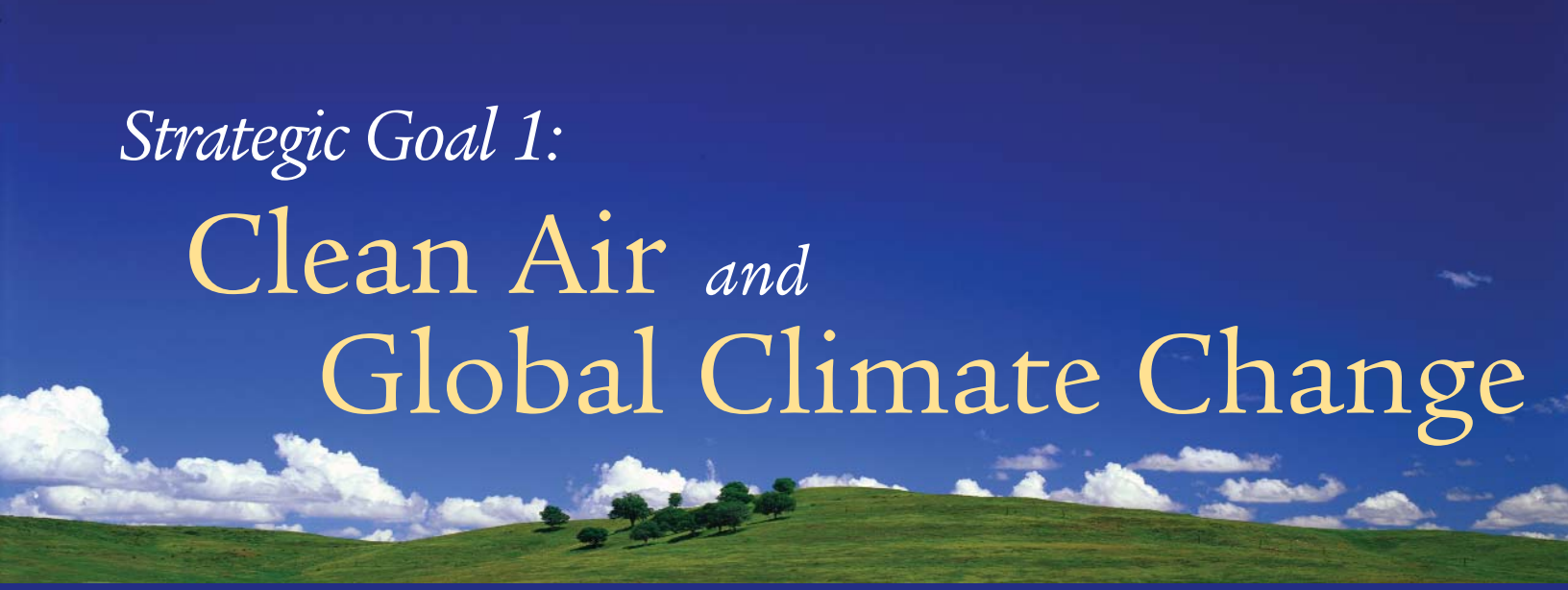


# *Strategic Goal 1:* Clean Air *and* Global Climate Change

*Protect and improve the air so it is healthy to breathe, and risks to human health and the environment are reduced. Reduce greenhouse gas intensity by enhancing partnerships with businesses and other sectors.*

## Overview of Goal 1

Since 1970, EPA has been working with its partners and stakeholders to implement the Clean Air Act and other environmental laws and approaches to achieve cleaner, healthier air for all Americans. The Agency's strategy for protecting public health relies on national regulatory, voluntary, and market-based programs carried out in combination with state, tribal, and local efforts. By phasing out lead in gasoline, setting tougher standards for vehicle emissions, and using allowance trading to reduce acid rain precursors, national programs have contributed to reducing overall emission of air pollutants by 48 percent since 1970; at the same time, economic growth has increased by more than 160 percent.[2] Every year, state and federal criteria air pollutant programs established pursuant to the 1990 Clean Air Act Amendments significantly benefit human health and the economy.

### OUTDOOR AIR POLLUTION

A better understanding by government and industry of fine particle pollution—including the role of sulfur dioxide ($SO_2$) and nitrogen oxides ($NO_x$) in forming fine particulate matter—and recent advances in diesel engine and power plant technologies are furthering EPA's progress in addressing outdoor air pollution. In FY 2005, the Agency issued two rules expected to achieve sizable improvements in air quality.

The new Clean Air Interstate Rule (CAIR) is expected to dramatically reduce pollution in the eastern United States, cutting power plant emissions of $SO_2$ by more than 70 percent and $NO_x$ by more than 60 percent and permanently capping emissions that lead to smog and soot. When fully implemented, CAIR is expected to provide nearly $2 billion in visibility benefits, significantly reducing haze in eastern national parks. Most importantly, EPA estimates suggest that CAIR will result in significant health benefits.[3]

#### Contributing Programs

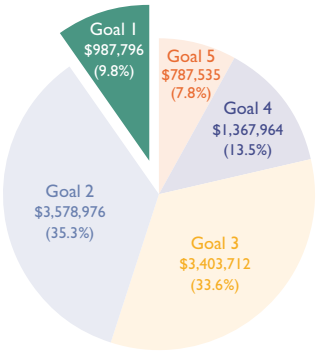
- Acid Rain Program
- AirNow
- Air Toxics
- Best Workplaces for Commuters
- Clean Automotive Technology Program
- Climate Leaders Partnership
- Combined Heat and Power
- National Ambient Air Quality Standards and Implementation
- Energy Star Programs
- Green Power Partnership
- High GWP Gas Programs
- Indoor Air Quality
- International Programs
- Methane
- Mobile Sources
- $NO_x$ Budget Program
- Stratospheric Ozone Layer Protection Program
- Pollution Prevention
- Radiation Programs
- SmartWay New Source Review
- Transport Program
- Sunwise Schools Program
- Voluntary Diesel Retrofit Programs

# Goal 1 At a Glance

## FY 2005 Annual Performance Goals (APGs)

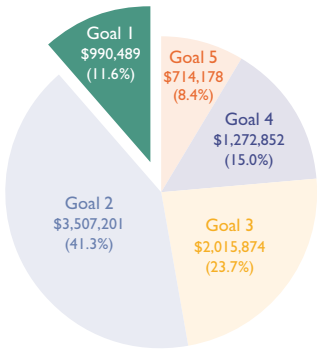
Met = 5 Not Met = 0*
Data Available After November 15, 2005 = 14
(Total APGs = 19)

FY 2005 Obligations (in thousands)




EPA Total = $10,125,983

FY 2005 Costs (in thousands)




EPA Total = $8,500,594

## FY 2005 "Report Card"

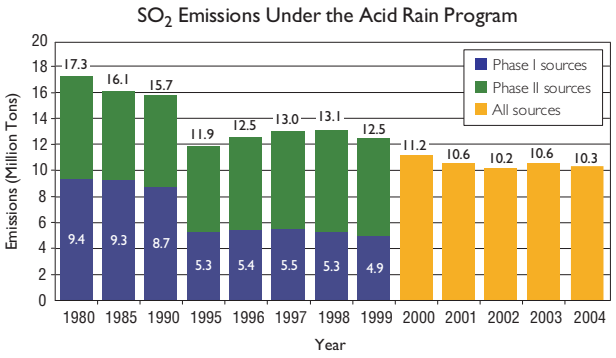
| Strategic Objective | APG Status |
|---|---|
| **Objective 1–Healthier Outdoor Air**<br>Through 2010, working with partners, protect human health and the environment by attaining and maintaining health-based air-quality standards and reducing the risk from toxic air pollutants. | 0 Met<br>0 Not Met<br>8 TBD |
| **Objective 2–Healthier Indoor Air**<br>By 2008, 22.6 million more Americans than in 1994 will be experiencing healthier indoor air in homes, schools, and office buildings. | 1 Met<br>0 Not Met<br>2 TBD |
| **Objective 3–Protect the Ozone Layer**<br>By 2010, through worldwide action, ozone concentrations in the stratosphere will have stopped declining and slowly begun the process of recovery, and the risk to human health from overexposure to ultraviolet radiation, particularly among susceptible subpopulations, such as children, will be reduced. | 0 Met<br>0 Not Met<br>1 TBD |
| **Objective 4–Radiation**<br>Through 2008, working with partners, minimize unnecessary releases of radiation, and be prepared to minimize impacts to human health and the environment should unwanted releases occur. | 2 Met<br>0 Not Met<br>1 TBD |
| **Objective 5–Reduce Greenhouse Gas Intensity**<br>Through EPA's voluntary climate protection programs, contribute 45 million metric tons of carbon equivalent (MMTCE) annually to the President's 18% greenhouse gas intensity improvement goal by 2012. (An additional 75 MMTCE to result from the sustained growth in the climate programs are reflected in the administrations' business-as-usual projection for GHG intensity improvement.) | 0 Met<br>0 Not Met<br>2 TBD |
| **Objective 6–Enhance Science & Research**<br>Through 2010, provide and apply sound science to support EPA's goal of Clean Air by conducting leading-edge research and developing a better understanding and characterization of environmental outcomes under Goal 1. | 2 Met<br>0 Not Met<br>0 TBD |

Summary of FY 2005 Performance: EPA is confident that, based on results through 2004 and preliminary FY 2005 information and trends, all six strategic objectives are on track. EPA works toward a set of strategic targets and annual goals that support the strategic objectives and help us estimate progress toward the stated long-term objectives.

The Clean Air Mercury Rule (CAMR) is designed to reduce mercury emissions from power plants. Working with CAIR, it provides a flexible multipollutant approach to air toxics, reducing $SO_2$, $NO_x$, and mercury emissions. Like CAIR, CAMR limits emissions by using a market-based, cap and trade program that will permanently cap utility mercury emissions. The United States is now the only country regulating mercury emissions from coal-burning power plants.[4]

In FY 2005, EPA also launched the Clean Diesel Campaign, which relies on regulatory and voluntary efforts to reduce emissions from new and existing diesel engines by 2014. Under this campaign, EPA is developing and implementing stringent emissions standards for new engines and fuel. The Agency is addressing the country's existing fleet by promoting such voluntary pollution-cutting measures as retrofits, use of cleaner fuels, replacement, and reduced idling.

EPA's Acid Rain Program and $NO_x$ Budget Program employ market-based allowance trading to reduce $SO_2$ and $NO_x$ emissions from the power industry. Now in its 10th year, the Acid Rain Program posted a cumulative reduction in $SO_2$ emissions of 7 million tons, a more than 40 percent reduction from the 1980 baseline. EPA has measured improvements in acid deposition and other environmental indicators, including an approximately 40 percent reduction in sulfate deposition in some regions of the country.[5]




## INDOOR AIR POLLUTION

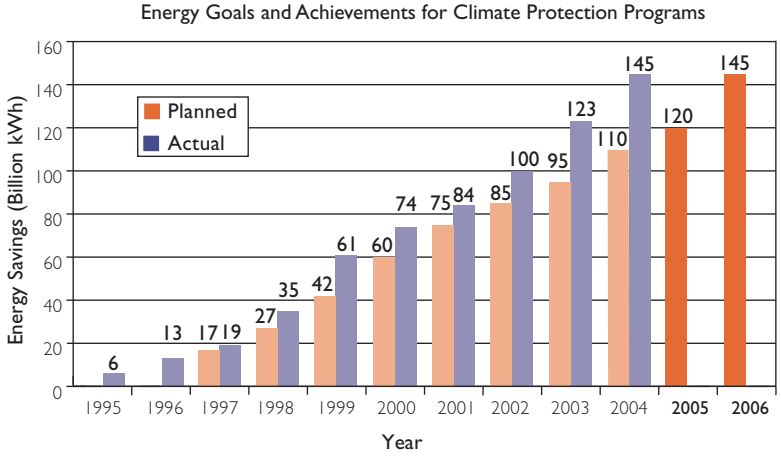
EPA's indoor air programs focus primarily on environmental management of asthma triggers, improving indoor air quality in schools, and reducing risks from radon. For example, the Agency's popular public service Goldfish Campaign, which highlights childhood asthma, has garnered close to $150 million in donated media time, generated nearly 50,000 calls to the "Asthma Hotline," and sparked more than 1 million Web site visits. During FY 2005, EPA trained more than 500 tribal environmental professionals, school nurses, school administrators, local housing authorities, respiratory health therapists, and council members servicing tribal nations on indoor air quality and techniques for reducing asthma risks. Under its schools program, EPA recruited an estimated 2,500 additional schools to use approaches promoted by the Agency's Tools for Schools Program. EPA also collaborated with five national school organizations on training, speaking engagements, mailings, articles, and other activities to make indoor air quality a key priority within the school community.

## CLIMATE CHANGE

Most global climate change is attributed the buildup of greenhouse gases—primarily $CO_2$, methane, and nitrous oxide—in the atmosphere. These gases trap heat in the Earth's atmosphere, decreasing snow cover and floating ice, increasing precipitation over land, and causing other climate changes. Increasing concentrations of greenhouse gases could accelerate the rate of climate change.

EPA's climate protection efforts are centered on reducing emissions of $CO_2$ and other greenhouse gases such as methane and perfluorocarbons and reducing energy consumption. When consumers and businesses use less energy, power plants need generate less electricity, thereby reducing greenhouse gas emissions and improving air quality. Energy efficient products and practices also benefit the economy by saving consumers and businesses money on their utility bills. EPA programs work to address the most potent greenhouse gases emitted from industrial and waste management processes; challenge businesses, public institutions, and households to reduce greenhouse gas emissions by investing in energy efficiency, renewable energy, and other climate-friendly technologies; and provide information, technical assistance, and recognition to organizations taking measurable steps to reduce their greenhouse gas emissions.

