

# **Strategic Environmental Management in Pennsylvania: New Tools for Gaining Environmental and Economic Efficiencies**

## **Introduction**

The Department of Environmental Protection (DEP) has created this position statement as a framework by which it can assist Pennsylvania businesses and local governments to develop and adopt Strategic Environmental Management practices. These practices can achieve environmental benefits far beyond regulatory compliance while reducing costs, increasing competitiveness and capacity for growth.

Strategic Environmental Management can provide the next generation of tools for synthesizing economic development activities and environmental protection, so important for sustainable development. These tools include environmental management systems, pollution prevention, environmental accounting and life cycle analysis, measurement protocols and performance indicators, and effective community involvement.

Strategic Environmental Management integrates environmental management objectives into an organization's strategic goals to enhance the efficiency and effectiveness of its operations and gain a competitive advantage. It provides a management framework within which most companies and local governments can identify cost-effective actions that maximize their operational efficiency when they strive for zero emissions over time. A Strategic Environmental Management system can improve products, save significant costs, improve production processes, reduce liabilities and waste management costs, enhance market responsiveness, lower insurance premiums, and improve competitiveness, while achieving significant environmental and energy efficiencies.

The development of Strategic Environmental Management is an evolving process that may be initiated in a variety of ways and appropriately built for the organization's objectives. Adoption of a Strategic Environmental Management system that strives for zero emissions over time and is developed in consultation with local community interests can lead to significant performance beyond regulatory compliance, while providing maximum savings and flexibility to businesses and local governments. A zero emissions goal involves the development, design and operation of industrial processes over time to eliminate or minimize process and accidental emissions to the air, water and soil and to efficiently utilize energy and natural resources, and can be addressed by continually refining business practices.

Meaningful public involvement enhances and facilitates continuous improvement. Communities benefit from business and government development of Strategic Environmental Management, including zero emissions goals. Businesses benefit from community and employee comments about pollution prevention priorities early in the Strategic Environmental Management process. Public involvement in an organization's Strategic Environmental Management development can reduce confrontations that often come with a community's perceived conflict between a business's economic viability and environmental quality. Strategic Environmental Management recognizes that economic viability and environmental quality are complementary, not conflicting, goals.

### **An Economic Argument**

The traditional strategy of regulating pollution at the end-of-the-pipe or after the fact has achieved significant environmental improvements -- at a high cost. This "command and control" system, which created piecemeal prescriptive environmental standards with their associated permitting and reporting requirements, has made it increasingly difficult for many companies to keep a competitive edge. Too often, permit requirements do not keep pace with the rate of technological advancement necessary for a company to compete in the global marketplace. Lost opportunities due to permit requirements or permit revisions are not acceptable. It is no longer enough for many companies merely to be in environmental compliance.

Introducing Strategic Environmental Management techniques to small and medium-sized firms in the Commonwealth has tremendous potential for expanding Pennsylvania's economy. It is important that the Department help businesses, particularly small and medium-sized ones, develop Strategic Environmental Management skills. Large firms often have the resources and management systems in place to identify new processes leading to zero-emissions, potential costs savings, and international market share strategies. The same principles and process can also be used by small and medium-sized companies which are structurally more adaptable to change. Strategic Environmental Management can positively assist a business to demonstrate fully its environmental performance to the financial community, decreasing its cost of capital and enhancing its corporate value.

The shift from end-of-pipe solutions to cost-effective, process-oriented solutions through Strategic Environmental Management approaches that reduce or minimize pollution at the source requires a shift in focus by many service industries. Environmental and management consultants, accountants, financial institutions and health and business liability insurers are examples of services that must change. To assist their clients adopt Strategic Environmental Management, environmental consulting firms may need to add technical assistance capacity such as process-oriented environmental expertise and business management specialists to complement their existing environmental experts.

The accounting industry is recognizing the value of environmental accounting techniques that enable a business to track its environmental costs to units of production. Environmental activity-based accounting, a core element of a mature environmental management system, is a powerful management tool for increasing the productivity of a facility over time.

The financial benefits of Strategic Environmental Management flow not only to manufacturers, but also to the public at large. While the environmental, health and safety benefits to the public have not yet been adequately quantified, recent studies indicate that for every dollar manufacturers invested in pollution prevention equipment, between 43 and 54 cents of additional state taxes are realized through income taxes on the increased profits of these businesses. Local governments also benefit from private sector zero emissions goals. Reduced air emissions and reduced discharges to a water treatment system, for example, provide immediate additional capacity for local economic development without having to expand local infrastructure.

