

# Utilities & Renewables

## Power generation moderates

### Generation evades strong growth trend on reduced demand

Power generation rose 4.5% YoY in December 2023 to 135bn units (BU). This modest growth was on a high base of December 2022, which saw a robust 14% YoY rise. The slight uptick in generation can be linked to decreased cooling demand during winters, thus deviating from the strong trend seen in the preceding three months. 9MFY24 demand rose 11% YoY to 1,318BUs. Peak demand cooled off to 213GW with seasonality. PLFs for coal-based capacities stood at 65% in December 2023 (68% for 9MFY24). Gas-based capacities operated at 10.4% utilization in December 2023 (9MFY24 PLF at 14.5%). Imported coal-based capacities saw improved generation on the back of Section 11, with PLF at 44.8% in December 2023.

### Coal production volumes up 11% YoY

Production volumes were healthy at 93mn tonnes (+10.7% YoY), with 9MFY24 production at 684mn tonnes (+12.5% YoY). Dispatch rose 8.8% YoY in December 2023. Coal inventory at plants improved to 13 days in December 2023, after falling to 7-8 days in earlier months. e-auction premium was at 70% in December. CIL's dispatch to the power sector rose 6.14% YoY to 67mn tonnes in December 2023. Imported coal prices averaged at ~USD 117 in December.

### Modest capacity addition in 8MFY24; capacity at 426GW

Installed capacity rose by 10GW for 8MFY24 and 0.6GW for November 2023. Renewables continue to lead overall capacity addition, similar to earlier periods. Renewable capacity of 7.5GW was added in 8MFY24, of which 0.6GW came in November 2023. Coal capacity addition stood at 1.6GW for 8MFY24. All-India capacity now stands at 426GW – 213GW (coal), 25GW (gas), Nuclear (7.5GW), 47GW (hydro) and 133GW (renewables).

### YTD renewable auctions at 23GW

December 2023 saw 4GW of RE tender awards. Solar and Hybrid accounted for 65% and 35% of the bids. YTD auctions at 23GW are much higher than 6-9GW in FY23 and largely in line with our estimates of 15-20GW+, the required annual run-rate for India. But the current rate is still below the government's 2030 target of 500GW. Dec 2023 onwards, prior to May 2024 elections, ordering activity may slow down as election embargo on government ordering sets in.

### Our view: Positive prospects for Power

Peak power deficit in a 7%+ YoY power demand growth environment and underinvestment in the past decade may drive sectoral investments. Soaring energy requirement, increased focus on energy transition, sizeable pipeline of capacity expansion, foray into green hydrogen, energy storage solutions (pumped storage) and regulatory reforms bode well for Elara Power universe.

We remain positive on NTPC and NHPC on assured returns from regulated assets and sizable capacity addition pipeline. We favor IEX due to its near monopoly in the growing short-term electricity market.

## Installed generation capacity in November

Source	Installed capacity (GW)	Share (%)
Thermal	239	56.2
Nuclear	7	1.8
Hydro	52	12.2
Renewables	127	29.8
<b>Total</b>	<b>425.6</b>	

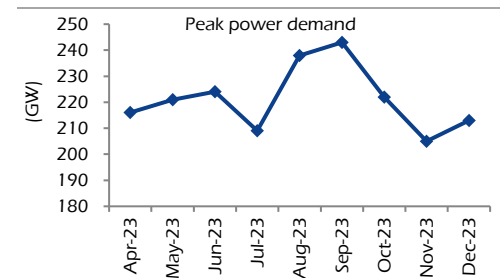
Source: Ministry of Power (MOP), Elara Securities Research

## Generation moderates with seasonality

Segments (MU)	Dec-23	Dec-22	YoY (%)	Nov-23	MoM (%)
Coal	104,253	98,853	5.5	102,104	2.1
Lignite	2,907	2,215	31.2	2,815	3.3
Hydro	6,672	9,130	(26.9)	7,250	(8.0)
Nuclear	4,261	3,760	13.3	4,410	(3.4)
Gas, Naptha & Diesel	1,894	1,703	11.2	1,648	14.9
RES (Wind, Solar, Biomass & Others)	14,779	13,349	10.7	12,301	20.1
<b>Total</b>	<b>134,766</b>	<b>129,010</b>	<b>4.5</b>	<b>130,528</b>	<b>3.2</b>

