

FREQUENTLY ASKED QUESTIONS ABOUT GLOBAL WARMING SCIENCE

QUESTION: How do we know that global warming is real?

ANSWER: Because we know that the Earth's mean (averaged) global surface temperature has risen much more abruptly over the past three decades than in the last thousand years. This is based upon reliable observations analyzed and reconfirmed by a very large climate science community.

QUESTION: Why do most scientists clearly think that man made greenhouse gases led by carbon dioxide are the main cause of global warming and climate change?

ANSWER: Because it is known that the greenhouse effect produces global warming, and no other proposed mechanism that has been investigated scientifically has proved effective; indeed most of the others have been eliminated by now. In addition, the best Global Climate Models have recently exhibited real (before the fact) predictive power in their prediction of trends in the mean global surface temperature.

QUESTION: How do we know that global warming is the culprit in well documented, and largely harmful, climate change?

ANSWER: Because temperature is known to be the critical climate parameter, and the Earth's energy budget is out of balance; in other words, science has definitely established that Earth is receiving more energy from the Sun than Earth is radiating away into space. Simple thermodynamics tells us that the Earth is going to heat up under these conditions, since temperature is defined as the parameter that measures the energy (heat) content of a physical system.

QUESTION: In light of this science, why would any scientifically educated person seek to argue that "global warming is a hoax," or that "human activity (i.e., greenhouse gases) has little to do with global warming."

ANSWER: The motives vary with the individual. Starting with a small number of competent scientists who still hold out for a "contrarian" position, they may be trying to protect a reputation made at an earlier date when the science was less well known. Others, including lobbyists who generally know less science but are well paid and well connected, may be working for interests that fear financial loss if corrective action is taken. Ordinary workers are vulnerable to transparent propaganda to do nothing, because they have been told that expensive action will cause them to lose their jobs. It is true that the changes associated with corrective action will produce a few "losers" along with many "winners." Consideration of technological capabilities and possibilities, as well as economic impacts, should be included in the search for proper corrective actions. However, the scientific community is becoming increasingly fed up with efforts to distort

science in the service of other agendas, and it should be. It would be good to see that community aroused a bit more.

FINAL QUESTION: You make two strong statements in the previous answer, one about "propaganda" and the other about "efforts to distort science." Don't you think those statements are too strong and a little impolite?

ANSWER: No. Let's discuss propaganda, because by addressing that, it also gives the answer to the comment about "other agendas." In 1962, French author Jacques Ellul noted that propaganda is the effort to influence people's thinking without their being aware of it. We see related efforts in our own country today in certain sophisticated forms of marketing. They are very effective. Recently a large slick volume was published by The Heartland Institute, and distributed in all Congressional offices with the clear intent to block energy legislation addressing global warming. The title of this book, created to look like the IPCC-2007 The Physical Science Basis, is Reconsidering Climate Science. Anyone familiar with propaganda is encouraged to examine this report accordingly.

– Stuart Jordan