### **Engaging Communities is Essential**

Public involvement improvements must accompany technology improvements to successfully implement the new tools of Strategic Environmental Management. Future decisions concerning environmental protection and economic development need to be made through dialogue between the major stakeholders -- businesses and the community whose health and jobs depend upon those businesses.

Characteristics of a community involvement process are: an outreach program that shares with the community what the organization is doing regarding pollution prevention and Strategic Environmental Management; mechanisms the organization can use to involve the community; and a procedure for synthesizing community and organizational goals in order to find constructive solutions to common environmental concerns.

### **ISO 14000**

The Department believes that ISO 14000 is an organizational *tool* useful in implementing Strategic Environmental Management. ISO 14000 can be used as an alternative to the current “command and control” approach to environmental protection and a positive step toward a market-driven zero emissions goal. ISO 14000 can provide a logical way to arrange an environmental management system that can promote efficiencies. However, DEP believes that organizations can further maximize environmental and economic benefits if they incorporate Strategic Environmental Management practices by further emphasizing pollution prevention, community involvement and performance measures as a part of the overall EMS.

ISO stands for the International Organization for Standardization in Geneva, Switzerland. It is a private sector, international standards body that has developed more than 8,000 internationally accepted standards on everything from paper sizes to ATM cards. The standards serve to create a common international language for management. The United States is a member of ISO.

The foundation of ISO system standards is a total quality management (TQM) approach. These standards are process-oriented with a quality product goal. ISO 9000 is the international quality management standard. ISO 14000 is ISO 9000’s equivalent for world-wide *environmental* management standards. (The “14000” number is simply a number series designated by ISO to cover environmental standards.) These various standards are used to evaluate management systems. They do not establish technical guidelines, limits or goals. They do not measure performance. ISO 14000 shares many common management principles with ISO 9000. Organizations can use an existing ISO 9000 system as a basis for ISO 14000 and developing an environmental management system.

The ISO 14001 standard, a subset of the 14000 series of standards, describes the basic requirements of an environmental management system. It is the standard that organizations implement and to which they will either seek third-party registration or self-declare conformance. An ISO 14001 registration will not guarantee that a particular facility has achieved the best possible environmental performance, only that it has put an environmental management system in place. The “continual improvement” mentioned in the standards refers to continual improvement of the management system itself, not environmental performance directly. This is the key distinction between Strategic Environmental Management as advocated by DEP and ISO 14001. An ISO 14001 EMS can provide but does not necessarily need to provide as much detail or emphasis on pollution prevention, community involvement and performance measurement issues as DEP believes is warranted in order to reap the associated benefits discussed in this paper. Because of this distinction, the Key Element Section that follows provides a more detailed comparison between ISO 14001 and Strategic Environmental Management.

# **STRATEGIC ENVIRONMENTAL MANAGEMENT**

## ***Key Elements of Strategic Environmental Management***

DEP suggests that organizations interested in reaping the full environmental and economic benefits of Strategic Environmental Management consider developing and putting in place a strong environmental management system that includes the following characteristics: pollution prevention, community involvement and environmental performance measures.

### ***Environmental Management System***

The foundation of Strategic Environmental Management is a strong environmental management system. The environmental management system envisioned in Strategic Environmental Management is a continual cycle of planning, implementing, reviewing and improving the actions that an organization takes to meet its environmental obligations. Most environmental management system models, including ISO 14001, are built on the “plan, do, check, act” model to ensure that environmental issues are identified, controlled and monitored.

The goal of Strategic Environmental Management is continual environmental improvement through a systematic, communicative management style. An environmental management system typically includes: a written environmental policy with a commitment from top management to superior environmental performance; planning which takes into account environmental inputs and outputs; compliance with legal requirements, objectives and targets and corporate-wide environmental management program; implementation which focuses on structure and responsibility, training and communication for employees, environmental management system documentation and control, operational control and emergency preparedness and response; checking and corrective action which includes monitoring and measurement, corrective and preventive action and regular environmental management system audits; as well as management review.

