Office of Pollution Prevention and Toxics Strategic Agenda: 1999 - 2005

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U.S. Environmental Protection Agency

-- DRAFT FOR STAKEHOLDER REVIEW --

Table of Contents **Page No.**

Message from the Office Director

OPPT today is in an excellent position to define a strategic agenda for action and accomplishment. Within our office, we are fortunate to have a staff that is committed to achieving a high level of performance under changing conditions through continuous learning and improvement. Congress has provided a strong new mandate for strategic planning in the Government Performance and Results Act, and this document -- the OPPT Strategic Agenda - 1999-2005 -- represents our blueprint for putting this mandate into action. As we carry out our agenda, we will strive to integrate the law's themes and requirements across the full range of our activities.

In this document you will find a set of objectives, strategies and measures that reflects extensive discussion among OPPT managers and staff. The direction we have set has been shaped by the results of a broad-based organizational assessment conducted by our office in 1996. Although much more needs to be done, the progress we have already made will provide a strong and vital foundation into the future.

The agenda sets out the targets we hope to achieve over the next six years (by FY 2005) and explains how they support the Agency's strategic goals. Over the years, OPPT has made great progress in carrying out its mission, yet we all know that much work remains. In putting together this agenda, we have sought to build on our record by continuing approaches that have proven successful while challenging ourselves to find new strategies to fit changing needs. With so much unfinished business and limited resources, we must fully utilize our core competencies and talents. We must communicate our objectives broadly so that others can join us in pursuit of a clean and healthy environment.

I would like to call your attention to an important element of the plan that may be new to most people. As in the past, we have developed a range of output measures to help us track progress toward the goals we have set. This time, however, we have tried to supplement these with longer-term *outcome* measures that will help us link the immediate results of our work to real-world health and environmental improvements. Keep in mind that we have taken only the initial steps in this direction. In the years to come, we will be refining these measures as we gain a better understanding of the relationship between outputs and outcomes.

I would like everyone in OPPT, along with OPPT's many partners and stakeholders, to look over this agenda carefully and give us any comments and suggestions they may have. I hope through this and other opportunities, we will emerge better prepared to make the best use of the resources we have.

I. Introduction to OPPT's Strategic Agenda (FY 1999 - FY 2005)

In 1996, EPA's Office of Pollution Prevention and Toxics (OPPT) initiated the development of a new strategic planning and evaluation framework for its program activities. This document -- OPPT's Strategic Agenda for FY 1999-2005 -- is the product of that effort. The Agenda is in part a response to the Government Performance and Results Act of 1993 (GPRA), which sets more rigorous standards for program planning and evaluation by federal agencies. Within the GPRA framework, OPPT hopes to institutionalize strategic planning and evaluation so that clear goals, strategies and performance measures will be established and implemented for all of its programs.

OPPT has sought broad participation both internally and from outside partners and stakeholders in the process of developing the Agenda. This breadth of involvement helps ensure that the Agenda will be responsive to a range of needs and circumstances. As we revise and update this document in the future, we will continue to emphasize partnership and teamwork with EPA Regions, state and tribal governments, industry, public interest groups and other interested parties.

A. Developing the Draft Strategic Agenda: Organizational Assessment

The process of developing this Strategic Agenda began in late 1996 when OPPT senior management and staff took part in an organizational assessment of OPPT's current situation, including its basic mission, its core strengths and competencies, and key trends, opportunities and challenges. The assessment involved a series of full-day work sessions and follow-up meetings. With this groundwork in place, the focus of the process shifted to defining the core GPRA-related building blocks of the strategic agenda: the office's objectives and subobjectives (long-range goals tied to EPA's Strategic Plan), the strategies it will use to achieve those goals, measures for evaluating program performance, and narrative explanations of program functions, initiatives and activities. Resource issues were discussed as well.

The organizational assessment exercise had several components:

✓ *Focus groups* -- These were program-specific discussions aimed at characterizing the objectives of individual programs, identifying barriers to success, and obtaining suggestions for improvement.

✓ *Priority setting* -- Senior management identified a set of "mandatory" criteria that must be satisfied in order for a project to be considered for funding, and a group of second-tier criteria that are to be used to help rank candidate projects.

✓ *Organizational capabilities analysis* -- Senior management took part in an exercise designed to more fully characterize OPPT's core competencies and strengths as an organization; highlight trends, opportunities and challenges; and identify stakeholders. These are some of the observations emerging from this "SWOT" (strengths, weaknesses, opportunities, threats) exercise:

→ *Trends, opportunities and challenges*: The discussion highlighted a number of trends that are likely to influence the way OPPT carries out its mission:

- A shift from EPA regulatory control to greater reliance on negotiated industry settlements, voluntary pollution prevention measures, and community-based approaches that make use of pollution prevention. These trends present major opportunities (such as the creation of new ways to provide for accountability and public participation) but also significant challenges (such as dealing with divergent approaches taken by different states).

- Expanded use of computer technologies. Here also, there was a sense that OPPT will benefit from the trend in question (technology advancement) if it can meet the inevitable challenges posed by change, including the need to train employees in new technologies and the possibility of "information overload."

- Some of the other trends cited are: more "place-based" activities, more interaction with state and local government, more children's programs, an increasing international focus to the office's activities, the impact of budgetary constraints, and increased EPA control of its policy agenda due to a reduction in Congressional mandates

→ *Core strengths and competencies*: A further element of the organizational assessment was the identification of OPPT's "core competencies" and strengths. These are the capabilities considered most fundamental to the mission and identity of the office. In a multivoting exercise, OPPT participants mentioned the following capabilities (among others) as being among the most important and/or as being "cutting edge" capabilities:

- Right-to-Know / power of information (including collection and dissemination of chemical, industry, and environmental information; public access; and development of information tools)
- Multimedia assessment (including value-added modeling/estimation)
- Leadership in pollution prevention
- Chemical testing program
- "Green Chemistry"
- Expertise in nationwide chemical management (system, knowledge, organization building, etc.)

✓ *Stakeholders*: Participants also identified some of OPPT's key "stakeholders" (the following list is not intended to be exhaustive):

→ State and tribal partners
→ Chemical users (including workers, business users, consumers)
→ Regulated chemical manufacturers
→ Environmental groups (including "watch dogs", information brokers, etc.
→ Children and their parents
→ Communities and local governments

The results of the organizational assessment will help to guide the office's strategic choices now and in the future.

B. How the Strategic Agenda Will be Used

The strategic agenda will help OPPT set program goals and priorities, identify strategies to achieve its long-range goals, invest resources productively and devise ways of measuring progress. The strategic direction that the office sets in this document will play an important role in shaping its planning, budgeting and evaluation efforts activities over the six-year life of the plan (FY 1999 - FY 2005) and beyond. There are likely to be many junctures at which the strategies and choices set out in the agenda will come into play -- including the development of office-level and program-level plans and initiatives, the formulation of office and program budgets, the development of management and information resources, communication with the public, and efforts to respond to Congressional mandates and inquiries.

II. EPA's Strategic Goals and OPPT's Mission

OPPT's strategic agenda is consistent with EPA's Strategic Plan of September 1997, in both structure and content. The Agency's strategic goals are summarized below, followed by OPPT's mission statement and a concise description of the approaches the office will take in carrying out its mission.

EPA Goals

"The mission of the U.S. Environmental Protection Agency," as stated in EPA's Strategic Plan (1997), "is to protect public health and to safeguard the natural environment - air, water, and land - upon which life depends." To assist Agency management and staff in carrying out this mission, EPA has defined a series of ten strategic, long-term goals, which will inform the Agency's planning, budgeting, analysis, and accountability processes:

1. **Clean Air:** The air in every American community will be safe and healthy to breathe, as determined by the latest, best scientific evidence. In particular, children, the elderly, and people with respiratory ailments will be protected from health risks of breathing polluted air. Strategies to reduce air pollution will also restore life in damaged forests and polluted waters.

2. **Clean and Safe Water:** All Americans will know that their drinking water is clean and safe. Effective protection of America's rivers, lakes, wetlands, aquifers, and coastal and ocean waters will sustain fish, plants, wildlife, as well as recreational, subsistence, and economic activities. Watersheds and their aquatic ecosystems will be restored and protected to improve public health, enhance water quality, reduce flooding and provide habitat for wildlife.

3. **Safe Food:** The foods Americans eat will be free from unsafe pesticide residues. Children especially will be protected from the health threats posed by tainted food, because they are among the most vulnerable groups in our society.

4. **Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems:** Pollution prevention strategies, risk management, and remediation strategies aimed at cost-effectively eliminating, reducing, or minimizing emissions and contamination will result in cleaner and safer environments in which all Americans can reside, work and enjoy life. EPA will safeguard ecosystems and promote the health of natural communities that are integral to the quality of life in this nation.

