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Covid-19 impact on electricity – Analysis - IEA

3-4 minutes

Across all major regions, the power mix has shifted towards renewables following lockdown measures due to depressed electricity demand, low operating costs and priority access to the grid through regulations. Electricity demand and mix went back to previous trends with lockdown relaxation.

In the **United States**, natural gas has remained the leading source of electricity from March onwards, while renewables far outpaced the contribution of coal-fired power plants as the first measures of confinement were put in place and demand decreased. In June, as stringency of government response softened, natural gas consolidated its leading position. In July and August, coal and nuclear peaked up to respond to growing demand. They outpaced renewables generation, which decreased in the wake of the

seasonal decline of wind and hydro. In August, the total electricity generation was much higher than in 2019 at the same period, as temperatures were higher, and this increase of demand was satisfied by increasing coal and higher wind generation. In September, significant temperature drop lead to a decrease of cooling demand, and total generation to lower levels than in 2019, especially affecting coal power production. In October, total generation levels were on par with 2019, and the electricity mix trends (increase of wind, decrease of natural gas) were seasonal. In December, the decrease of wind and solar generation led to overall decline of renewables share.

In **India**, the gap between coal and renewables significantly narrowed after the first lockdown measures were taken, with renewables reaching just over 30% in mid-August. Starting end-August the gap started to widen again, following seasonal trend. By the end of November, the share of renewables in the electricity mix was just below 20%, in line with start of the year pre-Covid19 levels. Since late May 2020, levels of electricity demand have recovered. Starting late July 2020, electricity generation was higher than in 2019 for the first time since the beginning of lockdown,

maintaining this trend for four consecutive weeks.

However, in the last two weeks of August, the trend inverted with lower generation levels than those observed in 2019, driven by lower demand. In September and October, electricity generation was back on its growing path. By mid- to end-November, the upward trend inverted again and returned to 2018 levels due lower demand associated with a combination of seasonal (e.g. Diwali holidays) and episodic (agricultural strikes) factors. The upward trend resumed in December.

In **China** under confinement, as electricity demand decreased, a large reduction of coal-fired power generation occurred. With progressive release of lockdown measures starting in the second half of March, the coal share recovered slightly, while renewables maintained a high share in the mix. In June and July, with growing hydro electricity generation in the Chinese mix due to new capacities and heavy rains, the share of renewables increased further. Throughout the autumn, the trends of coal and renewables generation adapted to the availability of hydro. In November, with decreasing hydro electricity generation due to seasonal constraints and stronger

demand, coal picked up again.