



Recycling Means Business



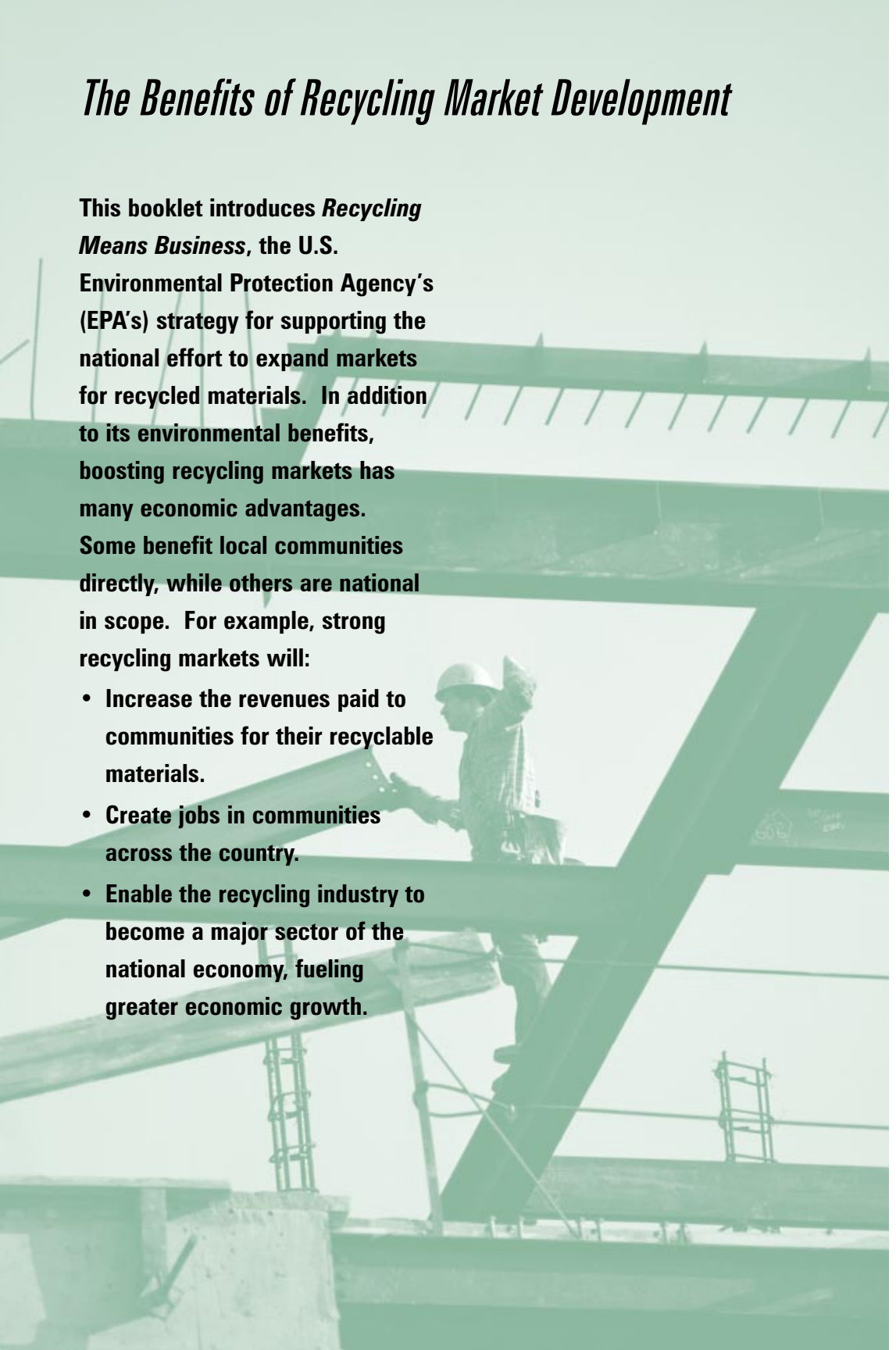
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The Benefits of Recycling Market Development

