

## Power sector update

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The lockdown has brought about a sharp reduction in the consumption of electricity in the country despite the supply of the same being outside the ambit of the lockdown as power is an essential service.

Electricity demand and generation has fallen to 5 year lows during Apr-May'20. The fall in demand has led to a decline in power generation; particularly from the leading source i.e. coal based power plants thus pulling down the capacity utilization of these power plants to record lows. Given the mandated must run status of renewable energy, generation from these sources saw an increase year on year. Renewable energy has also been adding to installed generation capacity thereby increasing its share in generation capacity.

Although there has been a pickup in electricity demand in May'20 over April'20, aided by the easing of the lockdown in various regions, it continues to be significantly lower than the seasonal demand given the limited resumption of activity by the major consumer of electricity i.e. the industrial and commercial sector.

There has been a moderation in the prices of short term electricity purchases from the power exchanges aided by availability of supply and higher trade volumes.

The over dues of power distributions companies have risen with the disruptions in the billing and collections due to the lockdown. This would further weaken their already strained financial position

The RBI, regulatory bodies and government have announced measures for addressing both short term challenges and long term reforms for the power sector. For power generating companies the measures include moratorium in debt servicing, purchase of coal against LC and time extension in completing renewable project. In terms of support to DISCOMS the measures are rebate in fixed charges by central gencos and PGCIL, lower interest rate on delayed payment by DISCOMS, liquidity support to DISCOMS (Rs.90,000 crs) and privatization of DISCOMS of Union Territories. While most of the measures are short term in nature to tide over the current issues related to lockdown, a few of them have long term positive implications also.

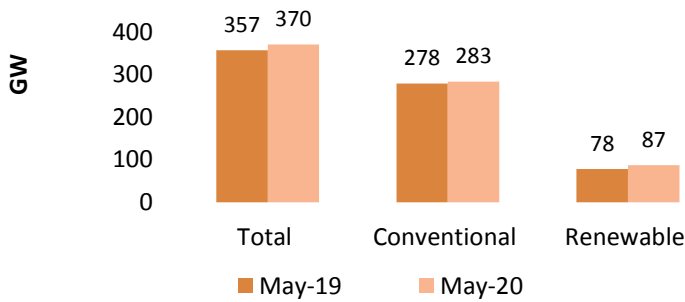
**Installed Electricity Generation Capacity – increasing share of renewable energy sources**

India’s installed power generation capacity as of May’20 at 370.5 GW was 3.8% higher than that in May’19 (as per provisional data from CEA). The addition to generation capacity was led by renewable energy sources which witnessed a year-on-year increase of 11.5%, taking its total installed capacity to 87 GW. Conventional energy sources capacity addition was around 2% during this period.

Although conventional energy dominates electricity generation capacity in the country with a share of 76% (amounting to 283 GW), there has been a sustained increase in the share of renewable energy sources, which has come to account for nearly 24% of the overall installed capacity, a 2% increase from a year ago.

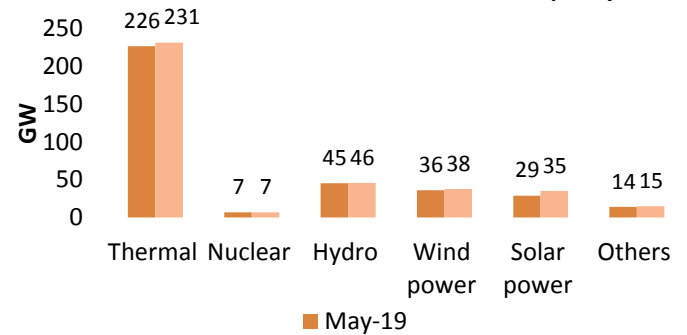
The increase in generation capacity of renewable energy is being driven by solar power which has witnessed a year-on-year growth of 22% (or 6 GW) in May’20, taking the solar power generation capacity to 35 GW. Wind power, which accounts for the largest share in renewable energy generation capacity at 38 GW has added 2 GW to capacity in the last 1 year. Within conventional energy, thermal sources have added 4.36 GW of generation capacity on a year on year basis in May’20, while hydro power capacity addition was 0.3 GW.

