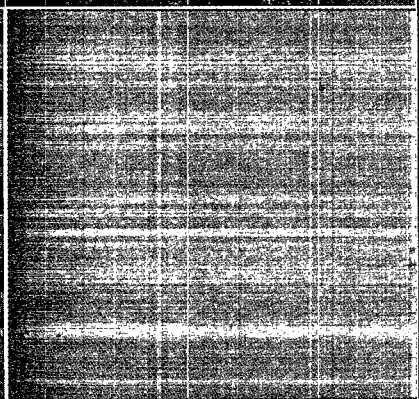
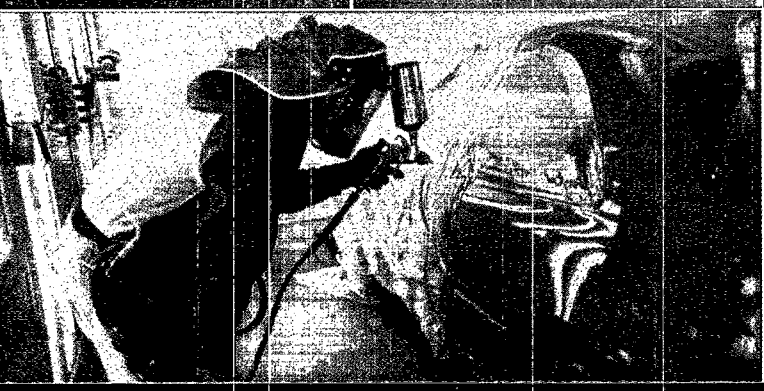
Achievement Through Partnership:

A Progress Report Through 2000





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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"In keeping with the President's philosophy of government, EPA is promoting market-based solutions to environmental challenges, focusing on environmental results over bureaucratic process, and building partnerships with the American people."

—EPA Administrator Christine Todd Whitman, from the Agency's *Six-Month Progress Report*

Prologue:
Partnering for the Environment

Since the compilation of the information in this report in 2000, the U.S. Environmental Protection Agency (EPA) has launched several new initiatives and programs designed to achieve economic and environmental improvements through voluntary partnerships with businesses, governments, organizations, and individuals. These partnership programs reward outstanding environmental performance, provide targeted technical assistance, and encourage innovation through market-based solutions.

The National Environmental Performance Track*, for example, was started in June, 2000 to reward companies that consistently exceed regulatory requirements, work closely with their community, and excel in protecting the environment and public health. Performance Track already has nearly 300 members who use environmental management systems to reduce their "footprint" on the environment. Because of their sustained record of compliance and commitment to continuous environmental improvement, Performance Track facilities are low priorities for EPA inspection. They also receive national recognition, access to a peer network of top performers, and other incentives now under development.

Climate Leaders is another new EPA/industry partnership that encourages companies to develop long-term comprehensive climate change strategies. Many corporations are already making great strides in reducing their greenhouse gas emissions through participation in EPA programs such as ENERGY STAR® and WasteWise, but Climate Leaders gives them an opportunity to take their climate commitment one step further, by setting a corporate-wide reduction goal and measuring their progress. Climate Leaders is working to create a credible system for inventorying and reporting greenhouse gas reductions and encouraging consistency among state registries. In addition to technical assistance, Climate Leaders partners receive public recognition, participate in a peer exchange, and sport a program logo.

* For more information about Performance Track and other EPA partnership programs, see <www.epa.gov/partners> and page 25 of this document.

Other recent EPA partnership programs are proving that environmental performance and economic benefits can go hand-in-hand:

- In September 2002, EPA announced the Resource Conservation Challenge, a nationwide campaign to conserve valuable natural resources. EPA is challenging everyone—manufacturers, retailers, and consumers—to adopt a resource conservation ethic. The Challenge encompasses various creative projects testing innovative, flexible, partnerships to minimize waste, recover energy, recycle, and revitalize the land. Challenge goals are to boost the national recycling rate from 30 percent to at least 35 percent by 2005, and to reduce by 50 percent the generation of 30 harmful chemicals normally found in hazardous waste.
- As one of EPA's newest partnership programs, the Commuter Choice℠ Leadership Initiative publicly recognizes employers whose commuter benefits reach a national standard of excellence and help reduce air pollution. By joining the program, employers earn the distinction of being a Commuter Choice℠ Employer—a designation that gives them a competitive advantage in recruiting and retaining the "best and brightest" employees. EPA also provides training, Web-based tools, one-on-one assistance, and networking opportunities, helping to ensure that the ride to work—and to a clean environment—will be smoother for generations to come.
- EPA initiated the Combined Heat and Power Partnership to facilitate the use of Combined Heat and Power (CHP) technologies. CHP systems generate electricity and capture waste heat which is then used to heat and cool buildings or provide steam for industrial processes. The use of waste heat results in total system efficiencies of 70 to 90 percent—a considerable performance gain over the 33 percent average efficiency of conventional central station electricity plants.
- EPA also introduced the Green Power Partnership to recognize businesses and organizations committed to expanding the market for renewable energy sources through their purchasing habits. By purchasing 100 percent renewable energy at its laboratories in Washington state, California, Ohio, and Colorado, and Massachusetts, EPA itself qualified as a founding partner in the program.
- Finally, in addition to using green power at its laboratories, EPA is demonstrating to other federal and private sector labs how to be more energy efficient and environmentally sustainable through Laboratories for the 21st Century. Since laboratories have special energy-intensive requirements, EPA is providing a variety of lab-specific education, tools, and technical assistance to its pilot partners as well as the broader laboratory community. By partnering with leaders from different lab-intensive industries, EPA is showcasing the potential for high performance, low energy laboratories.

EPA is continuing to expand its use of partnership programs across the country. The Agency is committed to providing hands-on, industry-specific technical assistance, education, information sharing, and recognition for these and other successful programs. This report outlines some of those successes from a variety of voluntary efforts.

Achievement through Partnership:

A Progress Report

The following report outlines the findings of EPA's effort to quantify the impact of its partnership programs. It touches on some examples of environmental stewardship through the many voluntary initiatives the Agency supports. The report includes descriptions, results, and case studies for some of EPA's major partnership programs. For additional information on these and other EPA partnership programs, visit the Partners for the Environment Web site at ***<www.epa.gov/partners>.***

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About this Report

What do a small Vermont inn, a major pharmaceutical lab, a Pennsylvania electroplating shop, the U.S. Navy, and a Minnesota dairy farm have in common? As partners in the U.S. Environmental Protection Agency's (EPA) voluntary partnership programs, these entities have all realized the benefits of a shared vision of environmental stewardship.

EPA partnerships produce measurable environmental and economic results by applying new technologies and innovation to conserve resources and manage waste. Partners are answering the call to be good stewards in their community, whether it is in their backyard, across the country, or around the world.

This report, *Achievement Through Partnership: A Progress Report*, lays out the success of EPA's voluntary programs. In 2000 alone, the more than 11,000 companies, facilities, governments, and organizations participating in voluntary EPA programs saved enough energy to power a major metropolitan city for 1 year. They reduced carbon dioxide (CO_2) emissions from their energy use or processes that would be the equivalent of taking more than 25 million cars off the road for 1 year. They saved the amount of water a small city uses in 1 year. And, while making all these environmental contributions, they saved billions of dollars.

This report is organized to give readers a background of EPA's partnership approach, why this approach works, and the cumulative results of EPA's voluntary programs through 2000. The report provides descriptions of 16 of EPA's more than 30 voluntary partnership programs, and provides examples of success stories for each of these programs.

What Are Partnership Programs?

In slightly more than a decade, partnership programs at EPA have evolved from two experimental voluntary programs—33/50 and Green Lights—into a richly varied array of more than 30 programs. Through this array of voluntary partnership programs, EPA is demonstrating that voluntary goals and commitments achieve real environmental protection and build cooperative relationships with a variety of groups, including small and large businesses, citizens groups, state and local governments, universities, and trade associations.

Partnership programs are collaborative agreements between EPA and all types of organizations to meet shared environmental goals. The first EPA voluntary program was the 33/50 Program, established in 1991, which identified 17 high-priority toxic chemicals and targeted them for ambitious reductions. The hallmark of the 33/50 Program was flexibility. EPA challenged corporate America to reduce toxic emissions of the 17 high-priority pollutants reported to the Toxic Release Inventory in 1988 by 33 percent in 1992 and 50 percent in 1995. American industry rose to EPA's challenge and responded resoundingly. Some 1,300 companies voluntarily joined the 33/50 Program. Once the 1995 data revealed the program's final accomplishments, the program was heralded as a success, and EPA continued to develop new voluntary programs that address reductions in different environmental media.

