



2020-IP08

Global Energy Review 2020: The impacts of the Covid-19 crisis on global energy demand and CO₂ emissions

On 30 April, the IEA released its report, “Global Energy Review 2020: The impacts of the Covid-19 crisis on global energy demand and CO₂ emissions” (www.iea.org/reports/global-energy-review-2020), followed by a webinar on 4 May. The webinar was presented by Laura Cozzi, the IEA’s Chief Energy Modeller, with a discussion moderated by Laszlo Varro, the IEA’s Chief Economist. Below, there is no intention to provide a detailed review of the report but, rather, to present a flavour of the impact and a selection of the headline numbers.

As is well documented, the fall in energy demand caused by Covid-19 is the highest since the 2nd World War. In fact, the decline in global energy demand of 6% is seven times greater than that suffered as a result of the 2009 financial crisis.

The share of global energy use affected by mandatory lockdowns jumped from 5% in mid-March to over 50% by early April. With some countries indicating they may slowly release their lockdown measures, from the viewpoint of energy demand, April may well be the hardest hit month.

Under lockdown, electricity demand has dropped to ‘Sunday levels’, with dramatic reductions in services and industry only partially offset by higher residential use. Notably, service-based economies are suffering the most.

Estimates point to weekly energy demand reductions of around 8% where there are limited restrictions, 17% on average in partial lockdown and nearly 25% in full lockdown. An additional month of current lockdowns would further reduce annual global demand by 1.5%.

2020 will prove a miserable year for fossil fuels, with all three set to fall markedly. Coal is set for the largest projected decline since World War II (down by almost 300 Mtoe), alongside sharp reductions for gas (around 170 Mtoe) and oil (over 400 Mtoe). Nuclear power is less affected by lockdown measures, while renewables are the only energy source on the rise in 2020. Indeed, for the first time in 50 years, low carbon technologies overtook coal as the leading source of electricity in 2019, and are moving further ahead in 2020.

Global electricity demand is set to fall by 5% in 2020, the largest decline since the Great Depression, with impacts largest in the European Union and United States, but extending to all corners of the world.

Due to the Covid-19 crisis, global energy-related CO₂ emissions are set to fall nearly 8% (or almost 2.6 Gt) in 2020 to their lowest level in a decade – in fact, recording the biggest fall ever. Reduced coal consumption contributes the most to this fall (contributing over 1.1 Gt CO₂ to the decline), while experience suggests that a large rebound in emissions is likely post crisis.

Laszlo Varro then led a discussion with a small number of the IEA’s experts to further elucidate the impact on fossil fuels, electricity and renewables.

Oil. Global oil demand is expected to be a record 9.3 mb/d lower in 2020 than in 2019. demand is not expected to reach pre-crisis levels before the end of the year, with December demand projected to be down 2.7 mb/d from December 2019 levels. While relatively strong recovery is anticipated when the lockdown ends, demand will likely remain subdued. Economic



growth will be low. Impacts imposed on behaviour and lifestyle, such as increased teleworking and reduced commuting will recover only slowly and, even then, may not return to previous levels. Similarly, with video-conferencing replacing air travel, kerosene demands are likely to build only gradually.

Electricity. Increases in residential demand were far outweighed by reductions in commercial and industrial operations. After correcting for weather effects, full lockdowns have reduced daily electricity demand by at least 15% in France, India, Italy, Spain, the United Kingdom and the northwestern region of the United States. Global electricity demand is expected to fall by 5% in 2020, eight times the reduction in 2009 due to the global financial crisis. With the substantial decline in generation from fossil fuels and small increase from renewables, some concerns were held over the resilience of the grids and electricity security. However, while there is a need to remain vigilant, this experience has led to some growth in confidence regarding electricity security in such circumstances.

Natural gas. Natural gas consumption was falling over the first months of 2020 in major markets even before the Covid-19 pandemic, mainly due to historically mild temperatures in the northern hemisphere. Partly as a result of investments made over the past decade, natural gas supply did not adjust to this drop in consumption, resulting in a considerable build-up of gas in storage. Prices consequently dropped to historically low levels. Based on the IEA's broad assumptions for the year, global natural gas demand could decrease by 5% in 2020. While less than the anticipated fall in oil demand, reflecting the fact that natural gas is less exposed to the collapse in demand for transportation fuels, it nonetheless represents a huge shock to a gas industry.

Coal. The fall in electricity use and industrial production in most countries has pushed down global coal consumption. Among all fuels, the uncertainty over coal is the highest, mainly because its use is concentrated in the power sector, and is strongly dependent on the level of electricity demand. Notably, also, the competition has changed – high gas prices appear to be history and prices of renewables have significantly reduced. Even so, coal remains vital in important industry sectors such as iron and steel, and cement. And, if there is a rebound of energy demand in major coal consuming countries, which are also generally highly populated regions, there will be a rebound in coal consumption.

Renewables. Renewable energy has so far been the energy source most resilient to Covid-19 lockdown measures. While demand has fallen for other uses of renewable energy, e.g. renewable heat demand in industry and a 50% reduction in ethanol production in the United States between the end of February and early April, renewable electricity has been largely unaffected. Even allowing for depressed electricity demand, power grids have managed heightened shares of wind and solar PV, leading to an increase of almost 3% in generation from renewables. While recently completed wind and solar PV projects completed over the past year have played their part, preferential policies have also meant that renewables have generally been dispatched before other sources of electricity. The share of renewables in global electricity generation jumped to nearly 28% in Q1 2020 from 26% in Q1 2019.

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