

U.S. Environmental Protection Agency

Description of Office of Air and Radiation (OAR) Partnership and Community Programs

This document includes brief descriptions of partnership and community programs that U.S. EPA OAR manages and/or participates in as of fall 2009. This document does not include programs that are primarily supported by EPA Regional Offices. The descriptions contained in this document have been extracted from an internal EPA work group report on partnership and community-based programs completed on November 10, 2009.

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1. OAR/HQ Partnership and Community Programs

1.1 OAR/HQ partnership programs

Climate Leaders

Climate Leaders is an EPA industry-government partnership that works with companies to develop comprehensive climate change strategies. Partner companies commit to reducing their impact on the global environment by completing a corporate-wide inventory of their greenhouse gas emissions based on a quality management system, setting aggressive reduction goals, and annually reporting their progress to EPA. Through program participation, companies create a credible record of their accomplishments and receive EPA recognition as corporate environmental leaders.

Coal Combustion Products Partnership

C2P2 is a joint government and industry program to increase the beneficial use of coal combustion products to reduce energy consumption, greenhouse gas emissions and increase industrial recycling. The goals of the C2P2 program are to increase the use of coal ash as a replacement for Portland cement in concrete from 12.6 million tons in 2002 to 20 million tons in 2010, which will reduce future greenhouse gas generation by over 6.5 million tons annually, and increase the overall use of coal combustion products from 35%, 2002, to 45 by 2008.

Combined Heat and Power Partnership

The CHP Partnership is a voluntary program seeking to reduce the environmental impact of power generation by promoting the use of environmentally beneficial combined heat and power (CHP). CHP, also known as cogeneration, is an efficient, clean, and reliable approach to generating power and thermal energy from a single fuel source. By installing a CHP system designed to meet the thermal and electrical base loads of a facility, CHP can greatly increase the facility's operational efficiency and decrease energy costs. The Partnership works closely with energy users, the CHP industry, state and local governments, and other clean energy stakeholders to facilitate the development of new projects and to promote their environmental and economic benefits.

Community-Based Childhood Asthma Program

The Asthma Program reduces adverse health outcomes and the economic burden due to asthma by promoting best practices and control of environmental triggers across the continuum of comprehensive asthma care. Program components include public awareness campaigns, training health care providers, support to national NGOs, and building community capacity through an annual pacing event, and online networking and peer to peer learning (www.epa.gov/asthma).

ENERGY STAR

ENERGY STAR is a joint program of EPA and the U.S. Department of Energy that helps American businesses and consumers save money and protect the environment by investing in energy efficient products and practices. ENERGY STAR is designed to overcome many of the market barriers to the adoption of cost-effective energy efficiency products and services in a sustained manner and to help unleash the attendant savings for individuals and organizations. Through the ENERGY STAR program, EPA has partnered with thousands of organizations across the residential, commercial and industrial sectors to increase the sales of energy efficient products bearing the ENERGY STAR label, raise energy

efficiency standards for new home construction and existing home renovations, and improve the efficiency of commercial and industrial facilities through strategic energy management practices.

- **ENERGY STAR Residential Sector**-- The energy used to light, heat, and cool U.S. homes and power household appliances, tools, and electronics currently accounts for nearly 17 percent of U.S. greenhouse gas emissions. To help meet the nation's goal of improving energy efficiency and reducing emissions, it is critical for the building and contracting industry, homeowners, and renters to make every effort to reduce the energy used in homes. Through ENERGY STAR, EPA offers many tools and resources to help households and the housing industry learn how to increase energy efficiency.
- **ENERGY STAR Labeled Products** -- Through the ENERGY STAR program, EPA provides value to consumers by enabling them to easily identify energy-efficient products. EPA offers the ENERGY STAR label for products that are substantially more energy-efficient than required by standards or than typically available where there are no standards. Recognized by an ever-growing number of consumers, ENERGY STAR continues to be the trusted symbol of energy efficiency, as demonstrated by increasing sales of ENERGY STAR qualified products. Americans purchased about 550 million ENERGY STAR qualified products in 2008—across more than 60 product categories—for a cumulative total of more than 2.5 billion products since 2000. These products offer consumers energy savings of as much as 75 percent compared to standard models.
- **ENERGY STAR Commercial Sector** – Commercial buildings now have a lead role in the nation's urgent work effort to reduce energy consumption, create new jobs, and fight global climate change because commercial buildings use nearly 20 percent of the total energy consumed in the United States and add almost the same proportion of greenhouse gas emissions to the atmosphere. Through the ENERGY STAR program, EPA is establishing a new paradigm for building owners to reduce building energy use, save energy, and protect the environment. EPA also offers recognition opportunities to showcase their energy efficiency achievements.
- **Energy Star Industrial Sector** – Through ENERGY STAR, EPA helps industrial companies develop robust energy programs that create the necessary infrastructure for cost-effective greenhouse gas management. Companies partner with EPA to learn how to build EPA- and industry-recommended strategies into their corporate energy management programs and ramp up their plant-level implementation of best practices. The industrial sector is responsible for about one-third of U.S. greenhouse gas emissions, and manufacturers are more aware than ever that energy efficiency is the first and most cost-effective step for minimizing energy risks and reducing the emissions that contribute to climate change.

