

# Frequently Asked Questions About Climate Change



All data from Intergovernmental Panel on Climate Change, 4<sup>th</sup> Assessment Report, 2007.  
To read the full reports or summaries please visit [www.ipcc.ch](http://www.ipcc.ch) (menu bar on right side).

## **Q: What does the 4<sup>th</sup> IPCC Assessment Report say about climate change?**

A: There is now conclusive scientific evidence that climate change is a real event, and that human activities over the last two-hundred and fifty years are the ultimate cause.

## **Q: What is the IPCC Report**

A: It is the product of a global network of thousands of the most prominent climate scientists from hundreds of countries who analyze and summarize all the new climate related research that has been published in the past six years. It is the most comprehensive examination of climate related science on the planet.

## **Q: Why should we trust the IPCC?**

A: Just the same as medical doctors, the climate scientists that participate in the IPCC are life-long professionals who do their jobs with as little bias as possible (no one is completely unbiased). If a similar sized group of physicians compiled a similar amount of data related to human health, their conclusions would receive serious attention.

## **Q: How much information was considered for the 2007 report?**

A: The 2007 report examined more than 29,000 data sets.

## **Q: All of the data couldn't have supported the conclusion that human activities are responsible for climate change. I read about a study that showed \_\_\_\_\_?**

A: In science there is never complete consensus, sometimes due to how the study was conducted, and sometimes due to real differences. Of the 29,000 data sets, there was 90% concurrence that climate change is a reality, and that human activities are responsible. 90% concurrence in peer-reviewed science is a good indication that it is extremely unlikely that there is an alternate explanation.

## **Q: How much has the earth warmed already as a result of human activities?**

A: The global average temperature increased 1.4 °F between 1900 and 2005. This is the period for which thermometers have been in use around the world.

## **Q: How do we know this warming is not just natural fluctuations, or the result of volcanoes or solar flares?**

A: Mathematical models, very similar to those regularly used in business to make profit estimations, are created that incorporate a number of different factors. The models that include natural events as well as human activities are the ones that most closely line up with the changes in temperatures that have been observed. The models that only include natural fluctuations and events don't explain what we've already seen happening with average global temperatures.

**Q: How are the future temperature predictions made?**

A: Once a model has been found that accurately matches the temperature changes that have already been observed, that model can be used to make projections into the future. If everything stays the same as it was, the model will most likely be correct. However, we know that almost nothing stays the same, so several similar (but different) models are being used to generate a range of predictions.

**Q: How hot will the average global temperature get?**

A: The most recent models predict average global temperature will increase 4-12 °F by 2100. The US is projected to be 30% hotter than the global average, and this will definitely affect weather patterns (e.g. drought, heat waves) in the Southeastern US.

**Q: What are the possible repercussions of rising average temperatures?**

A:

- Global sea level rise of 7-23 inches caused by melting land-based ice and ocean warming
- Increased variability in weather, stronger hurricanes (effects on storm frequency unclear)
- Disruption of ecosystem services (fresh water availability, air and water purification)
- Decline of agricultural and forestry production in Southeastern US due to drought and heat
- Shifts in temperature sensitive industries (e.g. cheese, wine) and growing regions
- Expansion of pest species (like mosquitoes) and any associated diseases
- An increase of 4.5 °F is predicted to place 30% of plant and animal species at increased risk of extinction. Any of these could be important for pollinating crops, be sources for new drugs, help keep pests under control, or even be food for humans.

**Q: What do we need to do to keep this from happening?**

A:

- Keep temperature increase within 3.6 °F
- Requires an 80-85% reduction in CO<sub>2</sub> emissions from 2000 levels by 2050
- Total carbon emissions must begin to decline by 2015

**Q: Is the solution just a matter of inventing new technology?**

A: This IPCC report highlights that technological advances alone will not be sufficient, people will be required to change the way they live. However, this doesn't necessarily mean giving up our current way of life. People will need to do things a bit differently, but often in ways that will actually increase quality of life.

**Q: Won't it cost too much to do anything and crash the global economy?**

A: The IPCC estimate is that it will only cost 3% of global GDP (gross domestic product). This amount is equal to the average growth in global GDP for the last fifteen years (from World Bank). In other words, it would take just the extra growth in global GDP from one year to keep climate change from reaching truly problematic levels. However, the costs will not be distributed evenly across the globe though. There will need to be a system to balance out these costs.

**Q: Won't businesses suffer or go bankrupt because of restrictions?**

A: Many businesses are already operating on the assumption that some form of greenhouse gas emission limits will be implemented in the near future. DuPont, a 205 year-old US chemical company, is one of these. Between 2000 and 2004 the company reduced their greenhouse gas emissions by 72%, and saved over \$3 billion in the process. DuPont's energy use is now 6% lower than it was in 1990. Doing business more efficiently is a competitive advantage, not a hindrance.