



The impact of Covid-19 on global energy demand: what did we learn from the data?

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Governments response to Covid-19 has been initially drastic

COVID-19: Government Stringency Index

This is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest). If policies vary at the subnational level, the index is shown as the response level of the strictest sub-region.

Our World in Data

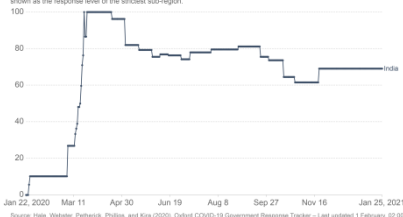


Source: Hale, Webster, Petherick, Phillips, and Kira (2020), Oxford COVID-19 Government Response Tracker - Last updated 1 February, 02:00 (London time).
Note: This index simply records the number and strictness of government policies, and should not be interpreted as 'scoring' the appropriateness or effectiveness of a country's response.
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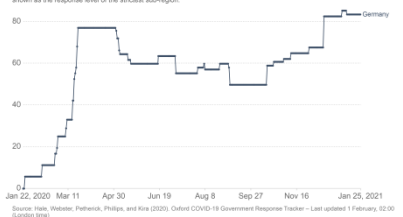


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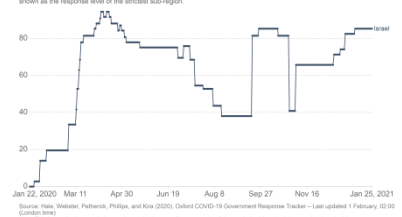


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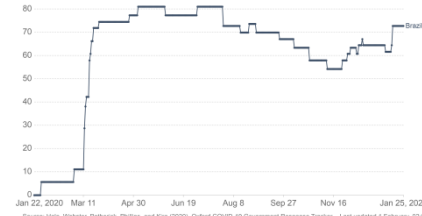


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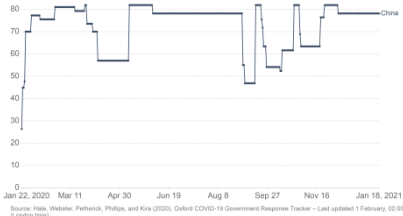


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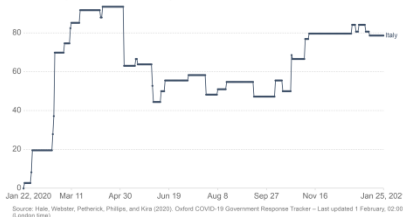


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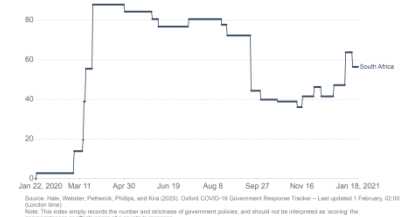


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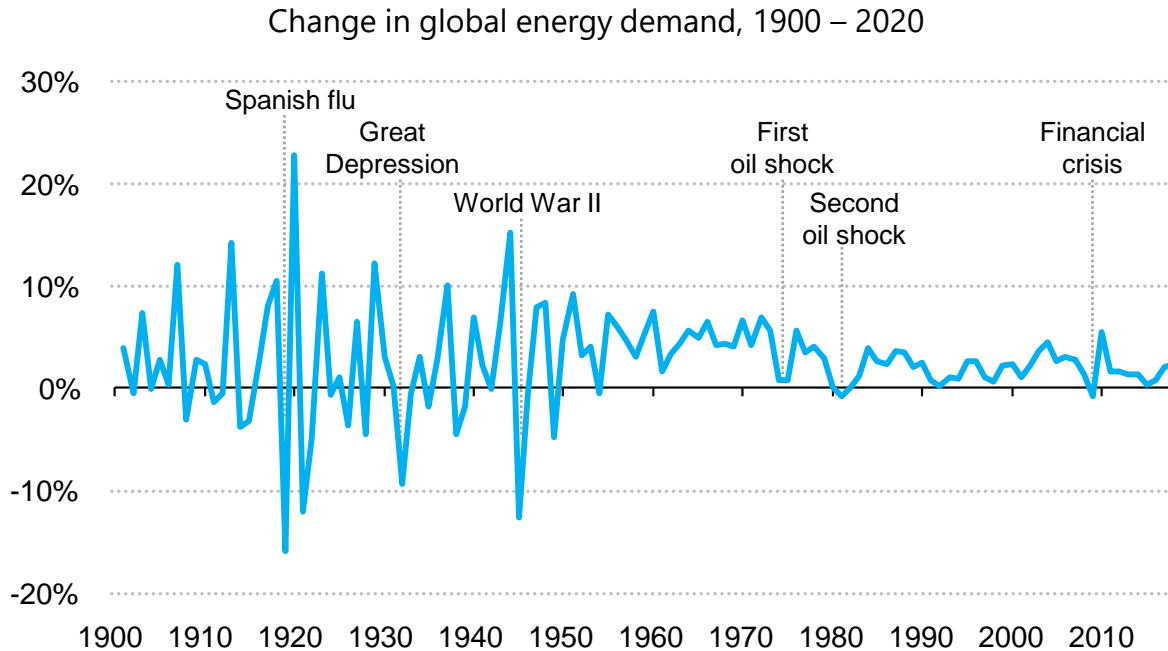


