

Power consumption and generation drop with second wave restrictions

June 18, 2021 | Economics

The reimposition of pandemic restriction and lockdown across states since the end of March has had a telling impact on electricity demand and consequently generation. However, despite the reversal of the gains of March and the decline on a sequential basis during April-May'21, overall electricity consumption and generation has been higher than that in April-May'20, which was the period of the national lockdown when nearly all commercial and industrial activity was halted countrywide. The comparatively higher electricity output and demand this time around is due to the localised nature of the restrictions which saw the continuity of activity across many regions.

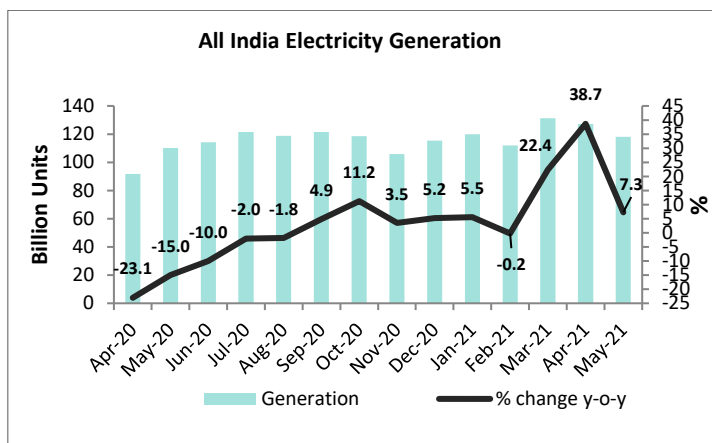
Lower electricity demand pulled down prices in the short-term electricity market in May'21 to the lowest levels in five-months.

The addition to domestic power generation capacity in the first two months of the current financial year which was the highest in four years has been driven by renewable energy i.e., solar and wind power.

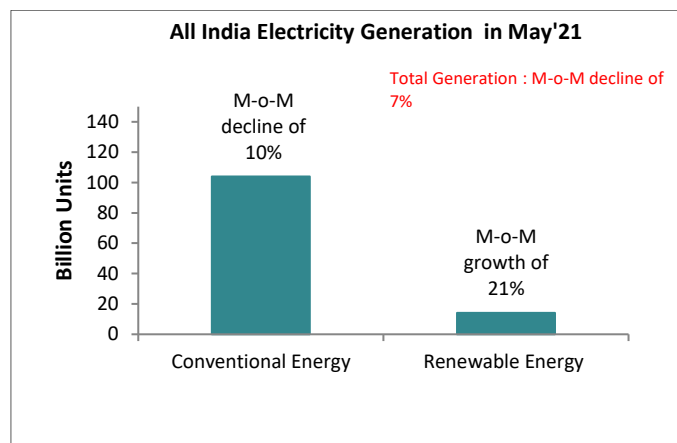
Although DISCOM dues have seen a decline in recent month, they nevertheless continue to be sizeable. As of end April'21, the outstanding dues amounted to Rs.0.68 lakh crores.

Electricity generation

India's power generation declined sequentially for the second consecutive month in May'21 with the lower output from thermal sources i.e. coal power far outweighing the increased generation from renewable sources. As per the provisional data, electricity generation during May'21 at 118 billion units (BU) was 7% lower than April'21 (127 BU) and the lowest in three months. It was however 7% more than the electricity output of May'20 which was the period of the nation-wide lockdown during which electricity consumption and consequently generation declined.



Source: CEA (prov)



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Conventional Energy Generation

- Electricity generation from conventional sources has seen a decline for two consecutive months (April-May'21)
- On a sequential basis, generation from conventional sources declined by 2% in April (to 115 BU) and 10% (to 104 BU) in May. However, on an annual basis, aided by a lower base, it registered a growth in both these months (by 43% in April'21 and 8% in May'21).
- Conventional energy accounted for 88% of the total generation in May.
- The decline in monthly generation was driven by coal power which at 81 BU was 17% less than that in April'21 (97 BU). Coal power had a 69% share.
- The lower generation saw the capacity utilization rate or plant load factor of coal power plants drop to 54%, 13% lower than that in March'21.
- There was a sequential increase in hydro generation in May'21 but on a year-on-year basis it was lower (Table 1).

