COVID-19 and Emissions

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This summer completes GCP's five-year plan to produce regular GHG budgets for CO_2, CH_4 and N_2O. A next focus is to combine budgets for multi-gas analyses.

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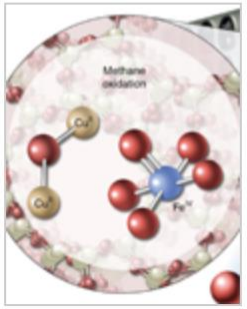
The Global Carbon Project

The Global Carbon Project (GCP) integrates knowledge of greenhouse gases for human activities and the Earth system. Our projects include global budgets for three dominant greenhouse gases — carbon dioxide, methane, and nitrous oxide — and complementary efforts in urban, regional, cumulative, and negative emissions.

Intensification of carbon uptake by Northern Hemisphere Vegetation	Methane removal	Second State of the Carbon Cycle Report (SOCCR2)
		
paper	paper	website

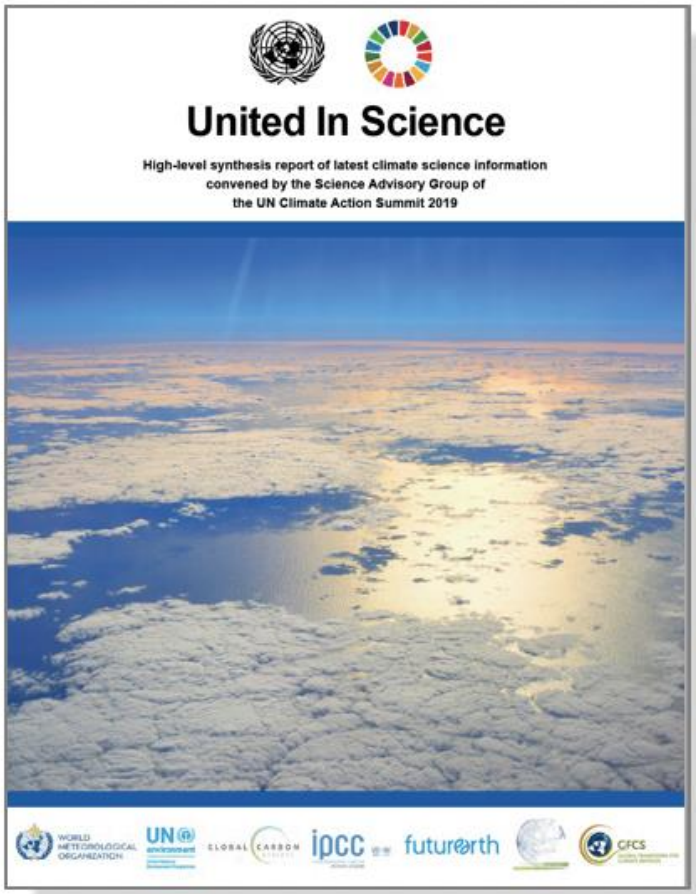
Science Highlights

Carbon Budget 2018

Methane Budget 2016

N_2O Budget coming soon

Climate Change Summit, New York, Sept 2019

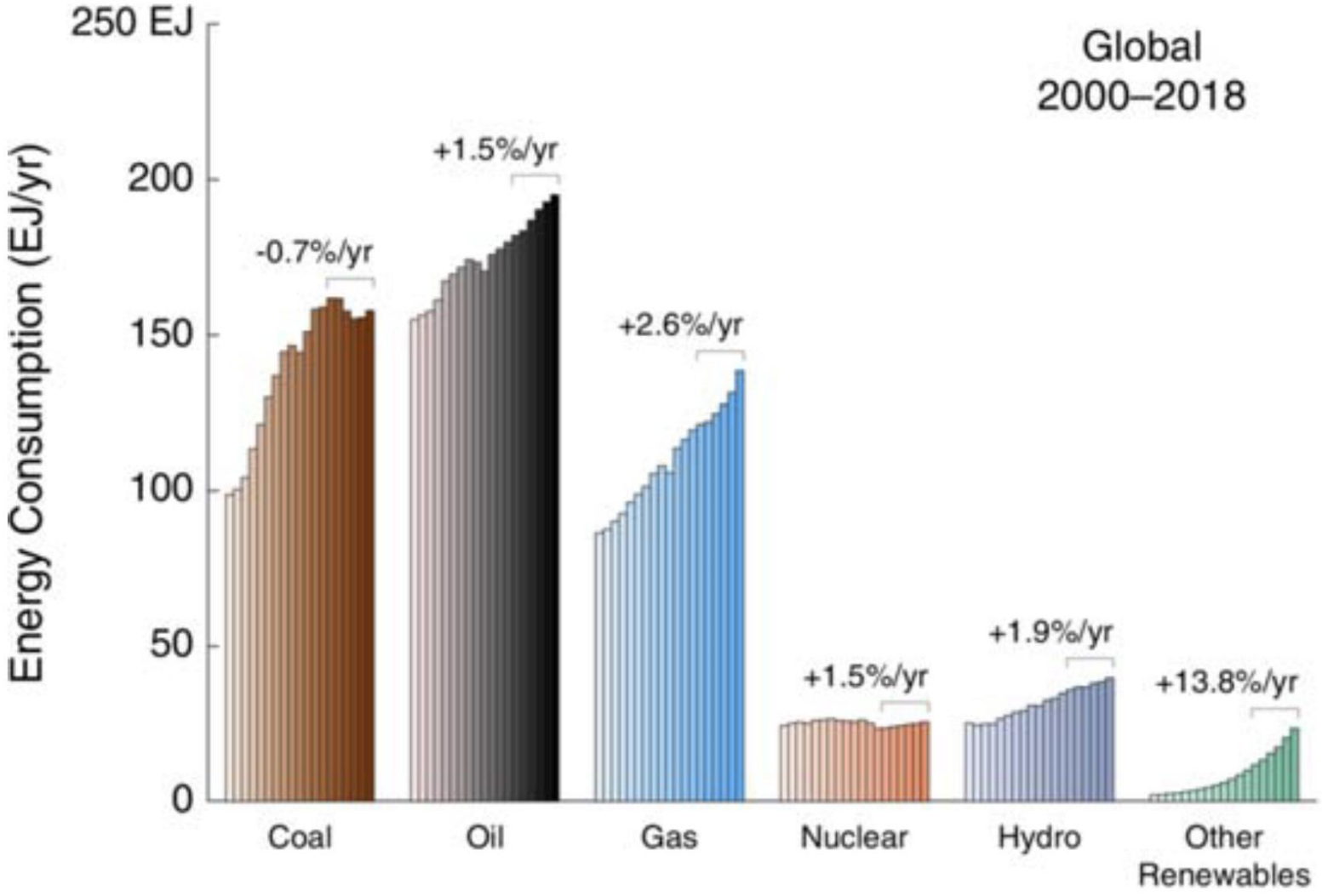


Average global temperatures have already risen 1.1°C.

2015–2019 is on track to be the warmest of any period on record.

Global hunger and food insecurity are rising, after years of declines

Global carbon emissions are still rising (Friedlingstein et al. 2019), despite explosive growth of renewables.