GreenChill Advanced Refrigeration Partnership

The GreenChill Advanced Refrigeration Partnership is an EPA cooperative alliance with the supermarket industry to take actions above and beyond Clean Air Act requirements. Supermarket partners set emissions reduction targets on an annual basis, which cuts the industry's impact on the Earth's ozone layer and climate change. EPA estimates that if every supermarket in the nation joined GreenChill and reduced emissions to the current GreenChill average, the nation could save the equivalent of 22 million metric tons of carbon dioxide and 240 ozone-depleting potential tons every year.

(www.epa.gov/greenchill)

Green Power Partnership

The Green Power Partnership is a voluntary program that encourages organizations to buy green power as a way to reduce the environmental impacts associated with purchased electricity use. Purchasing electricity that is generated from clean, renewable resources such as solar, wind, geothermal, biomass, and low-impact hydro facilities is one of the easiest ways for an organization to reduce the environmental impact of its electricity use. Through the program, EPA provides partners with expert advice, tools and resources, and opportunities for recognition.

High GWP Partnership Programs

EPA is working closely with key industries to implement a series of public-private partnerships focused on developing cost-effective operational improvements that will reduce emissions of perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF6) - all extremely potent and long-lived greenhouse gases. In 2007 alone, greenhouse gas emission reductions from these programs totaled 13.8 million metric tons of carbon equivalent. Despite the potential for sizable growth in emissions, EPA's partner industries are expected to maintain their emissions substantially below 1990 levels through the year 2010.

- **SF6 Emission Reduction Partnership for Electric Power Systems** -- The goal of this partnership between EPA and companies in the electric power industry is to reduce sulfur hexafluoride (SF6) emissions from electric power systems. Members of the program set emissions goals and work toward them utilizing a variety of strategies, including replacement and maintenance of equipment, and SF6 recovery. EPA provides technical assistance and public recognition for SF6 emission reduction projects.
- **Voluntary Aluminum Industrial Partnership** -- An innovative pollution prevention program developed jointly by EPA and the primary aluminum industry. Participating companies (partners) work with EPA to improve aluminum production efficiency while reducing perfluorocarbon (PFC) emissions, potent greenhouse gases that remain in the atmosphere for thousands of years.
- **SF6 Emission Reduction Partnership for the Magnesium Industry** -- The U.S. magnesium industry and the International Magnesium Association (IMA) are working with EPA to identify and adopt best management practices for reducing and eliminating emissions of SF6. Launched in 1999, this partnership works to reduce SF6 emissions from magnesium production and casting operations and currently includes more than 80 percent of the U.S. magnesium industry. Partner companies are striving to completely eliminate magnesium industry-related SF6 emissions by the end of 2010.
- **EPA's PFC Reduction/Climate Partnership for the Semiconductor Industry** -- Semiconductor manufacturers are working with EPA to identify and implement PFC-reducing process changes and manufacturing tool improvements for the production of integrated circuits. In April 1999, the World Semiconductor Council (WSC), whose members include the national semiconductor industry associations of Europe, Japan, Korea, Taiwan, and the United States, announced a technically challenging goal; to reduce PFC emissions by at least 10 percent below the 1995 baseline level by year-end 2010.
- **HFC-23 Emission Reduction Program** -- U.S. manufacturers of HCFC-22 and EPA have worked together since 1993 to reduce emissions of the greenhouse gas HFC-23, a byproduct in the production of HCFC-22 and the most potent and persistent of the hydrofluoro-carbons. HCFC-22

is most commonly used as a refrigerant in residential and commercial air conditioning. Through this program, EPA encourages all U.S. producers of HCFC-22 to develop and implement feasible, cost-effective processing practices and technologies to reduce HFC-23 emissions.

Indoor airPLUS Program

The Indoor airPLUS Program helps builders meet the growing consumer preference for homes with improved indoor air quality. Indoor airPLUS homes must earn the EnergyStar label, and meet additional construction specifications including the careful selection of and installation of moisture control systems; heating, ventilating, and air-conditioning systems; combustion-venting systems; radon resistant construction; and low-emitting building materials. (www.epa.gov/iaq/indoorairplus/)

Indoor Air Quality Tools for School Program

The Indoor Air Quality Tools for Schools Program promotes the adoption of IAQ management programs by delivering guidance, technical assistance, and leadership development support to schools and school districts. Program components include the Action Kit, the annual IAQ Tools for School National Symposium pacing event, a listserv, website, and the IAQ Tools for Schools Awards Program. (www.epa.gov/iaq/schools)

Methane Partnership Programs

U.S. industries along with state and local governments collaborate with the EPA to implement several voluntary programs that promote profitable opportunities for reducing emissions of methane, an important greenhouse gas. These programs are designed to overcome a wide range of informational, technical, and institutional barriers to reducing methane emissions, while creating profitable activities for the coal, natural gas, petroleum, landfill, and agricultural industries. In 2007, the methane program saved a combined 17.4 MMTCE, an increase of more than 85 percent since 2000.