### ***Pollution Prevention Program***

Strategic Environmental Management emphasizes the value of pollution prevention and calls for it to be a central theme of an organization’s environmental management system. Pollution prevention is generally defined as *source reduction and other practices (such as substitution of non-toxic materials for toxic ones, process changes, and direct reuse or in-process recycling of materials) to reduce or eliminate the creation of pollutants through increased efficiency in the use of raw materials, energy, water, and other resources, or protection of natural resources through conservation.*

#### *Strategic Environmental Management / ISO 14001*

The Department endorses the environmental management concepts specified in ISO 14001, however, this standard does not emphasize the importance of pollutant source reduction. Without this focus on source reduction, an organization may not achieve superior environmental and maximum economic performance. ISO 14001 specifies that an environmental management system should have an environmental policy that includes a commitment to the prevention of pollution. However, ISO 14001’s definition of pollution prevention includes treatment of wastes after they are created losing an important focus on source reduction specifically.

*Pollution Prevention Programs can include:*

- Development of a comprehensive pollution prevention plan with specific goals for continuous environmental improvement including, for example, a thorough assessment of all processes and associated waste streams, sources of waste generation, and opportunities to implement pollution prevention measures to reduce and eliminate waste.
- Employee participation and involvement in the determination and implementation of the pollution prevention plan is always a formula for success. Who knows a process better than the person who works it every day?
- Regular assessments of environmental performance to identify opportunities for continued reduction in waste generation.
- For some, advancement of pollution prevention techniques, methods, and technologies through continued research and development. For others, keeping informed on pollution prevention advancements.

***Community Involvement Program***

Effective community involvement is one of the keys to implementing Strategic Environmental Management. Community involvement can be a valuable component of any organizations' environmental management system and may have many rewards.

Effective community involvement results from a series of straightforward conversations between the management of a particular facility and its community to accomplish one essential objective: a dialogue involving the facility's significant environmental impact decisions and the community's perceptions and reactions so that sufficient trust is fostered to result in changes to operations, processes, continuous environmental improvement and implementation of pollution prevention plans that are meaningful to the community. It does not mean involving the community in business decisions, fiscal matters, proprietary information, or involving the community as de facto outside Board of Director members. This dialogue is one that will foster a sense of accomplishment, ownership, understanding and a stronger sense of community.

Community representatives should be drawn from a sufficient geographic or interest area as the situation merits. In order to identify them, consider an initial meeting, publicly advertised, to which representatives of clearly impacted groups are invited. Representation by interest, pollution medium, geography, age, gender, professional or trade groups and other relevant factors should be taken into account. The purpose, scope and duration of the organization's community involvement activity should be presented, as well as the essential elements of the environmental management system as a context for the undertaking. Announce the anticipated size of the group and that representatives will be considered from those attending the initial meeting. Where the amount of interest exceeds the number of seats at the table, consider asking if individuals or groups will represent multiple interests.

Participants may be local community members, and also individuals who represent broader interests such as the watershed associations, county planning office, conservation districts, and local governments. The most successful way to identify essential participants is to assemble an initial group of community members and then discuss, "Have we captured the community?" or "Are there essential community participants within the broader community not yet identified?". The selection process will vary according

to the needs of an organization and the significant environmental aspects and impacts of the organization. Some will want to employ a consultant, others may use the Department to assist in the process, while others may choose to do it by themselves.

For the sake of analogy, the community should be considered like the layers of an onion; enough layers must be exposed to get at what is necessary. Communities need to be considered as geographic locations, yet must sometimes be considered in terms of interests that, while they may reside elsewhere, have local focus. For the consideration of communities in Strategic Environmental Management, the town involved may be sufficient: however, organizations downstream may have interest in water matters, air deposition of emissions may broaden the geographic range, or employment area may lead to interest from outside the immediate geographic area.

Significant environmental aspects are actions that impact the local environment and community (though they may easily have an impact on a much larger scale as well): for example, emissions and discharges, permits, waste disposal practice, changes in the above, health and safety practices.

Trust changes behavior on both sides. Why is this important? For the past 25 to 30 years, state and federal governments have been set up to judge stewardship of the environment. One of the unfortunate results has been a fractured community. Local government, is not always able, or equipped, to make enough of a difference. Community members seldom have the technical resources they need for the judgments at hand and frequently distrust everyone else who could help them. Business feels as if they are a target under appreciated when they do perform well.

This is a serious matter because a commitment to environmental quality needs the eyes, ears and efforts of all segments of the community to succeed: businesses whose processes and products illustrate their commitment to the environment and, therefore, the larger community; consumers whose purchasing decisions reward those who fulfill that commitment; and government policies that move us forward, not hold us back.

As we succeed in restoring involvement of the business in the community and, as importantly, the community in business, we can attempt to restore the balance and attain what is frequently referred to as sustainable development.