This booklet introduces *Recycling Means Business*, the U.S. Environmental Protection Agency's (EPA's) strategy for supporting the national effort to expand markets for recycled materials. In addition to its environmental benefits, boosting recycling markets has many economic advantages. Some benefit local communities directly, while others are national in scope. For example, strong recycling markets will:

- Increase the revenues paid to communities for their recyclable materials.
- Create jobs in communities across the country.
- Enable the recycling industry to become a major sector of the national economy, fueling greater economic growth.



Recycling **MEANS BUSINESS\$**



EPA's "Greenprint" for Market Development

Over the past decade, ambitious collection programs instituted by communities and organizations across America have diverted millions of tons of recyclable materials from the solid waste stream. The number of community curbside collection programs alone has increased by 500 percent over the past five years, with more than 6,600 curbside collection programs in place. Many government agencies, businesses, and organizations also instituted in-house recycling collection programs, successfully diverting everything from office paper to scrap tires. The nation is collecting over 20 percent of its solid waste for recycling—the highest rate since World War II.

Recycling what would otherwise be thrown away has obvious environmental benefits. Using recovered materials as a substitute for virgin feedstocks conserves natural resources, reduces the energy used for manufacturing, and lessens the environmental impacts associated with the extraction and harvesting of raw materials. In addition, recycling makes sense as a waste management technique, diverting valuable materials from the waste stream and reducing the burden on landfills and incinerators.



marketing



remanufacturing



collecting

frequently used to gauge the economic contribution of recycling. The process of turning collected materials into new products creates a chain of economic activity that can result

in business expansion, jobs, and other economic growth in communities across the country—all from a resource that used to be thrown away.

Recycling also has inherent economic benefits. Every step in the recycling process, from collection to remanufacturing to purchasing recycled products, adds value to recovered materials. In fact, “value added” (defined as the difference between the cost of materials and the selling price of the products made from these materials) is a measure

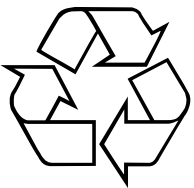
Everyone benefits from this increase in economic activity. Recycling businesses are able to earn profits that in turn can be reinvested in new plants and processes. In addition, these businesses require supplies and services from other industries, such as construction, equipment supply, transportation, and research and development, expanding their economic impact and creating more jobs for area residents. And the jobs created by recycling businesses tend to draw from the full spectrum of the labor market. The material collection and sorting industries primarily contribute low- and semi-skilled jobs,

while the companies in the manufacturing sector, which typically create the lion's share of new employment opportunities, offer more highly skilled jobs.

Communities and businesses looking for new routes to economic growth are recognizing that the waste they generate every day is a valuable economic resource. Instead of paying to have recyclable materials disposed of, or sending them to be recycled elsewhere, communities can keep the added value by providing the materials, labor, and markets that fuel local growth.

The Balancing Act

For recycling to realize its full environmental and economic potential, however, the three components of recycling—collecting, remanufacturing, and purchasing recycled products—must be in balance. This balance is illustrated by the universal symbol of recycling, the “chasing arrows.”



The first arrow represents the collection of materials for recycling, which

has grown dramatically since the early 1980s. The other two sides of the recycling equation, however—the remanufacturing of new products and the purchasing

Recycling Versus Waste Disposal

The Institute for Local Self-Reliance (ILSR) projected the impact of collecting and remanufacturing old newsprint (ONP) instead of paying to have the waste landfilled. ILSR found that for a city of one million residents, a single mill processing 100,000 tons of ONP per year could contribute up to \$57 million in annual gross revenues to the local tax base. By contrast, disposing of the same material would cost the city \$4 million in disposal costs annually (assuming an average tipping fee of \$40 per ton).

of these products by consumers—are only beginning to match the strength of the collection side of recycling. Since sustainable recycling hinges on turning collected materials into new products, and on selling these products to consumers, expanding the processing and remanufacturing capacity of recycling businesses is critical. This process is known as *market development*.

