



Pollution from a factory. (photo: Reuters)

The United Nations Is Sounding the Alarm About Seriously High Levels of Carbon Dioxide

By Natasha Geiling, ThinkProgress, 31 October 17

Atmospheric levels of carbon dioxide hit a record high in 2016.

Levels of atmospheric carbon dioxide — a greenhouse gas responsible for climate change — grew at a record rate in 2016, reaching levels not seen in millions of years, according to a report [released by the United Nations](#) on Monday.

According to the report, average levels of carbon dioxide in the Earth's atmosphere reached 403.3 parts per million in 2016, meaning that for every million gas molecules in the atmosphere, about 403 of them are carbon dioxide. At the beginning of the Industrial Revolution in the late 1800s, by contrast, atmospheric levels were around [278 parts per million](#). The report found that the record-high levels were likely caused by a combination of human activity, like the burning of fossil fuels, and a strong El Niño event.

The last time Earth experienced similar concentrations of carbon dioxide, according to the report, was three to five million years ago. During that time, sea level was some 66 feet higher than it is now.

The rapid rise in atmospheric carbon dioxide — which has increased 42 percent from preindustrial levels — raises serious concerns about climate change, since carbon dioxide is the primary heat-

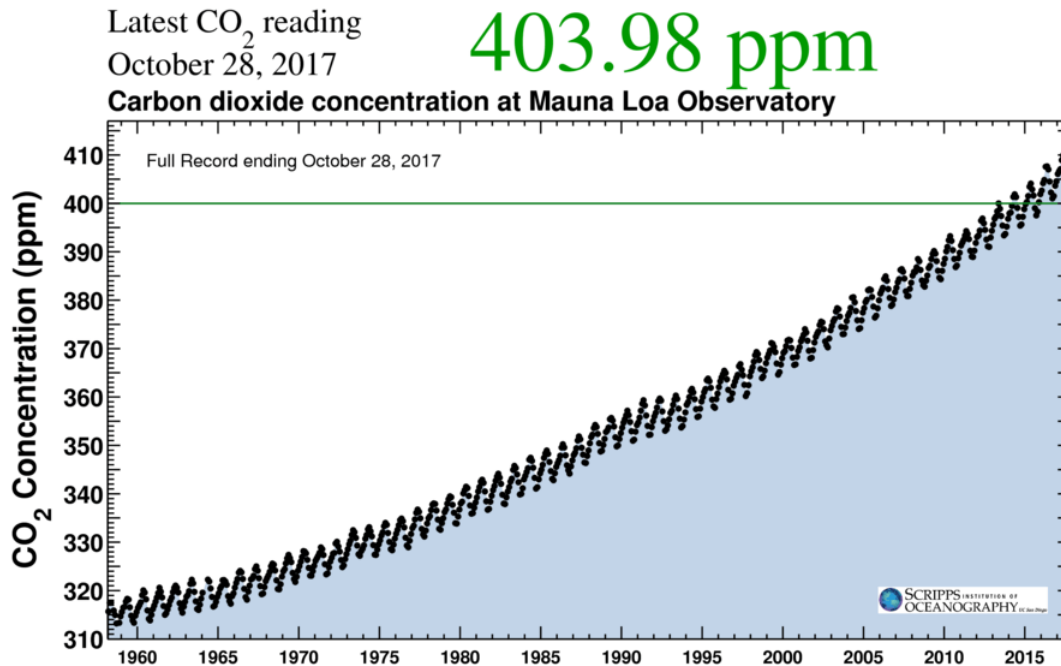
trapping gas released by human activity. The report comes just as nations from around the world are set to meet in Bonn, Germany, for the 23rd annual United Nations Framework Convention on Climate Change (UNFCCC). The United States will be [represented at the conference](#) despite President Donald Trump's [pledge](#) to remove the United States from the Paris climate agreement, an international agreement signed by nearly every nation on Earth in 2015 that seeks to limit global warming to well below 2 degrees Celsius.

“Without rapid cuts in CO2 and other greenhouse gas emissions, we will be heading for dangerous temperature increases by the end of this century, well above the target set by the Paris climate change agreement,” World Meteorological Organization chief Petteri Taalas said in a statement.

In 2015, the National Oceanic and Atmospheric Administration (NOAA) measured carbon dioxide levels above 400 parts per million [for an entire month](#) for the first time since the agency began making measurements. Both NOAA and the Scripps Institution of Oceanography measure atmospheric carbon dioxide levels at numerous sites around the world, from the top of

Hawaii's [Mauna Loa](#) volcano to the [South Pole](#). Since 1958, both institutions have taken continuous measurements, leading to the creation of the [Keeling Curve](#), named after Charles Keeling, the scientist who invented the method for measuring

atmospheric carbon dioxide still used today. That curve shows the steep increase in measured atmospheric carbon dioxide since the 1950s, and has been called “an icon of modern science.”



Since 2015, several more noticeable carbon dioxide thresholds have been passed, including [permanently passing the 400 parts per million milestone](#), and reaching levels of [410 parts per million](#). And while these thresholds are more symbolic milestones than any kind of immediate climate trigger — meaning that passing 400 parts per million doesn't immediately lead to warmer temperatures or higher sea level rise — the numbers are nonetheless a stunning example of just how much human activity has impacted the planet in the last century.

“As a scientist, the difference between 399 ppm vs. 401 ppm is negligible,” Katharine Hayhoe, atmospheric scientist at Texas Tech University, [said](#) when the 400 parts per million threshold was permanently crossed. “As a human, though, passing both the 400 ppm and (potentially) the 1°C threshold within such a short time period makes it clear we are already living in a different world. We have blown past targets that were being

considered as viable when I entered graduate school. We have significantly reduced the options available to us in the future.”

But with the Trump administration pushing ahead on a suite of deregulatory agenda items — including withdrawing from the Paris climate agreement as well as repealing Obama-era greenhouse gas regulations on power plants and fossil fuel producers — today's record-breaking carbon dioxide levels might not remain atop the charts for long.

“The numbers don't lie. We are still emitting far too much and this needs to be reversed,” the head of UN Environment Erik Solheim [said in a statement](#). “What we need now is global political will and a new sense of urgency.”