Today EPA's more than 30 programs aim to achieve environmental reductions through voluntary efforts of individual facilities, large and small companies, trade associations, local communities and high schools, local governments, or major government agencies. Most of EPA's programs were developed to gain environmental improvements in areas that are not typically regulated. All of EPA's voluntary programs further the business interests of the partners and the environmental interests of local communities and our nation as a whole by encouraging cooperation and innovation.

Some partnership programs such as Energy Star® and WasteWise have become household names; others, less well known, target specific industries, practices, or environmental issues. Never-

theless, they all have important features in common. The partners make voluntary commitments to meet agreed-upon environmental goals. These goals can be specific quantitative reductions in emissions or waste or they can involve improving business practices with the objective of improving environmental performance.

Participation in an EPA partnership program signifies a high level of environmental commitment and cooperation from an organization's senior management. Many EPA partnership programs require that participants sign a partnership agreement to join a program. The agreement lays out the goals or steps the participating company or facility will take to pursue environmental improvements.

EPA, for its part, provides technical assistance, networking opportunities, and recognition to encourage partners in their efforts. Technical assistance can range from helping develop preferable alternatives to providing benchmarking information that allows a company to compare its performance to its peers. Networking includes databases and national forums. Recognition can take the form of awards for outstanding performers, public notices, or the ability of partners to use labels to inform the public that their products meet certain standards. EPA cannot endorse the purchase of specific products or services; however, partners can use EPA partnership programs' logos to inform the public that their products or processes meet certain environmental standards.

Why Do Partnership Programs Work?

The success of partnership programs is undeniable. But why do they work? Why do organizations commit themselves to going beyond what they are required to do by regulations? And why is it important for EPA and other regulatory agencies to encourage voluntary partnerships?

For starters, environmental improvements made through voluntary partnerships can improve business performance. There can be a positive correlation between companies' environmental performance and their competitiveness and financial performance.* Well-managed companies also manage environmental issues well, and banks and stock markets reward good management. Our partners have found that by focusing on environmental performance, they save money, attract and retain workers, work more effectively with neighboring communities, improve their image and, in some cases, develop new business opportunities.

For EPA, partnerships are an effective tool to improve environmental performance. They are not a substitute for well-designed regulations and vigilant enforcement, but they are an important complement to regulations that enable EPA to work with those who wish to improve their performance beyond what is required by regulations. In some cases, voluntary programs enable EPA to address environmental issues—such as the efficient use of resources—that are not covered by regulations. In other cases, these programs enable EPA to recognize partners for reducing their impacts below what is required to meet regulations. Finally, they help find better, cheaper, more effective ways to meet environmental goals.

In a very important sense, partnership programs are about learning—by EPA, its partners, states, local communities, and stakeholders—about how to work together more effectively; how to improve the way we manage our environment; and how new methods and technologies can result in dramatic and far-reaching environmental improvements. As we learn, we all improve and reap the benefits of these voluntary efforts.

Partnerships Get Results

By 2000, more than 11,000 partners were participating in one or more EPA programs. To quantify the results of these voluntary efforts, EPA surveyed its partnership programs to gather informa-

*For further information, refer to the Web sites for the Dow Jones Sustainability Index <www.sustainability-index.com> and Innovest <www.innovestgroup.com>.

tion about cost savings and environmental benefits. Many of these programs do not require reporting, so although the data are somewhat limited, the results were impressive: thousands of commitments to environmental improvements and billions of dollars saved.

EPA's partners saved more than 769 trillion British Thermal Units (BTUs) of energy in 2000. The amount of emissions they avoided was more than 37 million metric tons of carbon equivalent. Partners achieved this by reducing methane emissions from farms, landfills, and coalbeds, and by saving energy through technological improvements and power-conserving appliances. Partnerships helped hotels save millions of gallons of water, assisted communities in cleaning up streams, and allowed hospitals to eliminate mercury waste.

By integrating environmental improvements into business decisions, companies are cutting costs, adding value, and increasing market share. In fact, EPA's study found that partners reported saving more than $5.9 billion in 2000 as a result of implementing environmental improvements in their operations. And that's just the beginning; ENERGY STAR® estimates that the United States could slash its cumulative energy bill over the next decade by more than $200 billion if everyone in the country bought ENERGY STAR® products and all commercial and industrial building owners implemented the ENERGY STAR® approach.

> "Environmental leadership means trying to do more and achieving more."
>
> —Wayne Balta, director of Environmental Affairs, IBM

RESOURCES AND RECOGNITION

To help partners identify environmental improvement and cost-saving opportunities, EPA offers a wealth of resources to assist organizations in

EPA Partnership Program Results for 2000[1]

Number of partners	11,300[2]
Money saved by partners	$6 billion
Greenhouse gas reductions	37 million metric tons of carbon equivalent[3] *Comparable to removing more than 25 million cars from the road for one year.*
Municipal solid waste recycled	17,800 tons[4]
Water saved	603 million gallons *Enough to fill over 12 million bathtubs.*
Energy saved	769 trillion BTUs *Enough to supply the annual energy needs of approximately 6.5 million U.S. households.*
Nitrogen oxide (NO_x) emission reductions	158,200 tons
Sulfur dioxide (SO_2) emission reductions	289,000 tons

[1]Data in this table are based on results reported by programs in EPA's survey, including the following: ENERGY STAR®, ENERGY STAR® in the Industry Sector, Landfill Methane Outreach Program, Coalbed Methane Outreach Program, Natural Gas STAR, agriculture-based programs, AgSTAR, Ruminant Livestock Efficiency Program, High Global Warming Potential (GWP) Stewardship Programs (Voluntary Aluminum Industrial Partnership, HFC-23 Emission Reduction Partnership for the Aluminum Industry, PFC Emission Reduction Partnership for the Semiconductor Industry, SF6 Emission Reduction Partnership for Electric Power Systems, and SF6 Emission Reduction Partnership for the Magnesium Industry), WasteWise, Region 1 Mercury Challenge, Project XL, Water Alliance for Voluntary Efficiency (WAVE), Pesticide Environmental Stewardship Program (PESP), and EPA Region 3's Waste Minimization Program. Most of these programs are profiled in the following report.

[2]This figure includes WasteWise partners.

[3]This figure does not include WasteWise partners.

[4]This figure does not include WasteWise results for 2000, thus the value presented here reflects only those efforts realized by partners participating in Project XL.

auditing, measuring, and benchmarking their energy consumption, waste, water use, and industrial processes.

EPA also encourages its partners to network and cooperate with companies facing similar challenges. Program-sponsored events, such as the Landfill Methane Outreach Program's annual conference and project expo, allow partners and EPA to exchange information on the latest available technologies. Many participants view these meetings as a great business opportunity to provide equipment, services, and know-how to solve problems. Aside from exchanging ideas and making business connections, EPA's partners also gain access to unique educational and technical opportunities. At the regional partner network meetings that WasteWise hosts, partners have exchanged ideas about computer donation and reuse, waste tracking systems, and sustaining management support for waste reduction programs. Through cooperation with industry trade associations and hands-on technical assistance, the Design for the Environment program informs businesses about the design or redesign of products and processes that are cleaner, more cost-effective, and safer for workers and the public.

Many partnership programs offer recognition, such as national awards for exceptional performance, that can motivate companies and enhance their corporate image with customers, regulators, neighbors, and the media. Participants who receive awards or other recognition can highlight their environmental commitment with their employees or customers. After **45th Avenue Cleaners** in Portland, Oregon, received EPA Region 10's Evergreen Award for Pollution Prevention for reducing its solvent use by 80 percent and solvent waste by 60 percent, it saw a tremendous increase in the volume of customers.

Community Involvement

Partnerships help empower individuals at all levels, by encouraging businesses, governments, and communities to participate in protecting our natural resources. For example, a student in **Broward County, Florida**, who was concerned about water pollution in his neighborhood canal used resources available through EPA's Adopt-Your-Watershed program to organize a canal cleanup and educate residents about illegal dumping and pollution prevention.

One EPA program, the National Environmental Performance Track, requires community involvement as one of its criteria for participation, and several others help individuals make a difference in their communities.

