



ENERGY NEWS

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Florida would do well to heed AGU's call

by Robert Farmer, ©1999

On January 28th, The American Geophysical Union announced that it had adopted a position statement on "Global Climate Change and Greenhouse Gases". The entire statement follows, but concludes: "AGU recommends the development and evaluation of strategies such as emissions reduction, carbon sequestration, and adaptation to the impacts of climate change. AGU believes that the present level of scientific uncertainty does not justify inaction in the mitigation of human-induced climate change and/or the adaptation to it."

The significance of this position statement should not be underestimated. The AGU is an international scientific society with over 35,000 members "dedicated to advancing the understanding of Earth and its environment in space" and "is the premier scientific organization that incorporates all of the disciplines engaged in research to understand the climate system".

As most readers know, the Intergovernmental Panel on Climate Change's risk assessment for climate change impacts on South Florida is not good. And the AGU's recommendations are definitely not good news for us. Just think about them for a moment. Imagine the lead times involved, not only in strategy planning, but actually implementing the plan. The next thing

you know, we'll be using sand bags to protect oceanfront property from sea-level rise.

It seems wise for Florida to begin developing state and regional policy responses to the AGU's recommendations. The debate has progressed quickly from the scientific to the political, and now to pragmatism based on the AGU's recommendations. We should heed their advice. It may be time, in the well-known words of hurricane advisories, to "begin preparations without further delay".

AMERICAN GEOPHYSICAL UNION
CLIMATE CHANGE & GREENHOUSE GASES
POSITION STATEMENT

"Atmospheric concentrations of carbon dioxide and other greenhouse gases have substantially increased as a consequence of fossil fuel combustion and other human activities. These elevated concentrations of greenhouse gases are predicted to persist in the atmosphere for times ranging to thousands of years. Increasing concentrations of carbon dioxide and other greenhouse gases affect the Earth-atmosphere energy balance, enhancing the natural greenhouse effect and thereby exerting a warming influence at the Earth's surface.

Although greenhouse gas concentrations and their climatic influences are projected to increase, the detailed response of the system is uncertain. Principal sources of this uncertainty are the climate system's inherent

complexity and natural variability. The increase in global mean surface temperatures over the past 150 years appears to be unusual in the context of the last few centuries, but it is not clearly outside the range of climate variability of the last few thousand years. The geologic record of the more distant past provides evidence of larger climate variations associated with changes in atmospheric carbon dioxide. These changes appear to be consistent with present understanding of the radiative properties of carbon dioxide and of the influence of climate on the carbon cycle. There is no known geologic precedent for the transfer of carbon from the Earth's crust to atmospheric carbon dioxide, in quantities comparable to the burning of fossil fuels, without simultaneous changes in other parts of the carbon cycle and climate system. This close coupling between atmospheric carbon dioxide and climate suggests that a change in one would in all likelihood be accompanied by a change in the other.

Present understanding of the Earth climate system provides a compelling basis for legitimate public concern over future global- and regional-scale changes resulting from increased concentrations of greenhouse gases. These changes are predicted to include increases in global mean surface temperatures, increases in global mean rates of precipitation and evaporation, rising sea levels, and changes in the biosphere. Understanding of the fundamental processes responsible for global climate change has greatly improved over

Florida would do well to heed AGU's call (continued)

the past decade, and predictive capabilities are advancing. However, there are significant scientific uncertainties, for example, in predictions of local effects of climate change, occurrence of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. In view of the complexity of the Earth climate system, uncertainty in its description and in the prediction of changes will never be completely eliminated.

Because of these uncertainties, there is much public debate over the extent to which increased concentrations of greenhouse gases have caused or will cause climate change, and over potential actions to limit and/or respond to climate change. It is important that public debate take into account the extent of scientific knowledge and the uncertainties. Science cannot be the sole source of guidance on how society should respond to climate issues. Nonetheless, scientific understanding based on peer-reviewed research must be central to informed decision-making. AGU calls for an enhancement of research to improve the quantification of anthropogenic influences on climate. To this end, international programs of research are essential. AGU encourages scientists worldwide to participate in such programs and in scientific assessments and policy discussions.

The world may already be committed to some degree of human-caused climate change, and further buildup of greenhouse gas concentrations may be expected to cause further change. Some of these changes may be beneficial and others damaging for different parts of the world. However, the rapidity and uneven geographic distribution of these changes could be very disruptive. AGU recommends the development and evaluation of strategies such as emissions reduction, carbon sequestration, and adaptation to the impacts of climate change. AGU believes that the present level of scientific uncertainty does not justify inaction in the mitigation of human-induced climate change and/or the adaptation to it.”•



Robert Farmer is an energy planning engineer and energy policy specialist. A comprehensive resource on technologies, issues, and policies, he offers clients strategies, briefings, and presentations on planning a sustainable energy future.

His technical expertise includes large scale to small scale power generation, combined heat and power (CHP), marine and surface transportation, and alternative fuel applications.

A Florida resident since 1984, Robert was a member of the Energy Advisory Committee of Governor Chiles' Commission for a Sustainable South Florida.

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