- **AgSTAR Program** -- is a voluntary effort jointly sponsored by EPA, USDA and DOE. The program encourages the use of methane recovery (biogas) technologies at the confined animal feeding operations that manage manure as liquids or slurries. These technologies reduce methane emissions while achieving other environmental benefits.
- **Coalbed Methane Outreach Program (CMOP)** -- The Coalbed Methane Outreach Program (CMOP) collaborates with large coal companies as well as related industries to reduce methane emissions from coal mines through the development of environmentally beneficial, cost-effective coal mine methane (CMM) recovery and utilization projects. CMOP efforts focus primarily on mitigating emissions from degasification systems at underground coal mines by providing high-quality, project-specific information and technical assistance to the coal mining industry and project developers. These efforts include analyses of technologies and potential projects, mine-specific project feasibility assessments, state-specific analyses of project potential, market evaluations, and guides to state, local, and federal assistance programs.
- **Natural Gas STAR Program** -- Natural Gas STAR is a voluntary partnership between EPA and the U.S. natural gas industry designed to overcome barriers to the adoption of cost-effective technologies and practices that reduce emissions of methane. Initiated in 1993, Natural Gas STAR welcomes partners from all sectors of the natural gas supply chain — production, processing, transmission, and distribution — to participate in the program and reap the benefits of methane reduction. EPA has developed a range of tools and resources to help corporate partners implement best management practices designed to reduce gas loss.

- **Landfill Methane Outreach Program (LMOP)** -- is a voluntary assistance and partnership program that promotes the use of landfill gas as a renewable, green energy source. Landfill gas is the natural by-product of the decomposition of solid waste in landfills and is comprised primarily of carbon dioxide and methane. By preventing emissions of methane (a powerful greenhouse gas) through the development of landfill gas energy projects, LMOP helps businesses, states, energy providers, and communities protect the environment and build a sustainable future.

Mobile Air Conditioning Climate Protection Partnership

The Mobile Air Conditioning Climate Protection Partnership is a joint voluntary initiative founded by EPA, the Society of Automotive Engineers, and the Mobile Air Conditioning Society. The partnership is working to reduce the impact of mobile air conditioning units on the environment. The program seeks to improve the energy efficiency of new mobile air-conditioning systems and reduce refrigerant leakage.

National Clean Diesel Campaign

The National Clean Diesel Campaign (NCDC) works aggressively to reduce diesel emissions across the country through the implementation of proven emissions control technologies and innovative strategies with the involvement of national, state, and local partners. EPA provides grants and innovative financing mechanisms to stakeholders to purchase new technologies, verifies the effectiveness of innovative technologies, and fosters the entry of existing and emerging technologies into the market. The Diesel Emissions Reduction provisions in the Energy Policy Act of 2005 (DERA) are a significant funding source for NCDC. In the first year of the DERA program (FY 2008), EPA awarded \$49.2 million for projects across the country – including projects funded through the SmartWay Finance Program, State Clean Diesel Grants, National Clean Diesel Funding Assistance Program, and Emerging Technologies Program – which will lead to emission reductions of approximately 46,000 tons of NO_x, 2,200 tons of PM_{2.5}, and over 35,000 tons of CO₂. Additional reductions will be achieved through clean diesel projects funded through the \$300 million from the American Recovery and Reinvestment Act of 2009 and \$60 million appropriated for FY2009.

- **Clean Construction USA** promotes the reduction of diesel exhaust emissions from construction equipment and vehicles. The initiative encourages the use of innovative emissions control technologies and the replacement of old, worn out equipment by promoting retrofit incentives and providing technical assistance.
- **Clean Ports USA** encourages port authorities and terminal operators to retrofit and replace older diesel engines with verified technologies, use cleaner fuels, and provide economic incentives for tenants and other stakeholders to reduce emissions from port operations.
- **Clean School Bus USA** helps provide the cleanest possible transportation to school children by: eliminating unnecessary school bus idling; retrofitting 1991 and later school buses with advanced emission control technology; replacing the oldest school buses (1990 and earlier) with new ones.
- **Clean Agriculture USA** program works through collaborative partnerships across the country to promote biofuels and retrofit technologies in farming communities in non-attainment areas.

Radon Risk Reduction

Radon is the leading environmental cause of cancer mortality in the U.S. The radon program reduces risk by encouraging the public - through information dissemination and collaboration with multiple partners - to fix homes with high radon levels and build new homes with radon reducing features. Approximately 21,000 American die each year from radon-attributable lung cancer. While roughly 2 million homes have radon reducing features, about 6 million high homes have yet to be fixed. Through 2007, EPA estimates that the actions taken as a result of EPA supported radon activities in new and existing homes have prevented about 6,000 premature lung cancer deaths. About 700 future premature lung cancer deaths are prevented each year.