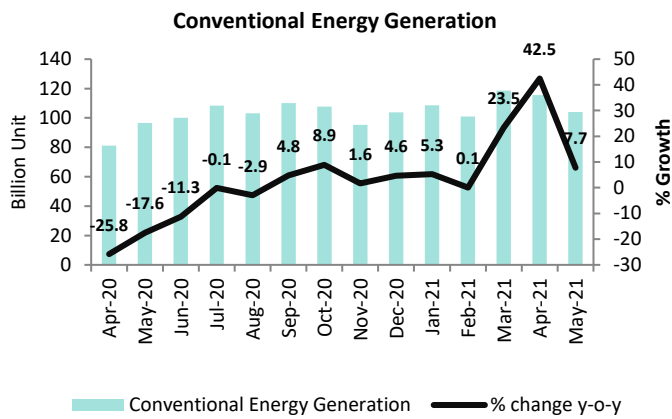


Table 1: Generation of Conventional Energy: May'21

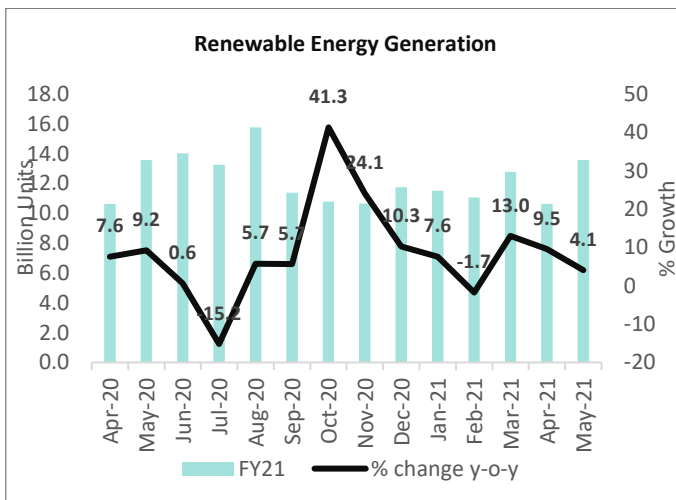
	Generation: May'21 (BU)	M-o-M Growth (%)	Y-o-Y Growth (%)
Thermal	87.7	-15.5	12.5
Coal	81.0	-16.6	16.3
Gas	3.5	-6.0	-33.5
Lignite	3.1	6.2	4.5
Hydro	11.8	42.5	-16.0
Nuclear	3.9	16.8	3.4

Source: CEA (prov)

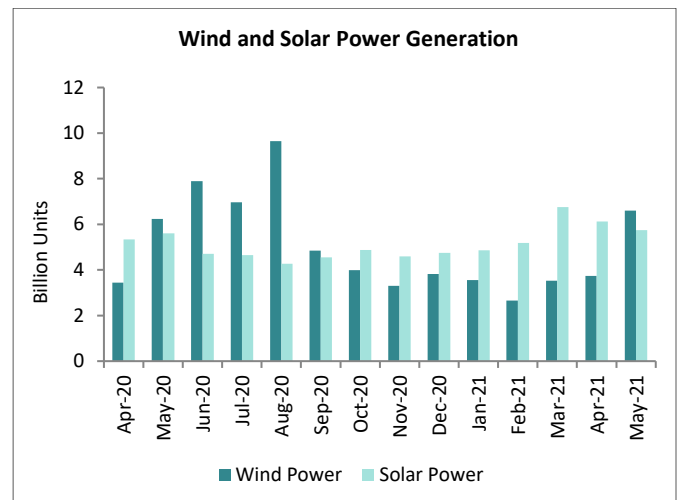
Source: CEA (prov)

Renewable Energy

- Generation from renewable energy sources increased on a monthly (by 21%) as well as annual (by 4%) basis in May'21 to 14.1 BU.
- This increase can in large part be attributed to the sharp increase in wind power generation, which accounted for 47% of the renewable energy generation during the month.
- Wind power generation in May'21 at 66 BU was 77% higher than that in April'21 and 6% more than May'20. It was also the highest output since August'20.
- Solar power generation in May'21 at 57 BU was 6% lower on a month-on-month basis but was 2% higher on an annual basis (over May'20).
- Solar and wind power together accounted for 11% of the total electricity generated in May'21.