In addition, EPA's climate protection programs have secured substantial energy conservation and environmental benefits for the next decade. Because many of the investments the Agency has promoted involve energy-efficient equipment with 10-year or longer lifetimes, investments made to date are expected to deliver environmental and economic benefits through 2014 and beyond. EPA estimates that organizations and consumers will net savings of more than $115 billion and reduce greenhouse emissions by more than 700 million metric tons of carbon equivalent (MMTCE) over the next 10 years. These programs continue to be cost-effective: EPA estimates that every dollar it spent deploying technology reduced



greenhouse gas emissions by more than 1 metric ton of carbon equivalent (3.67 tons of $CO_2$) and saved more than $75 in energy bills.[6]

## STRATOSPHERIC OZONE DEPLETION

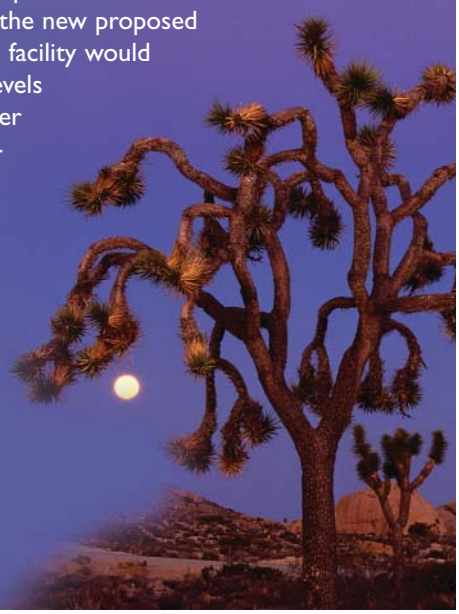
EPA also implements programs to protect the ozone layer, meeting requirements of the Montreal Protocol and Title VI of the Clean Air Act. The Agency reviews substitutes for ozone-depleting substances and develops voluntary programs to reduce emissions of gases that contribute to global climate change. If reduction targets are met on schedule, the Stratospheric Ozone Depletion program could help to prevent 6 million skin-cancer deaths over the next 100 years.

## RADIATION

EPA is responsible for protecting the public and environment from radiation. The Radiation Monitoring Network (RadNet) provides data that federal agencies use to assess responses to nuclear emergencies, provides data on ambient levels of radiation in the environment for baseline and trend analysis, and informs decisionmakers and the public in the event of a nuclear incident. In FY 2005, EPA enhanced RadNet by acquiring state-of-the-art fixed and deployable radiation monitors. The Agency also met its FY 2005 responsibilities for reviewing and recertifying the Waste Isolation Pilot Plant (WIPP). EPA oversees radiation waste shipped to the WIPP from sites throughout the United States.

### Radiation Standards for Yucca Mountain

In FY 2005, EPA prepared a revised radiation health and safety standard for the Yucca Mountain Nuclear Waste Repository that protects public health for an unprecedented 1 million years. Yucca Mountain is a potential permanent repository for spent nuclear fuel and high-level radioactive waste. Under the new proposed standards, people living close to the facility would not be exposed to total radiation levels higher than the levels people in other areas experience routinely. The proposed standards set a maximum dose level for the first 10,000 years. To ensure public safety to 1 million years, EPA proposed a separate, higher dose limit based on current natural background radiation levels in the United States. EPA is accepting public comments on the proposed standard and will carefully consider them before issuing a final standard for Yucca Mountain.



## RESEARCH

EPA's 2005 research findings support the association between exposure to particulate matter (PM), illness, and even death. Susceptible groups, including asthmatic children, suffered such adverse effects as impaired health and hospitalization. People with heart disease were found more prone to fatal cardiac events as a result of acute PM exposure. Scientists also found that $PM_{2.5}$, the component of PM smaller than 2.5 microns in diameter, easily penetrates indoor environments, where people spend much of their time. EPA's Office of Research and Development continues to investigate various hypotheses on how PM causes disease and death and will use the results to help the Agency and its partners develop targeted control strategies to reduce human exposure. In addition, EPA will continue research to help implement the National Ambient Air Quality Standards (NAAQS), using modeling and monitoring data to determine which states and regions are out of compliance and developing new analytical tools to help them meet the standards.

# Goal 1 Strategic Objectives

## *Strategic Objective 1—Healthier Outdoor Air*

*Through 2010, working with partners, protect human health and the environment by attaining and maintaining health-based air-quality standards and reducing the risk from toxic air pollutants.*

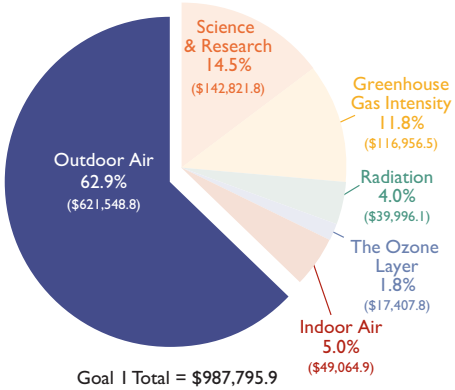
| STRATEGIC OBJECTIVE 1—HEALTHIER OUTDOOR AIR | | |
|---|---|---|
| APG # | APG Title | APG Status |
| 1.1 | Reduce CO, $SO_2$, $NO_2$, and Lead | FY 2005 data available in FY 2006<br>✗ Not Met for FY 2004 |
| 1.2 | Reduce Exposure to Unhealthy PM Levels—$PM_{10}$ | FY 2005 data available in FY 2006<br>✗ Not Met for FY 2004 |
| 1.3 | Reduce Exposure to Unhealthy PM Levels—$PM_{2.5}$ | FY 2005 data available in FY 2006<br>✔ Met FY 2004 goals in FY 2005 |
| 1.4 | Reduce $SO_2$ Emissions | FY 2005 data available in FY 2006<br>✔ Met FY 2004 goals in FY 2005 |
| 1.5 | Reduce Air Toxic Emissions | FY 2005 data available in 2015<br>✗ Not met for FY 2001<br>✗ Not met for FY 2000 |
| 1.6 | Reduce Exposure to Unhealthy Ozone Levels—8-hour | FY 2005 data available in FY 2006<br>✔ Met FY 2004 goals in FY 2005 |
| 1.7 | Acid Rain—Reduce Sulfur Deposition | FY 2005 data available late in FY 2006<br>✔ Met FY 2004 goals in FY 2005 |
| 1.8 | Acid Rain—Reduce Nitrogen Deposition | FY 2005 data available late in FY 2006<br>✔ Met FY 2004 goals in FY 2005 |

### OVERVIEW OF PERFORMANCE

EPA continues to make progress in improving air quality and is on track to meet its long-term objective of healthier outdoor air. The Agency's clean air rules provide tools for attaining and maintaining health-based standards and reducing risk from toxic air pollutants:

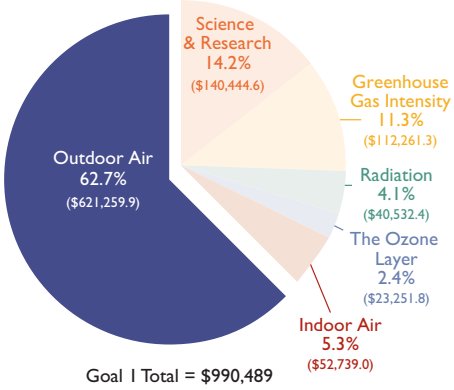
- The new Clean Air Interstate Rule (CAIR) will help 28 eastern states meet national health-based air quality standards and reduce pollution that moves across state boundaries. When fully implemented, CAIR is expected to reduce power plant emissions of SO2 by more than 70 percent and NOx by more than 60 percent.
- The Clean Air Mercury Rule (CAMR) will reduce mercury emissions from electric utilities. CAMR limits mercury emissions from new and existing coal-fired power plants and creates a market-based cap and trade program that will permanently cap utility mercury emissions, initially at 38 tons beginning in 2010 and finally at 15 tons beginning in 2018.

FY 2005 Obligations: Goal 1, Strategic Objective 1 (in thousands)




Goal 1 Total = $987,795.9

FY 2005 Costs: Goal 1, Strategic Objective 1 (in thousands)




Goal 1 Total = $990,489

- The Clean Air Fine Particle Rule designated areas where air does not meet the health-based standards for fine-particulate pollution.

States are required to submit plans for reducing the levels of particulate pollution in these designated areas.

- The Clean Air Ozone Rules (dealing with 8-hour ground-level ozone designation and implementation) designate areas where air does not meet the health-based standards for ground-level ozone. The ozone rules classify the seriousness of the problem and require states to submit plans for reducing ozone levels in designated areas.

## CHALLENGES

CAIR, CAMR, the Clean Air Ozone and Particulate Matter Rules, and the Non-Road Diesel and Tier 2 Rules lay the groundwork for meeting health-based air standards and reducing exposure to harmful pollutants. Progress requires effort at all levels of government. Delays in the development of states' clean air plans, for example, could lead to delays in meeting the standards.

## *Strategic Objective 2—Healthier Indoor Air*

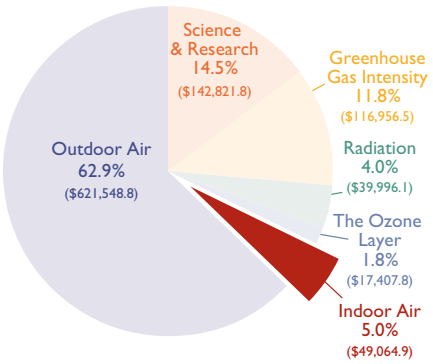
*By 2008, 22.6 million more Americans than in 1994 will be experiencing healthier indoor air in homes, schools, and office buildings.*

## OVERVIEW OF PERFORMANCE

EPA is on track to achieve its objective for healthier air inside homes, schools, and office buildings. EPA estimates that as of 2003, people suffering from asthma avoided 42,000 emergency room visits because they took action to reduce their exposure to indoor environmental asthma triggers. The Agency expects that by 2007, 64,000 ER visits will be avoided annually as a result of reduced exposure to indoor environmental asthma triggers.[7] In addition, EPA estimates that radon mitigations and radon-resistant new construction through 2005 will help save 580 lives annually. The Agency projects an additional 100,000 new homes built with radon resistant construction and more than 70,000 new working mitigation systems in 2005.

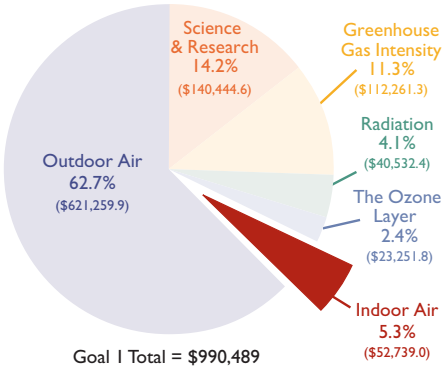
| STRATEGIC OBJECTIVE 2—HEALTHIER INDOOR AIR | | |
|---|---|---|
| APG # | APG Title | APG Status |
| 1.9 | Healthier Residential Indoor Air | FY 2005 data available in FY 2006 |
| | | ✔ Met FY 2004 goals in FY 2005 |
| 1.10 | Healthier Indoor Air in Schools | FY 2005 data available in FY 2006 |
| | | ✔ Met FY 2004 goals in FY 2005 |
| 1.11 | Healthier Indoor Air in Workplaces (NEW IN FY05) | ✔ Met in FY 2005 |

FY 2005 Obligations:
Goal 1, Strategic Objective 2
(in thousands)




Goal 1 Total = $987,795.9

FY 2005 Costs:
Goal 1, Strategic Objective 2
(in thousands)




Goal 1 Total = $990,489

As of 2002, more than 25,000 schools (22 percent of U.S. schools) had Indoor Air Quality (IAQ) management plans meeting EPA's standard for effectiveness.[8] EPA expects that in 2007, an additional 1,100 schools will implement effective indoor air quality management plans, for a total of more than 35,000 schools implementing plans nationwide.

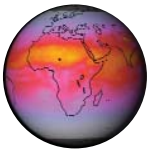
## CHALLENGES

EPA's non-regulatory Indoor Environments program is designed to promote voluntary actions by the general public to improve indoor air quality. While the program has been effective using education and outreach to change behavior, in the future, increased authority in some areas could improve program results.

### Healthier Indoor Air: Grant Projects

- Through an EPA grant, America's Health Insurance Plans (AHIP) worked with health plans to encourage the reduction of exposure to indoor air asthma triggers. To date, AHIP has educated approximately 200 health plans on evidence-based environmental asthma management; increased by 20 percent the number of health plans that integrate environmental management; and trained approximately 200 case managers who can actively demonstrate increased knowledge of indoor triggers and mitigation solutions.
- In FY 2005, more than 4,000 school nurses through a grant to the National Association of School Nurses were educated about ways to encourage approximately 65,000 children with asthma and their families on how to reduce exposures of indoor air asthma triggers.
- In FY 2005, Habitat for Humanity International, a national leader in the building construction industry, continued to include healthy indoor air quality (IAQ) principles as part of its building ethic. IAQ factors become integrated into Habitat builder training. At least 10 IAQ specific trainings occurred increasing the numbers of Habitat affiliates build homes radon-resistant allowing improved IAQ in residences.

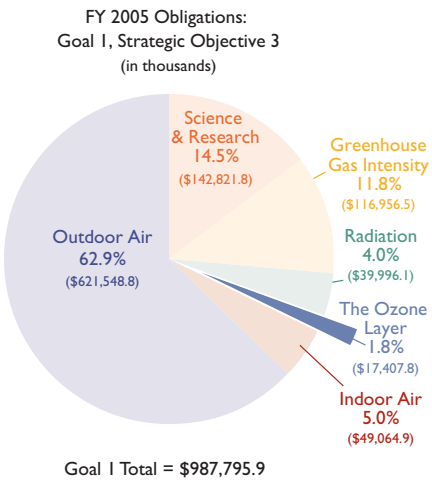
Radon is the leading cause of lung cancer after smoking. The World Health Organization (WHO) estimates that radon could cause up to 15 percent of lung cancers globally. To address this concern, WHO is collaborating with EPA and participating countries on an International Radon Project to increase public awareness about this invisible health threat and actions that can be taken to reduce risks. For additional information on the initiative, visit www.who.int/mediacentre/news/notes/2005/np15/en/index.html.

