

Climate Change 2007: The Physical Science Basis

Excerpts from the Summary for Policymakers

- a. Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years. The global increases in carbon dioxide concentration are due primarily to fossil fuel use and land-use change, while those of methane and nitrous oxide are primarily due to agriculture.
- b. The understanding of anthropogenic warming and cooling influences on climate has improved since the Third Assessment Report (TAR), leading to very high confidence that the globally averaged net effect of human activities since 1750 has been one of warming.
- c. Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.
- d. At continental, regional, and ocean basin scales, numerous long-term changes in climate have been observed. These include changes in Arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, wind patterns and aspects of extreme weather including droughts, heavy precipitation, heat waves and the intensity of tropical cyclones.
- e. Paleoclimate information supports the interpretation that the warmth of the last half century is unusual in at least the previous 1300 years. The last time the polar regions were significantly warmer than present for an extended period (about 125,000 years ago), reductions in polar ice volume led to 4 to 6 metres of sea level rise.
- f. Most of the observed increase in globally averaged temperatures since the mid-20th century is very likely¹ due to the observed increase in anthropogenic greenhouse gas concentrations. This is an advance since the TAR's conclusion that "most of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations". Discernible human influences now extend to other aspects of climate, including ocean warming, continental-average temperatures, temperature extremes and wind patterns.
- g. Continued greenhouse gas emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century.
- h. Anthropogenic warming and sea level rise would continue for centuries due to the timescales associated with climate processes and feedbacks, even if greenhouse gas concentrations were to be stabilized.

¹ In this **Summary for Policymakers**, the following terms have been used to indicate the assessed likelihood, using expert judgement, of an outcome or a result: *Virtually certain* > 99% probability of occurrence, *Extremely likely* > 95%, *Very likely* > 90%, *Likely* > 66%, *More likely than not* > 50%, *Unlikely* < 33%, *Very unlikely* < 10%, *Extremely unlikely* < 5%.

Intergovernmental Panel on Climate Change

FOR MORE INFORMATION: <http://www.ipccfacts.org/>

Quotations on ExxonMobil disinformation

"A new report from the Union of Concerned Scientists offers the most comprehensive documentation to date of how ExxonMobil has adopted the tobacco industry's disinformation tactics, as well as some of the same organizations and personnel, to cloud the scientific understanding of climate change and delay action on the issue. According to the report, ExxonMobil has funneled nearly \$16 million between 1998 and 2005 to a network of 43 advocacy organizations that seek to confuse the public on global warming science." (Union of Concerned Scientists, 2007)

"In a speech at a major industry gathering, [CEO of ExxonMobil] Mr. Tillerson acknowledged that the planet was warming while carbon dioxide levels were increasing, suggesting a more accommodating position than the hard-nosed stance Exxon had held." (Krauss and Mouawad, 2007)

A LIST OF ORGANIZATIONS FUNDED BY EXXON MOBIL CORPORATION:

<http://www.exxonsecrets.org/html/listorganizations.php>

Works cited

Clifford Krauss and Jad Mouawad (2007). *February 14, 2007 Exxon Chief Cautions Against Rapid Action to Cut Carbon Emissions*. Retrieved March 6, 2007 from The New York Times: <http://www.nytimes.com/2007/02/14/business/14exxon.html?ex=1173330000&en=dd929deceda02a78&ei=5070>

Intergovernmental Panel on Climate Change (2007). *February 2, 2007 Climate Change 2007: The Physical Science Basis - Summary of Policy Makers*. Retrieved March 6, 2007 from Intergovernmental Panel on Climate Change: <http://www.ipcc.ch/SPM2feb07.pdf>

Union of Concerned Scientists (2007). *January 3, 2007 Scientists' Report Documents ExxonMobil's Tobacco-like Disinformation Campaign on Global Warming Science*. Retrieved March 6, 2007 from Union of Concerned Scientists: http://www.ucsusa.org/news/press_release/ExxonMobil-GlobalWarming-tobacco.html