

SectorVector

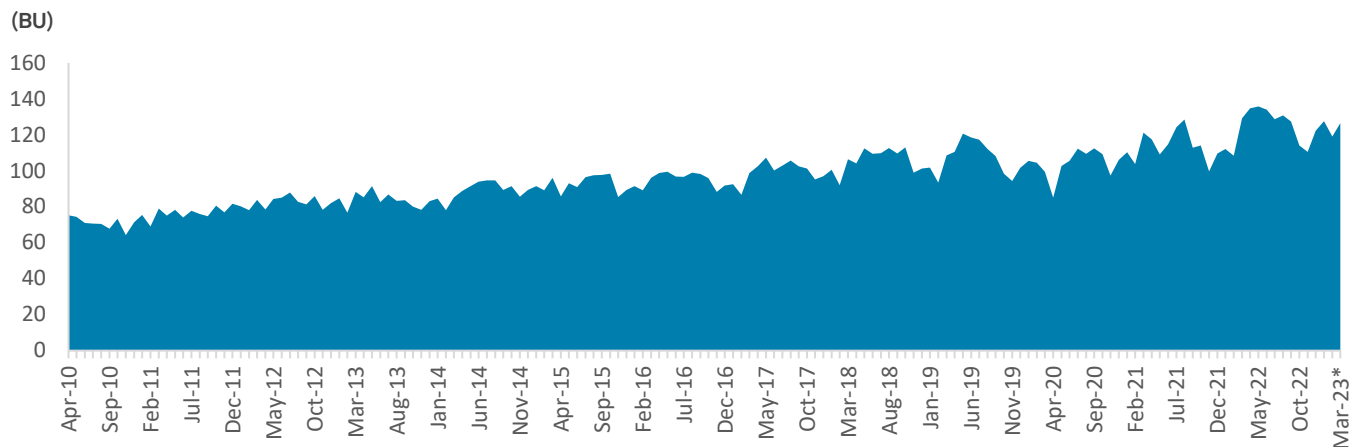
Reading the topical trends

April 2023

Power demand and prices get a breather

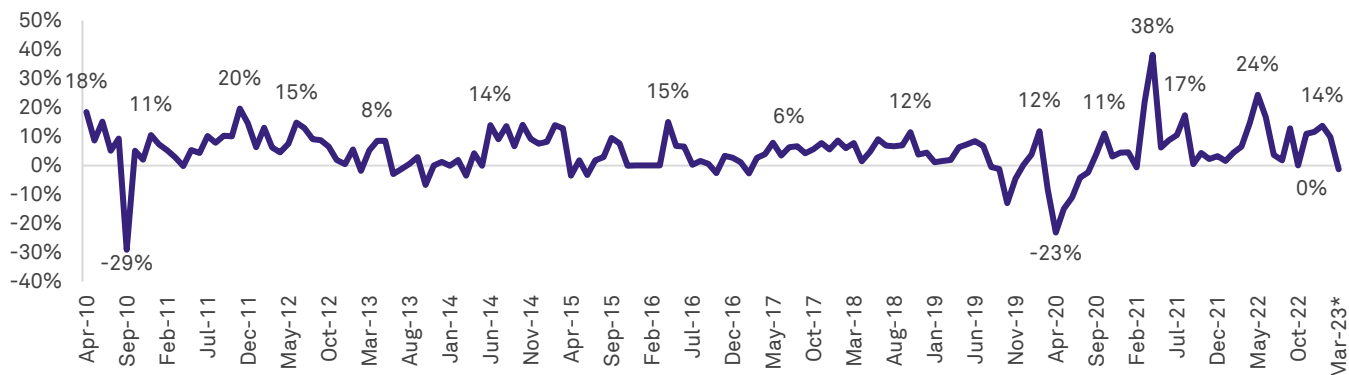
Consumption unusually contracted 1.3% on-year in March; first quarter of fiscal 2024 key to gauge demand dynamics

