Power Sector Update

April 14, 2021 I Economics

Electricity consumption and generation witnessed a notable improvement in March'21. Both conventional as well as renewable energy witnessed a monthly as well as an annual increase in generation in March'21. This along with firming up of prices in the short-term electricity market during the month was indicative of the strengthening of electricity demand and hinted towards the tentative economic recovery.

Electricity generation in FY21 was marginally lower than that in FY20 with lower output from conventional sources. Consumption too was slightly lower than year ago owing to the lower demand in the first five month of FY21.

The addition to domestic power generation capacity in the first eleven months of FY21 at 9.7 GW has been the lowest annualised addition in twelve years and is around half of that a year ago. New capacity addition of conventional as well as renewable energy has slowed down, with the decline in the former being higher. The addition to capacity in the current financial year has been led by solar power.

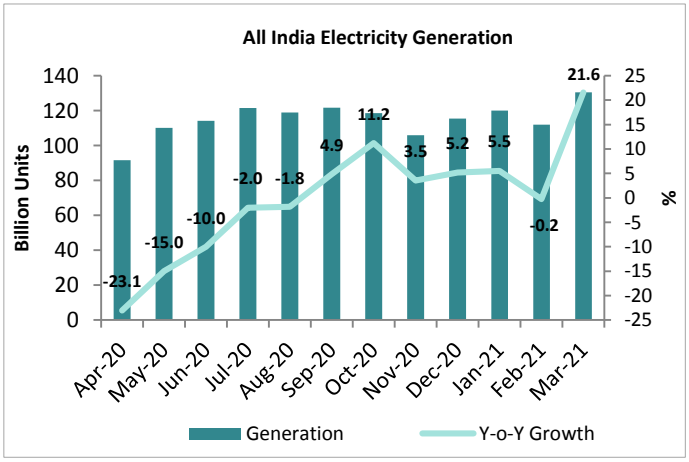
DISCOMS dues to generators continues to be sizeable. As of end Fenruary'21, the outstanding dues amounted to Rs.0.90 lakh crores.

Electricity generation

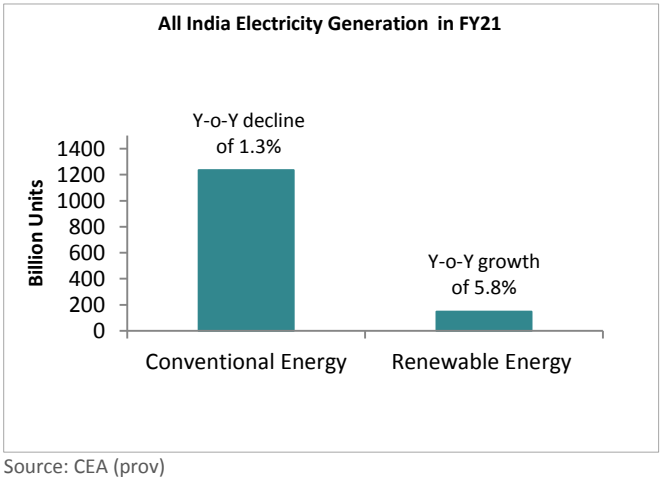
India's power generation rose sharply in March'21 with higher generation from conventional and renewable sources (based on provisional data). Electricity generation during March at 131 billion units (BU) was 17% higher than the previous month and 22% more than March'20. It was the highest monthly generation on record.

In FY21, domestic electricity generation was 1380 BU, 0.6% less than FY20. This fall was mainly on account of the lower output from conventional sources (thermal, hydro, and nuclear), which accounts for around 90% of the total generation.

- The lower output from conventional sources (1.3% decline from FY20) was partly offset by the higher generation from renewable sources, which witnessed a 5.8% increase over FY20.
- Lower power generation in FY21 has been the consequence of a sharp fall in electricity demand from the industrial and commercial sectors consequent to the nationwide lockdown during the end of March-May'20 as well as the disruptions in the supply of inputs, raw materials, and labour shortages consequent to the pandemic led restrictions across regions.