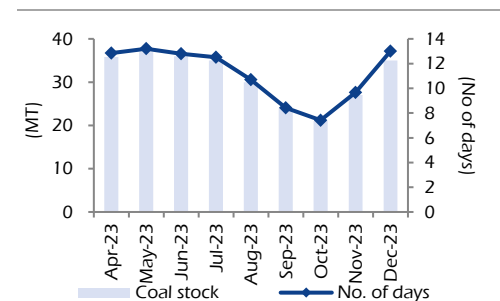
Source: POSOCO, Elara Securities Research

## Peak power demand moderated to 213GW from 240GW in prior months



Source: POSOCO, Elara Securities Research

## Coal stock normalized to 13 days in December



Source: POSOCO, Elara Securities Research

**Exhibit 1: Peer valuations**

Company	Ticker	Rating	Mcap (INR bn)	CMP (INR)	TP (INR)	Upside (%)	P/E (x)			EV/EBITDA (x)			ROE (%)		
							FY24E	FY25E	FY26E	FY24E	FY25E	FY26E	FY24E	FY25E	FY26E
NTPC	NTPC IN	Buy	3,031	312	287	(8.0)	16.6	15.4	15.1	10.8	10.6	11.1	12.4	12.3	11.7
Coal India	Coal IN	Accumulate	2352	381.7	385	0.9	8.2	8.2	7.8	4.41	4.08	3.50	40.1	33.3	29.6
Power Grid	PWGR IN	Reduce	2,228	240	201	(16.3)	13.9	13.2	12.7	8.0	7.7	7.4	17	17	16.5
Tata Power	TPWR IN	Accumulate	1,140	357	288	(19.3)	29.8	35.4	27.8	14.0	12.7	10.7	12.0	9.2	10.9
JSW Energy	JSW IN	Sell	791	481	333	(30.8)	45.7	31.3	23.8	16.4	14.0	12.1	8.9	11.1	13.1
NHPC	NHPC IN	Buy	691	69	60	(13.0)	21.6	20.3	15.5	15.2	14.5	11.7	9.1	9.3	11.7
Torrent Power	TPW IN	Sell	483	1,005	679	(32.4)	26.4	24.6	21.7	12.5	11.8	10.9	16.8	18.2	20.1
SJVN	SJVN IN	Accumulate	369	94	80	(15.0)	20.6	18.7	9.8	20.8	22.0	12.5	12.3	12.4	20.3
IEX	IEX IN	Buy	148	165	188	13.9	43.3	39.8	34.4	30.2	26.3	22.3	39.3	35.7	34.9
PTC India	PTC IN	Accumulate	60	204	174	(14.7)	13.5	13.1	12.5	9.2	9.2	8.8	9.6	9.3	9.1

Note: pricing as on 12 January 2024; TP and rating as per our last published notes; Source: Elara Securities Estimate

**Exhibit 2: Healthy generation across all segments, except hydro**

Segments (BU)	Dec-23	YoY (%)	Dec-22	YoY (%)	Dec-21	YoY (%)	Dec-20	CAGR 2-Yr	CAGR 3-Yr (%)
Coal	104.3	5.5	98.9	15.9	85.3	4.0	82.0	10.6	8.3
Lignite	2.9	31.2	2.2	(1.6)	2.3	14.6	2.0	13.6	13.9
Hydro	6.7	(26.9)	9.1	5.3	8.7	0.0	8.7	(12.3)	(8.4)
Nuclear	4.3	13.3	3.8	(5.5)	4.0	13.2	3.5	3.5	6.6
Gas, Naptha & Diesel	1.9	11.2	1.7	(11.5)	1.9	(43.6)	3.4	(0.8)	(17.8)
RES (Wind, Solar, Biomass & Others)	14.8	10.7	13.3	24.1	10.8	4.6	10.3	17.2	12.9
<b>Total</b>	<b>134.8</b>	<b>4.5</b>	<b>129.0</b>	<b>14.3</b>	<b>112.8</b>	<b>2.7</b>	<b>109.8</b>	<b>9.3</b>	<b>7.1</b>

Source: POSOCO, Elara Securities Research

**Exhibit 3: YTD generation up a healthy 11% YoY to 1,318BUs**

Segment-wise generation data (MUs)	YTD FY24	YTD FY23	YoY (%)
Coal	951,317	822,381	15.7
Lignite	24,933	23,840	4.6
Hydro	125,767	148,739	(15.4)
Nuclear	36,912	32,146	14.8
Gas, Naptha & Diesel	23,102	16,636	38.9
RES (Wind, Solar, Biomass & Others)	156,467	142,689	9.7
<b>Total</b>	<b>1,318,497</b>	<b>1,186,431</b>	<b>11.1</b>