Figure 1: Power consumption dipped to 127 BUs in March



Source- Central Electricity Authority of India (CEA), Power System Operation Corporation (POSOCO)
Note: * Numbers are provisional

Figure 2: Despite power demand declining in March, power consumption logged 7% on-year growth in the fourth quarter of fiscal 2023



* Provisional number
Source: CEA, POSOCO

The rising growth trajectory of power demand bucked the trend in March as unprecedented rainfall brought some respite from prevailing high temperatures. Although the month saw a 1.3% decline in demand, the fourth quarter of fiscal 2023 witnessed 7.0% on-year growth as January and February had seen demand grow 13.7% and 10%, respectively, led by increased

heating requirement in winter months and robust economic activity.

In fiscal 2024, soaring temperature and resilient economic activity are expected to keep power demand growing. On average, the first quarter of the fiscal should see power demand grow 4% on-year on a high base of the previous year.

Peak power demand remained buoyant in March despite contracting base demand

Figure 3: Increasing heating requirement amid a severe cold wave led the winter peak demand to an all-time high of 213 GW in the fourth quarter of fiscal 2023

GW	April	May	June	July	August	September	October	November	December	January	February	March
FY18	159	160	156	157	164	162	162	151	153	159	159	162
FY19	162	172	172	170	173	177	173	163	164	164	162	169
FY20	177	184	184	177	179	175	165	156	172	172	179	171
FY21	133	167	167	172	169	177	171	161	184	190	190	186
FY22	183	169	194	203	198	181	180	167	184	193	194	202
FY23(YTD)	216	206	212	192	197	200	187	188	206	213	211	209*

% Dev from peak Lean demand >8%&<=20% >7%&<=8% >2%&<=6% <=2% Peak demand.

Source-CEA, POSOCO

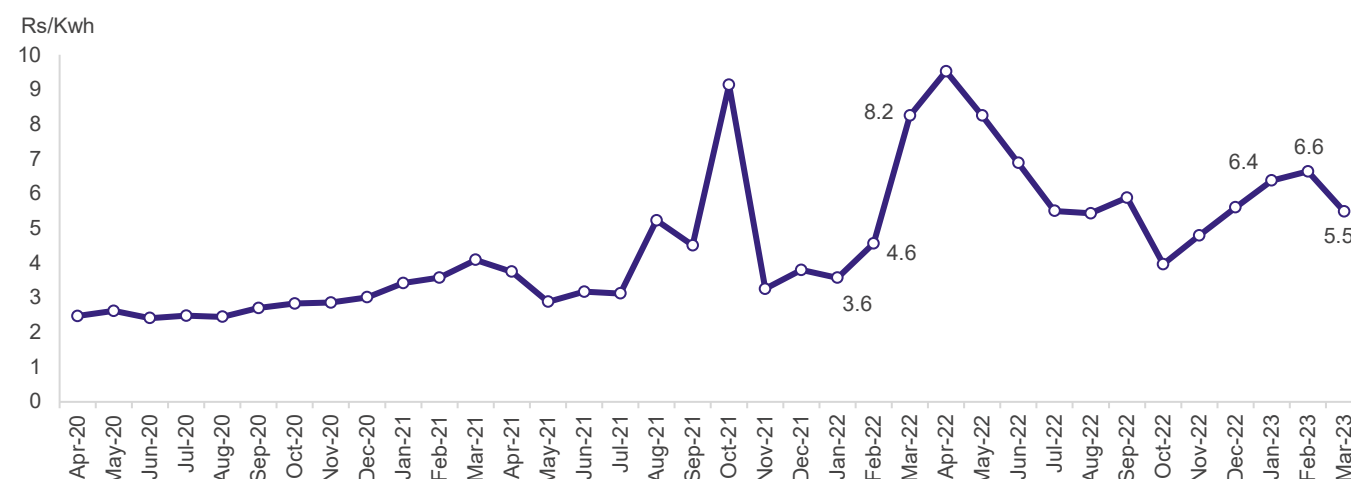
Note: Lean demand is the lowest peak demand observed in a fiscal year. * Numbers are provisional

Despite declining base demand, peak demand remained afloat, rising 3% to 209 GW in March. However, for the fourth quarter, growth was 10%, led by increased heating demand in the winter month of January.

