

**Promoting Pollution Prevention to Achieve Sustainability:  
A Strategic Plan for the U.S. Environmental Protection  
Agency's Pollution Prevention Program, 2009-2014**

*DRAFT JANUARY 2009*

## EXECUTIVE SUMMARY

This five-year strategic plan provides an opportunity for the U.S. Environmental Protection Agency's (EPA's) Pollution Prevention (P2) Program<sup>1</sup> to focus and give direction to its future efforts. The plan emphasizes increased collaboration with other EPA programs, States, Tribes, local governments, and other partners, as well as stronger internal program coordination, to utilize multimedia pollution prevention approaches to achieve sustainable environmental outcomes.

The strategic plan focuses on finding the most effective P2 solutions to maximize reductions in the generation and emission of greenhouse gases (GHGs), toxic chemicals and other pollutants of concern, and conservation of energy, water, and raw materials. Three goals provide a structure for the P2 Program's activities as the program works to advance the achievement of these environmental outcomes:

**Goal 1: By 2014, work with other EPA programs to establish EPA's leadership role in the sustainability arena, and broadly communicate the importance of preventing pollution at the source**

The P2 Program will closely engage in the 2009-2014 Agency Strategic Plan process to ensure that sustainability is well represented as a theme within the plan, and that prevention-focused activities are tracked within each of the goals.

The program will work with other EPA programs to ensure the 2012-2017 Agency Strategic Plan is a *comprehensive sustainability strategy* that stresses multimedia, pollution prevention approaches and is organized around goals that track society's progress in bringing greenhouse gas emissions, use of toxic chemicals and other pollutants of concern, and use of natural resources to levels that protect human and ecological health and are environmentally sustainable over the long term.

The P2 Program's vision is that by 2014, Agency programs will be working in a more seamless fashion to apply targeted policy approaches to ensure that businesses, governments, institutions, communities, and the public are adopting sustainable practices.

**Goal 2: By 2014, increase coordination among individual components of the EPA P2 Program and ensure a strong infrastructure within the EPA P2 Program and external P2 networks to support the program's mission**

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<sup>1</sup> Including P2 activities of the Pollution Prevention Division (PPD) and the Economics, Exposure, and Technology Division (EETD) in EPA's Office of Pollution Prevention and Toxics (OPPT); P2 programs in the ten EPA Regions; and the P2, Source Reduction Assistance (SRA), and Pollution Prevention Information Network (PPIN) Grant Programs.

Starting in 2009, the P2 Program will establish opportunities for routine communication and enhanced collaboration among individual program components and with States and other external partners. By 2011, implementation of strategic plan activities will provide a program infrastructure that can better respond to the P2 information and assistance needs of businesses, governments, institutions, communities, and the public.

**Goal 3: By 2014, meet or exceed the environmental outcome targets established for the P2 Program in the EPA Strategic Plan**

For each successive year of this strategic plan, the P2 Program will generate increased direct results corresponding to the program's Government Performance and Results Act (GPRA) targets of reduced million metric tons of carbon equivalent (MMTCE), pounds of hazardous materials, gallons of water, and dollars saved.

Results will come from ongoing work of individual P2 Program components (Design for the Environment, Environmentally Preferable Purchasing, Green Chemistry, Green Engineering, Green Suppliers Network, Partnership for Sustainable Healthcare, Pollution Prevention Resource Exchange, Regional P2 Activities, and P2 Grant Programs) and from the implementation of new cross-program strategies for six sector focus areas:

- Agriculture
- Chemical & Manufacturing Industries
- Buildings & Construction
- Electronics
- Hospitality
- Municipalities & Institutions

The strategic plan includes individual sections describing the P2 Program's five-year strategy for each of these six sector areas. EPA Headquarters and Regional P2 programs chose these six sectors based on their relative environmental impact and a perceived opportunity for gaining significant environmental results through source reduction/pollution prevention. The P2 Program will apply a variety of tested P2 approaches/tools to these challenges, including energy efficiency and energy conservation, toxics reduction analysis, materials management, greener product design and environmentally preferable purchasing, production process and supply chain efficiencies, and integration of P2 options and best management practices into rules.

Implementation of the strategic plan will reflect a transition of the P2 Program over the next five years. The first one to two years will be dedicated to identifying priority activities and partners, and building internal and external support for new activities and emphases. The program will continue to work on current program priorities, but will also evaluate those activities in light of the strategic plan. In years three to five the P2 Program activities are expected to shift significantly toward the three goals outlined above.

### List of Acronyms

BMP	best management practice
CARE	Community Action for a Renewed Environment
ChAMP	Chemical Assessment and Management Program
DOE	Department of Energy
EETD	EPA OPPT Economics, Exposure, and Technology Division
EJ	environmental justice
EMS	environmental management system
EPA	U.S. Environmental Protection Agency
EPEAT	Electronic Product Environmental Assessment Tool
EPP	Environmentally Preferable Purchasing
FAR	Federal Acquisition Regulation
FDA	Food and Drug Administration
FEC	Federal Electronics Challenge
FTR	Federal Travel Regulation
GAO	Government Accountability Office
GHG	greenhouse gas
GPRA	Government Performance and Results Act
GSA	General Services Administration
GSN	Green Suppliers Network
ICLEI	International Council for Local Environmental Initiatives
LCA	life cycle assessment
MEP	Manufacturing Extension Partnership
MMTCE	million metric tons of carbon equivalent
NACo	National Association of Counties
NAHB	National Association of Home Builders
NERL	ORD National Exposure Research Laboratory
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NIST	National Institute of Standards and Technology
NMSP	Nanoscale Materials Stewardship Program
NPPR	National Pollution Prevention Roundtable
OAR	EPA Office of Air and Radiation
OARM	EPA Office of Administration and Resource Management
OCIR	EPA Office of Congressional and Intergovernmental Relations
OECA	EPA Office of Enforcement and Compliance Assurance
OEI	EPA Office of Environmental Information
OFEE	Office of the Federal Environmental Executive
OMB	Office of Management and Budget
OPEI	EPA Office of Policy, Economics, and Innovation
OPPT	EPA Office of Pollution Prevention and Toxics
OPPTS	EPA Office of Prevention, Pesticides, and Toxic Substances
ORCR	EPA Office of Resource Conservation and Recovery
ORD	EPA Office of Research and Development

P2	pollution prevention
P2Rx	Pollution Prevention Resource Exchange
PART	Program Assessment Rating Tool
PMN	New Chemicals Premanufacture Notification
PPD	EPA OPPT Pollution Prevention Division
PPIN	Pollution Prevention Information Network
RFP	request for proposals
SAB	EPA Science Advisory Board
SBIR	Small Business Innovation Research
SRA	Source Reduction Assistance
TRI	Toxics Release Inventory
USDA	U.S. Department of Agriculture
USGBC	U.S. Green Building Council
VOCs	volatile organic compounds

## **Promoting Pollution Prevention to Achieve Sustainability: A Strategic Plan for EPA's P2 Program, 2009-2014**

### **Introduction**

The U.S. Environmental Protection Agency's (EPA's) Pollution Prevention (P2) Program<sup>2</sup> has developed this strategic plan during a time of transition in the environmental arena. Climate change has taken on a new sense of urgency, issues related to chemicals in products have gained more attention, and more businesses and consumers are looking to embrace more sustainable practices, both domestically and globally. The P2 Program is taking a fresh look at its role in helping to address these challenges, and how the program's experience and expertise can best contribute to the work of EPA to move our society towards sustainability.<sup>3</sup>

This document begins with a description of the P2 Program's vision and mission, summarizes some of the issues and trends that have informed the program's strategic planning, and describes the P2 Program's five-year strategy. The plan concludes with more detailed strategy information for six sector focus areas:

- Agriculture
- Chemical & Manufacturing Industries
- Buildings & Construction
- Electronics
- Hospitality
- Municipalities & Institutions

EPA Headquarters and Regional P2 programs chose these six sectors based on their relative environmental impact and a perceived opportunity for gaining significant environmental results through source reduction/pollution prevention. The P2 Program will apply a variety of tested P2 approaches/tools to these challenges, including energy efficiency and energy conservation, toxics reduction analysis, materials management, greener product design and environmentally preferable purchasing, production process and supply chain efficiencies, and integration of P2 options and best management practices into rules.

### *Highlighted Strategic Plan Outcomes*

#### **By 2014, the P2 Program is seeking to achieve the following outcomes:**

- The P2 Program will closely engage in the 2009-2014 Agency Strategic Plan process to ensure that sustainability is well represented as a theme within the plan, and that prevention-focused activities are tracked within each of the goals.

<sup>2</sup> Including P2 activities of the Pollution Prevention Division (PPD) and the Economics, Exposure, and Technology Division (EETD) in EPA's Office of Pollution Prevention and Toxics (OPPT); P2 programs in the ten EPA Regions; and the P2, Source Reduction Assistance (SRA), and Pollution Prevention Information Network (PPIN) Grant Programs.

<sup>3</sup> U.S. EPA defines sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs," <http://www.epa.gov/Sustainability/>

The program will work with other EPA programs to ensure the 2012-2017 Agency Strategic Plan is a *comprehensive sustainability strategy* that stresses multimedia, pollution prevention approaches and is organized around goals that track society's progress in bringing greenhouse gas emissions, use of toxic chemicals and other pollutants of concern, and use of natural resources to levels that protect human and ecological health and are environmentally sustainable over the long term.

The P2 Program's vision is that by 2014, Agency programs will be working in a more seamless fashion to apply targeted policy approaches to ensure that businesses, governments, institutions, communities, and the public are adopting sustainable practices.

- Starting in 2009, the P2 Program will establish opportunities for routine communication and enhanced collaboration among individual program components and with States and other external partners. By 2011, implementation of strategic plan activities will provide a program infrastructure that can better respond to the P2 information and assistance needs of businesses, governments, institutions, communities, and the public.
- For each successive year of this strategic plan, the P2 Program will generate increased direct results corresponding to the program's Government Performance and Results Act (GPRA) targets of reduced million metric tons of carbon equivalent (MMTCE), pounds of hazardous materials, gallons of water, and dollars saved.

Results will come from ongoing work of individual P2 Program components (Design for the Environment, Environmentally Preferable Purchasing, Green Chemistry, Green Engineering, Green Suppliers Network, Partnership for Sustainable Healthcare, Pollution Prevention Resource Exchange, Regional P2 Activities, and P2 Grant Programs) and from the implementation of new cross-program strategies for the six sector focus areas listed above.

Implementation of this strategy will reflect a transition of the P2 Program over the next five years. The first one to two years will be dedicated to identifying priority activities and partners, and building internal and external support for new activities and emphases. The program will continue to work on current program priorities, but will also evaluate those activities in light of the strategic plan. In years three to five P2 Program activities are expected to shift significantly toward the goals outlined below.