Residential Wood Smoke Program

The Residential Wood Smoke Program seeks to work with the hearth products industry and state, local and tribal agencies to find ways to reduce wood smoke emissions from new and existing wood-burning appliances.

- **Great American Woodstove Changeout Campaign** -- is a government, non-profit and industry collaborative effort to facilitate the change out of old, dirty, inefficient "conventional" woodstoves manufactured before 1988 to new, cleaner burning appliances like gas, pellet and EPA-certified stoves. Moving to cleaner technologies reduces Particulate Matter and air toxics (indoors and outdoors), improves energy efficiency and reduces fire hazards.
- **Wood-Burning Fireplace Program** – is an EPA voluntary program designed to drive technology improvements much sooner than they could be achieved through the development of a Federal regulation. This program includes both low mass and masonry fireplaces. The wood heating industry has worked closely with EPA to develop this program. The Hearth Patio and Barbeque Association has committed to working with its affiliates and manufacturers and OAQPS on a wood smoke education campaign through a separate effort.
- **Outdoor Wood-fired Hydronic Heaters Programs** – is a program to reduce emissions from new outdoor wood-fired hydronic heaters. EPA has worked with the hydronic heater industry to reach agreement on voluntary performance levels for new heaters. The approach is likely to bring cleaner heaters to market much faster than possible under a traditional, regulatory approach. In October 2008, we terminated Phase 1 program agreements and started Phase 2 agreements that entail tighter voluntary performance levels.

Responsible Appliance Disposal Program

The Responsible Appliance Disposal (RAD) Program supports Clean Air Act programs and is an important component of EPA's mission to reduce the emissions of ozone-depleting substances. RAD partners go beyond current regulation to ensure the recovery of appliance foam, which represents a significant source of ozone-depleting and greenhouse gas emissions. In addition to requiring partners to remove and destroy or reclaim refrigerants and foam-blowing agents, RAD encourages the retirement of older, less efficient appliances, which reduces emissions, saves energy through the recycling of durable materials (e.g., metals, plastics, glass), and prevents the release of polychlorinated biphenyls, mercury, and used oil into the environment. Through the program, EPA partners ensure the disposal of refrigerant-containing appliances using the best environmental practices.

(www.epa.gov/ozone/partnerships/rad)

SmartWay Transport Partnership

The SmartWay Transport Partnership is an innovative collaboration with the freight industry to increase energy efficiency while significantly reducing GHGs and air pollution. EPA provides tools and models to help SmartWay Transport partners – including corporations and trucking, rail, and marine companies that deliver their products – adopt cost-effective strategies to save fuel and reduce emissions.

Complimentary initiatives under the SmartWay umbrella include the SmartWay Finance Program, which helps small trucking fleet owners overcome financial obstacles to investing in emissions reduction technology (currently funded through DERA – see National Clean Diesel Campaign); identification of clean and efficient SmartWay-certified vehicles and technologies; a national idle reduction program for trucks and locomotives; a Supply Chain initiative to help companies quantify and track freight transport environmental performance across all modes; and initiatives with other governments and organizations around the world to establish international benchmarks for cleaner, efficient freight transportation.

State Climate and Energy Partner Network

The State Climate and Energy Partner Network helps state energy, environmental, and utility staff understand and explore climate change and clean energy policy and program opportunities. The partner network provides up-to-date information about state activities and fosters communication among state decision makers on climate and energy issues and opportunities. The State Climate and Energy Partner Network is the next generation of EPA's Clean Energy-Environment State Partnership, which operated from 2005 to 2009 and included 16 partner states. The partner states were: California, Colorado, Connecticut, Georgia, Hawaii, Massachusetts, Minnesota, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Texas, Utah, and Virginia. Through the partnership, each state took important steps towards developing clean energy action plans and integrating energy and environmental strategies to achieve multiple benefits. Lessons learned from the partnership will be shared broadly through the new partner network.

SunWise Program

Because more ultraviolet radiation reaches the Earth's surface under a compromised ozone layer, the SunWise Program was launched to teach children and their caregivers how to protect themselves from overexposure to the sun. Through the use of classroom-, school-, and community-based components, SunWise seeks to develop sustained sun-safe behaviors in children, so that they do not develop skin cancer, which accounts for half of all cancer cases in the U.S. Now in 25,000 schools and partner institutions, the award-winning environmental and health education program is used by schools, science centers, children's museums, Scouts, summer camps, and other organizations across the country. (www.epa.gov/sunwise)

Sustainable Skylines

EPA is working with cities on an initiative to integrate climate change, transportation, energy, land-use and air quality planning. Called the Sustainable Skylines Initiative (SSI), this effort provides a framework that can achieve measurable emissions reductions within three years. It is designed to be replicable to other areas, but with the flexibility to meet the needs and priorities of the individual areas. Program objectives include: making the project place-based and locally-driven; encouraging collaboration between multiple stakeholders; identifying and leveraging resources among public and private partners; and utilizing a consensus-based project selection approach. SSI is being implemented in Dallas, Kansas City, and Philadelphia, as well in Tribal areas and one military installation and its surrounding communities.

