CLEAN TECHNOLOGY, DECEMBER, 1997, 3(2) pp 1-12

Using Volunteer Programs to Encourage the Adoption of Clean Technologies in the United States

Harry M. Freeman

Director, Louisiana Environmental Leadership Pollution Prevention Program

University of New Orleans

New Orleans, Louisiana 70148

ABSTRACT : The paper reviews the movement in the United States to supplement environmental regulations with volunteer programs that encourage institutions and industry to go beyond compliance to achieve greater reductions in their waste and emissions than might otherwise be accomplished through the exclusive reliance on increasingly rigorous "end of the pipe" regulations. These volunteer programs have as a common element the encouragement of "pollution prevention" as a preferable strategy. Pollution prevention is a term used in the US to describe strategies, technologies, policies, etc. that focus on eliminating waste and emissions at the source rather than just treating and controlling them. In some countries the term "Clean Technologies" is used rather than pollution prevention. In the paper the author reviews selected voluntary programs and reports on accomplishments to date for those programs.

BACKGROUND

Although the encouragement of technologies and strategies to reduce waste and pollution to improve competitiveness and profitability has a history extending from the beginning of the industrial age, the encouragement of such approaches in lieu of end of the pipe treatment and disposal processes has a much shorter history. A review of the environmental literature prior to the mid 80's reveals that not much was then being written about pollution prevention approaches. It was in the 80's that attention in the US began to turn to encouraging the reduction of waste streams rather than just dealing with them. The then EPA Administrator reflecting current thinking stated, "We have learned the inherent limitations of treating and burying wastes. A problem solved in one part of the environment may become a new problem in another part. We must curtail pollution closer to its point of origin so that it is not transferred from place to place. We must consider the full range of prevention options--from greater energy efficiency to stronger incentives for producing less harmful substances to expanded recycling to natural resource conservation. Pollution prevention means a massive change in America's habits of waste generation and disposal, as well as other changes in our production and consumption practices that must become second nature to all of us."

Because of such high level interest, the popularity of pollution prevention as a strategy of preference of solving environmental problems soared. In October of 1990, President Bush highlighted a new regulatory agenda when he stated, "Environmental programs that focus on the end of the pipe or the top of the stack, on cleaning up after the damage is done, are no longer adequate. We need new policies, technologies and processes that prevent or minimize pollution--that stop

it from being created in the first place." With this address, the President further identified the 1990s as the decade of "pollution prevention"; an era to be characterized by a rethinking and restructuring of industrial policies and regulatory attitudes towards environmental protection.

A continuing discussion that has accompanied the "pollution prevention revolution" in the United States has centered around whether innovative approaches to eliminating pollution are best achieved through regulations are through voluntary programs that offer benefits in return for waste reduction. Rather persuasive cases can be made for both options. Since 1990, several voluntary pollution prevention programs have been initiated to provide some hard data on the potentials and limitations of this approach to improving environmental quality. In this paper we will review several of these programs.

Pollution Prevention Defined

Pollution prevention is the reduction or elimination of pollution at the source (source reduction) instead of at the end-of-the-pipe or stack. Pollution prevention occurs when raw materials, water, energy and other resources are utilized more efficiently, when less harmful substances are substituted for hazardous ones, and when toxic substances are eliminated from the production process. By reducing the use and production of hazardous substances, and by operating more efficiently we protect human health, strengthen our economic wellbeing, and preserve the environment.

Economic Incentives for Pollution Prevention

Adopting pollution prevention practices and techniques often benefits industry by lowering a company's operational and environmental compliance costs. By preventing the generation of waste, P2 can also reduce or eliminate longterm liabilities and cleanup costs. Furthermore, disposal costs are reduced when the volume of waste is decreased. This can also lead to a reduction in workplace exposures to hazardous materials which can affect workers' health and hence, their productivity. If less waste is produced, there will also be a diminished need for onsite storage space. Furthermore, by preventing pollution there will be a greater likelihood that a company will be in compliance with local, state, and federal compliance statutes. Finally, as community pillars, businesses shoulder an important responsibility for protecting the environment and natural resources for their own good as well as that of society.