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Source: [University of Oxford, Coronavirus Government response tracker](https://www.ourworldindata.org/coronavirus)

In many countries, the pattern of government response was similar, with highly restrictive initial measures.

Coronavirus: a once in century event for energy demand

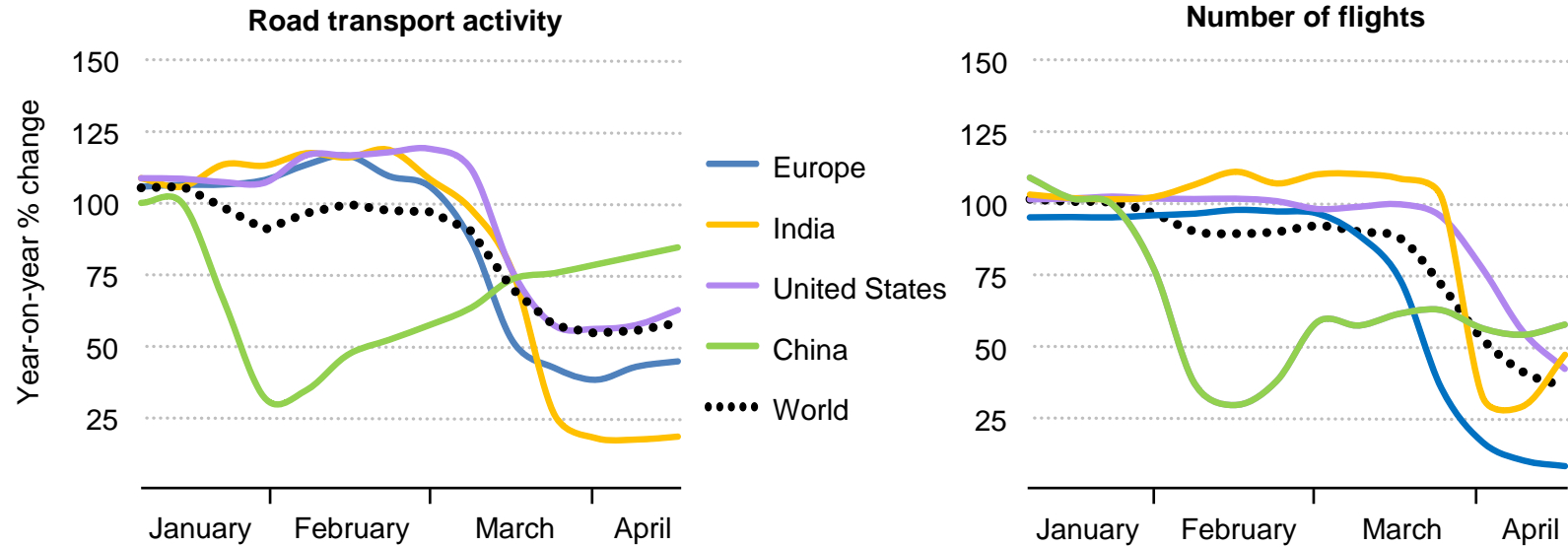


Source: [Global Energy Review, 2020](#)

The shock to energy demand in 2020 is set to be the largest in 70 years. We are finalising calculations, and expect global energy demand decline to be seven times greater than the 2009 financial crisis.

