EPA Climate Change-Related Activities

EPA has a vital and expanding role in supporting the federal government's climate change policy, announced by President Bush in 2002, to reduce greenhouse gas (GHG) intensity by 18 percent over the coming decade. Prior to 2007, EPA's approach in helping to achieve this goal had two major components: collaborating with public and private organizations to reduce GHG intensity while providing the additional benefits of cleaner air or lower energy bills and participating in the U.S. Climate Change Science Program. Beginning in 2007, EPA has expanded into two additional areas. It recently released a public review draft strategy, *National Water Program Strategy: Response to Climate Change*. EPA has also begun to develop regulations for the injection and geologic sequestration of carbon dioxide and the mandatory reporting of GHG emissions, and an Advanced Notice of Proposed Rulemaking (ANPR) on regulating GHG emissions. EPA Region 4 supports U.S. climate change policy by building knowledge within the Region 4 organization, supporting state partners, collaborating with federal partners, and working with industry and other stakeholders to promote clean energy and GHG reductions.

Collaborating with Private and Public Organizations

At the core of EPA's efforts are government-industry partnership programs designed to encourage consumers, businesses, and organizations to make sound investments in energy efficient equipment, transportation choices, and policies and practices that promote these. EPA is collaborating with other federal agencies to maximize results under its climate protection activities. In addition to reducing GHG emissions and supporting such EPA goals as improving air quality, these programs can help other agencies achieve their goals. For example, EPA and the Department of Energy (DOE) jointly implement the Energy STAR Program to promote use of energy-efficient products and practices. Not only does Energy STAR support EPA's objective to reduce GHG emissions from homes, businesses, and industry, it also supports DOE's goal to cost-effectively improve energy efficiency.

EPA also collaborates with DOE through EPA's SmartWay Transport Partnership, which works with fleet owners and the trucking and railroad industries to promote implementation of energy efficient strategies, such as reducing idling, using low-carbon fuels like E85 and biodiesel, and reducing particulate matter and nitrogen dioxide emissions.

Additional well known voluntary programs that EPA participates in include:

- Clean Energy-Environment State Partnerships to support states in increasing the use of clean energy;

- Climate Leaders, an industry-government partnership to develop long-term comprehensive climate change strategies and set corporate-wide goals for reducing GHGs; and
- Combined Heat and Power (CHP) Partnerships to encourage development and purchasing of clean and renewable energy.

Participating in the Climate Change Science Program

In February 2002, the United States government announced a climate change research initiative to focus on key remaining gaps in climate change science. To meet this goal, the multi-agency Climate Change Science Program (CCSP) was established to investigate natural and human-induced changes in the Earth's global environmental system; to monitor, understand and predict global change, and to provide a sound scientific basis for national and international decision-making. EPA's primary role in the CCSP is evaluating the potential consequences of climate variability and the effects on air quality, water quality, ecosystems, and human health in the United States. The program also seeks to understand the risks and opportunities presented by adaptation strategies. Areas of research currently being considered for funding in FY2008 include:

- Implications of Alternative Fuels with a Focus on Biofuels;
- Impacts of Geologic Sequestration of Carbon Dioxide;
- Understanding the Impacts of Carbon Capture Technology;
- Understanding the Impacts of GHG Emissions on Ecosystems;
- Developing Regional-Scale Ecological Performance Measures and Predictive Models to Evaluate the Environmental Outcome from Possible GHG Reduction Scenarios; and
- Evaluating Proposed Forest Offset Accounting Methods for Applicability at a National Scale.

Developing the draft National Water Program Strategy: Response to Climate Change

In March 2008, EPA published a draft document, *National Water Program Strategy: Response to Climate Change.* This document represents an initial effort by EPA's Office of Water to identify potential impacts of climate change for clean water and drinking water programs and define actions to respond to these impacts. Climate change is expected to have a number of important impacts on water resources and water programs including:

- increases in water pollution problems;
- more extreme water-related events;
- changes in availability of drinking water supplies;
- waterbody boundary movement and displacement;
- changing aquatic biology; and
- significant collective impacts on coastal areas.

The climate change related information in the draft is drawn from existing publications including the Intergovernmental Panel on Climate Change (IPCC) reports and published EPA documents. No new scientific information on climate change is presented.

The draft strategy identifies five major goals:

- water program mitigation of GHG: use water programs to contribute to GHG mitigation;
- water program adaptation to climate change: adapt implementation of core water programs to maintain and improve program effectiveness in the context of a changing climate;
- climate change research related to water: strengthen the link between EPA water programs and climate change research;
- water program education on climate change: educate water program professions and stakeholders on climate change impacts on water resources and programs; and
- water program management of climate change: establish the management capability within the National Water Program to engage climate change challenges on a sustained basis.