Federal Pollution Prevention Legislation

The Federal Pollution Prevention Act, signed into law in the United States in November, 1990 establishes pollution prevention as a national objective. The Act defines pollution prevention as source reduction, any practice which reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants. The term includes the following: 1) Equipment modernizations and modifications; 2) Improved Maintenance; 3)Improved operator practices; 4) Inventory Control; 5) Process and/or product modifications 6) Substitution; and 7) Inprocess recycling. These processes are all considered pollution prevention (P2) as they reduce the amount of materials at the source. The Pollution Prevention Act provided legislative and philosophical support for initiating voluntary pollution prevention programs.

Voluntary Programs

Over the last several years, an important change has taken place in the national strategy for protecting the environment. Through an array of partnership programs that are collectively referred to as Partners for the Environment, the United States Environmental Protection Agency (EPA) has initiated many new

programs to demonstrate that voluntary goals and commitments can contribute to achieving environmental quality improvements in a timely and cost-effective way. In addition to traditional approaches to environmental protection, EPA is building cooperative partnerships with a variety of groups, including small and large businesses, citizen groups, state and local governments, universities and trade associations.

According to the EPA, the results of the Partners for the Environment effort so far are impressive. Thousands of organizations are working cooperatively with EPA to set and reach environmental goals such as conserving water and energy, and reducing greenhouse gases, toxic emissions, solid wastes, indoor air pollution, and pesticide risk. These partners are achieving measurable environmental results often more quickly and with lower costs than would be the case with regulatory approaches. EPA views these partnership efforts as key to the future success of environmental protection.

In this paper we review the seven programs listed below as examples of US programs designed to further the pollution prevention agenda through voluntary actions.

The 33/50 Program
The Climate Wise Recognition Program
Design for the Environment
Energy Star Office Equipment
Green Lights
Waste Minimization National Plan

WASTEWISE

And, we also review one state program, the Louisiana Environmental Leadership Pollution Prevention Program.

33/50 Program

The 33/50 program was established in 1991 -- the first major EPA voluntary pollution prevention reduction initiative. EPA challenged corporate America to reduce toxic emissions through whatever methods were appropriate, but to consider and adopt pollution prevention whenever possible.

Corporate America responded to a letter from the Administrator of the EPA requesting their commitment to participate in the program with 1,300 individual commitments, which identified and quantified each company's chemical emission reduction goals. Taken together, the 33/50 commitments became voluntary pledges to reduce pollution across the nation. They were the sole requirement for participating in the 33/50 Program. No new paperwork--just partnerships between government and industry.

The 33/50 Program set national priorities for preventing chemical releases to the environment by targeting 1.5 billion pounds of 17 priority pollutants reported to TRI in 1988 for reduction by 33% in 1992 and 50% in 1995. The 33/50 target chemicals were selected on the basis of relative toxicity, volumes of use and potential for reduction through pollution prevention:

33/50 Target Chemicals

Benzene
Cadmium & compounds
Carbon tetrachloride
Chloroform
Chromium and compounds
Cyanide compounds
Dichloromethane
Lead & compounds
Mercury & compounds
Methyl ethyl ketone
Methyl isobutyl ketone
Nickel & compounds
Tetrachloroethylene
Toluene
1,1,1-Trichloroethane
Trichloroethylene Xylenes

In return for 33/50 commitment letters, EPA acknowledged each company with a certificate of appreciation for voluntary participation. These

certificates were sometimes used to launch new product lines or as bargaining chips in vendor selection preference. Positive public recognition effectively reinforced sound environmental stewardship. The nonregulatory and nonconfrontational approach of 33/50 encouraged government and industry to partner for environmental problemsolving.

Results

Since initiation of the 33/50 program in 1991 nearly 700 million pounds of toxic waste is no longer burned, buried, flushed or transported to treatment, disposal or recovery plants each year. According to the 1993 Toxic Release Inventory Reports, the 33/50 program showed progress at the 46 percent mark just 4 percent shy of the national goal set for 1995. Moreover, the 1993 TRI reports show 33/50 companies reducing toxic emissions at 3 times the rate of other companies reporting to TRI. Clearly, partnerships can be used as an effective supplement to command -and-control regulations.

In evaluating the success of the 33/50 Program, EPA stated, "1995 has come and gone, and the 33/50 Program's ultimate 50% pollution reduction goal was achieved one year ahead of schedule. Industries' efforts to meet 33/50's challenges have been completed in many casesthough many companies have set environmental goals extending into the future. Others will use the momentum gained through 33/50 program participation to continue with their own voluntary pollution reduction efforts."

