Research

CRISIL
An S&P Global Company

SectorVector

Reading the topical trends

September 2021

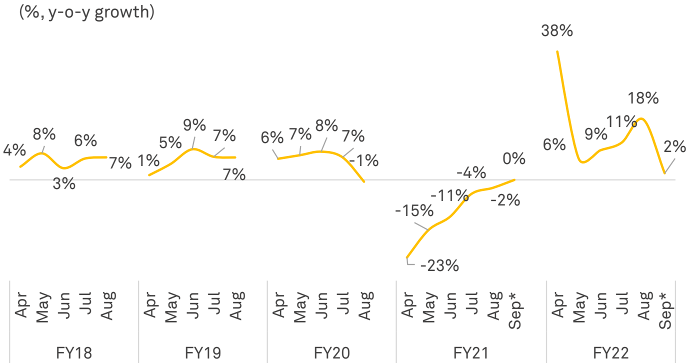
Coal supplies come up short as power demand rebounds

Feedstock inventory may not rise beyond 10 days on average through March

The surge in electricity demand

Power demand has seen a robust recovery after the second wave of Covid-19. As of August this fiscal, it was up ~16% on-year and ~3% over the corresponding period of fiscal 2020, or the pre-pandemic level.

Power demand up 18% on-year in August

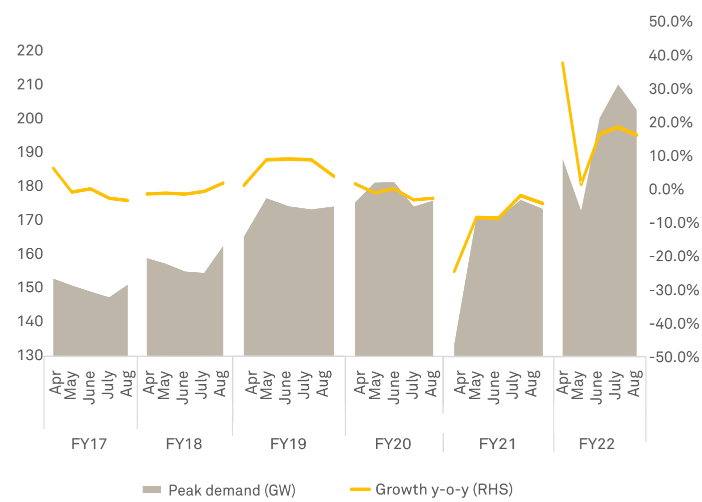


*Note: *September data is for the first 15 days of the month. For FY22, September data is provisional*
Sources: CEA, CRISIL Research

Peak demand also spurted sharply, especially over June-August, led by staggered rainfall, peaking temperature, and the recovering economy. In July, peak demand crossed a record 200 GW.

Peak demand is an important metric, along with rising base demand, as it is instantaneous and requires coal plants to quickly ramp up over a short period. In order to meet peak demand, thermal power plants need adequate coal stocks to quickly ramp up utilisation levels.

Taller peaks: demand topped 200 GW mark for the first time in July



Sources: CEA, CRISIL Research

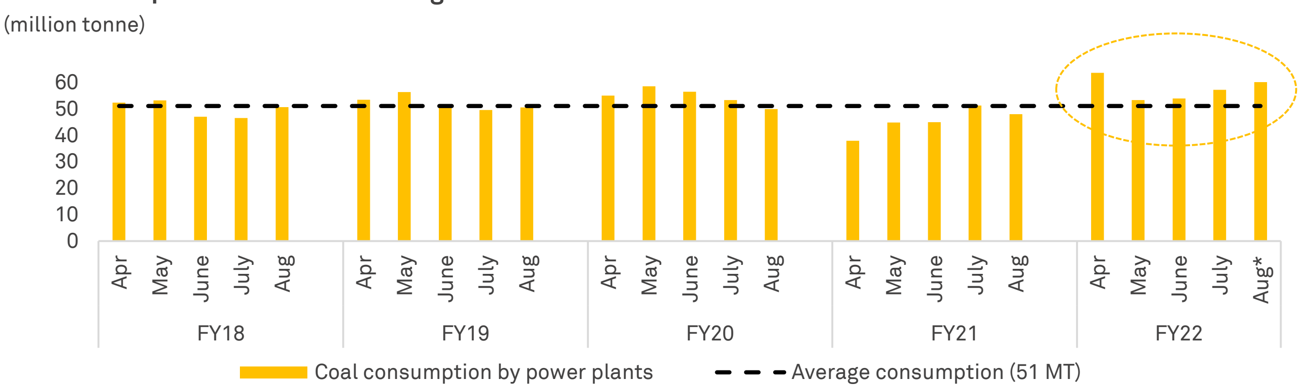
Demand met primarily through coal-based generation this fiscal

The massive increase in power demand in April-August was not distributed equally among different sources of power. Coal-based power generation increased ~23% on-year, whereas that based on other conventional sources[1] saw ~8.4% on-year decline. The only support was from renewable sources, which increased 16.7% on-year.