Impact of stringent measures was particularly strong on transport

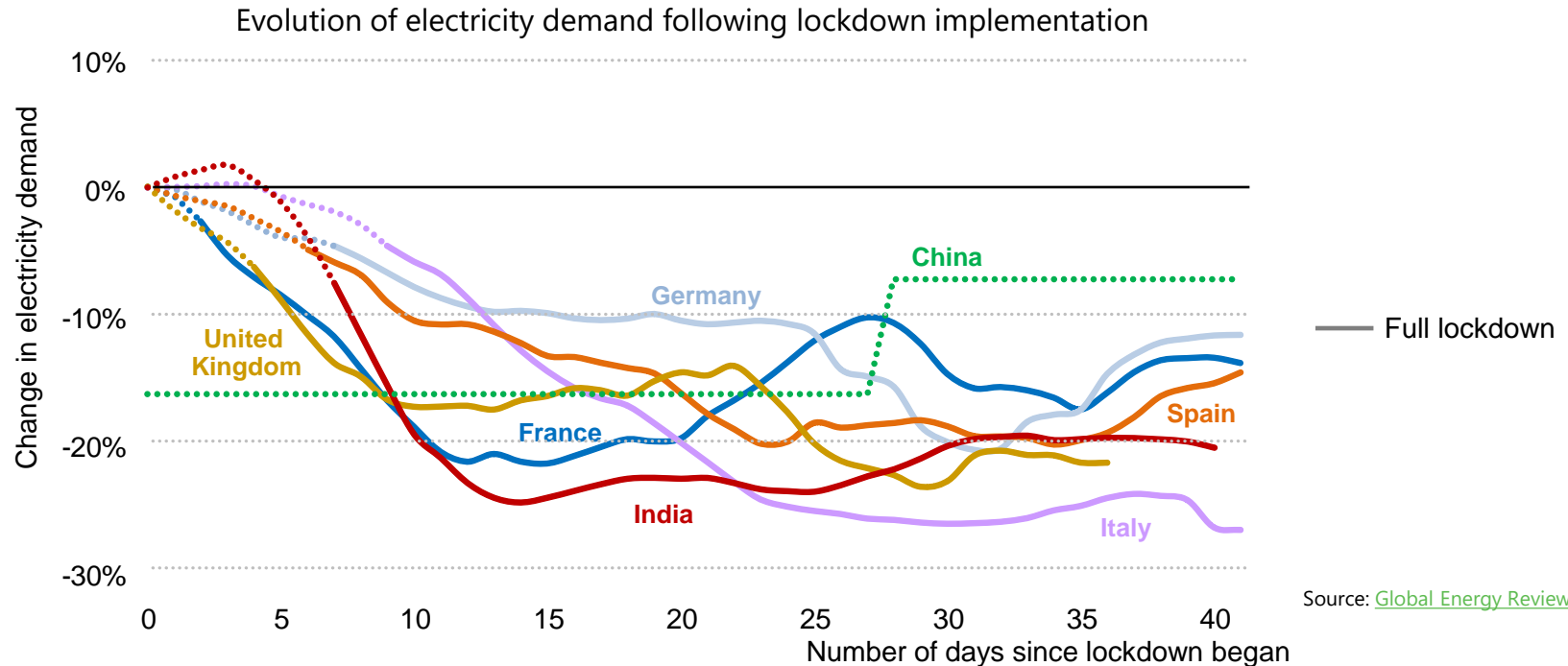
Evolution of transport activity in 2020



Source: [Global Energy Review, 2020](#)