Climate Wise Recognition Program

In 1993, EPA and the Department of Energy (DOE) formed a unique partnership that led the following year to the launching of Climate Wise--a voluntary program that encourages industry to adopt flexible, comprehensive approaches to reducing greenhouse gas emissions. Climate Wise is a key part of the nation's Climate Change Action Plan and reinforces and supports provisions of the 1993 Energy Policy Act.

Through Climate Wise, participants develop a comprehensive portfolio of emissions reduction actions that protect the environment, save money, and improve productivity. The program provides technical assistance and puts companies in touch with financial services to "jump start" energy efficiency and pollution prevention actions. Shifting the focus from specific technologies to performance, Climate Wise allows companies to pursue common sense approaches to achieving environmental and economic results.

Climate Wise helps companies turn energy efficiency and pollution prevention into a corporate asset. The program has three goals:

- Encourage the immediate reduction of energy use and greenhouse gas emissions in the industrial sector through cost-effective, flexible actions
- Change the way companies view and manage for environmental performance by demonstrating the economic and productivity gains associated with "lean and clean" management
- Foster innovation by allowing participants to identify the actions that make the most sense fo their organization.

Partners sign on by completing a Climate Wise Partnership Agreement, a simple one page form that asks companies to:

- Designate a Climate Wise contact and program manager
- Establish a process for identifying and implementing cost-effective energy efficiency and pollution prevention actions
- Submit a Climate Wise Action Plan within 6 months of joining

The Climate Wise Action Plan is a corporate strategy for achieving environmental and economic results. Partners have an opportunity each year to update or revise their plan to replace or revise individual actions while maintaining or exceeding the

original emissions reductions targets.

Climate Wise companies save money, receive technical assistance and support for identifying financing options, meet and work with other leading industries and select service providers, and receive public recognition that demonstrates environmental leadership and performance.

Results to Date

There are currently over 300 US companies participating in the Climate Wise Program representing a cross section of American industry, and an estimated 7% of US industrial energy use. Each company's program varies reflecting the products and organization of the company. For example, Dupont, a chemical manufacturer the is the 10th largest US company, estimates that its actions will reduce greenhouse gas emissions equivalent to 18 million metric tons of carbon dioxide by the year 2000. DuPont's energy efficiency improvements include switching boiler fuels, improving steam balance, decreasing waste heat, and optimizing system performance in aeration boilers.

Georgia Pacific, one of the largest US producers of paper and building products, is establishing energy management teams, upgrading boiler controls and operations, reducing waste wood sent to landfills, and increasing carbon sequestration through forestry programs.

General Motors, a manufacturer of cars and trucks one of the worlds largest companies, is reducing more than 200,000 metric tons per year of carbon dioxide by switching from coal to natural gas at five steam generating facilities. The first of eleven facility energy audits has identified procedural changes and projects saving almost 20% of total energy usage.

Design for the Environment

The Design for the Environment (DfE) program was created in 1991 to promote the incorporation of environmental considerations into the design and redesign of products, processes, and technical and management systems. By consciously designing for the environment, the program aims to encourage pollution prevention and efficient risk reduction in a wide variety of activities. Under the DfE program, EPA works through voluntary partnerships with industry, professional organizations, state and local governments, other federal agencies, and the public, including environmental and community groups.

The DfE Program aims to turn pollution prevention into both a corporate and environmental asset, by helping businesses incorporate environmental considerations into the design and redesign of products, processes, and technical and management systems. The program has three goals:

- Encourage voluntary reduction of the use of specific hazardous chemicals by businesses, governments, and other organizations through actual design or redesign of products, processes, and technical and management systems.
- Change the way businesses, governments and other organizations view and manage for environmental protection by demonstrating the benefits of incorporating environmental considerations into the up-front design and redesign of products, processes, and technical and management systems.
- Develop effective voluntary partnerships with businesses, labor organizations, government agencies, and environmental/community groups to implement DfE projects and other pollution prevention activities.

DfE projects include three distinct project types:

- Institutional projects are aimed at changing specific aspects of general business practices in order to remove barriers to and provide positive incentives for businesses and other organizations to undertake environmental design and pollution prevention efforts.
- Cooperative industry projects are joint efforts with trade associations and businesses in specific industries to assist businesses in selecting more environmentally-sound products, processes and

technologies, especially through provision of easily-accessible information on the comparative risks, performance, and costs of alternatives to currently used chemicals.