Hydro, gas and nuclear, which typically comprise 16-17% of the generation, saw a steep decline due to a combination of factors. Hydro generation, which accounts for 12-13% of monthly generation on average, declined ~4% on-year during April-August 2021 due to deficient and uneven monsoons. Gas generation — accounting for 3-4% of monthly generation on average — saw ~27% on-year decline because gas prices increased by nearly two times. Nuclear generation, which accounts for 2.5-3.5% of monthly generation on average, declined 2.5% on-year due to maintenance shutdown at three NPCIL plants in south India.[2]

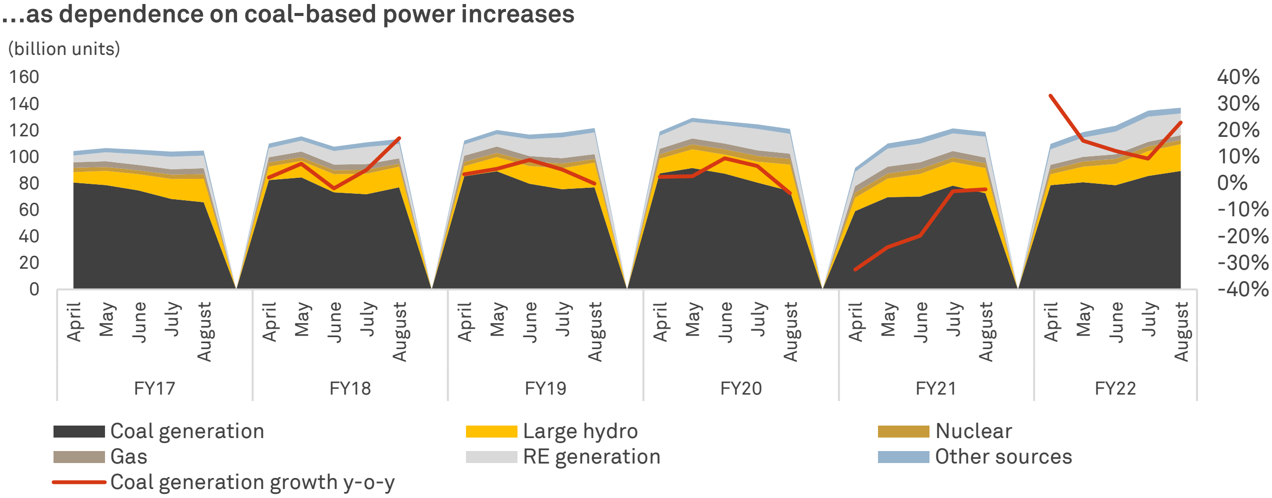
Consequently, ramp-up in coal generation pushed up its share in the overall pie to ~71.5%, compared with a 67% last year and an average of ~70% over fiscals 2019-2021. The consumption rate has also intensified as usage of domestic coal of lower calorific value increased, given a decline in imports (higher calorific value) over the period.

Coal consumption exceeds the average…



*Note: *The available data is provisional; actual numbers may differ*
Sources: CEA, CRISIL Research