EPA partnerships reach beyond our borders. Many nations share the same environmental challenges: greenhouse gas emissions, water and energy demands, and resource management and waste disposal. International partners share the desire to reduce their costs and improve the environment. EPA actively encourages governments and industry experts from around the world to share new information on technology and opportunities.

EPA's partnership programs have also encouraged entities in other countries to develop similar programs. For example, the ENERGY STAR® program was used as a model by South Africa to initiate the Green Buildings in Africa program for commercial building owners.

The following pages offer an in-depth look at specific partnership programs and participants that have made an impact—on their environment, communities, and their businesses' bottom lines. From programs that work to conserve resources and avoid pollution to those that affect the design, processing, and purchasing of products, these efforts are achieving impressive results.

Partnership Program Profiles

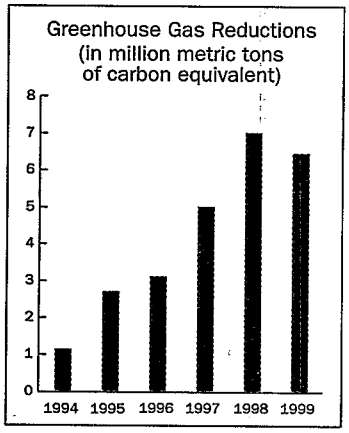
Partners Don't Let Savings Go to Waste

www.epa.gov/wastewise

In 1994, EPA founded a groundbreaking program designed to help large and small businesses, federal, state, local, and tribal governments, universities, colleges, and school systems reduce the amount of solid waste they generate. During the past 7 years, the WasteWise program has provided technical assistance and recognition to its partners, which now number more than 1,150. WasteWise also has 120 endorsers who help promote the program.

Through WasteWise, organizations tailor their solid waste reduction programs to fit their needs. Partners target everything from corrugated containers and office paper to yard waste and wooden pallets. Participants set three-year goals in three areas: waste prevention, recycling, and buying or manufacturing recycled-content products.

In the first 6 years of the WasteWise program, partners removed more than 35 million tons of waste from the solid waste stream through waste prevention and recycling. In 1999, partners reported that their WasteWise activities resulted in a reduction of 9 million tons of waste, surpassing 1998 results by 15 percent.[1]



WasteWise also provides EPA's WAste Reduction Model (WARM) to help organizations estimate greenhouse gas reductions from their waste reduction activities, which enables partners to visualize the broader environmental impacts of their efforts. Based on this model, EPA estimates that WasteWise partners have prevented the emission of 25 million metric tons of carbon equivalent from 1994 to 1999.

Case Study

The **Seydel Companies** in Pendergrass, Georgia, which make textile processing chemicals, were recognized twice as a WasteWise Small Business Partner of the Year. Seydel's 109 employees conserved an estimated 500 pounds of paper by removing the Seydel name from bulk mailings lists; donated 1,400 pounds of computer equipment to local schools; and cleaned and reused more than 3 tons of glass sample jars, saving more than $3,000. Seydel also returned more than 85 tons of plastic drums and totes to vendors in 1999, saving nearly $70,000.

Large and small organizations have improved their bottom line by reducing waste. **Verizon** saved more than $4 million by encouraging its 260,000 employees to use the company Intranet to obtain training and personnel information. **Guardian Industries**, an automotive glass manufacturer located in Indiana, saved $26,000 and 2,868 pounds of waste by laundering gloves. By working with vendors to redesign, reduce weight, and switch to reusable or recyclable containers, **Evelyn Hill, Inc.**, which operates the gift shop and food service at the Statue of Liberty, saved $112,000. And **Washoe County, Nevada's** 2,800 employees recycled more than 100 tons of mixed paper, glass bottles, aluminum, and corrugated boxes and spent $1.5 million on recycled-content products.

"Participating in EPA's voluntary programs is good for us not only because of the cost savings, but also for the way it reflects positively on our corporate image."

—Scott Seydel, chief executive officer, The Seydel Companies

[1] *WasteWise Sixth-Year Progress Report*

Hotels Catch the WAVE of Efficiency

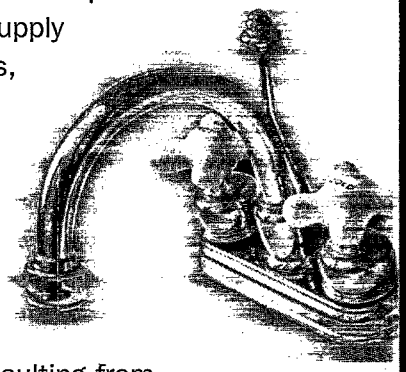
www.epa.gov/owm/genwave.htm

The average hotel in the United States consumes 209 gallons of water each day for each occupied room, meaning even moderate-sized hotels can use tens of thousands of gallons of water each day. EPA estimates that by integrating water efficiency practices into everyday operations and installing water-efficient equipment, hotels could achieve a 30 percent reduction in water consumption without loss of comfort to guests. Similar reductions for office buildings and educational institutions can be achieved in bathroom fixtures, landscape irrigation, heating and cooling, and food service areas.

EPA's Water Alliances for Voluntary Efficiency (WAVE) program helps businesses reduce water use and water-related energy use. Initially, WAVE focused on improving water efficiency in the lodging industry. Recently, WAVE's efforts expanded to office buildings and educational institutions. Partners commit to identifying opportunities to upgrade water-using devices and improving practices. To assist partners, EPA established a WAVE Supporter program to link partners with equipment manufacturers and distributors, water management companies, utilities, and state and local governments. EPA publicly recognizes the environmental efforts of participants and provides educational materials for customers and employees.

EPA also offers WAVE Saver for Office Buildings, a Windows-based software program that enables building engineers and managers to survey and track water use and evaluate specific water-saving opportunities, including laundry operations, irrigation, and cooling towers.

By installing water-efficient equipment, EPA estimates that the commercial and institutional sectors could save about 1.3 billion gallons of water per day, the amount used by 4 million homes in the United States. Efficient water use helps reduce the need for costly water supply and wastewater treatment facilities, helps maintain stream flows, and fosters healthy aquatic habitats. Less wastewater and reduced consumption means less energy is needed to heat, pump, and process water. This, in turn, helps reduce emissions from power plants. Electricity savings resulting from reduced water use would be about 11 million kilowatt hours per day, enough to meet the needs of 400,000 homes.



Case Study

In one of the largest water-efficiency upgrades ever attempted on a U.S. campus, **Columbia University** in New York City cut its water bill by 25 percent and realized a payback period of less than 2 years by replacing toilets, showerheads, and faucet aerators with high-efficiency models. Columbia also installed a cross-campus water-pumping loop, which allows it to control water pressure and flow to each campus building and drastically reduce the number of leaks and the amount of system maintenance required. Columbia estimates that it saves $235,000 each year.

"Water conservation measures helped us reduce maintenance, energy, and water costs by pinpointing high usage areas, replacing bathroom fixtures with low flow models, reducing leaks, and improving metering," said Tony Trocchia, Columbia University's assistant vice president of facilities operations. "At the same time, we helped meet our environmental goals."

Money Isn't All You're Saving

ENERGY STAR® Saves Billions

www.energystar.gov

Nearly anywhere you look in an office nowadays, you can see the ENERGY STAR® logo. From computers to appliances to the buildings themselves, the ENERGY STAR® program enables businesses, organizations, and consumers to realize the cost savings and environmental benefits of energy efficiency investments through a straightforward market-based approach:

- Use the ENERGY STAR® label to clearly identify which products, practices, new homes, and buildings are energy efficient—offering lower energy bills and environmental benefits.
- Empower decisionmakers by making them aware of the benefits of labeled products, homes, and buildings and providing energy performance assessment tools and project guidelines for efficiency improvements.
- Work with retail and services companies in the delivery chain so that they can easily offer efficient products and services.
- Partner with regional, state, and local organizations that are running energy efficiency programs so that these programs leverage the national energy efficiency specifications and public awareness of ENERGY STAR® and achieve more with their resources.

For each federal dollar spent, ENERGY STAR® partners achieve the following:

- Emissions reductions of more than 1 metric ton of carbon equivalent.
- Utility bill savings for partners and consumers of more than $75.
- $15 in private sector investment.
- Net savings of more than $60.