1.2 OAR/HQ Community based programs (place-based activities)

Assessing outdoor air near schools

In March 2009 EPA started an initiative to understand whether outdoor toxic air pollution poses health concerns to schoolchildren. EPA identified 63 schools in 22 states for air quality monitoring. State and local agencies will install and operate the monitors. EPA will use \$2.5 million from the competitive Community Scale Air Toxics Monitoring Grants program to purchase monitoring equipment and pay for laboratory analysis.

Collision Repair Campaign

The Collision Repair Campaign is a voluntary program between EPA and local communities that works to reduce and eliminate harmful air toxics from collision repair or auto body shops across the nation. The program provides free training, technical assistance, and community outreach to local collision repair shops. The program's goal is to help shop owners reduce paint, solvent and related hazardous waste disposal costs. It also aims to achieve enhanced compliance with OAQPS's Paint Stripping & Miscellaneous Surface Coating Rule by reducing pollutants early and to levels beyond those required by the rule.

Community Outreach, Tool Development and Technical Assistance

ORIA

- **Tribal Indoor Air Web Portal:** The Indoor Environments Division provides education, and supports peer to peer learning opportunities, through the Tribal Indoor Air Web portal (www.epa.gov/iaqtribal). This site captures innovative and promising programs and practices, and resources to promote good IAQ in tribal homes, schools, and workplaces.
- **Uranium Mining Tribal Initiative:** EPA provides technical assistance to tribes to locate and cleanup radioactive wastes produced from uranium mining that contaminate tribal lands and water resources with radionuclides and heavy metals. Public water supplies for the Navajo, Pueblo, and Sioux Tribes, and likely many others in the West are contaminated with uranium and radium from legacy mines as well as naturally occurring sources. This work includes identifying and providing new sources of clean drinking water, radiation training and educational materials about radiation and hazards from radioactive material for these at-risk communities.
- **Tribal Air Monitoring Support Center:** The TAMS Center is a partnership of the EPA Radiation and Indoor Environments National Laboratory, Tribes, and Northern Arizona University's Institute for Tribal Environmental Professionals. TAMS is the first technical training center designed specifically to meet the needs of tribes involved in air quality management, offering an array of training and support services to develop tribal capacity to assess, understand and prevent environmental impacts that adversely affect health, cultural, and natural resources.

OTAQ – The office provides technical assistance to states and local governments in nonattainment areas on the mobile source components of their SIPs and with transportation conformity.

OAQPS – The office supports activities around training, outreach, tool development and technical assistance to help Tribal, EJ and other communities reach their air quality goals. These activities include tribal air quality training for tribal employees and working in partnership with Tribes, stakeholders, and other EPA offices to improve air quality in Indian country. OAQPS also provides policy and technical assistance to states and local governments in nonattainment areas on the multiple components of their SIPs.

Local Climate and Energy Program

EPA's Local Climate and Energy Program provides technical assistance and administers the Climate Showcase Communities grant program to help communities meet their sustainability goals by applying cost-effective strategies focused on reducing greenhouse gas emissions and advancing clean energy. The Local Climate and Energy Program couples peer exchange opportunities with tools, resources, and training forums to provide technical assistance on program planning, policy development, and strategy analysis. Each program element and resource has a strong focus on sharing lessons learned, successful case studies, implementing cost-effective strategies and achieving measurable results. Key programmatic resources include a series of Climate and Energy Strategy Guides, regular training webcasts, and a database of diverse resources ranging from sample city ordinances, tools and resources, to model climate action plans and projects. The Climate and Energy Strategy Guides will cover 15 strategies addressing energy efficiency, energy supply, transportation, urban planning/design, and waste management at the local level. Through the Climate Showcase Communities grant program, the Local Climate and Energy Program provides funding, training forums, and strong technical expertise in multiple climate mitigation areas to help grantees implement and evaluate comprehensive climate mitigation programs. In addition to these resources, Climate Showcase Communities grantees will receive individual training on topics such as energy efficiency, renewable energy, smart growth, transportation and land use planning.

1.3 OAR Information partnership activities

AIRNow – OAQPS partnered with NOAA, NPS, tribal, state, and local agencies to develop the AIRNow Web site, which provides the public with easy access to national air quality information. The Web site offers daily AQI forecasts as well as real-time AQI conditions for over 300 cities across the US, and provides links to more detailed State and local air quality Web sites. EPA operates the AIRNow Data Management Center which collects, stores, and quality-assures data collected from across the U.S. and provides maps, forecasts, and health information. By reporting air quality and forecasts using the Air Quality Index, AIRNow strives to present the public with near real-time data they can use to make decision about the impact of air quality on their health.

Green Vehicle Guide & SmartWay Vehicle Program

EPA's Green Vehicle Guide is a searchable online database that allows consumers to search for the cleanest, most efficient vehicles in a variety of categories. The Guide ranks the vehicles according to various measures of environmental performance, and includes a user-friendly search function to help consumers identify vehicles certified as SmartWay and SmartWay Elite for emitting low levels of air pollution and GHGs. The SmartWay program works with states, NGOs, financial institutions, and auto manufacturers to promote SmartWay-certified vehicles and conducts consumer awareness campaigns through print, radio and video PSAs (including over \$15 million in free placements).

