

PROGRAMS FOR PROMOTING
SUSTAINABLE CONSUMPTION
IN THE UNITED STATES

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IN THE UNITED STATES

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CHAPTER 1: INTRODUCTION

Background

Over the past decade, the connection between consumption patterns and the environment has garnered increased examination. Economists, scientists, and ethicists have begun to look at the environmental impacts of consumer trends, particularly in developed countries. Their studies highlight the extensive natural resource depletion and environmental degradation that have resulted, directly or indirectly, from unprecedented per capita levels of spending on consumer goods and services.¹

The international political community also began in the 1990s to give serious consideration to the environmental effects of increased consumption.² In 1992, attendees at the United Nations Conference on Environment and Development in Rio de Janeiro recognized consumption as a “major cause of the continued deterioration of the environment” and agreed to take the lead in changing consumption patterns.³ In 1995, members of the Organisation for Economic Co-Operation and Development (OECD) commissioned a report and held a workshop to clarify a conceptual framework for sustainable consumption and production issues.⁴ In 1999, sustainable consumption was a main discussion theme at the seventh meeting of the United Nations Commission on Sustainable Development.⁵

Why has global consumption reached such unprecedented levels? Scholars have hypothesized several potential causes. First, they assert, competitive and status-oriented consumption has intensified in recent years.⁶ Second, manufacturers and advertisers overstimulate the demand for mass-produced items.⁷ Third, according to the teachings of classical economic theory, limitless growth in consumption is a meritorious goal. Standard economic practice, which measures welfare in terms of consumption, assumes

¹ See, e.g., *The Consumer Society*, Neva Goodwin, ed., Washington: Covelo Press, 1997, p. 11 (Summary of “Asking How Much is Enough” by Alan Durning).

² Bill L. Long, “Managing Change: the Challenge of Sustainable Consumption,” in *Symposium: Sustainable Consumption, Oslo, Norway, 19-20 January 1994 (Report)*, Ministry of Environment – Norway, p. 158. See also Nick Robins and Sarah Roberts, “Making Sense of Sustainable Consumption,” *Development* 41:1 (1998), p. 28 (“Sustainable consumption has come of age as a global priority.”)

³ *Agenda 21, Chapter 4 (Changing Consumption Patterns)*, Rio de Janeiro: United Nations Conference on Environment and Development, 1992.

⁴ Organisation for Economic Co-Operation and Development, *Sustainable Consumption and Production: Clarifying the Concepts*, Paris: OECD, 1997, p. 7.

⁵ See http://www.ncsdnetwork.org/un/sdresources/csd7_kit/prod_cons_en.htm (website of the Commission on Sustainable Development).

⁶ See Juliet Schor, *The Overspent American: Upscaling, Downscaling, and the New Consumer*, New York: Basic Books, 1998 (e.g., p. 3: “Competitive acquisition has long been an American institution... [but] in recent decades, the culture of spending has changed and intensified.”).

⁷ *The Consumer Society*, p. 14 (Summary of “Asking How Much is Enough” by Alan Durning) and p. 28 (Summary of “The Expansion of Consumption” by Allan Schnaiberg).

(often incorrectly) that individuals' welfare is maximized when their consumption is maximized.⁸

Academicians, politicians, and other commentators have offered a range of recommendations for mitigating the environmental impacts of current consumption patterns. Most agree that overall consumption levels must be reduced. Some argue that the burden of reducing consumption lies primarily with industrialized countries, which contain 25% of the world's population but consume 40-86% of various natural resources.⁹ For example, the non-profit group Friends of the Earth has asserted that the North must significantly reduce consumption in order to honor the equal right of each person on the planet to consume resources.¹⁰ Similarly, in their "Factor Ten" proposition, Friedrich Schmidt-Bleek and his colleagues single out industrialized nations in their call for a 90% reduction in energy use.¹¹ A second group has called for reductions in consumption by developed and developing countries alike, because the South seeks to emulate the North's consumption patterns. Nick Robins and Sarah Roberts, for example, assert that sustainable consumption must "shift from being a North First concern to an issue of common concern for the international community."¹²

A smaller cadre of experts considers the problem to lie in the quality as well as the quantity of current consumption. Juliet Schor and others point to the socially and environmentally destructive effects of consumption that is driven by a desire to improve one's relative position or status in society.¹³ In their view, consumption motivated by the desire to acquire and spend more than other people has a significantly larger aggregate impact than consumption motivated by the desire to reduce poverty.¹⁴ Amory Lovins and his colleagues offer a different criticism of the quality of current consumption patterns: they adversely affect the environment because they are inefficient. In their "Factor Four" proposition, Lovins and others offer examples of existing technologies that would allow industrial nations to experience a four-fold increase in energy efficiency after cutting energy consumption in half.¹⁵ Critics of the "Factor Four" proposition contend, however, that an efficiency-based strategy is insufficient because increases in consumption are far outstripping technological improvements.¹⁶

A new phrase, "sustainable consumption", has emerged from the past decade's discourse about the environmental impacts of current consumption patterns. Although

⁸ Paul Ekins, "Can Humanity Go Beyond Consumerism?," *Development* 41:1 (1998), p. 23. See also *The Consumer Society*, p. xxxi (the dominant economic paradigm encourages increased consumption but lacks any built-in concept of 'enough.')

⁹ *The Consumer Society*, p. 294 (Summary of "The Environmental Costs of Consumption" by Alan Durning).

¹⁰ "Making Sense of Sustainable Consumption," p. 34.

¹¹ Friedrich Schmidt-Bleek, *Carnoules Declaration of the Factor Ten Club*, Wuppertal Institute, 1994.

¹² "Making Sense of Sustainable Consumption," p. 36.

¹³ *The Overspent American*, chs. 1-2.

¹⁴ "Can Humanity Go Beyond Consumerism?," pp. 24-25.

¹⁵ Ernst Von Weiszacker, Amory Lovins, and L. Hunter Lovins, *Factor Four: Doubling Wealth, Halving Resource Use*, London: Earthscan Publications Ltd., 1998.

¹⁶ See, e.g., *The Consumer Society*, p. xxix, and p. 12 (Summary of "Asking How Much is Enough" by Alan Durning).

the phrase has its detractors,¹⁷ it is becoming popular in academic and political arenas. Like numerous other environmental buzzwords, “sustainable consumption” is difficult to define because it is used in different contexts to mean different things. Indeed, experts have remarked that a “fog of imprecision” surrounds the increasingly widespread use of the term.¹⁸ Part of this ambiguity stems from the variety of ways in which “consumption” itself has been defined: historically, environmentalists have used the term to describe resource use, while economists have used it to describe total spending on goods and services.¹⁹

Among the working definitions of sustainable consumption that have been offered to date,²⁰ perhaps the best known and most widely accepted is the version that a United Nations Symposium on Sustainable Consumption proposed in 1994:

[Sustainable consumption is] the use of services and related products which respond to basic needs and bring a better quality of life while minimising the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardise the needs of future generations.²¹

This report uses the term “sustainable consumption” in a manner consistent with the Sustainable Consumption Symposium’s definition.

In some ways, it is easier to understand what commentators mean by “sustainable consumption” by describing what they do not intend when they use the term. First, experts do not use the term “sustainable consumption” to refer to a formal ideology or an organized movement. Moreover, they do not consider it to be a goal in and of itself but a

¹⁷ For example, the term “sustainable consumption” has been disparaged as “a technocratic term with little popular resonance.” “Making Sense of Sustainable Consumption,” p. 29.

¹⁸ “Looking across the wide range of civil actions under the sustainable consumption umbrella, it is clear that there is only a vague sense of a common vision uniting often disparate initiatives.” “Making Sense of Sustainable Consumption,” p. 29.

¹⁹ Id.

²⁰ See, e.g., Edwin G. Falkman, *Sustainable Production and Consumption: A Business Perspective*, Waste Management International/World Business Council on Sustainable Development, n.d. (“Sustainable production and consumption involves business, government, communities and households contributing to environmental quality through the efficient production and use of natural resources, the minimization of wastes, and the optimization of products and services.”). See also Nick Robins and Sarah Roberts, *Changing Consumption and Production Patterns: Unlocking Trade Opportunities*, International Institute for Environment and Development and United Nations Department of Policy Coordination and Sustainable Development, 1997 (“The emphasis of sustainable production is on the supply side of the equation, focusing on improving environmental performance in key economic sectors, such as agriculture, energy, industry, tourism and transport. Sustainable consumption addresses the demand side, looking at how the goods and services required to meet basic needs and improve quality of life - such as food and health, shelter, clothing, leisure and mobility - can be delivered in ways that reduce the burden on the Earth’s carrying capacity.”).

²¹ “Summary of Issues Raised at the Symposium on Sustainable Consumption,” in *Symposium: Sustainable Consumption, Oslo, Norway, 19-20 January 1994 (Report)*, Ministry of Environment – Norway, p. 10.

means to various ends such as improved environmental quality.²² Second, although sustainable consumption is often incorrectly associated with “‘hair-shirtism’, or giving up and losing out,”²³ it is not synonymous with asceticism. Third, its promoters view sustainable consumption as transcending “green consumerism”, which “(sanctions) the option of being green at selected moments and in only some aspects of life.”²⁴ In their view, green consumerism cannot provide large-scale benefits because its message is “not to consume less but to consume better.”²⁵

Finally, the scholarly literature distinguishes sustainable consumption from various “simple living”²⁶ and “voluntary simplicity”²⁷ trends that have gained ground largely in the North. An example of these trends is the phenomenon known as “downshifting”, which involves reducing employment commitments (and therefore income) to have more time for leisure and meaningful activities.²⁸ Some of the advocates for sustainable consumption make this distinction because they perceive “voluntary simplicity” to be a realistic option only for the relatively affluent.²⁹

Purpose

The purpose of this report is to provide an overview of sustainable consumption efforts in the United States. In addition to identifying key issues, this report provides examples of measures that individuals, communities, governments, and businesses in the United States are currently undertaking to practice and/or promote sustainable consumption.

The report is aimed at audiences such as community activists and government agencies that are just beginning to explore the environmental impacts of their consumption patterns. By providing concrete examples of successful efforts taking place

²² “There is certainly no ‘movement’ for sustainable consumption.” “Making Sense of Sustainable Consumption,” p. 28.

²³ Id., p. 30.

²⁴ Ewa Charkiewicz, “Civil Action on Sustainable Consumption as Transformative Projects: If and When?,” *Development*, 41:1 (1998), p. 44.

²⁵ Id. Also, “(A) green – but self-complacent and ego-centric new-age consumer ... is concerned with health or environmental consequences of purchase decisions, but not with social impacts of the life cycles of products, nor with political and institutional change.”

²⁶ For a discussion of “simple living” and an overview of relevant literature, see the website of the Simple Living Network at <http://www.slnet.com>.

²⁷ The term “voluntary simplicity” comes from the title of a 1981 book that advocates a lifestyle of frugal consumption, ecological awareness, and personal growth. Duane Elgin, *Voluntary Simplicity: Toward a Way of Life that is Outwardly Simple, Inwardly Rich*, New York: William Morrow, 1981.

²⁸ Common motivations for down-shifters are to contribute to their communities, to do more work of their own choosing, to experience less stress, and to reduce their impact on or increase their contact with the natural environment. “Can Humanity Go Beyond Consumerism?,” p. 26.