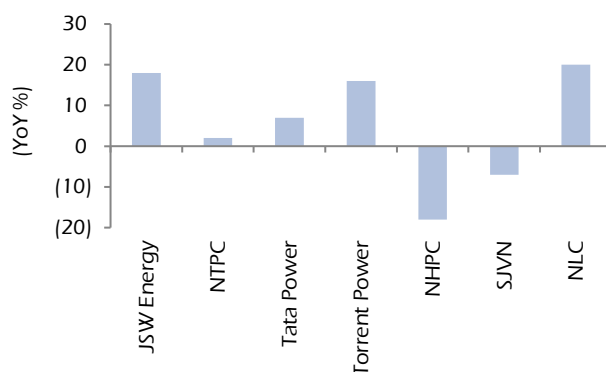
Source: POSOCO, Elara Securities Research

**Subdued generation led by lower demand**

Generation for NTPC moderated in December, up just 2% YoY to 28BUs (preliminary numbers per National Power Portal). Generation for Tata Power rose 7% YoY to 4.1BU. Generation from Mundra plant, which operated under Section 11, rose 24% YoY to 1.6BU. Generation for hydro firms, such as SJVN and NHPC, decelerated 7% YoY and 18% YoY, to 284MU and 796MU, respectively, due to seasonality.

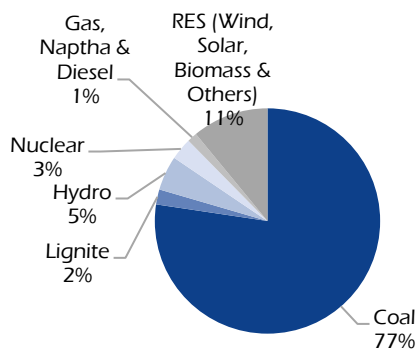
Generation for Torrent Power rose 16% YoY to 345MU. While generation from Unosugen (180MW) plant declined 67% YoY to 9.71MU, it increased 151% from Sugan plant (398MW) to 164MU. Domestic gas prices have reduced from USD 9.12/MMBTU in November to USD 8.47/MMBTU in December.

**Exhibit 4: Generation profile – Key players**



Note\* Company-wise generation excluding generation from renewable sources (wind, solar, bio mass); Source: Ministry of Power, Elara Securities Research

**Exhibit 5: Reliance on coal-based generation continues**



Note: as of Nov FY24: Source: POSOCO, Elara Securities Research

**IEX – December volume up 14.8% YoY to 9,707MU**

Indian Energy Exchange achieved 9,707MU overall volume in December 2023, including 10.52Lakh Renewable Energy Certificates (RECs; equivalent to 1,052MU), marking a 14.9% rise YoY. IEX achieved 8,655MU total electricity volume in December 2023, a rise of 8.7% YoY.

For the third quarter of FY24, IEX saw 28,326MU overall volume, registering a rise of 16.9% YoY. Sell bids on the exchange (Day Ahead Market plus Real Time Market) during the month rose 18% YoY. Going forward, sell liquidity may further improve, leading to a drop in power prices on the exchanges.

Day-Ahead Market (DAM) volume was at 4,798MU in December 2023, as compared with 5,001MU in December 2022. The DAM segment registered total volumes of 14,684MU in Q3FY24, a marginal rise of 1.5% over Q3FY23.

Real-Time Electricity Market (RTM) volume increased to 2,405MU in December 2023, from 1,763MU in December 2022, registering a rise of 36.4% YoY. The RTM segment registered volume of 7,166MU in Q3FY24, up 31.9% over Q3FY23.

Day Ahead Contingency and Term-Ahead Market (TAM), comprising contingency, daily & weekly and monthly contracts up to three months, traded 1,220MU in December 2023, higher 48.4% YoY. The total volume on the segment in the quarter was 3,810MU, a growth of 91.4% over Q3FY23.

The Green Day-Ahead Market (G-DAM) achieved 216.6MU volume in the month, with a weighted average price of INR 4.86 per unit. The segment saw participation from 187 market participants in the month. During Q3FY24, the segment achieved volume of 579.6MU.

