

## GLOBAL WARMING

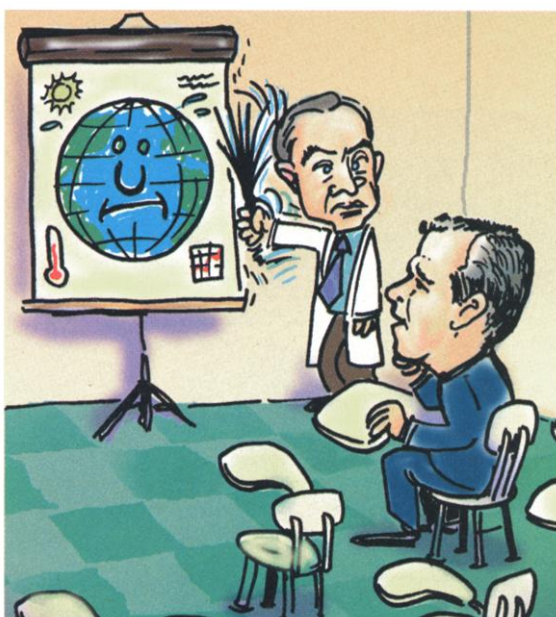
# Bush Backs Spending for a 'Global Problem'

A group of distinguished American scientists last week confirmed that the world is warming and humans are probably to blame for most of the climate change. The quickie, 1-month analysis\* by an 11-person committee of the U.S. National Research Council (NRC) also confirmed that essentially identical conclusions from an earlier 3-year international study had not been unduly distorted when summarized for public consumption. The NRC committee did play up the uncertainties in the international report, however—a point that President George W. Bush emphasized this week in calling for new research and technology initiatives to combat what is clearly a “global problem.”

In the wake of the president's rejection of the Kyoto Protocol for restraining greenhouse gas emissions, the White House had asked the National Academy of Sciences for help in formulating an alternative. Tapped for the scientific assessment job were 11 meteorologists, oceanographers, and climate scientists, all but two of whom—climatologist Thomas Karl of the National Climatic Data Center in Asheville, North Carolina, and meteorologist Richard Lindzen of the Massachusetts Institute of Technology—had avoided substantive involvement in the international assessment conducted by the U.N.-sponsored Intergovernmental Panel on Climate Change (IPCC) (*Science*, 26 January, p. 566). Although most committee members have kept a relatively low profile in the global warming debates, Lindzen is the country's most academically credentialed greenhouse contrarian; he has long argued that any warming will be minor. And climate modeler James Hansen of NASA's Goddard Institute for Space Studies in New York City ignited a

firestorm of media attention in 1988 when he told Congress that greenhouse warming had clearly already arrived.

Despite the committee's breadth of views, its report echoed the IPCC's mainstream support for anthropogenic global warming. “Temperatures are, in fact, rising,” the report's summary concludes. “The changes observed over the last several decades are likely mostly due to human activities. ...” And: “Global warming could well have serious adverse societal and ecological impacts by the end of this century.”



**Point taken.** President Bush concedes that humans are warming Earth but sees more research and better technology as the solution.

That's just what environmentalists and activist scientists wanted to hear, particularly as Bush meets this week with his European counterparts, in part to discuss what he intends to do about global warming.

But the White House also got what it was looking for, a more clearly articulated discussion of the uncertainties in greenhouse science. Although the IPCC's bottom line “accurately reflects the current thinking of the sci-

entific community,” even in its greatly simplified summary for policy-makers, “uncertainty remains,” says the report. It lingers in everything from the effects of soot from fires and changing cloud cover to the realism of climate models and the role of water vapor in stoking the greenhouse (*Science*, 13 April, p. 192). The committee reiterated the IPCC's dramatic range of possible warming; because of the uncertainties, the IPCC estimated that by the end of the century the world might warm by a modest 1.4°C or a sizzling 5.8°C.

Bush relied on this U.S. expert-certified uncertainty in an 11 June speech on global climate change from the Rose Garden. The academy's report found that the world has warmed and greenhouse gases have increased, largely due to human activity, he said. While leaving implicit the link between humans and the warming, he emphasized that the contribution of natural climate variability to the past century's warming is uncertain, as is the cooling effects of pollutant hazes. The magnitude and rate of future warming are unknown, he pointed out. And “no one can say with any certainty what constitutes a dangerous level of warming and therefore what level must be avoided.”

Bush's response, a 5-year U.S. Climate Change Research Initiative, appears to be a repackaged version of the existing U.S. Global Change Research Program begun a decade ago by his father. The new program, led by the Commerce Department, is to include an unspecified amount of money for research, climate observation systems, and computer modeling. The current program, a \$1.7 billion effort involving half a dozen federal agencies, is slated for a 4% cut in the president's 2002 budget. At the same time, Bush reiterated his rejection of the as-yet-unratified Kyoto Protocol, calling it “fatally flawed.” It would damage the U.S. economy, he said, and unfairly relieve developing countries of any commitments to reducing their greenhouse gas emissions. Although “we recognize the responsibility to reduce our emissions,” Bush said, the United States won't be doing so through the mandatory emission reductions of the Kyoto Protocol. Instead, the proposals in the Administration's energy plan for energy conservation and reduced-emission energy sources such as natural gas will help in the short term. A new National Climate Change Technology Initiative is meant to address the long-term problem by developing alternative technologies such as fuel cells and carbon dioxide sequestration.

—RICHARD A. KERR

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\* [www.nap.edu/catalog/10139.html](http://www.nap.edu/catalog/10139.html)