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Experts Review New U.S. Climate Change Strategy

Plan seeks to resolve scientific uncertainties surrounding climate change

By Jim Fuller
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Washington - More than 1,300 climate scientists and experts met in Washington to discuss a new U.S. strategic plan to help clear up the scientific uncertainties surrounding climate change.

The Climate Change Science Program Planning Workshop held December 3-5 drew participants from the United States and more than 30 other countries to review a draft version of the U.S. climate change research strategy, which sets priorities for the nation's \$1,800-million annual multi-agency research program on climate change. The draft strategic plan, issued on November 11, was prepared by 13 federal agencies participating in the administration's Climate Change Science Program.

The strategic plan is intended as a vehicle to facilitate comments and suggestions by the scientific and stakeholder communities interested in climate and global change issues. U.S. Deputy Secretary of Commerce Sam Bodman told those attending the workshop that the goal is to build a focused science program to improve the information available to policy makers, and that this could not be done without constructive input from all concerned parties.

"We need to hear from all contributing federal agencies, from industry and environmental groups, and from the international research community -- as well as from governments around the world, states and local communities," Bodman said.

In addition to comments on the draft plan made at the workshop and during a subsequent public comment period extending to January 13, 2003, a newly-formed committee of the National Academy of Sciences' National Research Council is also reviewing the plan. A final version of the plan, which sets a path for the next several years of climate change research, is due to be published in April 2003.

President Bush last February set a national goal of reducing the nation's greenhouse gas intensity by 18 percent over the next 10 years while sustaining economic growth needed to finance investment in innovative clean energy technologies. The president also challenged industry to reduce its greenhouse gas emissions -- mainly carbon dioxide from the burning of fossil fuels -- which contribute to global warming.

The current strategic plan under review acknowledges that climate change is occurring and that the surface temperature of the Earth has warmed, rising 0.6 degrees Celsius over the past century. The plan also refers to a report issued last year by the National Academy of Sciences which, while indicating that human activity is a contributing factor to higher concentrations of greenhouse gases, says that scientific uncertainties concerning climate change still exist. U.S. officials say the goal of the plan is to map out a strategy by which these uncertainties can be cleared up or better understood.

U.S. Secretary of Commerce Donald Evans, in a column published in The Washington

Times prior to the start of the workshop, said that climate science as a universally accepted discipline is still in its infancy.

"We do not know the effect of natural fluctuations in climate on warming or adequately understand the natural carbon and water cycles," he said. "We do not yet adequately understand the role of clouds, oceans and aerosol emissions on global climate change. We cannot confidently project how our climate could or will change. We do not know definitely what constitutes a dangerous level of warming."

The strategic plan also points to inconsistencies in the scientific record. "Apparently contradicting the evidence of warming are inconsistencies in the observational record, particularly related to the differences between temperature trends measured at the surface and measurements taken from satellite observations of the lower and mid-troposphere, which show no significant warming trends in the last two decades of the 20th century," the plan says.

"Reconciling these differences and improving observational capabilities remains an important challenge with significant potential implications for decision making," it adds.

The new research strategy focuses on three broad tiers of activity: scientific inquiry that is objective and well-documented; observation and monitoring systems to provide needed, comprehensive global data; and development of decision-support resources, including the ability to explore various potential outcomes.

The strategic plan says one of the main research efforts should be directed at developing complex computer models that probe the influences of clouds, aerosols and air pollution on the Earth's climate. It says that while today's models are capable of simulating large-scale features of the climate, many significant uncertainties remain to be addressed. For example, it reports that current models project significantly different increases in the global average surface temperature, from approximately 1 degree Celsius during the 21st century to more than 5 degrees Celsius during the same period.

The plan says another challenge is discerning whether human activities are causing observed climatic changes and impacts, which requires detecting a small, decade-by-decade trend against the backdrop of wide temperature changes that occur on shorter timescales of seasons or years.

The report adds that even if the scientific community were to develop a "perfect" model of the global climate, it would not be possible to predict the level and rate of future changes in climate resulting from human activities -- such as energy-related emissions of greenhouse gases and deforestation -- because these activities are not predetermined but, rather, depend on human choices.

"While we cannot predict these conditions," the report adds, "we can use a different set of models to project the climatic and environmental consequences of different combinations of basic human driving forces. These models ... could enable governments, businesses and communities to reduce damages and seize opportunities ... by adapting infrastructure activities and plans."

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