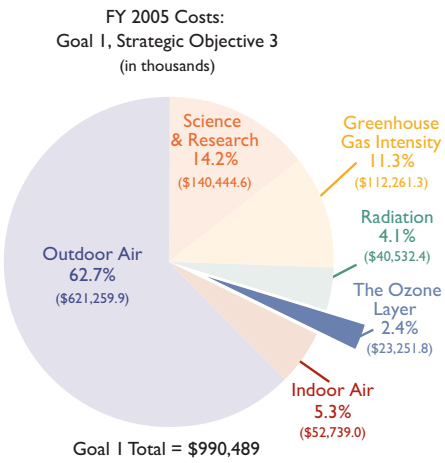


## *Strategic Objective 3—Protect the Ozone Layer*

*By 2010, through worldwide action, ozone concentrations in the stratosphere will have stopped declining and slowly begun the process of recovery, and the risk to human health from overexposure to ultraviolet radiation, particularly among susceptible subpopulations, such as children, will be reduced.*

| STRATEGIC OBJECTIVE 3—PROTECT THE OZONE LAYER | | |
|---|---|---|
| APG # | APG Title | APG Status |
| 1.12 | Restrict Domestic Consumption of Class II HCFCs | FY 2005 data available in FY 2006 |
| | | ✔ Met FY 2004 goals in FY 2005 |
| | | ✔ Met FY 2003 goals in FY 2005 |




## OVERVIEW OF PERFORMANCE

The Montreal Protocol on Substances That Deplete the Ozone Layer has reduced global production and use of ozone-depleting substances (ODS). Developed countries stopped producing chlorofluorocarbons (CFCs), methyl chloroform, and carbon tetrachloride in 1996, preventing emission of 400,000 metric tons of ODS. Developing countries are ahead of schedule in reducing their production, use, and emissions of ODS. As a result of these prudent international actions, the rate of increase of atmospheric concentrations of ozone-depleting chemicals has slowed, and in some cases, declined.

Through the Multilateral Fund, the United States helped more than 120 developing countries reduce their use of ozone-depleting chemicals, preventing emission of more than 150,000 metric tons of ODS. The fund has reached long-term agreements to eliminate more than two-thirds of developing countries' capacity for producing CFC and virtually all of their capacity for producing halon.

U.S. industry is benefiting from American leadership in this international arena. In 2004, U.S. firms exported ozone-friendly chemical alternatives, generating $80 million in revenue. In addition, the United States is supplying recycling technology, equipment, and technical assistance to support developing countries' phase-out activities.

## CHALLENGES

To further progress in protecting and restoring the ozone layer, EPA must continue its efforts to phase out ODS, while ensuring that ODS remain available for specific uses when no alternatives exist. In particular, with minor, limited exceptions, EPA must phase out the use of hydrochlorofluorocarbons (HCFC-22 and HCFC-142b) by January 1, 2010, a development that is expected to provide largest economic and technical impact since the bulk of CFCs were phased out in 1996. Because these chemicals are so widely used, minimizing the impact on manufacturers and users will be extremely challenging. This effort will require in-depth research and analysis and close consultation with stakeholders around the world, including other governments.

A second challenge is continuing to phase out methyl bromide. Developing an appropriate critical use exemption, which allows production and import of this important agricultural chemical while alternatives are developed, is extremely difficult. EPA will need to conduct thorough technical analyses and carefully consider the views of methyl bromide users, state and local officials, other federal agencies, environmental and other non-governmental organizations, and the international community. Moreover, the window of opportunity to assist methyl bromide users in identifying and adopting practical, effective alternatives is extremely narrow. Farmers will need relevant, timely information to help them produce, ship, and store crops without using methyl bromide.

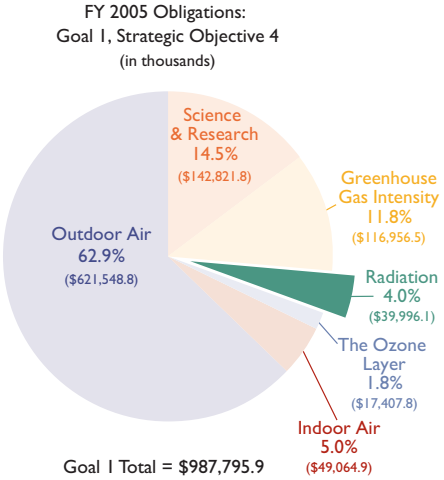

## *Strategic Objective 4—Radiation*

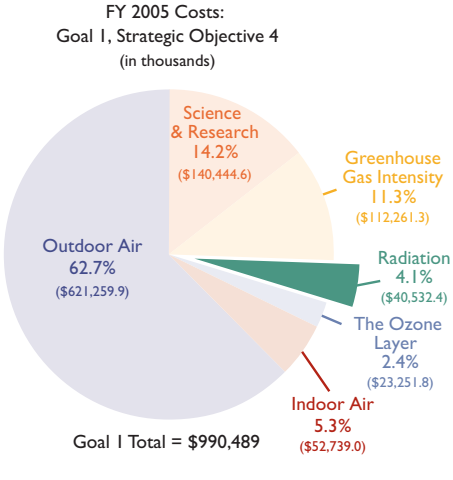
*Through 2008, working with partners, minimize unnecessary releases of radiation, and be prepared to minimize impacts to human health and the environment should unwanted releases occur.*

## OVERVIEW OF PERFORMANCE

EPA is making steady progress toward its 2008 objective of minimizing unnecessary releases of radiation and impacts to human health and the environment. The Agency has conducted regular radiological emergency response exercises; recertified the Waste Isolation Pilot Plant (WIPP);

| STRATEGIC OBJECTIVE 4—RADIATION | | |
|---|---|---|
| APG # | APG Title | APG Status |
| 1.13 | Ensure WIPP Safety | ✔ Met in FY 2005 |
| 1.14 | Build National Radiation Monitoring System | ✔ Met in FY 2005 |
| 1.15 | Homeland Security—Readiness and Response (NEW IN FY05) | FY 2005 data available in FY 2006 |



drafted guidance on acceptable levels of radiation exposure (Federal Radiation Guidance for the General Public) and upgraded and enhanced the radiation monitoring system.

In FY 2005, EPA continued its work with other agencies to ensure the nation's security and readiness from terrorist incidents. The Agency purchased monitors for the Radiation Monitoring Network (RadNet) and will site the initial group of monitors in FY 2006. The initial RadNet plan had called for the full monitoring system to be in place by 2009. However, given the complexities of the system and technology, the date for implementing the monitoring system has been pushed back. Nonetheless, EPA expects to substantially meet its original target by providing radiation monitoring coverage to approximately 65 percent of the U.S. population by 2009. EPA worked with the Department of Energy (DOE) to ensure that the deliveries of radiation waste to WIPP were fully certified according to EPA standards. DOE did not ship as many drums as it had planned this year; however, due to over-shipments in the past, EPA remains on track to meet its long-term goal.

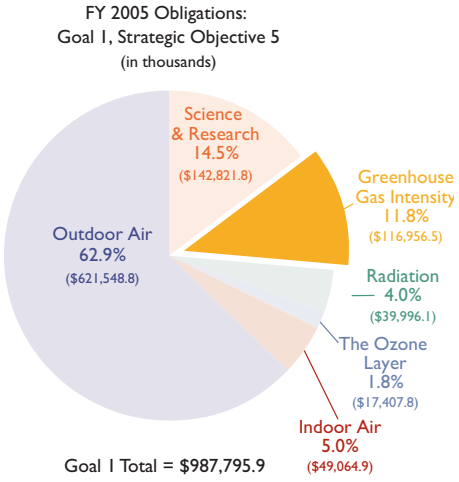
## CHALLENGES

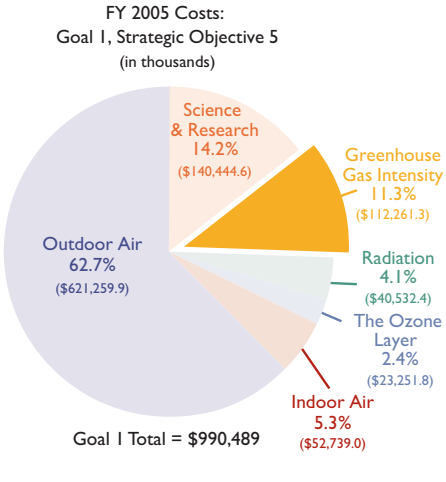
Ensuring the safety of Americans in the event of a terrorist event or other emergency is an ongoing concern. Many agencies contribute to this effort, making coordination complicated. EPA's role is critical but limited. Given the real and perceived danger from radiation, the range of radiation sources, and the expertise needed for cleanup, factoring radiation issues into all plans will be an ongoing challenge. Led by the Department of Homeland Security, EPA will work with other agencies to ensure the nation's safety in nuclear incidents as outlined in the Nuclear/ Radiological Incident Annex.

## *Strategic Objective 5—Reduce Greenhouse Gas Intensity*

*Through EPA's voluntary climate protection programs, contribute 45 million metric tons of carbon equivalent (MMTCE) annually to the President's 18% greenhouse gas intensity improvement goal by 2012. (An additional 75 MMTCE to result from the sustained growth in the climate programs are reflected in the administrations' business-as-usual projection for GHG intensity improvement.)*

| STRATEGIC OBJECTIVE 5—REDUCE GREENHOUSE GAS INTENSITY | | |
|---|---|---|
| APG # | APG Title | APG Status |
| 1.16 | Reduce Greenhouse Gas (GHG) Emissions | FY 2005 data available in FY 2006 |
| | | ✔ Met FY 2004 goals in FY 2005 |
| 1.17 | Reduce Energy Consumption | FY 2005 data available in FY 2006 |
| | | ✔ Met FY 2004 goals in FY 2005 |




## OVERVIEW OF PERFORMANCE

EPA's voluntary climate protection programs have made progress in reducing emissions of greenhouse gases including carbon dioxide ($CO_2$), methane, and perfluorocarbons (PFCs). These reductions contribute to progress on the President's goal to reduce greenhouse gas intensity by 18 percent by 2012.

ENERGY STAR, EPA's flagship program, realized substantial economic and environmental benefits through 2004. National awareness of the ENERGY STAR program has grown from 40 to 64 percent. More than 40 types of products now carry the ENERGY

STAR label, and 30 percent of U.S. households knowingly purchased an ENERGY STAR-qualified product. In all, consumers have purchased more than 1.5 billion ENERGY STAR-qualified products. In the residential sector, more than 2,000 builders have constructed more 360,000 ENERGY STAR-qualified homes, providing $200 million in savings for homeowners annually.

Since 2002, the Agency has offered leading organizations the opportunity to be Climate Leaders, partners who take aggressive steps to reduce their impact on the global environment. They inventory their greenhouse gas emissions, set aggressive long-term reduction goals, report their progress to EPA, and are recognized for their achievements. EPA also provides technical assistance to help them assess the environmental and economic benefits of clean energy policies and programs, including those that advance energy efficiency, combined heat and power, and renewable sources of energy.

## CHALLENGES

EPA's climate change programs include both domestic and international programs. The domestic programs support the Administration's goal of reducing greenhouse gas intensity by 18 percent by 2012. The Administration has also introduced a number of international initiatives, such as Methane to Markets, in which EPA participates. EPA will continue to work with its voluntary program partners to ensure adequate progress on domestic programs and with other agencies and international partners to support international programs.

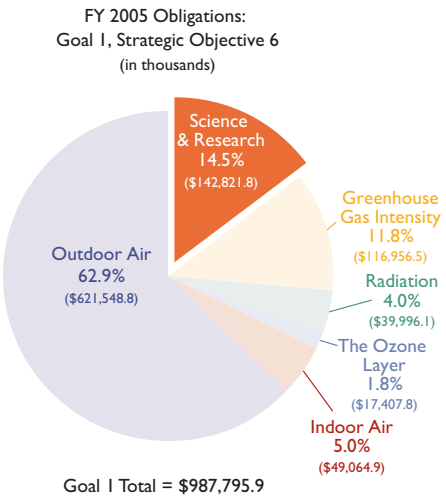
## *Strategic Objective 6—Enhance Science and Research*

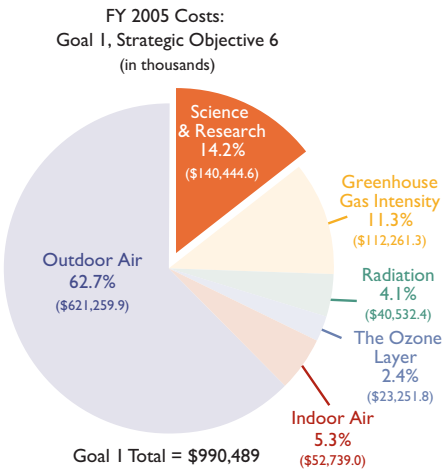
*Through 2010, provide and apply sound science to support EPA's goal of Clean Air by conducting leading-edge research and developing a better understanding and characterization of environmental outcomes under Goal 1.*

## OVERVIEW OF PERFORMANCE

EPA is on track for meeting this objective. The work being done under the Clean Automotive Technology program supports the Agency's climate program's goal to reduce greenhouse gas emissions through significantly improving fuel efficiency of vehicles such as passenger cars, large sport utility vehicles, pickup trucks, urban delivery trucks, school buses, shuttle buses, and refuse trucks.

| STRATEGIC OBJECTIVE 6—ENHANCE SCIENCE AND RESEARCH | | |
|---|---|---|
| APG # | APG Title | APG Status |
| 1.18 | Clean Automotive Technology | ✔ Met in FY 2005 |
| 1.19 | PM Effects Research (NEW IN FY05) | ✔ Met in FY 2005 |



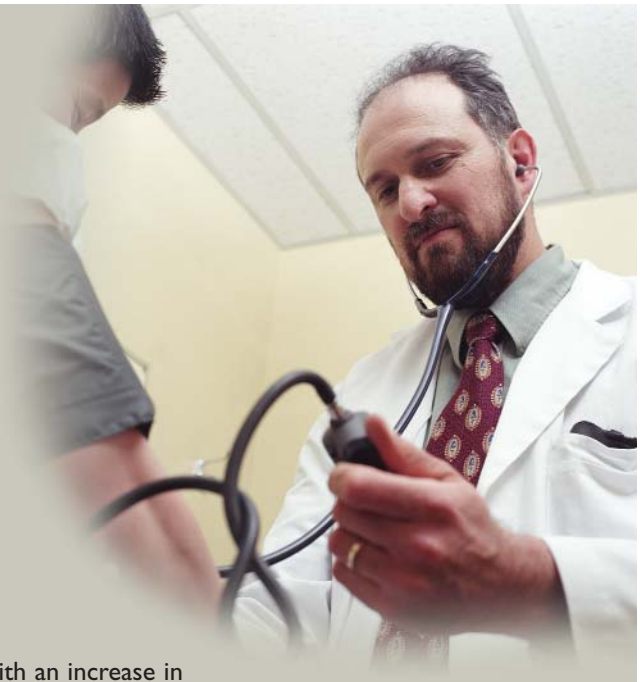

Additionally, in the area of PM research, EPA developed data on the chemical and physical characteristics of significant primary PM sources. These data will help states and others distinguish these from other sources of PM contributing to ambient PM burden, thereby enabling the development of effective State Implementation Plans (SIPs).