**Chart 1: All India Electricity Generation Installed Capacity**



Source: CEA (provisional)

**Chart 2: Installed Generation Capacity**



Source: CEA (provisional)

**Electricity Generation – significant drop**

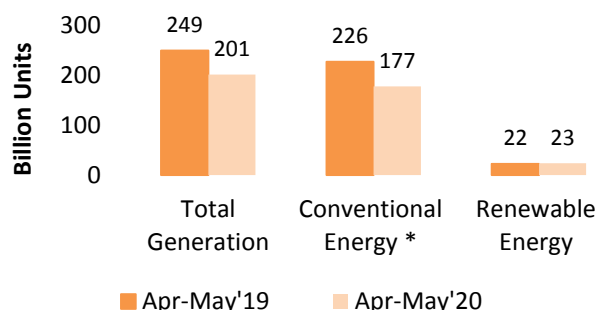
Electricity generation in the country during Apr-May’20 was at a 5 year low. On a year-on-year basis, generation declined by 19% to 201 billion units during these 2 months, attributable to the lockdown led disruptions in demand and supply of key inputs.

The decline in generation was led by the thermal energy sources viz. coal based power which witnessed a 28% decline in output during this period. Domestic power generation in the country is led by thermal power sources (72% of total generation in Apr-May’20) of which coal account for a 64% share in total generation.

Renewable energy sources on the other hand which accounts for a 12% share in total generation witnessed output increase by 5.2% to 23.5 billion units during Apr-May’20 on a year- on- year basis. This is mainly due to the mandated ‘must run status’ for renewable energy generators. The additions to installed capacity have also been a factor. Within renewable energy, solar power generation registered a year-on-year growth of 23.5% (to 10.4 billion units) while wind power and

other sources of renewable power (including small hydropower, bagasse, biomass) witnessed a contraction in output during this period.

Chart 3: All India Electricity Generation



Source: CEA (provisional). \*includes imports from Bhutan

Table 1: Electricity Generation by Renewable Energy Sources (Billion Units)

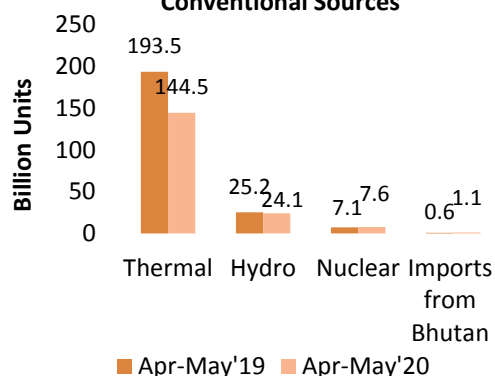
	Apr-May'19	Apr-May'20	% change
Wind Power	10.0	9.3	-6.9
Solar Power	8.5	10.4	23.5
Others	3.8	3.7	-3.8
<b>Renewable Energy Total</b>	<b>22.3</b>	<b>23.4</b>	<b>5.2</b>

Source: CEA (provisional)

There was a pickup in electricity generation in May'20 over April'20 across both conventional and renewable sources (barring solar power) which can be attributed to the easing of the lockdown and the improvement in demand situation. Nevertheless, generation from conventional sources (thermal, hydro and nuclear sources) was 18% lower than that in May'19.

With lower demand and generation, the capacity utilization rate or plant load factor of thermal power plants fell to a record low of 45% in Apr-May'20, which was 18% lower than a year ago. With an increase in generation, the capacity utilization improved in May'20 from the lows of Apr'20 (48% v/s 42%). It however continues to be 16% lower than May'19.

