

2015 smashes record for hottest year, final figures confirm

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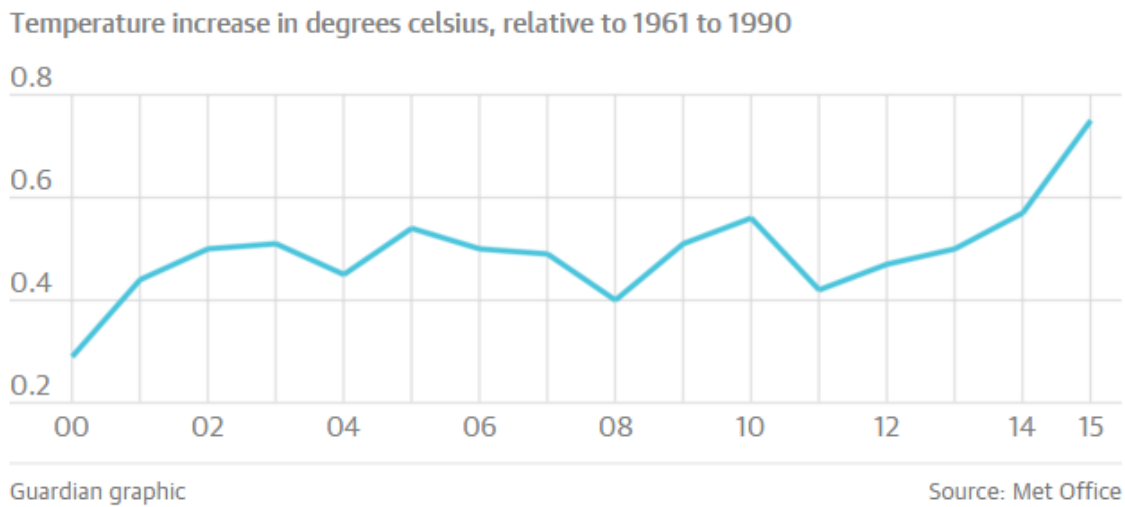
Experts warn that global warming is tipping climate into 'uncharted territory', as Met Office, Nasa and Noaa data all confirm record global temperatures for second year running

2015 smashed the record for the hottest year since reporting began in 1850, according to the first full-year figures from the world's three principal temperature estimates.

Data released on Wednesday by the UK Met Office shows the average global temperature in 2015 was 0.75C higher than the long-term average between 1961 and 1990, much higher than the 0.57C in 2014, which itself was a record. The Met Office also expects 2016 to set a new record, meaning the global temperature records will have been broken for three years running.

Temperature data released in the US on Wednesday by Nasa and by the National Oceanic and Atmospheric Administration (Noaa) also showed 2015 shattered previous records.

2015: the warmest year on record globally



Experts warned that the record-breaking heat shows global warming is driving the world's climate into "uncharted territory" and that it showed the urgency of implementing the carbon-cutting pledges made by the world's governments in Paris in December.

Heatwaves have scorched China, Russia, Australia, the Middle East and parts of South America in the last two years, while climate change made the UK's record December rainfall, which caused devastating floods, 50-75% more likely.

The Paris agreement commits the world's nations to limit warming to below 2C compared to pre-industrial times, or 1.5C if possible, to avoid widespread and dangerous impacts. But the Met Office data, when compared to global temperatures before fossil fuel burning took off, shows that 2015 was already 1C higher.

A strong El Niño event is peaking at the moment, putting the "icing on the cake" of high global temperatures. El Niño is a natural cycle of warming in the Pacific Ocean which has a global impact on weather. But scientists are clear that the vast majority of the warming seen in 2015 was due to the emissions from human activity.

"Even without an El Niño, this would have been the warmest year on record," said Prof Gavin Schmidt, director at Nasa's Goddard Institute for Space Studies. He said

he expected the long trend of rising global temperatures to continue because its principal cause – fossil fuel burning – was also continuing.

“It is clear that human influence is driving our climate into uncharted territory,” said Prof Phil Jones, from the University of East Anglia’s Climatic Research Unit, which produces the temperature record – called HadCRUT4 – with the Met Office. Peter Stott, at the Met Office’s Hadley Centre, said 2015 was the first year global average temperature was more than 1C above pre-industrial levels.