Jackson et al. 2019 Env Res Lett

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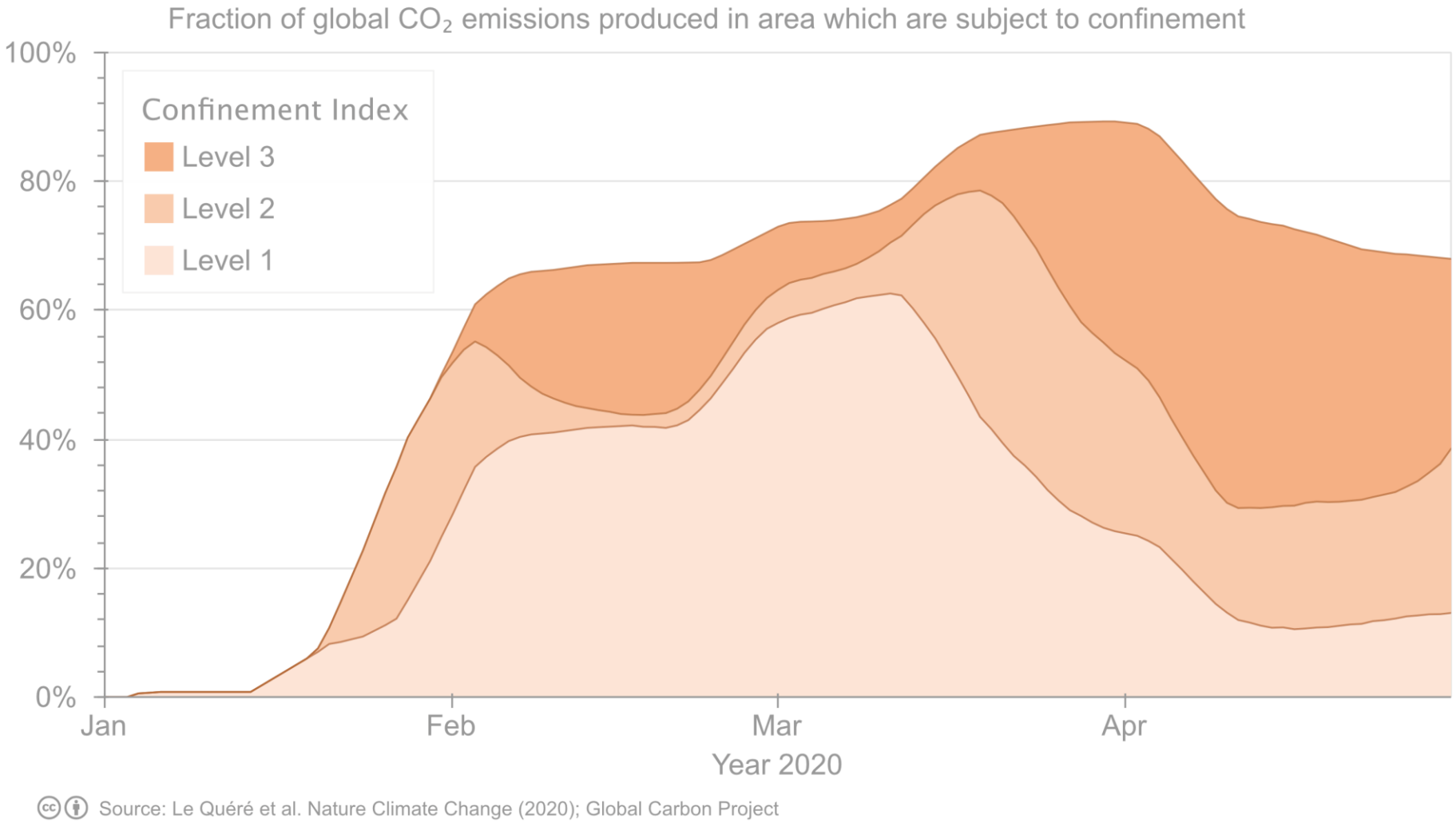
futureearth

Animation by
Rob Jackson,
Alistair Scrutton &
Jerker Lokrantz.