…as dependence on coal-based power increases

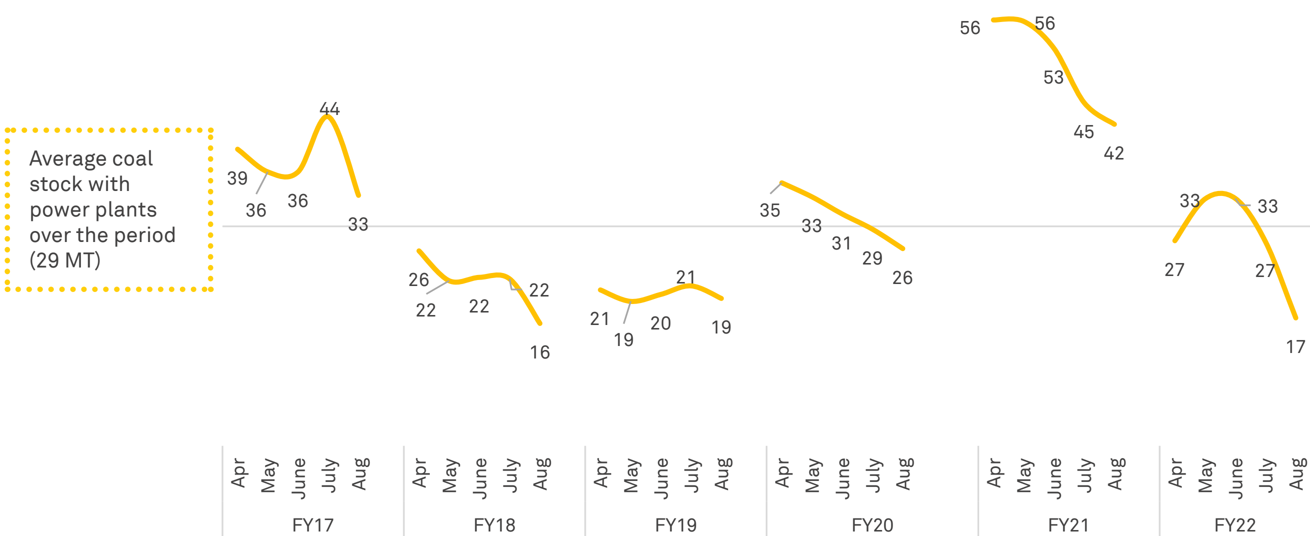


Note: Other sources include power generation from lignite and imports from Bhutan
Sources: CEA, CRISIL Research

[1]Other conventional sources refers to large hydro, nuclear and gas-based power plants
[2]The reference to average monthly generation considers the time period as April-August of each fiscal, 2019 through 2021

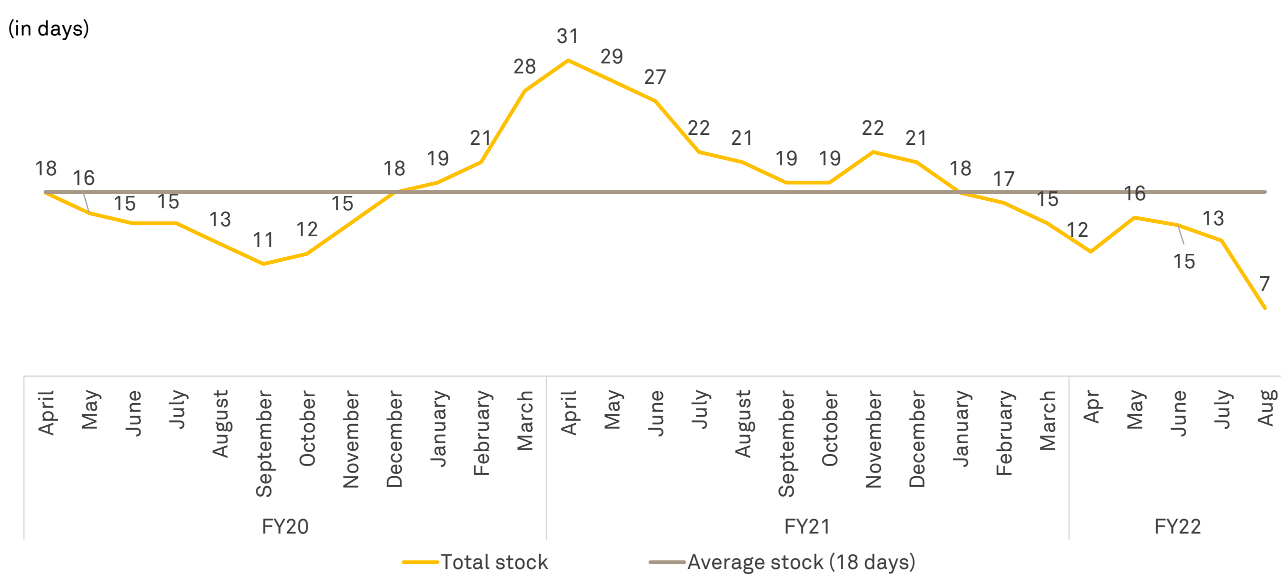
Stocks at power plants reached critical levels amid the surge in demand to less than 17 MT as of August 2021, which would be sufficient for just seven days of power generation. The situation became so acute that a core management team was set up in August to ensure supply of coal to plants with stocks at critical levels. This was done by diverting coal from non-power end-use sectors to fuel increased demand for power.

