

United States
Environmental Protection
Agency

EPA 744-F-94-003
February 1994

Office of Pollution Prevention and Toxics



EPA's Design for the Environment Program



*cleaner
technologies
for a safer
future*



Recycled/Recyclable
Printed with Soy/Canola Ink on paper that
contains at least 50% recycled fiber

WHY DESIGN FOR THE ENVIRONMENT?

Businesses operating in the 1990s face a variety of competing demands — keeping costs low and quality high, staying competitive in a global marketplace, and meeting consumer preferences for more environmentally benign products.

Designing for the Environment is a down-to-earth strategy for organizing and managing these challenging demands. Building on the concept of Design for the Environment (DfE) pioneered by industry, EPA's DfE program aims at helping businesses incorporate environmental considerations into the design and redesign of products, processes, and technical and management systems.

How does a business "design for the environment?"

- By implementing pollution prevention, energy efficiency, and other resource conservation measures;
- By producing and using less toxic and non-toxic materials;
- By making products that can be refurbished, disassembled, and recycled; and
- By keeping careful track of the environmental costs associated with each product or process.



Printing Project:

The DfE Printing Project is a cooperative EPA-industry project aimed at developing pollution prevention information specific to small and medium-sized printers. Six different methods of printing are in use today and each employs a different set of chemical and technological alternatives. Industry representatives identified several priority environmental concerns for lithographic, screen printing, and flexographic printing methods.

Project committees made up of both EPA and industry representatives are developing cleaner technology substitute assessments as well as outreach strategies and information products to communicate the results of the project to printers. The committees are also working to identify incentives that will encourage printers to use the information developed.

Cleaning Products:

EPA and the General Services Administration (GSA) are collaborating on a long-term project to promote the use of environmentally preferred cleaning products in government-owned buildings. This effort will mean developing standards for cleaning products, performing integrated risk assessments, and evaluating product performance. The project coincides with a federal Executive Order mandating that government agencies use environmentally preferred cleaners.

New Projects

The DfE program is also considering starting a number of new projects under the Environmental Technology Initiative. Industries being considered include the computer industry, the aerospace industry, and the metal finishing industry. EPA is interested in exploring future projects with other partners.

For more information on EPA's Design for the Environment program, contact:

Pollution Prevention Information Clearinghouse
U.S. Environmental Protection Agency
401 M Street SW (3404)
Washington, DC 20460
Tel: 202-260-1023 Fax: 202-260-0178

WHAT IS EPA's DfE PROGRAM?

Through its DfE program, EPA creates voluntary partnerships with industry, professional organizations, state and local governments, other federal agencies, and the public. EPA's efforts are directed at giving businesses the information needed to design for the environment and at helping businesses use this information to make environmentally informed choices. Within each business, the DfE program works to make sure that the information reaches the people who make the choices — from buyers to industrial design engineers.

For example, EPA is developing several analytical tools for businesses to use in evaluating their processes and products. These include the following:

Cleaner Technology Substitutes Assessments (CTSAs):

These assessments help companies compare different technologies or products, with an eye toward selecting the most environmentally friendly alternatives. The assessments look not only at environmental impacts (releases to the environment, energy impact, comparative risk), but also at the cost and performance profiles of each alternative. The DfE program is developing a generic assessment with a guidance manual to help companies perform their own assessments.

Life-Cycle Assessment Tools:

EPA is continuing work on development of a standardized method for comprehensively evaluating the environmental effects of a product, process or activity throughout all stages of its life, from raw materials extraction and production through final disposal.



Risk Management/Insurance:

EPA has entered into a cooperative effort with the American Institute of Chartered Property Casualty Underwriters, an independent non-profit organization offering educational programs and professional certification for the property and liability insurance industry. EPA is helping to incorporate pollution prevention into the curriculum for the Institute's certification program for Associates in Risk Management. Through efforts such as this, EPA hopes to facilitate pollution prevention principles becoming a part of the insurance underwriting and risk management decision-making process.

Financing:

An important constraint on the adoption of new pollution prevention technologies is the availability of financing. The financial community tends to associate environmental investment more with *liability* than with *opportunity*. In addition, companies and financial institutions generally have not known how to estimate the returns on pollution prevention investments. EPA will conduct outreach to businesses and the financial community to find ways to address these problems.

COOPERATIVE INDUSTRY PROJECTS**Dry Cleaning Project:**

Through the DfE program, EPA is working in partnership with the dry cleaning industry and environmental organizations to reduce exposure to perchloroethylene ("perc"). Perc is a chemical solvent used by most dry cleaners which poses potential health and environmental concerns. EPA will examine alternative technologies, solvents, and control methods as part of a Cleaner Technology Substitutes Assessment.

At the conclusion of the assessment, EPA plans to publish a technical summary of alternative solvents and processes and an information document on cost-effective, environmentally safer choices identified through the project. An important part of the project will be finding ways to provide small dry cleaners with both technical assistance and incentives to implement pollution prevention measures.

WHAT DfE PROJECTS ARE UNDERWAY?

EPA's DfE projects include broad institutional projects aimed at changing general business practices, as well as more targeted joint projects with trade associations and businesses in specific industry segments. Current projects include the following:

INSTITUTIONAL PROJECTS

Accounting & Capital Budgeting:

EPA is working with the private sector to develop new and modified accounting tools that will incorporate environmental costs and benefits into managerial accounting and capital budgeting practices, thus allowing businesses to more fully understand their environmental costs. The project also involves curriculum development and research activities.

Chemical Design:

Many of the traditional ways of synthesizing new high-volume industrial chemicals use toxic feedstocks or catalysts, or they create hazardous and toxic byproducts. In cooperation with the National Science Foundation, EPA is encouraging university research into alternative methods for producing chemicals that minimize or eliminate hazardous substances.

Curriculum Development:

EPA has established a National Pollution Prevention Center at the University of Michigan. The Center is developing curricula in multiple disciplines (e.g., business, engineering, accounting, marketing) which incorporate pollution prevention, lifecycle analysis, and DfE principles, rather than traditional end-of-pipe pollution control techniques.