Making Market Development Work

To further the development of recycling markets, EPA created a strategy called *Recycling Means Business*. EPA interviewed over 150 individuals from governments, businesses, and nonprofit organizations to identify real and potential market development issues that affect sustainable recycling. Using this information, *Recycling Means Business* aims to:

Market Development's Key Players

***Recycling Means Business* fosters the development of recycling-based businesses. It provides a national forum to build markets by facilitating the efforts of:**

- **State, tribal, and local governments**
- **Private sector entities**
- **Other federal agencies**
- **Nonprofit groups**
- **Educational institutions**
- **Individuals**

The Importance of Market Development

Market development is the key to unleashing the economic potential of the recycling industry. Market development includes:

- **Starting new recycling-based businesses.**
- **Expanding existing businesses and increasing revenues.**
- **Creating new jobs and adding wages.**
- **Expanding the local tax base.**
- **Making additional capital available to firms for growth.**

- Support and sustain the link between increased market capacity and sustainable economic growth.
- Leverage federal resources and build federal partnerships for market development.
- Develop infrastructures that support markets for recyclables and recycled products.

Together, these goals form a “greenprint” to help ensure markets for environmentally sound and economically sustainable recycling.

Linking Market Development and Economic Growth

Recycling Means Business fosters interaction and coordination among economic development professionals, financial institutions, and recycling businesses. It is critical that these groups work in partnership to ensure that recycling fulfills its potential for job creation and economic revitalization. *Recycling Means Business* addresses the need to provide marketing, technical, and financial assistance to recycling businesses, and to promote the use of recovered materials.

State and local economic development programs can be instrumental in championing and coordinating recycling projects within their jurisdictions. These programs serve as catalysts for recycling businesses by encouraging banks, investment groups, small business lenders, and others within the financial community to identify and help fund recycling ventures. They also help new recycling businesses seek out and acquire the capital and other resources they need to be successful.

Through *Recycling Means Business*, EPA is building the capacity of those groups that provide capital and information to budding recycling businesses.

Bringing Together Economic Development and Recycling Goals

EPA's *Jobs Through Recycling* initiative is one part of the *Recycling Means Business* strategy. *Jobs Through Recycling* was launched to:

- **Expand local and regional markets for recycled materials.**
- **Stimulate economic development.**
- **Create jobs in recycling-related businesses and industry.**

Recognizing that recycling can be an important part of their economic development strategy, communities across the country are looking for ways to support their local recycling industry.

***Jobs Through Recycling* is helping link groups and individuals who know the business of recycling with new companies and established firms interested in using recycled materials.**

For example, EPA established four Recycling and Reuse Business Assistance Centers (RBACs) and nine Recycling Economic Development Advocate (REDA) positions to help recycling businesses gain access to information and markets. These RBACs and REDAs inform manufacturers about the economic benefits of using recycled feedstocks, finding these materials, and switching from virgin-based raw materials. These programs also help individual companies learn how to assess the equipment and process modifications necessary to convert from virgin to recycled feedstocks. They also are helping companies locate sources of high-quality recovered materials and perform cost analyses to help determine when they might begin saving money from switching to these materials.

Industry also is taking action. Start-up recycling businesses, with hard work and assistance from the growing number of economic development programs, are making the collection and remanufacture of recovered materials a reality. Other companies are reaching out within the business community for information and assistance on collecting their recyclable materials and finding ways to use recycled products in their service and manufacturing processes.

Leveraging Federal Resources

Recycling Means Business recognizes and uses the federal government's ability to stimulate recycling market development. With its significant purchasing power, federal procurement alone represents about 8 percent of the nation's Gross Domestic Product. Aggressive buy-recycled policies by federal agencies help to generate critical markets for recycled products.