²⁹ See, e.g., “Making Sense of Sustainable Consumption,” p. 30 (“voluntary simplicity” trends are “a positional good for a small minority who have the resources to resist pressures for greater consumption” - i.e., the wealthy). But see Simon Zadek and Franck Amalric, “Consumer Works!,” *Development* 41:1 (1998), p. 11 (consumer-based civil action is not just a prerogative of the rich), and *The Overspent American*, pp. 113-142 (downshifters in the U.S. include individuals from a range of income categories).

elsewhere in the United States, this report seeks to help individuals and institutions understand that they can engage in sustainable consumption in the following ways:

- ❑ *Individuals and communities* can influence businesses to improve the environmental attributes of their products and services by purchasing environmentally preferable products and reducing patterns of over-consumption. They can also influence governments by advocating on behalf of laws and programs designed to change consumption patterns.
- ❑ *Governments* can practice sustainable consumption by establishing environmentally preferable purchasing programs. They can also create laws and policies that encourage private citizens and businesses to pursue sustainable practices.
- ❑ *Businesses* can seek to embed sustainable consumption principles more firmly into their relationships with suppliers and customers. They can also use their technical expertise to design greener products or to convert their businesses from products to services.

The Massachusetts Toxics Use Reduction Institute (TURI) has sponsored this report on sustainable consumption because of the key role that sustainable consumption efforts can play in helping Massachusetts achieve its goals of “advancing innovation in toxic use reduction and management” and “[promoting] reductions in the production and use of toxic and hazardous substances within the Commonwealth.” (M.G.L. c. 211, “Toxics Use Reduction Act,” Section 1, paras. 3 and 4). The report is intended to provide individuals, businesses, institutions, and communities in Massachusetts with domestic models of successful sustainable consumption efforts. This report is also intended to help TURI and other state agencies identify existing actors in the sustainable consumption field in order to partner with them as appropriate to further reduce the use of toxic chemicals in Massachusetts.

This report represents only a first step on the road to greater and more widespread sustainable consumption in Massachusetts. It is hoped that this report will encourage other state and local agencies in Massachusetts and elsewhere to explore and develop their own initiatives to promote sustainable consumption by organizations and individuals. It is also hoped that additional research on sustainable consumption initiatives abroad will serve as an impetus for further innovation and progress in Massachusetts.

Scope

This report addresses sustainable consumption initiatives in the United States only. The extensive and important efforts to promote sustainable consumption that are taking place in other countries are beyond the scope of this report.

In an effort to map out major areas of the sustainable consumption landscape in the United States, the report describes the activities and programs of a diverse set of businesses, government agencies, trade associations, and nonprofit organizations. The report provides examples of organizations that *practice* sustainable consumption by

consuming products in an environmentally sound manner. It also provides examples of organizations that *promote* sustainable consumption on the part of others through a variety of mechanisms, including educational tools, award and recognition programs, and advocacy campaigns.

The first chapter, “Individuals and Communities,” describes initiatives whose direct goal is to persuade private citizens to change their consumption patterns. Similarly, the second and third chapters, “Government” and “Business and Industry,” describe efforts aimed at altering the behavior of government agencies and businesses in their role as consumers. These last two chapters also summarize initiatives intended to encourage government agencies and businesses to promote sustainable consumption. These initiatives aim to recruit businesses and government agencies as social, technical, political and economic catalysts for the changes necessary to facilitate large-scale sustainable consumption patterns. Within each of these three chapters, the relevant information on organizations and programs is arranged according to subtopics. This information includes a brief description of the relevant sustainable consumption activities and, where applicable, contact information.

Research Methodology

While waste management practices and pollution prevention efforts have benefited from years of policy and technical research, sustainable consumption has received little attention. Current and proposed studies will increase knowledge on such topics as green marketing, consumer behavior, green product design, environmental purchasing, product life-cycle analysis, product-oriented environmental management systems, environmental product testing and environmental claim certification. In the meantime, however, the body of research on successful methods for promoting sustainable consumption is relatively small.

The organizations listed in this report were identified by consulting with experts in the field of sustainable consumption and by conducting a preliminary review of the relevant literature. The descriptions of the organizations derive primarily from the organizations’ own Web sites, supplemented with information received in interviews or via telephone.

Limitations

This report is not a comprehensive directory of sustainable consumption organizations and programs in the United States, nor does it describe all the sustainable consumption activities of every organization mentioned. Instead, it provides an initial survey of the sustainable consumption landscape to facilitate further inquiry and analysis. Specifically, the report focuses on sustainable consumption activities and programs that directly relate to products/services or influence the relationship between producer and consumer. The report does not include activities or programs relating to “simple living” or “voluntary simplicity” movements. Furthermore, it does not describe sustainable consumption efforts undertaken by academic institutions, health care institutions, or charitable foundations.

Initiatives that promote sustainable development or production but do not address consumer products/services or the producer/consumer relationship are beyond the scope of this report. For example, the report does not address activities involving “smart” growth or anti-sprawl policies, transportation issues, green building design or trade policies. Furthermore, while some of the initiatives described address businesses’ potential to effect changes in consumption patterns through their production methods or goals, it should be emphasized that sustainable production issues are not the focus of this report. Rather, sustainable production efforts are discussed only to the extent that they might directly bring about or encourage sustainable consumption.

With regard to environmentally preferable products, the report does not attempt to catalog all of the options that are currently on the market in the United States. Furthermore, mention of a product or service in this report does not constitute endorsement by TURI, the University of Massachusetts, or the Commonwealth of Massachusetts.

CHAPTER 2: INDIVIDUALS AND COMMUNITIES

Individuals and communities, particularly those in developed countries, bear a large share of the responsibility for increases in global consumption. To a large extent, current patterns of overconsumption reflect the cumulative economic decisions of millions of households influenced by the culture of consumeristic societies.

Experts agree that the consumption patterns of individuals and communities must be changed. Some insist that the best results will be achieved by focusing on the actions of individuals when action at other levels (e.g., governments) has stagnated or failed.³⁰ Others argue that focusing on the individual alone can be an ineffective way of changing habits, whereas community-based initiatives provide a supportive social framework.³¹

This chapter presents examples of the following types of initiatives aimed at individuals and/or communities in the United States:

- ❑ Neighborhood "EcoTeams" to help change consumer behavior,
- ❑ Educational programs to teach residential consumers about the environmental impacts of products and overconsumption,
- ❑ Grassroots environmental advocacy campaigns for improved environmental policies and products that further sustainable consumption, and
- ❑ Publications to promote the ethic of sustainable consumption to consumers.

I. CHANGING CONSUMER BEHAVIOR

While the need to change consumer behavior ranks as one of the primary challenges of the sustainable consumption movement, relatively few programs have been developed to work closely with individual consumers to attain this goal. The Global Action Plan for the Earth (GAP) may be the only program in existence that provides hands-on, customized support for the development of an environmentally sustainable lifestyle. Founded in 1989 in the USA, the GAP was introduced to an international audience in 1992 at the United Nations Conference on Environment and Development in Rio.

1. Global Action Plan for the Earth (GAP)

The Global Action Plan for the Earth (GAP) is a non-profit organization devoted to environmental education that promotes and supports the development of environmentally sustainable lifestyles in the United States. Over the past ten years, the GAP has developed an effective neighborhood organizing model by working with over 10,000 people and hundreds of neighborhood groups throughout the country.

³⁰ Simon Zadek and Franck Amalric, "Consumer Works!," *Development* 41:1 (1998), p. 11

³¹ Nick Robins and Sarah Roberts, "Making Sense of Sustainable Consumption," *Development* 41:1 (1998), p. 31.

The GAP's core program is the "Household EcoTeam Program". This Program empowers households to adopt resource-efficient lifestyle practices through membership in a neighborhood support group. Five or six households in a community form an EcoTeam and meet seven times over a four-month period. Team members use GAP's step-by-step workbook to make their lifestyles more environmentally sustainable. Choosing from a series of practical options identified in the workbook, EcoTeam members support one another to reduce waste, use less water and energy, buy "eco-wise" products, and encourage others to get involved. The EcoTeam Program goes beyond increasing environmental awareness to enable people to change the way they live – and to measure the results.

The GAP has also developed programs for municipalities and for children. The GAP's Sustainable Lifestyle Campaign brings the EcoTeam Program to municipalities through service contracts with local government agencies to help them achieve their resource conservation and environmental protection objectives. For children, the GAP has developed Journey for the Planet, an adventure with a "save-the-planet" theme that helps children develop planet-friendly lifestyle practices. This online, action-based children's program (www.Journey4thePlanet.org) is aimed at 9 to 12 year olds. The Journey has five sections, dealing with garbage, water, energy, eco-wise consumerism, and empowering others to act in a more planet-friendly manner. Each has its own cartoon animal guide to lead the way. It is designed to allow children to do the program on their own, or as part of a classroom or club.

CONTACT: Global Action Plan for the Earth
 P.O. Box 428
 Woodstock, NY 12498
 Telephone: 914.679.4830
 Internet: <http://globalactionplan.org/ecoteamA.htm>

II. EDUCATIONAL PROGRAMS

Retailers, nonprofit environmental groups, and government agencies have all developed programs and initiatives that educate residential consumers about sustainable consumption issues. In general, retailers and government agencies focus narrowly on issues related to the environmental impacts and attributes of products and services (e.g., household hazardous waste and home energy efficiency). By contrast, environmental groups tend to address a broader range of sustainable consumption issues.

1. U.S. EPA'S "Virtual House" and "Recycle City"

The U.S. Environmental Protection Agency (EPA) manages two interactive websites to teach grade school students and other consumers how to reduce the amount and toxicity of waste leaving their homes. The sites offer reliable information for individuals to:

1. Reduce the amount of solid and hazardous waste generated in the home,
2. Safely use, store, handle and dispose of household hazardous wastes, and
3. Increase personal comfort, family safety and economic security by sensible use and reuse of household products.

The "Virtual House" program identifies potentially hazardous products in a home on a room-by-room basis. As shown in Figure 2-1, the site presents a graphic-based house tour that provides a visual review of hazardous products in a home, including their location and use. By clicking on a room, visitors can see the products typically associated with that room. Visitors can then select products listed in each room to receive detailed information about the associated hazards. For example, the following text is produced by clicking on the Virtual House's bathroom and selecting "drain cleaners": "The use of chemical drain cleaners as a 'preventative' measure is not a good idea. Boiling water or a handful of baking soda and half cup of vinegar poured down the drain weekly is at least as effective as a chemical drain cleaner and much, much safer for you and the environment."



Figure 2-1: EPA's Virtual House

Source: <http://www.epa.gov/grtlakes/seahome/housewaste/house/house.htm>

The Virtual Home site advocates careful shopping to find products and packaging that can break down harmlessly in the environment, or that can be recycled or reused. The site also states that it is often possible to find substitutes or use alternatives for toxic products. For example, regarding kitchen products, the site states: "Self-cleaning ovens, roaster bags or simple care in cooking can reduce or eliminate the need for caustic oven cleaners. Non-toxic oven cleaners can be found in many local supermarkets, some in

relatively efficient packaging. Common materials, like baking soda, can be used to create alternative oven cleaners."

"Recycle City" is a complete "virtual community" that uses gaming simulation to demonstrate home and community solid waste management decisions. Using an interface similar to that of Virtual House, Recycle City allows visitors to click on sections and stores in the city. As shown in Figure 2-2, a visitor who selects "Maria's Market" can learn more about the environmental issues associated with a variety of products sold in stores. For example, by choosing "recycled content paper products," site visitors will read the following text: "Many paper products on the shelves today have already been recycled. By buying recycled products, you help save valuable natural resources and help to create a market for those materials. When manufacturers know that shoppers want recyclable goods, they will make more of them."



