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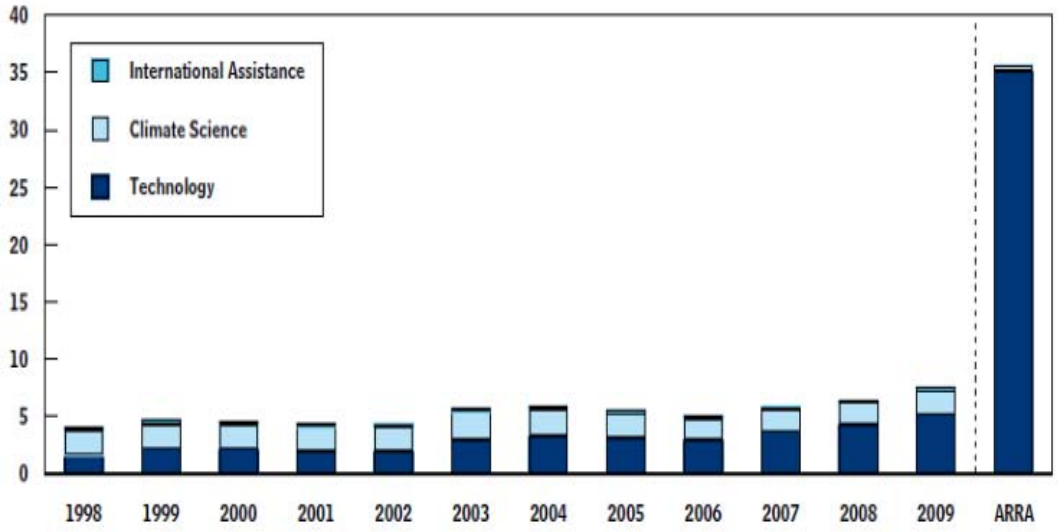
Federal Climate Change Programs

As awareness of global climate change has expanded over past decades, Congresses and Administrations have committed several billion dollars annually to studying climate change and reducing emissions of greenhouse gases, most notably carbon dioxide. Most of that spending is done by the Department of Energy (DOE) and by the National Aeronautics and Space Administration, although a dozen other federal agencies also participate. The effort has included funding science and technology, creating tax preferences, and assisting other countries in their attempts to curtail greenhouse-gas emissions. In a study released this afternoon, CBO examines the government's commitment of resources to those purposes. The study presents information on current spending and analyzes recent patterns and trends in spending.

From 1998 through 2009, appropriations for agencies' work related to climate change totaled about $99 billion (in 2009 dollars); more than a third of that sum—$35.7 billion by CBO's estimation—was provided in the American Recovery and Reinvestment Act of 2009 (see the figure below). During that period, the nation's commitment to climate-related technology development increased significantly, as has the forgone revenue attributable to tax preferences. Funding for climate science and international assistance, by contrast, stayed roughly constant.

Federal Climate Change Funding, by Category

(Budget authority in billions of 2009 dollars)



Growth in reported funding for climate programs occurred in three ways over the past decade. First, funding increased for some programs whose basic mission was maintained throughout the period.

Second, as different Administrations reconsidered what constituted a climate change program, some programs, most notably those in DOE for the development of nuclear power, were included in the tabulation without a change in mission. Third, the focus of some programs has shifted to emphasize climate change. DOE's program for research and development (R&D) on energy supplied from fossil fuels, for example, evolved from research on converting coal into liquid fuels to finding ways to cut emissions from coal-fired power plants.

There are several rationales for these federal activities. A leading argument in favor of federal support for climate science and technology R&D holds that because private developers of scientific and technical innovations do not capture all of the benefits from their discoveries and inventions, private investment is lower than would be justified by the magnitude of its benefit to society. A different rationale arises from the fact that the prices for fossil fuels and for carbon emission do not fully reflect environmental and social costs. Some activities in the climate change budget can be viewed as compensating for the lower energy prices. Although some or all of the conceptual justifications could apply to many types of policies, they do not indicate that any particular federal program should be undertaken.

CBO assessed the effect of technology programs for R&D, technology demonstration, energy efficiency, infrastructure investment, and tax preferences—areas in which there has been a significant recent commitment of resources. Previous analyses have shown that some programs in the climate change budget, although not all, have provided economic benefits to society that exceed the federal government's investment.

This study was prepared by Philip Webre of CBO's Microeconomic Studies Division.

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