### **P2 Program Vision & Mission**

*The P2 Program vision has long been that pollution prevention is the first choice for environmental protection. Our mission is to encourage, assist and lead others to prevent pollution at the source and conserve natural resources – a critical step in achieving a sustainable society. We work as partners with others to integrate pollution prevention into their programs and activities. We provide incentives to businesses, including*

*technical assistance, public recognition, and tools. We use creativity, innovation, and voluntary collaboration to treat materials as resources not wastes.*

These vision and mission statements are the foundation of all of EPA's P2 work. The program is contributing to the Agency's mission and the achievement of tangible environmental results, including the reduction of the generation and emission of greenhouse gases (GHGs), toxic chemicals and other pollutants of concern, and conservation of energy, water, and raw materials.

Rooted in the authority of the Pollution Prevention Act, the P2 Program consists of many areas of experience and expertise that contribute to meeting EPA's mission, including:

- applying source reduction, toxics reduction, green product development, product stewardship, risk management and informed substitution to transition from the manufacture and use of chemicals of concern to the design, manufacture, and commercial acceptance of safer substances or non-chemical alternatives
- finding ways to reduce greenhouse gas emissions through the adoption of energy efficiency, energy conservation, and chemical/material substitution strategies
- working with State P2 programs to provide on-site P2 technical assistance and technical information resources for facilities and communities
- advising Agency media programs on ways to incorporate P2 concepts and solutions into their policies, regulations, and other activities and assisting in the development of cost saving technical solutions
- building national and regional partnerships to target specific P2 opportunities
- stimulating demand for green products and services by working with others to develop voluntary consensus standards and helping the public, governments, organizations, and companies "buy green"
- working with large manufacturers and their suppliers to encourage product redesign, continuous improvement in manufacturing/facility processes, and information sharing within the supply chain to influence greener product specifications

The next section describes the evolving circumstances that will likely influence the role of pollution prevention and EPA's P2 program in the future.

### **P2 and the Evolution of Environmental Protection**

The world economy is structured in a way that facilitates the inefficient use of natural resources<sup>4</sup>, creating a default state of pollution, waste, and ecological disruption. Over the years, environmental regulations and voluntary stewardship efforts, both of which have included pollution prevention approaches to varying degrees, have helped the United States to reduce certain types of pollutants and their adverse impacts on human health and the environment. For example, emissions of criteria air pollutants decreased nationwide between 1990 and 2002, although in a number of local areas, concentrations of these pollutants are still greater than health-based standards.<sup>5</sup> Toxics Release

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<sup>4</sup> Geiser, Kenneth, *Materials Matter: Toward a Sustainable Materials Policy*, Cambridge, Massachusetts: Massachusetts Institute of Technology, 2001, p. 2.

<sup>5</sup> U.S. Environmental Protection Agency, *2008 Report on the Environment*, p. 2-60.

Inventory (TRI) data show a small but steady decline in the quantities of TRI chemicals released to all media between 2001 and 2006, with the exception of offsite releases, which increased slightly.<sup>6 7</sup>

Considerable time, resources, and energy have been expended to reach the current level of environmental and human health protection, but many challenges remain. Climate change is first among a number of concerns, and the greenhouse gas emissions that cause rising global temperatures continue to increase. In the United States, greenhouse gas emissions directly attributable to human activity increased 16 percent between 1990 and 2005.<sup>8</sup>

Pollution prevention and energy conservation are effective strategies for reducing greenhouse gas emissions as well as the use of toxics and natural resources. Between 2001 and 2003, the P2 efforts of 29 regional, state, and local governments resulted in the prevention of over 6 billion pounds of air, water, hazardous and solid waste pollution. The efforts saved businesses and governments at least 1.2 billion kilowatt hours and 44 billion gallons of potable water. The total savings returned to the economy for more productive use was more than \$500 million. This sum was 5 times the total budget for these P2 programs for the corresponding time period, and more than 25 times the federal investment.<sup>9</sup>

Today, more people and programs are moving towards environmentally sustainable outcomes, and are including the implementation of pollution prevention approaches in the achievement of their sustainability goals. EPA has established several partnership programs that focus on encouraging the adoption of sustainable practices by businesses, governments, and consumers. These practices embody pollution prevention approaches, although they aren't always identified as such. Some of EPA's regulatory programs also promote P2 approaches. A recent EPA self-assessment of P2 integration at the Agency concluded that "Agency review of regulations and programs for their effect on source reduction efforts is close to conformity with Pollution Prevention Act provisions, although there is clearly room for continuing improvement."<sup>10</sup>

The new focus on sustainability and sustainable practices will help to further integrate pollution prevention into the work done by EPA and others. To reach outcomes that are

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<sup>6</sup> Ibid., p. 4-41.

<sup>7</sup> As a result of the Pollution Prevention Act of 1990, EPA added *Section 8: Source Reduction and Recycling Activities* to the TRI Form R, which provides data about source reduction, recycling and other pollution control activities on the part of TRI industry reporters. TRI annual reports are used by a wide variety of Federal agencies, state governments, researchers, non-profit organizations and communities to access the progress of various industry sectors in reducing emissions and incorporating pollution prevention practices. Source reduction activity data reported to TRI may include equipment, technology, process or procedure modifications, reformulation or redesign of products, substitution of raw materials and improvements to maintenance, training or inventory control. The Agency plans to analyze this unique compilation of data in order to improve its ability to analyze and track industry efforts, and more effectively target its source reduction efforts.

<sup>8</sup> U.S. Environmental Protection Agency, *2008 Report on the Environment*, p. 2-72.

<sup>9</sup> National Pollution Prevention Roundtable, *Pollution Prevention Produces Results: Waste Reductions, Resource Conservation, and Cost Savings*, September 2006, p. 2.

<sup>10</sup> EPA draft self-assessment report, *Evaluation of EPA Efforts to Integrate Pollution Prevention Policy throughout EPA and at Other Federal Agencies*, April 16, 2008, p. 3.

truly sustainable, EPA must be able to work with state, tribal, and local programs to provide consumers and businesses with a comprehensive view of environmental protection that is not fragmented by environmental media, product lifecycle phase, type of pollution, or environmental issue. The P2 program's cross-cutting, multimedia perspective and experience working with industry, government agencies, communities, and others on comprehensive, prevention-based solutions can contribute greatly to meeting the sustainability challenge.

### **P2 Program Five-Year Strategy**

This P2 Program strategy takes into account where the program is now, the current state of P2 within the broader environmental protection context, and the state the program will be working to achieve over the next five years. The strategy consists of three goals.

**Goal 1: By 2014, work with other EPA programs to establish EPA's leadership role in the sustainability arena, and broadly communicate the importance of preventing pollution at the source**

**Goal 2: By 2014, increase coordination among individual components of the EPA P2 Program and ensure a strong infrastructure within the EPA P2 Program and external P2 networks to support the program's mission**

**Goal 3: By 2014, meet or exceed the environmental outcome targets established for the P2 Program in the EPA Strategic Plan**

Successfully implementing the activities in this strategy will depend on close coordination and collaboration with EPA offices, Regions, States, Tribes, and external stakeholders. Unless otherwise specified, the implementation of this strategy is the responsibility of the EPA P2 Program, with the EPA Office of Pollution Prevention and Toxics (OPPT) Pollution Prevention Division (PPD) taking the lead. Regions will need to support and advance the capabilities of state and local programs to round out the national capacity. Milestones for implementing activities are noted by calendar year. Activities will be implemented to the extent feasible, and as resources allow.

The P2 program will utilize its current Government Performance and Results Act (GPRA) goal structure and results collection mechanisms<sup>11</sup> to measure the results of its efforts. Since the next five years may prove to be a time of significant change in environmentally focused practices, the program will periodically re-evaluate its five-year strategy and make appropriate revisions.

**Goal 1: By 2014, work with other EPA programs to establish EPA's leadership role in the sustainability arena, and broadly communicate the importance of preventing pollution at the source**

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<sup>11</sup> For more information on P2 Program GPRA goals and results collection, see the Office of Management and Budget (OMB) Program Assessment Rating Tool (PART) assessment of the EPA P2 Program: <http://www.whitehouse.gov/omb/expectmore/summary/10004304.2006.html>

As the federal environmental agency of the United States, EPA should play a prominent role in the sustainability conversation. The P2 Program's goal of working with others to establish a leadership role for EPA in the sustainability arena reflects a recognition of EPA's responsibility to provide guidance and support for sustainability policies and initiatives on a broad scale. In striving to take on this leadership role, EPA must continue to transition to a more comprehensive, multimedia, sustainability-focused approach to environmental protection. This means communicating a cohesive, multimedia P2 message about what is needed to sustain vital ecological support systems long-term, and finding ways to meaningfully engage businesses, consumers, and others in contributing to this shared endeavor.

EPA's engagement in developing standards for sustainable products and services will be particularly important, given the positive effect that sustainable product design can have on the environmental impacts of an entire supply network. Indeed, efforts that focus on the design of products and systems from a life cycle perspective will be critical to reducing greenhouse gas emissions and other pollutants in a meaningful way.

The P2 approach will be key to achieving the goal of sustainability because prevention minimizes the use of limited resources and prevents harmful pollutants from being created, which corresponds to a reduced environmental footprint. The P2 Program must be able to clearly articulate how pollution prevention and the program's expertise and experience in particular, can contribute to EPA's sustainability efforts. Strong relationships with others in the P2 community, including States, Tribes, local governments, and non-government organizations, will be critical to developing a greater understanding of and communicating the role of P2 in creating sustainable systems. The outcomes of this goal can be seen as P2 integration on a broad scale.