Figure 2-2: Maria's Market

Source: <http://www.epa.gov/recyclecity/>

While Virtual House and Recycle City explore a range of environmental issues, they promote sustainable consumption by emphasizing how consumer choices affect the environment. By appealing to children, these sites hope to improve the purchasing habits of future consumers.

CONTACTS for the Virtual House web page:

Agricultural & Biological Engineering Department

Purdue University

West Lafayette, Indiana 47907-1146

Telephone: 765.494.1167

Internet: <http://www.epa.gov/grtlakes/seahome/housewaste/house/house.htm>

US EPA Region 5
77 West Jackson
Chicago, IL 60604
Telephone: 312.353.2000
Internet: <http://www.epa.gov/region5/>

CONTACT for the Recycle City web page:

US EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105
Telephone: 415.744.1500
Internet: <http://www.epa.gov/region09/>

2. Home*A*Syst

Home*A*Syst is a national program cooperatively supported by the United States Department of Agriculture (USDA) Cooperative State Research, Education and Extension Service, the USDA Natural Resources Conservation Service, and the U.S. Environmental Protection Agency. The voluntary program is a partnership between government agencies and private business that enables individuals to prevent pollution on farms and ranches and in homes through confidential environmental assessments.

The Home*A*Syst program guides homeowners and renters in developing action plans that assist them in making voluntary changes that prevent pollution. With the help of workbooks, families examine their daily routines in and around the home, gain understanding of the environmental risks in and around their home, and learn to better protect their health and the quality of the environment.

The Home*A*Syst program mainly focuses on household hazardous waste management practices and the proper use of hazardous products. Although the program does not directly address sustainable consumption issues, participants learn how their activities affect environmental quality and human health and safety. In doing so, Home*A*Syst enhances homeowners' and renters' notions of personal environmental responsibility and helps set the stage for improved consumer decisions.

CONTACT: Northeast Regional Agricultural Engineering Service
Cooperative Extension
152 Riley-Robb Hall
Ithaca, NY 14853-5701
Telephone: 607.255.7654
Internet: <http://www.nraes.org>

III. GRASSROOTS ENVIRONMENTAL ADVOCACY

Some individuals and communities promote sustainable consumption by participating in grassroots environmental campaigns that pressure governments and industry to adopt more sustainable policies and procedures. Environmental campaigns address such issues as toxic products (Greenpeace), overconsumption (Friends of the Earth), and alternatives to a petrochemical-based economy (Institute for Local Self-Reliance).

1. Greenpeace International

Greenpeace is a non-profit international organization dedicated to the protection of the environment by peaceful means. Its activist campaigns concern a variety of environmental issues, including climate change, ocean dumping, nuclear waste, genetic engineering, and toxic chemicals.

Greenpeace's "Play Safe: Buy PVC Free" campaign is an example of a grassroots effort to promote sustainable consumption and production patterns. The campaign has publicized the dangers associated with toys containing polyvinyl chlorides (PVCs), plastics whose phthalate softeners are suspected of harming the liver, kidneys, and reproductive organs. Laboratory tests, commissioned by Greenpeace, found that some PVC toys release considerable amounts of these softeners. Consequently, children who regularly suck on their toys are subsequently exposed to phthalates.

Greenpeace's PVC campaign has proven to be quite controversial and has prompted a concerted response from businesses and governments. Many distributors in the U.S. stopped selling PVC-containing toys after Greenpeace drew attention to more than one hundred PVC-containing toys on the shelves of 'Toys 'R' Us' and other toy retailers in 1997. German producers have switched to using plastics that need no softening ingredients at all and have labeled their products "PVC-free." In 1999, Austria became the first country to ban phthalates in toys for children under three years old.

PVC is still a popular material for many consumer products, including: packaging (cling film and bottles); credit cards; window frames and cables; imitation leather; flooring, wallpaper, and blinds; car interiors; and disposable medical devices. Moreover, Mattel, Hasbro, Playskool, Safety 1st, Gerber and Disney are among the companies that still make and sell PVC toys.

CONTACT: Greenpeace
 1436 U Street, NW
 Washington, DC 20009
 Telephone: 800.326.0959
 Internet: <http://www.greenpeaceusa.org>

2. Friends of the Earth (FOE)

Friends of the Earth (FOE), represented in 58 countries, is the largest international network of environmental groups in the world. Its grassroots focus includes 250 communities in the United Kingdom, where it is campaigning to reduce consumption to a level that does not threaten the environment resources and which does not exceed Great Britain's global share of resources.

The network commissions research and provides extensive information and educational materials on environmental topics. Its Fair Share Campaign is aimed at combating the assumption that "more is always better." By provoking public debate around consumerism and applying pressure for legislative changes, the Fair Share Campaign tries to ensure that materials are used more efficiently. The Campaign has three current objectives: (1) obligating producers of electrical goods to adopt product takeback schemes, (2) requiring newspapers to contain 80% recycled content by 2005, and (3) establishing a legally binding target regarding reuse packaging for manufacturers and distributors.

CONTACT: Friends of the Earth US
1025 Vermont Ave. NW, 3rd Floor
Washington, DC 20005-6303
Telephone: 202.783.7400
Internet: <http://www.foe.org/FOE>

3. Institute for Local Self-Reliance (ILSR)

The Institute for Local Self-Reliance (ILSR) is a Washington-based non-profit research and educational organization that provides technical assistance and information on environmentally sound economic development strategies. Since 1974, the ILSR has worked with citizen groups, government agencies, and private businesses in developing policies that extract the maximum value from local resources.

The ILSR's Waste to Wealth program provides communities and businesses with technical assistance and a road map toward a reduction in materials use and increased utilization of recycled and previously used materials. The ILSR also manages the Carbohydrate Economy Clearinghouse (CEC) to provide up-to-date information spanning all facets of the "carbohydrate economy" – i.e., plant-matter-based products, the technologies that make them possible, and the cutting-edge companies producing them. From paints and inks to fuels and construction materials, the Clearinghouse ([http://www.carbohydrateconomy.org/.](http://www.carbohydrateconomy.org/)) was designed to provide one-stop shopping for the latest developments in the new materials economy. The ILSF also plans to track efforts to integrate bio-based products into governmental procurement policies.

CONTACT: Institute for Local Self-Reliance
2425 18th Street, N.W.

Washington, DC 20009-2096
Telephone: 202.232.4108
Internet: <http://www.ilsr.org/>

4. Washington Toxics Coalition

The Washington Toxics Coalition is a non-profit, member-based organization dedicated to protecting public health and the environment by identifying and promoting alternatives to toxic chemicals. Its work includes public education, grassroots organizing, research and technical support, and policy development. The Coalition uses research, publications, presentations, conferences, and a Toxics Hotline to provide reliable information about preventing pollution in homes, schools, workplaces, agriculture, and industry. Three of the coalition's top areas of focus are household toxics, pesticides, and industrial toxics.

The Coalition's Home Safe Home Program combines research and public education to help consumers identify the hazardous chemical products found in their homes such as gasoline, lighter fluid, pool chemicals, insecticides, adhesives, and drain cleaners. The Home Safe Home Program also distributes a series of consumer-oriented fact sheets on the following topics: Toxics in the Home, Toxics in Industry, Toxics in Agriculture, Toxic Waste in Fertilizer, Pesticides in Our Schools and communities, and Endocrine Disruption. These fact sheets identify the hazards posed by various types of products, discuss proper use, storage and disposal techniques, and suggest environmentally preferable alternatives.

CONTACT: Washington Toxics Coalition
4649 Sunnyside Ave. N.
Suite 540 East
Seattle, WA 98103
Telephone: 206.632.1545
Internet: <http://www.accessone.com/~watoxics/index.html>

5. Mothers & Others for a Livable Planet

Mothers & Others is an advocacy organization working to focus women's daily decisions and choices in ways that are environmentally responsible. It seeks to organize women's collective marketplace power and influence production practices, especially with regard to food production. The organization was started in 1989 out of concern that children were being exposed to unsafe pesticide levels in the food supply and out of conviction that individuals have a right and a role to play in securing safer and more ecologically sustainable food sources. With over 35,000 members, Mothers and Others considers itself "a leading voice of consumer action for environmental change."³²

³² Wendy Gordon, "Mothers and Others for a Livable Planet: Women Promoting Civil Action in the Consumption Realm," *Development* 41:1 (1998), p. 71.

In 1993, Mothers & Others launched a national Shopper's Campaign to change the way food is grown in the U.S. The campaigns in which it is currently involved include:

1. *CORE Values Northeast*, a partnership with progressive Northeast apple farmers to provide a supportive market environment for products grown utilizing Integrated Pest Management (IPM) techniques (the project also created an IPM eco-label);
2. *Care What You Wear*, a campaign to increase consumer awareness of, and institutional demand for, organic cotton products; and
3. *Stop! Don't Shop in the Dark!*, educating consumers about the issues of genetically engineered food.

Mothers & Others also provides a variety of information services to assist consumers in making educated purchasing choices. The organization issues *The Green Guide*, a monthly environmental consumer newsletter, to provide information on environmentally responsible practices and products. Subscribers can also access company and product information by contacting Mothers & Others' Consumer Resource & Education Service.

CONTACT: Mothers & Others National Office
40 West 20th Street
New York, NY 10011-4211
Internet: <http://www.mothers.org>

6. Center for a New American Dream

The Center for a New American Dream is a non-profit, membership-based organization dedicated to reducing and reallocating North American consumption while fostering opportunities for people to lead more secure and fulfilling lives. The organization helps individuals, communities, and businesses establish sustainable practices that will ensure a healthy planet for future generations.

The Center was founded in 1997 with the recognition that the recent, highly materialistic definition of the "American Dream" is undermining families, communities, and the natural world. The Center serves as a hub for numerous local and national organizations promoting cultural, behavioral, industrial, and spiritual changes that are vital to reclaiming a healthy American dream. It distributes educational materials and conducts campaigns to help individuals make constructive changes within their homes, schools, workplaces, and communities.

The Center publishes a monthly bulletin and a quarterly newsletter about sustainable consumption. The bulletin, *In Balance*, is a two-page flyer that can be downloaded from the Internet at <http://www.newdream.org/bulletin/index.html>. The 16-

page newsletter, *Enough!*, features longer articles on the impacts and hidden costs of excessive consumption. The newsletter lists books, events, organizations and people that are associated with the sustainable consumption movement. It also suggests alternative products and lifestyles for reducing "environmental footprints". Select articles from *Enough!* can be downloaded at <http://www.newdream.org/newsletter/clips.html>.

CONTACT: Center for a New American Dream
6930 Carroll Ave., Suite 900
Takoma Park, MD 20912
Telephone: 301.891.ENUF (3683)
Internet: <http://www.newdream.org>

CHAPTER 3: GOVERNMENT

Public sector actors have significant potential to engage in and to catalyze large-scale sustainable consumption. First, governments can act as environmentally responsible consumers by purchasing environmentally preferable products. Second, governments directly and indirectly promote sustainable consumption by promulgating laws and adopting policies that influence the consumption of greener products. Third, governments encourage the development of sustainable consumption initiatives by sponsoring or collaborating with national and international organizations. This chapter details these activities in the following three sections:

- Environmentally Preferable Purchasing
- Laws and Policies
- Programs and Initiatives

I. ENVIRONMENTALLY PREFERABLE PURCHASING (EPP)

Over the past several years, federal, state and local government agencies in the United States have established environmentally preferable purchasing (EPP) programs. These programs promote sustainable consumption by requiring agencies to buy products whose use and disposal have minimal environmental impact. By leveraging billions of dollars of purchasing power, government purchasing efforts encourage manufacturers to improve the environmental performance of their products at all stages of product life cycle. Furthermore, by helping to establish green markets, EPP policies can make green products more accessible and affordable for a wider audience of business and residential consumers.