In fiscal 2024, given predictions of heat waves that will increase usage of air conditioners, fans, and refrigeration units, peak electricity demand should touch a record high. India's peak power demand is expected to grow to 230 GW in the first quarter of fiscal 2024, rising 6.5% on-year.

Lower power demand led to a 33% on-year decrease in power prices¹ in March

Figure 4: Despite the drop in March, prices increased 13% on-year in the fourth quarter of fiscal 2023



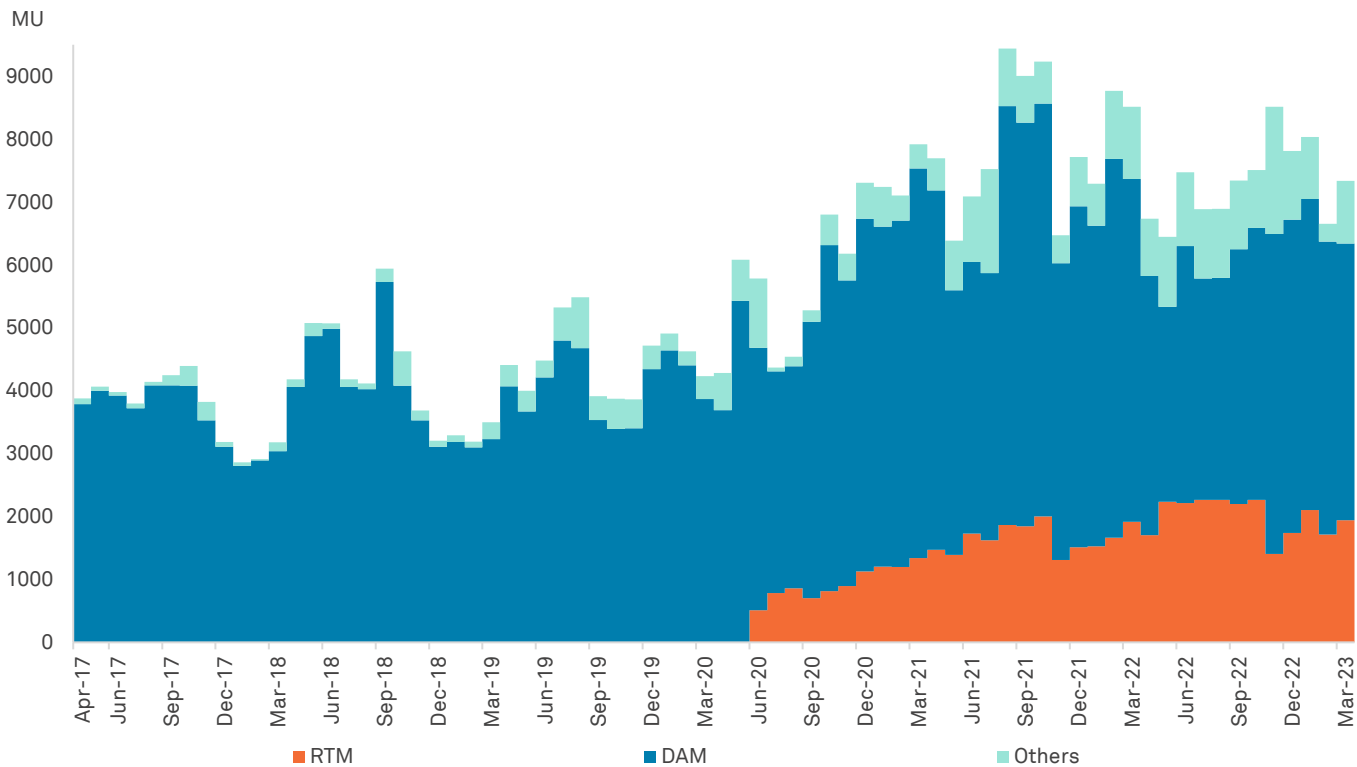
¹ Prices are for the day-ahead market segment of Indian Energy Exchange (IEX)