Objective 1: Work with other EPA programs, with input from external stakeholders, to create a comprehensive, cohesive EPA sustainability strategy

*Key Activities:*

- Network with other EPA programs to understand how they are defining their role in relation to sustainability issues, and how mutual planning and implementation could be carried out. In particular, coordinate with strategic planning efforts of other EPA offices and programs. Examples of networking include:
  - Taking advantage of partnership efforts with the EPA Office of Resource Conservation and Recovery (ORCR) on the 2020 Vision effort and the Resource Conservation Challenge to identify specific opportunities to realign, refocus, or expand efforts to promote life-cycle materials management
  - Working with the EPA Office of Research and Development (ORD) on sustainability efforts
  - Working with the EPA Office of Enforcement and Compliance Assurance (OECA) and the EPA Office of Policy, Economics, and Innovation (OPEI) to continue to strengthen EPA's Environmental Assistance Network and Partnership Programs Network

- Working with the EPA Office of Air and Radiation's (OAR's) Clean Energy programs, OPEI's Sector Strategies program and other EPA program offices to devise common strategies for greenhouse gas reductions in specific sectors
- Continuing participation in EPA Sustainable Products Network and assisting in the development of voluntary consensus standards for select products and services
- Working with EPA and external partners to convene a dialogue on what is needed for a successful, multi-attribute, national eco-label covering multiple product categories. One example of this type of activity is EPA's participation in the ANSI Sustainable Products Standards Forum. In Spring 2009, ANSI will convene a cross-sector coordinating body, engaging a broad range of stakeholders, and designed to:
  - Establish the guiding principles for developing sustainability/environmental performance standards
  - Identify existing standards and draft standards under development that are characterized as sustainability/environmental performance standards (both in the U.S. and abroad)
  - Determine gaps and needs for additional sustainability/environmental performance standards
  - Define/coordinate the relationship between sustainability standards and ecolabeling programs, especially ISO 14024 Type 1 labels
  - Facilitate the timely development, promulgation, and use of voluntary consensus sustainability/environmental performance standards and conformity assessment programs
- Taking the lead on the development of consensus performance goals on the use of chemical substances in products that promote:
  - Use of environmentally preferable products that minimize impacts throughout their lifecycles
  - Utilization of best management practices to reduce chemical exposures and releases from product manufacture to operations and maintenance to eventual recycling and disposal
  - Elimination or minimization of the manufacture, processing, and use of all unnecessary chemical substances, especially hazardous chemicals in products and processes
  - Use of safer, less persistent, less bioaccumulative, and less toxic chemical substances in products and processes
  - Use of integrated pest management approaches to reduce health and environmental effects associated with exposure to pests and pesticides
- Continuing to work with OPEI to strengthen the linkages between lean manufacturing and pollution prevention techniques, and increasing the application of these combined techniques by businesses
- Continuing to work internally across EPA core program areas to drive P2 into traditional statutory programs and working with others at EPA and States to address regulatory barriers to P2. Coordination should be established and/or increased with OPPT and other offices' regulatory programs, especially those that have adopted a P2 component, e.g., the OPPT New Chemicals Program's P2 Recognition

- Continue to network with external groups working in the P2 and/or sustainability area (on local, state, regional, national, and international levels) to build an understanding of new trends and maximize leveraging of resources
- Work with ORD/National Exposure Research Laboratory (NERL), industry trade organizations, National Academies, and others to continue the development of life-cycle assessment methodologies and other approaches to fully take into account the whole picture of environmental sustainability, by looking across product life-cycle stages, types of environmental impact (GHG emission, chemical emission/release, use of energy, natural resources, etc.), and environmental media
- Work with the Office of Environmental Information (OEI)/TRI Program Division to increase the ability to analyze and track Toxics Release Inventory (TRI) source reduction data. Through an increased awareness and understanding of various industries' past and current efforts, the Agency could strengthen the effectiveness of its multiple source reduction efforts.
- Finalize the EPA P2 Integration Assessment Report and proceed to develop plans for follow-up on report recommendations in the areas of P2 policy and P2 information collection. Examples of report recommendations include: updating the Agency P2 policy to reaffirm P2 as an Agency priority and to articulate its relationship to sustainability, environmental stewardship, and chemical security; reaffirming existing procedures for prompting regulatory workgroups to consider source reduction during regulatory development; and conducting a thorough overview of information collection efforts pertaining to waste generation and pollution prevention to identify options for increasing understanding of P2 progress.
- Establish a standard process for systematically considering and prioritizing opportunities to work with other EPA offices to integrate P2 concepts & approaches into EPA policies, regulations, and programs
- Closely engage in the 2009-2014 Agency Strategic Plan process to ensure that sustainability is well represented as a theme within the plan, and that prevention-focused activities are tracked within each of the goals
- Work with other EPA programs to ensure that the 2012-2017 Agency Strategic Plan is a *comprehensive sustainability strategy* that stresses multimedia, pollution prevention approaches and is organized around goals that track society's progress in bringing greenhouse gas emissions, use of toxic chemicals and other pollutants of concern, and use of natural resources to levels that protect human and ecological health and are environmentally sustainable over the long term

**Objective 2:** Communicate the importance of prevention, as well as the added value of the P2 Program and extended P2 networks, to EPA's sustainability efforts

*Key Activities:*

- Examine communication/marketing strategies and audiences utilized by similar programs and develop a forward-looking communications plan
- HQ and Regions work jointly on clear and cohesive messages to EPA senior leaders and other EPA programs about the value of pollution prevention and P2 Program areas of expertise, and the role that the P2 Program and P2 more generally can/should play within Agency sustainability and climate change initiatives

- Develop communications pieces for internal and external audiences. Communications pieces may include: a logic model or mind map describing the P2 Program, factsheets about the importance of pollution prevention to sustainability efforts, as well as the added value of the P2 Program and P2 technical assistance and information networks (including concise messages about P2 Program successes and results over the years), presentations/briefings about the P2 Program as a whole, a crosswalk between program areas of expertise and sector-focused work, a crosswalk between P2 Program activities and environmental outcomes, and a crosswalk between P2 Program activities and other EPA program activities
- Use networking with other programs, briefings, and other events as opportunities to become more educated on climate change and sustainability issues while building relationships and educating others about the effectiveness of P2 approaches in addressing these issues
- Strengthen the program's role as provider of P2 technical information and expertise to Congressional staff and senior decision-makers across the Agency and in other federal, state, and local government agencies
- Explore and strategically utilize various mechanisms for enhancing outreach and communication, including EPA and other web sites, journals/publications, conferences/events, other groups and programs

**Goal 2: By 2014, increase coordination among individual components of the EPA P2 Program<sup>12</sup> and ensure a strong infrastructure within the EPA P2 Program and external P2 networks to support the program's mission**

This goal includes objectives relating to coordination and capacity-building, which will bolster each other. Accomplishments under this goal will provide a platform for the coordination and knowledge-base needed to support P2 work under Goals 1 and 3. Specific outcomes include: setting up routine communications between all program components through regular calls and information distribution; increasing focus on strengthening program coordination with States and Tribes; focusing on training and information sharing with State technical assistance providers through webinars and other outreach opportunities; and increasing coordination and collaboration within P2 grant programs.

Currently, the P2 Program is a collection of several individual programs and initiatives, including Design for the Environment, Environmentally Preferable Purchasing, Green Chemistry, Green Engineering, Green Suppliers Network, Partnership for Sustainable Healthcare, Pollution Prevention Resource Exchange, Regional P2 Activities, and P2 Grant Programs.<sup>13</sup> While these programs interact with each other, the level of coordination could be improved. Increased coordination will require additional investments, but there is likely much to be gained from establishing routine opportunities

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<sup>12</sup> Including P2 activities of the Pollution Prevention Division (PPD) and the Economics, Exposure, and Technology Division (EETD) in EPA's Office of Pollution Prevention and Toxics (OPPT); P2 programs in the ten EPA Regions; and the P2, Source Reduction Assistance (SRA), and Pollution Prevention Information Network (PPIN) Grant Programs.

<sup>13</sup> See <http://www.epa.gov/p2/> for more information about these programs.

for coordination across programs, areas of expertise, and individual functions. It is especially important to recognize the synergies of roles between HQ and Regional P2 programs. For example, technical assessment may occur through HQ-based programs but Regions can play a significant “retail” role in the adoption of technologies through on-site technical assistance at the local level.

In addition to greater efficiencies from information sharing and reduced duplication of effort, improved coordination would make the P2 Program and each of its components stronger by combining strengths to address challenges that are not necessarily limited to one sector, one part of the economic value chain, or one particular type of audience or partner. Capacity building, through training, research, and targeted focus on specific needs, will help fill gaps and ensure a strong infrastructure to support efforts to improve environmental outcomes.

Objective 1: Create stronger connections between individual P2 Program components

*Key Activities:*

- Hold a bimonthly or quarterly meeting/conference call of all P2 Program headquarters and regional staff and managers that includes both a round robin of activities/events and targeted discussions of issues or projects that could benefit from multiple perspectives
- Share biweekly/monthly activity reports across all P2 and related regional programs
- Enhance collaboration and communications with States and Tribes on programmatic and other issues, such as priority environmental issues (air & climate change, water, emerging contaminants, etc.) and sector focus areas, measurement issues, and leveraging P2 programs across traditional core programs (e.g., supporting EPA compliance assistance priorities with a stronger P2 focus). Work with and support states, tribes, and municipalities on sustainability initiatives.
- Establish a standard process for considering the contributions of all program components to new initiatives or projects. To assist with this, create a flow chart, value stream map, or other visual schematic that demonstrates how P2 Program approaches and/or areas of expertise can be linked along a product life cycle or other representation of an economic value stream.

Objective 2: Continuously improve the capacity of P2 Programs and extended P2 networks to adjust to changing circumstances and address emerging issues

*Key Activities:*

- Provide support and cross-training to State P2 technical assistance providers in specific areas of expertise, such as energy efficiency, design for environment, green chemistry, and lean manufacturing. Hold 2-3 webinars each year on timely P2 tools/issues/approaches for States, Tribes, local governments, and businesses.
- Develop a strategy to address P2 infrastructure needs of Tribes and States where P2 resources are limited
- Over time, increase coordination and collaboration within P2 grant programs (SRA, PPIN, P2 grants). Examples of coordination could include:

- Multi-region or national grant projects that support national priorities
- Grant projects that help with coordination of outreach and technical assistance networks and focus on tool and product development, such as customizable presentations, educational videos, web sites, databases of vendor information and product specifications, webinar series, best practice manuals, technology reviews and verification, cost calculators, etc.
- Information sharing among grantees working on projects in similar areas
- Work with Pollution Prevention Resource Exchange (P2Rx) Centers to develop and assist with information sharing in support of P2 Program and sector focus area goals
- Share information about existing P2 intern programs and explore replication in additional Regions, States, and Tribes
- Develop an informal research agenda for emerging environmental issues, leveraging expertise/grant programs in ORD, OPPT, and elsewhere, linked to sector focus areas and sustainability strategy priorities. Examples of research priorities include but are not limited to: gathering additional information on environmental impacts of sector focus areas and other economic sectors; identifying top P2 opportunities for reducing GHG emissions through energy efficiency and development of renewable energy; and building on the Emerging Chemicals framework developed by OPPT and the Regions to establish chemical-specific workgroups on emerging chemical hazards of concern.
- Help P2 Program staff develop technical or policy experience by actively promoting mentoring, independent research, targeted training & rotational assignments
- Increase capacity to measure impacts of activities through specific actions such as:
  - Supporting the resolution of greenhouse gas measurement guidance issues
  - Finalizing development of GHG conversion tool for P2 program/grant activities
  - Developing a Chemical Environmental Calculator that measures GHG, volatile organic compounds (VOCs), and other environmental benefits of toxics reduction and chemical substitution
  - Aligning measurement/reporting systems within the P2 Grant Program and the Pollution Prevention Resource Exchange (P2Rx)
  - Making a policy decision on how to count P2 outcome results over time (one year, multiple years) and making defensible distinctions as needed
  - Collaborating with other EPA Programs and other federal agencies in the reporting of shared outcome measures
  - Considering the advice of the EPA Science Advisory Board's (SAB's) Environmental Engineering Committee on the use of recurring results and on measurement in general (SAB consultation convened September 3-4, 2008)
- Explore opportunities for external evaluations of program or program components and utilize performance metrics to informally evaluate the program's impact on an ongoing basis and ensure strong program infrastructure
- Encourage the consideration of dedicated resources for fulfilling adequate measurement activities within the context of annual program planning activities rather than competing against key programmatic needs

**Goal 3: By 2014, meet or exceed the environmental outcome targets established for the P2 Program in the EPA Strategic Plan**

This goal centers around the P2 Program's focus on achieving significant environmental outcomes while demonstrating the value of multimedia, pollution prevention approaches that rely on close collaboration with other EPA offices and external partners. Going forward, the program will build on the success of past efforts by maintaining a balance between innovation and action that originates at the local level and the implementation of program-wide strategies in a few key areas.