5. **Better Waste Management and Restoration of Abandoned Waste Sites:** America's wastes will be stored, treated, and disposed of in ways that prevent harm to people and to the natural environment. EPA will work to clean up previously polluted sites and restore them to uses appropriate for surrounding communities.

6. **Reduction of Global and Cross-Border Environmental Risks:** The United States will lead other nations in successful, multilateral efforts to reduce significant risks to human health and ecosystems from climate change, stratospheric ozone depletion, and other hazards of international concern.

7. **Expansion of Americans' Right to Know About Their Environment:** Easy access to a wealth of information about the state of their local environment will expand citizen involvement and give people tools to protect their

families and their communities as they see fit. Increase information exchange among scientists, public health officials, businesses, citizens, and all levels of government will foster greater knowledge about the environment and what can be done to protect it.

8. **Sound Science, Improved Understanding of Environmental Risk, and Greater Innovation to Address Environmental Problems:** EPA will develop and apply the best available science for addressing current and future environmental hazards, as well as new approaches toward improving environmental protection.

9. **A Credible Deterrent to Pollution and Greater Compliance with the Law:** EPA will ensure full compliance with laws intended to protect public health and the environment.

10. Effective Management: EPA will establish a management infrastructure that will set and implement the highest quality standards for effective internal management and fiscal responsibility.

OPPT Mission Statement

Our purpose is to protect and improve public health and environmental resources that are key to long-term sustainability and quality of life. We serve this purpose by using both regulatory and nonregulatory approaches to:

- ✓ Promote pollution prevention as a principle of first choice to achieve environmental stewardship throughout society;
- ✓ Promote the design, development and application of safer chemicals, processes and technologies in the industrial sector of the economy;
- ✓ Promote risk reduction and responsible risk management practices through the life cycle of major chemicals of concern; and
- ✓ Promote public understanding of the risks of chemicals and public involvement in environmental decision-making through the development and dissemination of information on toxic chemicals.

OPPT's Approach for Achieving its Mission

To carry out its mission as expressed above, OPPT plans to:

- ✓ Acquire, help to interpret, and disseminate information to governments, industry, and the public on:

- The uses, hazards, releases, exposures, and risks of chemicals;
- Reductions of the toxic chemicals in releases and in waste streams; and
- Pollution prevention technologies, strategies, and successes.

✓ Advance the understanding and application of the pollution prevention ethic in society by:

- Supplying information, training, technical assistance, and other support to public and private institutions that want to develop pollution prevention strategies;
- Pushing for use of pollution prevention principles in the actions of EPA, Federal agencies, other governments, and the private sector; and
- Providing public recognition of those who have successfully implemented pollution prevention.

✓ Provide a focused agenda for the toxics program, both in terms of responding to statutory requirements and selecting from other priority projects by considering the following factors:

- Maximize risk reduction opportunities, emphasizing ecological as well as human health concerns;
- Focus on multi-media exposure situations;
- Link OPPT activities to Agency priorities;
- Emphasize pollution prevention opportunities;
- Balance short-term and long-term results; and
- Fully utilize OPPT talents and experience.

✓ Develop and implement risk reduction strategies for new and existing chemicals. These strategies should emphasize:

- Application of pollution prevention principles;
- Building new and enhancing existing public/private partnerships, where feasible;
- Application of information exchange and market incentives to change behavior;
- Creative use of OPPT's many regulatory tools to obtain results as efficiently as possible; and
- Consolidation of the Regional, State/Tribal and local/municipal and State partnerships in designing the implementation of these strategies;
- Interagency coordination at the federal level, including coordinated development of GPRA strategies where appropriate.

- ✓ Work with international organizations, other governments, and foreign centers of excellence to share information on chemicals, pollution, policies, and experience which benefits the accomplishment of our domestic tasks, and to promote “right to know” as a principle for environmental stewardship at the national and international levels.

III. OPPT's Strategic Planning Framework -- Core Elements

This section lays out the *objectives* and *subobjectives*, *strategies*, and *performance measures* which are at the core of OPPT's strategic agenda for FY 1999-2005. As explained previously, the strategic agenda is to some extent the outgrowth of a high-level organizational assessment conducted by OPPT in 1996-97. The parameters set in the agenda will provide a basis for planning, resource allocation and performance evaluation over the next six years.

At this juncture, the agenda should be viewed as an evolving document. Although the objectives and subobjectives can be considered final, OPPT expects and indeed *encourages* a more extended process of review, comment and revision with regard to most components of the agenda. We are particularly intent on seeing more thought given to the *strategies* and *measures* by which results will be achieved and evaluated. As we use the term, "results" refers both to immediate program *outputs* and to the longer-term *outcomes* by which success ultimately will be gauged (for example, lower blood levels of lead in children).

For FY 1999-2005, OPPT has established the following five major programmatic objectives supporting three of EPA's Environmental and Human Health Protection Goals:

Objective 4.2: Reduce Lead Poisoning

By 2005 the number of young children with high levels of lead in their blood will be significantly reduced from the early 1990's.

Objective 4.3: Safe Handling and Use of Commercial Chemicals and Genetically Engineered Microorganisms

By 2005, of the approximately 2,000 chemicals and 40 genetically engineereed microorganisms expected to enter commerce each year, EPA will significantly increase the introduction by industry of safer or "greener" chemicals which will decrease the need for regulatory management by EPA.

Objective 4.5: Improve Pollution Prevention Strategies, Tools, Approaches

By 2005, reduce by 25% (from 1992 level) the quantity of toxic pollutants released, disposed of, treated, or combusted for energy recovery. Half of this reduction will be achieved through pollution prevention practices.

Objective 6.4: Achieve Cleaner and More Cost-Effective Practices

By 2005, reduce the risks to U.S. human health and ecosystems from selected toxics that circulate in the environment at global and regional scales, consistent with international treay obligations.

Objective 7.2: Improve Public's Ability to Reduce Exposure

By 2005, EPA will improve the ability of the public to reduce exposure to specific environmental and public health risks by making current, accurate substance-specific information widely and easily accessible.

These objectives and the agenda's other core elements are further defined in the pages that follow.

OBJECTIVE 4.2: Reduce Lead Poisoning

(Supports Agency Goal 4: Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems)

By 2005, the number of young children with high levels of lead in their blood will be significantly reduced from the early 1990's.

Importance of This Objective

Childhood lead poisoning is a serious, yet preventable environmental disease. Blood lead levels as low as 10 µg/dl are associated with children's learning and behavioral disorders. Severe toxicity (blood lead levels of 70 µg/dL or more in children and 100 µg/dL or more in adults) causes devastating health effects, such as seizures, coma, and death. During past decades, the U.S. has made great progress in combating this disease by addressing a wide range of sources of lead exposures. The Federal government has phased out lead in gasoline, reduced lead in drinking water, and banned or limited the lead use in consumer products, including toys, food cans, and residential paint. States and municipalities have set up programs to identify and treat lead poisoned children and to rehabilitate deteriorated housing. Parents, too, greatly helped to reduce lead exposures to their children. On average, U.S. children's blood lead levels decreased significantly during the 1970's and 1980's. Data released earlier this year by the U.S. Department of Health and Human Services (HHS) show during 1991-1994 average blood lead levels in children dropped to about 3 µg/dl.

Despite these successes, however, many areas still need our attention. HHS data show that almost one million children under six still have blood lead levels above 10µg/dl, with a disproportionate number of them living in our inner cities. There are also significant numbers of children living in other areas who suffer from lead poisoning. In addition, lead poisoning has a disproportionate impact on children who belong to minority ethnic groups and/or low-income families. Lead-based paint continues to be the major source of childhood high-dose lead exposure in the U.S.[1] today. Sixty five million homes across the nation contain old lead paint (applied before 1978) that can be released during normal wear and tear and during renovation activities.

OPPT, under the 1992 Residential Lead-Based Paint Hazard Reduction Act [Title X], contributes to solving this environmental problem primarily by assisting in, and in some cases guiding, federal activities aimed to reduce the lead exposure to children in homes with lead-based paint. Other Federal agencies, such as Department of Housing and Urban Development and the Department of Health and Human Services (via the National Institute for Occupational Safety and Health and the Center for Disease Control), also play important roles. In the past six years, EPA has made great strides in carrying out the role it plays in protecting children from lead poisoning, by a combination of rulemaking, education, research, and partnerships. OPPT has promulgated regulations to set up a federal infrastructure, including the lead assessment and abatement training and accreditation rule, the lead-based paint real estate notification and disclosure rule (with HUD) and the pre-renovation and remodeling rule. OPPT has also issued guidance on identifying hazardous levels of lead in paint, soil, and dust as well as how to safely remodel a home containing lead-based paint. The public education programs and tools developed include a national clearinghouse to provide the public with information on lead; $37 million in grants to states and tribes to establish training programs; six grants to local communities to train residents of poor, high-risk communities in lead abatement skills to enhance their communities' economic and environmental well-being; $460,000 in grants to communities under the 1997 Lead Poisoning Prevention and Lead Hazard Awareness Public Education and Outreach Grant Program; and six regional university-based training centers for lead professionals.

