

Global Warming – Questions and Answers

What is the nature of the scientific predictions?

The true scientists are sceptics – always prepared to admit that they do not know for certain. The scientific approach entails collecting evidence and applying logical reasoning to the collected evidence. Scientific predictions are not absolute statements of certainty. They are always tempered by the statement, “in the present state of knowledge” There is always some possibility that something unexpected may turn up. Instead predictions are given in the form of probabilities. Thus it is virtually certain – there is a very high probability – that the Sun will rise tomorrow (within the ordinary meaning). These probabilities are based on how well the subject is understood and on what evidence has been observed (what has happened before).

How does this apply to Global Warming?

A huge amount of research has been going on in the last 30 years and is continuing today and although the subject is complex it is becoming better understood all the time. Further there are lots of measurements being taken, which indicate what is happening. So the predictions that are being made have quite high levels of confidence, e.g. when predicting future trends the scientists can say things like:- we are very confident (99% or more), that whatever we do the temperature will rise by a further 0.5 °C (because of the GHGs already put into the atmosphere:- we are quite confident say 90% that the temperature will rise by a further 1 °C. We believe that it is more likely than not that the temperature will rise by a further 1.3°C.

Do we know that the Predictions about Global Warming are true?

So the scientific predictions about Global Warming are not certain. There is always some possibility that something unexpected may come along to change things. In the case of Global Warming the probabilities of the various predictions varies. Some things have a high probability (greater than 90%) some are more probable than not – more than 50%. etc. However it is rather like the predictions concerning surviving and/or benefiting from an operation. Few people would go for a cosmetic operation if they were told that the chance of dying was 90%. In the same kind of way the scientists are telling us that without big changes the chances of an environmental catastrophe are very likely. If we had any sense we would act on their warnings.

It has been Warmer in the Past – so what is there to worry about?

The first thing to say about this comment is to point out that it is the same science and scientists who present the evidence that it has been warmer in the past who tell us that there is something to worry about. The difference between what is happening now and what happened in the past is that the evidence indicates that our emissions of GHGs are causing the temperature to rise much faster than it has in the past. This does not give the eco-systems time to adjust to the changing conditions so that all kinds of catastrophic things are likely to happen. Species will become extinct at an even faster rate than at present, food production in some parts of the world will fall, water in some places will become scarce, etc.

Global Warming is caused by Volcanoes, Sun cycles etc.?

People frequently come up with their own pet explanation for Global Warming and deny that it is due to GHGs. One can only say that while many of these things can

and do have some effect on the temperature of the planet. Most have been investigated by scientists during this period of research and have been found to have far too little effect to be the main responsible agents for what we see. In addition the science of the absorption of radiation by GHGs has been well established in laboratory experiments for many years and those who deny its contribution have to explain why these extensively investigated and well understood phenomena should not produce Global Warming.

There is Very Little Carbon Dioxide in the Atmosphere. Surely its not important?

You don't need much Botulinium toxin to kill you! (about 1 millionth of a gram for the average person).