1.4 OAR research partnership activities

Clean Automotive Technology Program

EPA's Clean Automotive Technology program works to develop and deploy cost-effective automotive technologies that greatly cut GHG emissions, increase fuel efficiency, reduce health-related emissions, and are affordable for mainstream consumer and commercial vehicles. The program has developed several historic engine and drivetrain technology breakthroughs and currently holds 60 powertrain patents with 28 more in process. EPA has been instrumental in moving advanced vehicle technologies from the lab to the road by partnering with industry companies such as UPS, FedEx, Navistar, Freightliner, Eaton, and Parker to get the first series hydraulic hybrid package delivery vehicles on the road. The first generation of this advanced technology has shown to improve real-world fuel efficiency by 50%. EPA is working to incorporate the next generation of advanced engine and fuel technologies into series hybrids to boost these gains for commercial trucks to near 100%.

Green Racing Initiative

Working with DOE and SAE, OTAQ created a work group that has developed a set of voluntary protocols that will have the effect of turning racing into a laboratory for energy efficiency and reducing greenhouse gasses and auto emissions without slowing the cars or spoiling the sport.

Vehicle and Engine Testing Partnerships

OTAQ partners with state and local governments, academic institutions, and industry to better understand the emissions performance of vehicles and engines and to conduct confirmatory testing to ensure compliance with emissions standards. Current partners include DOE, CARB, Environment Canada, University of Michigan, State of Texas, Port of Houston, the Coordinating Research Council, and the Manufacturers of Emission Controls Association (MECA).

2. Other EPA & Federal government partnerships in which OAR participates

2.1 EPA partnership programs

Compliance Assistance Centers

Compliance Assistance Centers are a partnership with industry, academic institutions, environmental groups, and other agencies that help businesses, local governments, and federal facilities understand federal environmental requirements and save money through pollution prevention techniques. The EPA Compliance Assistance Center Web site represents a Web portal, linking to the different centers.

Design for the Environment Partnership (Best Practices for Auto Refinishing Shops)

The OPPTS Design for the Environment program (DfE) has worked with the automotive refinishing industry to develop best practices that help small businesses reduce emissions of toxic chemicals. Building on this successful approach, DfE is now working collaboratively with OAQPS and EPA on the Collision Repair Campaign to provide pollution prevention to automotive refinishing shops in advance of OAQPS' rule on Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources that will affect more than 50,000 such shops.

Environmental Technology Verification Program

Provide 3rd party objective testing information on the performance of environmental technologies to vendors, purchasers, and permittees in sales, purchasing and permitting decision making.

Green Buildings Workgroup

EPA's Green Building Workgroup brings together the many programs across the Agency that work with the building and development sectors to improve their environmental performance. Green or sustainable building is the practice of creating healthier and more resource-efficient models of construction, renovation, operation, maintenance, and demolition. Research and experience increasingly demonstrate that when buildings are designed and operated with their lifecycle impacts in mind, they can provide great environmental, economic, and social benefits.

Green Engineering

The goal of the Green Engineering Program is to promote the research and use of green engineering in production and design. Green engineering is the design, commercialization, and use of processes and products, which are feasible and economical while minimizing 1) generation of pollution at the source, and 2) risk to human health and the environment. The program hopes to institutionalize green thinking in the design and commercialization of products and processes through educational outreach, software development, and industry workshops. It hopes to go beyond focusing on waste reduction to the focus of elimination of environmental and health risks in the production process.

GreenScapes

EPA's GreenScapes program provides cost-efficient and environmentally friendly solutions for large-scale landscaping. Designed to help preserve natural resources and prevent waste and pollution, GreenScapes encourages companies, government agencies, and other entities to make more holistic decisions regarding waste generation and disposal and the associated impacts on land, water, air, and energy use. The GreenScapes program encourages companies/organizations to focus on "the four R's" in their landscaping: reduce (waste, water, etc.), reuse (waste, water), recycle (waste and water) and rebuy (purchase materials made from recycled products). The GreenScapes Alliance, which is part of EPA's Resource Conservation Challenge, seeks to promote the environmental and cost-saving benefits of greenscaping.

Labs 21

Labs 21 is a voluntary program that saves money at laboratories while improving our environment. Laboratories require tens of millions of dollars worth of energy to run and add tens of thousands of pounds of pollution to our air, soil and water. EPA and the US Department of Energy are helping new and retrofitted laboratories cut their energy costs and reduce environmental damage. The goal is to create energy self-sufficiency for all EPA labs, modeling these savings for other science labs throughout the country.

LCAccess

The LCAccess Web site promotes the use of life cycle assessments (LCA) to make more informed decisions through a better understanding of the human health and environmental impacts of products, processes, and activities. The Web site serves as an informational portal for people both new to the concept of LCA and companies employing LCA practices, providing information on why one would want to perform an LCA, an overview of LCA, how to find LCA data sources, available LCA resources, on-going efforts in the field of LCA and upcoming LCA events.