Coal stock at power plants almost halves from the average of 25-30 MT



Sources: CEA, CRISIL Research

Total stock had fallen to seven days by August 31, the lowest in the past two years



Sources: CEA, CRISIL Research

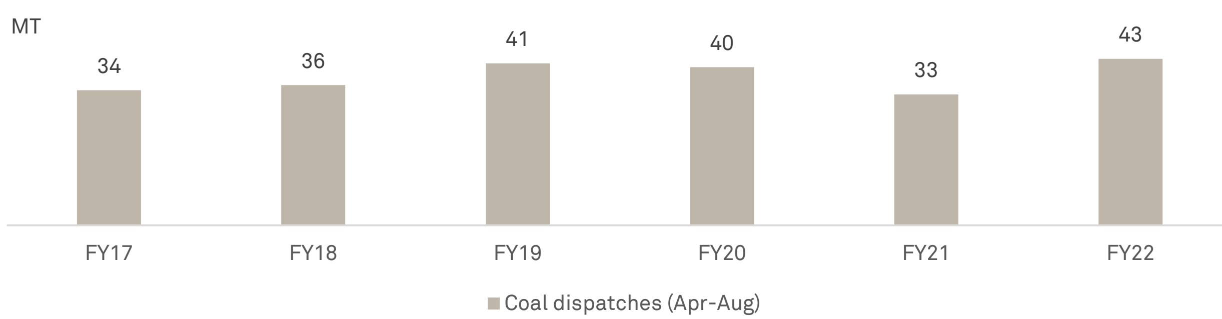
Domestic coal supply remains high with dispatches from Coal India and Singareni Collieries above average

This time of the year typically sees a seasonal dip as rains affect coal production. Historically, average production in the second quarter of the fiscal has remained 20-25% lower than in the remaining three quarters.

However, production in July and August 2021 remained high at 48 MT on average compared with the historical 41 MT, with domestic producers ensuring increased supply.

Consequently, dispatches from Coal India Ltd (CIL) and Singareni Collieries Company Ltd (SCCL) have been high. Coal dispatches over April-August increased ~27% on-year and by ~5% compared with fiscal 2020.

Average coal dispatches to power by CIL and SCCL increased 27% on-year in April-August



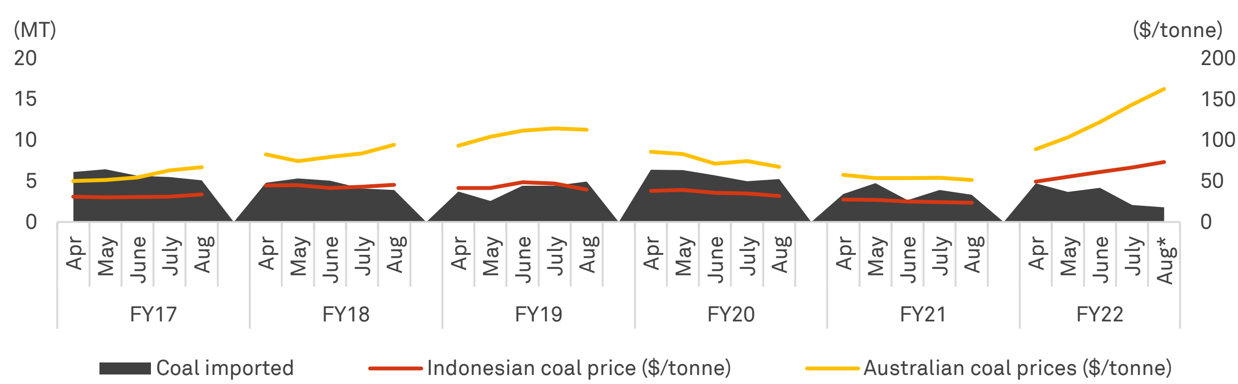
Note: Numbers are for April-August in each fiscal
Sources: CEA, CRISIL Research

Import of coal bit into budgets of end-use segments

While domestic supply of coal has remained strong, imports have been particularly subdued so far this fiscal as international prices surged, given a supply crunch across key mining regions due to a rise in Covid-19 cases.

This has kept Indian entities from importing coal. In April-July, non-coking coal imports by the power segment were at the same level as in fiscal 2021, and down 37% compared with fiscal 2020.

