

'Net zero' climate targets? Read the fine print

December 9 2020, by Marlowe Hood



More than 110 countries have committed to becoming carbon neutral by mid-century, including major greenhouse gas emitters

The worldwide effort to prevent Earth from becoming an unlivable hothouse is in the grips of "net zero" fever.

More than 110 countries have committed to becoming [carbon](#) neutral by

mid-century, including major greenhouse gas emitters such as Britain, Japan and South Korea, according to the United Nations.

The European Union has taken the vow, as has incoming US President Joe Biden.

China—which generates a quarter of all carbon pollution—set 2060 as the year when any remaining emissions from energy, agriculture or industry must be offset by tree farms or experimental technologies that suck CO₂ from the air.

More than 65 percent of global CO₂ emissions now fall under such pledges, according to a UN estimate.

The London-based Energy & Climate Intelligence Unit calculates the aggregate GDP of nations, cities and states with 2050 net zero targets is \$46 trillion, well over half of global GDP.

"I firmly believe that 2021 can be a new kind of leap year—the year of a quantum leap towards carbon neutrality," UN chief Antonio Guterres said last week in New York.

"Every country, city, financial institution and company should adopt plans for transitioning to net [zero emissions](#) by 2050."

'Devil in the detail'

But what is being promised?



The last five years have been the hottest on record

And will it deliver the Paris Agreement goals of capping global warming at "well below" two degrees Celsius above preindustrial levels or, better yet, under the treaty's aspirational 1.5C ceiling?

"In many cases, net-zero pledges are an improvement, but in others the 'net' provision is a black box that can conceal all sorts of problems," Duncan McLaren, a professor at Lancaster University's Environment Centre, told AFP.

Earth's surface has already warmed 1.2C on average, making extreme weather more deadly, and new research shows that a return to 2019

levels of carbon pollution would likely push the world past the 1.5C milestone around 2030.

"The devil is in the details," said Kelly Levin, a senior associate with the World Resources Institute's (WRI) global climate program.

There are several keys to evaluating the worth of carbon neutral promises, Levin and other experts said.

The first is whether they apply to all [greenhouse gases](#), or just carbon dioxide.

CO₂ is responsible for more than three-quarters of global warming. But concentrations of methane—mostly from natural gas leaks and animal husbandry—are rising, and could capsize the Paris treaty goals if not brought to heel.

New Zealand for instance cemented its net-zero-by-2050 vows into law in November 2019, but with a woolly caveat: it only applies to CO₂. A third of the country's total emissions come from belching cattle and especially sheep.

Kicking the can?

A second red flag is the lack of intermediate hard targets before 2050, said Teresa Anderson, climate policy coordinator for ActionAid International.



The European Union has taken the net-zero-by-2050 vow, as has incoming US President Joe Biden

"A smoker who promises to quit while carrying on with a pack a day for the next 30 years will still do themselves a lot of damage."

Scientists are categorical about the need for deep, near-term reductions in carbon pollution.

The UN's climate science advisory panel, the IPCC, has said that manmade emissions must drop 45 percent by 2030—and then 100 percent by 2050—to have any hope of staying on this side of the 1.5C guardrail.

Last week, British Prime Minister Boris Johnson gave the UN-led climate process a boost in announcing a 68 percent cut in carbon emissions by 2030, compared to 1990 levels.

Johnson—who will host a virtual climate summit on December 12, and the most important UN climate conference since Paris next year in Glasgow—encouraged other leaders to follow suit.

The European Union could boost its 2030 pledge later this week to 55 percent, but so far few other nations have done so.

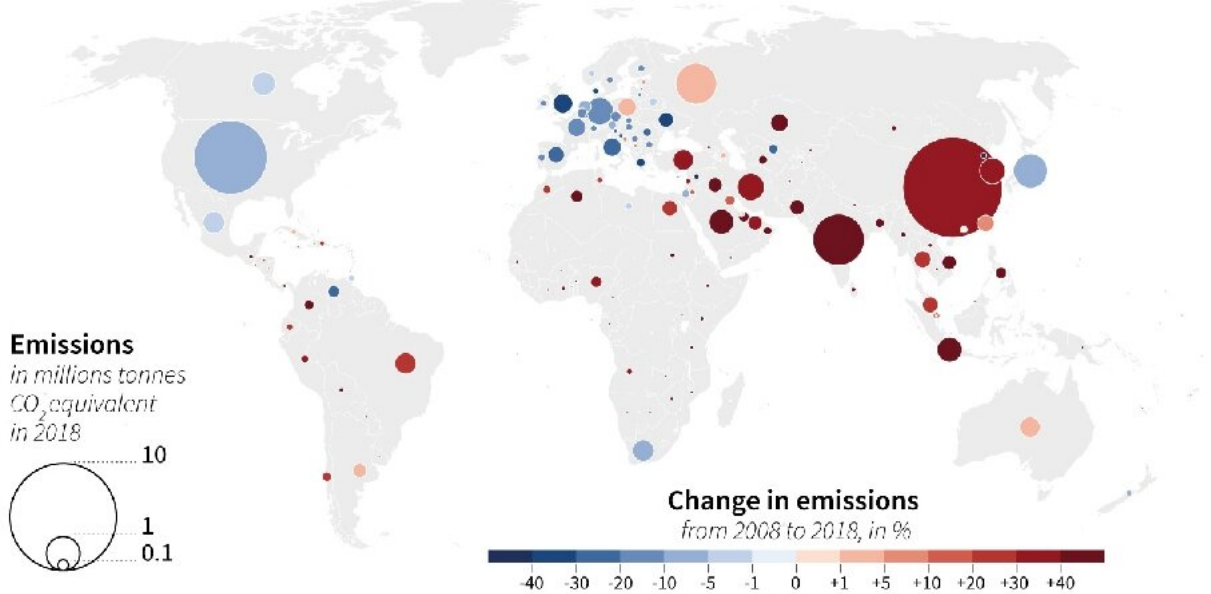
China, the world's top consumer of coal, has hinted it might pledge to peak emissions in 2025, five years earlier than its long-standing pledge.