• Cooperative government projects are joint efforts with government organizations to promote the use of environmentally-preferred products by government organizations.

Examples of DfE Projects

Some examples of current DfE projects are highlighted below:

• *Green Chemistry Program/Challenge*: Many of the traditional synthetic pathways used in chemical design result in the creation of hazardous and toxic products and by products. The Green Chemistry Program is working collaboratively with chemists in academia, industry and government to encourage the design and redesign of chemical products and processes so as to minimize adverse impacts on human health and the environment. This program also includes a competitive recognition component which recognizes and promotes fundamental breakthroughs in chemistry that accomplish pollution prevention through source reduction, and that are useful to industry.

• *Printed Wiring Board Project*: The printed wiring board (PWB) is the building block of the electronics industry; it is the underlying link between semiconductors, computer chips and other electronic circuitry. The PWB's manufacturing process requires substantial amounts of water, energy and some toxic chemicals that may pose environmental and health risks. To address these issues, the cooperative DfE PWB project was formed to develop pollution prevention information to facilitate the evaluation and implementation of alternative materials, processes, and technologies. Specifically, the project is developing a Cleaner Technology Substitutes Assessment for the "making holes conductive" step of PWB manufacturing as well as outreach strategies and information products to communicate project results to the PWB industry.

• *Lean Aircraft Initiative*: EPA joined with the U.S. Air force and twenty of the major U.S. aerospace companies to identify, develop, and test options for streamlining the entire process of aircraft design, manufacture, use, maintenance, and disposal, with the goal of improving the competitive posture of the U.S. aerospace industry while simultaneously incorporating pollution prevention strategies and technology into all phases of the aircraft life cycle. Waste minimization and toxics use reduction are key components of the project. Because the goal of the project is to fundamentally change the entire process of designing and building aircraft, it provides a unique opportunity to incorporate Design for the Environment and sustainable development principles into competitive practices across an entire industry. Individual companies have already implemented pilot projects in solvent use reduction.

Energy Star Office Equipment

Research has shown that much of the electricity consumed by office equipment is wasted. EPA's Energy Star Office Equipment program is a voluntary program for computer and office equipment manufacturers. They are asked to develop desktop computers, monitors, printers, fax machines and copiers that can power-down while not in use. Energy Star Office Equipment can reduce energy consumption by approximately 50 percent.

A Presidential Executive Order, in effect since October, 1993, directs U.S. agencies to purchase only desktop computers, monitors, and printers that meet EPA Energy Star guidelines for energy efficiency. This Executive Order should save taxpayers $40 million annually. EPA urges private and other public organizations to commit to a similar Energy Star purchasing policy.

Computer manufacturers agree to produce personal computers and monitors capable of achieving a low-power state during times of inactivity. EPA defines a "low power state" as less than or equal to 30 Watts for either the computer or the monitor. Similarly,

Printer and Fax Partners agree to manufacture equipment capable of entering a low-power state. Copier manufacturers agree to produce copiers that automatically turn off when not in use. Larger copiers are also set with double-sided copying as the default mode. This saves paper and helps reduce waste sent to landfills.

Energy Star Partners selling compliant products may use the Energy StarSM logo to label their equipment. Partners may also promote their efficient products by using the logo in advertisements, brochures and catalogues.

The US EPA is considering a proposal from the European Union (EU) to enter an intergovernmental agreement regarding the Energy Star Office equipment. Any final agreement would involve three parties: the US EPA, the EU, and Japan. The discussants agree that even though important issue s regarding the management of the program by three organizations need to be resolved, that one set of internationally recognized energy efficiency specifications is something that should be pursued.

Green Lights

The program's goal is to prevent pollution by encouraging U.S. institutions to use energy-efficient lighting technologies. Green Lights was officially launched on January 16, 1991. There were originally 39 Charter members from major U.S. corporations, but today the partnership has expanded to include public and private organizations of all sizes. There are small and medium-sized businesses; federal, state, and local governments; non-profit groups; schools; universities; and health care facilities. EPA has also developed a series of Ally Programs with the lighting industry and an Endorser Program with organizations that help promote the Green Lights ideas.

There are currently over 1,900 participants in the program, representing over 5 billion square feet of facility space. Participants are required to survey their domestic facilities and upgrade lighting wherever it is profitable and improves or maintains lighting quality.