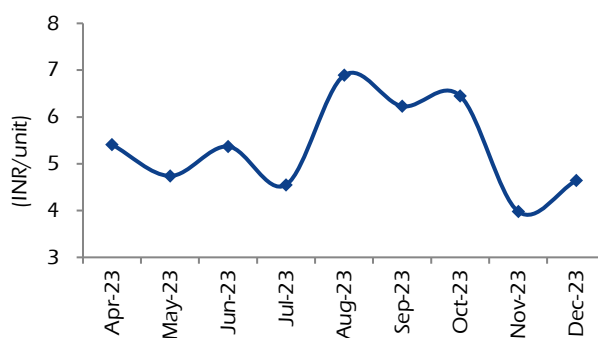
The Green Term-Ahead Market (G-TAM) achieved 15.4MU volume in December 2023, with average monthly price of Non-Solar at INR 6.08/unit. In Q3FY24, the segment achieved volume of 29.9MU.

**Exhibit 6: Volume up 14.8% YoY in December 2023**

Volume (MU)	Dec-23	YoY (%)	Dec-22	YoY (%)	Dec-21	YoY (%)	Dec-20
IEX: Total Volume (MU)	9,707	14.8	8,452	(6.5)	9,035	24.4	7,260
DAM	4798	(4.1)	5,001	(7.8)	5,423	(3.3)	5,606
TAM	1220	48.4	822	134.9	350		436
RTM	2405	36.4	1,763	16.6	1,512	33.9	1,129
GTAM	15.4	(95.9)	377	3.3	365		
GDAM	216.6	(10.1)	241	130	105		

Source: Company, Elara Securities Research

**Exhibit 7: Prices down 13% YoY to INR 4.64 per unit**



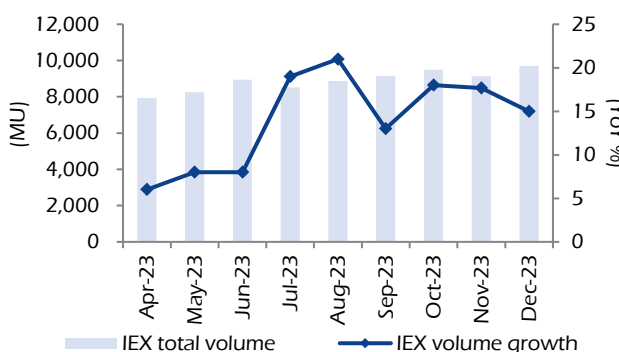
Source: Company, Elara Securities Research

**Exhibit 8: Volume up 17% YoY in Q3FY24**

Volume (MU)	Q3 FY23	Q4 FY23	Q1 FY24	Q2 FY24	Q3 FY24	YoY (%)
IEX: Total volume	24,188	26,052	25,125	26,534	28,326	17.1
DAM	14,410	14,301	12,501	11,253	14,648	1.7
TAM	1,990	2,943	3,018	4,604	3,810	91.5
RTM	5,435	5,914	7,251	8,201	7,166	31.8

Source: Company, Elara Securities Research

**Exhibit 9: IEX traded 9,707MU in December, up 15% YoY**



Source: Company, Elara Securities Research

**India's coal production up 11% and CIL's 8.2% YoY**

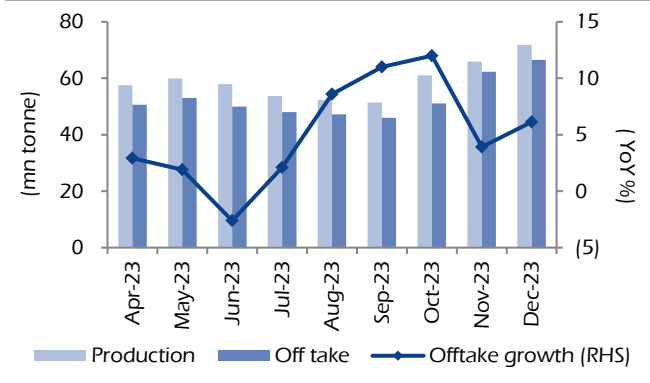
India's coal production rose 11% YoY to 92.9MT. Production of CIL increased 8.2% YoY to 72MT.

Overall coal dispatch increased ~9.0% to ~86.6mn tonnes in December 2023 from ~79.6mn tonnes in the same month in the past year. CIL's dispatch also rose significantly – 66.5mn tonnes in December 2023, up ~6.14% YoY.

Cumulative coal production till December 2023 has been reported at ~684.36mn tonnes, up ~13% from ~608.59mn tonnes in the same period in the prior fiscal. Cumulative coal dispatch for the same period rose to 710.33mn tonnes, up 11%, from 638mn tonnes in FY23. The Ministry of Coal has set a production target of 1,012mn tonnes in FY24. It plans to produce 1,404mn tonnes of coal by CY27 and 1,577mn tonnes by CY30, after factoring in more coal requirements for additional 80GW thermal capacity to be added by CY30. Cumulative coal production by CIL YTD FY24 was 460mn tonnes, up 11% YoY. CIL has set a target to produce 780mn tonnes of coal in FY24.