### Harvard School of Public Health PM Center Study: Susceptibility to Particulate Air Pollution

Convincing evidence exists that particulate air pollution exacerbates heart and lung disease, which can lead to increased morbidity and mortality risks. However, scientists have been uncertain about which populations are most susceptible to these exposures. An understanding of susceptibility is essential for effectively reducing the adverse public health effects on those at greatest risk.

Under a grant from EPA, researchers at the Harvard PM Center have conducted several studies on susceptibility, using data from multiple cities. Study results show that:

- The risk of heart attacks from PM exposure is double in subjects with a secondary diagnosis of pneumonia or a previous admission for chronic obstructive pulmonary disease.
- Elevated levels of particulate air pollution are associated with an increase in the rate of hospital admissions for exacerbation of congestive heart failure.
- Elevations in ambient particles can transiently increase the risk of ischemic, but not hemorrhagic, stroke.



## CHALLENGES

The emphasis of Clean Automotive Technology program work for the next five to 10 years will be research and collaboration with the automotive, trucking, and fleet industries. Through Cooperative Research and Development Agreements (CRADA), EPA's unique hydraulic hybrid technology and advanced clean-engine technologies will be demonstrated in vehicles such as large sport utility vehicles, pickup trucks, urban delivery trucks, school buses, shuttle buses, and refuse trucks. The intent of these real world demonstrations is to lead to the initial commercial introduction of significant elements of EPA's technologies by vehicle manufacturers.

# Goal 1 Annual Performance Goals

## *Strategic Objective 1—Healthier Outdoor Air*

*Through 2010, working with partners, protect human health and the environment by attaining and maintaining health-based air-quality standards and reducing the risk from toxic air pollutants.*

### APG 1.1 Reduce CO, $SO_2$, $NO_2$, and Lead (Pb)

## PERFORMANCE

Under this annual goal, EPA measures improvements in air quality over time associated with the CO, $SO_2$, Pb, and $NO_x$ area standards. The Agency assesses progress in terms both of population and sources of air emissions reduced. (Note: No areas currently are designated as in non-attainment for the $NO_x$ standard.)

Available data indicate that EPA did not meet its FY 2004 goal. EPA maintained healthy air quality for 173 million people living in 122 monitored areas attaining the CO, $SO_2$, $NO_2$ or Pb standards, falling slightly short of its 174 million goal. Out of 24 non-attainment areas that remain, EPA certified 14, five short of its FY 2004 goal of 19. As a result, the number of people living in areas with healthy air increased by 5.4 million fewer than EPA's target of 6.2 million.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, pages C-3–C-4.

## CHALLENGES

In reviewing these performance results, EPA recognizes that

DATA AVAILABLE FY 2006

**FY 2005:** The number of people living in areas with monitored ambient CO, $SO_2$, $NO_2$, and Pb concentrations below the NAAQS will increase by less than 1% (relative to 2004) for a cumulative total of 53% (relative to 1992).

| *Performance Measures* | *Planned* | *Actual* |
|---|---|---|
| • Cumulative percent increase in the number of people who live in areas with ambient CO, $SO_2$, $NO_2$, and Pb concentrations below the level the NAAQS as compared to 1992. | 53% | Data avail 2006 |
| • Cumulative percent increase in the number of areas with ambient CO, $SO_2$, $NO_2$, and Pb concentrations below the level of the NAAQS as compared to 1992. | 108% | |
| • Total number of people who live in areas measuring clean air for CO, $SO_2$, $NO_2$, and Pb. | 174.2 m | |
| • Areas measuring clean air for CO, $SO_2$, $NO_2$, and Pb. | 10 areas | |
| • Additional people living in new areas measuring clean air for CO, $SO_2$, $NO_2$, and Pb. | 4.1 m | |
| • *Tons of CO reduced from mobile sources. (PART)* | -841,971 tons | |

✗ GOAL NOT MET FOR FY 2004

**FY 2004:** Same goal, different targets of 4% relative to 2003 and a cumulative total of 53% relative to 1992.

| *Performance Measures* | *Planned* | *Actual* | |
|---|---|---|---|
| • Cumulative percent increase in the number of people who live in areas with ambient CO, $SO_2$, $NO_2$, or Pb concentrations below the level the NAAQS as compared to 1992. | 53% | 49% | ✗ |
| • Cumulative percent increase in the number of areas with ambient CO, $SO_2$, $NO_2$, or Pb concentrations below the level of the NAAQS as compared to 1992. | 87% | 99% | ✔ |
| • Total number of people who live in areas designated to attainment of the Clean Air Standards for CO, $SO_2$, $NO_2$, or Pb. | 174 M | 173.3 M | ✗ |
| • Areas newly designated to attainment for CO, $SO_2$, $NO_2$, or Pb standards. | 19 areas | 14 areas | ✗ |
| • Additional people living in newly designated areas with demonstrated attainment of the CO, $SO_2$, $NO_2$, or Pb standards. | 6.2 M | 5.4 M | ✗ |
| • *Tons of CO reduced from mobile sources. (PART)* | 12.6 M | 12.6M | ✔ |

Data Source(s): The Air Quality Subsystem (AQS). AQS stores ambient air quality data used to evaluate an area's air quality levels relative to the National Ambient Air Quality Standards (NAAQS). The Findings and Required Elements Data System (FREDS) is used to track the progress of states and regions in reviewing and approving the required data elements of the State Implementation Plans (SIPs). SIPs are clean air plans that define what actions a state will take to improve the air quality in areas that do not meet NAAQS. National Emissions Inventory Database contains information about reductions from mobile sources. Also see www.epa.gov/ebtpages/air.html.

### Program Assessment Rating Tool (PART)

OMB assessed the Mobile Source program related to this APG in the 2004 PART process. The program received a moderately effective rating. OMB is assessing the NAAQS program related to this APG in the 2005 PART process. Results will be included in the FY 2007 President's Budget.

### Grants Supporting the Achievement of This APG

Clean Air Act Section 105 grants fund state and local development of control strategies and clean air plans for demonstrating attainment and maintenance of the standards. The grants also support the ambient monitoring networks that measure atmospheric concentrations of these pollutants.

an area may monitor ambient air at a level meeting the standard, yet not update its clean air plan (a requisite for designation to attainment). Therefore, to more accurately assess progress in meeting health-based standards, EPA has changed this goal/measure for FY 2006 to measure areas that are monitoring clean air.

EPA is working with states on other, unique areas that are not monitoring clean air for one of these standards to assist them in developing local solutions that reflect local geographic and economic considerations.

## APG 1.2 Reduce Exposure to Unhealthy PM Levels—$PM_{10}$

### PERFORMANCE

Acute exposure to particles can lead to various serious health effects. Coarse and fine particles pose the greatest problems. Many scientific studies link breathing particulate matter (PM) to aggravated asthma, respiratory symptoms like coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, and premature death. Coarse particles ($PM_{10}$) come from such sources as wind-blown dust and unpaved roads and can contribute to respiratory problems such as asthma and bronchitis. Under this annual goal, EPA measures the improvement in air quality over time in meeting the health-based standard for $PM_{10}$.

In 1991, EPA designated 87 areas in the United States as not meeting the National Ambient Air Quality Standard (NAAQS) established for $PM_{10}$. Under the Clean Air Act, states were required to develop and implement control programs to reduce the emissions of $PM_{10}$ in order to achieve the standard. As a result of state $PM_{10}$

DATA AVAILABLE FY 2006

**FY 2005:** The number of people living in areas with monitored ambient PM concentrations below the NAAQS for the $PM_{10}$ standard will increase by less than 1% (relative to 2004) for a cumulative total of 7% (relative to 1992).

| *Performance Measures* | *Planned* | *Actual* |
|---|---|---|
| • Cumulative percent increase in the number of people who live in areas with ambient $PM_{10}$ concentrations below the level of the NAAQS as compared to 1992. | 7% | Data avail 2006 |
| • Cumulative percent increase in the number of areas with ambient $PM_{10}$ concentrations below the level of the NAAQS as compared to 1992. | 74% | |
| • Total number of people who live in areas measuring clean air for $PM_{10}$. | 120.8 m | |
| • Areas measuring clean air for $PM_{10}$. | 10 | |
| • Additional people living in new areas measuring clean air for $PM_{10}$. | 453 K | |
| • *Tons of $PM_{10}$ reduced from mobile sources. (PART)* | 62,161 tons | |

✗ GOAL NOT MET FOR FY 2004

**FY 2004:** Same goal, target of 1% relative to 2003 and cumulative total of 6% relative to 1992.

| *Performance Measures* | *Planned* | *Actual* | |
|---|---|---|---|
| • Cumulative percent increase in the number of people who live in areas with ambient $PM_{10}$ concentrations below the level of the NAAQS as compared to 1992. | 6% | 6% | ✔ |
| • Cumulative percent increase in the number of areas with ambient $PM_{10}$ concentrations below the level of the NAAQS as compared to 1992. | 40% | 54% | ✔ |
| • Total number of people who live in areas designated attainment of the Clean Air Standards for $PM_{10}$. | 120 M | 120.5 K | ✔ |

*(Continued on next page)*

control programs, 64 of the original 87 areas designated as non-attainment (75 percent) are now measuring clean air with respect to $PM_{10}$.

EPA did not meet its FY 2004 goal. Although EPA made significant progress in maintaining air quality in FY 2004, it did not fully meet this goal, in part because it was also working with states to meet the newly established goal for particles less than 2.5 micros in diameter. The Agency met its goal of maintaining healthy air quality for 120.5 million people living in 31 areas designated as attaining the $PM_{10}$ standard, EPA certified only six (rather than nine) of the remaining 54 non-attainment areas as attaining the NAAQS, increased the number of people living in areas with healthy air by 126,000, rather than the targeted increase of 380,000. Additional people are living in areas that are monitoring clean air for $PM_{10}$ although these areas were not designated. EPA will continue to work with areas to ensure that progress is made on reducing ambient $PM_{10}$. For FY 2005, EPA dropped the measure for the number of areas designated in favor of the number of areas monitoring clean air to emphasize the progress in the ambient air monitoring.

✗ GOAL NOT MET FOR FY 2004

**FY 2004:** Same goal, target of 1% relative to 2003 and cumulative total of 6% relative to 1992. *(continued)*

| *Performance Measures (continued)* | *Planned* | *Actual* | |
|---|---|---|---|
| • Additional people living in newly designated areas with demonstrated attainment of the $PM_{10}$ standard. | 380 K | 126 K | ✗ |
| • Areas newly designated to attainment. | 9 areas | 6 areas | ✗ |
| • Percent of areas with improving ambient $PM_{10}$ concentrations. | 76% | 62% | ✗ |
| • *Tons of $PM_{10}$ reduced from mobile sources. (PART)* | 18,100 | 18,100 | ✔ |
| • *Tons of $PM_{2.5}$ reduced from mobile sources. (PART)* | 13,500 | 13,500 | ✔ |

Data Source(s): The Air Quality Subsystem (AQS). See full writeup in APG 1.1. Also see www.epa.gov/ebtpages/air.html.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, pages C-3–C-4.

### Program Assessment Rating Tool (PART)

OMB assessed the Mobile Source program related to this APG in the 2004 PART process. The program received a moderately effective rating. OMB is assessing the NAAQS program related to this APG in the 2005 PART process. Results will be included in the FY 2007 President's Budget.

### Grants Supporting the Achievement of This APG

Clean Air Act Section 103 and105 grants support state, tribal, and local government development of control strategies and clean air plans for demonstrating attainment and maintaining the standards. The grants also support state ambient monitoring networks.

## CHALLENGES

EPA provides annual air quality reports to states and works with them to address areas where violations of the $PM_{10}$ NAAQS are recorded. States are responsible for developing action plans to address the violations and provide their plans to EPA. Challenges include working with states to update their clean air plans.