A. FEDERAL GOVERNMENT

The Office of the President of the United States has issued two executive orders regarding environmentally preferable products. Executive Order 12873, recently updated and strengthened by Executive Order 13101, mandates that federal agencies consider environmental attributes along with price and performance when making decisions regarding the procurement of goods and services. These Executive Orders provide guidance on purchasing environmentally preferable products. They also direct the EPA to identify recycled content products and to provide general guidance on environmentally beneficial purchasing to other agencies.

The federal government continues to expand the number and size of EPP efforts. Agencies such as the Department of Defense and the General Services Administration are leaders in developing green purchasing programs and initiatives.

1. President's Council on Sustainable Development

The President's Council on Sustainable Development in the United States was created in 1993 to advise the President on ways to integrate the environmental, economic, and social goals of the nation so that the needs of the present can be met without

compromising the ability of the future generations to meet their own needs. The Council's members came from government, businesses, environmental organizations, civil rights groups, labor unions, and Native American tribes. The authority of the President's Council on Sustainable Development expired on June 30, 1999.

The Council recommended in 1996 that the President appoint a Product Responsibility Panel to facilitate demonstration projects regarding voluntary, multi-stakeholder models of shared product responsibility. The Council recommended that the Panel have a balanced representation of stakeholders from all sectors of the economy with an interest in the life cycle stages of products.

The Council sponsored a "National Town Meeting for a Sustainable America" in May 1999 to catalyze a national movement towards sustainable development. A web site maintained by Sustainable America (<http://www.sustainableusa.org/>) describes the National Town Meeting and provides information about ongoing programs.

**CONTACT: Although the President's Council on Sustainable Development
Ceased to exist after June 30, 1999, several documents that
the Council had published are still available from the Internet
at:
<http://www.whitehouse.gov/PCSD/>**

2. U.S. EPA's Environmentally Preferable Purchasing Program

To support Executive Order 12873, the U.S. EPA created the Environmentally Preferable Purchasing Program (Program) in 1993 to encourage and assist federal executive agencies in the purchasing of environmentally preferable products and services. Although the Program does not recommend specific products or services, it offers a number of purchasing guides and tools to assist environmentally preferable purchasing efforts. The Program also acts as a clearinghouse for environmentally preferable purchasing case studies and success stories.

CONTACT: U.S. Environmental Protection Agency
401 M St., S.W. (7409)
Washington, DC 20460
Telephone: 202.260.3296
Internet: <http://www.epa.gov/opptintr/epp/>

3. U.S. Department of Defense

The U.S. Department of Defense (DoD) commands nearly five percent of the gross national product. However, its sheer size and complexity has prevented it from providing a succinct overview of its environmentally preferable purchasing activities.

The Airforce, Army, and Navy administer separate purchasing programs that are typically administered from individual military bases. Some purchasing programs are supported by a multi-million dollar budget, in-house analytical laboratories, and teams of hired consultants. Other efforts may simply consist of orders of recycled paper from the Defense Supply Center.

The following EPP success story illustrates one instance where the DoD collaborated with the EPA to buy environmentally preferable products. In 1996, the DoD worked with the EPA to develop contract language encouraging the use of environmentally preferable products in parking lot repairs. In 1997, the DoD awarded a 5-year, multi-million dollar contract for maintenance and repair of several parking lots, including the Pentagon parking lots. The contract included unique features to encourage the contractor to identify and use products with multiple environmental attributes such as recycled content or low volatile organic compound (VOC) content. Environmental benefits have included the reuse of 3328 tons of recycled asphalt and the recycling of 4380 tons of asphalt.

CONTACT: Frances Mcpoland
Federal Environmental Executive
USEPA Headquarters, Mail Stop 1600
1401 M Street, S.W.
Washington, DC 20460
Telephone: 202.260.1297
Internet: <http://www.ofee.gov>

4. U.S. General Services Administration (GSA)

The U.S. General Services Administration (GSA) provides federal agencies with billions of dollars worth of supplies and services. Their products and services encompass everything from recycled paper products, paints and chemicals, and data processing equipment to discounts for air travel and hotel/motel accommodations. The GSA's fleet management system currently provides vehicle services to 75 participating Federal agencies.

Over the past years, the GSA has included an increasing number of environmentally preferable products in its procurement schedules. It currently offers a range of biodegradable cleaning products that exhibit other environmentally beneficial attributes such as low VOC emissions. In a notably bold step, GSA has also made the decision to discontinue purchasing virgin paper and sell only 30 percent post-consumer recycled-content copier paper to federal agencies. The GSA management reached this decision as a result of discussions with the Office of the Federal Environmental Executive and representatives from various federal agencies. This effort has been hailed as a major step forward in efforts to promote green government purchasing because copier paper accounts for over 28 percent of all the paper purchased by the federal government, which uses approximately 10 million sheets every work hour. As a result,

total government purchases of recycled content copier paper almost doubled from 20 percent in FY 1996 to 39 percent in FY 1997.

CONTACT: Thomas Daily
Chief, Environmental Programs
GSA Federal Supply Service
Building CM4
1941 Jefferson Davis Highway, Room 705
Arlington ,VA 22202
Telephone: 703.305.5149
Internet: <http://pub.fss.gsa.gov/environ/about-environment.html>

B. STATE AND LOCAL GOVERNMENT

State and local governments have also initiated programs to promote sustainable consumption. A variety of states and municipalities have established protocols to encourage or require their governments to purchase environmentally preferable products. Others have adopted voluntary programs designed to encourage businesses to change their consumption patterns or help green their supply chain.

1. Massachusetts Operational and Services Division (MA OSD)

Spurred on by its "Clean State Program" encouraging state government to improve its environmental performance, Massachusetts hired a full-time Environmental Purchasing Coordinator in 1994. While the position is funded by the State's Department of Environmental Protection, it is located in the state's purchasing agency, the Operational Services Division (OSD). The OSD has established a reputation as one of the leading promoters of environmentally preferable purchasing by the public sector. Between 1994 and 1998, Massachusetts increasing its recycled product purchases from \$3 million to over \$35 million. Massachusetts has also established a purchasing program for environmentally preferable cleaning supplies.

CONTACT: Eric Friedman, Environmental Purchasing Coordinator
Massachusetts Operational and Services Division
John McCormack State Office Building
One Ashburton Place
Boston, MA 02108-1552
Telephone: 617.727.7500 Ext. 351
Internet: <http://www.state.ma.us/osd/enviro/enviro.htm>

2. Minnesota Department of Administration

The state of Minnesota has enacted a variety of legislative requirements related to environmentally responsible purchasing. For example, state agencies must buy products made with recycled material when the price does not exceed comparable nonrecycled

products by more than 10%. To assist state agencies with EPP, the Minnesota legislature has charged the Minnesota Department of Administration with assisting government entities in the acquisition of products and services in a socially and environmentally responsible fashion.

Within the Department of Administration, the Materials Management Division is responsible for helping state agencies and local governments purchase environmentally responsible products, including goods which: contain fewer toxic materials; minimize waste; contain recycled content; or conserve energy and water. The Materials Management Division works with the Minnesota Office of Environmental Assistance to provide information on the cost, performance, and availability of environmentally preferable products.

CONTACT: Brenda Willard, Acquisitions Manager
Materials Management Division
State of Minnesota Department of Administration
112 Administration Building
St. Paul, MN 55155
Telephone: 651.296.9075
E-Mail: brenda.willard@state.mn.us

3. The Green Zia Environmental Excellence Program³³

The Green Zia Environmental Excellence Program is a project of the New Mexico Environmental Alliance, whose members include the Energy, Minerals and Natural Resources Department, the Environment Department, and the Waste-Management Education and Research Consortium at New Mexico State University. A voluntary program modeled after the Malcolm Baldrige Quality Program, it is designed to assist all New Mexico businesses to achieve environmental excellence by implementing pollution prevention and energy efficiency programs (P2/E2) through an EMS.

The Program encourages companies to take a lifecycle approach towards their operations and to improve their products and environmental performance through feedback from employees, vendors, suppliers, and customers. For example, the Program asks companies to summarize how they do the following:

- ❑ Solicit customer feedback to improve the environmental performance of a product, process or service.
- ❑ Involve suppliers and vendors in product development and process improvements to improve the environmental health and safety performance of a product, process or service.
- ❑ Track and consider competitor analysis on green trends in product design.

³³ Patricia Gallagher et. al., "New Mexico's Green Zia Environmental Excellence Program: Using A Quality Model for A Statewide P2 Program," *Pollution Prevention Review*, (Winter 1999).

- ❑ Market their green products, processes or services and track competitor green marketing strategy.
- ❑ Develop new green markets and products.

The program offers a variety of incentives and rewards, including: public recognition for businesses that achieve environmental excellence through P2/E2, training and technical assistance to aid businesses in developing P2/E2 action plans, and a statewide network to share information.

CONTACT: Pat Gallagher
New Mexico Environment Department
Harold S. Runnels Building
1190 St. Francis Dr.
Santa Fe, NM 87505-4182
Telephone: 505.827.0677
E-Mail: Pat_Gallagher@nmenv.state.nm.us

4. Alameda County, California

The Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board operate as one organization, under the administrative direction of an Executive Director. The Waste Management Authority offers a wide variety of programs in the areas of waste reduction, market development, technical assistance and public education. The Alameda County Source Reduction and Recycling Board, which was created by voters through a 1990 ballot initiative, is responsible for programs in the areas of waste reduction, recycled product procurement, market development and grants to non-profit organizations.

One of the most innovative initiatives of the Waste Management Authority and Recycling Board is the "Resource-full Showcase," a traveling environmental education exhibit demonstrating the use of recycled, reused, recyclable, and non-toxic materials in home construction and remodeling. The Showcase is housed in a trailer constructed of over 50 recycled-content and sustainable building materials. Exhibits present information targeted to both a professional and non-professional audience regarding a variety of products, including: lumber, roofing, siding and sheathing, insulation, panel products, ceiling tiles, countertops, flooring products, paints/stains/adhesives, wall coverings, furnishings, and solar power systems. The Showcase also has an archive section offering detailed fact sheets on recycled content building materials.

The Waste Management Authority and Recycling Board were recognized by the California Resource Recovery Association in 1997 with the "Zero Waste" award for the most comprehensive waste reduction, recycling and public education program in California.

CONTACT: Alameda County Waste Management Authority &

Alameda County Source Reduction and Recycling Board
777 Davis Street, Suite 100
San Leandro, CA 94577
Telephone: 510.614.1699
Internet: <http://www.stopwaste.org>

5. City of Santa Monica, California

The City of Santa Monica manages the oldest environmentally preferable purchasing initiative in the United States. Established in 1993, the initiative focused first on developing criteria for selecting environmentally preferable janitorial supplies. Santa Monica continues to explore innovative purchasing strategies in such areas as fleet maintenance products and integrated pest management.