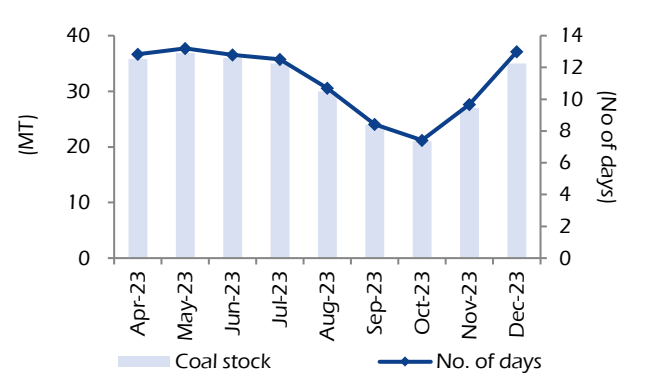
Coal inventory was ~34mn tonnes, with supply of 12 days in November 2023.

**Exhibit 10: Coal India – On track to achieve FY24 production target**



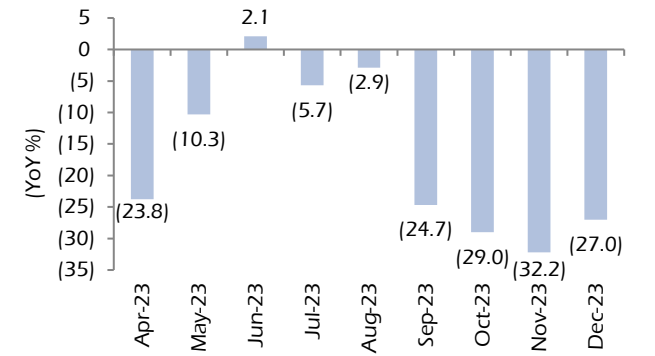
Source: Company, Elara Securities Research

**Exhibit 11: Coal stock normalized to 13 days in December**



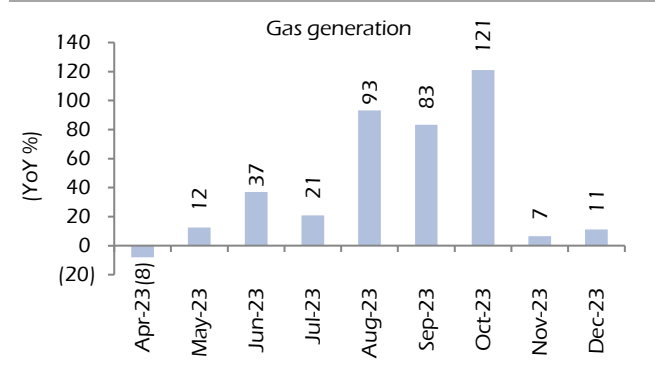
Source: Company, Elara Securities Research

**Exhibit 12: Hydro generation subdued YTD FY24 on reduced water availability**



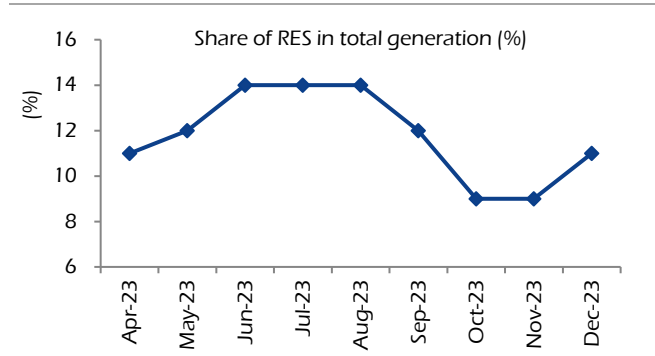
Source: POSOCO, Elara Securities Research

**Exhibit 13: Gas generation up on pared domestic price**



Source: POSOCO, Elara Securities Research

**Exhibit 14: Share of RE in overall generation less than desired**



Source: POSOCO, Elara Securities Research

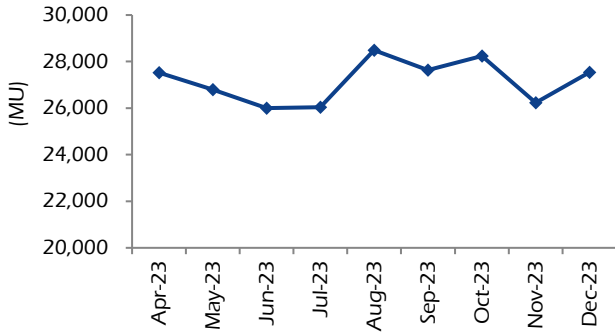
**Exhibit 15: Generation profile of key players**