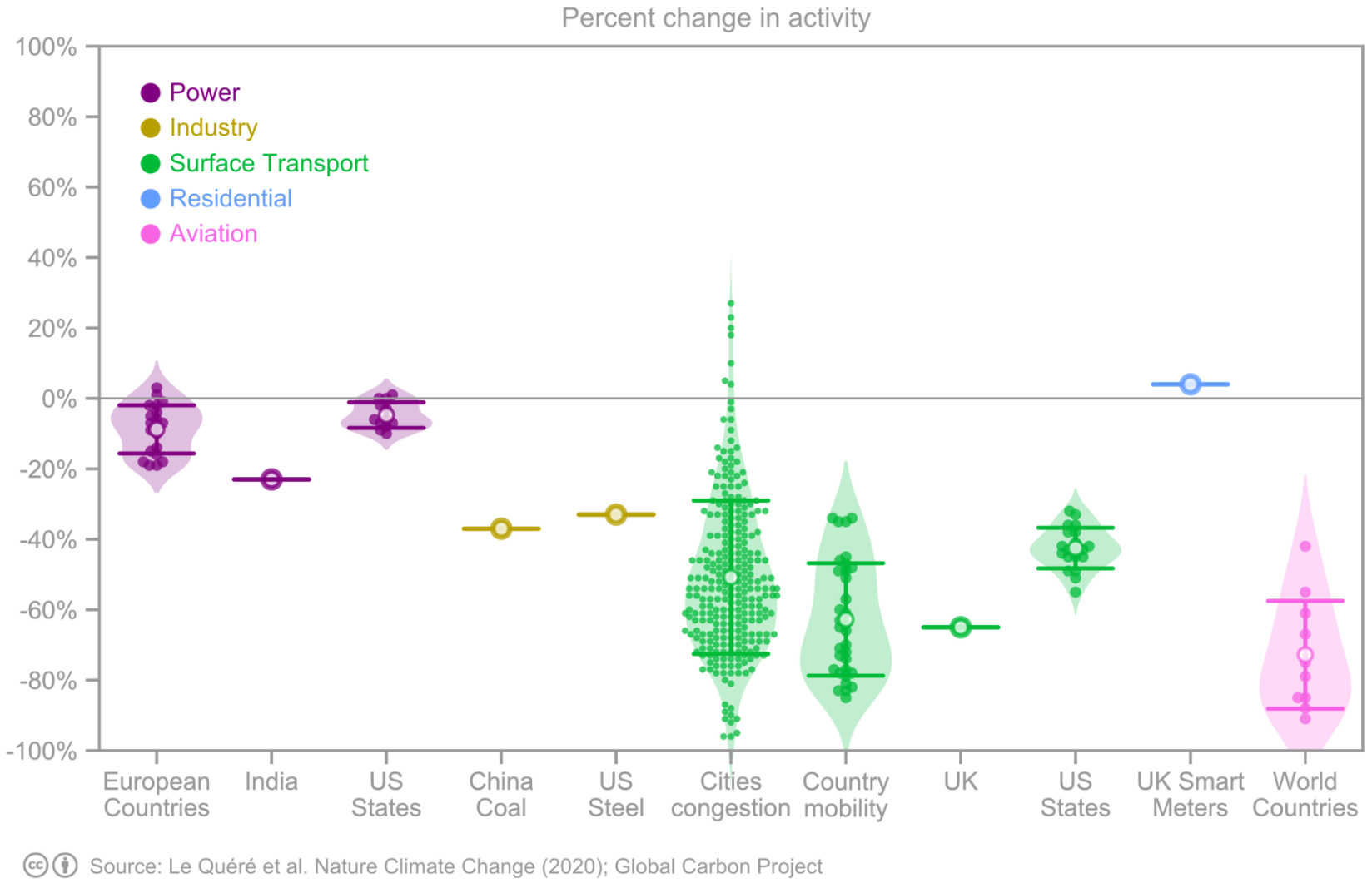
https://www.globalcarbonproject.org/carbonbudget/19/visualisations.htm

How has COVID-19 altered emissions? We combined a confinement index (# people restricted and their CO_2 emissions) with estimates of emissions reductions.



