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## Scientists more convinced mankind is main cause of warming

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By [Alister Doyle](#) and [Simon Johnson](#)

STOCKHOLM (Reuters) - Leading climate scientists said on Friday they were more convinced than ever that humans are the main culprits for global warming, and predicted the impact from greenhouse gas emissions could linger for centuries.

The Intergovernmental Panel on Climate Change (IPCC) said in a report that a hiatus in warming this century, when temperatures have risen more slowly despite growing emissions, was a natural variation that would not last.

It said the Earth was set for more heatwaves, floods, droughts and rising sea levels from melting ice sheets that could swamp coasts and low-lying islands as greenhouse gases built up in the atmosphere.

The study, meant to guide governments in shifting towards greener energies, said it was "extremely likely", with a probability of at least 95 percent, that human activities were the dominant cause of warming since the mid-20th century.

That was an increase from "very likely", or 90 percent, in the last report in 2007 and "likely", 66 percent, in 2001.

U.N. Secretary-General Ban Ki-moon said the study was a call for governments, many of which have been focused on spurring weak economies rather than fighting climate change, to work to reach a planned U.N. accord in 2015 to combat global warming.

"The heat is on. Now we must act," he said of the report agreed in Stockholm after a week of talks between scientists and delegates from more than 110 nations.

U.S. Secretary of State John Kerry said the report was a wake-up call. "Those who deny the science or choose excuses over action are playing with fire," he said, referring to skeptics who question the need for urgent action.

They have become emboldened by the fact that temperatures rose more slowly over the last 15 years despite increasing greenhouse gas emissions, especially in emerging nations led by China. Almost all climate models failed to predict the slowing.

### "LOOKING FOR THE CURE"

European Climate Commissioner Connie Hedegaard said it was time to treat the Earth's health. "If your doctor was 95 percent sure you had a serious disease, you would immediately start looking for the cure," she said.

Compiled from the work of hundreds of scientists, the report faces extra scrutiny this year after its 2007 edition included an error that exaggerated the rate of melting of Himalayan glaciers. An outside review later found that the mistake did not affect its main conclusions.

The IPCC said some effects of warming would last far beyond current lifetimes.

Sea levels could rise by 3 meters (9 feet, 10 inches) under some scenarios by 2300 as ice melted and heat made water in the deep oceans expand, it said. About 15 to 40 percent of emitted carbon dioxide would stay in the atmosphere for more than 1,000 years.

"As a result of our past, present and expected future emissions of carbon dioxide, we are committed to climate change and effects will persist for many centuries even if emissions of carbon dioxide stop," said Thomas Stocker, co-chair of the talks.



The IPCC said humanity had emitted about 530 billion tons of carbon, more than half the 1 trillion ton budget it estimated as a maximum to keep warming to manageable limits. Annual emissions are now almost 10 billion tons and rising.

Explaining a recent slower pace of warming, the report said the past 15-year period was skewed by the fact that 1998 was an extremely warm year with an El Nino event - a warming of the ocean surface - in the Pacific.

It said warming had slowed "in roughly equal measure" because of random variations in the climate and the impact of factors such as volcanic eruptions, when ash dims sunshine, and a cyclical decline in the sun's output.

Rajendra Pachauri, chair of the IPCC, told Reuters the reduction in warming would have to last far longer - "three or four decades" - to be a sign of a new trend.

And the report predicted that the reduction in warming would not last, saying temperatures from 2016-35 were likely to be 0.3-0.7 degree Celsius (0.5 to 1.3 Fahrenheit) warmer than in 1986-2005.

Still, the report said the climate was slightly less sensitive than estimated to warming from carbon dioxide.

A doubling of carbon in the atmosphere would raise temperatures by between 1.5 and 4.5 degrees Celsius (2.7 to 8.1F), it said, below the 2-4.5 (3.6-8.1F) range in the 2007 report. The new range is identical to the ranges in IPCC studies before 2007.

The report said temperatures were likely to rise by between 0.3 and 4.8 degrees Celsius (0.5 to 8.6 Fahrenheit) by the late 21st century. The low end of the range would only be achieved if governments sharply cut greenhouse gas emissions.

And it said world sea levels could rise by between 26 and 82 cm (10 to 32 inches) by the late 21st century, in a threat to coastal cities from Shanghai to San Francisco.

That range is above the 18-59 cm estimated in 2007, which did not take full account of Antarctica and Greenland.

Bjorn Lomborg, author of "The Skeptical Environmentalist" said "the IPCC's moderate projections clearly contradict alarmist rhetoric" of higher temperature and sea level rises by some activists.

(Additional reporting by Nina Chestney in London, Barbara Lewis in Brussels, Valerie Volcovici in Washington; editing by Alistair Scrutton and Mark Trevelyan)

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