(MU)	Monitored capacity (MW)	Dec-23	Dec-22	YoY (%)
JSW Energy	3,585	1,256	1,063	18.2
NTPC	54,247	27,541	26,897	2.4
Tata Power	8,647	4,028	3,760	7.1
Torrent Power	3,092	345	297	16.1
NHPC	6,971	796	976	(18.4)
SJVN	1,912	285	306	(7.1)
NLC Limited	3,640	1,539	1,282	20.1

Source: Ministry of Power (tentative September 2023 data), Elara Securities Research

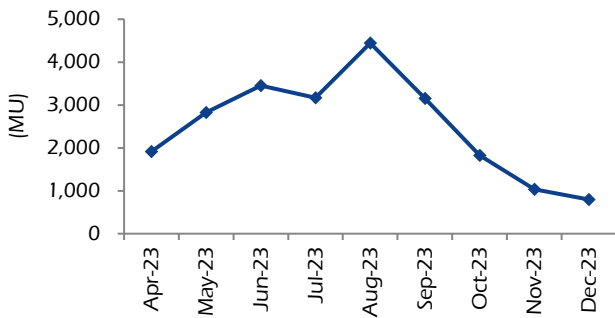
**Company-wise performance**

**Exhibit 16: NTPC – Generation moderated with subdued demand**



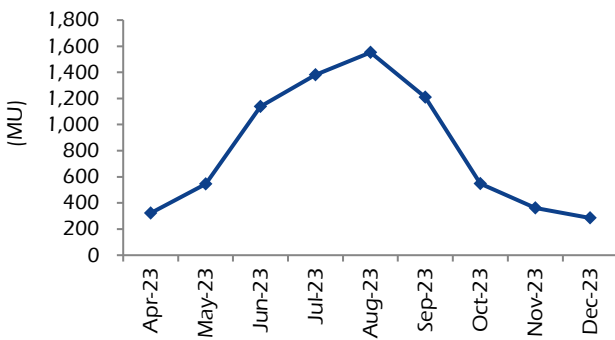
Source: Ministry of Power, Elara Securities Research

**Exhibit 17: NHPC – Muted generation due to lower water availability**



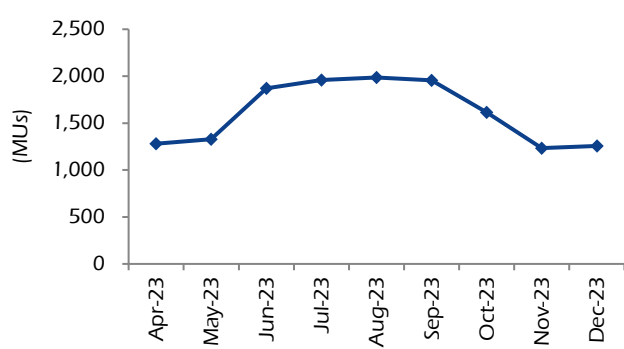
Source: Ministry of Power, Elara Securities Research

**Exhibit 18: SJVN – Generation down 7% YoY on reduced water availability**



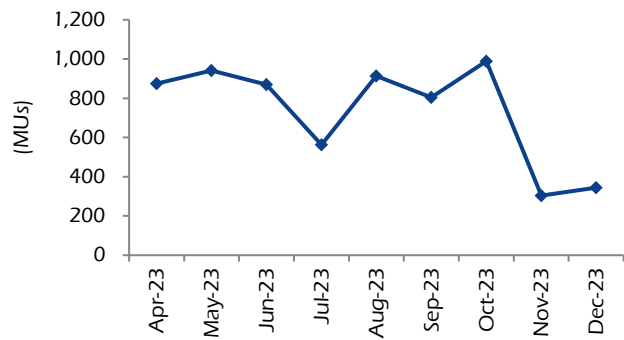
Source: Ministry of Power, Elara Securities Research