## APG 1.3 Reduce Exposure to Unhealthy PM Levels—$PM_{2.5}$

## PERFORMANCE

Studies link breathing PM to aggravated asthma, increased coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, and premature death. In 1997, EPA strengthened its health protection standards for PM by adding an indicator for even smaller-sized or "fine" particles ($PM_{2.5}$) that

DATA AVAILABLE FY 2006

**FY 2005:** The number of people living in areas with monitored ambient PM concentrations below the NAAQS for the $PM_{2.5}$ standard will increase by 1% (relative to 2003) for a cumulative total of less than 1% (relative to 2001).

| *Performance Measures* | *Planned* | *Actual* |
|---|---|---|
| • Cumulative percent increase in the number of people who live in areas with ambient $PM_{2.5}$ concentrations below the level of the NAAQS as compared to 2001. | 1% | Data avail 2006 |
| • Percent increase in the number of areas with ambient $PM_{2.5}$ concentrations below the level of the NAAQS as compared to 2001. | 1% | |
| • *Tons of $PM_{2.5}$ reduced from mobile sources. (PART)* | 61,217 tons | |

generally come from industrial fuel combustion and vehicle exhaust. The Agency designated non-attainment areas for $PM_{2.5}$ in December 2004. Under this annual goal, EPA measures the improvement in air quality over time for the $PM_{2.5}$ or fine particle standard. This goal was implemented for the first time in FY 2004 with initial targets while the program collected baseline data. Based on the FY 2004 results, which significantly exceed the target, the program is working to adjust these numbers for FY 2006.

EPA met this goal for FY 2004, achieving a 20 percent increase in the number of people who live areas with ambient $PM_{2.5}$ concentrations below the level of the NAAQS and a 46 percent increase in the number of areas with ambient $PM_{2.5}$ concentrations below the level of the NAAQS as compared to 2001.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, pages C-3–C-5.

✔ GOAL MET FOR FY 2004

**FY 2004:** Same goal, different targets.

| *Performance Measures* | *Planned* | *Actual* | |
|---|---|---|---|
| • Cumulative percent Increase in the number of people who live in ambient $PM_{2.5}$ concentrations below the level of the NAAQS as compared to 2001. | <1 | 20% | ✔ |
| • Cumulative percent Increase in the number of areas with ambient $PM_{2.5}$ concentrations below the level of the NAAQS as compared to 2001. | <1 | 46% | ✔ |

Data Source(s): The Air Quality Subsystem (AQS). See full writeup in APG 1.1. Also see www.epa.gov/ebtpages/air.html.

### Program Assessment Rating Tool (PART)

OMB assessed the Mobile Source program related to this APG in the 2004 PART process. The program received a moderately effective rating. OMB is assessing the NAAQS program related to this APG in the 2005 PART process. Results will be included in the FY 2007 President's Budget.

### Program Evaluations

The Inspector General report: "EPA Needs to Direct More Attention, Efforts, and Funding to Enhance Its Speciation Monitoring Program for Measuring Fine Particulate Matter" (Report No. 2005-P-00004). Additional information on this report is available in the Program Evaluation Section, Appendix B, page B-3.

### Grants Supporting the Achievement of This APG

Clean Air Act Section 103 and 105 grants fund state, tribal, and local government development of control strategies and clean air plans for demonstrating attainment of the standards.

## APG 1.4 Reduce $SO_2$ Emissions

### PERFORMANCE

Acid deposition, more commonly known as acid rain, occurs when emissions of $SO_2$ and $NO_x$ react in the atmosphere with water, oxygen, and oxidants to form various acidic compounds. These acid compounds (including small particles such as sulfates and nitrates) can impair air quality and damage public health; acidify lakes and streams; harm sensitive forest and coastal ecosystems; degrade visibility; and accelerate the decay of building materials, paints, and

DATA AVAILABLE FY 2006

**FY 2005:** Keep annual emissions below level authorized by allowance holdings and make progress toward achievement of Year 2010 $SO_2$ emissions cap for utilities. Annual emissions reduction target is 6.9 million tons from the 1980 baseline.

| *Performance Measures* | *Planned* | *Actual* |
|---|---|---|
| • *$SO_2$ emissions reduced. (PART)* | 6.9 M tons | Data avail 2006 |

✔ GOAL MET FOR FY 2004

**FY 2004:** Maintain or increase annual $SO_2$ emission reduction of approximately 5 M tons from the 1980 baseline. Keep annual emissions below level authorized by allowance holdings and make progress toward achievement of Year 2010 SO emissions cap for utilities.

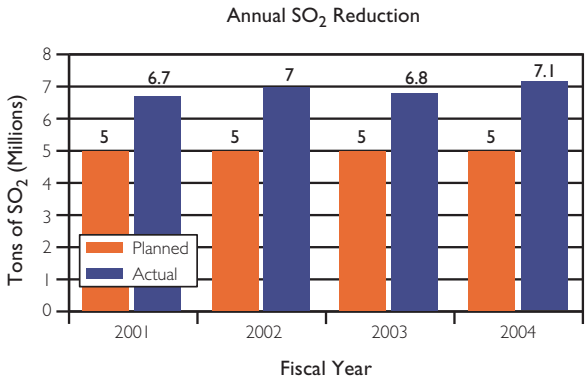
| | *Planned* | *Actual* | |
|---|---|---|---|
| *(Performance measure is included in the annual goal above.)* | 5 M | 7.1M | ✔ |

Data Source(s): Acid Rain Emissions Tracking System. Also see www.epa.gov/airmarkets/arp/.

cultural artifacts, such as buildings, statues and sculptures. Under this annual goal, EPA measures the progress of the acid rain allowance cap and trade program in reducing $SO_2$ emissions from electric utilities.

EPA met this goal for FY 2004, reducing $SO_2$ emissions by 7.1 million tons. $SO_2$ emissions have been reduced by approximately 41 percent from the 1980 level of 17.4 million tons, and the Agency is approaching its goal of a 50 percent reduction by 2010. In FY 2004, some acid rain program sources voluntarily reduced their $SO_2$ emissions below the level of their allowance allocation in order to bank the allowance for use in future years or to sell them. EPA exceeded the annual goal of 5 million tons because of these voluntary over-reductions.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, pages C-1–C-3.




### Program Assessment Rating Tool (PART)

OMB assessed the Acid Rain program related to this APG in the 2003 PART process. The program received a rating of moderately effective.

## APG 1.5 Reduce Air Toxic Emissions

### PERFORMANCE

Under the Clean Air Act Amendments of 1990, EPA identified 187 compounds as hazardous air pollutants. Over 10 years, EPA has issued maximum available control technology (MACT) standards to reduce or eliminate emissions of these pollutants from specific source categories. By calculating the theoretical, expected emission reductions associated with meeting various MACT standards, EPA plans its reduction targets.

In 2001, EPA did not meet its goal of reducing air toxics emissions nationwide from stationary and mobile sources combined by an additional 5 percent of the updated 1993 baseline of 6.0 million tons for a cumulative reduction of 37 percent. Although there are annual slippages, projections developed through 2010 show that EPA will still achieve the estimated cumulative reductions in 2010.

**DATA AVAILABLE FY 2015** — **FY 2005:** Air toxics emissions nationwide from stationary and mobile sources combined will be reduced by an additional 1% of the updated 1993 baseline of 6.0 million tons for a cumulative reduction of 38%.

| *Performance Measures* | *Planned* | *Actual* |
|---|---|---|
| • Mobile source air toxics emissions reduced. | .80 M tons | Data avail 2015[9] |
| • Major stationary source air toxics emissions reduced. | 1.59 M tons | |
| • Area and all other air toxics emissions reduced. | +.14 M tons | |

**DATA AVAILABLE FY 2012** — **FY 2004: Same goal,** cumulative target of 37% reduction from the 1993 level.

| *Performance Measures* | *Planned* | *Actual* |
|---|---|---|
| *(Performance measure is included in the annual goal above.)* | 2% | Data avail 2012 |
| • Mobile source air toxics emissions reduced. | .71 M tons | |
| • Major stationary source air toxics emissions reduced. | 1.59 M tons | |
| • Area and all other air toxics emissions reduced. | +.13 M tons | |

**DATA AVAILABLE FY 2009** — **FY 2003: Same goal,** cumulative target of 35% reduction from the 1993 level.

| *Performance Measures* | *Planned* | *Actual* |
|---|---|---|
| *(Performance measure is included in the annual goal above.)* | 1% | Data avail 2009 |
| • Mobile source air toxics emissions reduced. | .68 tons | |
| • Major stationary source air toxics emissions reduced. | 1.57 tons | |
| • Area and all other air toxics emissions reduced. | +.12 tons | |

*(Continued on next page)*

### Program Assessment Rating Tool (PART)

OMB reassessed the Air Toxics program related to this APG most recently in the 2002 PART process. The program received a rating of adequate.

### Program Evaluations

The Inspector General report: "Progress Made in Monitoring Ambient Air Toxics, But Further Improvements Can Increase Effectiveness" (Report No. 2005-P-00008). Additional information on this report is available in the Program Evaluation Section, Appendix B, page B-2.

| | | | |
|---|---|---|---|
| DATA AVAILABLE FY 2006 | **FY 2002:** Same goal, cumulative target of 40% reduction from the 1993 level. | | |
| *(Performance measure is included in the annual goal above.)* | | *Planned* 5% | *Actual* Data avail 2006 |
| ✗ GOAL NOT MET FOR FY 2001 | **FY 2001:** Same goal, cumulative target of 35% reduction from the 1993 level. | | |
| *(Performance measure is included in the annual goal above.)* | | *Planned* 5% | *Actual* 1.7% ✗ |
| ✗ GOAL NOT MET FOR FY 2000 | **FY 2000:** Same goal, cumulative target of 30% reduction from the 1993 level. | | |
| *(Performance measure is included in the annual goal above.)* | | *Planned* 3% | *Actual* 1.7% ✗ |

Data Source(s): National Toxics Inventory (NTI) and National Emissions Inventory (NEI) for Hazardous Air Pollutants (HAPS). Also see www.epa.gov/ebtpages/airairpohazardousairpollutantshaps.html.

One factor contributing to these results is that, since establishing its 2001 targets, EPA has updated and expanded the inventory of emission sources on which the original projections were based. EPA continues to refine its tools for analyzing emissions to provide better data with which to assess the impact of the MACT standards. Further, to address toxics emissions, EPA is required to re-examine its MACT standards to determine if any residual risk remains after that compliance period has passed. Finally, with EPA's assistance, states are operating and maintaining an air toxics monitoring network that includes 22 sites, strategically located and designed to measure long-range trends in ambient toxics levels.

***Data Quality:*** A description of the data used to measure EPA's performance can be found in Appendix C, pages C-5–C-7.

## CHALLENGES

EPA issued technology-based standards and has developed a strategy for addressing concerns about assessing and implementing residual risk standards and issues regarding the accuracy of air toxics data used to measure progress. The Agency issued 96 MACT standards that apply to 174 industrial categories. This effort has already resulted in estimated annual reductions of 1.5 million tons of toxic emissions and will achieve even greater reductions by 2007, when all sources come into compliance. To date, EPA has completed 15 area source standards and is working to develop standards for an additional 25 area source categories projected for completion in 2008. When completed, these 40 standards will address more than 90 percent of the 1990 baseline emissions from area sources.

Plans for further improvement include developing an innovative approach to assessing low-risk facilities quickly and assessing impacts from entire facilities, thereby grouping several source categories. EPA also plans to use ambient monitoring data from the air toxic monitoring network as a more direct measure of predicting exposure and risk. (Relates to management challenges discussed in Section III, page 188).

## APG 1.6 Reduce Exposure to Unhealthy Ozone Levels—8-hour

### PERFORMANCE

Ozone is formed from motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents, and natural sources that emit $NO_x$ and volatile organic compounds (VOCs). Sunlight and hot weather cause ground-level ozone to form in harmful concentrations. Ozone can irritate lung airways, causing inflammation, wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities. In 1997, EPA revised the air quality standards for ozone to reflect scientific studies showing that longer-term exposures to moderate levels of ozone may cause irreversible changes in the lungs. Under this annual goal, EPA measures the improvement in air quality over time for the 8-hour ozone standard.

EPA met its goal for FY 2004. Based upon designations EPA made in April 2004, 126 areas of the United States—encompassing 159.3 million people—were determined to be in non-attainment for the ozone standard. This goal was implemented for the first time in FY 2004 with initial targets while the program collected baseline data. Based on the FY 2004 results, which significantly exceed the target, the program is working to adjust the annual targets for FY 2006.

DATA AVAILABLE FY 2006

**FY 2005:** The number of people living in areas with monitored ambient ozone concentrations below the NAAQS for the 8-hour standard will increase by 4% (relative to 2004) for a cumulative total of 7% (relative to 2001).

| *Performance Measures* | *Planned* | *Actual* |
|---|---|---|
| • Cumulative percent increase in the number of people who live in areas with ambient 8-hour ozone concentrations below the level of the NAAQS as compared to 2001. | <1% | Data avail 2006 |
| • Cumulative percent increase in the number of areas with ambient 8-hour ozone concentrations below the level of the NAAQS as compared to 2001. | <1% | |
| • *Millions of tons of VOCs reduced from mobile sources. (PART)* | 0.86 M | |
| • *Millions of tons of NOx reduced from mobile sources. (PART)* | 1.69 M | |

✔ GOAL MET FOR FY 2004

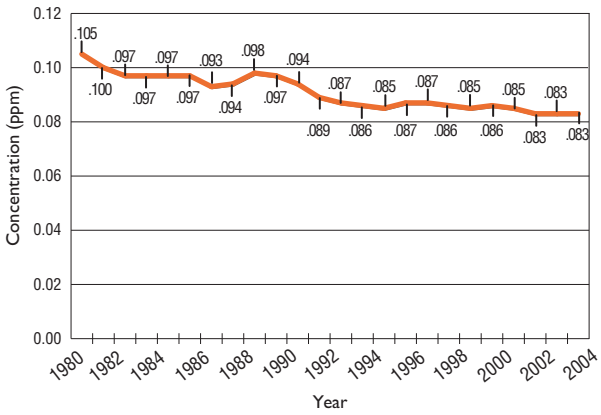
**FY 2004:** Same goal, target of 4% relative to 2003.

| *Performance Measures* | *Planned* | *Actual* | |
|---|---|---|---|
| • Cumulative percent increase in the number of people who live in areas with ambient 8-hour concentrations below the level of the NAAQS as compared to 2001. | <1% | 19% | ✔ |
| • Cumulative percent increase in the number of areas with ambient 8-hour concentrations below the level of the NAAQS as compared to 2001. | <1% | 31% | ✔ |

Data Source(s): The Air Quality Subsystem (AQS). See full writeup in APG 1.1. Also see www.epa.gov/ebtpages/air.html.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, pages C-3–C-4.