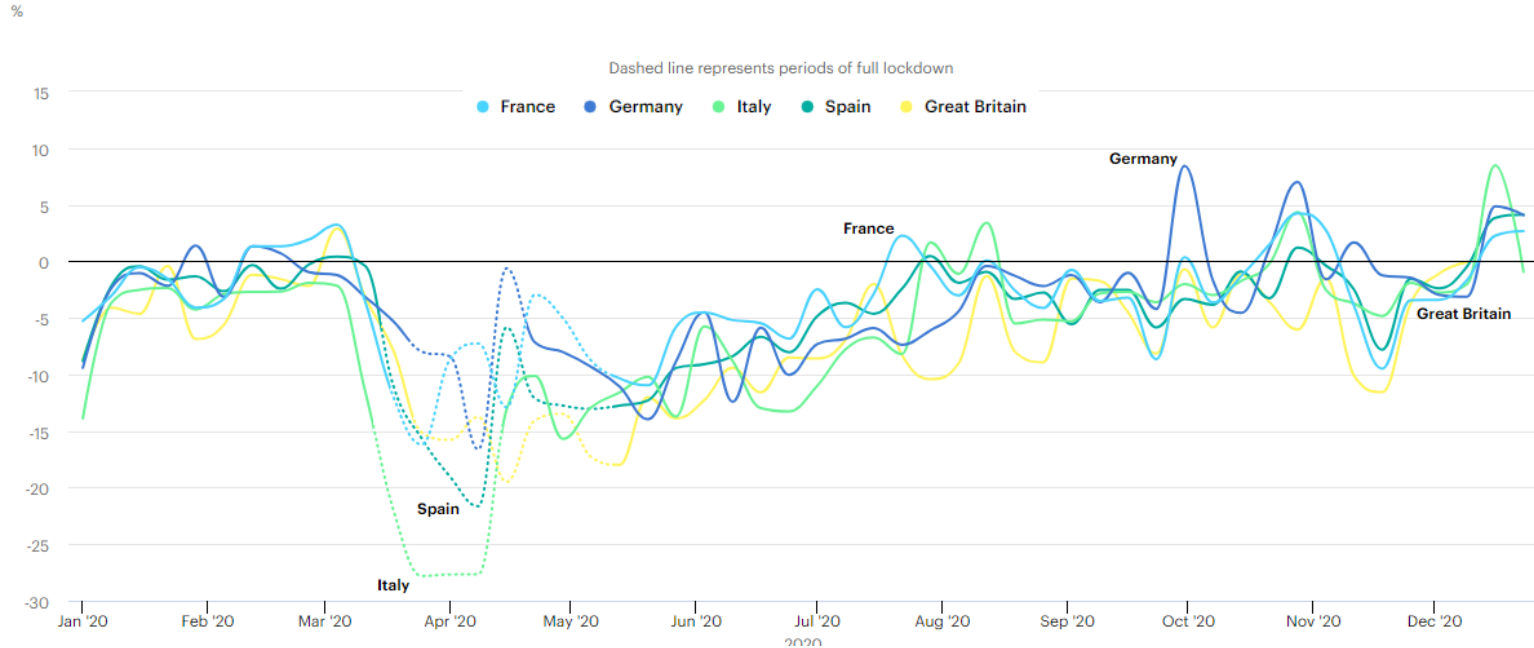
Lockdown measures have reduced mobility at an unprecedented scale, and oil demand along with it. Road transport and aviation have been hit hard, combined they account for half of global oil demand.

It was also swift and deep in electricity consumption



Electricity demand dropped to Sunday levels under lockdown, with dramatic reductions in services and industry only partially offset by higher residential use. Service-based economies suffered the most.

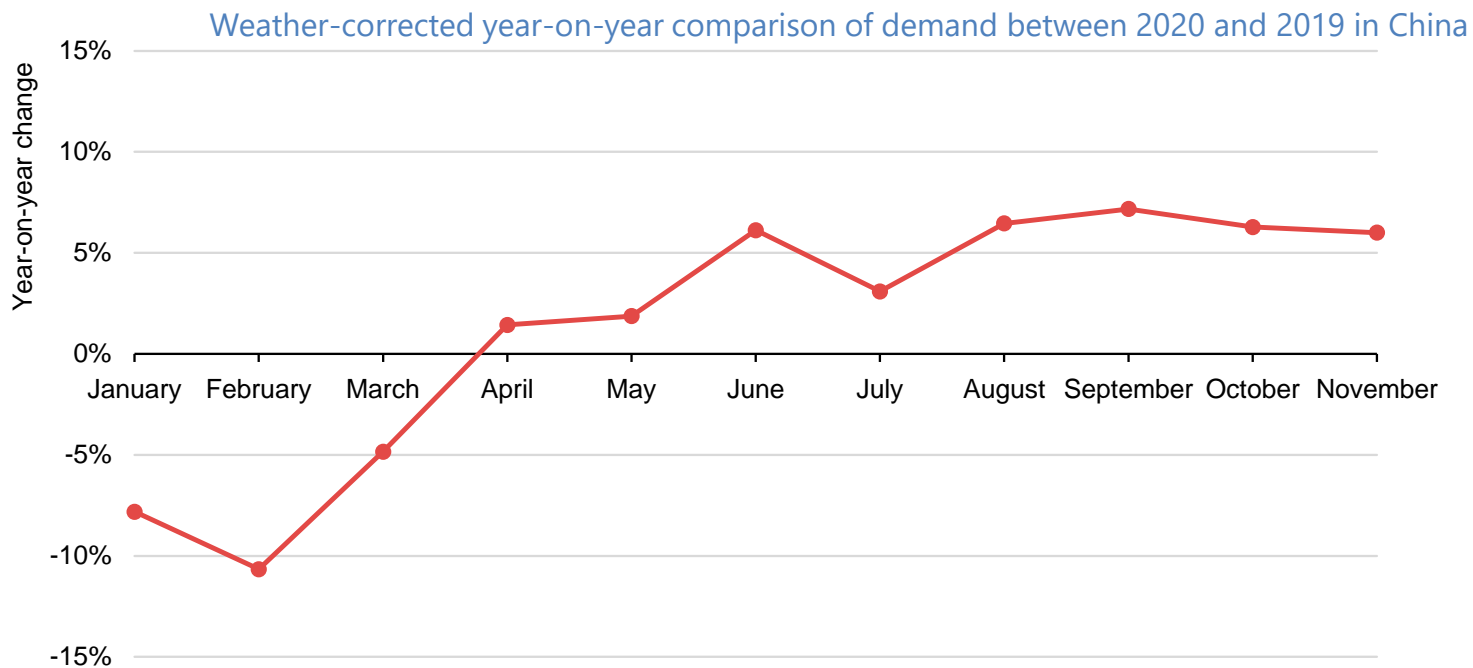
In Europe, the pandemic led to a shock in electricity demand