**Exhibit 19: JSW Energy – Generation up 18% YoY to 1,256MU**



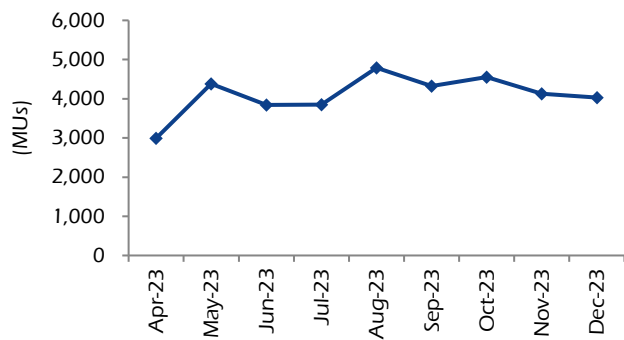
Source: Ministry of Power, Elara Securities Research

**Exhibit 20: Torrent Power – Generation up 16% YoY to 345MU**



Source: Ministry of Power, Elara Securities Research

**Exhibit 21: Tata Power – Generation up 7% YoY to 4,028MU**



Source: Ministry of Power, Elara Securities Research

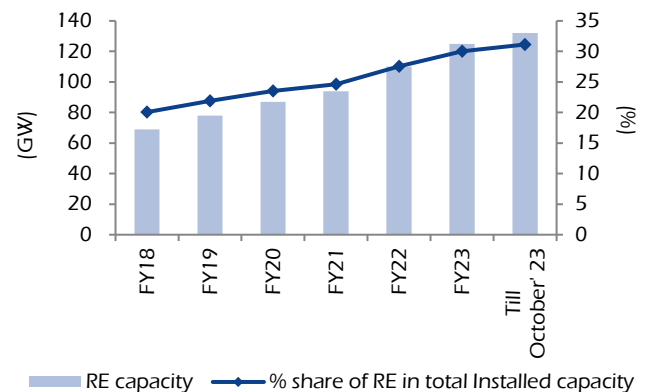
### Renewables energy

- In December 2023, 10 new renewable energy (RE) tenders with cumulative capacity of 5,785MW were issued.
- SECI issued a 1,500MW ISTS-connected solar tender (ISTS-XIII).
- NTPC floated two tenders of 1,500MW each, an ISTS-connected solar tender and an ISTS-connected Wind-Solar hybrid tender (tranche IV) pan-India.
- UPNEDA issued a rooftop solar tender of 500MW capacity in Uttar Pradesh.
- Through January-November 2023, ~9GW solar capacity and 2.7GW wind capacity were added in taking the cumulative RE capacity to 132.7GW.
- About 2,750MW of solar tenders and 1,500MW of wind-solar hybrid tenders were auctioned in December 2023.
- JSW Renew Energy commissioned the first phase of 51MW capacity of its 810MW wind energy project in Tamil Nadu.
- In December 2023, domestic module prices decreased by ~1.97% MoM.
- The IEX traded a total of 15MUs in GTAM in December 2023, 46.6% higher than the volume traded in November 2023. The average trade price in IEX-GTAM for December 2023 was INR 6.08/kWh. This is ~1.9% less than the prior month's price.

#### Regulatory push

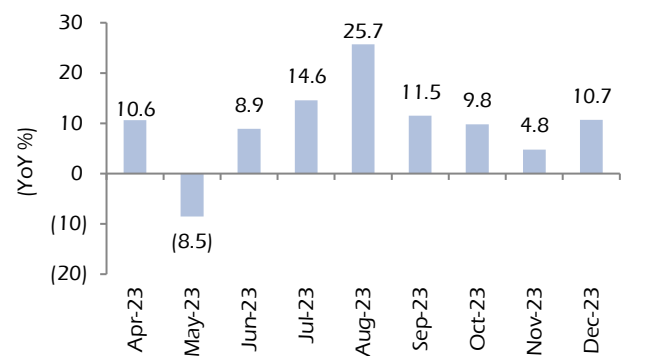
- MNRE issued an order to extend compliance to Quality Control Order 2017 standards.
- The central government issued amendments to the Carbon Credit Trading Scheme, 2023.
- The Ministry of External Affairs issued Offshore Wind Energy Lease Rules 2023.
- Solar rooftop up to 10kW requires no testing for technical, per MoP.
- MNRE issued National Repowering and Life Extension Policy for Wind Power Projects 2023.