Source: CEA (prov)



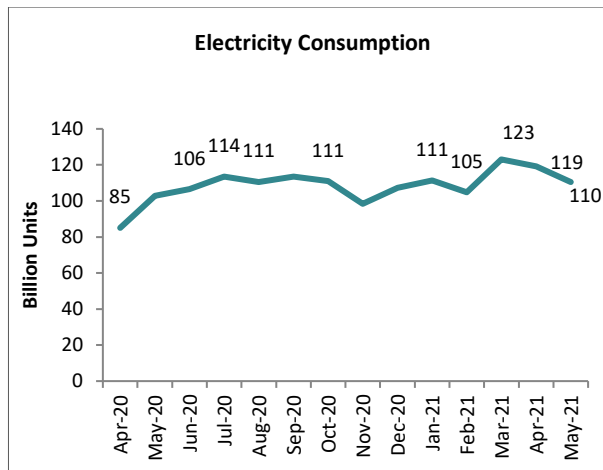
Source: CEA (prov)

Fall in Power Consumption

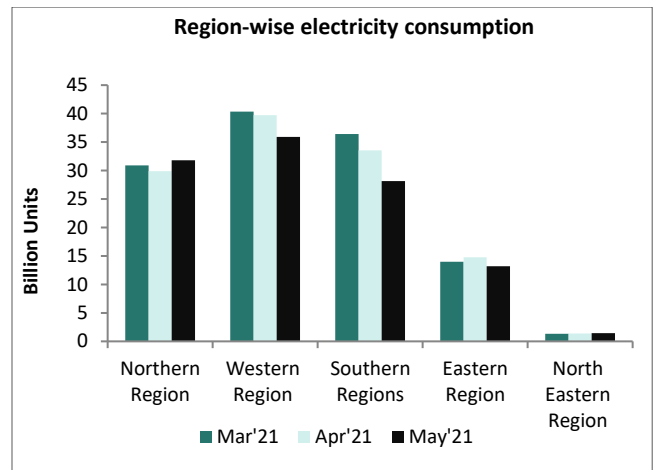
Domestic electricity consumption declined for the second month in a row in May'21. It however witnessed a growth on an annual basis i.e., over May'20 and was marginally higher than the average consumption during May'20 to March'21.

- Power consumption during May at 111 BU was 7% lower than April'21 but 7% higher than May'20 and 1% higher than the average consumption during the eleven-month period May'20 to March'21.
- The lockdowns and restrictions across states since end March following the second wave of the pandemic curtailed business and commercial activity and thereby the demand for power. To add to this, weather disturbances (cyclones) and lower summer temperature across various regions also impacted consumption.
- However, with restrictions this time being localised in nature as against the national lockdown during the first wave, power consumption was higher than year ago.
- In terms of regional consumption, power demand was lower in the western, southern and eastern regions in May'21 than month ago, while it was higher in the northern and north-eastern regions.

- The decline was the sharpest in the southern region (16% decline m-o-m), followed by the eastern region (11% fall). Consumption in the western region which is the commercial and business centre of the country was 10% lower in May'21 v/s April'21. Consumption increased by 6% (m-o-m) in the northern region and by 3% in the north-eastern region.
- Electricity consumption in the country contracted by 0.8% in FY21 v/s FY20. This is mainly due to lower demand from the industrial and commercial sector consequent to the lockdown/ pandemic restrictions.