The draft proposes 46 specific actions that the National Water Program will take to respond to climate change. The majority of the proposed actions involve adjustments to program management to reflect a better understanding of impacts of climate change in several key areas:

- drinking water, water quality and effluent standards;
- watershed protection;
- NPDES permits;
- water infrastructure; and
- wetlands protection.

Other proposed actions address activities to mitigate release of GHG, including

- water conservation;
- energy conservation related to water;
- green buildings/smart growth; and
- carbon sequestration, including underground injection and biological sequestration.

Developing Regulations

EPA has recently begun a number of regulatory activities related to GHG emissions:

- developing a proposed rule for carbon dioxide injection and geologic sequestration (GS);
- writing a mandatory reporting requirement for GHG emissions; and

- developing an ANPR on regulating GHG emissions under the Clean Air Act (CAA).

GS is one technology in a portfolio of options that could be effective in reducing carbon dioxide emissions to the atmosphere and stabilizing atmospheric concentration of carbon dioxide. The DOE's National Energy Technology Laboratory and DOE's Regional Carbon Sequestration Partnerships are conducting research on GS of carbon dioxide to provide information about its capabilities, impacts, and best practices. In late 2007, DOE announced awards for demonstration projects that will test large-scale GS of carbon dioxide.

EPA issued guidance in March 2007 to assist States and EPA regional offices in evaluating permit applications for GS pilot projects and setting appropriate permit conditions for these projects to protect underground sources of drinking water and public health. This guidance was followed by the formation of an EPA workgroup to develop regulations to address GS of carbon dioxide. The regulations, expected to be proposed during summer 2008 will identify minimum federal requirements for GS. The scope of the proposal will be guided by the Safe Drinking Water Act which authorizes EPA to develop minimum federal requirements for state and tribal underground injection control programs to protect underground sources of drinking water.

EPA's FY2008 appropriation bill required the Agency to use its existing authority under the CAA to develop a mandatory GHG reporting rule. This rule will provide emissions data that will inform and support development of national climate policy. The producers of fuels and chemicals, known as upstream emitters, as well as manufacturing and power plants, known as downstream emitters, are expected to be covered by this rule. Several existing mandatory and voluntary reporting systems, developed by states and private sector-government partnerships, will provide inputs for the EPA reporting program. The proposed rule is expected to be announced during September 2008 with the final rule being released in June 2009.

EPA is also developing an ANPR in response to the U.S. Supreme Court's decision in *Massachusetts v. EPA* providing that EPA must take action under the CAA on GHG emissions from motor vehicles. The ANPR serves two very important functions. First, it provides a mechanism for EPA to communicate:

- its efforts to date that are relevant to the issue of reducing GHG emissions from mobile sources;
- the numerous CAA issues arising from action under the Act; and
- possible approaches to addressing various issues.

The ANPR also provides an opportunity for public comment and input on the possible approaches identified by EPA.

The focus of the ANPR will be to present and seek comment on several aspects of GHG emissions:

- the best available science on the effects of GHG relevant to making an endangerment finding;
- the broad implications of the *Massachusetts v EPA* decision; and
- technologies and strategies to address GHG emissions from mobile and stationary source categories.

EPA Region 4 Approach

EPA Region 4's approach to supporting U.S. climate change policy has been to build knowledge within the Region 4 organization, support state partners, collaborate with federal partners, and work with industry and other stakeholders to promote clean energy and GHG reductions. Region 4 has created a cross-organization Clean Energy and Climate Change Work Group which is charged with understanding how clean energy and climate change issues impact regional programs and how Region 4 can respond to these issues in a manner that is most advantageous for its stakeholders. The Work Group is managed by a Clean Energy and Climate Change Program Coordinator and a management-level Steering Committee. Region 4's recent accomplishments include:

- the December 2007 Clean and Sustainable Energy Conference held in Atlanta, Georgia and attended by approximately 150 stakeholders. Region 4 organized this meeting to initiate an ongoing, comprehensive dialog on the issues involved in providing clean and sustainable energy to the consumers in the Southeast and how Region 4 can facilitate that process;

- the April 2008 Energy and Climate Change Awareness Day held as part of the Sam Nunn Atlanta Federal Center's Earth Day observance. Region 4 developed a program to educate individuals on what they can do to contribute to reduced GHG emissions. The day's agenda included presentations from climate scientists and clean energy experts, and exhibits of energy and water conservation products such as compact fluorescent light bulbs and rain barrels;

- the initiation in early 2008 of a pilot project with the Tennessee Department of Environmental Conservation to reduce impediments on using biodiesel and ethanol-gasoline motor fuel blends and to encourage the adoption of anti-idling and reduced idling strategies. This project will ensure that motorist in the Southeast have an awareness of the availability of alternative fuels and reduce mobile source emissions. The strategies and tools developed in this pilot project are expected to be applicable to other states in the Southeast.