Ozone Concentration Levels at Lowest Level Since 1980




Based on 3-year rolling averages of annual average fourth maximum 8-hour ozone concentration at 155 monitoring sites.

### Program Assessment Rating Tool (PART)

OMB assessed the Mobile Source program related to this APG in the 2004 PART process. The program received a moderately effective rating. OMB is assessing the NAAQS program related to this APG in the 2005 PART process. Results will be included in the FY 2007 President's Budget.

### Grants Supporting the Achievement of This APG

EPA's Clean Air Act Section 103, 105, and 106 grants support state, tribal, and local government air programs in developing control strategies and clean air plans for demonstrating attainment with the standards.

## APG 1.7 Acid Rain—Reduce Sulfur Deposition

### PERFORMANCE

Acid deposition, or acid rain, occurs when emissions of $SO_2$ and $NO_x$ react with water, oxygen and oxidants in the atmosphere to form various acidic compounds. These acidic compounds (including small particles such as sulfates and nitrates) contribute to unhealthy air and respiratory problems in humans, particularly in children and other sensitive populations. Sulfur and nitrogen deposition can also acidify lakes and streams, making them unable to support fish and other aquatic life. This goal was met for FY 2004.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, pages C-1–C-3.

| | | | | |
|---|---|---|---|---|
| DATA AVAILABLE FY 2006 | **FY 2005:** *Reduce total annual average sulfur deposition and ambient sulfate concentrations 27% from baseline. Baseline for annual targets up through 2010 is 1990 monitored levels. (PART)* | | | |
| | *(Performance measure is included in the annual goal above.)* | *Planned* 27% | *Actual* Data avail 2006 | |
| ✔ GOAL MET FOR FY 2004 | **FY 2004:** *Reduce total annual average sulfur deposition and ambient sulfate concentrations 25% from baseline. (PART)* | | | |
| | *(Performance measure is included in the annual goal above.)* | *Planned* 25% | *Actual* 31% | ✔ |

Data Source(s): Clean Air Status and Trends Network (CASTNet) and National Acid Deposition Program (NADP) monitoring networks. Also see www.epa.gov/airmarkets/arp/.

### Program Assessment Rating Tool (PART)

OMB assessed the Acid Rain Program related to this APG in the 2003 PART process. The program received a rating of moderately effective.

### Grants Supporting the Achievement of This APG

Grants made under CAA Sections 103 and 105 contribute to the achievement of this goal. EPA has established an interagency agreement with National Park Service, U.S. Department of Interior, for the operation of 30 CASTNET monitoring sites (approximately one-third of the network). EPA has also entered into an interagency agreement with Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, to support National Acid Deposition Program (NADP) monitoring network operations.

### CHALLENGES

Implementation of the Acid Rain Program has substantially reduced emissions of $SO_2$ and $NO_x$ from power generation sources. However, the NAPAP 2005 Report to Congress, recent modeling, and many published articles indicate that $SO_2$ and $NO_x$ emissions reductions achieved under Title IV are insufficient to achieve full recovery or to prevent further acidification in some regions. Additional emissions reductions will be achieved through implementation of existing or future regulations to address transport of ozone and fine particles.

## APG 1.8 Acid Rain—Reduce Nitrogen Deposition

### PERFORMANCE

EPA added this measure in 2003, when the Acid Rain Program was evaluated under the PART process. The new measure more accurately tracks progress toward EPA's environmental objectives than did the previous program measure of reduction in $NO_x$

| | | | |
|---|---|---|---|
| DATA AVAILABLE FY 2006 | **FY 2005:** *Reduce total annual average nitrogen deposition and ambient nitrate concentrations 5% from baseline. Baseline for annual targets up through 2010 is 1990 monitored levels. (PART)* | | |
| *(Performance measure is included in the annual goal above.)* | *Planned* 5% | *Actual* Data avail 2006 | |

| ✔ GOAL MET FOR FY 2004 | **FY 2004:** *Reduce total annual average nitrogen deposition and ambient nitrate concentrations 5% from baseline. (PART)* | | |
|---|---|---|---|
| *(Performance measure is included in the annual goal above.)* | | *Planned* 5% | *Actual* 7% ✔ |

Data Source(s): Clean Air Status and Trends Network (CASTNet) and National Acid Deposition Program (NADP) monitoring networks. Also see www.epa.gov/airmarkets/arp/.

emissions from coal-fired utilities, which was discontinued in 2003.

Reductions in nitrogen deposition recorded since the early 1990s have been less dramatic than those of sulfur. Emission trends from source categories other than the acid rain program sources significantly affect air concentrations and deposition of nitrogen.

***Data Quality:*** A description of the data used to measure EPA's performance can be found in Appendix C, pages C-1–C-3.

## CHALLENGES

In many areas, emissions of nitrogen oxides from on- and off-road vehicles, industrial processes, and other sources not controlled under the Acid Rain Program, along with the use of fertilizers, contribute to nitrogen deposition and ambient nitrate concentrations. Reductions in $NO_x$ emissions achieved through the Acid Rain Program, therefore, may not result in improvements under this measure.

### Program Assessment Rating Tool (PART)

OMB assessed the Acid Rain Program related to this APG in the 2003 PART process. The program received a rating of moderately effective.

### Grants Supporting the Achievement of This APG

Grants made under CAA Sections 103 and 105 contribute to the achievement of this goal. An interagency agreement with National Park Service, U.S. Department of Interior, has been established to support the operation of 30 CASTNET monitoring sites (approximately one-third of the network). EPA has also entered into an interagency agreement with Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, to support NADP monitoring network operations.

## *Strategic Objective 2—Healthier Indoor Air*

*By 2008, 22.6 million more Americans than in 1994 will be experiencing healthier indoor air in homes, schools, and office buildings.*

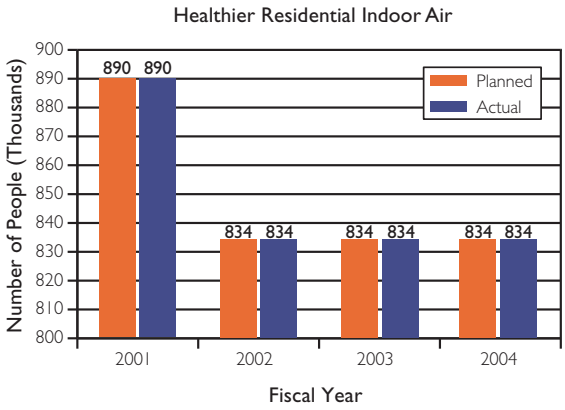
## APG 1.9 Healthier Residential Indoor Air

## PERFORMANCE

To improve air inside America's homes, EPA is focusing its efforts on reducing radon and asthma triggers related to indoor environments. Radon, a colorless, odorless, tasteless gas, is a significant indoor air problem in homes and is the second leading cause of lung cancer in America. In 1992, EPA estimated that nearly one out of every 15 homes had radon concentrations above the EPA recommended action level.[10]

| DATA AVAILABLE FY 2006 | **FY 2005:** 843,300 additional people will be living in homes with healthier indoor air. | | |
|---|---|---|---|
| *(Performance measure is included in the annual goal above.)* | | *Planned* 843,300 | *Actual* Data avail 2006 |
| ✔ GOAL MET FOR FY 2004 | **FY 2004:** Same goal, different target. | | |
| *(Performance measure is included in the annual goal above.)* | | *Planned* 834,000 | *Actual* 834,000 ✔ |

Data Source(s): An external survey produced by National Association of Home Builders Research Center and reviewed by EPA to estimate the percentage of homes that are built radon resistant; Manufactures report their radon fan sales to the Agency (EPA assumes one fan per radon mitigated home and then multiplies it by the assumed average of 2.67 people per household); EPA-developed telephone survey (National Survey on Environmental Management of Asthma), which seeks information about the measures taken to minimize exposure to indoor environmental asthma triggers and how many people permit smoking in their home. Also see www.epa.gov/radon/index.html.




Asthma afflicts about 20 million Americans, including 6.3 million children. Since 1980, the largest growth in asthma cases has been in children under five. In 2000 there were nearly 2 million emergency room visits and nearly half a million hospitalizations due to asthma, at a cost of almost $2 billion, and causing 14 million school days missed each year.

Under this annual goal, EPA measures incremental changes in the number of people with improved indoor air in their homes, schools, and workplaces from actions they took as a result of EPA's radon and asthma programs. EPA met the annual target for FY 2004; FY 2005 results for radon will not be available until late 2006, and asthma results are not available until several months after the close of the fiscal year. However, EPA believes it is on track to achieve its 2005 goals.

Based on historical trends, EPA estimates that 90,000 to 100,000 radon-resistant homes were built in FY 2004, for a total of 1.3 million homes with radon-resistant new construction. Data suggest that the number of active mitigations increased to more than 575,000. Together, all houses with radon-reducing features led to more than 520 future premature cancer deaths prevented annually.

Results of EPA's *2003 National Survey on Environmental Management of Asthma and Children's Exposure to Environmental Tobacco Smoke* indicate that approximately 3 million people with asthma have taken the essential actions recommended by EPA to reduce exposure to indoor triggers. These actions result in an estimated 42,000 emergency room visits avoided on an annual basis.

***Data Quality:*** A description of the data used to measure EPA's performance can be found in Appendix C, pages C-7–C-8.

### Program Assessment Rating Tool (PART)

OMB is assessing the Indoor Air program related to this APG in the 2005 PART process. Results will be included in the FY 2007 President's Budget.

## APG 1.10 Healthier Indoor Air in Schools

### PERFORMANCE

In 1999, indoor air quality was reported to be unsatisfactory in about one in five U.S. schools; ventilation was reported as unsatisfactory in about one-quarter of the nation's public schools. These figures translate to more than 11 million public school students experiencing unsatisfactory indoor air quality and about 14 million attending schools with unsatisfactory ventilation.[11] EPA's Tools for Schools Program is helping school districts evaluate indoor air problems and develop strategies to address them. Under this goal,

| | | | |
|---|---|---|---|
| DATA AVAILABLE FY 2006 | **FY 2005:** 1,312,500 students, faculty and staff will experience improved indoor air quality in their schools. | | |
| *(Performance measure is included in the annual goal above.)* | | *Planned* 1.3 M | *Actual* Data avail 2006 |
| ✔ GOAL MET FOR FY 2004 | FY 2004: Same goal, different target. | | |
| *(Performance measure is included in the annual goal above.)* | | *Planned* 1.5 M | *Actual* 1.63 ✔ |

Data Source(s): EPA-developed survey. See www.epa.gov/iaq/schools/index.html.

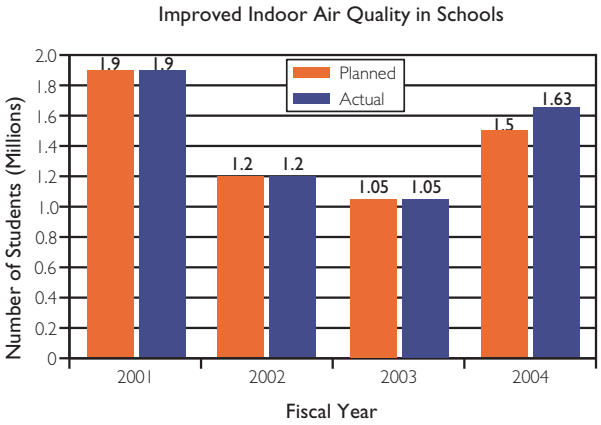
### Program Assessment Rating Tool (PART)

OMB is assessing the Indoor Air program related to this APG in the 2005 PART process. Results will be included in the FY 2007 President's Budget.

EPA tracks increases in the school-based populations with better indoor air in their schools as a result of EPA programs.

In recent years, 12 of the 15 largest U.S. school districts—including the Los Angeles, Miami, and Dallas districts—implemented indoor air quality management plans. EPA estimates that 2,000 schools established indoor air quality Tools for Schools Programs in 2003, and an additional 3,000 schools established programs in 2004.

EPA estimates that it met its FY 2004 goal: approximately 1.63 million students, faculty, and staff experienced improved indoor air quality in their schools. While data for FY 2005 achievements will be not be available until late 2006, the Agency is on track to achieve its FY 2005 target of reaching approximately 1.3 million students and school staff in approximately 2,500 schools.




*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, pages C-10–C-11.

## APG 1.11 Healthier Indoor Air in Workplaces

### PERFORMANCE

Indoor air pollution can pose high risks to human health, especially to sensitive populations. The national cost of poor indoor air quality, including lost worker productivity, direct medical costs for those whose health is adversely affected, and damage to equipment and materials, runs to tens of billions of dollars per year. EPA is helping owners and managers of office buildings understand and achieve the benefits of good indoor air quality, thereby improving the health and productivity of office workers.

✔ GOAL MET

**FY 2005:** 150,000 additional office workers will experience improved air quality in their workplaces. (NEW IN FY05)

| | *Planned* | *Actual* |
|---|---|---|
| *(Performance measure is included in the annual goal above. )* | 150,000 | 150,000 ✔ |

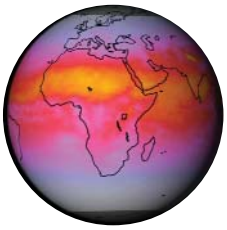
Data Source(s): The performance database consists of two sources, copies of building indoor air quality guidance documents, (e.g. Building Air Quality, I-Beam, and related guidance Mold Remediation in Schools and Commercial Buildings) and training conducted through cooperative agreements or other government agencies (GSA) using our documents. In addition, EPA conducted a voluntary, pilot survey of building owners and managers in 2001 to determine the use of indoor air quality (IAQ) management practices in U.S. office buildings. Also see www.epa.gov/iaq/largebldgs/index.html.

In FY 2005, EPA met the target for this measure, estimating that approximately 150,000 office workers experienced improved air quality in their workplaces.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, pages C-11–C-12.