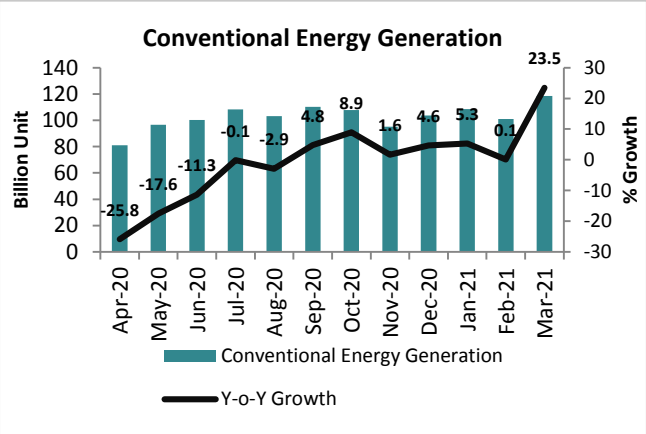
Source: CEA (prov)



Source: CEA (prov)

Conventional Energy Generation

- Generation from conventional sources grew by 17% on a sequential basis and by 24% on an annual basis in March'21.
- This increase was led by coal power generation (84% share in conventional energy generation) which witnessed a month-on-month growth of 17% and year-on-year increase of 32%.
- The higher generation saw the capacity utilization rate or plant load factor of coal power plants rise to 67%, the highest level since October'15.
- There was a sequential increase in hydro power and gas power generation in March'21 but on a year-on-year basis it was lower (Table 1).
- Conventional energy sources have sustained higher year-on-year growth in generation since September'20, following six months of contraction.
- In FY21, generation from conventional sources was 1234 BU as against 1250 BU in FY20.
    - Barring gas power generation, there was contraction in output from the other conventional sources of power from year ago. Gas power output grew by 5% (to 51 BU) in FY21.
    - Coal power generation at 951 BU was 1% lower than FY20
    - Hydro power generation declined by 3.5% in FY21 v/s FY20 to 150 BU.
    - Nuclear power generation fell by 7.6% to 43 BU in FY21.



Source: CEA (prov)

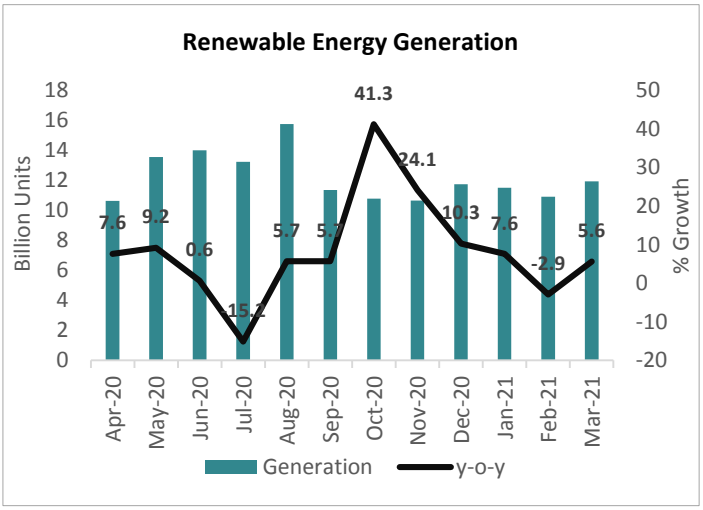
Table 1: Generation from Conventional Sources: March'21

	Generation: March'21 (BU)	M-o-M Growth (%)	Y-o-Y Growth (%)
Thermal	106.99	17	29
Coal	99.86	17	32
Gas	4.07	30	-5
Lignite	3.04	14	3
Hydro	8.38	15	-8
Nuclear	3.08	14	-24

Source: CEA (prov)

Renewable Energy

- Generation from renewable energy sources increased on a monthly (by 9%) as well as annual (by 6%) basis in March'21 to 11.9 BU.
- This increase can in large part be attributed to the increase in solar power generation, which accounted for 50% of the renewable energy generation during the month.
- Solar power generation in March at 6 BU was higher by 15% on a month-on-month basis and 7% on an annual basis.
- Wind power generation (27% share in renewable energy generation in March) also rose by 21% on a sequential basis in March'21 but on a year-on-year basis it was 6% lower.
- Renewable energy generation in FY21 was the highest on record at 146 BU. The 'must-run' status of renewable power plants that mandates uninterrupted power procurement by utilities supported the higher generation from these power sources despite the sharp fall in power consumption during April-August'20 (by 11%).
    - Solar power generation in FY21 was at a record high of 59 BU and witnessed a 19% growth over FY20. This increase can be credited to the higher generation during the summer months (Apr-May) and Sept-Oct which was nearly 30% higher than a year ago. Solar power generation witnessed fluctuations in monthly generation which can be linked to seasonal factors as well as the pandemic led disruption in input supply chains (i.e., imports).
    - Wind power generation at 59.6 BU was 8% lower in FY21 v/s FY20 and was the lowest in three years. This decline can be primarily attributed to the low wind speeds, especially in the peak monsoon season.
    - Solar and wind power accounted for 4% each of the total electricity generation in FY21