In the applied research area, OPPT continues to search for more cost-effective ways to reduce lead hazards (such as to investigate the effectiveness of lead control activities) and to set up national criteria for the private sector.

Other uses of lead that may pose risks to the general population have undergone review by OPPT. They include: brass/bronze plumbing fittings and fixtures, lead solder used to join water pipes, lead in non-residential paint, lead in batteries, lead fishing sinkers, and lead in ammunition (lead shot).

Sub-Objectives

(There are no sub-objectives associated with this objective.)

What Will Be Accomplished

By 2005, OPPT will work to substantially reduce the incidence of lead poisoning in children under age six. To achieve this, OPPT along with other Federal agencies is working to prevent children's exposure to lead sources, primarily lead-based paint, and to establish an infrastructure to intervene in cases where exposure has already occurred. Specific actions will be targeted at high risk children in urban cities and other communities.

Strategies for How This Objective Will Be Achieved

In general, OPPT will continue to set the direction, goals, and criteria for the national effort to substantially reduce the incidence of lead poisoning in children under the age of six. OPPT will encourage states, tribes and municipalities to tailor implementation to best meet local needs. EPA will continue to build the educational programs, and add on a new dimension by encouraging these efforts at the community level where the messages can most effectively be tailored. The U.S. lead poisoning prevention program is a good example of government and others being poised to essentially eradicate childhood lead poisoning. OPPT will also be encouraging state programs to train and accredit lead professionals, because we believe that when lead is abated, it must be done safely and effectively.

OPPT will also further investigate and implement programs to reach children at highest risk no matter where they live and play. In collaborating with the CDC, OPPT will assist states and local communities in examining a number of metropolitan areas to identify the most vulnerable communities where lead poisoning prevention efforts should be targeted. The identification of communities will be followed with a multi-pronged outreach program to ensure awareness of the risk to children and to ensure that steps are taken to provide assistance to the communities at risk. Other non-regulatory activities will be continued to target efforts to areas where the HHS data very clearly identify the risk of lead poisoning is the greatest -low-income, minority, urban areas. The HHS and other supplementary data will also be examined to identify additional populations at risk of lead poisoning. A program to target public education and risk reduction methods for these additional populations will be developed and implemented.

Performance Measures

The effectiveness of OPPT's lead-based paint program will be measured, in part, by seeing whether there is a significant reduction of children's blood lead levels compared to levels in the 1970's. For the past two decades, the Department of Health and Human Services' National Center for Health Statistics (NCHS) has collected data on the general health of the nation's population through the National Health and Nutrition Examination Survey. The collection and laboratory analysis of children's blood for lead has been part of this program since its inception and has become the standard for the estimation of national blood lead averages. It is also the only national survey of children's blood lead levels. NCHS is preparing to begin another NHANES survey. The results, scheduled for release in 2002, will be used to measure the success of OPPT's lead program. We recognize that the use of NHANES to assess anything but national progress can be problematic. We are hoping to obtain additional blood-lead data with a narrower geographic focus (e.g., state-or EPA Region-specific) in order to develop better performance measures.

In addition, OPPT in partnership with the EPA Regions will evaluate the effectiveness of regulations promulgated over the next two years. Through mechanisms including focus groups and surveys, OPPT and EPA Regions will measure

the awareness of and any changes in behavior of the regulated community due to these regulations. For example, at the end of 1998, EPA will have established a training, certification, and accreditation program for lead-based paint professionals in States that do not seek approval from the agency to administer their own program (about 15 states are not expected to seek authorization). In 1999, following an outreach effort to increase awareness by state residents of EPA's certification program, OPPT and EPA Regions will measure the success of this regulation in certifying professionals. In this context, success will be determined by the degree of awareness of the program among professionals who are likely to become certified. Similar evaluations will be developed for other regulations. OPPT will evaluate the effectiveness of the Section 1018 regulations in providing lead-based paint hazard information to prospective renters and home purchasers, and will further evaluate how this information is used in housing decisions.

The following are examples of some of the measures that OPPT plans to use (or is considering using) to evaluate the progress it makes under Objective 4.2. The measures fall into three broad categories:

- Output measures (which track immediate results of program activities)
- Outcome measures (which are geared toward longer-term environmental or program results)
- Impact measures (which reflect indirect effects such as jobs created, costs avoided or reduced, and innovations in technology or approach)

Output Measures

✓ Number and timeliness of rules proposed, promulgated, or amended as required by Title X and others.

✓ Progress made in establishing national infrastructure:
- State/Tribal capacity in containing and/or abating lead-based paint in older housing, including number of programs approved and implemented for training, certification and accreditation
  - Number of certified labs.
  - Number of certified inspectors, risk assessors and abatement workers.

✓ Progress made in applied research, such as abatement effectiveness studies, low cost measurement, test methods and lead hazard control studies etc.

✓ Number of children screened for elevated blood lead levels in high risk communities and in the general population.

✓ Outreach efforts, such as pamphlet design and distribution, training centers establishment, etc.

✓ Other intervention and risk management actions to reduced children lead exposures.

Outcome Measures (including environmental indicators)

✓ Reduced exposure to lead-based paint:
- Number of interventions performed on older housing containing lead-based paint hazards.
- Number of high risk children in housing where interventions to address lead-based paint hazards are performed.

✓ Children blood lead levels in general population and specific populations. Measurement of reduction in children's blood lead levels due to EPA activities will be accomplished by the National Center for Health Statistics through the National Health and Nutrition Examination Survey. EPA will use the results of this long-term study , supplemented with other regional data, to estimate the effect of regulations and other programmatic activities on the reduction in children's blood lead levels.

✓ Effectiveness of regulations promulgated, evaluated through mechanisms such as focus groups and surveys, which will help OPPT learn more about how the regulated community perceives and responds to particular regulations.

Impact Measures

- ✓ Epidemiological studies, e.g., case-control studies to show the direct or indirect effects (could be positive or negative) of the lead-based paint program, compared to what would be expected had we not implemented the program.
- ✓ Lead abatement worker blood lead levels.
- ✓ Impact on housing market as the result of the lead disclosure rules.

OBJECTIVE 4.3: Safe Handling and Use of Commercial Chemicals and Genetically Engineered Microorganisms

(Supports Agency Goal 4: Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems)

By 2005, of the approximately 2,000 chemicals and 40 genetically engineered microorganisms expected to enter commerce each year, we will significantly increase the introduction by industry of safer or "greener" chemicals which will decrease the need for regulatory management by EPA.

Importance of This Objective

The Toxic Substances Control Act (TSCA) authorizes the EPA to review a chemical or microorganism before commercialization to determine whether it can be handled and used safely. If the review indicates that an unreasonable risk may be posed to people or the environment, control measures will be put in place to ensure their safety in the marketplace. Since 1979, OPPT has reviewed more than 31,000 premanufacture notices (PMN) and taken actions to control risks for 10% of these chemicals. Although the New Chemicals Program has been successful in meeting TSCA goals, OPPT sees tremendous opportunities for increasing the introduction and use of safer or "greener" chemicals. These safer or "greener" chemicals are less toxic, result in lower exposure, are more energy efficient, generate less (or less toxic) waste, or have other similar attributes. The more such chemicals are available to replace those harmful chemicals currently in use, the greater will be the opportunity to achieve safer workplaces and communities.

A key element of EPA's approach for promoting industry's introduction of safer chemicals is to fulfill the mandate under TSCA to control the unreasonable risks for the chemicals which are already in commerce. Placing controls on existing chemicals that pose risks in their use or management induces industry to look for new chemical formulations or processes that do not pose these risks. This is done through chemical information gathering and testing to provide EPA and others, including the public, sufficient data for screening, assessing and managing the risks. In dealing with over 75,000 chemicals, OPPT in partnership with other Federal agencies, states and tribes, industry, and other stakeholders, has adopted innovative techniques and non-regulatory approaches. Today, risk management controls are already in place or planned for a number of chemicals whose risks are well-characterized (e.g., asbestos, polychlorinated biphenyls (PCBs), and many other chemicals through Risk Management Actions). The pace for gathering scientific data needed to support risk assessment is also increasing.

