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In response to the exceptional circumstances stemming from the coronavirus pandemic, the annual IEA Global Energy Review has expanded its coverage to include real-time analysis of developments to date in 2020 and possible directions for the rest of the year.

In addition to reviewing 2019 energy and CO2 emissions data by fuel and country, for this section of the Global Energy Review we have tracked energy use by country and fuel over the past three months and in some cases – such as electricity – in real time. Some tracking will continue on a weekly basis.

The uncertainty surrounding public health, the economy and hence energy over the rest of 2020 is unprecedented. This analysis therefore not only charts a possible path for energy use and CO₂ emissions in 2020 but also highlights the many factors that could lead to differing outcomes. We draw key lessons on how to navigate this once-in-a-century crisis.

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Key findings

The current Covid-19 pandemic is above all a global health crisis. As of the 28th of April, there were 3 million confirmed cases and over 200 000 deaths due to the illness. As a consequence of the efforts to slow the spread of the virus, the share of energy use that was exposed to containment measures jumped from 5% in mid-March to 50% in mid-April. Several European countries and the United States have announced that they expect to reopen parts of the economy in May, so April may be the hardest hit month.

Beyond the immediate impact on health, the current crisis has major implications for global economies, energy use and CO₂ emissions. Our analysis of daily data through mid-April shows that countries in full lockdown are experiencing an average 25% decline in energy demand per week and countries in partial lockdown an average 18% decline. Daily data collected for 30 countries until 14 April, representing over two-thirds of global energy demand, show that demand depression depends on duration and stringency of lockdowns.

Global energy demand declined by 3.8% in the first quarter of 2020, with most of the impact felt in March as confinement measures were enforced in Europe, North America and elsewhere.

- **Global coal demand** was hit the hardest, falling by almost 8% compared with the first quarter of 2019. Three reasons converged to explain this drop. China – a coal-based economy – was the country the hardest hit by Covid-19 in the first quarter; cheap gas and continued growth in renewables elsewhere challenged coal; and mild weather also capped coal use.
- **Oil demand** was also hit strongly, down nearly 5% in the first quarter, mostly by curtailment in mobility and aviation, which account for nearly 60% of global oil demand. By the end of March, global road transport activity was almost 50% below the 2019 average and aviation 60% below.

- The impact of the pandemic **on gas demand** was more moderate, at around 2%, as gas-based economies were not strongly affected in the first quarter of 2020.
- **Renewables** were the only source that posted a growth in demand, driven by larger installed capacity and priority dispatch.
- **Electricity demand** has been significantly reduced as a result of lockdown measures, with knock-on effects on the power mix. Electricity demand has been depressed by 20% or more during periods of full lockdown in several countries, as upticks for residential demand are far outweighed by reductions in commercial and industrial operations. For weeks, the shape of demand resembled that of a prolonged Sunday. Demand reductions have lifted the share of renewables in the electricity supply, as their output is largely unaffected by demand. Demand fell for all other sources of electricity, including coal, gas and nuclear power.

Looking at the full year, we explore a scenario that quantifies the energy impacts of a widespread global recession caused by months-long restrictions on mobility and social and economic activity. Within this scenario, the recovery from the depths of the lockdown recession is only gradual and is accompanied by a substantial permanent loss in economic activity, despite macroeconomic policy efforts.

The result of such a scenario is that energy demand contracts by 6%, the largest in 70 years in percentage terms and the largest ever in absolute terms. The impact of Covid-19 on energy demand in 2020 would be more than seven times larger than the impact of the 2008 financial crisis on global energy demand.

All fuels will be affected:

- **Oil demand** could drop by 9%, or 9 mb/d on average across the year, returning oil consumption to 2012 levels.
- **Coal** demand could decline by 8%, in large part because electricity demand will be nearly 5% lower over the course of the year. The recovery of coal demand for industry and electricity generation in China could offset larger declines elsewhere.
- **Gas** demand could fall much further across the full year than in the first quarter, with reduced demand in power and industry applications.
- **Nuclear** power demand would also fall in response to lower electricity demand.
- **Renewables** demand is expected to increase because of low operating costs and preferential access to many power systems. Recent growth in capacity, some new projects coming online in 2020, would also boost output.

In our estimate for 2020, global electricity demand falls by 5%, with 10% reductions in some regions. Low-carbon sources would far outstrip coal-fired generation globally,

extending the lead established in 2019.

Global CO₂ emissions are expected to decline by 8%, or almost 2.6 gigatonnes (Gt), to levels of 10 years ago. Such a year-on-year reduction would be the largest ever, six times larger than the previous record reduction of 0.4 Gt in 2009 – caused by the global financial crisis – and twice as large as the combined total of all previous reductions since the end of World War II. As after previous crises, however, the rebound in emissions may be larger than the decline, unless the wave of investment to restart the economy is dedicated to cleaner and more resilient energy infrastructure.

Next

Context: A world in lockdown

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