CASE STUDY

Sears, Roebuck & Company effectively promotes a wide range of ENERGY STAR®-labeled products from appliances, office equipment, and home electronics to window products and heating, ventilation, and air conditioning equipment. Last year, Sears pledged to sell more than 1 million ENERGY STAR®-qualified appliances. The company exceeded this goal by promoting ENERGY STAR® in more than 1,500 stores nationally.

Sears' success is the result of a strong commitment to working with ENERGY STAR® utility and market transformation groups across the country, offering comprehensive sales training programs for its sales staff, and directing its vendors to supply ENERGY STAR®-qualified products. Sears has also demonstrated an ongoing commitment to educate its consumers by airing the ENERGY STAR® public service announcement on in-store displays, reaching more than 26 million viewers in the last half of 2000, and by using the ENERGY STAR® logo in weekly advertising. In recognition of these efforts, Sears was awarded an ENERGY STAR® Partner of the Year Award.

Introduced by EPA in 1992 for energy-efficient computers, the ENERGY STAR® label has been expanded to more than 30 product categories. Since the mid-1990s, EPA has collaborated with the U.S. Department of Energy (DOE), which now has responsibility for certain product categories. Energy-efficient new homes and commercial buildings became eligible for the ENERGY STAR® label in 1995 and 1999, respectively.

The economic and environmental benefits through the year 2000 are substantial. ENERGY STAR® has developed strong partnerships with 1,600 manufacturers labeling more than 11,000 products. The ENERGY STAR® label has become a national symbol for energy efficiency and is now recognized by more than 40 percent of the American public, who have purchased more than 600 million labeled products to date. In addition, 1,600 builders have joined as partners, constructing 25,000 ENERGY STAR®-labeled homes. ENERGY STAR® has also partnered with organizations representing 17 percent of U.S. building floor space that are committed to improving their energy performance. The national building energy performance rating system, which was first offered in 1999 for office buildings, became available for schools in 2000. More than 4,200 buildings were benchmarked in 2000, with 215 schools and 330 office buildings earning ENERGY STAR® labels.

In 2000 alone, the ENERGY STAR® program:

- Reduced greenhouse gas emissions by more than 15 million metric tons carbon equivalent—the same as eliminating emissions from more than 10 million cars.
- Prevented emissions of nitrogen oxides (NOx) of about 160,000 tons—equivalent to the emissions from more than 100 power plants.
- Reduced energy consumption by 74 billion kilowatt hours.
- Offset more than 10,000 megawatts of peak electricity demand.

AgSTAR Helps Farmers Make Better Neighbors

www.epa.gov/agstar

Today's farmers face a number of growing environmental challenges: new regulations, increasing urbanization, and local pressure to control odors. Waste management systems, in particular, affect the water and air quality surrounding a farm, as well as the productivity and profitability of the farm. Farmers are responding to these new challenges by making changes to their waste management systems.

EPA's AgSTAR program, jointly sponsored by the U.S. Departments of Agriculture and Energy, encourages methane recovery technologies at animal feeding operations that manage manure as either liquids or mud-like slurries. Using digester systems and other technologies, animal

CASE STUDY

Dennis Haubenschild of **Haubenschild Farms** in Princeton, Minnesota, knew that he could harness the power of the methane gas emitted from his dairy operation, so he contacted EPA's AgSTAR program to learn more. EPA selected Haubenschild Farms as one of its charter farms to demonstrate farm-scale anaerobic digestion technologies. Haubenschild installed a plug-flow digester that recovers methane to power a 150-kilowatt generator for the farm. In the first 7 months of operation, the system produced 320,000 kilowatt hours of power from 8 million cubic feet of biogas. The methane recovery system has produced $40,000 in revenues from the sale of electricity, and it has virtually eliminated propane purchases.

farmers can recover methane to produce energy, while controlling odor and improving water quality. Since the program started more than 5 years ago, 31 digester systems have been put in operation at commercial livestock farms. Twelve of the 31 digesters are at participating AgSTAR "charter farms," and many of these were completed in coordination with emerging state agricultural energy programs in Iowa, Minnesota, and New York.

The captured biogas is often used to generate electrical power and heat; in 1999, these systems produced approximately 1 million megawatt hours (MWh) of power. The remaining systems flare the captured gas to control odor. The 31 operating digesters prevented more than 4,800 metric tons of methane, a potent greenhouse gas, from entering the atmosphere (equivalent to approximately 27,500 metric tons of CO_2).

Best Management Practices Are a Natural Success

NaturalGas EPA POLLUTION PREVENTER

www.epa.gov/gasstar

An estimated 300 billion standard cubic feet of methane is emitted by the U.S. natural gas industry each year. The Natural Gas STAR Program encourages natural gas production, processing, transmission, and distribution companies to promote cost-effective technologies and practices to reduce methane emissions. Natural Gas STAR works with its partners and industry associations to identify cost-effective methods for minimizing equipment leaks, reducing methane releases from unit operations, and improving equipment efficiency. Partners agree to assess these methods—called best management practices—and implement those that make economic sense for their operations. Many practices pay for themselves in less than 1 year.

Natural Gas STAR provides companies with workshops, training courses, and analyses of emerging technologies. In addition, EPA assists partners in working with federal, state, and local government agencies to remove regulatory barriers that may prevent the implementation of best management practices. EPA recognizes partners with public service announcements, marketing materials, news articles, and press releases.

What Partners Say About Natural Gas STAR

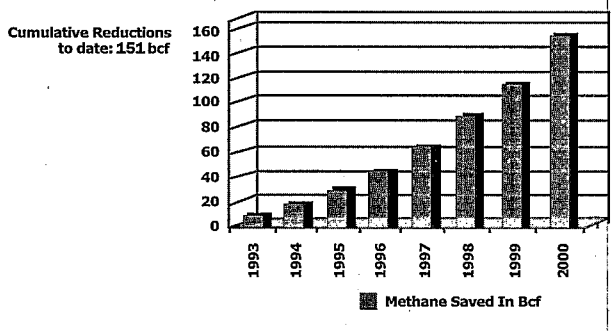
"We're convinced that proactive environmental responsibility is good business. Efforts to reduce our methane emission often improve the operating efficiency of the pipelines, and that leads to financial reward." —Columbia Gas

"You have the flexibility to implement best management practices if they meet your economic criteria. Also, partnership is a good way to bring more awareness and emphasis to methane emission reductions." —Kerr-McGee

Case Study

Natural Gas STAR partner **Unocal Gulf Region USA**, an exploration and production unit of Unocal Corporation, found that using pilot projects to test new methane emission reduction activities is the best way to establish practices that will be cost-effective on a larger scale. Unocal Gulf Region pilot tested converting its natural gas-powered pneumatic instrument system to a compressed air-powered system, which reduced methane emissions by 62.4 million metric cubic feet per year and saved more than $208,000 annually. After that successful pilot, Unocal Corporation—the unit's parent company—joined the Natural Gas STAR Program in 2000.

Methane Emission Reductions by Natural Gas STAR Partners (1993-2000)

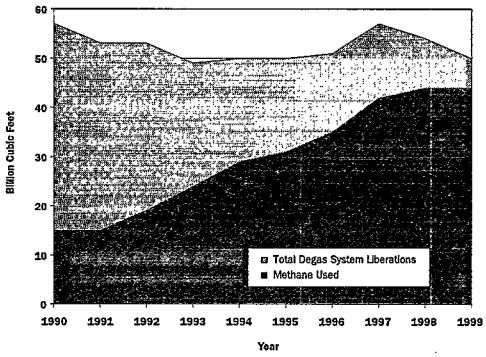


Natural Gas STAR now has more than 90 partner companies and is endorsed by 11 major industry trade associations. In 2000, Natural Gas STAR partners reported 34 billion cubic feet of methane emission reductions, bringing the total reductions through the program to more than 151 billion cubic feet. This is the equivalent of removing more than 12.3 million cars from the road for 1 year. At a gas value of $3 per million cubic feet, partners saved nearly $453 million by keeping more gas in their systems for sale in the market.

CMOP Supports a Decade of Progress in Coal Mines

www.epa.gov/coalbed

Coal mine methane is not only a potent greenhouse gas released from coal seams during mining, it also is a valuable product that can be captured and used for energy. EPA's Coalbed Methane Outreach Program (CMOP) promotes profitable recovery and use of methane by cooperatively working with coal companies and related industries. CMOP helps to identify and implement methods to use coal mine methane productively, which reduces mine methane ventilation costs, improves safety conditions for miners, and provides benefits from the sale of high-quality methane gas. CMOP projects that globally more than 100 million tons of CO_2 equivalent may profitably be slashed each year—a world market value in excess of $2 billion.