For those chemicals whose significant risks are well established (such as PCBs, asbestos, and dioxin), reductions in use and releases are important to reducing exposure of the general population as well as sensitive subpopulations. Risk reduction efforts on these chemicals must continue to meet the mandates under TSCA and fulfill the commitments made in domestic and international agreements.[1]

Sub-Objectives

4.3.1: By 2005, EPA will annually review about 2,500 Premanufacture Notifications submitted by chemical manufacturers and take appropriate risk management actions to protect human health and the environment. EPA will pay particular attention to protecting ecosystems and drinking water supplies from chemical releases, children and workers from potential risky inhalation and dermal exposures.

[1] The "Great Lakes Binational Toxics Strategy" (signed April 1997), the Commission for Environmental Cooperation's (CEC) Regional Action Plan signed in February, 1997 and the United Nations Economic Commission for Europe's Convention on the Long-Range Transboundary Air Pollution (LRTAP).

4.3.2: By 2005, EPA will ensure that all chemicals in commerce have been screened for safe use. Significant progress will be achieved in acquiring test data on chemicals entering commerce and high volume chemicals with a special emphasis on chemicals which are potential endocrine disruptors or persistent, bioaccumulative, and toxic (PBTs).

4.3.3: By 2005, EPA will achieve continued reductions in remaining uses of PCBs at concentrations above 500 ppm in electrical equipment. Significant reductions in exposures to toxic fibers and dioxins will be achieved. Management actions will be harmonized with the international community where possible.

What Will Be Accomplished

By 2005, we expect that EPA will have fully screened the potential risks of the 75,000 chemicals presently in commerce (existing chemicals) based on available scientific information. All chemicals prior to the commercialization (new chemicals) will be scrutinized for their safe use. And in addition, as the result of EPA's encouragement and removal of regulatory barriers, industries will design and develop more chemicals that are safer to consumers/industrial users and produce fewer ecological impacts than those previously manufactured. EPA will assume a role of prime mover and producer of the technologies that incorporate "pollution prevention" for chemical research & development, manufacturing, processing, and distribution. For the chemicals characterized as harmful, particularly those that are persistent, bioaccumulative, and endocrine disruptive toxics, EPA will ensure their risks are reduced or prevented for not only the general public but also the populations that are vulnerable to the toxic effects. To achieve this objective, the limited resources and capacity within EPA will be augmented through innovative scientific approaches, streamlined operations, and joint efforts with industries and other stakeholders.

Strategies for How This Objective Will Be Achieved

While OPPT will continue to assess and take action against unsafe chemical usage, additional effort will focus on supporting development and/or use of safer chemicals by industry and improved risk management for all chemicals. There were several key ideas discussed during the OPPT internal focus groups which contributed to the strategies listed. Creating comprehensive data management tools; maintaining and providing access to data; managing data more effectively; promoting pollution prevention, information dissemination and partnerships as objectives of the new and existing chemicals (testing) programs; and exploring coordination with other EPA databases in other programs all played a role in shaping our approaches. OPPT sees several ways to achieve this end:

1) Encourage industry to apply new or alternative ways, in designing and developing new chemicals and manufacturing new and existing chemicals, that will either avoid pollution entirely or minimize risks to health and the environment.

2) Switch from an inefficient method of managing chemicals one-by-one to concurrently dealing with all chemicals within a group (i.e., chemical category or use clusters[2]), thereby streamlining the process for identifying safer substitutes and for managing the collective risk of the group. In connection with this approach, EPA will be initiating the development of an overall fibers strategy as soon as resources become available. Asbestos will be among the fibers addressed through this strategy.

3) Remove the regulatory barriers to innovation.

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[2] The category approach (based on known hazards for certain chemical categories) offers a streamlined process for the hazard evaluation. OPPT is currently developing a use cluster approach (chemicals used in specific use application) which when implemented would likewise offer a streamlined process for exposure evaluation in the risk equation.

There are ripple effects of these strategies. First, the strategies will drive and consequently bring about improved risk assessment capabilities, both within OPPT and its client communities. For example, the "use cluster approach" gives flexibility in applying risk mitigation techniques that will result in a cumulative risk reduction in the use sector for a particular industry. These improved risk assessment methods can also be utilized for supporting pollution prevention activities, such as Green Chemistry Programs[3], that will produce safer and greener chemicals. With a higher proportion of safer chemicals being developed, OPPT can concentrate its limited resources on regulating a smaller portion of the new chemical substances that warrant risk management.

Second, OPPT will act as an agent for spreading and sharing the new technologies among all parties. This will contribute to better new premanufacture submissions by industry to EPA for review; and to provide the knowledge for better understanding EPA review decisions.

Third, the category and use cluster approaches will shift both new and existing chemicals focus toward those areas of the chemical marketplace that would benefit from a comprehensive risk management approach. Overall this shift is expected to result in better targeting of chemicals for risk reductions. Further, this shift in focus will minimize or eliminate regulatory burdens on new chemicals if they replace riskier substances already in the marketplace.

To assess the 75,000 chemicals currently in commerce, the challenge is to provide a streamlined and well-focused program, while minimizing administrative, record keeping, and regulatory burdens on the chemical industry, because it is a vital economic sector that provides important products and services to the American people. The strategy is to move toward a planned, broad screening of the potential risks posed by the 75,000 chemicals in commerce, focusing particularly on chemical categories of special concern, including potentially toxic chemicals that persist and bioaccumulate in the environment (PBTs), chemicals with high production volume, and chemicals that children are most likely to be exposed to (i.e., consumer chemicals and high-release chemicals included on the Toxics Release Inventory (TRI)). Testing and risk screening of chemicals in these groups will be an integral part of the Chemical Right-to-Know initiative announced by Vice President Gore in April 1998 (see also Objective 7.2 ("Improve Public's Ability to Reduce Exposure") for a description of additional elements of this initiative). This systematic approach will identify chemicals that are believed to be manufactured and used safely as well as those chemicals which may pose risks to humans and the environment and need further attention.

Under Objective 4.3, EPA plans to take several specific actions to promote effective testing and screening of chemicals that are in categories of special concern. EPA will:

- Issue a "Children's Testing" test rule for high release TRI chemicals and consumer chemicals. This effort will focus on chemicals that children are exposed to most.

- Proceed with promulgation of a rule amending the Inventory Update Rule (proposal expected Summer 1998) which will require chemical manufacturers to identify and report chemicals used in consumer products (see the following paragraph for more information). This data will help ensure that the right chemicals are tested for their effects on children.

- Issue a challenge to industry to come forward with complete test data for identified high production volume chemicals and propose test rules by the end of 1999 to fill remaining data gaps.

The Agency will begin to evaluate and implement a national chemical hazard classification system through

[3] Green chemistry involves a reduction in, or elimination of, the use or generation of hazardous substances from a chemical process. It encompasses all aspects and types of chemical processes.

promulgation of the Chemical Use Inventory (CUI) reporting rule and issuance of the Master Testing List (MTL). The CUI, by identifying critically needed industrial, commercial, and consumer product (e.g., household) chemical uses, will facilitate risk screening, including identifying risks to children. It will be issued via amendment to the Inventory Update Rule. The MTL will present a consolidated listing of OPPT's new and existing chemical testing priorities (including high production volume chemicals), as well as those of other EPA program offices, other federal agencies, and international organizations such as the Organization for Economic Cooperation and Development (OECD). Completion of testing actions on new and existing chemicals will result in the development of test data needed to support adequate assessments of chemical risks by government, industry, and the public.

OPPT believes these actions will lead to both a focused national chemical risk management program and a major increase in the amount of information on chemical exposures, hazards and risks that OPPT can provide to the public. Steps will be first initiated to facilitate enhanced public access to TSCA test data, thereby beginning a process to meet the right-to-know needs of the public for basic toxicity information on chemicals. This public information can also incorporate innovative approaches, such as chemical classification and labeling systems, to advise users and consumers of chemical hazards and risks. Information on toxic chemicals will be made available to state and local governments in conducting risk assessment and management activities.

Underlying the success of all these strategies is a critical piece of information -- chemical use. Without use information, we will not be able to accurately screen out unsafe use, define the chemicals falling into specific "use clusters," assess chemical hazards to reduce exposures, or identify the "universe" of household chemicals. The Chemical Use Inventory System will serve as an important tool for carrying out the strategies.

Other areas critical to the implementation of these strategies will lie in OPPT's internal operations. Besides the integrated approach for testing on new and existing chemicals (through the MTL) already in process, OPPT will move ahead on other fronts. New chemical reviews will identify green chemistry approaches and will engage customers in these programs through incentives indicating benefits/gains that might accrue from these pollution prevention efforts. New and existing chemical programs will be better aligned to remove barriers to innovation of new chemicals and to promote integrated risk management and pollution prevention for new and existing chemicals. There will also be closer integration of new and existing chemical screening actions. Chemical risks will be screened and identified using procedures similar to those used in OPPT's New Chemicals program and will result in chemicals being classified by hazard endpoint based on available information. Experience gained in EPA's New Chemicals program has provided OPPT with the tools and scientific capability to accomplish the risk screening of all commercial chemicals.

