



# THE WOODS HOLE RESEARCH CENTER

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## Underrating Climate Disruption

*On Monday, October 6th, 1997, the President Clinton and Vice President Gore hosted the "White House Conference on Climate Change: The Challenge of Global Warming" at Georgetown University. Among those speaking at the conference was Dr. John P. Holdren, Visiting Distinguished Scientist at The Woods Hole Research Center. Dr. Holdren, then head of PCAST (The President's Committee of Advisors on Science and Technology) was also one of seven prominent scientists invited to the White House in July to discuss issues of climate change science with the President and Vice President. Dr. Holdren's statement made at that meeting appears below.*

I think, Mr. President, Mr. Vice President, there are at least six reasons why most people underrate the seriousness of the climate disruption problem. I think the first reason that people tend to underrate this problem is that human well-being is a lot more dependent on climate than most people think. As you heard today, we're talking about the productivity of farms and forests and fisheries. We're talking about the frequency and intensity of floods and droughts and heat waves. We're talking about the geographic pattern of disease. We're talking about sea level rise and associated destruction of coastal property. And we're talking about the potential for political tension and conflict over the consequences and over who's responsible and who should pay.

The second reason people tend to underrate this problem is that climate disruption is a lot further along than most people think. As we've seen, atmospheric carbon dioxide is already higher than it's been in the last 160,000 years. The global surface temperature, which is expected to lag behind increasing carbon dioxide concentration, is higher than it's been in the last thousand years.

The third reason that many people are more complacent than they should be is that the climate implications of future growth in population and future growth in energy consumption are a lot bigger than most people think. We're going to have in the year 2050, barring near disaster, something like 9 billion people compared to less than 6 billion today. We're going to have energy use under "business as usual" that will be three times higher than today's and CO2 emissions that are 2 to 2H times today's worldwide.

The fourth point is that scientific uncertainties are not grounds for complacency, in spite of what many people may think. There are uncertainties about many of the details of timing and magnitude and regional variation in the consequences of climate change, but there is no uncertainty at all that humans have significantly altered the global atmospheric concentrations of gases we know to be critical in controlling climate. And there's a solid consensus among the scientists who have studied these matters seriously that the chances of significant impacts on human well being from climate change over the next few decades are substantial.

The fifth reason that people underrate the problem is that the time lags between cause and effect and between effect and remedy are longer than most people think. Those time lags and above all the several decades that it will take to substantially success fully transform the world's fossil fuel-dependent energy supply system mean that doing nothing is a very dangerous course of action. The world's energy-economic system is a lot like a supertanker, very hard to steer and with very bad brakes, and we know from the science that has been reviewed here today that that supertanker is heading



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for a reef. Even though we can't say exactly when we're going to get to the point where that reef rips the bottom out of the supertanker, it's a bad idea in these circumstances to keep on a course of full speed ahead.

The last reason that people tend to underrate this problem is because the fate of industrialized and less developed countries is a lot more interconnected than most people think. We all live on this planet under one atmosphere. We all live on the shores of one global ocean. Our countries are linked by flows of people, money, goods, ideas, images, drugs, and weapons. If we in the industrialized countries are to enjoy a stable and sustainable prosperity, we are only going to be able to manage that if we can achieve for the rest of the world now less fortunate a stable and sustainable prosperity as well. And the only way to do that is going to include addressing the danger of global climate disruption in a cooperative way.