But despite the pandemic, it's 2020 emissions will exceed those in 2019, according to the International Energy Agency (IEA).

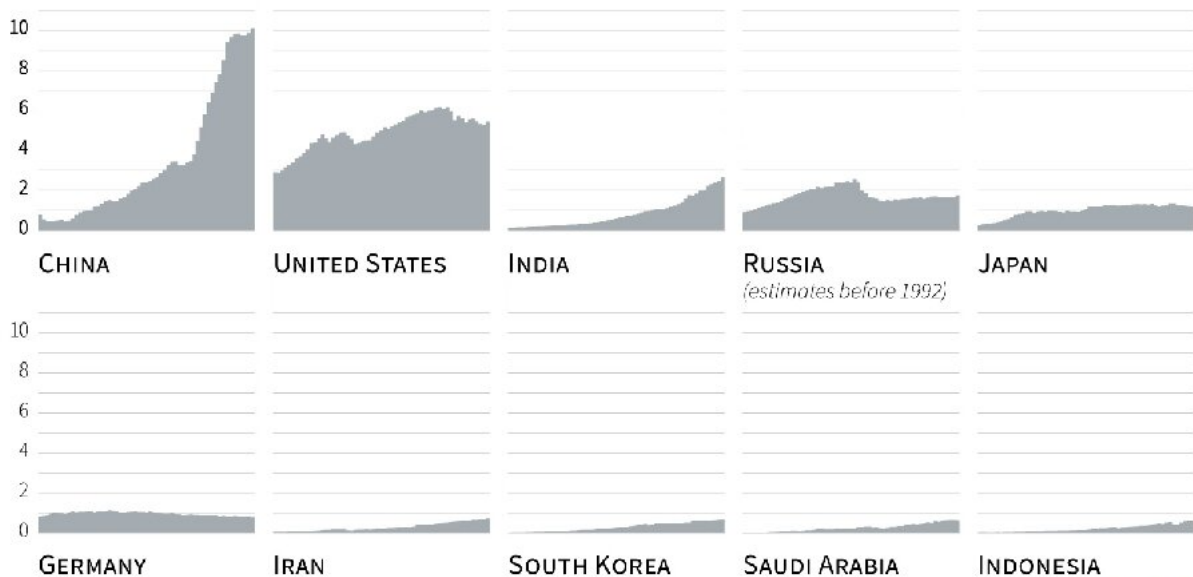
A trillion trees

A third crucial measure is how much of a net zero commitment will be fulfilled with short-term emissions cuts, and how much will come from so-called "negative emissions technologies".

Carbon emissions from fossil fuels



Emissions from 1960-2018, top 10 emitters in 2018



Source: Global Carbon Project



A UN report shows that global fossil fuel production must in fact decline roughly 6% annually over the next decade to keep the 1.5C target in view

"You cannot get to net zero without some carbon dioxide removal," or CDR, said Oliver Geden, a researcher at the German Institute for International and Security Affairs, and an IPCC lead author.

And yet all of the options on the table for taking excess carbon out of the air remain deeply flawed, experts say.

To work at scale, an area more than twice the size of India would be needed for tree farms by the latter half of the century, studies have shown.

Last year, a scheme unveiled by Swiss scientists to solve the climate crisis by planting a trillion trees—quickly embraced by [fossil fuel companies](#) and even US President Donald Trump—was picked apart by experts as based on faulty calculations and requiring unrealistic amounts of land.

Another approach—in which the CO₂ emitted from burning biofuels is buried underground—runs into a similar problem.

Meanwhile, technology that draws CO₂ directly from the air, to be sequestered or converted into fuel pellets, remains in its infancy.

"There is a large degree of uncertainty about the scale and availability of future carbon removals from both land-based carbon sinks (trees), and emerging carbon-removal technologies," said Levin of WRI.

The handful of fossil fuel companies which claim their futures are compatible with Paris Agreement targets, such as Shell and BP, rely very heavily on both to justify near-term plans to ramp up exploration and production of oil and gas.

A UN report last week showed that global fossil fuel production must in

fact decline roughly 6 percent annually over the next decade to keep the 1.5C target in view.



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'Loopholes'

Finally, one must read the fine print of net zero pledges to see exactly what is, or is not, included.

"There is not an agreed set of principles and guidelines for these plans, so they are rife with loopholes," said Jesse Bragg, media director for watchdog NGO Corporate Accountability.

Many national schemes leave out the aviation and shipping sectors which, if they were nations, would each rank in the top ten of global emitters.

"Most if not all of the aviation and oil sector plans are seriously flawed, with a heavy reliance on biological sinks (trees) to offset ongoing fossil fuel emissions," McLaren said, adding some steel and cement firms had taken bold steps.

"Good plans are the ones that maximise reduction at the source, and redesign their technologies accordingly."

Experts say net zero plans should clearly separate targets for slashing greenhouse gas emissions from future carbon removal schemes.

"If you have explicit targets on both sides it becomes harder—both politically and reputationally—to fudge one against the other, and to conceal dodgy choices," said McLaren.

But even if promises on carbon neutrality are all kept, he added, that only stabilises the greenhouse gases in the atmosphere.

"That means climate change impacts will remain as bad or worse than they are now unless we subsequently increase removals to bring concentrations down," he said.

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Citation: 'Net zero' climate targets? Read the fine print (2020, December 9) retrieved 17 July 2024 from <https://phys.org/news/2020-12-net-climate-fine.html>

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