A profitable project is one that - on a facility aggregate basis - maximizes energy savings while providing an annualized internal rate of return (IRR) that is greater than 20 percent. This target is a "floor" rather than a "ceiling;" most lighting upgrades yield 20-40 percent IRRs. Participants must complete their lighting upgrades within 5 years.

The Green Lights program is flexible enough to allow organizations to approach implementation in their own ways. A Green Lights Partner typically forms a team which identifies financial needs, conducts trial installations, and develops the 5 year action plan. Green Lights participants are asked to annually appraise EPA of their progress by using a 1-page Green Lights Implementation Report for each of their lighting surveys and upgrade projects. Green Lights is also the first step in the Energy Star Buildings Program.

On average, Green Lights participants are experiencing rates of return of close to 50 percent. These participants are also saving, on average, 50 percent of the energy associated with their lighting. As of 1995, Green Lights participants were currently saving over $100 million per year. They had also reduced their energy consumption by an average of roughly 50 percent.

EPA provides technical assistance including: a decision support software package, lighting upgrade workshops and manuals, a financing registry, and ally programs. EPA recognizes participants for their participation in the program through newsletters, articles, media events, and public service advertisements. Also, EPA encourages participants to take advantage of their own opportunities for public recognition through appropriate use of the Green Lights logo and other materials that can be incorporated into internal communications, public relations, marketing, and advertising.

A recent Green Lights bulletin stated that to date Green Lights participants have cumulatively installed more than 27.5 million energy efficient lamps, and more than 11 million electronic ballasts in completed upgrades

Waste Minimization National Plan

The Waste Minimization National Plan, finalized in November of 1994, promotes a long-term effort to minimize the generation of hazardous constituents in Resource Conservation and Recovery Act (RCRA) wastes by emphasizing source reduction and environmentally sound recycling over waste management. It evolved from both the Hazardous and Solid Waste Amendments of 1984 and the Pollution Prevention Act of 1990, each of which emphasized a national policy to reduce or eliminate the generation of hazardous constituents in waste, rather than managing them after they are generated. The Waste Minimization National Plan promotes the goals of the current Administration's Reinventing Government program in providing flexibility to comply with environmental regulations.

The Plan sets national goals for reducing constituents in hazardous waste that are persistent, bioaccumulative, and/or toxic by 25 percent by the year 2000 and by 50 percent by the year 2005. Generators, whose hazardous wastes contain these hazardous constituents, have flexibility to set their own individual facility goals and baseline years and measure their own progress in a manner that is tailored to the facility involved.

To accomplish these goals, six objectives have been established in the Plan:

Objective 1: Develop a framework for setting national priorities; identify constituents of concern and develop flexible screening tools for identifying priorities at individual facilities.

Objective 2: Promote multimedia environmental benefits and prevent cross-media transfers.

Objective 3: Demonstrate a strong preference for source reduction; shift attention to the nation's hazardous waste generators to reduce hazardous waste generation at its source.

Objective 4: Clearly define and track progress; promote accountability for EPA, states and industry.

Objective 5: Involve citizens in waste minimization implementation decisions.

- Hazardous Waste Generators and hazardous waste managers who are required to comply with hazardous waste regulations.
- Organizations willing to commit to a specific waste minimization goal for persistent, bioaccumulative, and/or toxic (PBT) constituents.
- Government agencies and non governmental organizations (NGOs).

PROGRESS

- Although EPA will be measuring the overall progress toward achieving these goals at a national level, individual organizations will be taking the lead in setting individual goals and measuring their own results.
- While the Waste Minimization National Plan is a relatively new program, Agency efforts are ongoing in helping organizations identify persistent, bioaccumulative and toxic constituents, and methods to minimize these constituents in their waste. The draft report "Setting Priorities for Minimization of Combusted Hazardous Waste," was published in early 1996 to assist organizations in identifying these constituents in wastes managed by combustion.
- An EPA team including headquarters, regional, and state staff has also been assigned to develop hazard-based screening tools to assist stakeholders in identifying their waste minimization priorities for all types of hazardous wastes.
- EPA is working with several EPA regions and states to develop training modules for government officials to successfully encourage pollution prevention at facilities during permitting, inspections, and enforcement discussions.
- Although not components of the Plan, a number of additional resources also will be available in helping organizations meet the Plan's initiatives; some examples include: a metal plating technical report, including detailed descriptions of the wastes generated by metal plating operations and the waste minimization methods currently employed by the United States and other

Organization for Economic Cooperation and Development (OECD) member countries, and; waste minimization practices for selected residuals in the petroleum refinery industry, covering both source reduction and recycling techniques implemented by the petroleum industry.