Procurement, however, is just one part of market development. Many federal agencies—from the Department of Commerce to the Small Business Administration—have experience in job creation, business assistance, community economic development, and technology development. EPA and other agencies together can facilitate the dissemination of this knowledge throughout industry, thereby building and strengthening recycling markets.

Building a Recycling Infrastructure

Just as building a house requires a strong infrastructure—a solid foundation, a framework for supporting the walls and roof, and connections such as electricity and clean water—sustainable recycling

The Feds Weigh In

The effort to focus federal procurement policies on recycled materials has been increased by Executive Order 12873, requiring federal agencies to establish recycling programs and to buy recycled products whenever possible. As part of this process, EPA has developed the Comprehensive Guideline for the Procurement of Products Containing Recovered Materials (CPG) (and the accompanying Recycled Materials Advisory Notice [RMAN]). The CPG lists currently available items made from recovered materials. Other federal agencies can refer to these resources for recycled products.

The federal contribution also includes entering into partnerships with other organizations to help build recycling markets. For example, to help companies acquire specific information about using recovered feedstocks, the National Institute of Standards and Technology (NIST, a division of the U.S. Department of Commerce), Washington State's Clean Washington Center, and the National Recycling Coalition (NRC) created the Recycling Technology Assistance Project (ReTAP). ReTAP has two distinct missions: (1) to provide direct technical assistance to companies interested in switching to recycled materials in plant operations, and (2) to disseminate recycling technology information across the country. With funding support from EPA, ReTAP offers such services as identifying and resolving recycled product manufacturing difficulties and identifying potential end uses for recycled products.

Structures for Sustainable Recycling

EPA's *Recycling Means Business* strategy was designed to build on efforts already under way to develop the foundation of recycling. One such project is the establishment of an exchange for buying and selling recovered materials in the mecca of commodity markets—the Chicago Board of Trade (CBOT). The Chicago Board of Trade Recycling Partnership was created by the New York State Office of Recycling Market Development, the National Recycling Coalition (NRC), Clean Washington Center, EPA, and CBOT itself to provide a formal recovered materials market exchange. This new recycling market is helping to remove uncertainties over recovered materials' price and availability. The exchange also is helping minimize concerns over the quality of recycled feedstocks through standardized inspection procedures and a neutral process for settling trade disputes.

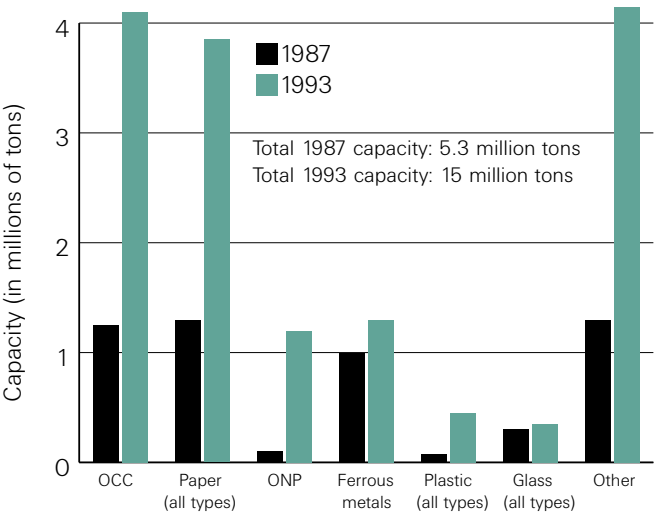
To encourage businesses to adopt or expand buy-recycled programs, EPA also created its *WasteWi\$e* program. In addition to implementing recycling collections and adopting waste prevention activities, corporations that join the program agree to increase their purchase and/or manufacture of recycled products. By increasing the demand for recovered materials, the hundreds of corporations that have joined *WasteWi\$e* are poised to make a major contribution to the development of a recycling infrastructure.

also depends on developing a basic infrastructure. This infrastructure includes elements such as:

- Networks of information supporting markets for recyclable materials and recycled products.
- Links between buyers and sellers.
- Established consumer demand for recycled products.