CONTACT: Deborah Raphael
Environmental Programs Division
200 Santa Monica Pier
Santa Monica, CA 90401
Telephone: 310.458.2255
Internet: <http://www.ci.santa-monica.ca.us> and
<http://www.epa.gov/opptintr/epp/santa.pdf>

6. The King County (Washington) Environmental Purchasing Policy

King County in the state of Washington operates one of the most active and extensive environmental purchasing programs in the country. Adopted by the King County Council in 1989, the Environmental Purchasing Policy directs County agencies to purchase products manufactured with recycled and environmentally preferable products whenever practicable.

The objective of the Environmental Purchasing Program is to bring about fundamental change in the procurement priorities of the more than 12,000 employees of King County and its contractors. The program helps agencies understand policy requirements and communicates specifications, contracts, and other practical information to County agencies, vendors, users, and other jurisdictions. The program also provides information and technical assistance to help County agencies identify and purchase recycled and environmentally preferable products that are economical and effective. By providing information and guidance to County employees and relying on their expertise to evaluate procurement opportunities and revise procedures, the program's collaborative approach is gradually changing the way County agencies view these opportunities.

CONTACT: Eric Nelson
King County Environmental Purchasing Program
500 4th Ave., Room 620
Seattle, WA 98104
Telephone: 206.296.4324

Internet: www.metrokc.gov/procure/green

7. Northeast Recycling Council (NERC)

In 1997, the Northeast Recycling Council in Brattleboro, Vermont, established the nation's first Internet listserv for government purchasers of environmentally preferable products. The EPPNET is intended to provide quick access to product specifications, lists of vendors for particular products, pricing information, strategies to achieve recycled product procurement goals, and federal procurement policies. The Environmentally Preferable Products Procurement Listserv (EPPNET) also allows federal, state, local, and private officials to discuss procurement issues. Product vendors are currently not granted access to the network, although this may be reconsidered later.

CONTACT: Northeast Recycling Council
139 Main Street, Suite 401
Brattleboro, VT 05301
Telephone: 802.254.3636
Internet: <http://www.nerc.org>

8. National Association of Counties (NACo)

The National Association of Counties' (NACo) Environmentally Preferable Purchasing Project helps counties in the United States locate and select products whose manufacture or use reduces waste and exposure to hazardous materials, conserves resources and energy, and is cost effective.

The NACo plans to provide an environmentally preferable purchasing "starter kit" that will include program implementation strategies, case studies, model resolutions, and a resource list. The NACo also plans to develop information packets on eight product categories: automobile and fleet maintenance/alternative fueled vehicles, cleaning supplies, pesticides and herbicides, office supplies, painting, printing, construction and demolition, and green buildings.

CONTACT: The National Association of Counties
440 First Street, N.W., Suite 800
Washington, D.C. 20001
Telephone: 202.393.6226
Internet: <http://www.naco.org/programs/environ/purchase.cfm>

II. LAWS AND POLICIES

Although governments may adopt environmentally preferable purchasing programs for themselves, they rarely if ever mandate that others consume sustainable

products or services. Indeed, no government has yet developed a set of comprehensive laws and policies to support, let alone require, sustainable consumption. Nevertheless, governments have used a variety of regulatory, economic and information-oriented "instruments" to directly or indirectly encourage companies and communities to pursue sustainable consumption.

A. REGULATORY INSTRUMENTS

For decades, governments have used performance standards, technology standards, and chemical bans and phase-outs for environmental protection. While these regulatory mechanisms were initially designed as a means of improving and protecting public health and the environment, in some instances they also influenced (or compelled) industry to modify production processes, design greener products, and use more environmentally sound materials. In so doing, these regulatory mechanisms indirectly helped stimulate sustainable consumption.

1. Product Take-Back

Product take-back laws require retailers and/or manufacturers to create educational, informational or training programs to help customers understand how to purchase, use and dispose of products in a manner that facilitates reuse or recycling.

One example of a take-back law is the federal Mercury-Containing and Rechargeable Battery Management Act of 1996,³⁴ which helped usher in a voluntary take-back system for nickel-cadmium rechargeable batteries. The primary purpose of this federal law is to facilitate a national take-back program, paid for and carried out by the rechargeable products industry, to collect and recycle these batteries. The Act also requires uniform national labeling of nickel-cadmium and other rechargeable batteries and sets uniform battery removeability design requirements for rechargeable products.³⁵

2. Bans and Phase-outs

In the United States, various federal laws impose bans or phase-outs of certain toxic chemicals. For example, through its authority under the Toxic Substances Control Act, the U.S. EPA has banned the manufacturing, processing, and distribution of chlorofluorocarbons and polychlorinated biphenyls in most instances.³⁶ The EPA has also exercised its authority under the Federal Insecticide, Fungicide, and Rodenticide Act to ban the manufacturing, distribution, and use of DDT and other pesticides.³⁷ By their nature, government actions taken under these laws force manufacturers to seek greener inputs for their production processes and to consider the environmental impact of the products' use and disposition.³⁸ However, these laws generally do not restrict consumers

³⁴ 42 U.S.C. §§ 14301-14336.

³⁵ See Office of Environmental Policy and Assistance, Department of Energy, *Environmental Law Summary: Mercury-Containing and Rechargeable Battery Management Act*, available online at (http://tisnt.eh.doe.gov/oeпа/law_sum/BATTERY.HTM).

³⁶ 15 U.S.C. §§ 2601-2629. The manufacturing, processing, and distribution of chlorofluorocarbons and polychlorinated biphenyls is allowed under certain limited circumstances. See 40 CFR § 761.

³⁷ The Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. § 135 *et seq.*

³⁸ John Hart et al., *Toxics A to Z: A Guide to Pollution Hazards*, Berkeley: University of California Press, 1997.

from using these chemicals, nor do they require the use of greener alternatives. Consequently, these laws have an indirect and weak effect on sustainable consumption.

B. ECONOMIC INSTRUMENTS

Governments can use a variety of economic strategies to promote sustainable development, include fiscal instruments (e.g., taxes and subsidies), charge systems (e.g., emission charges and user fees), and financial mechanisms (e.g., deposit-refund systems).³⁹ Many of these strategies can promote sustainable consumption indirectly. For instance, product taxes (often called advanced disposal fees) shift the waste management cost of a product to the producer and consumer. The tax provides an incentive to producers and consumers to take note of and minimize the environmental impacts of their manufacturing and purchasing decisions.

C. INFORMATION-ORIENTED INSTRUMENTS

Governments can increase the public's level of environmental awareness by increasing the quantity and quality of environmental information available. Information-oriented programs help consumers make more informed decisions and encourage businesses to minimize the environmental impact of their production processes and products.

1. Eco-Labeling Laws

Eco-Labeling programs provide information on the environmental impact of manufacturing or using a product. This information can help consumers choose more environmentally superior products; it can also create a market incentive for businesses to improve the environmental attributes of their products. For example, the energy efficiency labeling requirements of the federal Energy Policy and Conservation Act of 1976 have encouraged manufacturers to significantly increase the energy efficiency of large appliances.

Eco-Labels can also provide consumers with information about a product's contents. The Minnesota Mercury Emission Reduction Act is an example of a labeling program that requires manufacturers to identify mercury-containing products. It also requires the label for a mercury-containing product to inform the consumer that the item may not be placed in the garbage until the mercury is removed and reused, recycled or otherwise managed to ensure that it does not become part of the solid waste or wastewater streams. The law covers consumer items such as thermostats or thermometers, electric switches, medical and scientific instruments, and electrical devices and appliances.

Alternatively, Eco-Labels might go beyond simply listing a product's ingredients to state the potential environmental or health impacts of those ingredients. For example, the federal Consumer Product Safety Act requires certain products to contain statements of potential health and safety impacts. Similarly, California's Safe Drinking Water and

³⁹ See the International Institute for Sustainable Development's Web site at <http://iisd.ca/susprod/>.

Toxic Enforcement Act requires warning labels for products containing chemicals that the state has determined to be carcinogenic and/or teratogenic.

2. Right-To-Know Laws

Right-to-know laws provide an indirect yet powerful impetus for promoting sustainable consumption because they provide employees and the public with information about the industrial use and release of hazardous chemicals and wastes. By generating negative publicity for companies that use large volumes of hazardous chemicals and discharge toxic pollutants, such laws create strong incentives for businesses to pursue source reduction programs. Once established, these programs can lead to sustainable consumption initiatives such as green product design or environmentally progressive purchasing.

The federal Emergency Planning and Community Right-To-Know Act (EPCRA) establishes a basic right-to-know program for communities across the country. It requires millions of businesses to provide hazardous chemical inventory data to local, regional, state, and federal authorities. These inventories include information on hazardous chemical usage and storage needed to prepare emergency response plans, as well as information on routine discharges of toxic by-products. Basic information about these discharges is compiled in the Toxic Release Inventory (TRI) maintained by the EPA.

III. INTERNATIONAL PROGRAMS AND INITIATIVES THAT AFFECT THE UNITED STATES

Various international programs and initiatives are helping prepare the public sector to address the challenge of sustainable consumption. This section describes several programs and initiatives designed to support the work of government agencies or multinational organizations. While these programs do not target efforts in the United States in particular, they are intended to support sustainable consumption initiatives in the United States as well as in other countries.

1. The United Nations Commission on Sustainable Development

The United Nations Commission on Sustainable Development (CSD) helps to improve the UN's coordination of environment and development activities. The Commission works with over 50 nations and more than one thousand non-governmental organizations to promote sustainable development worldwide.

The CSD also acts as an international forum for sustainable consumption issues. The CSD has addressed consumption and production patterns as a key issue at all of its annual sessions.

The Secretariat for the CSD, the United Nation's Division for Sustainable Development of the Department of Economic and Social Affairs (DSD/DESA)

coordinates the implementation of the International Work Programme on Changing Consumption and Production Patterns. The Programme focuses on five areas:

- (1) Trends in Consumption and Production Patterns,
- (2) Impacts on Developing Countries of Changes in Consumption Patterns in Developed Countries,
- (3) Policy Measures to Change Consumption and Production Patterns,
- (4) Voluntary Commitments from Countries/Indicators for Measuring Changes in Consumption and Production Patterns, and
- (5) Revision of the UN Guidelines for Consumer Protection.

CONTACT: Secretariat of the U.N. Commission on Sustainable Development
United Nations Plaza, Room DC2-2220
New York, NY 10017
Telephone: 212.963.3170
Internet: <http://www.un.org/esa/sustdev/csd.htm>

2. United Nations Environment Programme Working Group on Sustainable Product Development

The United Nations Environment Programme Working Group on Sustainable Product Development (WG-SPD) was established in 1994. As a response to 'Agenda 21' of the 1992 UNCED Conference in Rio de Janeiro, which called for changes in production and consumption patterns for a sustainable future, the Dutch Ministry for the Environment expressed its support for a new Working Group on products and services.

The mission of the WG-SPD is to provide support to industry and policy makers for strategic thinking about sustainable products and services in relation to trends in international sustainable production and consumption policy. Its primary product and service is information. The WG-SPD's web site offers a database of sustainable product and service examples, hundreds of contacts in 55 countries, a downloadable version of its magazine ("Way Beyond"), various documents, and a Sustainable Development Agenda. The WG-SPD also publishes a newsletter and numerous reports, studies and papers.