Noaa’s global temperature records stretch back to 1880 and it also found 2015 was the hottest year yet, beating the previous high by a record margin. The agency also found December was warmer than any other month in the record, when compared to long-term averages. Ten of the 12 months in 2015 had record high temperatures for their respective months, according to Noaa.

Nasa’s new data for 2015 also shattered its previous record and showed 15 of the 16 warmest years on record have occurred since 2001.

“Climate change is the challenge of our generation,” said Nasa head Charles Bolden. “Today’s announcement is a key data point that should make policymakers stand up and take notice - now is the time to act.”

The Nasa, Noaa and HadCRUT4 temperature records all use independent methods to calculate the global average. They use many thousands of temperature measurements taken across the globe, on land and at sea, each day.

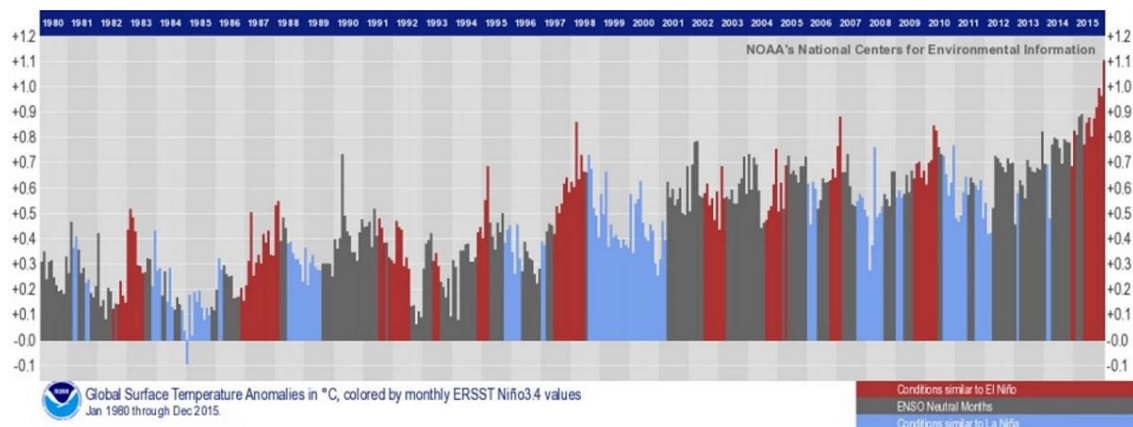
There are uncertainties in the measurements, partly due to fewer measurements in the polar regions, and these are included in the calculations. Stott said: “Remaining uncertainties are clearly much smaller than the overall warming seen since pre-industrial times.” Another independent temperature record, from the Japan Meteorological Agency, indicates 2015 was by far the hottest year on record.

Bob Ward, at the Grantham Research Institute on Climate Change at the London School of Economics, said: “This [record heat] should put pressure on governments

to urgently implement their commitments to act against climate change, and to increase their planned cuts of greenhouse gases. The warming is already affecting the climate around the world, including dangerous shifts in extreme weather events. Those who claim that climate change is either not happening, or is not dangerous, have been conclusively proven wrong by the meteorological evidence around the world.”

Despite constantly rising greenhouse gas emissions trapping ever more heat on Earth, the last decade has seen relatively slow warming of air temperatures, dubbed a “pause” in climate change by some. In fact, global warming had not paused at all. Instead, natural climate cycles led to more of the trapped heat being stored in the oceans (which already absorbed most the heat), some of which El Niño is now releasing. Scientists usually assess changes in climate over decades, rather than years, and the each of the last four decades has been warmer than any decade on record before.

“It’s the long term warming trend we need to worry about rather than one hot year,” said Prof Piers Forster, at the University of Leeds in the UK. “So we shouldn’t get too excited - but it is certainly a sign of things to come.”



Sumber :

<http://www.theguardian.com/environment/2016/jan/20/2015-smashes-record-for-hottest-year-final-figures-confirm>