The Amount of Coal Mine Methane Utilized Over the Past Decade Has Increased 300 Percent

Case Study

Jim Walter Resources (JWR), a leader in coal mine methane production and utilization, has worked closely with CMOP to identify and implement cost-effective recovery and use options. JWR is now operating an extensive degasification program at its deep, longwall mines in Alabama, which produce gas of varying quality levels from several different types of wells.

JWR has installed a cryogenic gas processing unit to upgrade the quality of some of its gas and is equipping its system to boost processing capacity. The unit currently processes 7 million cubic feet per day of gas with 70 percent methane into 4 million cubic feet per day of pipeline-quality gas. JWR is also pursuing efforts to find uses for some of the low quality gas and ventilation air methane it produces. These projects will further reduce methane emissions from the mine complex and could eventually supply power to mining operations.

Over the past decade, coal mines in the United States and globally have made significant strides in putting their coal mine methane to use as a fuel for electric power production to meet onsite electricity requirements, sell excess power to utilities, and supplement other fuels such as coal and natural gas. In 2000, coal mines captured and utilized more than 90 percent (46 billion cubic feet) of the methane produced from their degasification systems, compared to only 25 percent in 1990. Over a 10-year period, the program recovered an amount of methane equivalent to removing 2.5 million cars from the road.

The CMOP Web site identifies technologies that cost effectively combust or beneficially use ventilation methane, which accounts for 94 percent of underground coal mine methane emissions. The Web site stimulates dialogue on technology application, facilitates information transfer, and assists project developers in planning and executing oxidation projects. Using lessons learned in the United States, partners expect to share technical information with countries such as China, Russia, and the Ukraine, which have already embarked on methane recovery programs.

In other international efforts, CMOP hosted a workshop on international opportunities and barriers in coal mine methane recovery for 50 people from developing countries and countries with economies in transition. Participants exchanged information on international projects, resource assessment, reservoir characterization and modeling, and legal and regulatory issues.

CMOP's Steps to Success:

- Identify potentially profitable projects.
- Generate support from stakeholders.
- Conduct project analyses at the site.
- Provide information and technical assistance.
- Help overcome regulatory, institutional, and technological barriers to increased use of coalbed methane.

LANDFILL METHANE OUTREACH PROGRAM

LMOP Gets its Power From Landfills and Communities

www.epa.gov/lmop

Methane released from decomposing garbage in landfills smells bad, contributes to local smog, and is a potent greenhouse gas. So why are companies across the country getting excited about landfill gas? It's simple—methane released from landfills can be captured and sold or utilized as a cost effective source for electricity, heat, boiler, and vehicular fuel. Capturing and using the methane also reduces odors and improves the management of the landfill, prevents the release of greenhouse gases into the atmosphere, and offsets the need to use other energy sources that emit CO_2. **Lucent Technologies**, for example, fuels its boiler operations with landfill gas instead of fossil fuels. By partnering with EPA's Landfill Methane Outreach Program (LMOP), this

CASE STUDY

The Ecology Club at **Pattonville High School** in Maryland Heights, Missouri, came up with the idea to use gas from the nearby landfill to heat the school. Using a $150,000 loan from the Missouri Department of Natural Resources (MDNR), an LMOP State Ally, Pattonville High School paid to run a 3,600-foot pipeline between the landfill and the school's two basement boilers. In turn, the landfill owner donated the methane to the school as a way of "giving back to the community." The school anticipates that it will save $40,000 per year and recapture its investment within 5 years. MDNR provides low-interest loans to schools, local governments, and small businesses for energy efficiency and renewable energy projects.

telecommunications company not only reduces the amount of greenhouse gas emissions equivalent to taking more than 23,000 cars off the road each year, but also saves $100,000 per year on fuel bills.

EPA estimates there are approximately 337 landfill methane recovery projects in the United States and about 500 other landfills that could install economically viable landfill energy projects. To realize this potential, LMOP assists utilities, municipal and private landfill owners and operators, tribes, and state agencies in developing profitable landfill gas recovery projects.

LMOP currently has more than 266 allies and partners that have signed voluntary agreements to develop projects. LMOP provides partners with information, software, marketing assistance, and access to technical experts to facilitate project development, then promotes successful projects and partnerships. LMOP keeps a continuously updated database of information on projects that are currently operational, under construction, and in the planning stages. There are more than 337 operating projects in the country, nearly 60 under construction, and at least another 163 exploring opportunities. Since 1995, LMOP's activities have resulted in greenhouse gas emission reductions of more than 7 million metric tons of carbon equivalent. This reduction is equal to removing 5 million cars from the road.

Benefits of Reducing Landfill Gas Emissions:

- Reduces unpleasant odors.
- Reduces explosion threats at a landfill.
- Offsets the need for non-renewable energy sources.
- Cuts emissions of air pollutants such as sulfur dioxide.
- Helps fight global climate change.

Partners Excel at Innovation

www.epa.gov/projectxl

What do you get when you combine "eXcellence" and "Leadership"? In the case of Project XL, the result has been cost-effective solutions that benefit partners and the environment. EPA launched Project XL in 1995 to test innovative ideas that demonstrate environmental excellence and lead-

Case Study

With the advent of e-commerce and an increasingly global economy, businesses need to have the flexibility to change product lines and processes quickly—sometimes within days.

Through Project XL, EPA and the Arizona Department of Environmental Quality approved a facility-wide emissions cap for an **Intel** semiconductor manufacturing plant in Chandler, Arizona. The new limits allow Intel to make equipment and process changes and to expand production capacity without regulatory reviews, as long as the total emissions stay below the specified cap. The Intel project provides a test case for two innovations for improving air permitting: the elimination of case-by-case review of specific manufacturing process changes (if emissions remain under a capped amount), and preapproval of a major plant expansion (if emissions remain below a capped amount for the entire site).

Since the project began, the company has remained well under its limits for all applicable pollutants and avoided millions of dollars in production delays by eliminating 30 to 50 new source permit reviews per year. The company has found the emission caps to be so successful that it is building a new facility. So long as it remains under the cap, Intel can proceed with expansion without regulatory review.

ership by those who must comply with Agency regulations and policies.

The goal of Project XL is to find solutions that can be integrated into our environmental protection system for everyone's benefit by creating more options for, and taking a more comprehensive approach to, environmental management. Project XL provides companies and other project sponsors with a forum to demonstrate their abilities to find innovative approaches to environmental protection.

Project XL solicits ideas from private and public sector facilities, states, trade associations, and communities that propose solutions to difficult regulatory or technological problems and explore new approaches to protecting human health and the environment, usually at a lower cost or lessened regulatory burden for the sponsor.

Project XL has experimented with a variety of partners, from Fortune 500 companies and small businesses to state and local government agencies, and communities. Companies are cutting costs, communities are addressing priority concerns, and regulatory agencies are targeting their resources more effectively. Each of these benefits must meet the standard of superior environmental performance and enhanced environmental protection.

The experiments being conducted under Project XL are in various stages: some are just getting started, while others have been underway for several years. The important thing is that EPA is learning from these experiments; over the past two years, EPA has identified more than 100 innovations within projects.

Design for the Environment
U.S. EPA

Design for the Environment Affects Business Decisions

www.epa.gov/dfe

From fewer paint fumes in the air and respirators that really protect, to better ventilation in paint booths and a reduced risk of asthma, EPA's Design for the Environment (DfE) program has made going to work each day a lot safer for many autobody shop workers in Philadelphia. Through DfE, small autobody shops in a pilot program are learning cost-effective ways to reduce the release of potentially harmful chemicals and keep their workers healthy.

DfE provides decision-makers with information, tools, and incentives to make informed decisions that integrate risk, performance, and cost concerns. DfE works directly with industry to integrate health and environmental considerations into business decisions, by: identifying the technologies, products, and processes that can be used to perform a particular function within an industry; noting the pollution prevention opportunities; evaluating the risk, performance, and cost tradeoffs of the alternatives; disseminating this information to the entire industry; and providing incentives to institutionalize continuous environmental improvement.

Benefits of Designing for the Environment:

- Reduced health, safety, and ecological risks.
- Increased efficiency and customer acceptance.
- Increased worker morale and productivity.
- Reduced regulatory burden.
- Better channels of communication, cooperation, and collaboration among stakeholder organizations.
- Expanded business and market.