Source: <https://www.iea.org/reports/covid-19-impact-on-electricity>

Demand was returning to 2019 levels gradually until the latest lockdowns.

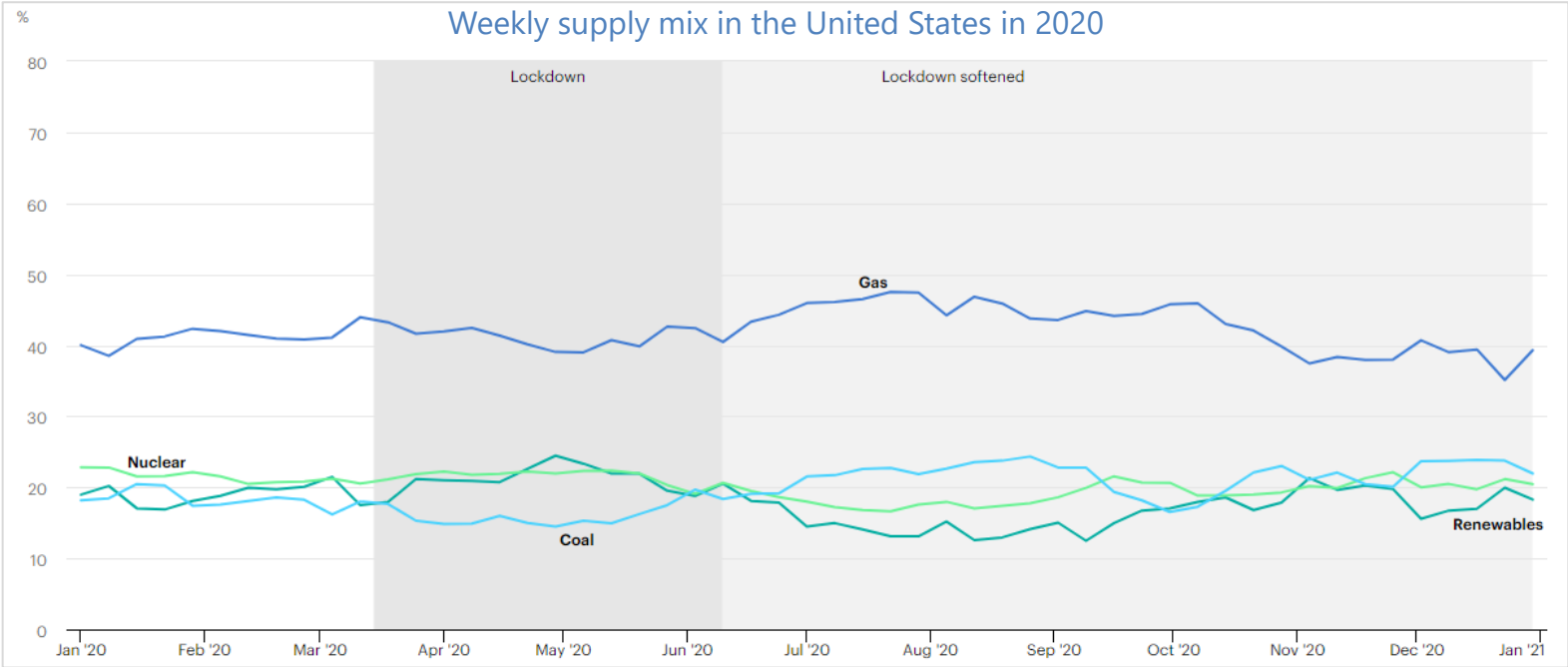
China's electricity demand in 2020 is higher than pre-crisis levels



Source: <https://www.iea.org/reports/covid-19-impact-on-electricity>

China is the only major economy to see electricity demand in 2020 higher than 2019 (up 2%).