Specific outcomes of this goal include environmental outcome results<sup>14</sup> from ongoing work of individual P2 Program components (Design for the Environment, Environmentally Preferable Purchasing, Green Chemistry, Green Engineering, Green Suppliers Network, Partnership for Sustainable Healthcare, Pollution Prevention Resource Exchange, Regional P2 Activities, and P2 Grant Programs) and environmental outcome results from the implementation of new cross-program strategies for six sector focus areas.

Objective 1 represents the myriad of activities that the program undertakes to further the P2 Program vision and mission. Work in Goals 1 and 2 will help to tease out the lessons learned from these activities to ensure that the entire P2 Program benefits. The P2 program will continue to measure progress towards program goals of reducing greenhouse gas emissions and energy use, emissions of chemicals/other pollutants, and raw materials use (with water use as a proxy) by aggregating the results achieved by the individual program components.

The P2 cross-program strategies for six sector focus areas are described under Objective 2. These are areas that drew a considerable amount of interest across multiple Regions and HQ P2 programs, and the strategies for these sectors capitalize on EPA's P2 strengths. One of the P2 Program's priorities is to maximize the effectiveness of sector-based work by connecting stakeholders and coordinating resources at the local, state, regional, and national levels. Therefore, where possible, the program will include these sector focus areas as P2 Grant Program priorities.

Objective 1: Pursue opportunities to achieve significant environmental improvements through the development and application of P2 approaches and tools

*Key Activities:*

- Continue to develop expertise in and implement activities related to the use of emerging tools/approaches, such as consensus-based, multi-attribute standards for environmentally preferable products and services and supply/value chain management, to facilitate the adoption of sustainable practices by businesses and consumers through education, technical assistance, and recognition
- Continue to identify opportunities to apply P2 tools and approaches to EPA regulatory, compliance, and enforcement activities, including the integration of P2 options in regulations, implementation of best management practices, and application of EPA guidance and standards programs

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<sup>14</sup> GPRA targets of reduced million metric tons of carbon equivalent (MMTCE), pounds of hazardous materials, gallons of water, and dollars saved

- Work with OAR (including Energy Star), the Department of Energy (DOE), and States to provide guidance and assistance to businesses, governments, and others on GHG prevention opportunities and GHG measurement
- Utilize the Design for the Environment, Green Chemistry, and Green Engineering approaches to implement pollution prevention strategies (including source reduction and informed substitution) for chemicals of concern, as identified by the Chemical Assessment and Management Program (ChAMP), the Nanoscale Materials Stewardship Program (NMSP), the New Chemicals Premanufacture Notification (PMN) Program, and similar programs
- Invest in projects related to other sectors or issues that are a regional, state, or tribal priority, and explore other areas of potential national priority as conditions change

Objective 2: Work across Regions and HQ programs to drive environmental results through targeted focus on economic sectors with significant environmental impacts, e.g., greenhouse gas emissions, emissions of toxic chemicals and other pollutants, and use of energy, raw materials, and water

The P2 Program has chosen six sectors as areas of focus on a national level: agriculture; chemical & manufacturing industries; buildings & construction; electronics; hospitality; and municipalities & institutions. These sectors were selected using the following decision criteria:

Pollution Prevention Potential: The work is focused on source/risk reduction solutions that are economically, technologically, socially, and legally practical.

P2 Program Role: There is a unique role for the program's expertise, and there are opportunities for substantive contributions by most of the P2 program components.

Support, Timing & Leverage: P2 Program involvement in this sector is likely to have both internal and external support. There are also strong indications of stakeholder interest/willingness to participate and potential for leverage provided by new or planned policies, programs, or legislation.

Direct Results: P2 Program work in this sector will contribute to measurable, sizeable reductions in greenhouse gas emissions, toxic/other pollutants of concern, and natural resource (water) use.

Sphere of Influence: Program activities undertaken in this sector will result in the integration of P2 concepts or approaches on a wider scale, or lead to widely applicable improvements in product, process, or infrastructure design and practices.

Connections to Other Projects: Program efforts in this sector can be combined with work of other programs and initiatives to result in greater collective impact.

While these sectors are not the only areas that the P2 Program will be working in over the next five years, implementing program-wide strategies for these sectors will bring together different types of P2 program experience and expertise to achieve greater results in areas of the economy that have significant environmental impacts. Working within sectors also provides a defined avenue for working across EPA and with external partners to address specific challenges, and provides an opportunity to demonstrate pollution prevention integration. The P2 Program will strive to work closely with other sector-based programs, including EPA's Sector Strategies Program, Compliance Assistance Centers, the Pollution Prevention Resource Exchange (P2Rx), and state and local sector programs. The remainder of this document is devoted to a description of strategies for these six sector focus areas.

## P2 Program Strategy for the Agricultural Sector

Agriculture is an enormously important part of the U.S. economy and culture, and a significant part of our trade with the rest of the world. The agricultural sector accounts for 42% of U.S. land use, and annually produces \$275 billion of both food and non-food products.<sup>15</sup>

Farming is also a significant factor in the nation's environmental quality, both in terms of alterations to natural ecosystems, as well as the impacts of the materials and energy used in agriculture.<sup>16</sup> This sector accounts for approximately 7.4% of U.S. greenhouse gas emissions<sup>17</sup>, and is the largest user of pesticides and fertilizers in the nation<sup>18</sup>. There are concerns about exposure of farm workers and their families, especially children who live and work on farms, or who accompany their parents into the field.<sup>19</sup> Concerns have also been raised about emerging technologies such as genetically engineered pest control practices.

The P2 Program can work in concert with EPA's national Strategic Agriculture Initiative Program (SAI) and their stakeholders in the agricultural sector to bring technical expertise, organizational resources, and information to local entities. Consistent with EPA's National Strategy for Agriculture<sup>20</sup> and the priorities of the Office of Pesticide Programs, the P2 Program would leverage extensive EPA activities in this area to increase awareness and understanding of the important intersection between agriculture and the environment, and build working networks across the government, private sector, and organizations in order to promote P2 options in agriculture, and encourage stewardship. The P2 Program will also consult with Regional, State and local agricultural sector contacts, SAI coordinators and others to ensure that the implementation of this strategy is coordinated with regional agriculture strategies and existing efforts..

In particular, the P2 Program would encourage a "whole farm systems" approach that strives to integrate pest, soil, crop, water, air, and energy management practices. This includes best management conservation practices such as no-till methods, waste-to-energy practices, carbon-capture farming, use of renewable energy, use of renewable resources like compost, and source reduction of material and energy inputs. The Program would also rely on environmental measures to track the progress of P2 in agriculture.

The P2 in Agriculture Strategy would focus on the activities described below. However, it is important to note that this Strategy is in the very early stages of development, and will likely change significantly as we solicit input from a broader community of stakeholders

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<sup>15</sup> U.S. Department of Agriculture (USDA) Agriculture Factsheet <http://www.ers.usda.gov/StateFacts/US.htm>

<sup>16</sup> USDA Environmental Interactions with Agricultural Production  
<http://www.ers.usda.gov/Briefing/AgAndEnvironment/background.htm>

<sup>17</sup> From the Inventory of U.S. Greenhouse Gas Emission and Sinks: 1990 – 2005

<sup>18</sup> According to the Government Accountability Office (GAO) (see next reference), farms use 950 million pounds or pesticides per year, out of the US total of 1.2 billion pounds.

<sup>19</sup> USGAO: PESTICIDES -- Improvements Needed to Ensure the Safety of Farmworkers and Their Children, March 2000

<sup>20</sup> <http://www.epa.gov/oecaagct/agstrategy.html>

**Goal:** To reduce the environmental impacts of farming, with a particular focus on P2 techniques for:

- reducing agriculture's 'carbon footprint'
- reducing or eliminating the use of high risk pesticides through transition to lower risk practices.
- reducing other hazardous chemicals used on farm.
- promoting the use of integrated pest management approaches to reduce health and environmental effects associated with exposure to pesticides
- reducing air and water pollution, including runoff
- promoting water conservation
- contributing to a diversity of agricultural ecosystems and protected watersheds.

Objective 1: Work with key partners to implement P2 best management practices in agriculture

*Key Activities:*

- Establish a core group of interested parties<sup>21</sup> to help with the identification of specific agricultural issues that are amenable to P2/source reduction approaches
- Work with the Regional SAI coordinators and stakeholders to identify priority issues for agriculture in their Region that can best be addressed through P2 approaches
- Build a coalition of organizations willing to assist with each priority issue addressed and establish a P2 action plan. Sample activities:
  - Include priority in P2 Grants requests for proposals (RFPs), as feasible and appropriate, for projects that include agricultural best management practices (BMPs) with a P2 focus
  - Identify opportunities to integrate P2 practices into USDA Natural Resource Conservation Service (NRCS) conservation plans
  - Identify opportunities to incorporate P2 practices into cooperative extension efforts.
  - Enhance information sharing through effective use of the P2Rx network and the Agriculture Compliance Assistance Center.
  - Work on green chemistry and green engineering optimization of fertilizers and other agricultural inputs.
  - Promote use of biopesticides and lower risk pest management practices.
  - Promote recognition and awards for improved environmental performance
- Monitor progress towards achieving the action plan, evaluate the effectiveness of individual projects, and use feedback to improve the delivery of practices

*Milestones:*

- By Winter 2009, establish an EPA-wide group to help with the identification of specific agricultural issues amenable to P2/source reduction approaches

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<sup>21</sup> Including Administrator's Counselor for Agriculture, EPA regulatory programs, compliance assistance, Strategic Agricultural Initiative, EPA voluntary programs such as Greenscapes, States, USDA and other federal agencies, small business concerns, P2 assistance providers, P2Rx centers, etc.