Case Study

The DfE program is working with the **automotive repair industry** and individual shops to increase awareness of the health and environmental concerns from highly reactive chemicals used in automotive paints and other products. Through site visits at partner shops, the program observed operations, gathered information, identified best practices, and recommended areas for improvement. For example, some shops have switched from conventional paint spray guns to high-volume, low-pressure guns that increase paint transfer efficiency by 25 percent, reduce overspraying, save material costs, and reduce worker exposure and air emissions to the surrounding community.

DfE focuses on cooperative projects with trade associations and businesses in specific industries. For example, to respond to the needs of smaller printers in the screen-printing industry, DfE brought printers, system manufacturers, and the **Screenprinting & Graphic Imaging Association** together to evaluate the environmental impacts of a variety of screenprinting reclamation systems and technologies. The project has developed information on the risk, performance, and cost of 16 substitute screen reclamation systems and technologies. Half of the screenprinters interviewed following this effort switched to a cleaner reclamation product.

Each year, **laundry detergent formulators** use billions of pounds of chemicals, many of which are released into the environment in wastewater. DfE offers formulator companies the opportunity to partner with EPA to design or reformulate products with a more positive environmental and human health profile. DfE partners enjoy recognition for upgraded laundry formulations, including the use of the DfE logo on partnership products.

DfE works with cutting-edge industries to understand the environmental impact of new technologies. DfE formed a voluntary partnership with the **computer display industry** to evaluate the life-cycle environmental impacts, performance, and costs of cathode ray tube and flat-panel display technologies used for desktop computers. DfE will provide the results of the study to original equipment, display, and component manufacturers to encourage them to make environmentally informed decisions.

In addition to its national efforts, DfE is coordinating its efforts with regional offices and state programs. For example, DfE is coordinating with the **Iowa Waste Reduction Center's STAR Program** to train painters in more efficient spraying techniques that increase the amount of paint applied to the product and reduce the amount wasted by overspraying. Working with EPA's **Coordinating Committee for Automotive Repair**, a small business compliance assistance center, DfE developed a virtual auto body Web site to disseminate health, safety, and environmental information materials.

Aluminum Industry Efforts Result in Savings

www.epa.gov/highgwp1/vaip

When Alcoa, a world leader in aluminum production, wanted to cut its emissions of perfluorocarbons (PFCs), a potent greenhouse gas, and improve production efficiency in its smelting operations, it joined EPA's Voluntary Aluminum Industrial Partnership (VAIP). In conjunction with the primary aluminum industry, EPA developed VAIP to reduce greenhouse gases by improving the available information about PFC generation, encouraging other aluminum-producing countries to include PFC emissions in their climate change action plans, and providing public recognition for partners' efforts. Each partner in the VAIP program signs a Memorandum of Understanding with EPA in which the company agrees to undertake technically feasible and cost-effective actions to reduce PFC emissions. The partners also submit periodic reports to track emissions reductions.

Case Study

VAIP partner **Alumax, Inc.**, initiated a series of programs to reduce PFC emissions, including employee awareness and training, a team-based management approach, improved feed control, improved computer control, and modified operating procedures. In addition to reducing PFC emissions, Alumax anticipates realizing benefits from these activities of improved current efficiency, reduced aluminum fluoride consumption, and better electric power utilization.

Since VAIP was launched in 1995, the program's membership has grown to include nine of the nation's 10 primary aluminum producers, representing 22 smelters and 94 percent of U.S. production capacity. Many partners have already been successful in reducing their emissions, and the program recently met its 2000 program goal, with emissions reduced by 50 percent—relative to 1990 levels—on an emissions per unit of production basis. In addition to contributing to more efficient aluminum production process and cost savings, this effort reduces the equivalent of roughly 2.2 million metric tons of carbon emissions.

> "We support the VAIP as a responsible demonstration of environmental stewardship."
>
> —Alcan Ingot

Metal Refinishers Reach Strategic Goals

www.strategicgoals.org

When California Technical Plating partnered with EPA's Metal Finishing Strategic Goals Program (SGP), it found a win-win situation. The shop used common sense ideas, with an emphasis on recycling or reusing, to meet its environmental goals. The result? Besides cutting water usage by 50 percent and its production of metal hydroxide sludge by 50 percent, the company's profits have increased by 20 to 30 percent.

The SGP program started in 1998 as a unique cooperative effort between EPA and the metal finishing industry, represented by the National Association of Metal Finishers (NAMF), the American Electroplaters and Surface Finishers Society (AESF), the Metal Finishing Suppliers

Case Study

K&L, a small electroplating shop in Lancaster, Pennsylvania, cut its wastewater discharges by more than 44 percent, while increasing production 180 percent. By incorporating flow restrictors, spray header rinsing, and improved operator practices, the company saved more than $6,000 per year. And its closed-loop hexavalent chromium process results in zero chemicals or water to waste treatment. "The SGP created a first-time opportunity for plating companies to openly communicate with industry and regulators as a whole," said James Struck, K&L's owner.

Association (MFSA), and the Surface Finishing Industry Council (SFIC). Now, EPA, 22 states, and more than 80 local governments are working with industry partners to help more than 400 companies meet high environmental standards. These environmental goals, established by a multi-stakeholder group, including experts in metal finishing, environmental protection, and regulatory programs, ask participating companies to go beyond current standards required by law. The seven voluntary targets are designed to measure an individual facility's progress toward conserving resources and reducing human exposures.

Why would a company voluntarily join SGP? While the partnership encourages companies to go beyond environmental compliance, it also offers them incentives, resources, and a means for removing regulatory and policy barriers as they work to achieve the goals. From technical assistance to environmental management systems training, informational workshops, and public recognition, SGP offers a wide variety of state and local resources to help metal finishing companies achieve environmental improvements.

Actively participating companies have already reduced water use by 880 million gallons, reduced metals released to water by 99,000 pounds, reduced sludge sent to landfills by 1.6 million pounds, and reduced organic chemical releases by more than 1 million pounds. The results of SGP stretch far beyond environmental improvements. Industry participants save money when reducing water and energy use. Likewise, reductions in regulatory burden result in cost savings for both industry and regulators. SGP participants also note improved communications between industry and regulators.

This industry-specific, performance-based model—the first of its kind—is already serving as a blueprint for the future. EPA's Office of Policy, Economics, and Innovation is working with other industries, such as metal casting, meat processing, shipbuilding, and specialty-batch chemical manufacturing, to create partnerships with the potential to yield impressive environmental results.

GREEN CHEMISTRY

Green Chemistry Encourages Innovation

www.epa.gov/greenchemistry

Imagine a world where our products and processes never jeopardize human health or the environment. Thanks to an EPA partnership program, some of the country's most talented scientists are already starting to make this dream a reality. An innovative approach to pollution prevention, "green chemistry" is the design of chemical prod-

Case Study

In today's competitive agricultural environment, growers must maximize crop productivity by enhancing yield and minimizing crop losses. Harpin technology, developed by **EDEN Bioscience Corporation**, provides growers with a highly effective alternative approach to crop production that improves crops without traditional chemical pesticides.

Harpin proteins trigger a plant's natural defense systems to protect against disease and pests and simultaneously activate certain plant growth systems without altering the plant's DNA. Unlike most agricultural chemicals, Harpin-based products are produced in a water-based fermentation system that uses no harsh solvents or reagents, requires only modest energy inputs, and generates no hazardous chemical wastes.

Using environmentally benign Harpin protein technology, growers will be able to harness the innate defense and growth systems of crops to substantially enhance yields, improve quality, and reduce reliance on conventional chemicals. EDEN Bioscience received the Presidential Green Chemistry Challenge Award for its outstanding green chemistry technology.

ucts and processes that reduce or eliminate the use or generation of hazardous substances. EPA's Green Chemistry Program fosters the research, development, and implementation of innovative chemical technologies that accomplish pollution prevention in both a scientifically sound and cost-effective manner. In addition to recognizing chemical technologies, products, and processes, the program supports a variety of educational projects, tools, conferences, awards, research, and international activities.

In partnership with EPA's Office of Research and Development and the **National Science Foundation** (NSF), the Green Chemistry Program awards $5 million to $7 million in grants annually through the Technology for a Sustainable Environment solicitation for the development of benign feedstocks and reagents, greener solvents and reaction conditions, safer chemical products, and pollution preventing analytical methods. Academic research grants for studying or applying green chemistry are available through EPA and NSF's Partnership for Environmental Research.