Source: POSOCO

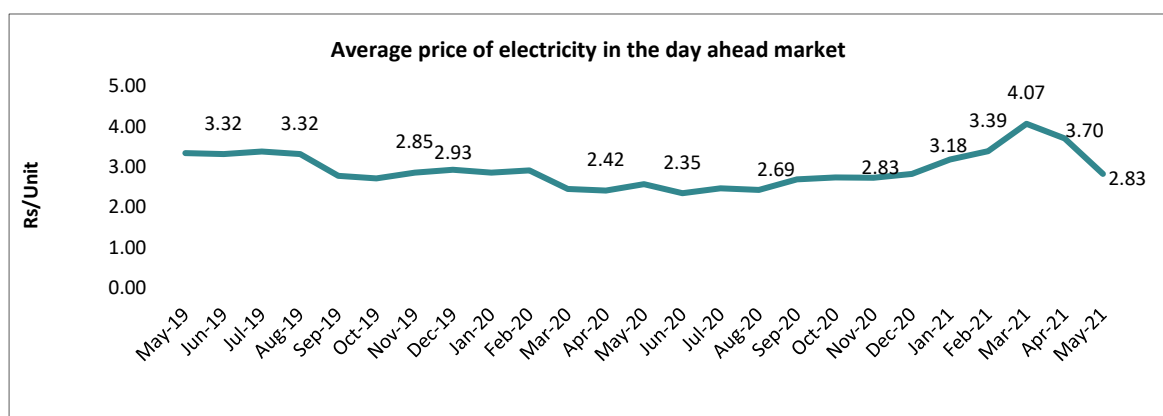


Decline in prices in the short-term electricity market

Prices dropped to five-month lows in the short-term electricity market in May'21 with the decline in overall electricity demand. The average price of electricity in the DAM (day-ahead market) on the IEX power exchange during the month was Rs. 2.83/unit, which was 24% lower than the average prices of Rs.3.70/unit in April'21. Despite the sequential decline in prices, on an annual basis prices were higher by 10% (over May'20).

Lower demand for power since April'21 reversed the price gains in the short-term electricity market of the preceding five months – prices rose by 44% during December'20 to March'21 attesting to the increase in electricity demand during the period.

The transactions of electricity in the Day Ahead Market (DAM) on the IEX power exchange was lower in May'21. At 4,363 mn units it was 23% less than month ago (5,699 mn units in April'21) and 22% less than May'20 (5,573 mn units).