Chart 4: Electricity Generation by Conventional Sources



Source: CEA (provisional)

Table 2: Electricity Generation from Thermal Sources (Billion Units)

	Apr-May'19	Apr-May'20	% change
Coal	179.2	128.7	-28.2
Diesel	0.03	0.02	-23.8
Gas	8.7	10.0	15.8
Lignite	5.6	5.8	2.8
<b>Total</b>	<b>193.5</b>	<b>144.5</b>	<b>-25.3</b>

Source: CEA (Provisional)

Table 3: Plant Load Factor (%)

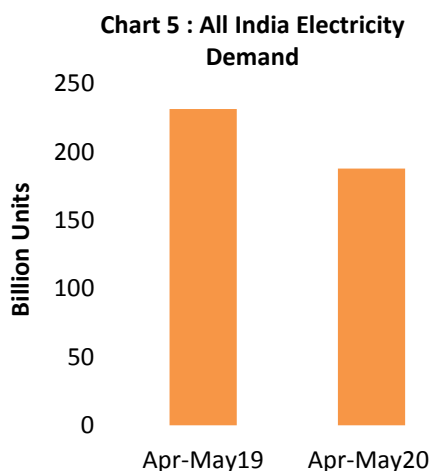
	Apr-May'19	Apr-May'20
Thermal Total	63.4	45.1
Coal Based	63.5	44.7
Gas Based	23.8	27.5
Lignite Based	61.1	58.8
Nuclear	71.2	76.9

Source: CEA (Provisional)

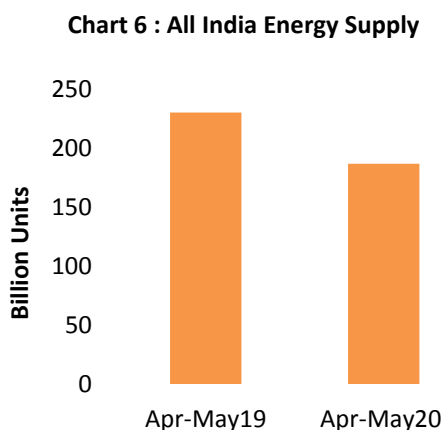
### Fall in Electricity Consumption

Consumption of electricity in the country has seen a significant decline since the lockdown (last week of March'20), especially by commercial and industrial units who are the major and higher tariff paying consumers. All India energy demand fell to a 5 year low during Apr-May'20 despite seasonal factors (summer months and rising temperatures). Energy demand during Apr-May'20 at 188 billion units was 19% lower year-on-year. Similarly, the peak power demand during these 2 months at 167 GW was 9% lower year-on-year.

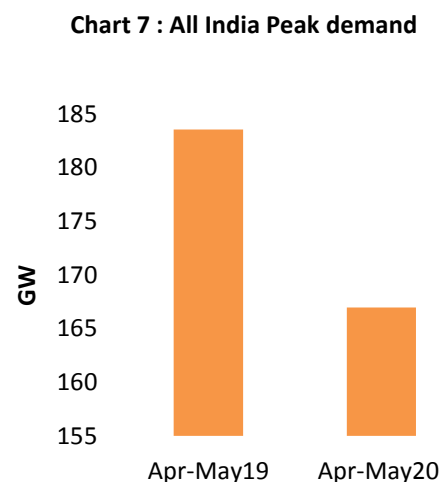
Demand rose by 20% in May'20 (103 billion units) from the lows of April'20 (86 billion units) with the easing of the lockdown restriction and the rise in summer month temperature. It, however, was lower than the pre-lockdown (around 2% than Feb'20) as well as a year ago level (15% lower than May'19).



Source : CEA (provisional)



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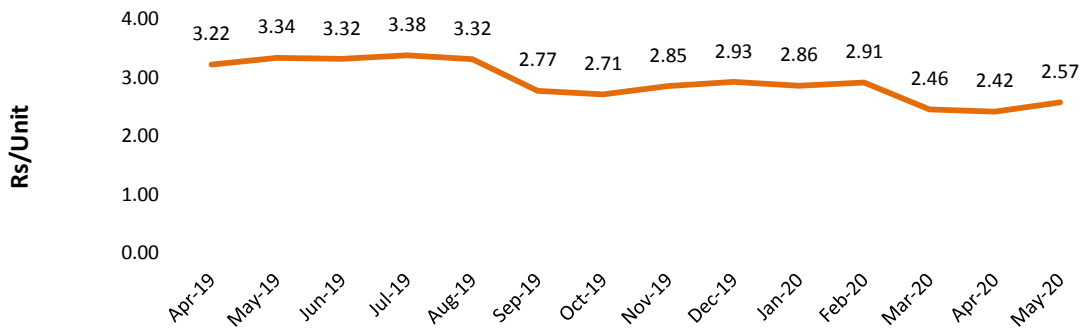
Both energy demand and supply declined by 19% in Apr-May'20, taking the electricity deficit to 0.51% during this period, marginally higher than the deficit of 0.47% year on year.