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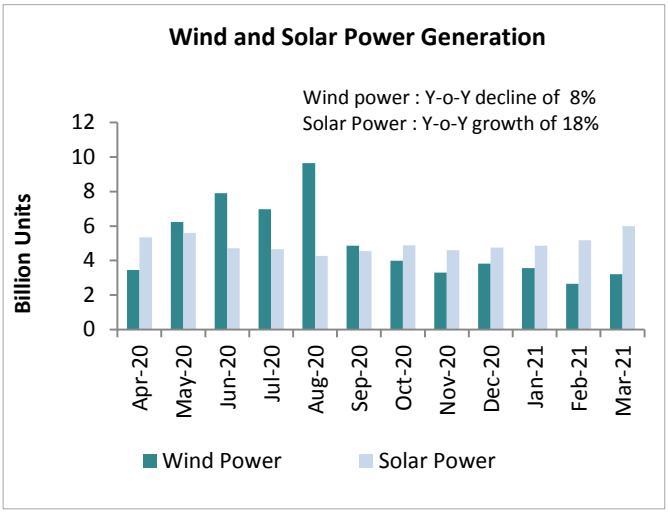


Source: CEA (prov)

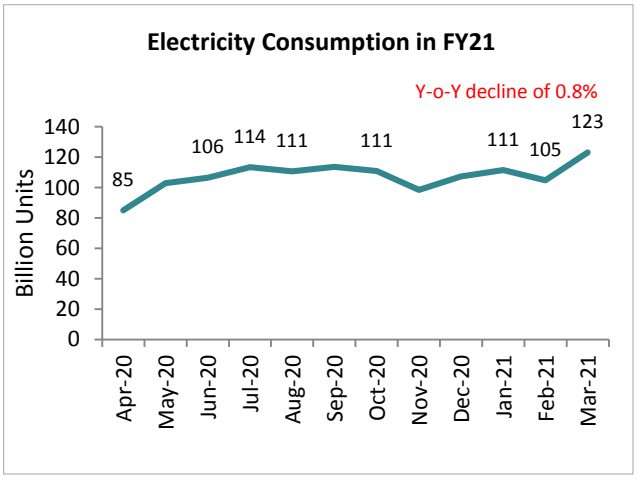
Higher Power Consumption

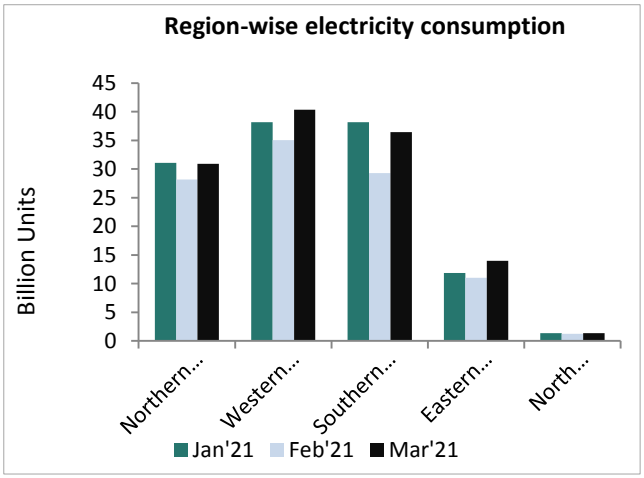
Electricity consumption in the country increased on a sequential as well as an annual basis in March'21.

Power consumption during March at 123 BU was 18% higher than February'21 and 23% more than March'20. The higher levels of business and commercial activity as well as the rise in temperatures has driven the increase in consumption during the month.

The higher power consumption in March was broad-based across regions. The increase in electricity consumption was the highest in the eastern region (27% increase m-o-m) followed by the southern region (25% increase from Feb'21). The western and northern region witnessed a month-on-month increase of 15% and 10% respectively.