This nationwide base is critical for sustainable recycling. *Recycling Means Business* helps to support and expand this foundation. *Recycling Means Business* is helping improve existing market development programs, provide opportunities for information exchange, and promote recycled products procurement in both the public and private sectors.

Recovered Materials Market Capacity Growth in Minnesota 1987 to 1993



Source: Assessment of Recycling Capacity for End Markets Serving Minnesota. Sure Green Inc., for the Minnesota Office of Waste Management. June 1994.

Market Development: 2000 and Beyond

Recycling Means Business provides focus and guidance for EPA’s growing market development activities. At the same time, it serves as a “greenprint” to help organize the market development efforts of governments, businesses, and nonprofit organizations. As these efforts take root and our economy moves toward a greater use of recovered raw materials, EPA will monitor *Recycling Means Business* trends closely to ensure its continuing effectiveness.

In particular, EPA will continue to study the market development needs of the recycling business community. Soliciting feedback will remain an important part of the process. In this way, EPA can maintain the collaborative spirit under which this strategy was drafted, identify emerging market development issues, and design new projects to meet these challenges.

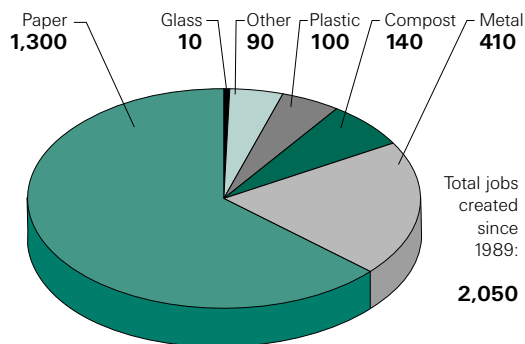


More Studies Link Recycling and Jobs

A series of studies examining the emerging recycling industry has found that recycling is having a major impact on job creation in local and state economies. For example, in a recent report entitled *California Recycling Means California Jobs: A Library of Facts*, the Californians Against Waste Foundation reported that recycling businesses in the state employ about 18,000 residents. Small business manufacturers, who have entered the recycling market in response to the state laws encouraging recycling and the steady growth in recycling collections, are accounting for much of this growth. The report also predicts a continuation of this trend. About 45,000 recycling jobs are expected by the year 2000, over 20,000 of which should come from the manufacturing sector.

In Philadelphia, city planners decided to conduct a multi-year study to gauge recycling's impact on the economy of the metropolitan Philadelphia area. The city gathered baseline data in 1991, finding that the potential existed for 665 jobs from recycling (based on the city's count of 35 companies that had started up, were intending to start up, or had expanded since 1986). By 1992, the city found that

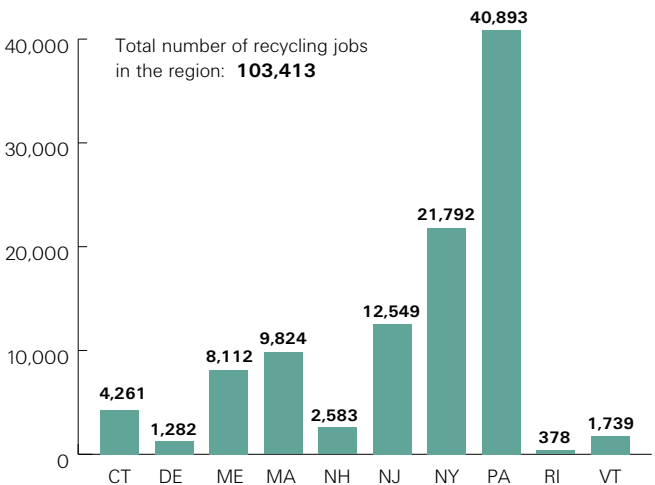
Recycling Employment in Washington State by Commodity: Jobs Created Since 1989



Source: 1992 Survey by Clean Washington Center.