EPA's PCB control efforts will include both enforcement of PCB use standards and voluntary measures to encourage phaseout of PCB electrical equipment, ensure proper waste disposal methods and capacity, and foster PCB site cleanups. EPA will implement the final rules issued in 1998 which will enable the regulated community to reduce the PCB concentration of their equipment to acceptable levels and clean up contaminated sites under more flexible, self-implementing equipment reclassification, decontamination and remediation options. This should result in less administrative burden and costs for both EPA and the regulated community.

EPA is committed to developing an Agency-wide dioxin strategy that would respond to the new science of the reassessment and address dioxin risk management in a more comprehensive cross-media approach. A draft strategy is now under development and will be released concurrently with the final reassessment. Efforts will continue to understand the dispersal of dioxin through the environment by the establishment and implementation of a national network to monitor air levels across the nation. Once this network is established, data collected in future years will aid the Agency in monitoring changes in ambient levels occurring over time. In addition, the mechanism for dioxin contamination of meat products will continue to be studied. These data will allow the agency to understand the mechanism of dioxin contamination of animals and to make decisions regarding appropriate actions to reduce adverse exposure.

OPPT established the Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC), to provide advice and counsel to the Agency on a strategy to screen and test chemicals and pesticides that may cause endocrine disruption in humans, fish, and wildlife. EDSTAC will complete its deliberations this year to enable EPA to meet the August 1998 statutory deadline for the development of the screening and testing strategy. EPA must implement the strategy by August 1999 and report to Congress by August 2000. It is expected that by 2005 all high volume chemicals will have been screened for endocrine disrupting potential and the resulting priority chemicals will have been tested or testing initiated, using the approach and test methods developed from recommendations of the Endocrine Disruptors Screening and Testing Advisory Committee.

Some of the strengths, opportunities and challenges identified by OPPT through its organizational assessment (see pages 2-3) play a direct role in fulfilling this objective. First, OPPT has a highly credentialed and outstanding group of scientists, economists and engineers. Second, the tools and experience that OPPT possesses in understanding various populations is a strength, and one the office intends to continue to build upon, especially as we look to particularly vulnerable populations such as children. Third, in addition to our past emphasis on obtaining and assessing data, OPPT needs and intends to give high priority to informing the public. Knowing these strengths and challenges helps the office to define areas requiring improvement or continued emphasis.

Performance Measures

The following are examples of some of the measures that OPPT plans to use (or is considering using) to evaluate the progress it makes under Objective 4.3. The measures fall into three broad categories:

- Output measures (which track immediate results of program activities)
- Outcome measures (which are geared toward longer-term environmental or program results)
- Impact measures (which reflect indirect effects such as jobs created, costs avoided or reduced, and innovations in technology or approach)

Output Measures

✓ Number of PMNs completed review
✓ Number of testing actions initiated/developed on new chemicals.
✓ Number of testing actions initiated/developed on existing chemicals.
✓ Number of Screening Information Data Set (SIDS) chemicals completed review.
✓ Number of methods (used to manage risks of a chemical group) identified from the category/use cluster approaches.
✓ Progress made in implementing Chemical Use Inventory.
✓ Progress made in chemical hazard classifications.
✓ The amount of information provided to the public through chemical screening and testing.
✓ Number and timeliness of rules proposed, promulgated, or amended.
✓ Number of chemicals gone through identification and testing of endocrine disruptive effects.
✓ Number and timeliness of issuance of PCB permits.
✓ % reduction nationally of the high level PCBs used in electrical equipment.
✓ Other voluntary risk management actions.
✓ Outreach activities.

Outcome Measures (including environmental indicators)

- ✓ Number of safer or greener chemicals introduced to the market by industry through pollution prevention and green approaches.
- ✓ Number of protected workers.
- ✓ Pounds of avoided chemical releases.
- ✓ The reduction in exposures of PCBs, dioxin and toxic fibers.
- ✓ Number of incidents or adverse health effects reported by workers, industrial users or households.
- ✓ Prevalence and incidence of chronic illnesses caused by endocrine disruptors, PBTs, and other toxic chemicals.

Impact Measures

- ✓ Reduction in regulatory actions.
- Industry innovation.

OBJECTIVE 4.5: Improve Pollution Prevention Strategies, Tools, Approaches

(Supports Agency Goal 4: Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems)

By 2005, reduce by 25% (from 1992 level) the quantity of toxic pollutants released, disposed of, treated, or combusted for energy recovery. Half of this reduction will be achieved through pollution prevention practices.

Importance of This Objective

The goal of *pollution prevention* (P2) is to prevent contaminants from entering the environment (before the fact), in contrast to risk management and remediation, which are designed to control pollutants that have already been introduced to the environment (after the fact). By eliminating or reducing the use/release of harmful substances (through source reduction), the level of pollution escaping into the environment will be reduced, both in "upstream" manufacturing operations and in "downstream" use by businesses and consumers.

Compared to the traditional approaches of controlling, treating, or cleaning up pollution, pollution prevention (P2) can often be more effective in reducing health and environmental risks to the extent that it --

* reduces releases to the environment,
* reduces the need to manage pollutants
* avoids shifting pollutants from one media (air, water, land) to another, and
* protects natural resources for future generations by cutting waste and conserving materials.

Preventing pollution is often cost-effective to industry because it reduces excess raw materials and energy use. It also trims the need for expensive "end-of-pipe" treatment and disposal, cuts potential liability and conforms with quality and continuous improvement incentives already at work within facilities. To EPA, pollution prevention moves away from many of the limitations of conventional, command-and-control regulation; for example, pollution transfers due to single media regulation, long lead time for promulgation, and fast changing technologies and processes.

Under the Pollution Prevention Act of 1990, it is the policy of the United States "that pollution should be prevented or reduced at the source whenever feasible," as the preferred approach to environmental protection. To support this principle, current EPA strategies are to institutionalize preventive approaches in EPA's regulatory, operating, and compliance/enforcement programs and facilitate the adoption of pollution prevention techniques by the states, tribes and private industry. Underpinning these strategies is the recognition by EPA that pollution prevention can be accomplished only after its concept is understood, firmly grounded and put into practice by stakeholders, since pollution prevention represents new ways of doing business. EPA is using various market incentives, environmental management tools and technologies to induce and facilitate P2 actions.

Much progress has been made by EPA and stakeholders in implementing these strategies, but there is still more work to be done. Many program offices within EPA have increasingly become aware of the potential role of pollution prevention in alleviating medium-specific or cross-media pollution problems. Where state, tribal and local governments are the principal focus, mechanisms have been created (such as the Environmental Commissioners of the States (ECOS) and the Forum on State and Tribal Toxics Action (FOSTTA)) to assist them in building P2 programs and adopting P2 practices. OPPT sees the fastest growing P2 opportunities in private sector partnerships, by merging EPA's knowledge of P2 principles/techniques with industry-specific expertise in production/process design. This will be the strategy of choice for incorporating P2 into basic business practices.

Sub-Objectives

4.5.1: By 2005, EPA will achieve adoption of P2 principles as the basis for sustainable development by: increasing the integration of P2 into state environmental regulatory and other mainstream environmental programs; facilitating practices that advance eco-efficiency in business practices and decision making; increasing the adoption of prevention concepts to educate the public and the nation's students; expanding the use of environmentally preferable products by the federal government to stimulate demand and production capacity in the private sector for products which minimize environmental impact; integrating P2 into EPA's regulatory, enforcement and compliance programs; and providing information to states, businesses and other consumers to assist them in making prevention-oriented decisions.

4.5.2: Using Design for the Environment (DfE) and other approaches, encourage businesses to incorporate environmental considerations into the design and redesign of products, processes, and technical and management systems. By 2005, achieve a 25% increase in the use of cleaner technologies in specific industrial applications in four targeted industry sectors. The targeted industry sectors include dry cleaning, printing, electronics, and one additional sector chosen from among metal finishing, textiles, or another suitable candidate. The switch to cleaner technologies will result in reduced risk to human health and the environment.

What Will Be Accomplished

By 2005, we expect to see a substantial increase in the pollution prevention practices by EPA offices, other Governmental agencies, States, tribes, and industry as a result of EPA promotion of the concept, development of management and technical tools, direct assistance, and the establishment of a strong base within States and Tribes. EPA will use several forces and tools to drive the pollution prevention practices, including: consumer demand for greener products, Government purchasing requirements for greener products, incentives built into EPA permitting and enforcement in exchange for prevention, prevention options incorporated into EPA major rules and regulations, enhanced business management systems to help companies decide on the trade offs between prevention and pollution controls, development of environmental management standards to help companies conform to prevention practices, and direct working with industries to devise prevention technologies and alternative processes. We expect these efforts will eventually lead to reduced toxic pollutants, particularly those are persistent, bioaccumulative, that are generated primarily by chemical manufacturing and use activities. As the office determined what should be on the agenda for this objective for the next five years, the data collected during its 1996 organizational assessment (see pages 2-3) served as a frame of reference. During the focus group discussions three main themes emerged: pollution prevention as a priority, the importance of available technical resources, and an increased focus on partnerships. Certainly OPPT has made major shifts toward partnerships in our Design for the Environment (DfE) Program, ISO 14000, and many industry specific efforts. This trend, it appears, will produce additional pollution prevention gains and thus contribute to meeting this objective.