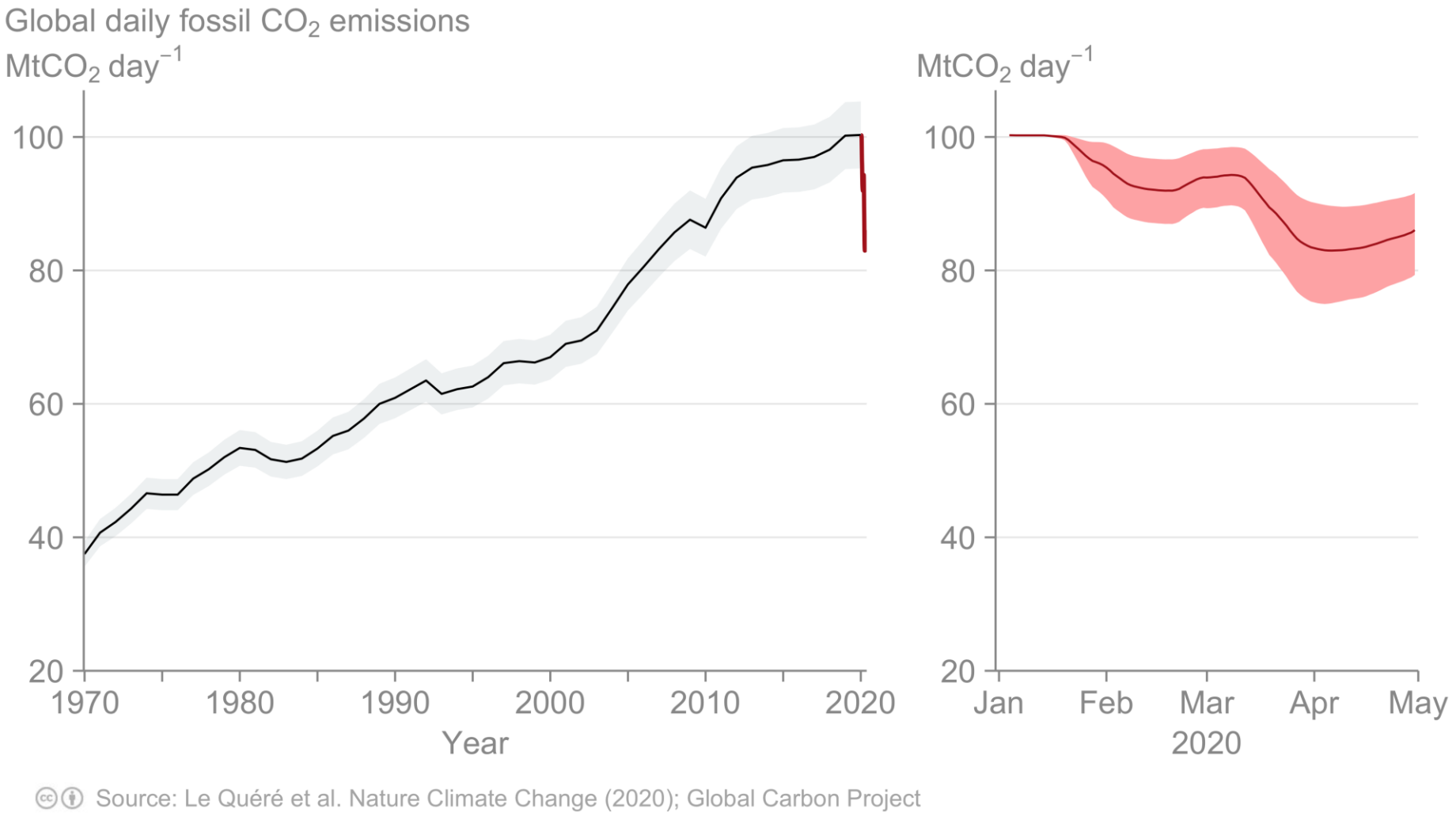
Le Quéré et al. 2020 Nature Climate Change

At peak confinement, COVID-19 reduced emissions in surface transport (50%), power (15%), manufacturing (35%), and aviation (75%).



