



CLIMATE CHANGE

Research and Development Funding in the President's 2006 Budget

Climate Change Science Program

The U.S. Global Change Research Program, authorized by the Global Change Research Act of 1990, and the Climate Change Research Initiative were combined in 2002 into the comprehensive U.S. Climate Change Science Program (CCSP). CCSP published the *Strategic Plan for the U.S. Climate Science Program* in 2003, describing a strategy for developing knowledge of climate variability and change and for application of this knowledge.

Based on the Strategic Plan, the CCSP has focused on nine key priority areas to accelerate the delivery of critical science-based information in support of decision making on climate change science issues:

- Reduce scientific uncertainty of aerosols
 - Quantify radiative effects of aerosols on climate
 - Observe global distributions of aerosols and clouds
- Reduce scientific uncertainties of carbon sources and sinks
 - Determine the magnitude of the North American carbon budget
 - Determine terrestrial processes regulating carbon balance including carbon sequestration
- Reduce scientific uncertainties of the water cycle
 - Quantify interconnections between water cycle and biogeochemical and ecological processes
 - Reduce quantitative uncertainties of the global and regional water and energy budgets
- Analyze climate feedbacks and sensitivity to natural and human-induced forcing
 - Improve predictions of seasonal-to-interannual climate phenomenon, e.g., El Niño
 - Improve climate models through understanding climate feedbacks
- Improve understanding of ecosystem responses to climate change
 - Determine relationships between observed ecosystem changes and climate change
 - Determine effects of increased ultraviolet radiation on ecosystems
- Enhance global climate observations
 - Develop integrated observing systems to minimize data gaps and maximize utility of data
 - Develop and implement new technologies to enhance data and information management
- Enhance climate modeling systems
 - Improve model physics, increase model spatial resolution, improve data assimilation method
 - Determine model performance with observations
- Improve decision support capabilities
 - Develop decision support models of impacts to climate variability and climate change
 - Evaluate decision support tools associated with forecasts of seasonal-to-interannual processes
- Improve communications between scientists and information users
 - Communicate climate change science information to a multitude of stakeholders
 - Ensure climate change science findings are available to policymakers and others

The 2006 Budget provides nearly \$1.9 billion, which is about the same as the amount enacted in 2005. CCSP comprises over 13 agencies, but NASA, NSF, NOAA and DOE provide almost 90% of CCSP funding.

Climate Change Technology Program

The 2006 Budget provides approximately \$2.9 billion for the U.S. Climate Change Technology Program (CCTP), which supports research, development, deployment, and voluntary programs to reduce greenhouse gas emissions via renewable energy, fossil energy and nuclear energy, efficiency improvements, and carbon sequestration. Over 80% is expended in DOE. CCTP published *Research and Current Activities* in November 2003, describing some of the Administration's initiatives and other programs that can help to help reduce, avoid, or sequester greenhouse gas emissions. In 2005, the CCTP will publish a draft Strategic Plan and solicit comments from the scientific community and the public.