Strategies for How This Objective Will Be Achieved

For the coming five to six years, EPA will achieve the goals of the pollution prevention programs through a coordinated set of initiatives. These initiatives depend on the support of an extensive infrastructure encompassing EPA program and regional activities, other federal, state and tribal organizations, non-governmental associations and trade groups. Elements of this infrastructure include:

- The **National Pollution Prevention Resource Exchange (P2Rx),** a nine center network created to expedite technology and information sharing among state and local assistance programs. This network, operated jointly by EPA regional and Headquarters P2 staff, will encourage collaborative efforts to develop technical material that is responsive to customers' needs.

- Technical assistance providers such as OECA's Compliance Assistance Centers, OAR's Small Business Assistance Program or state P2 Technical Assistance Programs can provide information for specific applications either directly or through referrals from customer point-of-contact services.

- Service providers, such as the nearly 1000 **Small Business Development Centers (SBDCs)**, and the several dozen **Manufacturing Technology Centers** sponsored by NIST are well positioned to provide context sensitive assistance as well as being a source of information on small business needs for assistance on environmental problems.

- Other business oriented groups, such as the **Institute of Management Accountants,** the **Business Roundtable's Pollution Prevention Council** and the **American Institute for Pollution Prevention (AIPP)** can be instrumental in furthering the notion of pollution prevention as a critical building block toward sustainable development.

- The **Partnership for Environmental Technology Education (PETE)** is a national network, sponsored by several federal agencies including EPA, DOE, DOD and the NSF, which provides leadership in environmental education and training through community and technical college partnerships with business, industry, government and other educational providers.

- Industry specific trade, educational and research organizations in partnership with EPA in active Design for the Environment projects including the **Printed Wiring Board, Garment and Fabric Care,** and **Printing** industries.

The development of this infrastructure provides a solid foundation for achieving the goals of the pollution prevention program through the following six integrated sets of initiatives:

(a) Building strong, operating pollution prevention programs in each of the 50 states.

States are primary sources for businesses seeking assistance in identifying and applying prevention approaches. It is vitally important to build a strong P2 presence among states and tribes since they are the major conduits for helping educate their communities in pollution prevention methods. Several states have become leaders in pollution prevention efforts and the Agency has provided seed money to assist states and tribes in promoting innovation and developing state capacity. The National Pollution Prevention Roundtable, the Forum on State and Tribal Toxic Action (FOSTTA), and state P2 and media programs have been able partners in developing training and technical assistance programs to aid in "mainstreaming" P2 in many areas. EPA will also foster technology and information sharing among the states and tribes through the existing network of governmental and non-governmental bodies already active in this field.

(b) *Institutionalizing Pollution Prevention in EPA's Core Regulatory and Programmatic Activities.*

OPPT sees pollution prevention as an important tool for developing multi-media solutions to environmental problems. OPPT will continue to provide information and assistance to EPA media offices (air, water, land) and regions in devising P2 options as they develop and implement common sense regulatory approaches. The value and validity of these approaches will be demonstrated in the coordinated efforts among several EPA offices to reduce the serious risks of priority persistent, bioaccumulative and toxic pollutants (PBTs). This initiative will serve as a model for addressing future environmental problems with multi-media hazards.

The Agency's PBT initiative is a multi-media approach to bring the full range of EPA's tools, especially prevention-based tools, to bear on priority PBT pollutants, by (1) unifying EPA's priorities for a set of pollutants of greatest concern, and (2) applying all available tools from seven EPA National Program Manager Offices in an orchestrated fashion

to achieve greater reductions than are achievable by all seven offices working independently. The initially targeted list of PBT's will provide needed focus to the effort in the PBT initiative, and further joint prioritization activities will reach more deeply into integrating core regulatory and programmatic outcomes on a multi-media basis. Specific industries that use or produce PBT's will be selected for particular focus, and actions will be taken to prevent or reduce the release of PBT's into the environment.

(c) *Informing Consumers about Environmentally Preferable Products.*

The Agency is moving ahead with consumer product programs to provide the kinds of information consumers can use in making environmentally friendly choices. We expect this will improve the breadth of market information that will subsequently influence the supply of products designed with pollution prevention considerations. The Consumer Labeling Initiative (CLI) is a program intended to improve the household product labels to better present environmental, safe use, health and other information that can be easily understood and compared by average Americans. The EPA has been working cooperatively with other federal and state agencies, industry groups and public interest groups to develop more effective consumer product labels, analogous to the new food nutrition labels. Proper labeling is especially important for products that are used by or around children to help parents prevent the unnecessary dangers of using toxic chemicals.

(d) *Leading by Example in the Federal Government.*

The EPA also has the lead in implementing Executive Order 12873, Section 503, which requires the federal government to use its purchasing power to create a demand for products and services that have a reduced impact on the environment, environmentally preferable products. The Agency has developed proposed guidance which includes seven general guiding principles to help executive agencies identify and purchase environmentally preferable products and services.

This strategy will drive up the demand from public sectors and production capacity for products with less potential threat to public health and environmental damage. There is also a growing movement in state government to establish "take back" legislation which would make certain producers responsible for "cradle to cradle" product design, manufacture, marketing and use. This would provide an incentive for product design that minimizes environmental impact.

(e) *Reforming Business Practices*.

The Agency is pursuing the integration of P2 principles into social choices by focusing on reforming business practices. The EPA will play a strong role in promoting business adoption of voluntary Environmental Management Systems (such as ISO 14000) into fundamental business decisions, and in encouraging businesses to modify management accounting systems to fully and explicitly account for environmental costs. These strategies are based on the beliefs that the current business management framework can be enhanced to help companies more easily decide on prevention practices. These systems will foster performance and compensation decisions that reflect environmental goals and that will result in less waste, increased profitability, enhanced competitiveness for U.S. businesses and, ultimately, improved protection of public health and the environment.

(f) *Promoting Green Product Design.*

The Design for the Environment approaches are aimed at helping industry make informed decisions about the use of alternative chemicals, processes, and technologies to prevent pollution. Specifically targeted industries will include dry cleaning, printing, electronics, and textiles. Projects to date have shown the potential and willing partners to demonstrate reduced risk to human health and the environment from using DfE approaches.

Performance Measures

The following are examples of some of the measures that OPPT plans to use (or is considering using) to evaluate the progress it makes under Objective 6.4. The measures fall into three broad categories:

- Output measures (which track immediate results of program activities)
- Outcome measures (which are geared toward longer-term environmental or program results)
- Impact measures (which reflect indirect effects such as jobs created, costs avoided or reduced, and innovations in technology or approach)

Output Measures

✓ Number of states with strong, effective, operating pollution prevention programs.
✓ P2 options incorporated in all regulations where P2 is a viable approach.
✓ The percentage of products purchased by Executive Branch departments and agencies that are environmentally preferable products.
✓ The number of facilities using pollution prevention practices to reduce toxic pollutants that are released, disposed of, treated, or combusted for energy recovery.
✓ The percentage of manufacturing industries that have adopted voluntary environmental management systems, including environmental accounting and materials management practices.
✓ Increase (by percentage) in the use of cleaner technologies in certain targeted industries

Outcome Measures (including Environmental Indicators)

Measures of success are still under development and will be specific to each of the initiative areas. Over time, we expect that output measures, such as the number of states adopting comprehensive P2 programs, will be replaced by environmental results measures indicated by:

✓ Reductions in TRI releases
✓ Increases in P2 practices reported on the TRI Form R, etc.

Similarly, efforts to promote use of P2 practices by private industry will be measured first by the growth in use of Environmental Management Systems by targeted industries, leading to more results-oriented measures such as:

✓ Cost factors
✓ Materials accounting statistics and reported release levels
✓ Increased efficiency in the use of input materials and energy.

Measures for product oriented initiatives will also evolve from output measures, such as labels improved, products redesigned, etc. to outcome measures such as:

✓ Market penetration of green products
✓ Reduced poisoning incident reporting and others.

Impact Measures

✓ Could use case-control studies to show effects of pollution prevention practices. For example, could choose either randomly selected industries or paired groups of industries to compare the effects of with or without pollution prevention practices.
✓ Process and technology innovation.
✓ Reduced manufacturing costs and materials.