**Exhibit 22: Installed RE capacity – Five-year CAGR 13%**



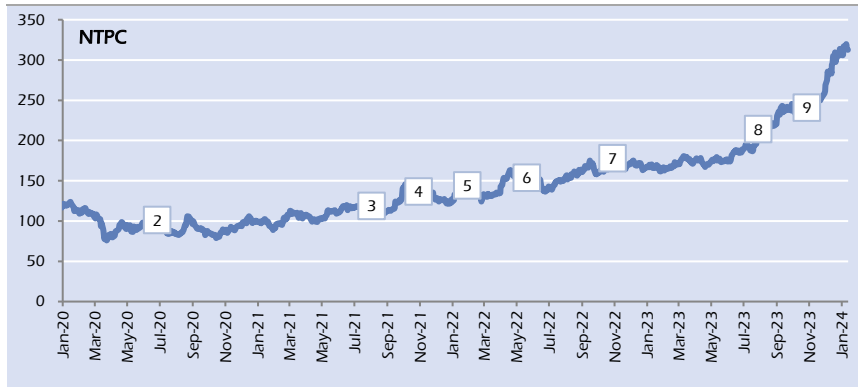
Source: CEA, Ministry of Power, Elara Securities Research

**Exhibit 23: RES – Generation up 11% YoY in December**

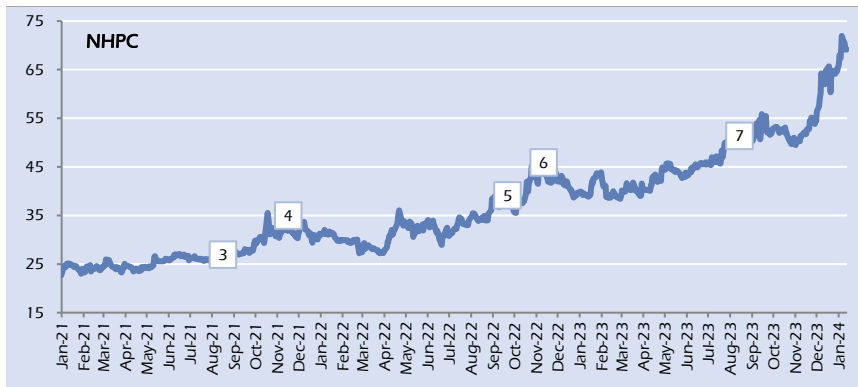


Source: POSOCO, Elara Securities Research

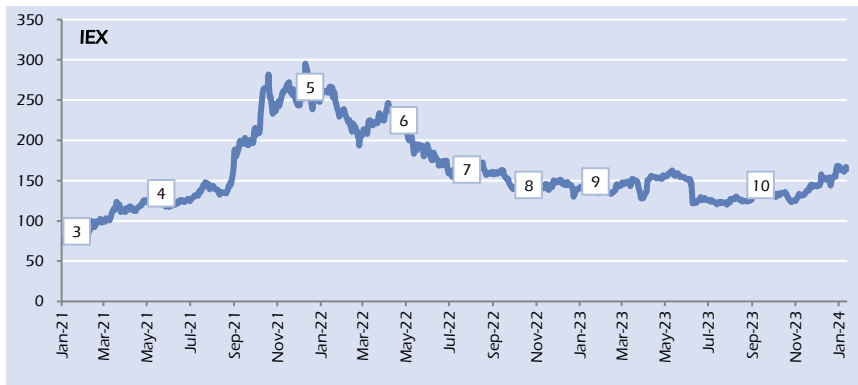
## Coverage History



	Date	Rating	Target Price	Closing Price
5	28-Jan-2022	Buy	INR 172	INR 140
6	20-May-2022	Buy	INR 194	INR 150
7	28-Oct-2022	Buy	INR 209	INR 174
8	31-Jul-2023	Buy	INR 267	INR 218
9	27-Oct-23	Buy	INR 287	INR 237



	Date	Rating	Target Price	Closing Price
4	16-Nov-2021	Buy	INR 40	INR 34
5	21-Sep-2022	Buy	INR 49	INR 38
6	11-Nov-2022	Buy	INR 55	INR 45
7	14-Aug-2023	Buy	INR 60	INR 50



	Date	Rating	Target Price	Closing Price
7	26-Jul-2022	Buy	INR 236	INR 154
8	21-Oct-2022	Buy	INR 215	INR 135
9	23-Jan-2023	Buy	INR 200	INR 139
10	18-Sep-2023	Buy	INR 188	INR 133

## Guide to Research Rating

<b>BUY</b>	Absolute Return >+20%
<b>ACCUMULATE</b>	Absolute Return +5% to +20%
<b>REDUCE</b>	Absolute Return -5% to +5%
<b>SELL</b>	Absolute Return < -5%

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