A sharp swing in the weather pattern led to abnormal prices in the power exchange. While prices dropped 33% on-year in March, the cold wave pushed prices up 78% and 45%, respectively, in January and February.

However, despite the high base for March last year, the fourth quarter in fiscal 2023 saw a 13% growth in the day-ahead market (DAM) prices over the same period a year ago.

Despite lower prices in exchange, volume² saw a 19% dip in March

Figure 5: Higher prices in January and February, and lower demand in March, led to a 15% decrease in the day-ahead volume in the fourth quarter of fiscal 2023



Source- IEX
Note: The DAM and real-time market (RTM) are two main products of power exchanges, constituting over 85% of the short-term market. DAM alone constitutes over 60% of overall market volume. Source: IEX

Volume in exchange is a factor of prices discovered, as well as prevailing power demand in the country.

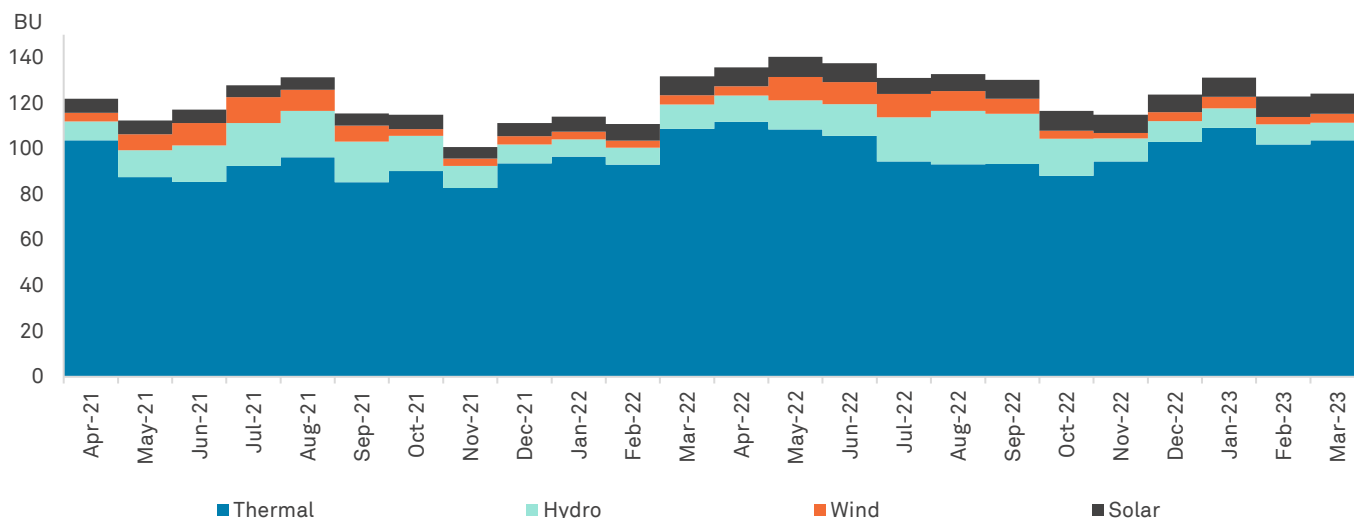
While volume cleared in the DAM was lower in March due to lower power demand of 1.3%, it was lower by 3% and 22% on-year in January and February due to higher

price discovery. For this reason, the fourth quarter of fiscal 2023 ended with 15% lower volume compared with the same period a year ago. This implied, buyers chose to forgo the service of incremental power demand amid higher exchange prices.