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. Power consumption witnessed a contraction on a year-on-year basis during the first five months of FY21 (Apr-Aug). There was a gradual increase in demand following the unlocking process starting June'20.





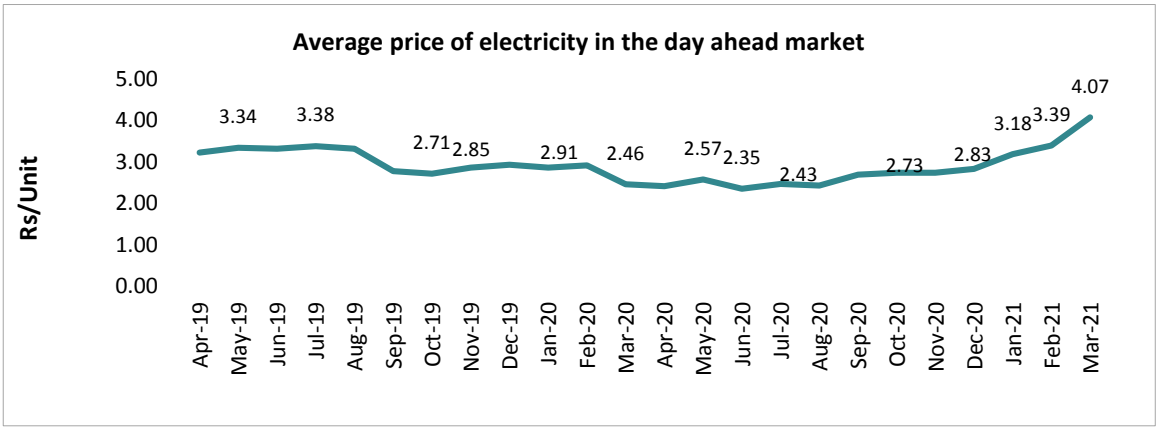
Source: POSOCO

Rising prices in the short-term electricity market

Prices surged in the short-term electricity market in March'21. The average price of electricity in the DAM (day -ahead market) on the IEX power exchange during the month was Rs. 4.07/unit, which was a 20% increase from the 3.39/unit in February'21 and 66% increase from year ago (Rs. 2.46/unit in March'20). Increase electricity consumption with higher levels of economic activity and the onset of summer have propelled prices higher. There has been a sustained increase in prices since December'20 and prices have risen by 44% in the four months to March'21, reflective of the growing electricity demand.

The transactions of electricity in the Day Ahead Market (DAM) on the IEX power exchange also rose during March'21. At 6,549 mn units it was 28% more than month ago (5,124 mn units in February'21) and 65% higher than March'20 (3971 units). In FY21, the cumulative volume of electricity traded in the DAM on the IEX increased by 34% from that in FY20.

DISCOMS and industrial consumers have been increasingly procuring power from the power exchanges given the cost advantage of relatively lower prices when compared with their long-term power purchase agreements as well as the ease and efficiency of these transactions.



Source: IEX

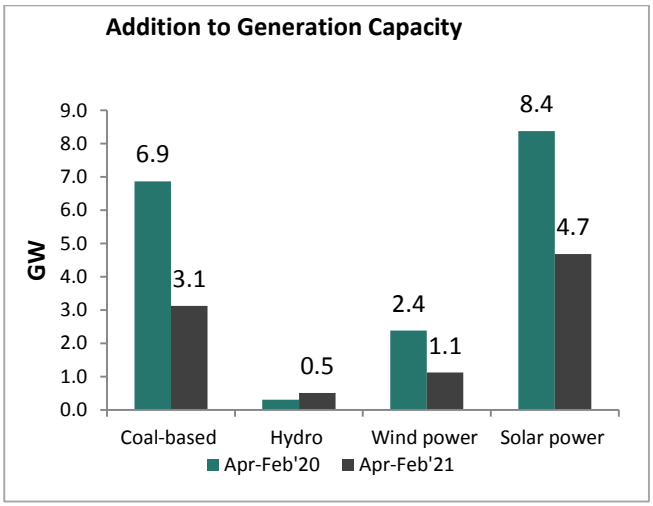
Lower Addition to Power Generation Capacity in 2020-21

Capacity addition to conventional as well as renewable power generation slowed in FY21. During April–February of FY21, 9.7 GW of new generation capacity was installed. This has been the lowest annualised addition in twelve years and nearly half of that in the same period of FY20 (April- February). The decline in annual capacity addition was higher in the case of conventional energy sources (54% decline y-o-y) than that on renewable energy (47% lower y-o-y).