National Farm*A*Syst/Home*A*Syst Program

Farm*A*Syst and Home*A*Syst are partnerships between government agencies and private business that enables you to prevent pollution on farms, ranches, and in homes using confidential environmental assessments. Home*A*Syst helps you identify potential risks to your family's health and the environment in your home and take action on those risks. Farm*A*Syst can help you determine what risks -- whether from livestock waste disposal, pesticide management or petroleum storage -- could threaten your family's health and financial security. A system of step-by-step factsheets and worksheets helps you to identify the behaviors and practices that are creating those risks.

National Vehicle Mercury Switch Recovery Program – OAQPS participates in a partnership involving EPA, the States, environmental organizations, and industry. The purpose of this program is to recover mercury switches from scrap automobiles to prevent that mercury from entering the environment.

Persistent Bioaccumulative and Toxic Chemicals Program

The EPA is reducing risks from and exposures to priority persistent, bioaccumulative, and toxic (PBT) chemicals through increased coordination among EPA national and regional programs. This PBT chemicals program has been established to overcome the remaining challenges in addressing priority PBT pollutants. EPA is committing, through this program, to create an enduring cross-office system that will address the cross-media issues associated with priority PBT pollutants.

PFC Emission Reduction Partnerships

The PFC Emission Reduction Partnership is a voluntary program run by EPA that encourages companies in the semiconductor industry to commit to reducing the emission levels of perfluorocompounds (PFCs), potent greenhouse gases. Program members commit to reducing PFC emissions to 10 percent below the 1995 baseline level by 2010. The Partnership promotes the use of various technologies and alternative chemicals that make the manufacturing process more environmentally friendly while at the same time increasing efficiency.

Smart Growth Network

In 1996, EPA joined with several non-profit and government organizations to form the Smart Growth Network. The Network's partners include environmental groups, historic preservation organizations, professional organizations, developers, real estate interests; local and state government entities. The network is a forum to raise public awareness of how growth can improve community quality of life; promote smart growth best practices; develop and share information, innovative policies, tools and ideas; and, cultivate strategies to address barriers to and advance opportunities for smart growth.

2.2 EPA-wide community programs that OAR supports

Community Action for a Renewed Environment (CARE)

CARE is a competitive grant program that offers communities an innovative way to address risks from multiple sources of toxic pollution. Through this program, various local organizations, including non-profits, businesses, schools and governments create partnerships to implement local solutions to reduce releases of toxic pollutants and minimize people's exposure to them. CARE educates and supports communities by helping them assess the pollution risks they face. The CARE staff provides access to EPA voluntary programs to address local environmental priorities and improve the environment through

local action. CARE has provided financial assistance by funding cooperative agreements with communities annually since 2005.

Sustainable Communities Partnership (HUD, DOT & EPA)

In June 2009, EPA joined with HUD and DOT to help improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide. Through a set of guiding livability principles and a partnership agreement that will guide the agencies' efforts, this partnership will coordinate federal housing, transportation, and other infrastructure investments to protect the environment, promote equitable development, and help to address the challenges of climate change. OTAQ/OAR is actively participating in the performance measures and planning subcommittees and will be working on a number of the pilot projects.

2.3 Federal partnership that OAR supports

21st Century Truck Partnership (DOE) – OTAQ

The 21st Century Truck program supports the development and implementation of commercially viable technologies that will help reduce the nation's dependence on imported oil and improve air quality. DOE (sponsor/organizer), DOT, DOD, OTAQ/EPA and 15 industrial partners are working together to develop prototype production heavy-duty trucks and buses with improved fuel efficiency, reduced emissions, enhanced safety and performance, and lower operating costs. EPA has entered into cooperative research agreements with several leading manufacturers to develop and deploy clean, advanced heavy-duty vehicle technologies.

Clean Air Technology Initiative

In July 2008, representatives from the EPA, California EPA, CARB, South Coast Air Quality Management District, and San Joaquin Valley Air Pollution Control District signed a Memorandum of Agreement to improve air quality by aligning agency research resources, where possible, to evaluate innovative and emerging emission reduction technologies and choose technologies on which to collaborate with each other to accelerate development and deployment. OAR is working with R9 to represent EPA in this work.

Clean Diesel Fuel Alliance – OTAQ

The Clean Diesel Fuel Alliance is a partnership between fueling stations, automobile manufacturers, fuel suppliers, DOE, and other stakeholders to oversee successful implementation of the Ultra Low Sulfur Diesel program and to promote clean diesel technologies.

EcoCAR Challenge

Launched in 2008, EcoCAR is a three-year collegiate automotive engineering competition established by DOE and General Motors (GM) and managed by Argonne National Laboratory. The competition challenges 17 universities across North America to re-engineer a 2009 model year Saturn VUE to increase efficiency reduce emissions and out perform its production counterpart while maintaining its consumer acceptability. EPA is sponsoring the competition along with more than two dozen other industry and government organizations. In addition to sponsorship, EPA is hosting a workshop and providing a wide-range of technical support, including testing the vehicles at OTAQ's laboratories in Ann Arbor.