² Volume numbers are for the DAM segment of IEX

Power generation dipped 7% on-year in March due to lower demand, easing the pressure on hydro and thermal generation

Figure 6: Despite lower generation in March, the fourth quarter of fiscal 2023 saw 4% increased generation to service higher winter demand in January and February



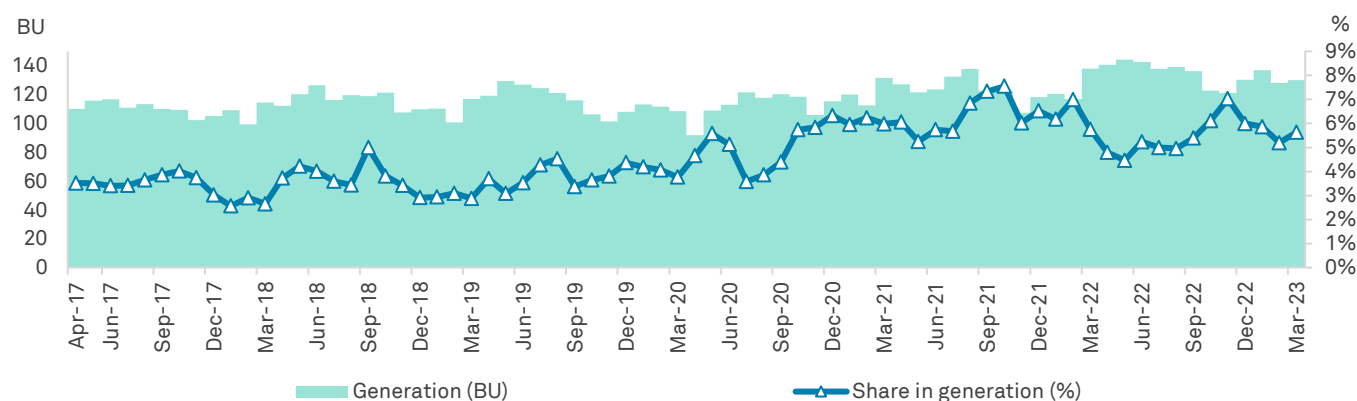
Source- POSOCO

Hydro generation dipped 27% in March 2023, and its share in overall generation decreased 167 basis points (bps), which prevented the water levels in hydro plants from decreasing further.

Increased winter demand led to 13% and 9% higher generation from across fuels in January and February, respectively. Despite this growth, timely servicing of demand remained tricky, which was reflected in the short-term power prices of January and February.

Lower power demand led to a 12bps dip in the share of short-term volume in overall generation for March

Figure 7: Higher prices in winter months led to lower clearing volume, which caused the share of short-term in overall generation to fall 70 bps in the fourth quarter of fiscal 2023