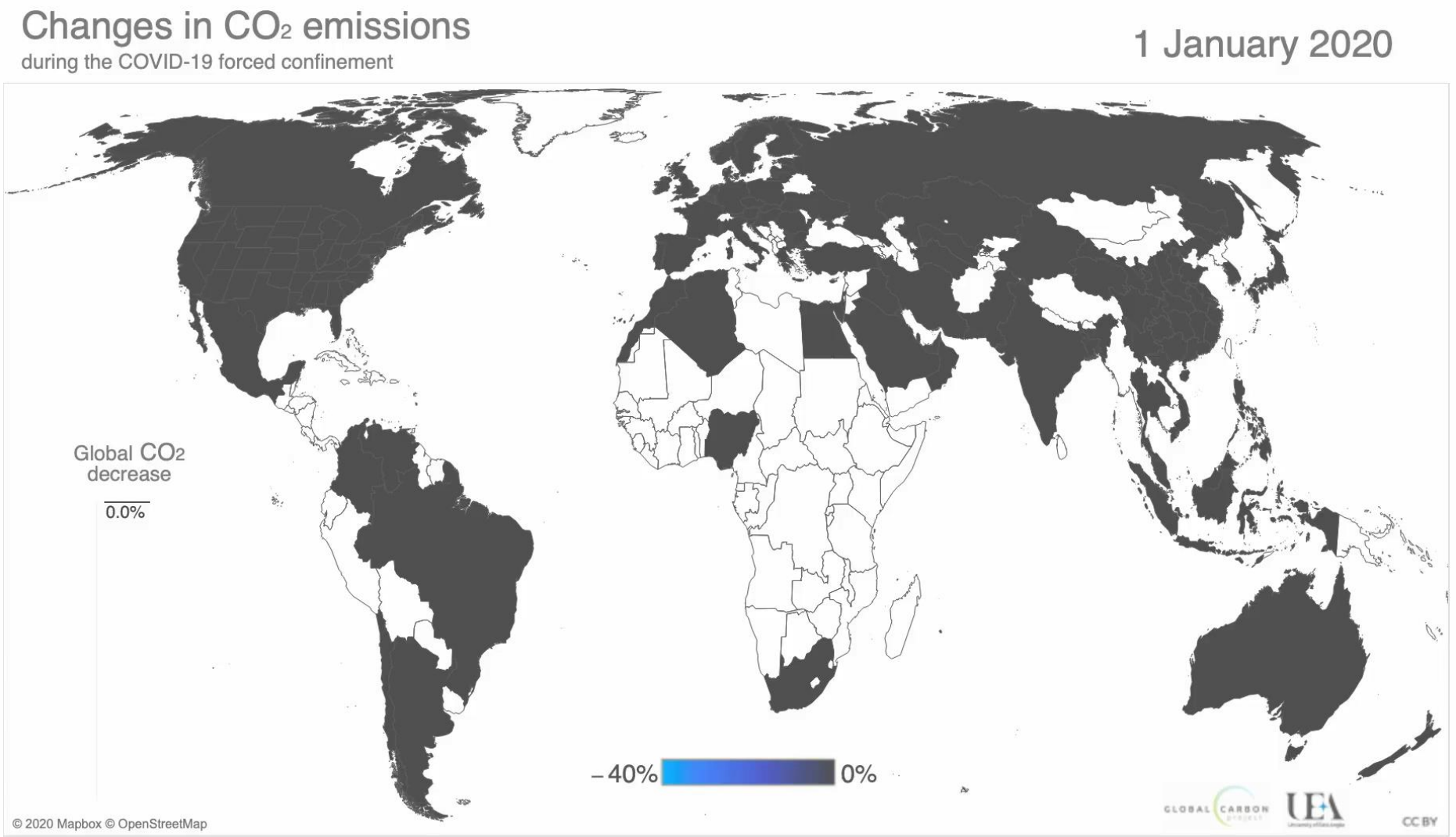
Le Quéré et al. 2020 Nature Climate Change

In early April, global fossil CO_2 emissions decreased 17% compared to the same day of 2019. The global decline through April was 1.05 Mt CO_2



Le Quéré et al. 2020 Nature Climate Change

Changes in CO_2 emissions by location and date.



https://www.globalcarbonproject.org/news/TemporaryReductionInCO2EmissionsDuringCOVID-19.html

How can we make emissions reductions permanent? A few thoughts for the U.S.:

Stimulus funding should center on the clean energy transition. Globally, 10 million people work in renewable energy, >1 million in the U.S.

1) Free up $40 billion in low-interest loans currently idled in the Dept. of Energy's clean energy and advanced vehicle loan programs.

2) Change the HEROES bill currently in the Senate to include Investment and production tax credits for wind and solar.

3) Provide comprehensive job retraining for people in the coal and fossil fuel industries.

The 2009 U.S. Recovery Act included ~$90 billion for renewable energy, which had some of the best returns on investment in the bill.

How can we make emissions reductions permanent? A few thoughts for the U.K.:

Invest COVID-19 stimulus funds in technologies and incentives to help reach the UK's binding net zero target for 2050 (decarbonizing transport; building retrofits for energy efficiency; low-carbon heating; societal and personal choices; tree planting; etc.).

The Committee on Climate Change (theccc.org) recently proposed six principles for post-coved "resilient recovery" in the U.K., including:

1) Use climate investments to support economic recovery and jobs.
2) Embed fairness as a core principle.
3) Ensure the recovery does not 'lock-in' greenhouse gas emissions or increased climate risk.

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The E.U. and China are making the clean-energy transition a core part of their stimulus funding. The U.K. and U.S. should, too.

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Thank you!
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