CONTACT: United Nations Environment Programme
Working Group on Sustainable Product Development
Nieuwe Achtergracht 166,
J.H.van't Hoff Institute, B-315,
NL-1018 WV Amsterdam
The Netherlands
Telephone: 31.20.525.6268
Internet: <http://unep.frw.uva.nl>

3. International Institute for Sustainable Development

The mission of the International Institute for Sustainable Development (Institute) is to promote sustainable development in decision-making within Canada and internationally. While the Institute's broader focus is on sustainable development, it maintains a web page with a wide variety of documentation on Sustainable Consumption and Production.

The Institute works with businesses, governments, communities, and concerned individuals to create networks designed to move sustainable development from concept to practice. Network members are linked via Internet communications, working groups, and project activities. The Institute disseminates information about best practices and demonstrates to networks how to measure progress toward sustainability.

CONTACT: International Institute for Sustainable Development
161 Portage Avenue East, 6th Floor
Winnipeg, Manitoba, Canada
R3B 0Y4
Telephone: 204.958.7700
Internet: <http://www.iisd.ca/linkages/consume>

4. Organization for Economic Co-operation and Development - Sustainable Consumption and Production Program

The governments of the OECD countries, which are the largest consumers of natural resources, are devoting greater effort to understanding the forces driving their consumption and production patterns and to identifying and implementing strategies and policies to reverse unsustainable trends. The OECD has been supporting its member countries since 1994 through a multi-disciplinary work programme on sustainable consumption and production which is intended to clarify the conceptual framework, identify trends, policy options, and tools, and monitor and evaluate progress. The work programme draws together a diverse range of activities within the Environment Directorate and other parts of the OECD and has close links with related work in other international organizations.

In June 1997, the OECD published a report on its work, *Sustainable Consumption and Production*, which formed part of its contribution to the UN General Assembly Special Session on Sustainable Development. Various documents on Sustainable Consumption and Production are available for downloading from the OECD web site, <http://www.oecd.org/env/sust/sustain.htm>.

CONTACT: OECD Washington Center
2001 L Street, N.W., Suite 650,
Washington, DC 20036-4922
Telephone: 202.785.6323
Internet: <http://www.oecdwash.org> and
<http://www.oecd.org/env/sust/sustain.htm>

CHAPTER 4: BUSINESS AND INDUSTRY

In the past, in the absence of product-oriented regulations, businesses rarely considered their responsibility for products once they left the shipping dock. Only in the most egregious instances would companies discontinue or reformulate products due to their negative environmental impacts. Similarly, consumers rarely took the environmental impacts of products into account when making purchasing decisions. Indeed, consumers would have had a difficult time doing so, because manufacturers

themselves often knew or cared little about the environmental impacts of their products and so little information was available.

In recent years, however, businesses have begun to adopt management strategies or principles that focus on sustainable production. These approaches recognize the importance of assessing the entire life cycle of a service or product.⁴⁰ One strategy that entails a comprehensive look at the flow of materials associated with the manufacture of a product is “cleaner production”. As defined by the United Nations Environment Programme, “cleaner production” means “the continuous application of an integrated preventive environmental strategy to processes and products to reduce risks to humans and the environment.”⁴¹ Cleaner production calls upon manufacturers to reduce impacts throughout the entire life cycle of their products by using a variety of methods such as conserving raw materials and energy, eliminating toxic raw materials, and reducing the quantity and toxicity of all emissions and wastes.⁴² Similarly, the principle of “Extended Product Responsibility” states that the actors along the product chain share responsibility for the life-cycle environmental impacts of the whole product system, including upstream impacts inherent in the selection of materials for the products.⁴³

These environmental management strategies do not necessarily advocate explicitly that businesses alter their (or their customers’) consumption patterns. Nevertheless, they have paved the way for many businesses to begin thinking about sustainable consumption issues. As businesses focus more on the environmental attributes of their products and services, they see new opportunities to improve operational efficiency, strengthen relationships with customers, and increase market share. This positive feedback encourages businesses to take a holistic approach to environmental management that includes addressing every stage of a product’s life cycle.

Companies have undertaken a range of efforts to practice and promote sustainable consumption, whether as independent initiatives or as part of a larger marketing strategy. This chapter classifies sustainable consumption efforts by businesses into three general categories:

- Enhanced commercial relationships with suppliers and customers that support sustainable consumption practices,

⁴⁰ For example, “Environmentally Conscious Manufacturing” involves planning, developing, and implementing manufacturing processes and technologies that minimize or eliminate hazardous waste and reduce scrap. To do this, manufacturers use life-cycle assessments to measure the environmental impact of products from “cradle to grave.” Joseph Starkis and Abdul Rasheed, “Greening the Manufacturing Function,” *Business Horizons*, Vol. 38, Issue 5, September/October 1995, p. 17.

⁴¹ United Nations Environment Programme Division of Technology, Industry and Economics website (http://www.unepie.org/Cp2/what_is/general_info.html). See also Beverley Thorpe, *Citizen’s Guide to Clean Production (First Edition)*, Lowell, MA: University of Massachusetts Lowell, August 1999, p. 8.

⁴² *Citizen’s Guide to Clean Production (First Edition)*, p. 9.

⁴³ “The concept is to identify opportunities to prevent pollution and reduce resource and energy use in each stage of the product life cycle (or product chain) through changes in product design and process technology.” Gary Davis and Catherine Wilt, *Extended Product Responsibility: A New Principle for Product-Oriented Pollution Prevention*, University of Tennessee: Center for Clean Products and Clean Technologies, June 1997, p. 1-1.

- Educational and management programs that promote institutional acceptance of and accountability for sustainable consumption, and
- Design initiatives that help businesses to “green” their products and services.

It should be noted that many of the organizations described in this chapter have undertaken sustainable consumption initiatives in all three of the areas listed above. In such cases, these complementary programs work together to help the organizations establish a unified corporate strategy around sustainable consumption.

I. ENHANCED COMMERCIAL RELATIONSHIPS

To promote the environmental benefits of their products and services, businesses and industry are taking a variety of new approaches to their relationships with suppliers and customers. To support this effort, nonprofit organizations, government agencies, trade organizations and consulting firms have developed programs that are revolutionizing the traditional modes of commerce. These programs include:

- Service-Oriented Approaches
- Green Procurement
- "Greening" Supplier Inputs (Greening the Supply Chain)
- Green Marketing
- Eco-Labeling/Environmental Certification
- Product Takeback Programs

A. SERVICE-ORIENTED APPROACHES

A number of innovative product delivery systems are establishing new relationships between producers and consumers and turning manufacturers into service providers. Companies such as Interface have developed products that are leased rather than sold to customers. Similarly, through the Chemical Strategies Partnership, chemical suppliers seek to provide a service (e.g., satisfying their customers’ chemical management needs) instead of a product (e.g, chemicals).

1. Interface, Inc.

In 1994, Interface Chairman Ray Anderson spearheaded a movement to turn the carpet manufacturer into an ecologically sustainable corporation by 2000, and eventually into a restorative operation that helps improve the environment. Modeled on the cycles of energy and matter found in natural systems, the company's sustainability efforts can be broadly divided into seven major components: zero waste, benign emissions, renewable energy, closing the loop, resource-efficient transportation, sensitivity, and the redesign of commerce.

To achieve its environmental goals, Interface has introduced the EverGreen Lease program whereby customers lease carpets rather than purchase them. Interface lays the carpet tiles, maintains them, and replaces individual tiles when they wear out. Worn carpet tiles are taken back for refurbishing or recycling, depending on their condition.

CONTACT: Interface Flooring Systems, Inc.
 Orchard Hill Road
 La Grange, GA 30240
 Telephone: 800.336.0225
 Internet: <http://www.interfaceinc.com>

2. Chemical Strategies Partnership (CSP)

The Chemical Strategies Partnership (CSP) is promoting chemical use reduction through a new model in customer-supplier relationships where chemical suppliers are rewarded for chemical service instead of chemical sales. The CSP Program helps a manufacturer evaluate the efficiency and costs of its current chemical management system. Based on this information, financial incentives are developed for the chemical supplier to help the manufacturer reduce its use of chemicals, reduce its costs, and improve quality. A project of the Tides Center, the CSP Program is funded by The Pew Charitable Trusts and The Heinz Endowments and is administered by California Environmental Associates and the Tellus Institute.

CONTACT: Chemical Strategies Partnership
 423 Washington Street, 4th floor
 San Francisco, CA 94111
 Telephone: 415.421.3405

3. Home Depot

Home Depot, a national chain of hardware super-stores, conducts education programs that inform consumers about environmentally preferable products and home improvement options that protect the environment. Home Depot requires all of their suppliers to submit their products to an independent environmental certification company (Scientific Certification Systems, see above) to evaluate the accuracy of environmental claims. Home Depot also states that it educates its staff about the environmental attributes of Home Depot products.

Through short seminars in its stores, on its website, and in published fact sheets (Home Depot's Environmental Greenprint Series), Home Depot suggests cost-saving environmental improvements for homeowners. These improvements are aimed at promoting energy efficiency (e.g., insulation upgrades) and resource conservation (e.g., low flow showers and irrigation systems). In addition, Home Depot sponsors Canada's Powersmart Program to promote efficient energy use in homes.

CONTACT: The Home Depot

2455 Paces Ferry Road
Atlanta, GA 30339
Internet: <http://homedepot.com>

B. GREEN PROCUREMENT

Many companies are seeking to buy greener products and materials from their suppliers to help ensure that their products and processes are environmentally responsible. This includes buying products or packaging that reduce waste but do not compromise costs, reliability, or quality. Some companies participate in buyers' groups in which they leverage their collective buying clout to push suppliers to consider alternative products or processes.

1. Warner Brothers⁴⁴

A subsidiary of Time Warner, Warner Brothers is a media and entertainment company that also operates a chain of specialty retail stores worldwide. The company's purchasing policy asks all employees to purchase products that maximize one or more of the following attributes: high recycled post-consumer content, recyclability, durability/reusability, reduced packaging, or decreased use of toxic chemicals in manufacturing. The company states that its purchase of environmentally preferable products (e.g., paper, janitorial supplies, construction materials, transportation products, computers, copiers, and printers) has increased as a result of its purchasing policy.

The purchasing policy also calls for all departments to include environmentally friendly criteria in their selection of vendors. These vendor criteria include a commitment to supply environmentally sound products, flexibility in order to reduce packaging, adoption of environmentally sound practices in manufacturing, and willingness to urge the vendor's own suppliers to improve their products and go beyond minimum standards.

CONTACT: Warner Brothers
4000 Warner Blvd.
Burbank, CA 91522
Attention: Shelley Levin Billik
Telephone: 818.954.3470
Internet: <http://www.wb.com>

2. Perrigo⁴⁵

⁴⁴ Information on Warner Brothers is derived from the United States Environmental Protection Agency Office of Pollution Prevention and Toxics, Environmentally Preferable Purchasing Program, *Private Sector Pioneers: How Companies are Incorporating Environmentally Preferable Purchasing*, EPA 742-R-99-001, June 1999, pp. 24-25.

⁴⁵ Information on Perrigo is derived from *How Companies are Incorporating Environmentally Preferable Purchasing*, p. 17.

Perrigo is a manufacturer of generic and store brand pharmaceuticals, personal care, and nutritional products with revenues of \$903 million in 1998. Perrigo implemented an environmental purchasing program for cleaning products used in its 11 manufacturing facilities, which occupy a total of 2 million square feet. The company developed a list of environmental attributes to use in selecting cleaning products. The list includes VOC content, pH level, toxicity, flammability, chemical content, use of regulated materials, and reduced packaging. Perrigo's environmental purchasing program is saving the company more than \$35,000 annually and has decreased the number of different cleaning products it needs to purchase.