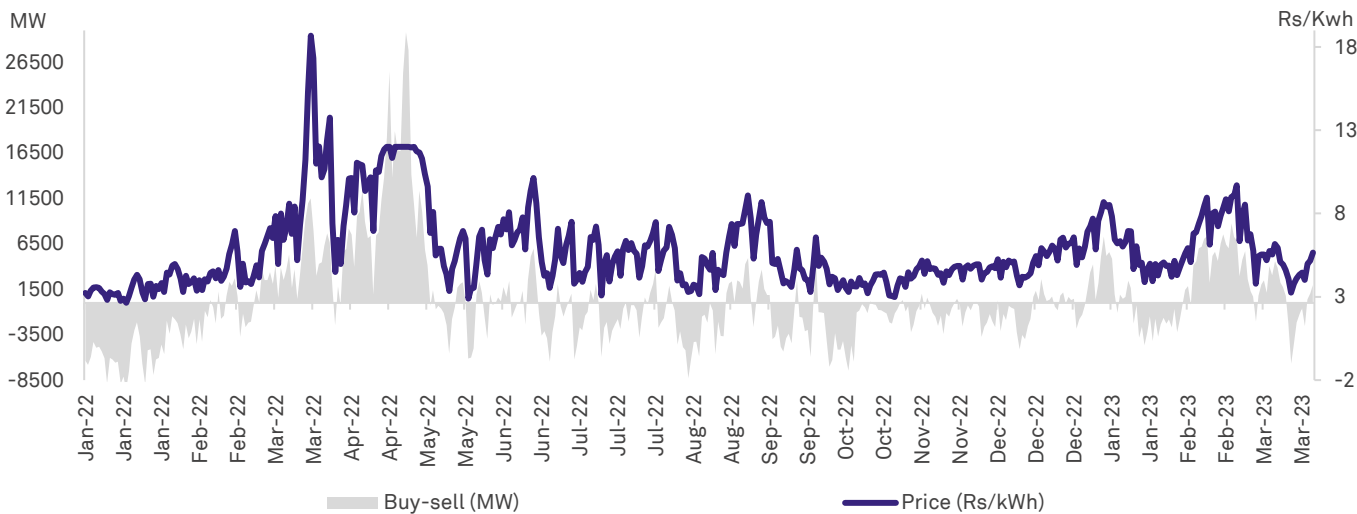
Source: IEX

While the share of short-term generation in overall generation fell 12 bps in March due to lower power demand, it fell a significant 31 bps and 180 bps in Jan-

uary and February, respectively, due to higher exchange prices, even as generation struggled to meet incremental demand.

Positive³ buy-supply bid differential decreased 67% on-year in March 2023 due to lower demand

Figure 8: Despite the drop in March, the overall buy-sell bid differential turned positive in the fourth quarter of fiscal 2023 due to higher variability in January and February

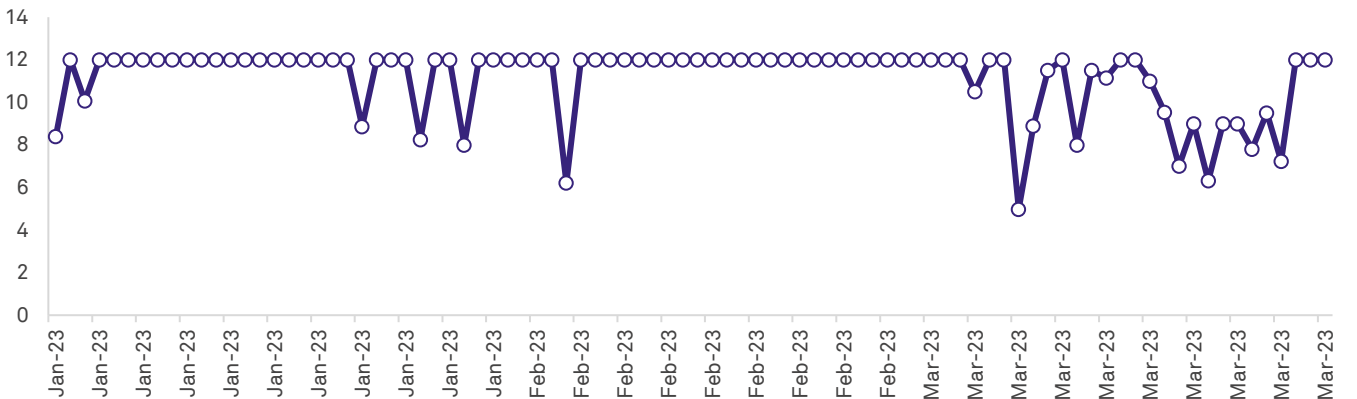


Source- IEX
Note: Buy-sell bid differential is for the DAM of IEX

Positive differentials in January and February 2023 due to higher power demand and weak power supply increased pressure on both, the peak and average prices in the DAM. Despite the high base of March 2022, the overall differential in the fourth quarter of fiscal 2023 remained positive due to insufficient power supply in

the winter months of January and February 2023. This positive differential led prices to touch the upper circuit of Rs 12/kWh in January and February 2023 and higher pressure on prices in peak time blocks.