- By Spring 2009, establish groups within participating Regions
- By Winter 2009, Regional groups identify priority issues for agriculture in their Region that can best be addressed through P2 approaches
- By Spring 2010, build a coalition of organizations willing to assist with each priority issue addressed and establish a P2 action plan
- By late 2011, complete first evaluations of progress towards achieving the action plan and effectiveness of individual projects

Objective 2: Explore policy, economic, voluntary, regulatory, and other opportunities to promote wider adoption of P2 agricultural best management practices

*Key Activities:*

- Look for opportunities to use regulatory approaches at EPA and other agencies to improve adoption of best management practices. (Examples include a cap-and-trade approach to controlling fertilizer runoff)
- Identify resources to fund the development and adoption of sustainability plans that include P2 practices.
- Participate in the development of standards and certification programs related to agriculture production<sup>22</sup>
- Promote connection to broader sustainability and climate change mitigation initiatives, including reducing meat consumption and buying local/organic produce (reduced energy and artificial chemical inputs)
- Work toward revising national agriculture policy to reduce subsidies that encourage environmentally harmful practices and to increase payments for environmental services in agriculture, such as carbon credits for on-farm carbon sequestration (USDA Conservation Reserve Enhancement Program)
- Use existing measures and, if needed, design new measures to track progress towards meeting P2 in agriculture goals.

*Milestones:*

[TBD]

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<sup>22</sup> For example, there is a recently initiated process to develop a [national standard for sustainable agriculture](http://www.leonardoacademy.org/Projects/ansi-SustainAg.htm) under the auspices of the American National Standards Institute, see <http://www.leonardoacademy.org/Projects/ansi-SustainAg.htm>. Also, Protected Harvest has published [five standards on the web](http://www.protectedharvest.org/farmers/standards.htm) (<http://www.protectedharvest.org/farmers/standards.htm>) and the Food Alliance is a leader in [standards](http://www.foodalliance.org/certification/standards.htm) (<http://www.foodalliance.org/certification/standards.htm>) and [certification](http://www.foodalliance.org/certification/index.html) (<http://www.foodalliance.org/certification/index.html>) for sustainable agriculture.

## P2 Program Strategy for Chemical & Manufacturing Industries

EPA's P2 programs have served as a long-time catalyst in promoting cleaner, safer "greener" chemistries, products, processes, and business practices. Fueled by emerging concerns about climate change, the demand for green has grown tremendously. However, there remains much uncertainty and confusion over "green" choices. It is critical that EPA contribute to making green choices easier to understand, easier to act upon, and ensure that those choices truly represent environmental improvement. The P2 Program will apply its expertise in chemical risk management, process mapping, lean manufacturing, source reduction, and design for environment to help manufacturers reduce the toxic chemicals they produce, use, and release; and help reduce the use and release of chemicals that contribute to climate change.

There are enormous P2 lifecycle opportunities to reduce health and environmental impacts throughout the chemical and manufacturing industry sectors. In order for this strategy to be successful, the P2 Program must broadly communicate its unique contributions to solving critical health and environmental issues, offering both tools and approaches that stimulate the development and market acceptance of safer, cleaner, innovative technologies.

The strategy consists of three main approaches to substantially increase reductions in toxic substances, greenhouse gas emissions, and natural resources usages:

- working in partnership with the chemical industry and manufacturing sectors that have high hazardous chemical and GHG<sup>23</sup> emissions to implement P2 opportunities;
- focusing on finding P2/risk management solutions for specific chemicals of concern, including product redesign, process substitution, and informed alternative analysis;
- developing and working with partners to develop sustainable products and to implement sustainable manufacturing practices.

The P2 Program can serve as an authoritative source on the development of product design alternatives and the implementation of chemical risk management and P2 manufacturing practices. There is a great deal of institutional knowledge, experience, and just plain hands-on, know-how across P2 programs.

It is timely and critical to promote P2 integration with other Offices and with OPPT priority programs including the Chemical Assessment and Management Program (ChAMP) and the Nanoscale Materials Stewardship Program (NMSP). It is also important to continue to build on long-standing work of State P2 technical assistance providers in the area of manufacturing and OPPT, OPEI, and Regional efforts to

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<sup>23</sup> Greenhouse gases are generally recognized as: carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>). Note HFCs and PFCs are considered large classes of chemical substances that include such chemicals as fluorinated ethers, perfluoropolyethers, and other substances. Methane is also considered a potent GHG but the program's focus should be on anthropogenic sources, such as generation of methane through agricultural activities versus methane releases through natural biological processes such as fermentation of organic matter in wetlands.

encourage the implementation of projects that combine the strengths of pollution prevention and lean manufacturing. In addition, the P2 Program will focus on increasing coordination with OPPT's New Chemicals Program, which is on the leading edge of the review of new technologies while also providing P2 recognition for chemical substances that are better for the environment. Not only does the New Chemicals Program review and recognize new technologies, but also sees the data gaps and research needs for technologies that might also be deserving of recognition if more complete data supported the technology.<sup>24</sup> Regions and States can play a significant role in can play a significant "retail" role in the adoption of technologies through on-site technical assistance at the local level.

**Goal:** By 2014, substantially reduce the generation and use of toxic substances, greenhouse gas emissions, and raw materials, energy, and water usage by focusing on partnership opportunities within the chemical and manufacturing industries and furthering the definition and adoption of green design and green manufacturing practices.

**Objective 1:** Conduct a broad analysis of the chemical and manufacturing sectors, and determine and implement the best opportunities to redesign products and reduce chemicals of concern, as well as GHG emissions and use of raw materials, energy, and water

*Key Activities:*

- OPPT & Regions undertake an analysis of opportunities to identify key chemical production/use and other manufacturing sectors with the greatest potential for product and process redesign to reduce hazardous chemicals that also provide substantial greenhouse gas emission reductions. This analysis will organize reductions by sector, location in the larger supply chain(s) and by relevant chemical(s) of concern. This analysis will consider the impacts of over 60 recognized chemicals with global warming potential as well as chemicals of concern for their high hazard potential. The objective will be to cross-walk priority chemicals with products and manufacturing or industrial sectors, looking at such things as the production energy required when processing solvents, including solvent recovery and reuse; taking the view that a product is the demand side that flows back upstream to manufacturing decisions; and providing a lens on national chemical priorities that have resolution at the regional level.
- OPPT & Regions rank identified opportunities according to criteria such as industry's potential willingness to participate, technical feasibility, role of economic and social factors, and ability to leverage other on-going initiatives
- OPPT & Regions engage in dialogue with other EPA offices/programs and key industry leaders, trade associations, States, Tribes, and other stakeholders to form

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<sup>24</sup> For example, the OPPT New Chemicals Program recently recognized Micronal® PCM (phase change materials); developed by BASF, a product that reduces energy needs for cooling and heating buildings. These low-weight and low-volume materials have proven their effectiveness by providing a high thermal storage capacity to building construction materials such as wall plasters, wall paints, gypsum plasterboard, and concrete blocks. In summer months when room temperatures typically rise, wax inside microcapsules melts, absorbing excess heat from the air. This reduces the need for mechanical temperature control, e.g., running an air-conditioning system, and also *reduces carbon dioxide emissions from the energy consumed to regulate building temperatures.*

specific partnership initiatives in a sub-set of chemical/manufacturing sectors on a national and/or regional level

- OPPT and Regions continue work with the pharmaceutical industry and other agencies (including the Food and Drug Administration (FDA)) and offices to facilitate information sharing and adoption of best practices and GHG measurement tools in the pharmaceutical processes
- OPPT & Regions develop framework for “greener” product performance goals for the use of chemicals in products, such as:
  - Use of environmentally preferable products that minimize impacts throughout their lifecycles
  - Utilization of best management practices to reduce chemical exposures and releases from product manufacture to operations and maintenance to eventual recycling and disposal
  - Elimination or minimization of the manufacture, processing, and use of all unnecessary chemical substances, especially hazardous chemicals in products and processes
  - Use of safer, less persistent, less bioaccumulative, and less toxic chemical substances in products and processes
  - Use of integrated pest management approaches to reduce health and environmental effects associated with exposure to pests and pesticides
- OPPT & Regions review P2, Community Action for a Renewed Environment (CARE), Environmental Justice (EJ) and other grant program solicitations to include language where feasible on encouraging adoption of cleaner, safer technologies
- OPPT & Regions consult with Pollution Prevention Resource Exchange (P2Rx) Centers and National Compliance Assistance Centers to enhance information sharing and adoption of best practices and tools

*Milestones:*

- By 2008, initiate analysis and ranking of opportunities
- By 2009, develop a framework for chemical assessment to meet greener product performance goals
- By Summer 2009, explore the ability to build on existing partnerships where possible, begin 1-2 industry initiatives based on opportunities identified (including EPA headquarters and regional staff activities, and in coordination with related P2 grant projects). Demonstrate short-term success in key areas.
- By Summer 2009, review technology assessments in individual P2 programs (Green Chemistry, Green Engineering, Design for the Environment, etc.) and develop 1-2 technology diffusion projects, e.g., develop a case study or fact sheet to widely promote in the Regions/States a technology that was recognized through a Green Chemistry award or PMN Recognition
- Annually, review P2, CARE, EJ and other grant program solicitations to include language where feasible on encouraging adoption of cleaner, safer technologies
- By Summer 2010, begin to assess results from these initiatives
- By 2012, complete assessment of results from industry initiatives and determine whether to continue and/or begin additional initiatives

Objective 2: Collaborate with others to respond to specific needs for P2 activities related to chemicals of concern, chemicals in products, and associated manufacturing processes

*Key Activities:*

- OPPT & Regions consult with States, Tribes, industry, academia, environmental groups, environmental justice community groups, and other stakeholders to develop and implement P2 strategies (including Design for the Environment, Green Chemistry, and Green Engineering approaches) for chemicals of concern identified in the EPA Chemical Assessment and Management Program (ChAMP) assessment process
- OPPT & Regions exchange information with ORD, other EPA offices/programs, and external partners regarding opportunities and potential risks associated with the use of manufactured nanomaterials and nanotechnology, and develop and implement P2 strategies based on information provided under the EPA Nanoscale Materials Stewardship Program (NMSP) and the OPPT New Chemicals Program
- OPPT & Regions support the other P2 sector focus areas (agriculture, buildings & construction, electronics, hospitality, and municipalities & institutions) by analyzing and assisting with implementation of P2 opportunities associated with products purchased or manufactured, or related manufacturing processes in these sectors
- OPPT & Regions, through EPA's Green Suppliers Network (GSN) and Sustainable Futures programs, help original equipment manufacturers identify chemicals of concern utilized within their supply chains and help develop P2 strategies for those chemicals, including product redesign to eliminate target chemicals
- OPPT & Regions work with industry and others to develop P2 solutions for priority chemicals of concern identified by States.
- OPPT & Regions coordinate with States to provide technical and scientific information and assistance for States' green chemistry efforts