CONTACT: Perrigo Company
117 Water Street
Allegan, MI 49010
Attention: Danielle Ouendag
Telephone: 616.673.8451 x2909
Internet: <http://www.perrigo.com>

3. Green Seal Partnership Program

Green Seal is an independent nonprofit organization dedicated to protecting the environment by promoting the manufacture and sale of environmentally responsible consumer products. The Green Seal Environmental Partners Program provides green buying assistance to businesses concerned about the environmental impact of their purchases. When a company or institution joins the Partnership Program, Green Seal provides recommendations for environmentally preferable products in a range of categories, including copy paper, printing paper, envelopes, newsprint and select building materials. Green Seal's "Office Green Buying Guide" includes information on how to implement a green procurement policy and recommendations for environmentally preferable products.

CONTACT: Green Seal
1400 16th St., NW, Suite 300
Washington, DC 20036
Telephone: 202.588.8400
Internet: <http://www.green seal.org/>

C. "GREENING" SUPPLIER INPUTS

Many companies have come to understand that their environmental performance is directly linked to the performance of their suppliers and have begun to look "upstream" to the environmental impact of the products and services they buy. Companies have adopted a variety of approaches to help "green" their suppliers' products and services. Some companies have imposed codes of conduct on their suppliers; others have offered hands-on support and other resources. In some cases, companies are providing educational or training services to help suppliers learn about new products, technologies or management strategies that will directly lead to greater environmental improvement. Many companies are asking suppliers to reduce or eliminate their packaging use or use

packaging that can be reused or returned. A few large companies are even leveraging their buying clout to persuade suppliers to reduce or eliminate toxic chemicals that are contained in their products or released during the manufacturing process.

1. General Motors

General Motors invited eight of its key suppliers to form a Supplier Environmental Advisory Team (SEA Team) to explore ways that GM can work effectively with suppliers to integrate environmental concerns into its design, sourcing, and manufacturing processes. The SEA Team has identified several opportunities for collaboration on projects involving environmental management systems, design for the environment, and environmental metrics throughout the supply chain. Working with the SEA Team, GM developed a policy statement on "Environmental Performance Management in GM's Value Chain" and mailed the statement to its 650 largest suppliers. As shown in Box 4-1, the statement articulates GM's expectations for suppliers' environmental performance and "underscores the importance of continuous environmental improvement in GM's supply chain."

CONTACT: GM Global Supplier Network
Telephone: 877.435.7476
Internet: <http://www.gmsupplier.com/>

Box 4-1

Environmental Performance Management in GM's Value Chain

GM expects suppliers to:

- Implement and maintain an environmental management system that is consistent with an external standard or model (e.g., ISO 14001) appropriate for their businesses and locations
- This will assist suppliers to:
- Understand the environmental aspects and impacts of their activities, products, or services and to have a policy for managing them.
- Define and apply effective environmental management practices appropriate for their significant environmental aspects and impacts.
- Maintain regulatory compliance, or, in the absence of relevant regulation, observe good industry management practices or standards.
- Set and achieve goals and objectives for environmental impact reduction over time by considering opportunities in current activities and products and in the design and development of future ones.
- Help GM to understand how it can best identify, promote and support ongoing environmental performance improvement in its supply chain, and promote similar efforts with next-tier suppliers.

Source: Business for Social Responsibility
(<http://www.bsr.org/resourcecenter>)

2. Fetzer Vineyards

Fetzer Vineyards, a winery in Northern California, currently grows less than 10 percent of the grapes it uses for its wines. To meet its customers' increased demand for organic grapes, it developed an organic farming training program for its growers. Fetzer invited a group of its growers, dubbed "Club Bonterra," to discuss organic farming methods and exchange strategies and research for combating pests without the use of pesticides. Fetzer structured the group as a collaborative effort where Fetzer served as a resource and all participants, including Fetzer, learned from each other. Over the past five years, the quantity of organic grapes used by Fetzer has risen from one percent of total company production to thirty percent.

CONTACT: Fetzer Vineyards
4040 Civic Center Drive, Suite 525
San Rafael, CA 94903-4191
Telephone: 415.444.7442
Internet: <http://www.fetzer.com/>

3. Stonyfield Farm

Stonyfield Farm is a producer of yogurt and ice cream that promotes its image as an environmentally responsible company. Its high-profile environmental programs address such issues as environmental packaging, waste minimization, organic farming, solid waste minimization, energy conservation, and climate change.

As shown in Box 4-2, Stonyfield Farm's Environmental Mission Statement sets a number of environmental objectives, including the goals of achieving zero waste and eliminating the use of toxic chemicals. Stonyfield Farm is engaged in sustainable consumption activities to the extent that it opposes the use of genetically engineered recombinant bovine growth hormone (rBGH) and advocates an increase in the use of organically certified milk.

CONTACT: Stonyfield Farm Yogurt
Ten Burton Drive
Londonderry, NH 03053
Telephone: 603.437.5050
Internet: <http://www.stonyfield.com>

Box 4-2
Stonyfield Farm Environmental Mission Statement

To honor our stewardship responsibilities, we operate on these guiding principles:

- We will strive for the sustainable use of resources by intentionally designing and managing our facilities and activities to be in harmony with nature's processes, i.e., relying on natural energy flows, using resources efficiently, working toward zero waste, reducing the use of toxic chemicals with a goal of elimination of their use, and supporting biological diversity and the local ecosystem.
- We will strive for and model sustainable business practices which are environmentally sound AND economically viable, and will seek opportunities to educate stakeholders such as customers, suppliers, co-workers and fellow businesses, on specific actions that can be taken to reduce their impact on the environment.
- We will create systems to ensure the proper adherence to these principles, to track our progress, and to report our progress to all stakeholders. We accept responsibility for the effects of our design decisions and activities on humans and natural systems, and uphold the health and safety of our workers and community as our highest priority.
- We will invest our resources in activities that restore the health of our natural environment and create beauty.

Source: Stonyfield Farm's Earth Action webpage (www.stonyfield.com/earth/action.htm)

4. Ben and Jerry's

A maker of premium ice cream, Ben and Jerry's has recently decided to purchase and use only unbleached brown kraft paper for its ice cream containers. One of the stated aims of the company's decision is to encourage U.S. paper manufacturers to follow the lead of their European counterparts and equip their factories with chlorine-free technology. In its retail shops, Ben and Jerry's gives away pamphlets that provide customers with information about dioxin, a chemical byproduct of paper that is produced with chlorine. The company's website also urges consumers to use unbleached chlorine-free paper at home and at work and to demand that local governments and merchants revise their purchasing procedures to require the use of unbleached papers.

Ben and Jerry's also facilitates the "greening" of supplier and consumer behavior in less direct ways, through the Ben and Jerry's Foundation. The Foundation offers competitive grants to not-for-profit, grassroots organizations throughout the United States which facilitate progressive social change by addressing the underlying conditions of societal and environmental problems. Grants are awarded to applicants who demonstrate that their projects will lead to societal, institutional, and/or environmental change, address the root causes of social or environmental problems, and lead to new ways of thinking and acting. Past grant recipients whose projects touch upon sustainable production or consumption issues have included: Alternatives for Community & Environment, to train Boston youth to organize and advocate for cleaner public transportation and healthy air quality; the Carolina Farm Stewardship Association, to promote sustainable agriculture and organic farming in North Carolina; and the Farmworker Institute for Education &

Leadership Development, to work to change the policy and practice of agriculture in California's strawberry industry regarding toxic pesticides. For information about the Foundation, see <http://www.benjerry.com/foundation/index.html>.

CONTACT: Ben & Jerry's
30 Community Drive
South Burlington, VT 05403
Telephone: 802.846.1500
Internet: <http://www.benandjerrys.com>

5. Allergan, Inc.⁴⁶

Allergan, Inc. is an eye care and specialty pharmaceutical products company with sales of \$1.2 billion in 1998. The company has implemented Environmental Product Design (EPD), a process to green its health care supply chain, to ensure that environmental health and safety problems are avoided before a product enters commercialization stages. A feature of the EPD process is its description of environmental attributes to be encouraged (such as recyclable packaging) or avoided (such as toxic materials in the manufacturing process). Currently, Allergan uses EPD criteria to evaluate every product it researches and develops.

The EPD process also considers the environmental health and safety effects of raw material suppliers, manufacturing facilities or third-party manufacturers, distribution partners, and customers. Allergan has adopted a supplier certification process designed to “foster business agreements with organizations with effective environmental health and safety policies.”⁴⁷ In order to be certified as a “preferred provider,” a supplier must have ISO 14001 certification or demonstrate “preferred environmental health and safety qualities,” including processes for management and compliance assurance. Allergan is also trying to educate its customers about the benefits of buying from suppliers who have ISO 14001 certification.

CONTACT: Allergan, Inc.
2525 Dupont Drive
Irvine, CA 92612
Telephone: 800.347.4500
Internet: <http://www.allergan.com>

⁴⁶ Information on Allergan is derived from James Messelbeck and Michael Whaley, “Greening the Health Care Supply Chain: Triggers of Change, Models for Success,” *Corporate Environmental Strategy*, Winter 1999 (Vol. 6, No. 1), pp. 39-45.

⁴⁷ *Id.* p. 43.

6. Patagonia, Inc.⁴⁸

A merchandiser of outdoor apparel, Patagonia seeks to be a sustainable business (see Box 4-3). It publishes an annual Environmental Assessment Report that measures the company's performance according to four criteria: conserving natural resources, reducing pollution, protecting communities and their environments, and experimenting with alternative methods of doing business.

Since 1991, when an outside consultant conducted life cycle assessments of Patagonia's four major fabrics (polyester, nylon, cotton, and wool), the company has undertaken process modifications to reduce the environmental impacts of their products. For example, Patagonia offers products made with Fortrel-EcoSpun, made of 100 percent post-consumer polyester derived from soda bottles. It has also convinced some of its conventional cotton fabric suppliers to produce the same fabrics using organic cotton. Patagonia has also acknowledged the challenges it has faced when quality criteria have prevented the company from greening a particular product. For example, while Patagonia has eliminated chlorine from its organic product line and from production of its catalog, chlorine remains in the nylon fabric coating of its luggage line because of the company's colorfastness requirements.

Box 4-3

Patagonia's Principles of Responsible Business

- Maximize the efficiency of systems using less and change systems to improve use of time and resources.
- Close the loop using recycled materials and maximize recyclability of materials and products.
- Protect public and worker health by avoiding toxic material and hazardous processes.
- Use renewable resources wisely by using sustainably grown or harvested products and materials.
- Conserve nonrenewable resources, specifying particular conditions if use, and increase efficiency of use.
- Educate management, employees, and customers in an effort to increase understanding of company's environmental impacts and what company can do about them.

Source: Kelly McSpirit, "Sustainable Consumption: Patagonia's Buy Less, But Buy Better," *Corporate Environmental Strategy*, p. 37

⁴⁸ Information on Patagonia is derived from Kelly McSpirit, "Sustainable Consumption: Patagonia's Buy Less, But Buy Better," *Corporate Environmental Strategy*, Winter 1998 (Vol. 5, No. 2), p. 37.