WastewiSe

WasteWi$e was conceived in the fall of 1992. EPA's research showed that reducing materials used and solid waste generated could save companies money on purchasing, mailing, disposal, labor, and transportation costs. This idea prompted a discussion between EPA and an ad hoc group of business representatives to decide how to structure a voluntary solid waste reduction program. Through consultation with businesses and others, EPA designed a flexible program which allows companies to set their own waste reduction goals based on their circumstances.

WasteWi$e was launched January 1, 1994 with a letter from the EPA Administrator to the Fortune 500 industrial and service companies. Current membership exceeds 400 organizations and includes companies from 35 different business sectors.

Through reducing municipal solid waste, energy and natural resources are conserved, and pollution is prevented. WasteWi$e partners reduce municipal solid waste in three ways:

- Waste prevention (source reduction)
- Collecting recyclables
- Increasing the manufacture or purchase of recycled products

WasteWi$e partners provide EPA with their waste reduction goals and a yearly progress report. Goals are updated each year, although many companies choose to continue implementation of initial goals for more than one year. Company goals must include three significant waste prevention actions, an action to establish or improve a recycling program, and an action to increase the purchase or manufacture of recycled products. Companies may start gradually with a pilot program at a single facility, if desired.

The annual reporting form asks companies to describe what they did during the previous calendar year and provide the following:

- Amount of waste prevented
- Amount of recyclables collected
- Description of buy-recycled activities and example purchases.

Any company, institution, or non-profit organization may join WasteWi$e. Trade associations and other membership organizations may join as Endorsers which promote the program to their members.

Companies have saved millions of dollars through their WasteWiSe activities. Bank of America saved $1 million in 1994 through paper reduction efforts that included two-sided printing of customer statements. NYNEX saved $2.5 million through similar paper reduction efforts. Quaker State is saving $600,000 annually by changing the shape of a bottle to allow more bottles to fit in each carton; this reduces packaging material by 15 percent.

EPA facilitates technical assistance for partner companies through a help line, a newsletter entitled WasteWi$e Update, "how-to" publications, a peer exchange for partners to share information directly, workshops, and a limited number of on-site waste assessments.

EPA provides recognition for outstanding achievements and publicizes program successes through newsletters, press releases and public service announcements. Partners may use the WasteWiSe logo in their own promotion and advertising.

One of the companies recognized by the EPA in 1996 was the very familiar American company, McDonalds headquartered in Oak Brook ,Illinois. McDonalds was recognized for the following outstanding accomplishments:

· Replaced hash brown cartons with hash brown bags. This activity conserved 2.9 million pounds of corrugated and saved McDonalds $3.8 million.

· Reduced the basis weight of sandwich wraps , reducing mixed paper use by 1 million ponds and saving $360,000.

· Reduced the diameter of straws, resulting in lighter weight straw. Eliminated 424,000 pounds of polypropylene and save McDonalds $450,000.

· Reduced low density polyethylene usage by 2.1 million pounds by switching to a redesigned trash bag that is both stronger and thinner.

The Louisiana Environmental Leadership Pollution Prevention Program

The Louisiana Environmental Leadership Pollution Prevention Program is a Louisiana Department of Environmental Quality program begun in August of 1995 to encourage Louisiana industry to volunteer to go beyond compliance to reduce their waste and emissions. Any public or private facility in Louisiana is eligible to participate in the program.

Requirements for Participation in the Program

Any Louisiana facility committed to improving the quality of the environment is eligible to join the Leadership Program at any time. To become a member a facility sends a letter to the Executive Director indicating an intention to join and support for the following Guiding Principles:

· Minimizing impact on human health and the environment should be given top priority in regulatory and business decisions,

· Facilities should have internal environmental management systems to encourage continuous improvements in their environmental performance

· Facilities should use the waste management hierarchy (source reduction, recycling, treatment, and disposal) as guidance for managing environmental issues and for optimizing production processes , and

· Facilities should be proactive in communicating with their neighbors and the larger community regarding environmental matters.