*Milestones:*

- By 2009, identify and begin to implement initial opportunities for source reduction for chemicals of concern coming out of the ChAMP process
- By 2009, identify and begin to implement P2 projects related to manufactured nanomaterials/nanotechnology
- By 2009, identify needs of the other P2 sector focus areas in the area of chemicals/manufacturing processes
- By 2009, complete existing project to help original equipment manufacturers in the automobile manufacturing sector identify substitutes for chemicals of concern utilized within their supply chains, and consider additional projects to apply lessons learned from this process to other sectors
- By 2009, develop source reduction and/or substitution strategies to address chemicals of concern that have been identified by States
- By 2010, begin a project to help a specific chemical manufacturing sub-sector, such as the dry cleaning chemical sector, solvent chemical sector, nail salon chemical sector, to develop P2 strategies, including product redesign, for chemicals of concern

Objective 3: Collaborate with others to develop, communicate, and facilitate the implementation of sustainable manufacturing practices

*Key Activities:*

- OPPT works with EPA regulatory programs to pursue opportunities to integrate P2 manufacturing and related best practices in “media” regulation (e.g., January 2008 NESHAPS regulation adopted Design for the Environment (DfE) auto-refinishing best practices)
- OPPT & Regions work with large manufacturers and their suppliers, state P2 technical assistance providers, and National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP) centers, through EPA’s Green Suppliers Network program, to facilitate the adoption by small and medium-size manufacturers of pollution prevention and lean manufacturing best practices
- OPPT works in collaboration with the Department of Energy’s Industrial Technologies Program to weave energy efficiency technical assistance into the Green Suppliers Network model
- OPPT & Regions work with OECA and compliance assistance programs to provide industry with information on sustainable manufacturing practices
- OPPT & Regions pursue opportunities to replicate innovative P2 manufacturing practices implemented in P2 grant projects or Regional projects; also leverage ORD’s Small Business Innovation Research (SBIR) grant solicitations
- OPPT & Regions collaborate with industry leaders, other EPA programs, federal agencies, States, to define standards or guidelines for sustainable manufacturing practices, and develop a sustainability road map for manufacturers
- OPPT & Regions explore opportunities to communicate and encourage the adoption of sustainable manufacturing practices, including partnerships with financial institutions and other entities that provide supporting infrastructure for businesses

*Milestones:*

- By 2009, conduct an analysis of targeted opportunities to integrate P2 manufacturing and related best practices in “media” regulation
- By 2009, conduct an inventory of innovative P2 manufacturing practices implemented in P2 grant projects, Regional P2 projects, or SBIR grant projects and develop a plan to replicate them where possible
- By 2009, establish effective and collaborative MEP/State lean manufacturing and P2 activities in 30 states
- By 2009, conduct energy efficiency assessments as a routine element of the lean and clean Green Suppliers Network approach
- By 2010, work with others to define standards or guidelines for sustainable manufacturing practices, and develop a sustainability road map for manufacturers

## **P2 Program Strategy for Buildings and Construction**

**[Note: This strategy will be further revised by the OPPT/Regional Workgroup on Green Products, which is expected to provide initial recommendations within the next couple of months.]**

The design, construction, operation, maintenance, and removal and recycling of building debris takes enormous amounts of energy, water, and materials, and generates large quantities of waste, air and water pollution, as well as creating stormwater runoff and heat islands. Buildings also develop their own indoor environments, which present an array of health challenges. Where and how they are built affects wildlife habitat and corridors and the hydrologic cycle, while influencing the overall quality of human life.

In the U.S., this sector represents 39% of energy use, 69% of electricity use, and 38% of CO<sub>2</sub> emissions. Urban runoff is a leading source of water quality impairment, and buildings account for 12% of water use. Buildings and construction also account for 36% of non-industrial waste generation. In addition, people spend 90% of time indoors, where pollution levels are 2-5 times higher, affecting health and productivity. The U.S. will spend an estimated \$30 trillion on new development from 2000-2030, resulting in half of the US building stock being newly constructed by 2030.

### **EPA Green Building Strategy**

The overall goal of the recently developed EPA Green Building Strategy is to reduce the environmental and human health impacts from the nation's buildings by being a source of credible information on cost-effective green building practices and products and by actively promoting this information in important stakeholder processes.

The point is to use EPA's resources, reputation and relationships to help ensure that the green building approaches that deliver the greatest environmental benefits in the most feasible and cost-effective ways rapidly become standard industry practice.

To achieve this goal, the strategy is built upon five complementary objectives:

- Lead by example with state-of-the-art EPA buildings
- Expand public understanding of why green building is important
- Inform decisions with better standards
- Promote widespread adoption of green building practices
- Enhance performance through research

Each of these five objectives targets critical barriers to the advancement of effective green building in the United States.

### **P2 Program Role**

The P2 Program has unique experience and expertise to contribute to the EPA Green Building Strategy. The P2 Program has co-chaired the EPA Green Building Workgroup since its inception, and the EPA Office of Prevention, Pesticides, and Toxic Substances

(OPPTS) Deputy Assistant Administrator is an active member of EPA's Green Building Management Steering Committee. In addition to specific expertise in developing voluntary consensus standards, P2 Program capabilities relate to some of the most pressing needs in the green building movement:

- information on toxics/safer chemical substitutes for building materials;
- life cycle assessment (LCA) of environmental impacts of building products/assemblies
- providing guidance on environmentally preferable building products and services (i.e., construction and operations & maintenance services)

Indicators of these needs include a proliferation of "green" and "healthy" building product claims and the U.S. Green Building Council's (USGBC) call for robust product standards based on LCA and risk assessment. EPA can be most effective in meeting these needs through coordination and partnership – namely, cross-agency engagement via the Green Building Workgroup and the GB Management Steering Committee; partnership with key Feds including the Office of the Federal Environmental Executive (OFEE), DOE, USDA, and NIST; partnership with key external partners including USGBC, National Association of Home Builders (NAHB), ASTM International, product manufacturers.

P2 Programs can contribute knowledge and expertise to the plethora of standards development activities (e.g., LEED, GreenGlobes, ASTM, GreenSeal, NSF International, GreenGuard), thereby maximizing EPA's reach and changing standard operating procedures in the building materials and construction sectors. Helping to make green building practices the norm through widespread adoption of standards will drastically minimize the environmental impacts discussed above.

**Goal:** To substantially reduce the toxic chemical-related environmental & public health impacts of building and construction

Objective 1: Use OPPTS's scientific/technical expertise & credibility to accelerate both the supply and demand of green products and services in the marketplace

Objective 2: Engage the Federal community in green building voluntary consensus standards development and use

Objective 3: Support research to fill scientific & technical gaps blocking progress, including life cycle assessment & risk assessment

*Key Activities:*

- Working with EPA's Green Building Workgroup and others, interact with standard development bodies to identify needed information for specific building & product standards.

- Work with other EPA programs, such as Energy Star, to support mutual program goals related to reducing GHG emissions, use of toxic chemicals, and conserving energy, water, and raw materials, and participate in EPA Green Building Task Groups: Green Building Guiding Principles, Green Building Research Strategy, EPA Green Building Metrics, and Existing Buildings and Homes
- Consult with stakeholders to identify priority building product categories for analysis, and write and disseminate results widely to key industry groups and interested public. Utilize the Pollution Prevention Resource Exchange (P2Rx) Network to enhance information sharing. For each product category, identify:
  - Toxicological components of concern
  - Safer substitutes or alternative products from toxicological/health perspective
  - Life cycle impacts of substitutes
- Develop information, especially on toxics/safer chemical substitutes for building materials<sup>25</sup>, and help make that information available in a user-friendly format.
- Advance and promote the utilization of life cycle assessments and risk assessments of building products and assemblies
- Provide other assistance, as necessary, that utilizes the P2 Program's specific expertise in risk assessment, risk management, life cycle assessment, standards development processes, and developing environmentally preferable purchasing guidance.
- Include green building and construction as a priority in P2 Grant RFPs, as feasible and appropriate
- Coordinate with State P2 technical assistance providers to support implementation of green building best practices and purchase of greener building products
- Support EPA efforts to drive demand for green features through consumer education, including web-based green home information and resources, Administrator events & speaking engagements, and other means of outreach

*Milestones:*

[TBD]

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<sup>25</sup> For example, the Green Chemistry Program recently recognized an alternative adhesive made from soy flour for use in plywood and other wood composites. In 2006, Columbia Forest Products, Inc. used the soy-based adhesive to replace more than 47 million lbs of formaldehyde-based conventional adhesives.

## P2 Program Strategy for Electronics

Electronics provide an important support system for all facets of our economy, including technological assistance for environmental protection activities. However, electronics also have significant environmental impacts. Electronics use a considerable amount of energy throughout their life cycle – primarily during use, but also during manufacturing and end-of-life (e.g., through recycling). This energy use results in significant greenhouse gas and other emissions (e.g., mercury from coal-fired energy generation). Many electronics contain toxic constituents, which may present risks during manufacturing, use, and end-of-life. The current demand for cutting-edge electronics has resulted in relatively short life spans for most electronics, which may lead to increased natural resource use (both renewable and non-renewable) to produce new electronics, and the possible loss of natural resources embodied in electronics that are discarded.

The P2 Program provides unique technical expertise, including Design for the Environment (DfE) and Environmentally Preferable Purchasing (EPP), that may be applied to the management of the electronics life cycle. This technical expertise, coupled with EPA's authority and credibility, also allows the P2 Program to act as a convener for stakeholder groups focused on reducing the environmental impacts of electronics.

The P2 Program also uniquely supports the federal government in its efforts to meet the requirements of Executive Order 13423 and the Federal Acquisition Regulation (FAR), which require the purchase of environmentally preferable electronics, as well as environmentally responsible use and end-of-life management of federal electronics.

This strategy encompasses opportunities to reduce the environmental impacts associated with each phase of the electronics life-cycle: design and manufacturing; acquisition and procurement; operation and maintenance; and end-of-life management. The P2 Program's participation in the development of additional IEEE standards for environmentally preferable electronics and efforts to encourage increased utilization of the Electronic Product Environmental Assessment Tool (EPEAT) will further facilitate the ability of purchasers to identify greener electronics. EPEAT also provides an impetus for electronics manufacturers to continually improve the design of these products. The DfE program can provide its expertise to help manufacturers find the most environmentally sound design solutions. Finally, managing and promoting the Federal Electronics Challenge (FEC) and associated best practices for the entire electronics life cycle will ensure a comprehensive feedback loop to prevent risk shifting from one life-cycle phase to another. The best practices developed and refined through the FEC program can be transferred from the federal sector to the private sector, encouraging responsible life-cycle management of electronics by both public and private organizations.

Implementing the strategy for the electronics sector will result in continued reductions in the use of toxic chemicals, energy, water, and raw materials throughout the electronics life cycle, as well as reductions in greenhouse gas and other emissions, solid waste, hazardous waste, and risks from improper handling of obsolete electronic products.

**Goal:** By 2014, improve the manufacturing, purchasing, use, and end-of-life management of electronics in order to reduce or eliminate toxic substances in electronic products; reduce energy use, and associated greenhouse gases/other emissions that result from electronics manufacturing, use, and disposal; and reduce natural resource use and loss associated with the manufacturing and rapid disposal of electronic products.