Renewables increased their market share during lockdowns

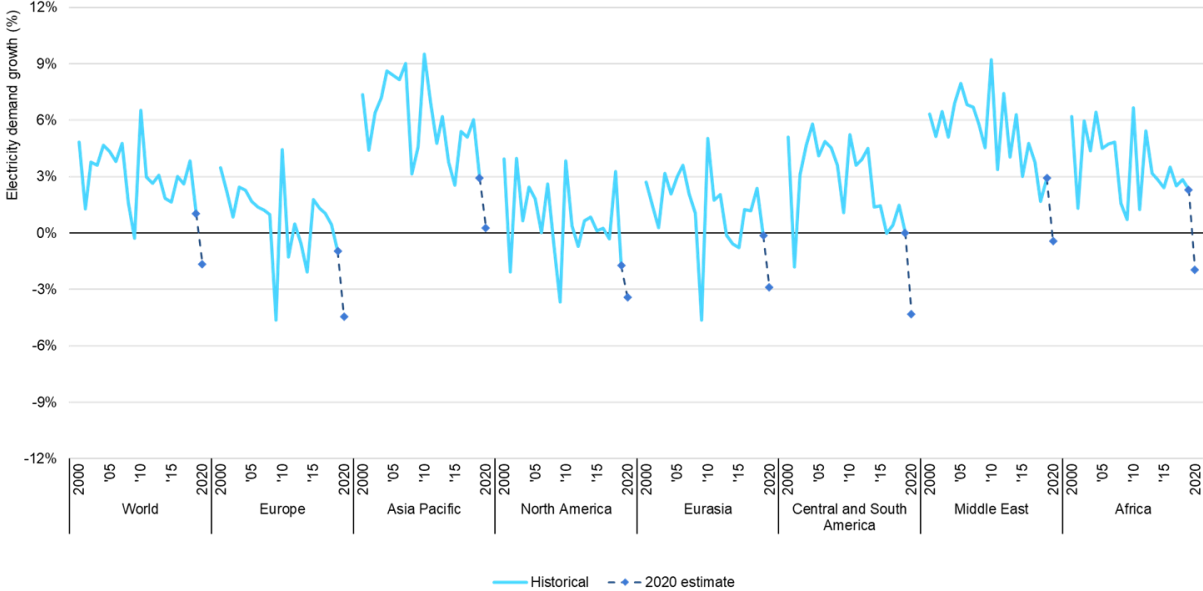


Source: <https://www.iea.org/reports/covid-19-impact-on-electricity>

Continued growth in renewable power generation amid decline in total electricity demand led to a surge in renewable share. Coal and gas recovered their market share as lockdowns eased.