**Program Assessment Rating Tool (PART)**

OMB is assessing the Indoor Air program related to this APG in the 2005 PART process. Results will be included in the FY 2007 President's Budget.



## *Strategic Objective 3—Protect the Ozone Layer*

*By 2010, through worldwide action, ozone concentrations in the stratosphere will have stopped declining and slowly begun the process of recovery, and the risk to human health from overexposure to ultraviolet radiation, particularly among susceptible subpopulations, such as children, will be reduced.*

## APG 1.12 Restrict Domestic Consumption of Class II HCFCs

### PERFORMANCE

When gases containing chlorine and bromine, routinely emitted through human activities, are transported to the stratosphere, they can participate in reactions that destroy ozone. The Clean Air Act regulates ozone-depleting compounds based on their ozone depleting potential. Ozone-depleting compounds include chlorofluorocarbons (CFCs), commonly used as refrigerants, solvents, and foam blowing agents; halons, used as fire extinguishing agents; and hydrochlorofluorocarbons (HCFCs), a class of chemicals being used to replace CFCs because they deplete stratospheric ozone to a much lesser extent. (The United States stopped producing halons on December 21, 1993, due to their ozone-depleting potential.) Under this annual goal, EPA measures the annual consumption and production of these ozone-depleting compounds.

EPA met both its FY 2003 and FY 2004 goals, verifying that domestic consumption of Class II HCFCs was less than the target amounts. Progress on restricting domestic exempted consumption of Class I CFCs and halons for FY 2004 was tracked by monitoring industry reports of compliance with EPA's Clean Air Act phase-out regulations and U.S. obligations under the Montreal Protocol. As a result of excellent implementation of the program and long-term, effective communications with industry, EPA exceeded its annual performance goals.

| | | | | |
|---|---|---|---|---|
| DATA AVAILABLE FY 2006 | **FY 2005:** Restrict domestic annual consumption of class II hydrochlorofluorocarbons (HCFCs) below 9,906 ODP-weighted metric tons (ODP MTs) and restrict domestic exempted production and import of newly produced class I chlorofluorocarbons (CFCs) and halons below 10,000 ODP MTs. | | | |
| | *(Performance measure is included in the annual goal above.)* | *Planned*<br>< 9,906<br>< 10,000 | *Actual*<br>Data avail 2006 | |
| ✔ GOAL MET FOR FY 2004 | **FY 2004:** Same goal, same targets. | | | |
| | *(Performance measure is included in the annual goal above.)* | *Planned*<br><9,906<br><10,000 | *Actual*<br>5,500<br>1,225 | ✔ |
| ✔ GOAL MET FOR FY 2003 | **FY 2003:** Same goal, same targets. | | | |
| | *(Performance measure is included in the annual goal above.)* | *Planned*<br><9,906<br><10,000 | *Actual*<br>7,110<br>2,049 | ✔ |

Data Source(s): Progress on restricting domestic exempted consumption of Class I CFCs and halons is tracked by monitoring industry reports of compliance with EPA's CAA phase out regulations and U.S. obligations under the Montreal Protocol. Data are provided by U.S. companies producing, importing, and exporting Ozone Depleting Substances. Also see www.epa.gov/ozone/index.html.

**Program Assessment Rating Tool (PART)**

OMB assessed the Stratospheric Ozone program in the 2004 PART process. The program received a score of adequate.

***Data Quality:*** A description of the data used to measure EPA's performance can be found in Appendix C, page C-12.


## *Strategic Objective 4—Radiation*

*Through 2008, working with partners, minimize unnecessary releases of radiation, and be prepared to minimize impacts to human health and the environment should unwanted releases occur.*

## APG 1.13 Ensure WIPP Safety

### PERFORMANCE

The Waste Isolation Pilot Plant (WIPP) Land Withdrawal Act requires EPA to issue final regulations for the disposal of spent nuclear fuel, high-level radioactive waste, and transuranic waste, and it gives the Agency authority to develop criteria for implementing final radioactive waste disposal standards for the WIPP. EPA is required to recertify the site every 5 years and oversee the wastes shipped to the WIPP from sites throughout the country. This measure tracks the progress of the Department of Energy (DOE) in meeting the criteria set by EPA and sending waste to WIPP.

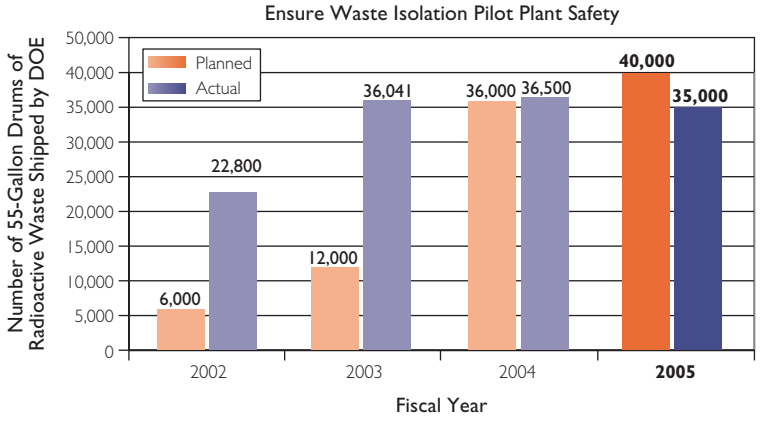
EPA expects to complete its current review of the DOE Recertification Request in late winter 2006. During FY 2005, EPA held WIPP stakeholder meetings in New Mexico to discuss the first WIPP recertification application.

| ✔ GOAL MET | **FY 2005:** Certify that 40,000 55-gallon drums of radioactive waste (containing approximately 120,000 curies) shipped by the Department of Energy (DOE) to the Waste Isolation Pilot Plant are permanently disposed of safely and according to EPA standards. | | |
|---|---|---|---|
| | *(Performance measure is included in the annual goal above.)* | *Planned* 40,000 drums | *Actual* 35,000 ✔ |

Data Source(s): The performance data used by EPA are collected and maintained by the Department of Energy. EPA ensures the safe characterization and disposal of drums of transuranic waste. Also see www.epa.gov/radiation/wipp/index.html and www.epa.gov/radiation/.

In FY 2005, DOE shipped approximately 35,000 55-gallon drums of radioactive waste (containing approximately 108,000 curies) to the WIPP, and EPA certified that all were permanently disposed of safely and accordance with EPA standards. Because DOE did not ship as many containers it had originally planned, EPA's target was unachievable, but the Agency considers this goal to have been met since EPA took action on all the drums provided. EPA does expect DOE to meet the long-term disposal goal, however, and the Agency to meet its inspection and certification goals. Having consulted with DOE, EPA is already prepared to inspect an additional 10,000 drums of waste over the original target of 45,000 drums set for FY 2006.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, page C-14.




### CHALLENGES

This performance goal is structured such that DOE must meet its estimated shipments for EPA to meet its performance target. Consequently, the Agency may miss or far exceed its performance goal, depending on DOE shipments. In preparation for the assessment of this program, EPA is developing additional measures to track the radiation program's progress.

## APG 1.14 Build National Radiation Monitoring System

### PERFORMANCE

EPA consolidated a number of existing radiation monitoring activities to establish the Radiation Monitoring Network (RadNet, formerly ERAMS). The RadNet program has three objectives: to provide data for nuclear emergency response assessments; to provide data on ambient levels of radiation in the environment for baseline and trend analysis; and to inform decision-makers and the public in the event of a nuclear incident. Measures under this annual goal track EPA's progress in expanding the network.

In FY 2005, EPA purchased 52 state-of-the-art monitors and initiated the deployment to sites. The first of the monitors will not be delivered until the first quarter of FY 2006. Most will be sited in FY 2006. Additional monitors will be delivered in FY 2006 and sited in FY 2006 and subsequent years. EPA will update its annual goals for FY 2006 and beyond to reflect the delay in obtaining the monitors. Based on EPA's current estimates, the full network will not be completed until 2012.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, page C-13.

| ✔ GOAL MET | **FY 2005:** EPA will purchase 51 additional state of the art monitoring units and initiate deployment to sites selected based on populations and geographical coverage. | | |
|---|---|---|---|
| | *(Performance measure is included in the annual goal above. )* | *Planned* 51 units | *Actual* 52 units ✔ |

Data Source(s): Output measure; internal performance tracking database. Also see www.epa.gov/narelweb/radnet/ and www.epa.gov/radiation/.

### CHALLENGES

The RadNet plan initially called for the full monitoring system to be in place by 2009. Given the complexities of the system and the technology, however, and the delay in selecting a contractor and making an award, the plan has been pushed out to future years. Nonetheless, EPA expects to substantially meet its original target by providing radiation monitoring coverage to approximately 65 percent of the U.S. population by 2009.

## APG 1.15 Homeland Security—Readiness and Response

### PERFORMANCE

In the event of a radiological emergency, EPA's Radiological Emergency Response Team (RERT) works with other federal agencies, states, and international organizations to track, contain, and clean up the releases, while protecting people and the environment from harmful exposure to radiation. Under this annual goal, EPA tracks progress in training RERT members and implementing updated response procedures. Performance data will be available in late 2006.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, page C-14.

| DATA AVAILABLE FY 2006 | **FY 2005:** Verify that 50% of EPA's Radiological Emergency Response Team (RERT) members meet scenario-based response criteria. (NEW IN FY 05) | | |
|---|---|---|---|
| | *(Performance measure is included in the annual goal above. )* | *Planned* 50% | *Actual* Data avail 2006 |

Data Source(s): The Department of Homeland Security (DHS) is responsible for assuring that all Federal Emergency Response assets maintain an adequate level of readiness (Homeland Security Act of 2002). EPA assumes that DHS will maintain a data system to evaluate and assess the readiness of assets across the federal government. EPA will perform evaluations of its own assets and report results under this measure, but must rely on the DHS data source for key information. Also see www.epa.gov/radiation/rert/index.html and www.epa.gov/radiation/.

### CHALLENGES

While EPA has not identified specific challenges to meeting its goal for FY 2005, emergency response preparedness continues to pose unique issues. While the Agency measures its performance based on meeting scenario-based response criteria, the Department of Homeland Security (DHS) has not yet finalized those criteria. EPA is developing standardized criteria based on the functional requirements identified in the National Response Plan's Nuclear/ Radiological Incident Annex and the National Oil and Hazardous Substances Pollution Contingency Plan.

## *Strategic Objective 5–Reduce Greenhouse Gas Intensity*

*Through EPA's voluntary climate protection programs, contribute 45 million metric tons of carbon equivalent (MMTCE) annually to the President's 18% greenhouse gas (GHG) intensity improvement goal by 2012. (An additional 75 MMTCE to result from the sustained growth in the climate programs are reflected in the administrations' business-as-usual projection for GHG intensity improvement.)*

## APG 1.16 Reduce Greenhouse Gas (GHG) Emissions

### PERFORMANCE

EPA and its partners continue to achieve reductions in emissions of greenhouse gases, which contribute to meeting the President's greenhouse gas intensity reduction goal for 2012. Measures under this annual goal track greenhouse gas emissions (measured in million metric tons of carbon equivalent, or MMTCE) that have been avoided as a result of EPA programs.

In FY 2004, through EPA's partnerships with businesses, schools, state and local governments, and other organizations, greenhouse gas emissions were reduced from projected levels by approximately 87.9 MMCTE per year. FY 2005 performance data for this goal will be available in October 2006, after EPA assesses the data it receives from companies.

***Data Quality:*** A description of the data used to measure EPA's performance can be found in Appendix C, pages C-15–C-16.

**DATA AVAILABLE FY 2006**

**FY 2005:** GHG emissions will be reduced from projected levels by approximately 90 MMTCE per year through EPA partnerships with businesses, schools, state and local governments, and other organizations.

| *Performance Measures (all are MMTCE)* | *Planned* | *Actual* |
|---|---|---|
| • Annual GHG reductions—all EPA programs. | 90.2 | Data avail 2006 |
| • *GHG reductions from EPA's Buildings Sector Programs (ENERGY STAR). (PART)* | 23.8 | |
| • *GHG reductions from EPA's Industrial Efficiency/Waste Management Programs. (PART)* | 8 | |
| • *GHG reductions from EPA's Industrial Methane Outreach Programs. (PART)* | 19.1 | |
| • *GHG reductions from EPA's HFC/PFC Programs. (PART)* | 34.4 | |
| • *GHG reductions from EPA's Transportation Programs. (PART)* | 2.9 | |
| • *GHG reductions from EPA's State and Local Programs.* | 2.0 | |

✔ **GOAL MET FOR FY 2004**

**FY 2004:** Same goal, different targets.

| *Performance Measures* | *Planned* | *Actual* | |
|---|---|---|---|
| • Annual GHG reductions—all EPA programs data available. | 81.0 | 87.9 | ✔ |
| • *GHG reductions from EPA's Buildings Sector Programs (ENERGY STAR). (PART)* | 21.4 | 26.2 | ✔ |
| • *GHG reductions from EPA's Industrial Efficiency/Waste Management Programs. (PART)* | 7.3 | 9 | ✔ |
| • *GHG reductions from EPA's Industrial Methane Outreach Programs. (PART)* | 18.1 | 19.9 | ✔ |
| • *GHG reductions from EPA's Industrial HFC/PFC Programs. (PART)* | 29.6 | 28.2 | ✗ |
| • *GHG reductions from EPA's Transportation Programs. (PART)* | 2.6 | 2.6 | ✔ |
| • *GHG reductions from EPA's State and Local Programs.* | 2.0 | 2.0 | ✔ |

Data Source(s): EPA maintains a "tracking system" for emissions reductions relative to appropriate baselines. Baseline data for carbon emissions related to energy use come from the Energy Information Agency (EIA). Baseline data for non-carbon dioxide emissions, including nitrous oxide and other global warming potential gases are maintained by EPA. The non-carbon dioxide emissions data are compiled with input from industry and also independently from partners' information. EPA develops methane emissions baselines and reductions using information from industry partners, including the natural gas, coal, and landfill gas development industries. EPA continues to develop annual inventories as well as update methodologies as new information becomes available. Also see www.energystar.gov.