Objective 1: Participate in the development of additional IEEE standards for environmentally preferable electronics, for use in the Electronic Product Environmental Assessment Tool (EPEAT)

*Key Activities:*

- PPD, the OPPT Economics, Exposure, and Technology Division (EETD), and Regions work with ORCR, ENERGY STAR, SmartWay, Green Power Partnership, the Indoor Air Program, the Green Building Workgroup, and others to gather information about environmental criteria to be included in IEEE standards for environmentally preferable imaging equipment, televisions, servers, and mobile devices
- PPD, Regions, and ORCR work with electronics manufacturers, institutional purchasers, non-profit organizations, academia, and others, using the IEEE's voluntary consensus-based standard development process, to create multi-attribute standards for imaging equipment, televisions, servers, and mobile devices

*Milestones:*

- By 2010, work with others to complete the IEEE standards for televisions and imaging equipment.
- By 2011, work on development of the IEEE standards for mobile devices and servers has begun.

Objective 2: Work with federal and other institutional purchasers to ensure utilization of EPEAT and realization of associated environmental benefits

*Key Activities:*

- PPD, ORCR, Regions, and the Office of the Federal Environmental Executive conduct outreach and education to ensure that federal agencies purchase and lease EPEAT-registered electronic products, and track EPEAT-registered product purchases and leases by Agency
- PPD, ORCR, Regions, and the Office of the Federal Environmental Executive conduct outreach to federal agencies on new EPEAT product categories once the standards are finalized
- PPD, ORCR, Regions, and the Office of the Federal Environmental Executive work with electronic product vendors to ensure that EPEAT-registered products are prominently labeled in product catalogues
- PPD, Regions, and third party organizations conduct outreach and educational activities to encourage other public and private sector organizations to purchase and lease EPEAT-registered electronic products

*Milestone:*

- By 2010, 95% of eligible electronic equipment purchased or leased annually by FEC partners is EPEAT-registered

Objective 3: Work with manufacturers to improve the design and manufacture of electronics products to reduce environmental impacts

*Key Activities:*

- PPD and Regions look for ways to incorporate EETD/DfE life-cycle assessments (LCAs) as well as other hazard assessment work in this industry, including current activities with the cable and wire industry
- EETD explores the possibility of conducting a screening-level LCAs to compare nano-structured Lithium-ion (Li-ion) batteries to traditional nickel metal hydride (NiMH) batteries, as used in hybrid vehicles
- EETD develops hazard review and combustion test data on alternative flame retardants to inform selection of flame retardants for circuit boards
- OPPT and Regions develop an initial framework for assessing the suitability of alternative, safer chemicals for EPEAT products, including the use of ChAMP risk-based prioritizations on high- and medium-production volume chemical substances
- EETD, PPD, and Regions collaborate with States, academia and industry to develop holistic environmental performance assessment of selected electronics manufacturing processes and to identify improvement opportunities and more sustainable processes

*Milestones:*

- By 2009, explore project feasibility, form partnerships, and conduct scoping for a screening-level life-cycle assessment to compare nano-structured Li-ion batteries to traditional NiMH batteries
- By 2009, release public report from Partnership on Flame Retardants in Printed Circuit Boards
- By 2009, develop an approach for assessing the suitability of alternative, safer chemicals for EPEAT products

Objective 4: Encourage the adoption of best management practices throughout the life cycle of electronic products in the public and private sectors

*Key Activities:*

- PPD, Regions, and ORCR update the Federal Electronics Challenge's (FEC) collection of best management practices and guidance, as needed, to reflect the best available electronics stewardship practices
- PPD, Regions, and ORCR continue to support and use the FEC to assist federal agencies in implementing best management practices within the purchasing, use, and end-of-life phases of electronics
- PPD coordinates with the Regions to include electronics stewardship as a priority focus in P2 Grant RFPs as feasible and appropriate, and to support States' efforts to

develop similar programs and policies for state and local government, such as the State Electronics Challenge (SEC)

- PPD and Regions consult Pollution Prevention Resource Exchange (P2Rx) Centers to enhance outreach and information sharing on electronics stewardship practices
- Regions, ORCR, and PPD utilize the Resource Conservation Challenge as a mechanism to coordinate and share information related to electronics stewardship programs
- PPD and Regions work with ORCR, the EPA Office of Environmental Information (OEI), OAR, and others to provide tools to private corporations to help them adopt best management practices. Examples include:
  - Providing tools and information on electronics BMPs to information technology (IT) companies
  - Conducting outreach to small and medium-sized businesses and chambers of commerce on green electronics
  - Working with state & local agencies and businesses to establish local electronics take-back networks, especially in rural areas

*Milestone:*

- By 2010, 75% of federal employees will be covered by a federal facility or agency that is part of the FEC

Objective 5: Conduct or compile additional research on the universe of environmental impacts of electronic products over their life cycle, in order to help inform and shape on-going EPA/P2 Program activities in this area

*Key Activities:*

- PPD, EETD, and Regions consolidate best available information on environmental impacts of electronics management practices, in order to create a cohesive picture across the electronics life cycle
- PPD, EETD, and Regions work with ENERGY STAR to obtain additional information about embodied greenhouse gas emissions in electronic products produced in other countries
- PPD, EETD, and Regions utilize information gathered under this objective to assess numerical targets for activities in this sector

*Milestone:*

- By 2009, as resources allow, create a compendium of best available information on environmental impacts of electronics management practices

## P2 Program Strategy for the Hospitality Sector

The hospitality sector has a large impact on the environment through energy and water use, use of consumable products, and solid and hazardous waste generation. It is estimated that the life cycle of products and services for the global hotel & restaurant sub-sector alone represent 3% of global CO<sub>2</sub> emissions<sup>26</sup>. The hospitality sector reaches nearly every business and consumer in some capacity, and has the ability to influence both its customers by highlighting environmentally friendly practices and its suppliers by demanding greener products and services.

On a national level, P2 Program work in the hospitality sector will follow three main paths: participation in the development of hospitality standards, work with the hospitality industry on the adoption of more sustainable practices, and work with the public sector on procurement of environmentally preferable hospitality services. Efforts will primarily be focused on green meetings and conferences, lodging, and food and beverage services. The Program will also emphasize coordination and information sharing on regional strategies for additional hospitality sub-sectors, such as casinos, cruise ships, and large entertainment venues.

The P2 Program has several strengths that can help EPA to advance the adoption of more sustainable hospitality practices, including: experience with the development of voluntary, consensus-based standards; experience working with the public sector on green procurement policies and practices; a strong regional/state P2 network with a history of successful work in this sector; and a multimedia perspective that can be helpful in tailoring EPA programs and resources to the needs of a particular sector or audience.

**Goal:** By 2014, substantially reduce the use of raw materials, toxic substances, energy, and water and the generation of solid and hazardous waste within the hospitality sector through the promotion of sustainable industry practices and procurement of environmentally preferable hospitality services

**Objective 1:** Participate in the development of voluntary, consensus-based, ANSI certified green hospitality standards to help define green products and best practices for adoption by the hospitality industry and to help procurement officials/consumers more easily identify environmentally preferable hospitality providers

### *Key Activities:*

- PPD and Regions provide input on the draft ASTM standard for green meetings and events currently under development, as well as encourage participation from a wide range of stakeholders in the standard development process
- PPD and Regions determine if additional voluntary consensus standards are needed for specific sub-segments of the hospitality sector and take necessary actions to facilitate their development

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<sup>26</sup> WWF/SustainAbility, *One Planet Business*, 2007, pp. 18-19. Report located at <http://www.wwflerning.org.uk/one-planet-business>

*Milestones:*

- By 2010, complete participation in the ASTM green meetings and events standard development process, as the standard is expected to become final during the year
- By 2010, determine whether the development of additional standards is needed

Objective 2: Work with the hospitality industry to promote the adoption of sustainable industry practices and environmentally preferable products

*Key Activities:*

- PPD, Regions, and other HQ programs share information (through monthly or bimonthly calls and an e-mail group) on ongoing EPA efforts in the hospitality sector
- As resources allow, PPD and Regions conduct outreach to national chains, local hospitality providers, and green or sustainable hospitality associations, to gain a better understanding of the information and technical assistance needs of national and local segments of the hospitality sector. This activity will also help EPA to identify change agents in the hospitality sector.
- As resources allow, PPD, Regions, and States work with national chains, local hospitality service providers, local governments, and local industry associations on a variety of actions (tailored to the audience and situation) to encourage the adoption of sustainable practices. Examples include:
  - Organizing outreach/trainings/workshops for local hospitality providers (with the assistance of local governments, associations, and others) on sustainable practices and resources/assistance provided by relevant EPA partnership programs<sup>27</sup>
  - Working with the hospitality industry to develop sustainability action plans
  - Entering into memoranda of understanding with hospitality providers related to the adoption of sustainable practices and EPA partnership program participation
- PPD and Regions work with the OPEI Partnership Programs Coordination Team and relevant EPA partnership programs to develop an EPA Green Hospitality website to highlight hospitality-related information & resources available, including the availability of standards for green hospitality practices. Also, work with P2Rx to add relevant information to the P2 Topic Hub for Hospitality.
- PPD and Regions conduct outreach to national chains, local hospitality providers, and green or sustainable hospitality associations, directories, membership groups and certifiers regarding EPA partnership resources tailored for their sector, and standards/national guidance they should consider adopting
- PPD and Regions explore the potential for additional activities to promote the adoption of sustainable practices by the hospitality industry, such as:
  - Including green hospitality in P2 grant RFPs as feasible and appropriate
  - Enhancing information sharing on green hospitality practices through effective use of the Pollution Prevention Resource Exchange (P2Rx) Network
  - Coordinating with GSN to help green the hospitality sector supply chain
  - Developing a “Green Hospitality” curriculum for colleges and training schools

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<sup>27</sup> These programs may include but are not limited to: Energy Star, WasteWise, WaterSense, the Resource Conservation Challenge, Environmentally Preferable Purchasing, Integrated Pest Management, GreenScapes and Green Suppliers Network.

- Convening and/or presenting at relevant conferences such as the Annual Green Hotels Conference, Hotel Investment Conference, et al.