OBJECTIVE 6.4: Achieve Cleaner and More Cost-Effective Practices

(Supports Agency Goal 6: Reduction of Global and Cross-Border Environmental Risks)

By 2005, reduce the risks to U.S. human health and ecosystems from selected toxics that circulate in the environment at global and regional scales, consistent with international obligations.

Importance of This Objective

Many human health and environmental risks to the American public originate outside our borders. Ecosystems and transboundary pollutants transcend international boundaries. Even in remote Antarctica, indigenous species have significant levels of industrial chemicals such as PCBs in their body tissues. Reducing pollution around the world brings benefits back to the U.S. and as a result EPA is committed to reducing pollution globally.

Persistent organic pollutant (POPs) of concern are those which are persistent, toxic, and bioaccumulative and which pose an international threat to human health or the environment when transported across international boundaries. A series of international negotiations has been underway to complete various legally binding agreements for the elimination and/or control of specified POPs. Along with other EPA offices and U.S. government agencies, the Office of Prevention, Pesticides and Toxic Substances (OPPTS) recently concluded negotiations on a regional POPs protocol to the United Nations Economic Commission for Europe's (UNECE) Convention on Long-Range Transboundary Air Pollution (LRTAP). The LRTAP POPs protocol will result in banning or severely restricting the production and/or use of 16 industrial chemicals, pesticides and unintentional combustion byproducts. The protocol also contains a number of provisions concerning emission release restrictions, monitoring and reporting, microcontaminant issues, and waste and stockpile management and disposal issues. The non-pesticide chemicals addressed by this protocol are PCBs, PAHs, dioxins, furans and hexabromobiphenyl. The U.S. intends to sign the LRTAP POPs Protocol in late June 1998. The United Nations Environment Program (UNEP) will begin negotiations on a legally binding global POPs convention in late June 1998, focusing initially on 12 POPs, all of which are covered in the LRTAP POPs protocol. Negotiations are scheduled to conclude in the year 2000.

To facilitate information exchange and decision making on export and import of banned or severely restricted chemicals among countries, OPPT has supported the development of a legally binding agreement, commonly called the Prior Informed Consent (PIC) procedure. The PIC agreement will give importing countries the opportunity to decide whether they wish to permit import of PIC listed substances. It also includes provisions for export notification and labeling.

International harmonization of test guidelines[4] is designed, in part, to reduce the burden on chemical companies of repeated testing while expanding the universe of toxic chemicals for which needed testing information is available by fostering efficiency in international information exchange and mutual international acceptance of chemical test data. OPPT has published 97 guidelines in the areas of physical chemistry, ecotoxicity, environmental fate, and human health. OECD has published 77 guidelines in the same four areas. In the Pesticides Program a total of 170 test guidelines have been published which include guidelines for the above four areas and for other specific requirements for the evaluation of pesticides (e.g., product identity, composition, application exposure).

Presently, all of the physical/chemical properties and environmental fate guidelines, 30 health effects guidelines and six ecotoxicity test guidelines have been harmonized between EPA and OECD. Ten health effects guidelines and 13

[4] Test Guidelines are a collection of methods for testing chemicals and chemical preparations, such as pesticides and pharmaceuticals. The purpose of the testing is to assess hazard or toxicity. Each Test Guideline provides instructions on how a specific type of test should be performed.

ecotoxicity guidelines have been harmonized between OPPTS' Toxics and Pesticides Programs. Some of these OPPTS test guidelines incorporate recent and significant advances in the scientific knowledge and methodologies compared with older existing OECD guidelines, particularly in the areas of neurotoxicity, developmental neurotoxicity, and developmental and reproductive biology. OPPT is currently leading the effort to harmonize these improved guidelines with OECD.

Pollutant Release and Transfer Registries (PRTRs) is the international term for emissions inventories. The Toxic Release Inventory (TRI) is the United States' version of a PRTR. International attention focused on PRTRs in 1992 when the U.S.leadership prompted the Earth Summit in Rio de Janeiro to encourage all nations to establish these systems as an integral role in the sound management of chemicals. In North America, all three North American Free Trade Agreement (NAFTA) nations, Canada, the United States, and Mexico, have established emissions inventories. There are currently eight nations with PRTRs, and many more that are in the process of developing them. Still, more countries have expressed an interest in developing such an inventory. Fostering the public's right-to-know in other countries can help reduce pollution generated in these countries, just as it has in the United States.

Sub-Objective

6.4.1: By 2005, regional and global international agreements will be concluded and signed to reduce risks associated with selected persistent organic pollutants and to establish a binding import-related Prior Informed Consent regime; the U.S. will complete work on 100 international test guidelines as part of efforts coordinated by the OECD to harmonize chemical test guidelines; and the United States, Canada, and Mexico will substantially harmonize their domestic Pollutant Release and Transfer Registers and will encourage public right-to-know about toxic chemical releases and transfers in other countries.

What Will Be Accomplished

International agreements on POPs will be concluded and signed in 1998 at the regional level and are expected to be concluded and signed in 2000 at the global level. By 2005, OPPT will have harmonized all of its environmental toxicity, health effects and fate guidelines with other participating Federal agencies and with the international community via the OECD. By 2005 we expect that all OECD countries will not only have developed Pollutant Release and Transfer Registries, but that these inventories will be fully operational. In addition to being used for community right to know purposes, as they are currently used in this country, these registries will be used to monitor the progress countries make in complying with international agreements, such as the Montreal Protocol (CFC production), Basel (waste transfer agreements), and the global and LRTAP POPs agreements. With the encouragement and direction of national governments, industries worldwide will be in a better position to ensure that human health and the environment are well protected.

Strategies for How This Objective Will Be Achieved

To reach the agreement on PICs and POPs, OPPT has been and must continue to be involved with other EPA offices, Federal agencies, and external stakeholders, such as Congressional staff, industry, and environmental groups, to convey the U.S. approach and our concerns. We need to ensure that the list of chemicals and the criteria and process for evaluating future chemicals are based on sound science.

For test guideline harmonization, OPPT will continue to cooperate closely with other Federal agencies and OECD in harmonizing its testing guidelines to reduce the burden to the regulated industry in satisfying the regulatory requirements of different jurisdictions both within the United States and internationally. OPPT serves as a major source of scientific expertise and review in updating guidelines with the OECD.

OPPT remains involved at all levels of the PRTR effort. This involvement includes country-to-country talks and active participation in international meetings and workshops. OPPT works actively with the OECD, United Nations Institute for Training and Research (UNITAR), and the PRTR Coordination Workgroup on ways to facilitate the public's right-to-know and the importance of collecting data on air, water, land, and off-site transfers. As the OECD takes steps to integrate PRTR data with risk assessment and risk management activities, OPPT will participate to ensure that the resulting decisions meet EPA objectives. To help foster the public's right-to-know around the world OPPT will help nations develop PRTRs, providing financial or technical assistance.

Performance Measures

The following are examples of some of the measures that OPPT plans to use (or is considering using) to evaluate the progress it makes under Objective 6.4. The measures fall into three broad categories:

- Output measures (which track immediate results of program activities)
- Outcome measures (which are geared toward longer-term environmental or program results)
- Impact measures (which reflect indirect effects such as jobs created, costs avoided or reduced, and innovations in technology or approach)

Output Measures

✓ Number of international agreements reached and implemented to control toxic chemical pollutants.
✓ Number of guidelines harmonized with OPP, other Federal agencies, and the OECD.
✓ Progress made on harmonization of PRTRs among U.S., Canada, and Mexico.
✓ Assistance provided to other countries in the establishment of PRTRs.

Outcome Measures

✓ The quantity of toxic chemicals manufactured and released internationally and cross-boundary.
✓ Regulated industry has simplified testing requirements, with unified guidelines that are acceptable to a wide spectrum of Federal agencies and countries.

Impact Measures

✓ Unified guidelines acceptable to a wide spectrum of Federal agencies and countries will result in less confusion among regulated industries, increase efficiency in collecting test data and in assessing risk, avoid duplication of effort, save animal lives and expense.

OBJECTIVE 7.2: Improve Public's Ability to Reduce Exposure

(Supports Agency Goal 7: Expansion of Americans' Right to Know About Their Environment)

By 2005, EPA will improve the ability of the public to reduce exposure to specific environmental and public health risks by making current, accurate substance-specific information widely and easily accessible.

Importance of This Objective

The full and active participation of the American public and their communities in environmental priority setting, risk reduction and remediation and both short and long term environmental planning is an essential part of a comprehensive national approach to environmental protection. In many cases, especially those that are focused in a specific geographic location, informed citizens and their communities can better assess the relative severity of environmental risks, the opportunities for prevention or remediation, and the trade-offs and uncertainties that underlie many environmental decisions. Communities which have access to the information and data which characterize potential risks from chemical use and industrial facilities within their boundaries, are in a far superior position to make decisions about their day to day activities.