*Strategic Environmental Management / ISO 14001*

Strategic Environmental Management cannot succeed without a strong dialogue within a community about the environmental issues that impact upon the life of the community.

ISO 14001 community participation can be as limited or as broad as an organization chooses. The standard appears to *require* only that the organization's environmental policy be made available to the public. A procedure must be established and maintained to receive, document and respond to "relevant" communication from "external interested parties". The guidance document (14004) accompanying ISO 14001, while mandating "internal communication" leaves the decision whether or not to engage in "external communication" to the discretion of the organization.

*Effective community involvement can include:*

- ➡ Open discussion between businesses and the community in which they are located regarding environmental issues that affect their community;
- ➡ Sharing environmental data openly with the community so the community can discuss issues of concern and business can educate communities about facility activities;
- ➡ Open dialogue through public forums where Strategic Environmental Management can be discussed as a tool to help businesses and communities help each other thrive in a healthy environment;
- ➡ State government serving the process as a catalyst for participation and communication, when requested;
- ➡ Other organizations including businesses, associations, schools, local governments and environmental groups can assist the process of Strategic Environmental Management by holding forums, town meetings and other public discussion opportunities.

***Performance Measures***

Measuring performance is critical in any important endeavor whether it be running a business or managing a government program. *What gets measured gets managed.* General nonmeasurable environmental objectives do not provide an organization with the cold hard numbers necessary to measure financial objectives each quarter. In the case of environmental management, establishing an environmental management system that can help an organization measure its environmental performance is essential. An important distinction must be made between measuring performance and measuring progress in building an environmental management system. It is possible to have a sophisticated environmental management system in place and still not achieve the desired environmental performances. It is important to acknowledge that appropriate performance indicators will vary on a case-by-case basis depending on the size, type and complexity of an organization.

*Strategic Environmental Management / ISO 14001*

Strategic Environmental Management calls for a system of collecting and evaluating an organization's environmental performance. An organization that cannot measure performance, cannot improve it. Measuring environmental performance is essential to attaining this goal. ISO 14001 standards are *process*, not performance, standards. ISO 14001 provides a framework for an environmental management system that may *or may not* include environmental performance measurements.

*Performance measurements could include:*

Environmental Indicators

- ➡ “*Environmental Performance Indicators*” can include measures of emissions of regulated and non-regulated significant environmental aspects, their risk factors, the use of energy and natural resources, accidents and other impacts, normalized to production.

- “*Environmental Condition Indicators*” can measure environmental quality in relation to the organization and its discharges or in a larger (ambient) sense. Such measures substantiate the well being of air, land, water and living things as part of a larger eco-system.
- “*Environmental Compliance Indicators*” specify and describe deficiencies in terms of unauthorized releases and government requirements.

#### Management Process Indicators

- “*Management Framework Indicators*” specify information about the organization’s business plan or management system and the specific practices and tools that are applied to support the system.
- “*Pollution Prevention Indicators*” include pollution prevention performance information and what stakeholders believe are the priority pollution prevention actions.
- “*Cost/Benefit Indicators*” measure the costs and benefits associated with implementing Strategic Environmental Management. This includes those costs and benefits that can be attributed to all stakeholder groups -- business management, employees, community members, customers, and government. The indicators or objectives identified can be both tangible and intangible or quantitative and qualitative in nature.
- “*Community Participation Indicators*” The organization should briefly identify ways it has played a leadership role in appropriately involving the public in the discussion of Pollution Prevention and Strategic Environmental Management goals and objectives, and how it has incorporated public insights and recommendations into the attainment program for Strategic Environmental Management.

#### Stakeholder Involvement Indicators

- “*Stakeholder Involvement Indicators*” convey information about stakeholders level of awareness and involvement in Strategic Environmental Management. Stakeholders may include parties inside and outside the organization who have an interest in the organization’s performance in addressing environmental aspects.

## ***Tools to Support an Evolving Environmental Management System***

Strategic Environmental Management will most likely take place in increments. The Department suggests that putting an environmental management system in place is the first step. The best time to integrate pollution prevention, community participation and performance measurements into an environmental management system is in the beginning. Other helpful tools can be added to the environmental management system as the system itself evolves. These added value tools include environmental accounting and life-cycle analysis.

### ***Environmental Accounting***

The financial benefits that result from the implementation of an environmental management system are also important to capture. Tracking environmental performance and its associated costs and benefits is a key to future business success.