25 of the 35 original companies were operating, providing a total of 599 jobs—over 90 percent of the potential maximum. Moreover, in 1992, businesses that had not been in operation or were missed in 1991 generated 134 additional jobs for Philadelphia-area residents. All together, the city found that 733 jobs had been created in Philadelphia’s recycling industry since 1986.

Number of Recycling Jobs in the Northeast, by State



Source: Roy F. Weston, 1994, for the Northeast Recycling Council.

The North Carolina Office of Waste Reduction also found that recycling is a major source of employment, according to its report *The Impact of Recycling on Jobs in North Carolina*. Recycling industries have created over 8,700 jobs in North Carolina. And the study offers more important evidence. Using its Recycling Jobs Model, the report found that these kinds of job gains can far outnumber those jobs lost in other industries. For every 100 recycling jobs created, according to the report, just 10 jobs were lost in the solid waste industry, and three jobs were lost in the timber harvesting industry.



*Value Added by Recycling in Massachusetts**

Material	Value Added by Processors (in dollars)	Value Added by Manufacturers (in dollars)
Paper	42,909,000	475,307,000
Plastic	2,891,000	58,000
Glass	2,429,000	20,010,000
Metals	44,022,000	3,000
Compost	0	400,000
Subtotal	92,251,000	495,778,000
TOTAL VALUE ADDED BY MANUFACTURING SECTORS:		\$588,029,000

*Estimates do not include semiprecious or precious metals, auto scrap, mill scrap portion of tonnage from nonrecycled materials, or value added after manufacture (e.g., intellectual property, paperboard made into games, etc.). No avoided disposal costs have been figured into this analysis.

Estimates provided by Massachusetts Department of Environmental Protection, Division of Solid Waste Management, Willa S. Kuh, Director.
Study by Robin Ingenthron, Recycling Director. July 1992.

EPA Resource Centers

The following clearinghouses, dockets, and hotlines stock up-to-date recycling information.

Public Information Center (PIC)

U.S. Environmental Protection Agency
Public Information Center (3404)
401 M Street, SW.
Washington, DC 20460
phone: 202 260-7751
fax: 202 260-6257

Serves as the primary point of contact between EPA and the public. Refers calls and letters to the appropriate sources for technical information, and distributes a variety of general-interest items.

RCRA Information Center (RIC)

RCRA Information Center (RIC)
U.S. Environmental Protection Agency
Office of Solid Waste (5305W)
401 M Street, SW.
Washington, DC 20460
phone: 202 260-9327
fax: 202 260-4937

Holds and provides public access to all regulatory materials on solid waste and distributes technical and nontechnical information on solid waste.

RCRA/Superfund/OUST Hotline

RCRA/SF/OUST Hotline
1725 Jefferson Davis Highway
Arlington, VA 22202
phone: 800 424-9346 (outside
Washington, DC metropolitan area)
within Washington, DC: 703 412-9810
fax: 703 486-3333

Answers questions on matters related to solid waste, hazardous waste, or underground storage tanks. Also can be used to find and order EPA publications.

Pollution Prevention Information Clearinghouse (PPIC)

PPIC (3404)
401 M Street, SW.
Washington, DC 20460
phone: 202 260-1023
fax: 202 260-0178

Provides a library and an electronic bulletin board (accessible by any PC equipped with a modem) dedicated to information on pollution prevention.

Environmental Financing Information Network (EFIN)

U.S. Environmental Protection Agency
EFIN (3304)
401 M Street, SW.
Washington, DC 20460
phone: 202 260-0420
fax: 202 260-0710

Provides an on-line computer database containing abstracts of publications and a network of public financing and environmental program experts. Help using the database is available.

Small Business Ombudsman Clearinghouse/Hotline

U.S. Environmental Protection Agency
Small Business Ombudsman (1230C)
401 M Street, SW.
Washington, DC 20460
phone: 800 368-5888
fax: 703 305-6462

Helps private citizens, small businesses, and smaller communities with questions on all program aspects within EPA.