### Program Assessment Rating Tool (PART)

OMB assessed the Climate Change program related to this APG in the 2004 PART process. The program received an adequate rating.

## APG 1.17 Reduce Energy Consumption

### PERFORMANCE

As a result of the ENERGY STAR program alone, Americans saved a significant amount of energy in 2004: 125 billion kilowatt-hours (kWh) and 25 gigawatts (GW) of peak energy required for about 25 million homes. Voluntary efforts also prevented greenhouse gas emissions equivalent to those from 20 million vehicles and saved approximately $10 billion in energy bills. In FY 2004, as a result of all climate change programs, EPA reduced energy consumption from the projected level by 145 billion kWh, contributing to over $10 billion in energy savings for consumers and businesses.

**Program Assessment Rating Tool (PART)**

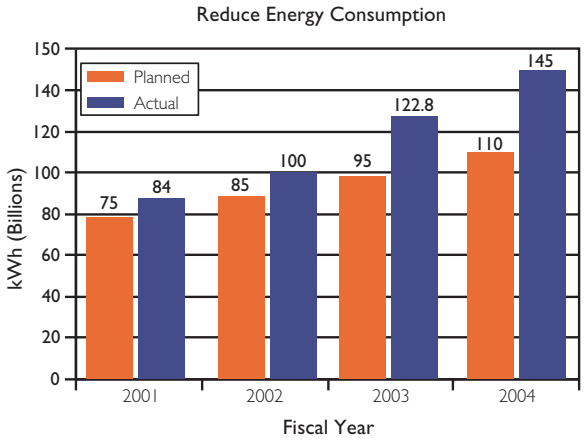
OMB assessed the Climate Change program related to this APG in the 2004 PART process. The program received an adequate rating.

| | | | |
|---|---|---|---|
| DATA AVAILABLE FY 2006 | **FY 2005:** Reduce energy consumption from projected levels by more than 120 billion kilowatt-hours (kWh), contributing to more than $8.5 billion in energy savings to consumers and businesses. (all are MMTCE) | | |
| *(Performance measure is included in the annual goal above.)* | | *Planned* 120 | *Actual* Data avail 2006 |
| ✔ GOAL MET FOR FY 2004 | **FY 2004:** Same goal, different target. | | |
| *(Performance measure is included in the annual goal above.)* | | *Planned* 110B | *Actual* 145B ✔ |

Data Source(s): Climate Protection Partnerships Division Tracking System. Data collected by EPA's voluntary programs include partner reports on facility specific improvements (e.g. space upgraded, kWh reduced), national market data on shipments of efficient products, and engineering measurements of equipment power levels and usage patterns. Also see www.energystar.gov.

FY 2005 data for this performance goal will be available in October 2006.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, page C-16.




## *Strategic Objective 6—Enhance Science and Research*

*Through 2010, provide and apply sound science to support EPA's goal of Clean Air by conducting leading-edge research and developing a better understanding and characterization of environmental outcomes under Goal 1.*

## APG 1.18 Clean Automotive Technology

### PERFORMANCE

EPA's goal was to adapt technology originally developed for passenger vehicles for use in SUV's and urban delivery vehicles that would achieve 30 percent improvement in fuel economy, while also meeting the size, performance and durability requirements of these vehicles. The Agency demonstrated through vehicle testing that its hybrid powertrain could meet the fuel economy improvement goal for FY 2005. However, the towing

performance requirement was verified through modeling, as a high-performance configuration was not operationally tested. EPA modeling results, combined with vehicle testing, projects that the average fuel economy of the typical SUV with EPA-developed hybrid technology would represent at least a 30 percent increase over the baseline of 20.2 mpg.[12]

EPA anticipates that its work to facilitate industry's use of innovative clean automotive technology will lead to consumer benefits, increasing consumers' ability to recoup higher initial vehicle costs with lower operating costs. Continued success is evidenced by the International Truck and Engine Corporation's and Ford Motor Company's licensing of EPA's hybrid technology. EPA is also working with Autocar, to transfer this technology to refuse trucks, and with the Army, to demonstrate the feasibility of hydraulic hybrid technology on heavy vehicles.

**Program Assessment Rating Tool (PART)**

OMB assessed the Climate Change program related to this APG in the 2004 PART process. The program received an adequate rating.

✔ GOAL MET

**FY 2005:** Transfer hybrid powertrain components, originally developed for passenger car applications, to meet size, performance, durability, and towing requirements of sport utility vehicle (SUV) and urban delivery vehicle applications with an average fuel economy improvement of 30% over the baseline.

| | Planned | Actual |
|---|---|---|
| *(Performance measure is included in the annual goal above.)* | 26.3 mpg | 26.3 mpg ✔ |

Data Source(s): Powertrain components were subjected to EPA fuel economy tests at the National Vehicle and Fuel Emissions Laboratory (NVFEL), Ann Arbor, Michigan. Performance and towing performance data are based on EPA modeling of optimal vehicle configuration. For more information on modeling results, see www.epa.gov/otaq/technology/.

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, page C-17.

## APG 1.19 PM Effects Research

### PERFORMANCE

When ambient air PM concentrations exceed the PM NAAQS, states are required to develop State Implementation Plans (SIPs) to achieve PM goals. Under this annual goal, EPA develops data on the chemical and physical characteristics of significant primary sources of PM. States will use this information to help distinguish primary from other sources of PM, enabling them to develop more effective SIPs.

For example, EPA has characterized the chemical and physical properties of emissions from automobiles, aircraft engines, oil-fired boilers, and residential appliances. These characterizations allowed scientists to profile the combustion sources of PM2.5 that need to be developed or improved—information that states can use develop effective PM emission reduction strategies in their SIPs. These emissions profiles will be incorporated into EPA's SPECIATE database as part of an incremental process to upgrade emissions profiles for a wide variety of air pollution sources.

By the end of FY 2005, EPA's Office of Research and Development delivered improved receptor models and data on chemical compounds emitted from sources so that, by 2006, EPA and states will have the new data and tools needed to predict, measure, and reduce ambient PM and PM emissions to attain the existing PM NAAQS.

✔ GOAL MET

**FY 2005:** By FY 2005, deliver and transfer improved receptor models and data on chemical compounds emitted from sources so that by 2006, EPA's Office of Air and Radiation and the states have the necessary new data and tools to predict, measure, and reduce ambient PM and PM emissions to attain the existing PM NAAQS for the protection of public health. (NEW IN FY05)

| Performance Measures | Planned | Actual |
|---|---|---|
| • Improved receptor models and data on chemical compounds emitted from sources. | 09/30/05 models/ data | 09/30/05 models/ data ✔ |

*Data Quality:* A description of the data used to measure EPA's performance can be found in Appendix C, page C-17.

## CHALLENGES

EPA encountered the usual research challenges in accomplishing this work. The Agency anticipated and overcame quality assurance and data analysis issues.

### Program Assessment Rating Tool (PART)

OMB is assessing the NAAQS Research program related to this APG in the 2005 PART process. Results will be included in the FY 2007 President's Budget.

### Program Evaluations

The Board of Science Counselors Report: "Managerial and Scientific Review of the Particulate Matter (PM)/Ozone (Oz) Program." Additional information on this report is available in the Program Evaluation Section, Appendix B, page B-6.

## *Prior Year Annual Performance Goals Without Corresponding FY 2005 Goals*

*(Actual performance data available in FY 2004 and beyond)*

## PERFORMANCE

Ozone is formed from motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents, and natural sources that emit NOx and VOCs. Sunlight and hot weather cause ground-level ozone to form in harmful concentrations. Ozone can irritate lung airways, causing inflammation, wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities. In 1997, EPA revised the air quality standards for ozone to reflect scientific studies showing that longer-term exposures to moderate levels of ozone may cause irreversible changes in the lungs.

***Goal Not Met.*** Under this annual goal, EPA measured the improvement in air quality over time for the 1-hour ozone standard. However, the 1-hour standard has been revoked in areas following designation of 8-hour ozone non-attainment areas. Because it now tracks progress on the 8-hour standard, EPA will not tracking this annual goal and associated measures in FY 2006 and beyond.

✗ GOAL NOT MET

The number of people living in areas with monitored ambient ozone concentrations below the NAAQS for the 1-hour ozone standard will increase by 4% (relative to 2003) for a cumulative total of 47% (relative to 1992).

| *Performance Measures* | *Planned* | *Actual* | |
|---|---|---|---|
| • Cumulative percent increase in the number of people who live in areas with ambient 1-hour ozone concentrations below the level of the NAAQS as compared to 1992. | 47% | 44% | ✗ |
| • Cumulative percent increase in the number of areas with ambient 1-hour ozone concentrations below the level of the NAAQS as compared to 1992. | 55% | 96% | ✔ |
| • Total number of people who live in areas designated to attainment of the Clean Air Standards for ozone. | 167.3 M | 165.4 M | ✗ |
| • Areas newly designated to attainment for the ozone standards. | 5 areas | 3 areas | ✗ |
| • Additional people living in newly designated areas with demonstrated attainment of ozone standards. | 5.8 M | 3.9 M | ✗ |
| • *Millions of tons of VOCs reduced from mobile sources. (PART)* | 2.0 M | 2.0 M | ✔ |
| • *Millions of tons of $NO_x$ reduced from mobile sources. (PART)* | 1.65 M | 1.65 M | ✔ |

### Program Assessment Rating Tool (PART)

OMB assessed the Mobile Source program related to this APG in the 2004 PART process. The program received a moderately effective rating. OMB is assessing the NAAQS program related to this APG in the 2005 PART process. Results will be included in the FY 2007 President's Budget.

***Data Quality:*** A description of the data used to measure EPA's performance can be found in Appendix C, pages C-3–C-4.

## *Goal 1—PART Measures with Data Availability Beyond FY 2005*

*EPA and OMB established the annual and efficiency measures included on this table through PART Assessments. These measures will be incorporated into EPA's budget and GPRA documents, including the PAR, as data becomes available. The column titled "Data Available" provides the most current estimate for the date EPA expects to report on each measure.*

| PART Program | PART Measure | Status | Data Available |
|---|---|---|---|
| Air Toxics | Cumulative percentage reduction in tons of toxicity-weighted (for cancer risk) emissions of air toxics. | Collecting Data | FY 2008 |
| | Cumulative percentage reduction in tons of toxicity-weighted (for noncancer risk) emissions of air toxics. | Collecting Data | FY 2008 |
| | Tons of toxicity-weighted emissions (for cancer and noncancer risk) per total cost (EPA and industry dollars). | Collecting Data | TBD |
| Climate Change | Tons of greenhouse gas emissions (MMTCE) prevented per dollar spent—Industry. | Collecting Data | FY 2008 |
| | Tons of greenhouse gas emissions (MMTCE) prevented per dollar spent—Transportation. | Collecting Data | FY 2008 |
| | Tons of greenhouse gas emissions (MMTCE) prevented per dollar spent—Buildings. | Collecting Data | FY 2007 |
| Mobile Sources | Cumulative reduction in tons of pollution from mobile sources per dollar spent by EPA and industry. | Collecting Data | FY 2010 |
| | Percentage reduction in time (days) per certificate approval for large engines (Nonroad CI, Heavy duty gas and diesel engines). | Collecting Data | FY 2012 |
| Stratospheric Ozone Protection | Remaining US consumption of HCFCs, measured in tons of ozone depleting potential (ODP). | Collecting Data | TBD |

## NOTES

1 It is important to note that the Safe Drinking Water Information System (SDWIS) has been identified as an Agency-level Weakness under the Federal Managers Financial Integrity Act, with corrective action to be completed in 2007. The data are not considered materially inadequate, however, per OMB's definition. The Verification and Validation section of the Annual Performance Plan and Congressional Justification has details on data limitations associated with SDWIS.

2 See www.epa.gov/airtrends/reports.html. Air pollutants include lead, CO, SO2, NOx, ozone, and PM.

3 EPA Announces Landmark Clean Air Interstate Rule (Agency Press Release, 3/10/05).

4 EPA Announces First-Ever Rule to Reduce Mercury Emissions from Power Plants. www.epa.gov/mercuryrule/.

5 More information is available in National Acid Precipitation Assessment Report to Congress: Integrated Assessment, August 2005. The National Acid Precipitation Assessment Program (NAPAP) is a legislatively mandated cooperative effort among federal agencies to coordinate acid rain research and assessment.

6 Investing in Our Future: Energy Star® and Other Voluntary Program. 2004 Annual Report www.energystar.gov/ia/news/downloads/annual_report2004.pdf.

7 2003 National Survey on Environmental Management of Asthma and Children's Exposure to ETS www.epa.gov/asthma/pdfs/survey_fact_sheet.pdf.

8 "IAQ Practices in Schools Survey," July 10, 2003. Prepared by Indoor Environments Division, U.S. Environmental Protection Agency and Environmental Health & Engineering, Inc. 60 Wells Ave., Newton, MA 02459-3210. IAQ Practices in Schools Survey, Office of Management and Budget Control No.: 2060-0436.

9 Approximately 3 years (from the end of the inventory) is required to compile/QA the inventory. The inventory is compiled on a 3-year cycle (2002, 2005, and 2008).

10 National Residential Radon Survey, 1992 and U.S. Surgeon General Health Advisory on Radon, January 13, 2005, http://www.surgeongeneral.gov/pressreleases/sg01132005.html. Reiterates 1988 U.S. Surgeon General Health Advisory recommending that all homes be tested below the third floor for radon. Also recommends fixing homes with radon levels at or above 4 picocuries per liter (pCi/L), EPA's National Voluntary Action Level.

11 Condition of America's Public School Facilities: 1999, National Center for Education Statistics, Office of Educational Research and Improvement, U.S. Department of Education, NCES2000-032, June 2000.

12 The average fuel economy for a typical SUV is derived from EPA's Annual Fuel Economy Trends report.