Demand decrease in 2020 dwarfs the financial crisis drop

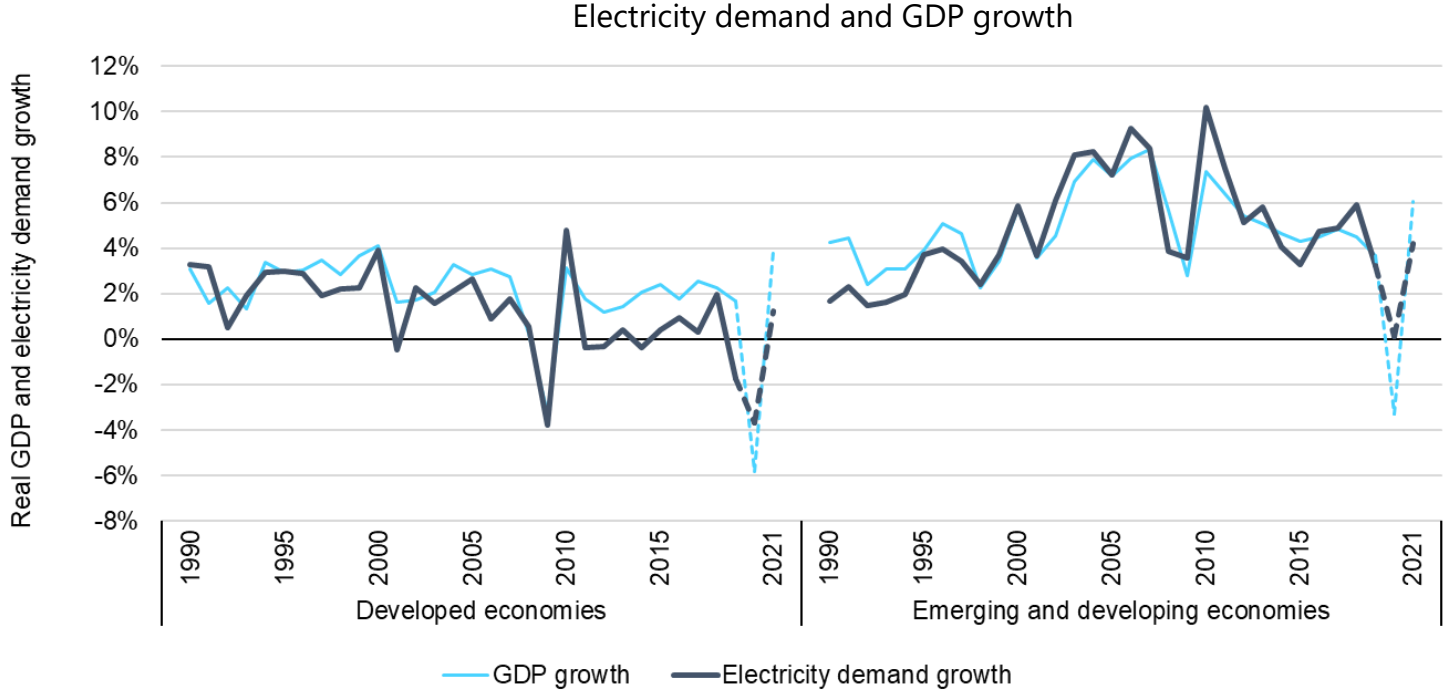
Historical demand growth by region



Source: <https://www.iea.org/reports/electricity-market-report-december-2020>

Global electricity demand in 2020 falls by 2%.
The biggest annual decline since the mid-20th century and larger than the 0.6% in 2009.