In addition to assisting researchers that are developing greener chemical products and processes, the Green Chemistry program recognizes its partners through the annual Presidential Green Chemistry Challenge Awards Program. The awards program helps raise awareness for this important initiative among scientists and their peers. "Society wants chemical companies and other industries to develop environmentally friendly materials," said Larry P. Koskan, President of the Donlar Corporation, the 1996 Small Business Award Winner. "When we answer that call and when there is an economic incentive to do so, everybody wins."

Select Green Chemistry Award Winners

- **Biofine, Inc.** designed a way to convert paper mill sludge, municipal solid waste, waste paper, wood, and agricultural residues into commercially valuable chemicals.
- **Lilly Research Laboratories** designed a manufacturing process for a central nervous system drug that eliminates chromium and reduces chemical solvents.
- **Dow AgroSciences** developed an insecticide from naturally occurring microorganisms to address pests in cotton, trees, fruits, and vegetables without harming most beneficial insects, animals, and birds.

Pesticide Environmental Stewardship Program

www.epa.gov/oppbppd1/PESP

Hawaiian pineapple growers and the U.S. Department of Defense may have little in common, but both are working to reduce pesticide risk through the Pesticide Environmental Stewardship Program (PESP), a partnership program focused on the use of pesticides in agricultural and non-agricultural settings. While government regulation can lower pesticide risk, PESP is guided by the principle that even in the absence of additional regulatory mandates, the informed actions of pesticide users reduce risk even further. This voluntary program began in 1994 with 14 charter partners and now includes more than 120 organizations.

Participating members agree that environmental stewardship is an integral part of pest control and work toward pesticide practices that ease risk to humans and the environment. They develop strategic approaches and implement specific, measurable risk reduction activities. EPA supports research and education to promote the adoption of alternative techniques and practices that enhance pest management and reduce pesticide risk.

In one PESP research effort, the **Pineapple Growers Association of Hawaii's** Herbicide Management Program is researching and implementing ways to minimize the use of herbicides. New sprayers are being used that allow tractor operators to release herbicides only where they are needed instead of spraying an entire field. At Little Rock Air Force Base in Arkansas, deer carry Lyme disease-infected ticks into residential and mission areas. Instead of spraying the whole area with pesticides, the **U.S. Department of Defense** has an innovative bait station that attracts the deer to feed on corn. To get to the corn, they must rub against acaracide-soaked rollers, which deliver the pesticide directly to the deer's hides and control the ticks.

Case Study

As one of the nation's leading baby food manufacturers, **Gerber Products Company**, a charter PESP member, helped launch the Southern Appalachian Apple Integrated Pest Management Program at North Carolina State University's Mountain Horticultural Crops Research and Extension Center. Gerber has asked all of its North Carolina growers to dramatically reduce their use of pesticides targeted for regulatory action under the Food Quality Protection Act. Instead of organophosphate insecticides, growers used mating disruption and reduced-risk materials to control pests such as codling moth, oriental fruit moth, and tufted apple budmoth.

"Our growers in North Carolina have been remarkably successful this first year," said John Aselage, Gerber agricultural resource specialist. "Not only did they completely eliminate their use of organophosphate insecticides, but they were able to begin reducing their use of fungicides. This is no easy task given the region's hot and humid growing conditions."

Consumers Learn to Read the Label First

www.epa.gov/opptintr/labeling

Changing consumer behavior is no easy task, but partners of EPA's Consumer Labeling Initiative (CLI) are making progress—and helping people take the time to protect their health and the environment. Every day, thousands of consumers across the country use indoor pesticides and cleaning products. Misuse, accidents, and improper storage and disposal of these products can pose serious threats to humans and the environment. Recognizing the need to reach this audience, EPA launched CLI to make the labels of indoor pesticides, hard surface cleaners, and outdoor pesticides and herbicides easier to read.

In its first phase, CLI implemented a detailed telephone and mail survey to assess consumers' understanding of and satisfaction with labeling on pesticides and cleaning products and to evaluate alternatives. CLI partners—businesses holding market shares of these product categories and trade associations related to the manufacture and distribution of these products—funded and directed the quantitative research. The survey results revealed information about consumer preferences regarding label location, effectiveness, and content.

Based on the findings, EPA and CLI partners developed an easier-to-read label that clearly outlines the environmental and safety aspects of these products. For example, EPA revised first aid instructions for all combinations of the Federal Insecticide, Fungicide, and Rodenticide Act regulation. The Office of Pesticide Programs proposed an initial set of first aid statements, with input from industry, the American Poison Control Center, and other CLI partners and stakeholders. Partners now voluntarily use these improved labels on their products.

To promote the new labels, EPA's CLI program launched a national education campaign encouraging consumers to "Read the Label First!" to help protect their children, pets, and the environment. The consumer education strategy is a broad and long-ranging plan featuring a memorable logo designed to remind people to read, understand, and use label information. The campaign also is designed to educate consumers about ingredient information on labels and provide information on where to get additional health and safety product data.

CLI Partners at Work

Following are some of the efforts CLI's partners and EPA regions have undertaken to encourage consumers to "Read the Label First!":

- New Mexico State University incorporated pesticide safety and "Read the Label First!" messages into its family and consumer sciences curricula for middle and high school levels.
- Boulder County, Colorado's Public Health Department used the CLI logo to create a series of "shelf talkers" and other materials to educate consumers in local stores about pesticides and cleaning products.
- The Bayer Company tailor-made and printed 50,000 CLI "Protect Your Garden" brochures, which they distributed to clients and consumers in several Home Depot stores.
- Pesticide manufacturer Bonide includes the CLI logo on its Web site with a link to remind consumers to "Read the Label First!"
- EPA Region 4 arranged to have CLI posters placed in local stores and information on pesticide use distributed to local churches and schools.

Aside from using and supporting improved labeling, CLI partners donate their experience and expertise to the design, testing, and execution of the program's research, and provide funding and information resources. They also act as liaisons between EPA and the industry, helping to spread information to their members and colleagues, and reporting feedback and ideas to EPA.

The Power of Environmentally Preferable Purchasing

www.epa.gov/oppt/epp

The federal government is the largest consumer of goods and services in the United States, spending more than $250 billion annually. Recognizing the government's tremendous purchasing power, EPA's Environmentally Preferable Purchasing (EPP) Program works to leverage this influence to minimize the environmental impacts of government procurement.

Executive Order 13101, *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*, mandates that all federal procurement officials give preference to "products and services that have a lesser or reduced effect on human health and the environment." In response, EPA's EPP Program has developed numerous tools and resources to help federal agencies identify and purchase environmentally preferable products and services. These tools include a set of guiding principles, a searchable database of product environmental standards and contract language, a series of product-specific purchasing guides, and a thorough documentation of successful EPP efforts across the country.

Case Study

Each day, federal government agencies and their employees have opportunities to make both big and small EPP decisions. As an example of the pioneering projects occurring throughout the federal government, **EPA's** new headquarters facility in Washington, DC, and its new 1-million-square-foot, $250 million research facility in Research Triangle Park, North Carolina, both include features designed to protect indoor air quality, maximize energy efficiency, reduce water consumption, and promote pollution prevention throughout the construction process. Design teams for both facilities examined the environmental impacts of selected materials and furnishings from a life-cycle perspective to select those with minimal adverse effects to human health and the environment.

Aberdeen Proving Ground, a **U.S. Department of Defense** installation in Maryland, sought to reduce the number, volume, and environmental effects of the paints it uses—in particular, their potential for contributing to air pollution. Aberdeen established environmentally preferable paint standards for the installation, focusing particularly on lower levels of volatile organic compounds and less toxicity. Through this project, Aberdeen discovered significant, growing competition in the market for environmentally preferable paints, resulting in a cost savings of $1.78 per gallon. Added to the avoided hazardous waste disposal costs, Aberdeen is saving $60,000 annually.

Partnership Encourages Communities to "Adopt Your Watershed"

www.epa.gov/adopt

Can a "Toxic Tour" bike ride help prevent water pollution? High school students in Miami, Oklahoma, think so. The 10K race and 19-mile bike ride through environmentally challenged sites is just one of the awareness activities students staged through EPA's "Adopt Your Watershed" program. The students, members of the Cherokee Volunteer Society, "adopted" Tar Creek, a local waterway threatened by industrial pollution.