Additionally, the facility must agree to within two months submit to the DEQ a brief plan that highlights and describes reduction goals for waste and emission streams selected by the facility. The facility is encouraged to target those waste streams whose reduction will do the most to reduce risk and enhance the quality of the environment.

Finally, the facility must agree to provide annual updates to the DEQ to allow the tracking of their progress towards achieving their waste reduction goals.

Plans and goals may be modified at any time and not meeting the voluntary goals will not be used by the LaDEQ in and judgmental or punitive manner.

Facilities joining the program receive an acknowledgment certificate from the Secretary of the DEQ. Meetings are held quarterly to explore various pollution prevention topics and issues. The facilities are eligible to participate in the Governor's Pollution Prevention Achievement Awards, an annual competition to recognize exemplary pollution prevention accomplishments by Louisiana companies.

Results

There are currently 60 companies enrolled in the company. These companies have submitted volunteer pollution prevention plans to the DEQ and are participating in periodic meetings to explore ways to increase pollution prevention within the state. The program is viewed within Louisiana as a viable supplement to environmental control regulations based on regulating discharges from the end-of -process pipe.

One example of a pollution prevention plan submitted by a Louisiana facility is that of the Marathon Oil Company in Garyville, LA. A tabular summary of Marathon's goals is shown below :

Waste stream	Baseline Year Quality	Target Year Quality	Comment
Acid Soluble Oil	1994 3,927Tons	1997 0	Refinery eliminated the burning of Acid Soluble Oil
HF Air Emissions	1994 47Tons	1997 0	Refinery eliminated the burning of Acid Soluble Oil
Air Toxics	1995 85Tons	1997 40Tons	Reduction from HF Alky Reboiler
Wastewater Sludge	1995 875Tons	1997 0	Thermal drying to qualify for delisting
Biosolids	1994 5,434Tons	1997 1000Tons	Dewatering prior to land disposal
Volatile Organic Compounds	1994 94Tons	1997 4Tons	Equipment to reduce fugitive air toxics from external tanks

Summary

While voluntary programs can never replace an environmental regulatory system, they can be used to supplement a regulatory system. The programs reviewed in this paper are facilitating the implementation of new and creative approaches to eliminating waste and pollution. For more informtion on the programs reviewed in this paper the reader is referred to the sources outlined in the table below :

33/50

TSCA Assistance Hotline
Phone: 202-554-1404
Monday through Friday
8:30 a.m. - 5:00 p.m. EST.

Office of Pollution Prevention & Toxics
U.S. EPA (7408)
401 M Street, SW
Washington, DC 20460
Phone: 202-260-6907 Fax: 202-401-8142

Climate Wise

Pamela Herman, Climate Wise Co-Director
U.S. EPA (2126)
401 M Street, SW
Washington, DC 20460
Phone: 202-260-4407 Fax: 202-260-0512

Gerald Kotas
U.S. Department of Energy
Office of Energy Efficiency &
Renewable Energy
1000 Independence Ave.
Washington, DC 20585
Phone: 202-586-9220 Fax: 202 586-9260

Design for the Environment (DfE)

U.S. EPA (7406)
401 M Street, SW
Washington, DC 20460
Phone: 202-260-1678

Energy Star Buildings/Green Lights

Green Lights Program Hotline: 202-775-6650
Faxline: 202-233-9659 (for information by fax)
U.S. EPA (6202J)
401 M Street, SW
Washington, DC 20460
Fax: 202-775-6680

Energy Star Programs

Jeanne Briskin
Linda Latham
U.S. EPA (6202J)
401 M Street, SW
Washington, DC 20460
Hotline: 202-775-6650

Waste Minimization National Plan

U.S. EPA (5302W)
401 M Street, SW
Washington, DC 20460
Phone: 703-308-8433 Fax: 703-308-8433

WasteWiSe

WasteWiSe Hotline: 1-800-EPA-WISE
Lynda Wynn
WasteWiSe Program Director
U.S. EPA (5306W)
401 M Street, SW
Washington, DC 20460
Phone: 703-308-7273 Fax: 703-308-868

Louisiana Environmental Leadership Pollution Prevention Program

Rm 804, Engineering Building
University of New Orleans
New Orleans, LA 70148
Phone: 504 280-6072 Fax: 504 280-5586