*Milestones:*

- By 2009, set up mechanisms for EPA coordination on work in the hospitality sector
- By 2009, conduct initial outreach to major national chains, local providers, and others in the lodging and food & beverage sectors to assess information & assistance needs
- By 2011, establish an EPA Green Hospitality Website

Objective 3: Assist the federal government and others in the public sector with the procurement of environmentally preferable hospitality services

*Key Activities:*

- Regions and PPD share ideas for policies and implementation of best practices related to greening meetings and travel
- PPD works with the EPA Office of Administration and Resource Management (OARM) to implement agency-wide policies (initially on green meetings; additional policies on travel/lodging when appropriate guidance is available). The near-final Region 9 Green Conference and Meeting Policy may be used as a template.
- PPD and Regions conduct outreach to federal, state, and local government facilities on sample policies and ways to green their meetings and travel through their EMS
- PPD works with OARM, the Office of the Federal Environmental Executive (OFEE), and the General Services Administration (GSA) to incorporate national ASTM green meeting standard (if appropriately stringent) into EPA and federal acquisition regulations
- PPD works with OFEE and GSA to explore the possibility of amending the Federal Travel Regulation (FTR) to incorporate the sustainable accommodations portion of the ASTM green meeting standard
- PPD works with OFEE to explore the possibility of establishing a hospitality-focused program for the federal government, similar to the Federal Electronics Challenge

*Milestones:*

- By 2009, work with OARM to establish an EPA Green Conference & Meeting Policy
- By 2011, work with OARM to incorporate national ASTM green meetings and events standard into EPA acquisition regulations
- By 2011, work with OFEE, GSA, and others to incorporate national ASTM green meetings and events standard in to the Federal Acquisition Regulation
- By 2011, work with OFEE and GSA to explore the possibility of amending the Federal Travel Regulation (FTR) to incorporate the sustainable accommodations portion of the ASTM green meeting standard
- By 2011, begin exploring the possibility of establishing a hospitality-focused program for the federal government

Objective 4: Assess environmental impacts of the broader hospitality sector in order to help further inform and shape on-going EPA/P2 Program activities in this sector

*Key Activities:*

- PPD and/or Regions conduct an analysis or compile existing information on current practices, environmental impacts (e.g., water & energy use, toxic substance use, waste generation, etc.), potential for environmental achievements (e.g., reduced water & power use, pounds of pollution), and possible cost savings of the hospitality sector
- PPD and Regions utilize this information to establish baselines and numerical targets for activities in this sector

*Milestone:*

- By 2009, conduct analysis/research to enhance understanding of sector impacts

## P2 Program Strategy for Municipalities & Institutions

This strategy is focused on providing municipalities<sup>28</sup> and communities with comprehensive, multimedia-focused information that can help them gain an understanding of their environmental footprint and implement more sustainable practices. Since municipalities and communities are comprised of a variety of businesses, institutions, and facilities, developing information that is tailored to the needs of these entities becomes an important component of any effort to reduce the environmental footprint of the community in which they reside.

Municipalities have considerable influence over policies and guidelines that affect operations within their jurisdictional boundaries, and therefore play a central role in furthering the adoption of sustainable practices achieved through green building guidelines, green roads, smart growth planning, construction and demolition guidance, etc.

Municipalities themselves also use a considerable amount of energy and resources to maintain their infrastructure. Energy is used to light and heat buildings, run wastewater treatment plants, and operate fleets of vehicles. Toxic chemicals are used to provide services, construct and maintain buildings, manage streets and open spaces, and operate vehicles. Similarly, solid waste, hazardous waste and other pollutants are generated and managed by municipalities. Beyond the direct activities associated with managing a municipality, communities are also concerned about issues such as toxic chemicals used and released by local institutions, industries, and facilities, greenhouse gas emissions and local contributions to climate change, water/stormwater management and linkages to water quality, and the health of local ecosystems.

Many cities have embarked on developing GHG inventories and writing climate action plans for their communities. EPA has extensive information, resources, tools, and programs that can be helpful to municipalities/communities as they work to reduce their environmental footprints and implement their climate action plans. A number of efforts are underway at EPA Headquarters and in the various Regions to bundle partnership programs. However, there is a need to collaborate further among EPA offices and Regions to package this information in a comprehensive way and provide technical assistance in order to facilitate the adoption of more sustainable practices on a local level. There are a number of membership organizations that assist cities and towns with assessing local environmental footprints and tracking progress. Collaboration and distribution of EPA's materials through these organizations will ensure broad outreach and efficient distribution. A large portion of this strategy is based on using what has been learned by these organizations, acting as a convener, and helping to replicate achievements of communities on a wider scale.

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<sup>28</sup> A "municipality" is a public administrative entity that commonly denotes a city, town, or village, or a small grouping of them. A municipality is typically governed by a mayor and a city council or municipal council. Municipal services include sanitation (both sewer and refuse), water, streets, schools, food inspection and other health department issues and transportation. In 2002, the nation's local governments totaled 3,034 counties, 19,429 municipalities, and 16,504 townships.

The P2 Program’s multimedia perspective, strong regional/state P2 network, and P2 technical expertise will support the program’s contributions in this arena. Working with experts across the Agency and at the state and local levels, the P2 Program will emphasize approaches such as environmental management systems, environmentally preferable purchasing, design for the environment, low-impact development, green building, energy efficiency, and pollution prevention for wastewater and water utilities.

**Goal:** By 2014, work with others in EPA and externally to collect information on existing resources/programs and develop a comprehensive package of sustainability resources for municipalities/communities and the institutions or facilities within their jurisdictions, such as schools, colleges & universities, hospitals, building managers, convention centers and other venues, and manufacturing facilities, to help them substantially reduce their environmental footprint

Objective 1: Gather additional information to determine how P2 Program networks, resources, and individual program components could serve the needs of municipalities/communities and the institutions/facilities within their jurisdictions

*Key Activities:*

- PPD, Regions, and EETD develop an inventory of recent and current P2 Program (HQ, Regional, Grant) activities with municipalities and communities, which would also include information about lessons learned, successful strategies, etc.
- PPD and Regions learn more about what other EPA programs<sup>29</sup> are doing to provide assistance to local governments, municipalities, and communities through individual meetings and regular cross-Agency conference calls (discussions currently underway with the EPA Office of Congressional and Intergovernmental Relations (OCIR) and OAR about setting up a cross-Agency local governments group)
- PPD and Regions, in concert with EETD, States, and other EPA programs, develop an initial assessment of which P2 Program initiatives, information resources, tools, etc. might be useful to municipalities/communities, by Region and on a national level
- PPD, Regions and EETD prioritize and focus outreach and education on a few “effective” key programs for implementation, especially those that will help municipalities meet their GHG emission reduction goals. The effectiveness of EPA programs should be based on a variety of program elements, such as:
  - a track record for effectively reducing GHG emissions (directly or indirectly)
  - a system for measuring and reporting results that can be converted to GHG reductions
  - relevance to local governments (or relevant to GHG sources that local

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<sup>29</sup> Programs/initiatives include but are not limited to: Smart Growth, EPA’s Clean Energy Programs including Energy Star, CARE, Green Building Workgroup, Design for the Environment, Compliance Assistance Centers, Environmentally Preferable Purchasing, Green Suppliers Network, GreenScapes, WaterSense, Wastewise, Pay-as-You-Throw, OWOW Watershed Academy, Tools for Schools, and Partnership for Sustainable Healthcare, Green Power Partnerships, Climate Leaders, EPEAT, Environmental Management Systems, Green Venues, Sustainable Skylines, Sustainable Cities, etc.

- government may try to impact)
    - a system for signing up partners
    - ideally, a process for participants to set targets/goals
    - ideally, though not required, a system of recognition
- PPD, Regions, States, and other interested EPA offices (such as OCIR, OAR, OPEI, OECA) reach out to national/regional/local government associations or NGOs<sup>30</sup> to assess the needs of local governments/municipalities/communities for consolidated/comprehensive information about sustainable practices and related EPA programs and resources, including P2 assistance, resources, etc.

*Milestones:*

- By 2008, start participating in regular conference calls/meetings with other EPA programs in both the Regions and Headquarters that work with local governments
- By 2009, collect information on various Regional and Headquarters efforts and then create an inventory of P2 program activities with municipalities and communities
- By 2009, assess the needs of local governments/municipalities/communities
- By 2009 address the needs of local governments/municipalities/communities to implement their climate action plans with EPA programs to reduce their GHG emission reduction goals

Objective 2: Conduct outreach and provide assistance to local governments/municipalities and communities on P2 programs, tools, and information resources

*Key Activities:*

- PPD and Regions gather, develop, tailor and/or package P2 resources for local governments and communities, based on feedback obtained under Objective 1
- PPD and Regions, together with EETD, States, and other EPA programs, identify opportunities to conduct outreach to national organizations/associations that represent local governments, CARE communities, and others regarding P2 and other EPA information, tools, resources, technical assistance, etc.
- PPD and Regions coordinate with EETD, States, and others to provide information and assistance on P2 tools and programs to other EPA programs to help enhance their offerings to municipalities/communities
- PPD and Regions include as a priority in P2 Grant RFPs (as feasible and appropriate) a focus on projects that include P2 technical assistance for municipalities/communities and the institutions within their jurisdiction. For example, a P2 internship program that provides municipalities with energy benchmarking and conservation support, or a program to help cities implement GHG inventories and climate action plans
- PPD and Regions consult with Pollution Prevention Resource Exchange (P2Rx) Centers on enhancing outreach and information sharing for local governments/municipalities and communities on sustainable practices
- Regions and PPD facilitate information sharing among grantees to replicate effective

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<sup>30</sup> Including the National Pollution Prevention Roundtable (NPPR), P2Rx, The National Association of Counties (NACo), US Green Building Council (USGBC), and the International Council for Local Environmental Initiatives (ICLEI).

strategies for working with municipalities/communities

*Milestones:*

- By 2009, package existing P2 resources with other bundles of bundles (e.g., EPA Construction Initiative, *The Business Guide to U.S. EPA Climate Partnership Programs*, EPA's Clean Energy-Clean Environment Municipal Network, etc.) for municipalities/communities and develop a plan to create additional resources or technical assistance offerings
- By 2009, begin outreach to local governments/municipalities/communities on P2 resources and other EPA resources, information, tools, etc.
- By 2009, include work with municipalities/communities as a priority within the P2 Grant RFPs

Objective 3: Participate in efforts to develop and implement an EPA strategy for local governments

*Key Activities:*

- PPD and Regions collaborate with OCIR, OAR, OECA, and other EPA offices to develop an EPA strategy for local governments that is based on providing comprehensive information and assistance related to EPA programs. Initial ideas of the P2 Program for activities of this cross-Agency strategy include:
  - Reviewing the needs of local governments/communities and creating more comprehensive packages or bundles of information and resources. This effort would likely be limited in focus at first, and could include:
    - Sub-sets of information and tools focused on an environmental impact of concern to local governments/communities (energy/GHG emissions, water usage or water pollution, or toxics use/emissions)
    - Sub-sets of information and tools that are broader in environmental scope (i.e., have more of a comprehensive sustainability focus), but focused on specific types of institutions or facilities within a community (colleges/universities, manufacturing facilities)
  - Developing an EPA web portal (or combining and enhancing existing EPA web sites) for local governments/communities that provides a comprehensive overview of sustainability issues specific to local governments/communities and EPA programs and resources available
  - Supporting existing or establishing new partnership and recognition programs for local governments/ communities

*Milestone:*

- By 2010, develop a cross-Agency strategy for working with local governments