Adopt Your Watershed is a campaign to encourage stewardship of the nation's water resources. The program is celebrating more than 25 years of progress under the Clean Water Act. Through this effort, EPA encourages citizens and organizations at the community level to "adopt" valuable rivers, streams, wetlands, lakes, ground water, and estuaries. Adoption activities include organizing stream cleanups, volunteering to plant trees along eroding stream banks, and educating children about how pollution affects water.

In Texas, for example, volunteers from the **Colorado River Watch Network (CRWN)** monitor more than 90 sites in the lower Colorado River watershed, including the Llano, Pedernales, and San Saba Rivers. The organization was the first major volunteer water monitoring program in Texas, and local news organizations use CRWN's monitoring data in monthly water quality indexes. In Duluth, Minnesota, the **Environmental Association for Great Lakes Education (EAGLE)**, whose mission is to develop community awareness and involvement for protecting and restoring the Great Lakes ecosystem, adopted a designated urban trout stream. Members surveyed property owners and held a workshop to educate them and the general public about how to locate sources of pollution. The workshop identified roles the community can play in preserving and protecting the creek.

EPA is building a voluntary, national catalog of organizations such as CRWN and EAGLE, including formal watershed alliances, local groups, and schools involved in monitoring, cleanups, and restoration projects. Using the Adopt Your Watershed Web site, citizens can locate their own watershed and search a catalog to identify programs in their community that protect and restore watersheds. To date, more than 3,000 organizations have been registered with the Adopt Your Watershed program. Organizations that demonstrate a long-term commitment to their watershed are eligible to receive a Certificate of Appreciation from EPA.

Case Study

More than 6,000 Girl Scouts nationally have earned Water Drop Patches through a unique partnership between the **Girl Scouts of the USA** and EPA's Office of Wetlands, Oceans, and Watersheds. Through the Water Patch Program, Girl Scouts learn how to preserve and protect local watersheds. EPA published a booklet providing educational information on watersheds, nonpoint source pollution, wetlands, and ground water/drinking water, as well as a list of helpful Web sites and other resources. At Camp Shanituck in Kentucky, Girl Scouts conducted stream assessments, chemical testing, and biological monitoring of two creeks. They also focused on learning where the pollutants enter their creeks and how they can help keep them clean, such as providing buffers and educating the community. The Girl Scouts continue to monitor and report their findings to the Kentucky Division of Water.

Regional Efforts

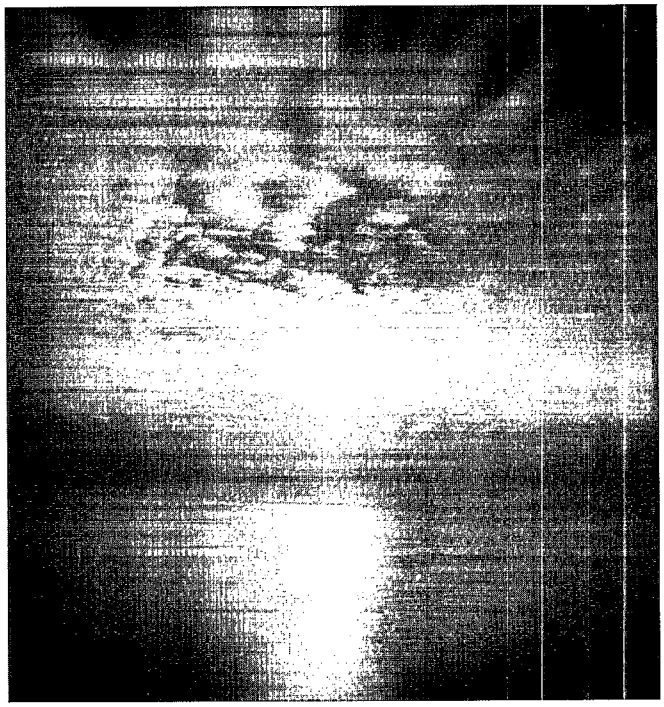
Through its regional offices, EPA promotes hundreds of partnership efforts to address local and global environmental issues through voluntary initiatives. Though too numerous to list, these local, state, and regional efforts have resulted in similar environmental and economic savings to the programs quantified here. Following are just a few of the regional partnerships that are making a difference.

- In EPA Region 1, the **Mercury Challenge** helped hospitals across the region reduce their use of mercury in fluorescent bulbs, thermometers, blood pressure units, and other equipment by encouraging partners to adopt goals to eliminate mercury from the waste stream and to adopt purchasing policies that allowed no mercury in medical supply purchases. Hartford (Connecticut) Hospital alone converted 965 mercury blood pressure units and recycled 276 pounds of bulk mercury. For more information, visit <www.h2e-online.org>.

- In EPA Region 3, Maryland, Virginia, Pennsylvania, and Washington, DC, have joined to promote **Businesses for the Bay**, a voluntary partnership whose mission is to build support for pollution prevention among all businesses in the Chesapeake Bay watershed. Members develop their own pollution prevention goals, ranging from recycling wastes to reducing chemical use, and voluntarily report their activities. The program offers a mentor program for businesses looking for pollution prevention opportunities and provides technical assistance, public recognition, and a partner logo. For more information, visit <www.chesapeakebay.net/b4bay.htm>.

- EPA Region 10 signed an agreement with the **Oregon Department of Environmental Quality (DEQ)** on a **Green Permitting Program** that encourages and rewards facilities that go the extra mile to reduce environmental impacts. A Green Permit modifies how a facility needs to comply with environmental regulations if it can meet certain qualifications. Based on a model memorandum of agreement from the Environmental Council of the States (ECOS), this program is similar to efforts undertaken between state agencies and EPA regional offices in Wisconsin and Virginia.

In Oregon, businesses that apply for a Green Permit must have an environmental management system that assures performance. The program provides regulatory relief and incentives for innovative approaches that are significantly better than the existing state and federal laws. A "tiered" approach offers different types of Green Permits, in which increasing performance increases benefits. Thus far, six businesses have applied for Green Permits, and two have already been issued—to a semiconductor laboratory and a paper company renovating an old mill. For more information, visit <www.deq.state.or.us/programs/greenpermits/index.htm>.



EPA's Regional Partnership Programs

For more information about EPA's regional partnership programs, visit the following Web sites:

Region 1:
www.epa.gov/region1

Region 2:
www.epa.gov/region2

Region 3:
www.epa.gov/region3

Region 4:
www.epa.gov/region4/topics/envmanagement/partners.html

Region 5:
www.epa.gov/region5

Region 6:
www.epa.gov/region6

Region 7:
www.epa.gov/region7

Region 8:
www.epa.gov/region8

Region 9:
www.epa.gov/region9/cross_pr/innovations

Region 10:
www.epa.gov/region10

Where Do We Go From Here?

EPA is continuing its efforts toward innovative solutions to environmental problems by taking an even more strategic approach. In 2002, EPA released its Innovations Strategy, which assists EPA in targeting innovations and partnerships on the most serious environmental problems. Now more than ever, innovative partnership programs are important. Voluntary programs help Americans strive for the shared goal of protecting the environment. These programs will continue to draw their power from the value all Americans place on serving as stewards of the environment for future generations.

For more detailed information about the partnership programs, individual success stories, or general partnership information included in this report, visit <www.epa.gov/partners> or any of the following:*

Adopt Your Watershed
www:epa.gov/adopt

AgSTAR
www.epa.gov/agstar

Coalbed Methane Outreach
www.epa.gov/coalbed

Consumer Labeling Initiative
www.epa.gov/opptintr/labeling

Design for the Environment
www.epa.gov/dfe

Energy Star
www.energystar.gov

Environmentally Preferable Purchasing Program
www.epa.gov/oppt/epp

Green Chemistry
www.epa.gov/greenchemistry

Landfill Methane Outreach Program
www.epa.gov/lmop

Metal Finishing Strategic Goals Program
www.strategicgoals.org

National Environmental Performance Track
www.epa.gov/performancetrack

Natural Gas STAR
www.epa.gov/gasstar

Pesticide Environmental Stewardship Program
www.epa.gov/oppbppd1/PESP

Project XL
www.epa.gov/projectxl

Voluntary Aluminum Industrial Partnership
www.epa.gov/highgwp1/vaip

WasteWise
www.epa.gov/wastewise

WAVE (Water Alliances for Voluntary Efficiency)
www.epa.gov/owm/water-efficiency/faq.pdf

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