One tool that may prove useful to an evolving environmental management system is a process for identifying the true costs and savings associated with managing the organization's environmental aspects. Environmental accounting principles incorporate environmental cost information into standard accounting practices. Environmentally-related costs normally hidden in general categories, such as overhead accounts, are allocated to the products or processes that generated them. Environmental accounting should factor in all of the environmental costs (direct and indirect) of the product/process--not just the cost of pollution prevention and new equipment. The cost of disposal, potential liability from exceedances or from disposal, cost avoidance, etc., should also be included. These are included in life cycle cost assessment and performance measures, and should be included in the overall accounting system. An environmental accounting system can generate reliable financial data which will enable organizations to:

- Evaluate and compare the total costs of current processes to the total costs of potential alternatives based on pollution prevention and energy efficiency strategies, and assign these costs to units of production.
- Determine the benefits and cost savings associated with investments in pollution prevention through improved measures of profitability such as Payback Period, Net Present Value, or Internal Rate of Return.
- Evaluate potential capital investments using total cost environmental data.
- Identify current and potential environmental liability costs.
- Identify less tangible costs and benefits that can affect an organization's financial standing such as product quality, productivity, market share, stakeholder relations, employee health and safety, and public image.

### ***Life Cycle Analysis***

A second tool that can add value to an organization's environmental management system and is a key element of sustainable development is Life Cycle Analysis (LCA) also referred to by some as product

stewardship. Life Cycle Analysis is a process to evaluate the environmental burdens associated with a product, package, process, or activity by identifying and quantifying energy and material usage and environmental releases throughout the life cycle. A product's life cycle begins with the initial acquisition of raw materials from the ground or water and continues through all stages of processing, manufacturing, distribution, transportation, consumption, and final disposal.

Although the concept of Life Cycle Analysis is still evolving, it is increasingly being recognized as a valuable tool to assist organizations with environmental improvements. By conducting a Life Cycle Analysis, organizations can more effectively develop and substantiate strategies to eliminate or minimize waste associated with their products and processes. Specifically, Life Cycle Analysis can assist an organization to:

- ➡ Assess the impact of energy and material usage and environmental releases.
- ➡ Determine whether a particular material, design, or process will help or hurt the environment relative to other alternatives.
- ➡ Evaluate opportunities for environmental improvements and source reduction strategies.
- ➡ Develop product designs that are more sustainable and environmentally friendly.
- ➡ Enhance credibility with customers and regulators through good product stewardship.

## ***Implementation of Position Statement by DEP***

The concept of Strategic Environmental Management is voluntary and not a regulatory requirement. It has evolved in the private sector, but clearly has benefits for other organizations based on new management principles, that require the awareness, participation and expertise of many industry sectors and the general public. Industry knows that through reengineering its plants and processes it makes itself more competitive on a global basis with the development of new products, new technology, and new markets. DEP's Office of Pollution Prevention and Compliance Assistance will assist the private sector, the general public, government agencies and DEP staff recognize the economic and environmental benefits of Strategic Environmental Management focused on zero emissions goals. In addition, it will make available new tools and programs to achieve these ends.

### **DEP ACTION - Increase Technical Assistance to and by the Private Sector**

A primary objective of the Office of Pollution Prevention and Compliance Assistance is to build the awareness among Pennsylvania's technical assistance sectors of the customer needs, and new business opportunities inherent in Strategic Environmental Management as the next generation of environmental protection. To this end, it will:

- ➡ Work with technical assistance and service sectors such as environmental consulting, management consulting, banking, accounting and insurance to introduce them to new market opportunities presented by Strategic Environmental Management and build their capacity to provide technical assistance and help reduce capital costs for businesses which reduce risk by adopting this assistance linked to zero emissions.
- ➡ Establish partnerships with existing trade and professional association leaders to provide educational and technical assistance to their members. Partnerships with respected membership organizations can be an effective way to introduce the economic and environmental benefits of Strategic Environmental Management to business, local governments, and the public.
- ➡ In collaboration with the Pennsylvania Department of Community and Economic Development, partner with existing business assistance organizations such as Industrial Resource Centers, Small Business Development Centers, and Ben Franklin Technology Centers to incorporate Strategic Environmental Management into the best management practices technical assistance that these organizations provide to small and medium-sized companies.
- ➡ Identify new and updated tools for use by DEP staff, third parties and businesses to provide their clients with Strategic Environmental Management technical assistance.
- ➡ Develop and make available to the regulated community practical pollution prevention and Strategic Environmental Management tools through DEP field staff.