Solid Waste Assistance Program (SWAP)

SWANA

Solid Waste Assistance Program

Post Office Box 7219

Silver Spring, MD 20907

800 677-9424

Collects and distributes current municipal solid waste information.

EPA Main Library

U.S. Environmental Protection Agency
Headquarters Library (3404)

401 M Street, SW. Room 2904

Washington, DC 20460

202 260-5921 or 5922

Maintains environmental reference materials for EPA staff and the general public, including books, journals, abstracts, newsletters, newspapers, and audiovisual materials generated by government agencies and the private sector. Also provides access to on-line computer services, bulletin boards, and CD-ROM systems.

EPA Regional Offices

EPA's ten regional offices can offer further information on recycling.

Region 1

*Connecticut, Maine, Massachusetts,
New Hampshire, Rhode Island, Vermont*

JFK Building

One Congress Street

Boston, MA 02203

Library: 617 565-3298

Waste Management Division

Mail Code: HAA-CAN2

617 573-5700

Region 2

*New Jersey, New York, Puerto Rico,
Virgin Islands*

Javitz Building

290 Broadway

New York, NY 10007

Library: 212 637-3010

Hazardous Waste and Solid Waste
Programs Branch

Mail Code: 2AWMD

212 637-4100

Region 3

*Delaware, District of Columbia, Maryland,
Pennsylvania, Virginia, West Virginia*

841 Chestnut Street

Philadelphia, PA 19107

Library: 215 597-6633

Hazardous Waste Management
Division

Mail Code: 3HW53

215 597-8181

Region 4

*Alabama, Florida, Georgia, Kentucky,
Mississippi, North Carolina, South Carolina,
Tennessee*

345 Courtland Street, NE

Atlanta, GA 30365

Library: 404 347-4216

Waste Management Division

Mail Code: 4WD-RCRA

404 347-3454

Region 5

Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

77 West Jackson Blvd.
Chicago, IL 60604-3507
Library: 312 886-9906

Waste Management Division
Mail Code: HS-6J
312 886-7579

Region 6

Arkansas, Louisiana, New Mexico, Oklahoma, Texas

First Interstate Bank Tower
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733
Library: 214 665-6424

Hazardous Waste Management
Division
Mail Code: 6HHW
214 665-6701

Region 7

Iowa, Kansas, Missouri, Nebraska

726 Minnesota Avenue
Kansas City, KS 66101
Library: 913 551-7358

Waste Management Division
Mail Code: SUPR
913 551-7050

Region 8

Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming

999 18th Street, Suite 500
Denver, CO 80202-2405

Hazardous Waste Management
Division
Mail Code: HWM-HW
303 293-1720

Region 9

Arizona, California, Hawaii, Nevada, American Samoa, Guam

75 Hawthorne Street
San Francisco, CA 94105
Library: 415 744-1510

Hazardous Waste Management
Division
Mail Code: H-1
415 744-1730

Region 10

Alaska, Idaho, Oregon, Washington

1200 Sixth Avenue
Seattle, WA 98101
Library: 206 553-1289

Hazardous Waste Division
Mail Code: HW111
206 553-1296

Accessing This Document on the Internet

This document can be accessed on line using one of several Internet pathways:

Through the World Wide Web: Access the home page at <http://www.epa.gov>. Select EPA Offices and Regions. *Recycling Means Business* is under the Office of Solid Waste directory.

Through Gopher: Access the EPA Public Access Gopher at gopher.epa.gov. Select EPA Offices and Regions. *Recycling Means Business* is under the Office of Solid Waste directory.

Through FTP: Go to the [ftp.epa.gov](ftp://ftp.epa.gov) server. Login as "anonymous" using your Internet address as the password. *Recycling Means Business* is located in /pub. All OSW files are in directories beginning with "OSW."