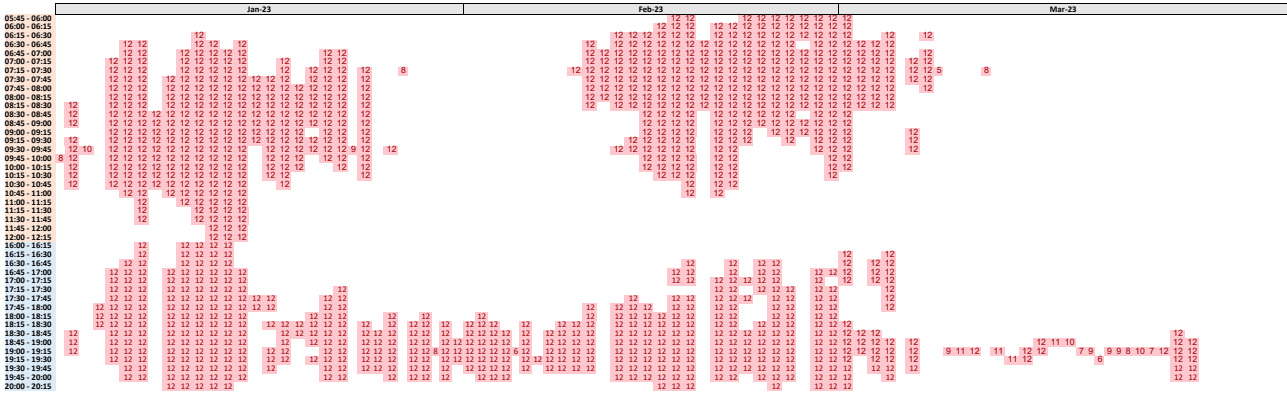
Figure 9: Daily peak price discovered in the DAM moderated after the first week of March 2023



³ Positive differential in demand-supply means higher demand than supply bids. The higher this number, the greater is the pressure on short-term prices

Even at the intra-day level, prices in March moderated from the maximum (peak) price of the day for multiple time blocks, in stark contrast with January and February, as shown below.

Figure 10: Time blocks in which the maximum price of the day was achieved in the DAM



Government stepped in to tame peak prices in the fourth quarter of fiscal 2023; weather remains a monitorable for fiscal 2024

Last summer, prices on the exchange shot up amid prevailing coal supply issues.

In fiscal 2024, anticipating a 24 million tonne shortfall in coal supply in the first half, the government has mandated all domestic plants to blend 6% of their coal requirement with imported coal.

As of April 3, 2023, the overall coal stock at power plants was only sufficient to last over 13 days, compared with the normative requirement of 15 days. To alleviate exchange prices and ensure sufficient supply, Section 11 of the Electricity Act, 2003, has been invoked for all import-based coal plants, mandating them to operate at full capacity from March 16 2023.

The recent purchase auction for 1,500 MW of untied imported plants and 4,000 MW of gas plants is expected to ease the supply situation further in

the exchange market. The result of these auctions will be crucial in taming short-term prices in the exchange market.

Additionally, the Central Electricity Regulatory Commission has lowered the price cap across exchange products (except the high price (HP) DAM) to Rs 10/kWh starting April 4, 2023, from Rs 12/kWh, to alleviate the burden on distribution companies' power purchase costs.

That said, the early onset of summer and robust economic activity are expected to keep power demand buoyant in fiscal 2024. In the first quarter of the fiscal, we expect power demand to grow at an average of 4.2% on-year on a high base of nearly two years.

Temperatures did not soar to very harsh levels in March, as well as the first week of April. This will remain a monitorable for peak power demand as well as generation by source, as hydro generation dips seasonally in summers.

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