### **DEP ACTION - Develop Leaders and Mentors**

Leading by example, and improving their efficiencies even further by introducing these techniques to their suppliers, peers and customers, many forward-thinking companies in Pennsylvania are making important contributions to the economic and environmental enhancement of all Pennsylvanians. They are the

innovators that provide the anecdotal examples to help make these next generation of environmental tools mainstream. DEP will increase its programs to encourage continued and expanded environmental performance by these and other companies in the following ways:

- Develop an environmental leadership program to recognize leading edge companies that implement Strategic Environmental Management based on zero emissions goals and provide technical assistance to these companies to achieve these goals.
- Identify leaders and mentors in the practices of Strategic Environmental Management, publicly acknowledge progress towards zero emissions goals, and encourage participants to introduce Strategic Environmental Management practices to their suppliers and customers.
- Support the activities of regional Pollution Prevention (P2) Roundtables for Business to facilitate industry peer-to-peer technical assistance in adoption of Strategic Environmental Management tools.
- Continue to foster environmental leaders through the Governor's Environmental Excellence Awards program.
- Establish an inter-agency working group to develop and execute specific Strategic Environmental Management practices within state government agencies to foster their ability to serve as leaders and mentors to local governments and business through procurement practices and policy actions.

### ***DEP ACTION - Incorporate Strategic Environmental Management Concepts Throughout DEP's Operations***

DEP believes there are several opportunities within its organization to incorporate the use of Strategic Environmental Management tools and philosophies into ongoing program operations, planning and training initiatives. We also propose to undertake special initiatives such as facility wide permitting or consolidated and electronic reporting that enhance a systems approach to environmental regulation and management. DEP will develop a Green Plan that embraces Strategic Environmental Management to more effectively manage its own operations and impacts on air, water, land and climate.

- Incorporate Strategic Environmental Management principles and tools into training programs for DEP staff and include elements of Strategic Environmental Management in DEP program plans, training plans and the employee performance evaluation system.
- Incorporate Strategic Environmental Management into DEP's programs through such efforts as the Regulatory Basics Initiative, voluntary compliance audit policy and guidance documents, and pollution prevention/energy efficiency site visits offered by cross-media DEP regional staff and facility-wide permitting. Provide Strategic Environmental Management training for organizations to assist them in enhancing their operational efficiency by eliminating or significantly reducing emissions to the environment and to encourage allocation of more resources to up-the-pipe cost savings and away from end-of-pipe expenses.
- Comprehensively introduce new process-oriented P2 technologies to DEP permit staff to more consistently support companies seeking source reduction through process changes.

## **DEP ACTION - Public Education and Outreach**

- Facilitate forums with the general public, environmental groups and business to discuss the enormous potential for Strategic Environmental Management in helping to achieve affordable sustainable development goals.
- Educate the public, including concerned community members, businesses, and technical service providers such as environmental and management consultants, accountants, and bankers, on the value of Strategic Environmental Management through articles in trade journals and general media. This approach will include case studies of best environmental management practices of Pennsylvania companies, editorial board meetings, and editorials in local, regional and national papers.
- Support DEP's Public Participation Coordinator in establishing regional focus groups across the state to facilitate discussion and awareness about the benefits of Strategic Environmental Management for businesses, communities and citizens.

## **DEP ACTION - Pilot Projects and Studies**

It is important for DEP to demonstrate, through pilot projects and studies, the potential of a Strategic Environmental Management approach for achieving increased environmental performance at less cost. Such pilot projects will become the benchmarks for measuring Strategic Environmental Management's effectiveness in changing business practices from end-of-pipe controls to up-the-pipe avoidance of pollution at the source.

- As part of its environmental leadership program, DEP will conduct several pilot projects to evaluate the use of Strategic Environmental Management as a viable alternative to the existing command-and-control method of environmental protection. Individual measures may include economic benefits, such as lower health and liability insurance premiums, lower cost of capital and increased access to capital for those firms that successfully manage risks going forward, fewer workers compensation claims and better employer health and safety records, capital and operating cost savings, and other cost savings associated with zero emissions achievements.
- In coordination with other states, develop economic and environmental performance measurements to share multi-state information about similar approaches in implementing Strategic Environmental Management-oriented policies, initiatives and pilot projects to more systematically promote Strategic Environmental Management practices nationwide.
- Sponsor studies on realistic applications and methodologies of Strategic Environmental Management.

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