The lower capacity addition can be attributed to the lockdown led to supply side disruptions (which slowed movement of inputs and has led to an increase in their prices), labour shortages as well as the constrained finances and liquidity pressures faced by the developers. Also, the restriction on the imports of inputs viz. for solar power has aggravated the constraints faced by the developers. Project timelines have been extended as a result, further aggravating the financial stress of developers. A five-month extension in the scheduled commissioning date due to the Covid-19 pandemic was provided by the Ministry of New and Renewable Energy for renewable energy projects (from 25 March'20 to 24 August'20).

New power generation capacity addition in 2020-21 has been led by renewable energy. 6.2 GW of renewable energy generation capacity has been added during April-February of FY21 versus 3.5 GW of conventional energy. Renewable energy capacity addition has been led by solar power, which accounted for 48% or 4.7 GW of new capacity. Solar power generation capacity currently stands at 39 GW. Coal-based power, which is the dominant source of electricity in the country and which accounts for 53% of the total generation capacity, added 3.1 GW to generation capacity in the eleven months to February'21, taking its total installed capacity to 201 GW.

Of the total domestic electricity generation capacity of 379 GW, the installed capacity of conventional energy is 286 GW (75% share in total) and that of renewable energy is 93 GW (25% share).



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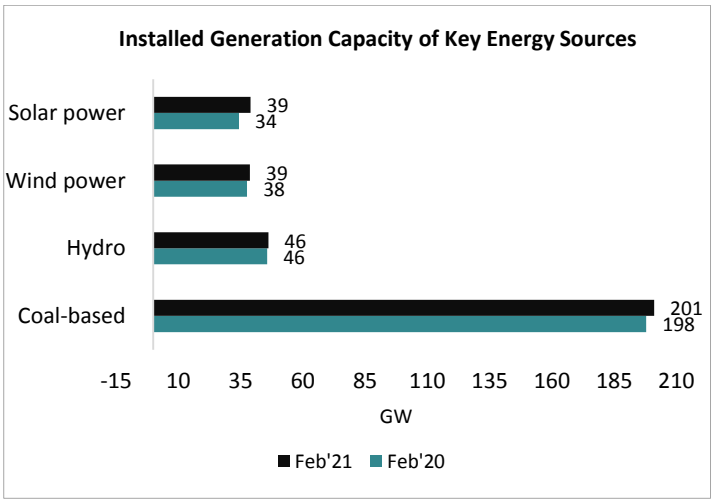

Source: CEA (prov)

DISCOMs dues

The outstanding dues owed by DISCOMs to power generators as of the end of February'21 amounted to Rs.90,026 crs lakh 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. Added to this, the fall in power demand and disruptions in the billing and collections consequent to the lockdown in the current financial year has further aggravated their financial stress and thereby the overall financial weakness in the power sector.

Table 2: State-wise DISCOM Dues to GenCo's as of end February'21

	Feb'21 : Rs Crs
Tamil Nadu	18,585
Uttar Pradesh	14,737
Rajasthan	10.192
Telangana	7,463
Karnataka	6,526
Jammu & Kashmir	4,820
Madhya Pradesh	4,445
Andhra Pradesh	4,391
Jharkhand	4,177
Maharashtra	4,081
Haryana	3,177
Bihar	2,386
Odisha	1,056

Source: PRAAPTI

The outstanding dues were the highest for the DISCOMS of Tamil Nadu (Rs.18,585 crs). The other states with notable outstanding dues are Uttar Pradesh (Rs.14,737 crs) and Rajasthan (Rs.10,192 crs). These three states accounted for nearly 50% of the total outstanding dues. The other states with sizeable dues (over Rs.3,000 crs) include Telangana, Karnataka, Jharkhand, Madhya Pradesh, Maharashtra, Jammu & Kashmir, Andhra Pradesh and Haryana. Table 2 details the outstanding DISCOMS dues of the states who make up for 96% of the total dues.

Outlook for FY22

Power generation and consumption is expected to improve in FY22 with the anticipated higher levels of economic activity amid optimism that the vaccination programme would facilitate normalization and stimulate economic recovery. At the same time, the uncertainty pertaining to the effective control of the pandemic and the likelihood of prolonged restriction being imposed across regions 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

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