Green Suppliers Network

Working in collaboration with the U.S. Department of Commerce, EPA (OPPTS) established the Green Suppliers Network to help small and medium-sized manufacturers stay competitive and profitable while reducing their impact on the environment. The Green Suppliers Network works with large manufacturers to engage their suppliers in low-cost technical reviews to identify strategies for improving process lines and using materials more efficiently. OAP's Climate Leaders program participates through providing support for GHG inventories and reduction measures.

Public Health Air Surveillance Evaluation (PHASE)

This partnership evaluates, develops, and delivers air quality characterization data to environmental public health tracking organizations. The Centers for Disease Control and Prevention (CDC) is working with EPA/ORD, state, academic, and other partners to develop a National Environmental Public Health Tracking (EPHT) Network. The EPA is developing routinely available air quality information and forecasting tools as well as indicators that can be used to help measure the success of its programs in terms of public health outcomes. The National EPHT Network is a possible mechanism for achieving these mutual goals of relating health surveillance data to environmental exposures.

Retailer Energy Alliance (DOE) – OAP supports the REA, which began in 2008. One of the goals of the REA is to identify new or underused energy efficiency technologies that have significant potential for energy savings in member buildings and to select the most promising of these technologies for technology procurement projects. The REA members, with DOE support, develop and implement these projects to help advance new technologies in the marketplace.

3. OAR International Partnerships

3.1 OAR International Partnerships

AIRNow International

AIRNow International is to bring this highly successful domestic alert program to countries around the world who are interested in adapting to the program to meet their air program needs and inform their public about air quality. Thus far, Shanghai, China is participating in the program. Discussions are underway or anticipated in other areas.

Methane to Markets Partnership -- Launched in 2004, M2M is an EPA led public-private partnership that brings together 31 Partner countries and over 900 public and private sector organizations to advance methane recovery and use project development at agriculture operations, coal mines, landfills, and oil and gas systems. Methane is a potent GHG and clean energy source that offers near-term climate and energy benefits. The U.S. has contributed approximately \$40 million and is supporting over 170 projects around the world. US efforts have leveraged over \$270 million in public and private sector investments and will reduce emissions by 60 MMTCO₂e.

Bilateral Fuel and Vehicle Partnerships

In addition to activities that EPA supports under the U.N. Partnership for Clean Fuels and Vehicles (PCFV), OTAQ is supporting or has supported diesel bus retrofit programs in various countries including China and India. OTAQ is also providing technical assistance to the World Bank and others in Southern China related to SmartWay technologies and strategies to reduce emissions in the freight sector.

Clean Air Initiative for Asia

OAQPS, with other EPA air and international offices, actively participates in this partnership which addresses air quality issues in Asia and serves as a network for exchanging best practices for reducing the public health and environmental impacts of air pollution.

EPA-China Ministry of Environmental Protection Cooperation on Clean Air and Energy

OAQPS, with other EPA air offices, leads this bilateral partnership (established in 2003 via a Memorandum of Understanding) which enables exchange of information about air quality and clean energy issues and focuses on addressing key sources of air pollution from the power sector, transportation and industrial sectors. The partnership also catalyzes attention on regional air quality issues in the three largest industrial and economic regions in China (Beijing, Shanghai, and the Pearl River Delta).

International Harmonization of Vehicle, Engine, and Fuel Standards

OTAQ is involved in various discussions with the EU, Japan, Mexico and Canada related to harmonizing vehicle, engine, and fuel standards.

Partnership for Clean Indoor Air (PCIA)

The mission of the Partnership is to improve health, livelihood, and quality of life by reducing exposure to air pollution, primarily among women and children, from household energy use. PCIA focuses on four priority areas which have proved to be essential elements for sustainable household energy and health programs in developing countries: Meeting Social and Behavioral Needs; Developing Local Markets; Improving Technology Design and Performance, and Monitoring Impacts of Interventions. More than 300 public and private organizations are participating in the Partnership. Since 2003, Partners' efforts have resulted in 2.4 million households adopting clean cooking practices, improving the lives of 18.4 million people. (www.PCIAonline.org)

3.2 International partnerships in which OAR participates

Global Bioenergy Partnership (GBEP)

GBEP is the international focal point for the world's major biofuel players (U.S., Brazil, E.U.) for multilateral discussion of climate change and overall sustainability issues related to biofuels and bioenergy. OTAQ is a part of the U.S. delegation and actively participates in the task forces that are developing (1) a GHG framework to enable comparison of different countries and organizations' lifecycle GHG emissions methods for bioenergy and (2) the criteria and indicator list for biofuels sustainability.

Partnership for Clean Fuels and Vehicles (PCFV)

The U.N. Partnership for Clean Fuels and Vehicles is global private- public effort that OTAQ supports. The goals are to remove lead from gasoline, achieve 50 ppm or less sulfur levels for gasoline and diesel, and promote cleaner vehicles and vehicle technologies that can run on these fuels.