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Carbon Emissions Had Leveled Off. Now They're Rising Again

There are many reasons, but the biggest is that China is burning more coal again.



A farmer prepares for spring near a power plant in Shanxi Province, China. The facility, which supplies electricity to Beijing, 200 miles away, covers local fields, crops, and people with soot.

PHOTOGRAPH BY ROBB KENDRICK, NATIONAL GEOGRAPHIC CREATIVE

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By **Craig Welch**

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For a while it looked as if the world might be turning the corner.

But after a three-year stall in their growth, human-caused carbon-dioxide emissions have not, in fact, peaked, an international team of scientists announced this morning.

In 2017, global emissions of CO₂ from fossil fuels and industry will once again rise by 2 percent, the scientists project, to a record 37 billion metric tons. Those emissions had increased by only a quarter of a percent from 2014 to 2016. Changes in land use, such as deforestation, will add around 4 billion metric tons of CO₂ in 2017, bringing the global emissions total to an estimated 41 billion metric tons.

The resurgence [tightens the time constraint on the world's efforts](#) to keep global warming from exceeding 2 degrees Celsius (3.6 degrees Fahrenheit)—a cap scientists increasingly believe is important to ward off [climate change's most catastrophic effects](#).

"What's driving, really, the global trend is this pick-up in China," says [Corinne Le Quéré](#) of the University of East Anglia, and the lead author of one of several new emissions studies released today. An unexpected rise in coal-burning in China—due in part to a summer drought that diminished the country's rivers and its generation of hydropower—was the biggest contributor to the global surge in emissions.

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NOT JUST THE CHINESE

But China's shift didn't happen in a vacuum. Its emissions rose just as the United States and European Union each saw their emissions decrease more slowly than expected.

In the U.S., higher natural gas prices led to a slight rise in coal burning, for the first time in five years, while oil use also increased. As a result, emissions that had been declining about 1.2 percent a year dropped less than half a percent. In the E.U., emissions dropped less than a quarter percent after a decade of annual declines topping 2 percent a year.

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On the other hand, India's emissions, which had been steadily rising about 6 percent a year, as the country industrializes and rapidly brings electricity to rural areas, are projected to increase by only 2 percent in 2017. That good news is also troubling, because it's almost certain not to last.

With five of the [hottest years on record](#) all having come just since 2010, the big question is whether the renewed emissions growth is a one-time slip or the new normal.

"It's hard to say whether 2017 is a hiccup on the way to a trajectory that eventually peaks and goes downward—or if it's about returning to high growth," Le Quéré says.

A CLOUD OVER THE CONFERENCE

The announcement comes as climate experts gather in Bonn, Germany, to boost efforts by world leaders to stem climate change. In 2015, during the Paris climate talks, 195 nations, including the United States, [voluntarily agreed to do what it took](#) to keep temperature increases to no more than 2 degrees Celsius—while acknowledging that an even better goal would be to [keep heat growth to below 1.5 degrees](#). The U.S., under President Donald Trump, has since [announced it would withdraw from the Paris accords](#).

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This coal-fired power plant in Guizhou province is one of China's newer ones. The country leads the world in carbon emissions—but also in investments in renewable energy.

PHOTOGRAPH KEVIN FRAYER, GETTY

Scientists had not fully expected that the world's emissions were ready to top out. Hundreds of millions of people in India alone, for example, are still living without power. But there was hope that China's surprisingly rapid move away from coal to combat the air pollution killing its citizens might hasten the transition to renewable energy.

While Le Quéré says she hopes 2017 proves to be a brief blip, another study she worked on with Stanford University climate scientist [Robert Jackson](#) suggests the bad climate news could, in fact, continue.

Twenty-two countries that account for 20 percent of global emissions have seen their CO₂ output drop as their gross domestic product increased in the last decade. But both the World Bank and the International Monetary Fund project global increases in GDP in 2018 at rates that haven't been seen since 2011. Economic activity at that scale seems [likely to lead to more emissions](#), Jackson says.

One reason: Despite the global explosion in solar and wind power, since the year 2000 "80 percent of the new energy infrastructure we've built around the world is still fossil fuels," Jackson says. "We are more energy efficient but just as carbon intensive as we were in 1990."

There are some positive trends. Emissions are decreasing in Mexico and other parts of Latin America. China has capped winter coal use and announced a commitment to [phase out gas- and diesel-powered cars](#).

"Decarbonizing the transportation sector is probably the most difficult thing we have to do, so if that happens, it's a big step," Jackson says.

The new studies suggest emissions growth globally is unlikely any time soon to return to the 3 percent-a-year rate we saw through much of the 2000s.

But that depends on the actions countries take in the immediate future, the scientists say.

"At the moment it looks like the governments have gotten a bit complacent," Le Quéré says.

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