This document is available at these sites as an Adobe Acrobat file (an electronic version containing both text and graphics).



Recycling Means Business: EPA's Market Development Strategy



The three chasing arrows of the recycling logo portray a seemingly simple system. Materials are collected out of the waste stream for recycling. Next, they are processed and used to make new products. Finally, the purchase of recycled products closes the loop. Recycling, however, is much more complex than the symbol indicates. At its core, recycling is about shifting to an environmentally-responsible manufacturing economy that conserves natural resources, energy, and disposal capacity. For this shift to take place, numerous barriers must be addressed. For example:

- ▶ Recycling businesses often lack ready access to technology, marketing information, and business development assistance. In addition, recycling businesses are often perceived as risky ventures by financiers unfamiliar with the recycling industry.
- ▶ Many state and local government market development programs need mechanisms to coordinate their activities, share information, and learn from each other's experiences.
- ▶ Government agencies and private sector entities often lack partnerships that would enable them to work cooperatively to build markets.
- ▶ Manufacturers and distributors of recycled products often find it difficult to gain access to markets provided by large purchasers such as government agencies and large corporations.
- ▶ Recycled products have not achieved widespread public acceptance due to a lack of performance history and general public awareness.

Market Development, which is defined as the process of strengthening or expanding both intermediate and end-uses of materials collected for reuse or recycling, can mitigate these barriers while advancing other national goals of the U.S. Environmental Protection Agency, such as:

- ▶ Harmonizing environmental protection with economic growth
- ▶ Preventing pollution and conserving natural resources and energy
- ▶ Enhancing the capacity of State, Tribal, and local government programs
- ▶ Promoting public-private partnerships and building government alliances
- ▶ Fostering technology development and transfer.

In this Strategy, EPA is adopting three equally important Market Development goals that will guide the Agency's market development activities and leverage other resources outside EPA.



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EPA's Market Development Goals

1) SUPPORT AND STRENGTHEN THE LINK BETWEEN INCREASED MARKET CAPACITY AND SUSTAINABLE ECONOMIC GROWTH.

- Objectives: Stimulate interaction and coordination among the economic development, financial, and recycling communities.
Promote the use of recycled feedstock by assisting recycling businesses.

Through leadership and advocacy, EPA can demonstrate that environmental protection and economic prosperity are complementary pursuits. By implementing this goal, EPA will build bridges between the public and private sectors, create and expand networks to provide processors and manufacturers with needed assistance, and encourage them to use recycled feedstock.

2) LEVERAGE FEDERAL RESOURCES AND BUILD FEDERAL PARTNERSHIPS FOR MARKET DEVELOPMENT.

- Objectives: Maximize Federal purchases of recycled products.
Facilitate access to Federal information, research, and programs.
Mobilize Federal participation in market development.

Acting as a catalyst, EPA can demonstrate how Federal agencies can further their primary missions while incorporating environmental protection goals. Achieving this goal will demonstrate how Federal agencies can not only procure recycled products, but also participate in the strengthening of recycling infrastructure by promoting resource efficient approaches and partnerships.

3) DEVELOP INFRASTRUCTURES THAT SUPPORT MARKETS FOR RECYCLABLES AND RECYCLED PRODUCTS.

- Objectives: Strengthen State, Tribal, and local government capabilities.
Foster the establishment and exchange of market development information.
Maximize public and private sector purchases of recycled products.

By helping to create, expand, and disseminate information about existing organizational infrastructures, EPA can establish foundations for the activities of other groups. Through this goal, EPA will help improve existing market development programs, provide opportunities for the exchange of information and lessons learned, and promote increased procurement of recycled products by the public and private sectors.

These goals are the basis for EPA's internal market development Strategy which will direct EPA activities in fiscal years 1995-1996 and beyond. I look forward to working with the public and private sectors to implement this Strategy which will promote the development of mature recycling markets to permanently "close the recycling loop."



Carol M. Browner
EPA Administrator



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