Non-coking coal imports by power plants dipped as prices rose due to global supply constraints in April-August



*Note: *Available data is provisional. Actual numbers may differ*
Sources: CEA, CRISIL Research

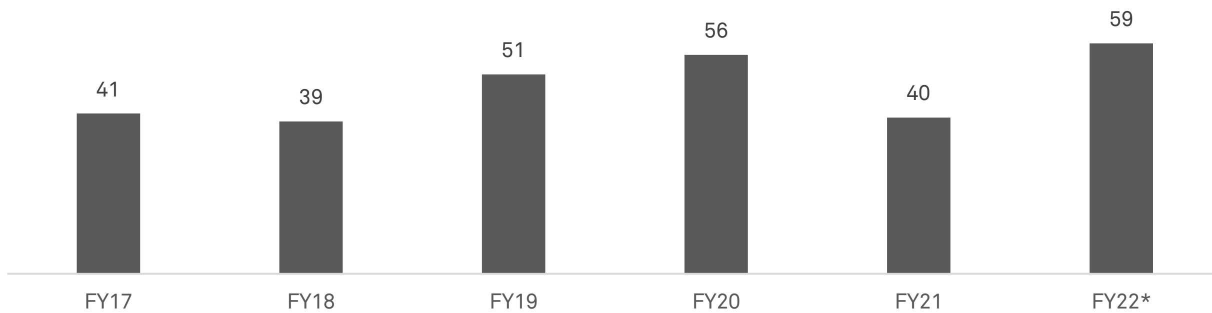
High imported coal prices and priority to power sector amid coal shortage to affect non-power segments

With recovery in industrial activity, coal demand from non-power segments[3] has also risen sharply. Coal offtake for non-power segments – accounting for 30% of overall non-coking coal consumption, on average – rose 16% during April-August in fiscal 2022.

However, as coal supply was directed towards the power sector on priority, the situation turned grim for non-power sector users, leaving players with stocks for 4-5 days only. Dispatches from CIL and SCCL were down 1.5% at 64 MT compared with the 65 MT dispatched in April-August of fiscal 2020. As demand rose, spot e-auction premiums for August 2021 increased to 74% compared with 30% in the first quarter of this fiscal and 25% in fiscal 2021.

In the near term, the supply crunch is expected to persist, with the non-power sector facing the heat as imports remain the only option to meet demand but at rising costs.

Non-coking coal imports increased 45% on-year in April-August



*Note: *Available data is provisional, actual numbers may differ. The above data is for April-August for respective fiscals*
Sources: CEA, CRISIL Research

Situation to ease with pointed measures to enhance supply, but coal inventories to remain around the 10-day mark

Power demand is expected to remain high, with increasing industrial productivity, impending festive season that boosts commercial demand, followed by the last quarter of the fiscal when temperature starts peaking. However, robust growth in power consumption in the first half of this fiscal will taper because of base effect as the second half of last fiscal had seen power demand grow by a strong ~7.5% on-year.

The dependence on coal-based generation is also likely to continue as the peak season of generation (monsoon) for both hydro and wind would soon be over, a typical trend each year. Therefore, the dependence on coal generation is typically higher in the last two quarters of a fiscal.

This would signify continued high consumption rates of 57 MT per month over September-March this fiscal as seen over April-August. This compares with an average monthly consumption rate of 52 MT per month as seen over fiscals 2017-2021.

[3]Non-power segments indicate sectors apart from power that are key consumers of non-coking coal. This would primarily include cement, sponge iron, fertilisers, chemical, paper, etc.

The silver lining is the supply push from domestic producers — CIL and SCCL — which have been able to enhance both production and dispatch in the current fiscal. We expect this trend to sustain, as the subsidiaries target an ambitious 1 billion tonne production target.

This leads us to believe average dispatches to power will remain high at an average 52 MT per month over September-March this fiscal compared with the historical average (fiscals 2017-2021) of 44-45 MT for the same period. This would be further supported by a production rate of 5-6 MT from captive mines allocated to power producers as seen over period April-August in fiscal 2022.

Imports are likely to be significantly subdued at 3-3.5 MT on average over September-March due to the surge in non-coking coal prices for both, Indonesian and Australian varieties.

Prices of imported non-coking coal have remained high due to a rise in Covid-19 cases in key mining regions, coupled with other supply constraints such as shortage of labour and ship tonnage, which have weighed on supply. This has been aggravated by high demand from China, which was also suffering from a coal shortage internally.

We expect prices to remain high as the constraints are expected to ease only gradually. Hence, the Australian and Indonesian non-coking coal varieties, which have already crossed the $200 per tonne and $90 per tonne mark, respectively, as at end-September, are expected to trend higher over the remainder of this fiscal.

In our view, coal inventory at thermal plants will improve only gradually by next March. For this fiscal, it will hover around 10 days compared with the two-year average of around 18 days.

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