To be successful in assuring that communities can ensure environmental protection for themselves and their families, they need to have rapid and convenient access to environmental information that is local, relevant, and comprehensive. The data must be timely, easily understood, and easily accessible. For relevance, we must identify our customer information needs and tailor our data collection and dissemination accordingly. For comprehensiveness, a goal for EPA is to continue to identify information gaps that reduce the ability of the public to make sound environmental decisions. Gaps could be associated with specific pesticides and chemicals, specific industrial sectors or specific data elements.

Under the Emergency Planning and Community Right-To-Know Act (EPCRA), OPPT has successfully provided the public with valuable chemical release data through the Toxic Release Inventory (TRI). EPA has recently expanded the Toxics Release Inventory by adding seven new industry sectors and by nearly doubling the number of reportable chemicals; the goal of these actions was to provide an expanded picture of industrial releases and transfers so the public has a more informed understanding of potential risks.

EPA is actively seeking to integrate all relevant sources of data and information on a facility specific basis, coordinating and integrating across Agency data bases where appropriate. OPPT is working towards streamlining the operations for data reporting, integration, processing, and dissemination by taking advantage of advanced information technologies so that data are provided in a timely manner.

Sub-objectives

7.2.1: Annually, EPA will process 110,000 facility reports (Form R's, of the Toxics Release Inventory). EPA will provide TRI chemical data and evaluation tools to the public. Communities will have the ability to evaluate potential risks for themselves. The TRI data will be presented in forms, both substantive and computer formats, that individuals can use.

7.2.2: By 2005, Pesticide, TSCA, Water and other environmental information and tools will be available to all communities and citizens, through the Internet, outreach efforts, and consumer confidence reports, to help make informed choices about their local environment, including where to live and work, and what potential exposures are acceptable; and to assess the general environmental health of themselves and their families.

What Will Be Accomplished

By 2005, OPPT expects major environmental information will be accessible to most communities within the nation. Any person who desires to access the information can use various means, including pamphlets, on-site visits, library, CD-ROMs, hotlines, or Internet, to obtain the needed information. As the technology continues to advance, OPPT will move toward making information easily accessible electronically and make the information understandable and useful to average Americans.

By 2005, people who log onto the Internet will be able to find out chemical-specific releases and aggregate data on non-point sources of pollution around their neighborhoods and potential hazards associated with the releases, major environmental problems existing within their communities, the air quality and water quality of their neighborhoods, and how to avoid dangers of using household chemical products. Of course, this type of information will not be limited to those households with personal computers. For people who lack the electronic access capability, OPPT will proactively make the information available to them.

EPA will actively assist communities bearing high environmental stresses in solving their problems. We will build on the concept of government working with communities, not for communities. OPPT's role, in partnership with the EPA Regions, is to stimulate and nurture the development of community capacity in assessing and managing the risks themselves. We will transfer our knowledge and scientific tools to all the relevant parties working toward the community environmental goals. As catalyst, we will also work with the stakeholders at all levels to help them reach common goals. This is a prime area for EPA Regional involvement, as the Regions have a great deal of experience in working with states, tribes and communities on environmental problem solving.

Strategies for How This Objective Will Be Achieved

(1) Improve and Increase Education Opportunities

Providing information and data is just one component of an effective strategy to expand the public's right to know about their environment. EPA will assure that training and education materials and programs keep pace with the information and data that the Agency provides to the public. Communities will be given not only data but the tools, the training and the assistance to use that data in a way that helps every citizen to make informed environmental decisions.

Through OPPT's Community Based Environmental Programs (CBEP) we are performing pilot cumulative risk assessments in communities to develop an effective model of conducting assessments for other communities. The information and tools will enhance the public's ability to address the areas of greatest concern for their communities.

OPPT will work with local communities in an effort to build capacity for environmental information identification and resolution of environmental problems.

EPA will support and encourage the interdisciplinary environmental education programs of state and local governments, schools and universities, and non-profit organizations through grants, teacher training, internships, and national recognition of outstanding efforts and model programs. EPA will build stronger partnerships with other governmental organizations and with the private sector to improve public understanding of the role of science in environmental decision-making.

(2) Identify Customer Information Needs

The successful implementation of the TRI program, building on the concept of right-to-know, has greatly expanded the availability of chemical release information to the public. The program has encouraged citizens and

communities to become active participants in environmental decision-making. Besides the national data collection and dissemination, OPPT will emphasize the application of TRI data for local environmental situations. For example, EPA is currently implementing a pilot in Baltimore, where TRI data are used in conjunction with other EPA, State, and local information to establish priorities among the multitude of environmental challenges the community faces. Factors such as volume of local releases of specific chemicals and location of such releases (proximity to schools, etc.) play a significant role in the discussions among the community's stakeholders. To make this really work, OPPT recognizes the need to improve its community and industry relations.

OPPT will conduct surveys among TRI users including the EPA Regional Offices, states, industry, environmental groups, community decision-makers, and the general public. In communities, the national EMPACT initiative will drastically change the focus for OPPT in disseminating information. It sets a framework for OPPT to assess community usage of TRI information and at the same time, speeds up the process for OPPT to gather community needs on other chemical-specific information. OPPT and the EPA Regions will assume a leadership role for helping communities identify the needed information currently not available within the EPA and devise alternative methods to collect the data at the community level.

3) Improve and Increase Environmental Information

OPPT will take steps to expand the scope and depth of information available from TRI. Examples include initiatives to review chemicals that presently are not on the TRI list, to assess the need to include additional industrial sectors and to evaluate the need for more in-depth chemical use data. Specifically, in 1999 OPPT will propose a rule to expand the TRI list by adding persistent, bioaccumulative and toxic chemicals (PBTs) that are not currently listed. In addition, OPPT will lower the reporting threshold for certain chemicals, such as PBTs, to assure that the public has information on chemicals that may be highly toxic but are manufactured, processed, or used in lower volumes. These refinements to TRI will assure the public has more comprehensive information.

OPPT will incorporate other chemical data and health effects information into the TRI Public Data Release reports in order to supplement the current information, thereby providing a broader environmental picture for local communities.

OPPT will ensure the integrity of TRI environmental information through compliance assistance outreach to the regulated industries.

(4) Improve and Increase Access to Information

A key component of improving public access is the consolidation of information provided to EPA under a variety of statutory and regulatory authorities. EPA's one-stop access and reporting initiative strives to fashion an unambiguous way to identify facilities; consolidate EPA information collections on environmental use and releases, transfers, and emissions as much as possible; and otherwise re-engineer the way in which reporting is accomplished. At the same time, EPA is working to create a single, clear, and easy-to-use point of public access to the Agency's environmental data holdings.

EPA will build partnerships with state, tribal, and local governments and nongovernmental organizations to ensure that environmental information is widely available. EPA will upgrade the electronic distribution of environmental information by significantly expanding the type and amount of information on the Internet, and by providing easy access to data. For example, communities will be able to access via the Internet information such as TRI, and pollution prevention data to assist in environmental problems in their areas.

Performance Measures

The following are examples of some of the measures that OPPT plans to use (or is considering using) to evaluate the progress it makes under Objective 7.2. The measures fall into three broad categories:

- Output measures (which track immediate results of program activities)
- Outcome measures (which are geared toward longer-term environmental or program results)
- Impact measures (which reflect indirect effects such as jobs created, costs avoided or reduced, and innovations in technology or approach)

Output Measures

✓ Number and timeliness of processing TRI Form R's.
✓ Number and timeliness of rules proposed, promulgated, or amended.
✓ Systems (including TRI) integration, standardization, processing, reporting and maintenance.
✓ Comprehensiveness of information and tools provided to the public.
- Number of toxic chemicals, particularly PBTs
- Number of facilities
- Coverage of industrial categories
- Tools and methods
- Summary data on non-point source contribution to total pollution.
✓ Quality (including accuracy, validity), timeliness, accessibility, and user friendliness of information and tools.
✓ Customer survey on information needs
✓ Community assistance and outreach activities.

Outcome Measures

✓ Percentage of users satisfied with the information and tools provided.
✓ Number of people accessing OPPT information.
✓ Number of entities served through community assistance and outreach activities
✓ Number of TRI reporters reached through compliance assistance to regulated industries
✓ Improved environmental conditions (as defined by local communities) -- these might include, for example, reduced levels of toxic pollutants, fewer fish kills, reduced exposure to lead-based paint in housing, and improvements in air or water quality.

Impact Measures

✓ Improved technological capabilities within communities, e.g., more PCs, more training on Internet
✓ More jobs created.
✓ Increased visits to EPA websites
✓ Increased awareness of TRI reporting requirements by industry