2020 ties 2016 as hottest year on record

January 8 2021, by Marlowe Hood

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2020 has tied 2016 as the hottest year on record, the European Union's climate monitoring service said Friday, keeping Earth on a global warming fast track that could devastate large swathes of humanity.

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the last 21, evidence of a persistent and deepening trend, the Copernicus Climate Change Service (C3S) reported.

Last year's record high—a soaring 1.25 degrees Celsius above pre-industrial levels—was all the more alarming because it came without the help of a periodic natural weather event known as an El Nino, which added up to two-tenths of a degree to the 2016 average, according NASA and Britain's Met Office.

"It is quite clear that in the absence of El Nino and La Nina impacts on year-to-year temperatures, 2020 would be the warmest year on record," Zeke Hausfather, director of climate and energy at the Breakthrough Institute in Oakland, California, told AFP.

During an El Nino, which occurs every two to seven years, warm surface water in the tropical Pacific Ocean can boost global temperatures. La Ninas—such as one currently underway—have the opposite cooling effect.

"2020 stands out for its exceptional warmth," said C3S director Carlo Buontempo.

With just over 1C of warming so far, the world has already seen a crescendo of deadly droughts, heatwaves, flood-inducing rainfall, and superstorms make more destructive by rising seas

"This is yet another reminder of the urgency of ambitious emissions reductions to prevent adverse climate impacts in the future."

In 2015, the world's nations vowed to cap global warming "well below" 2C, and 1.5C if possible.

A subsequent report from the UN's climate science advisory panel, the IPCC, left no doubt that 1.5C was the safer threshold.

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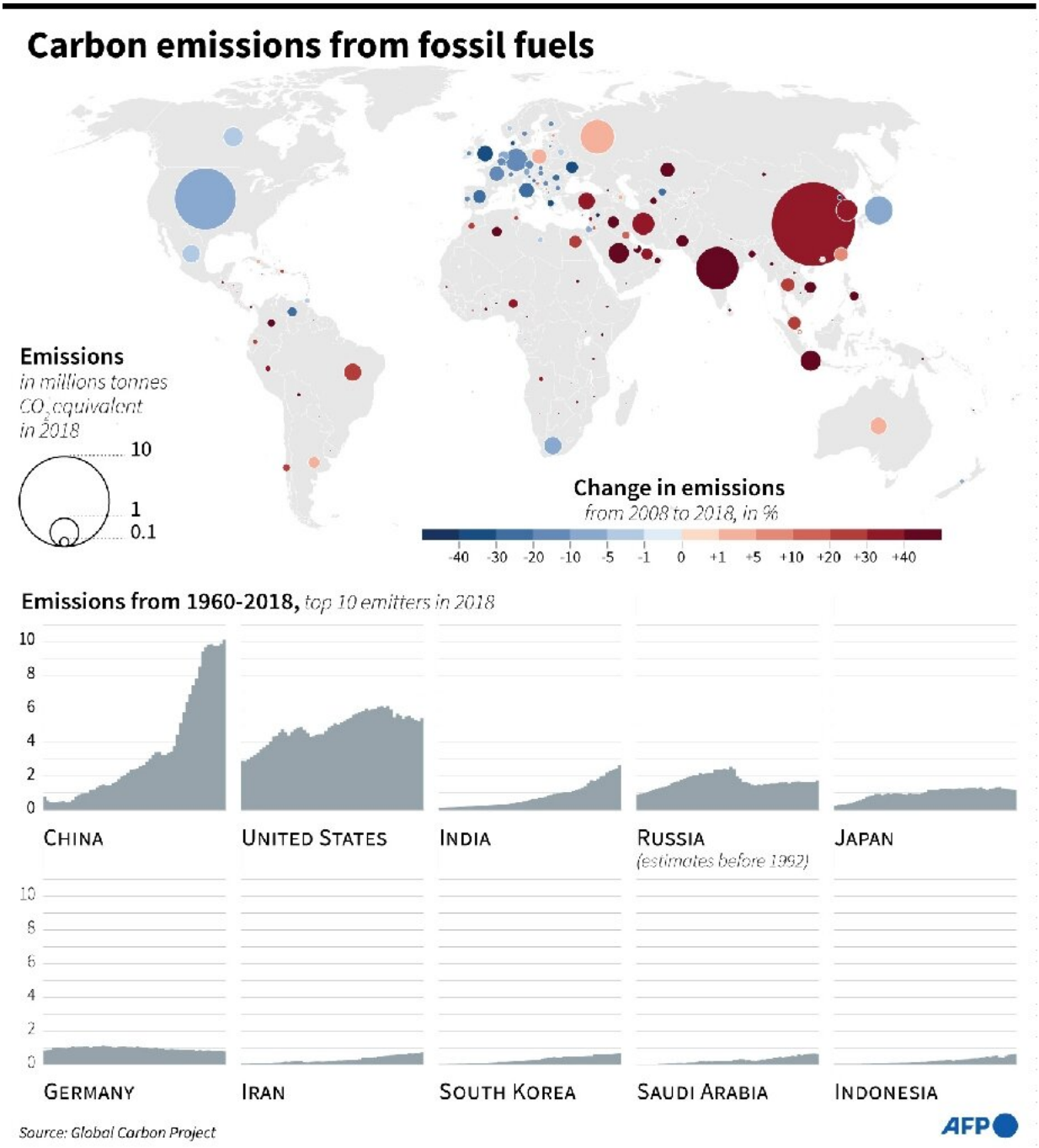
2020 witnessed a record number, for example, of hurricanes in the Atlantic—so many that the World Meteorological Organization (WMO) ran out of letters in the alphabet to name them.

'Shut off the tap'

Some regions last year experienced warming well beyond the global average, according the Copernicus report, based largely on satellite data.



Global carbon emissions in 2018, 10-year change and emissions since 1960 for the top 10 emitters

Europe's average surface temperature across 2020 was a searing 2.2C over the pre-industrial benchmark—and nearly half a degree above 2019, the previous record year.

Warming in the Arctic region was even more spectacular, with northern Siberia and parts of the Arctic itself nearly 7C above mid-19th century levels.

Wildfires across Siberia lasting well into the autumn released a record quarter billion tonnes of carbon dioxide into the atmosphere, equivalent to the annual emissions of Spain, Egypt or Vietnam, and a third more than in 2019, the previous record year.

CO2 levels in Earth's atmosphere peaked at 413 parts per million, nearly 50 percent more than in the early 18th century, before fossil fuel burning began to load the skies with heat-trapping greenhouse gases, C3S reported.

These unprecedented levels were reached despite a seven percent drop in emissions due to pandemic lockdowns.

"Since CO2 accumulates in the atmosphere like water in a bathtub, if we turn down the tap by seven percent, the CO2 level just rises a bit more slowly," Stefan Rahmstorf, head of Earth system analysis at the Potsdam Institute for Climate Impact Research, told AFP.

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"We need to shut off the tap to get a stable climate again."

Global emissions were on a steady upward trend through 2019, and it remains unclear whether humanity will return to "business as usual" or begin to ratchet down carbon pollution quickly enough to avoid catastrophic climate impacts.

Even if all nations fullfil pledges submitted in annex to the 2015 Paris Agreement, the planet would still heat up more than 3C by century's end.

"The world has been warming at a steady rate of around 0.2C per decade since the 1970s due to human emissions of CO2 and other greenhouse gases," noted Hausfather.

"If we continue at our current rate we will pass 1.5C in the mid-2030s."