Electricity demand expected to rebound in 2021

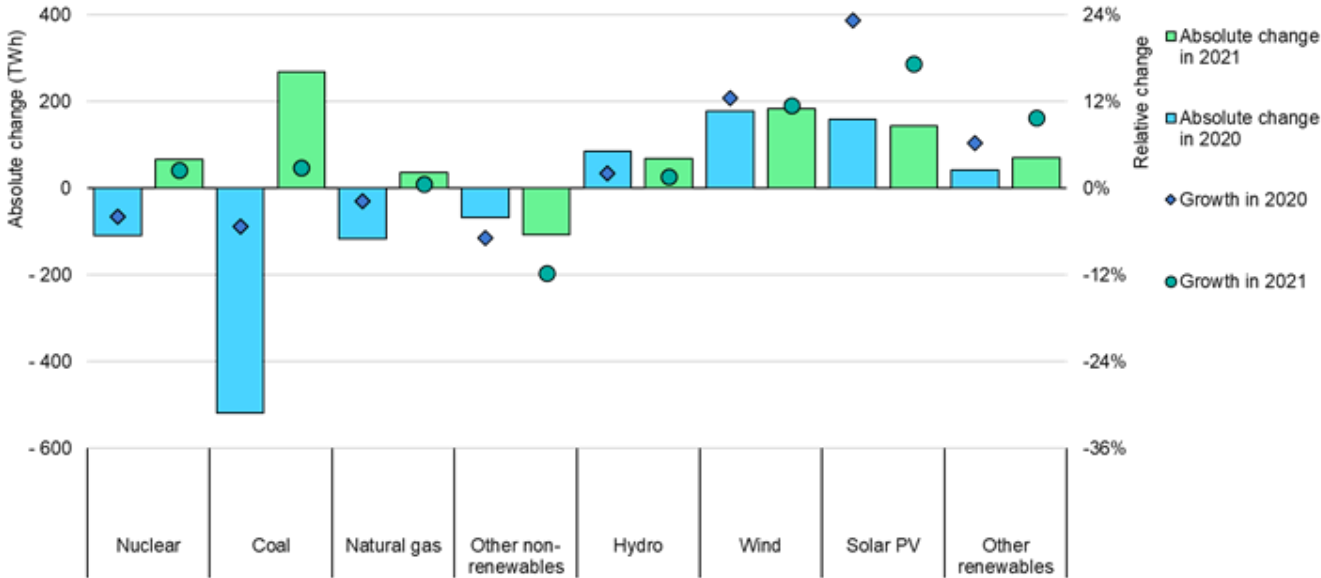


Source: <https://www.iea.org/reports/electricity-market-report-december-2020>

Global power demand will rebound above 2019 level.
Vast majority of the growth will be in emerging economies.

Renewables continue growth while coal rebound strongly in 2021

Projected global change in power supply in 2020 and 2021

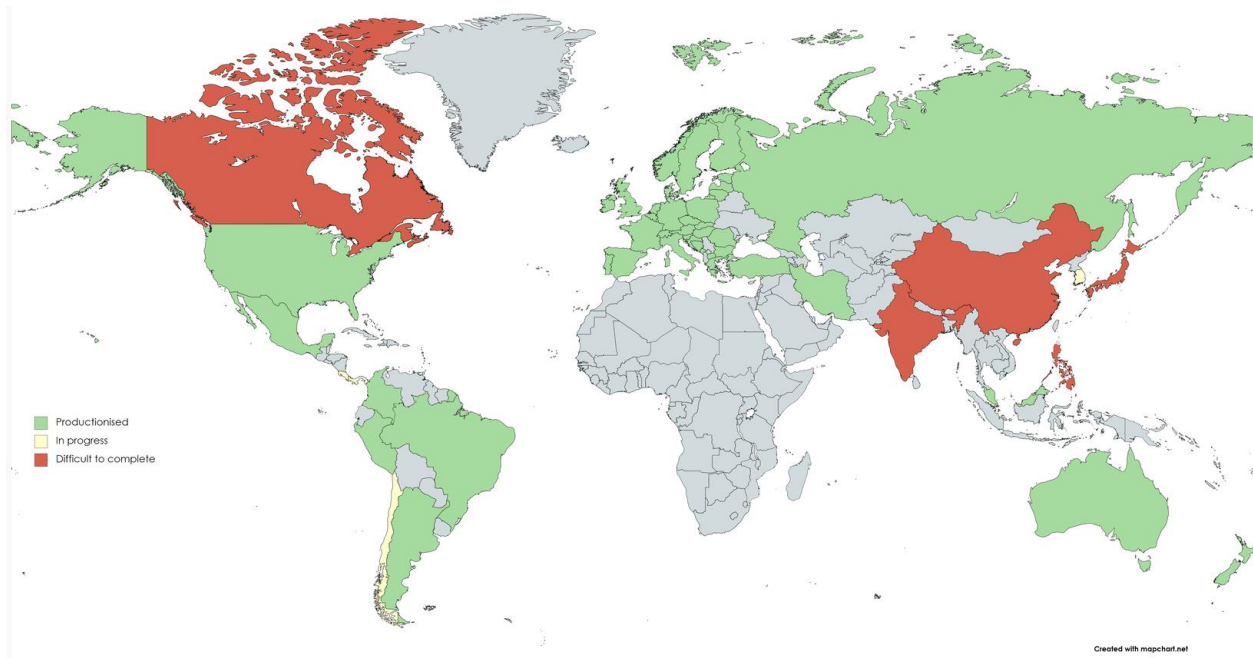


Source: <https://www.iea.org/reports/electricity-market-report-december-2020>

Coal generation in 2021 recovers some of its massive loss in 2020, but will not reach 2019 level.

The IEA continues collection of real time data and expanding

IEA coverage of data scraping on electricity demand



Initially focused on the EU and major economies, real time data collection is being automatised and expanded to provide data to IEA analysts.

In conclusion

- Global electricity demand in 2020 falls by around 2% hit hard by the pandemic.
- China will be the only major economy to see electricity demand in 2020 higher than 2019.
- Renewable electricity generation grows by almost 7% in 2020, squeezing conventional generation.
- Electricity demand will rebound modestly in 2021.
- Renewables will continue robust growth in 2021, but coal is expected to bounce back.
- IEA will continue analyzing these developments through real time data scraping and analysis, which will feed our semi-annual Electricity Market Report series, and Global Energy Reviews.