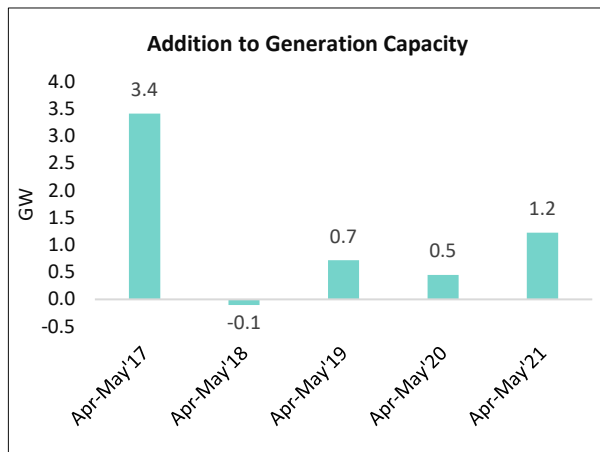
Source: IEX

Addition to Power Generation Capacity

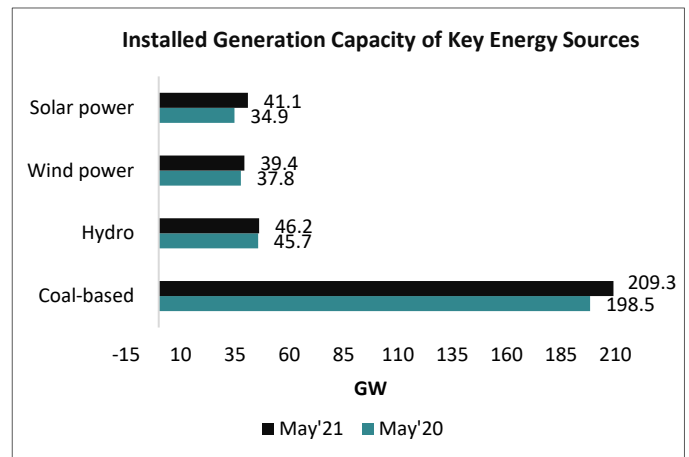
Capacity addition to overall power generation in the first two months of the current financial year (Apr-May'21) has been the highest in the last four years when compared for the same months in the previous years.

During April–May'21, 1.2 GW of new generation capacity was installed, and this was solely contributed by renewable energy viz. solar and wind power. Capacity addition to solar and wind power generation in the first two months of 2021-22 has been double that of the same months of 2020-21. 1 GW of fresh solar power capacity was installed and 0.2 GW fresh capacity was added to wind power generation.

As of May'21, the total domestic electricity generation capacity is 383 GW with conventional energy capacity being 288 GW (75% share in total) and renewable energy capacity at 96 GW (25% share). Coal-based power, which is the dominant source of electricity in the country has installed capacity of 209 GW (55% share in total). Solar power generation capacity currently stands at 41GW and that of wind power is 39 GW. Since 2016-17, capacity addition to solar power has been surpassing that of all other sources of energy.



Source: CMIE and CEA (prov)



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DISCOMs dues

The outstanding dues owed by DISCOMs to power generators as of the end April'21 amounted to Rs. 68,508 crores, which is Rs.17,110 crores less than the overdue amount of January'21 (Rs.85,618 crores).

The absence of cost-reflective tariffs, high operational expenses, and AT&C losses along with huge historical outstanding dues has been pressuring the finances of state distribution utilities over time.

The outstanding dues were the highest for the DISCOMs of Tamil Nadu (Rs.13,717 crores). The other states with notable outstanding dues are Rajasthan (Rs.10,326 crores) and Maharashtra (Rs.9,749 crores). These three states accounted for nearly 50% of the total outstanding dues. The other states with sizeable dues (over Rs.3,000 crores) include Uttar Pradesh, Jammu & Kashmir, Jharkhand, Telangana, Andhra Pradesh and Karnataka. Table 2 details the outstanding DISCOMs dues of the states that make up for 94% of the total dues.

Table 2: DISCOM Dues to GenCo's as of end April'21

	Apr'21 : Rs Crs
Tamil Nadu	13,717
Rajasthan	10,326
Maharashtra	9,749
Uttar Pradesh	6,062
Jammu & Kashmir	5,066
Jharkhand	4,619
Telangana	4,374
Andhra Pradesh	3,709
Karnataka	3,544
Madhya Pradesh	1,773
West Bengal	1,201

Source: PRAAPTI

Outlook for FY22

Power consumption and generation is expected to improve in the coming months with the unlock process getting underway and gaining traction across states. Higher level of economic activity is expected amid optimism that the vaccination programme would help control the severity of the pandemic and help facilitate normalization and stimulate economic recovery. This would translate into higher demand for electricity.

At the same time, there is uncertainty on all these counts which poses a risk to the sustainability in economic revival and thereby power demand. *Electricity generation is projected to grown by 5% to 7% in FY22 from that in FY21.*

Contact:

Madan Sabnavis
Author: Kavita Chacko
Mradul Mishra

Chief Economist
Senior Economist
(Media Contact)

madan.sabnavis@careratings.com	+91-22-6837 4433
kavita.chacko@careratings.com	+91-22-6837 4426
mradul.mishra@careratings.com	+91-22-6754 3573

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Corporate Office: 4th Floor, Godrej Coliseum, Somaiya Hospital Road,
Off Eastern Express Highway, Sion (East), Mumbai - 400 022
Tel. : +91-22-6754 3456 | CIN: L67190MH1993PLC071691

Connect :