### Moderation in short term electricity prices

Market participants, including industries and state power distribution companies, have been increasingly turning to the power exchanges to meet their short term power requirements at lower rates, even reportedly replacing their costlier purchases from generators.

There has been an increase in the volume of trade transacted on the power exchanges – the traded volumes on the Indian Energy Exchange in May'20 at 5574 MU was 48% higher than a year ago and 51% more than a month ago (Apr'20). The availability of ample supply amidst lower power demand led to a decline in prices of electricity in the day ahead market (DAM). The average prices of electricity in the day ahead market in May'20 at Rs.2.57 per unit was 23% (or Rs.0.76 per unit) lower than a year ago. It was however 6% (of Rs.0.15 per unit) higher than month ago. This can be ascribed to the increase in consumption in May'20 with the easing of the lockdown.

Chart 8 : Average price of electricity in the day ahead market



Source: IEX

### Strained Finances of State Power Distribution Utilities

The financial profile of the state distribution companies (DISCOMs) continues to be strained. The transmission and distribution losses and the outstanding dues of DISCOMs have risen in recent months. The absence of cost reflective tariffs, rising operational expenditure, high AT & C losses and delays in receipt of subsidy from the government s has been weighing down the finances of state distribution utilities over time.

The AT&C losses (aggregate technical and commercial loss) of DISCOMs at the all India level at 19.08% is above the UDAY (Ujjwal DISCOM Assurance Yojana) target of limiting the losses to 15% by FY19. The ACS-ARR gap (average cost of supply and average revenue realised) at the national level is Rs.0.41/unit against the target of elimination of the gap by FY19.

The financial position of power DISCOMs has been further strained owing to the disruptions in the billing and collections due to the lockdown. This has caused cash flow problems for the DISCOMs and constrained their ability to clear dues of generating companies. The over dues of DISCOMs to generating companies as of end April'20 (as per data from PRAAPTI) stood at Rs. 1,07,785 crs (excluding disputed amounts), a 4% increase from February'20 and 80% increase from April'19.

### Measures – implementation is key

In light of the shutdown, the government has announced a special economic package with some short term relief measures and long term reforms for the power sector. These include flexibility in debt servicing and clearance of dues, time extension in completing projects, liquidity support to DISCOMs against state government guarantee (Rs.90,000 crs by way of loans from PFC and REC) and privatization of DISCOMs of Union Territories.

The liquidity infusion into the financially strained DISCOMs was expected to provide relief and enable them to clear their dues. However, many state governments have been seen to be unwilling to guarantee the loans of DISCOMs. So far, the state governments of Andhra Pradesh and Maharashtra have reportedly extended guarantees for these loans and Punjab, Rajasthan and Uttar Pradesh are under negotiation. The financial woes of DISCOMs are thus likely to prevail and worsen.

Some of measures announced by the central government (including enabling provision for commercial coal mining) would be positive for the thermal power sector in the long term; the effective implementation of the same however would be the key factor.

## Outlook

India's power sector performance is expected to see a significant decline in 2020-21, due to the likely prolonged disruptions caused by the Corona virus pandemic. The recovery of the sector would be contingent on the recommencement of economic activity.

The easing of the lockdown and resumption of economic activity could lead to an improvement in electricity demand. There may however not be a significant increase in the same given that the resumption of activity is expected to be gradual and limited. Electricity demand is expected to contract during the year, largely driven by slippages in commercial and industrial demand. Consequent to lower demand, power generation would also see a commensurate decline. Renewable power capacity addition and generation would continue to see a steady increase. .

While the power demand is gradually coming up, a lot will depend on how fast the unlocking of the economy and consequent resumption of business activities takes place, lest the financial health of generating and distribution companies would further deteriorate leading to increase in stressed assets in the sector.