CONTACT: Patagonia, Inc.
P.O. Box 150
Ventura, CA 93002
Telephone: 800.638.6464
Internet: <http://www.patagonia.com>

7. Herman Miller⁴⁹

Herman Miller is the second largest manufacturer of office furniture in the United States, with 1998 revenues totaling \$1.72 billion. As part of its efforts to promote environmentally conscious manufacturing and purchasing practices, the company holds semiannual conferences for its employees and its suppliers. The conferences address topics such as waste minimization, pollution prevention, lifecycle analysis, environmental design, and packaging. The company also uses several environmental criteria when it evaluates existing and potential suppliers.

CONTACT: Herman Miller, Inc.
855 East Main Ave.
P.O. Box 302
Zeeland, MI 49464
Telephone: 800.433.3998
Internet: <http://www.hermanmiller.com>

8. Supply Chain Working Group - Business and the Environment Program

The organization “Business for Social Responsibility” (BSR) has convened a Supply Chain Working Group, which consists of a group of companies interested in sharing ideas on how to improve economic and environmental performance in their supply chains. The Group is working with BSR to identify best company practices in supplier environmental management and to create new and better tools for implementing and measuring the results of supply chain management programs.

CONTACT: Business for Social Responsibility
Business and the Environment Program
609 Mission St., 2nd Floor
San Francisco, CA 94105
Telephone: 415.537.0890 x127
Internet: <http://www.bsr.org>

⁴⁹ Information on Herman Miller is derived from *How Companies are Incorporating Environmentally Preferable Purchasing*, pp. 30, 32.

D. GREEN MARKETING

Numerous green marketing firms advise companies on ways to promote their products and services to an increasingly savvy public as well as to businesses, government agencies, and other institutions.

1. J. Ottman Consulting, Inc.

J. Ottman Consulting, Inc., is a marketing consulting firm that advises companies on how to develop and market environmentally sound products. This firm advises companies in such industries as household products, food, energy, plastics, steel, high technology, home construction products, and packaging. Its services include: new product concept development and evaluation, strategic positioning, marketing plan development, market research (quantitative and qualitative), and corporate workshops and presentations. The president of the firm, Jacqueline Ottman, has published numerous articles on green marketing.

CONTACT: J. Ottman Consulting, Inc.
1133 Broadway, Suite 1211
New York, NY 10010-7903
Telephone: 212.255.3800
Internet: <http://www.greenmarketing.com/index.html>

2. Co-op America Business Network (CABN)

Co-op America is a non-profit membership group whose goal is to represent the interests of consumers and smaller companies with social and environmental missions. The organization hosts the Co-op America Business Network (CABN), which provides hands-on tools and resources for smaller companies seeking to implement "greener" practices and to market their products to environmentally conscious consumers. These tools and resources include "WoodWise," a database that helps companies buy products that are forest-friendly, and the online "Guide to Socially Responsible Investing," which promotes socially and environmentally responsible mutual funds. Co-op America's best-known product, The Green Pages, which lists hundreds of companies selling environmentally friendly products and services, is published both in print form and online (<http://www.greenpages.org>).

CONTACT: Co-op America
1612 K St., N.W.
Washington, DC 20006
Telephone: 202.872.5307
Internet: <http://www.coopamerica.com/>

E. ECO-LABELING/ENVIRONMENTAL CERTIFICATION

An array of eco-labeling programs exists across the world, from Canada to China. By providing basic information about a product's environmental attributes, these programs allow consumers to make more informed purchasing decisions. The bulk of these programs are in Europe, the most significant of which are Germany's Blue Angel program and the European Union's Eco-label initiative. In the U.S., the Green Seal certification is the most widely recognized. Criteria for certification under these eco-labeling programs provide some of the most comprehensive standards for green product design available to date.

1. Green Seal

Green Seal sets environmental standards and awards a "Green Seal of Approval" to products that cause less harm to the environment than other products in a similar category. By setting standards for environmentally responsible products, Green Seal seeks to reduce air and water pollution, cut the waste of energy and natural resources, slow ozone depletion and the risk of global warming, prevent toxic contamination, and protect fish and wildlife and their habitats.

To date, Green Seal has developed environmental standards for 300 products in 85 categories. Products awarded the Green Seal may display the certification on packaging, advertising, and promotional material.

CONTACT: Green Seal
 1400 16th St., NW, Suite 300
 Washington, DC 20036
 Telephone: 202.588.8400
 Internet: <http://www.greenseal.org/>

2. Scientific Certification Systems

Scientific Certification Systems ("SCS") is an independent organization founded in 1984. Its mission is to harness the tools of analytical science to stimulate innovation in the public and private sectors toward a more sustainable future.

In 1989, SCS started the first scientific program in the U.S. to independently verify the accuracy of environmental claims about products. The organization's Environmental Claims Certification Program documents and tests the environmental claims such as "recycled content" and "biodegradability" that appear on thousands of products and materials. Products which perform in the top 20th percentile for all significant environmental performance indicators merit the "Certified Environmental State-of-the-Art" designation. Similarly, the SCS Compliance Evaluation Program helps retailers, government agencies, and corporate procurement officials screen the environmental claims made by their vendors to ensure responsible green marketing.

In 1994, SCS created the Certified Eco-Profile, which summarizes a product's unique environmental performance based on a comprehensive life-cycle assessment. The organization compares the Eco-Profile to a nutritional label for the environment designed to help manufacturers, consumers, retailers, procurement officials and policy makers better understand the array of environmental considerations and impacts associated with each product choice.

CONTACT: Scientific Certification Systems
Park Plaza Building
1939 Harrison Street, Suite 400
Oakland, CA 94612
Telephone: 510.832.1415
Internet: <http://www.scs1.com>

F. PRODUCT TAKE-BACK PROGRAMS

Pressured by environmental laws and enticed by economic advantages, an increasing number of companies are developing product take-back programs. These programs seek to slow the growth of the solid waste stream by providing a mechanism for consumers to return used merchandise to the manufacturer for reuse, remanufacture, or material recovery. Product take-back programs, which usually require the incorporation of green design principles and new production management approaches into facility operations, have resulted in cost savings and increased industrial performance for many companies.

1. Nortel

Nortel is a global manufacturer of telecommunications whose major products include central office switches, private branch exchanges, and wireless communications. In 1992, Nortel initiated a Product Life-Cycle Management (PLCM) program that commits the company to factoring resource efficiency into all stages of the product life cycle. The PLCM program directly promotes product take-back by designing products for recovery, remanufacturing, and reuse.

Driven both by the recent European product take-back laws and the inefficiencies associated with waste generation, Nortel has recovered more than 60 switching systems in Europe since mid-1995. Approximately 80 percent of the recovered equipment has been used for spares, component resale, or material recycling, while 20 percent has been remanufactured and sold as refurbished equipment. Nortel met these goals in part because it designed products in the first place to retain value, be easily disassembled, and readily reusable in next generation products. For example, Nortel has adopted a modular product philosophy for its line of Vista telephones. The new model allows the customer to upgrade the units without buying a new one and scrapping the old one.

CONTACT: Nortel Networks
Dept 1019
One Brunswick Square
Atrium, Suite 100
Saint John, NB E2L 4V1 CANADA
Telephone: 800.4.NORTEL
<http://www.nortelnetworks.com/corporate/community/index.html>

2. Xerox

Xerox sells copiers, printers, scanners, fax machines, publishing systems, document management software, and related products and services in over 130 countries. In 1990, Xerox embarked upon a strategy to reduce waste in its facilities and to promote the recycling and recovery of Xerox products. The company developed the Environmental Leadership Program, which seeks to promote environmental excellence in all aspects of the Xerox Corporation's operations and products. One main component of the Program is the process of Asset Recycle Management (ARM), or reusing an asset (e.g., machine, subassembly, or piece part) by remanufacturing it to the original state, converting it to a different state, or dismantling it to retrieve the original components.

Although Xerox had already been taking back machines through their leasing programs, their manufacturing facilities had not been developed with comprehensive recycling of machines in mind. Under the Environmental Leadership Program, the "return" process required equipment to be sent to a central warehouse facility, which presented additional handling and warehouse costs. Further, as returns accumulated, there were problems with inventory control and the scrapping of parts. Xerox eventually realized that implementation of the ARM program would require a new method for accepting, processing, and recycling returns. Now, after a machine has reached the end of its useful life (or a lease), it is returned to a dedicated recycling center. The returned equipment is then remanufactured or stripped down for part and material recovery. Xerox estimates that its savings in raw materials, labor, and waste disposals under the ARM program amounted to \$300-400 million in 1995 alone.⁵⁰

CONTACT: Xerox Corp.
800 Longridge Rd.
Stamford, CT 06904
Telephone: 203.968.3000
Internet: <http://www.xerox.com>

⁵⁰ Stuart Hart, "Beyond Greening: Strategies for a Sustainable World," *Harvard Business Review*, vol. 75, no. 1 (January-February 1997), p. 72.

II. MANAGEMENT EDUCATION

The following section details ways that businesses develop and maintain an institutional drive toward sustainability as an element of achieving superior environmental performance. It offers examples of initiatives that educate managers as well as those that seek to hold them accountable for demonstrated environmental improvements, because both types of programs serve to improve the conditions within companies that promote sustainable consumption practices. The section is organized according to the following topics:

- *Educational programs* intended to demonstrate how new technologies and management approaches can result in environmental and economic benefits;
- Mechanisms for making managers account for and demonstrate environmental improvements, such as *corporate environmental standards, corporate mission statements, and corporate environmental reports*; and
- *Environmental award and recognition programs* intended to encourage corporate sustainability efforts.

A. EDUCATIONAL PROGRAMS

Various trade associations, nonprofit organizations, and government agencies have developed corporate environmental education programs. Corporate environmental education programs take a variety of forms, ranging from extensive training curricula to on-line Internet tutorials. Although many of these programs emphasize sustainability principles, few if any programs are devoted to sustainable consumption issues exclusively.

1. World Business Council for Sustainable Development

The World Business Council for Sustainable Development (WBCSD) is a coalition of over 120 international companies that provides a business perspective on sustainable development issues and whose primary goal is to push elevated standards of environmental management in business. It conducts research, promotes collaboration, and publishes information to help companies and industry sectors best manage sustainable development issues.

The WBCSD launched an electronic challenge to corporate executives and business students (“The Sustainable Business Challenge”). Available on the Internet, it features a briefing designed to familiarize candidates with the trends that businesses will face in the next century. This briefing covers topics related to such issues as the state of the global environment, the pace and direction of economic growth in transition economies and developing countries, and the changing regulatory and market pressures on business. The Internet briefing is followed by a free exam, designed to test and measure each candidate's understanding of the issues. All who pass the exam receive a WBCSD Sustainable Business Literacy Certificate.

CONTACT: World Business Council for Sustainable Development (WBCSD)
160 Route de Florissant, CH-1231
Conches-Geneva, Switzerland
Telephone: 41.22.839.3100
Internet: <http://www.wbcd.ch>

2. Business for Social Responsibility

Business for Social Responsibility (BSR) is a U.S.-based global resource for companies seeking to sustain their commercial success in ways that respect people, communities and the environment. Through membership in BSR, companies have access to practical information, research, education and training programs, technical assistance, and consulting services on all aspects of corporate social responsibility. More than 1,400 companies are BSR members or affiliates representing more than \$1.5 trillion in combined annual revenues and employing more than six million workers.

The Business and the Environment Program (BATE) is a subset of BSR that helps companies integrate environmental considerations into strategic business decisions and create more environmentally sustainable systems of commerce. BATE initiatives include projects relating to global climate change, green product design, green building design, sustainable business practices, and "closing the loop" with customers and suppliers.

The on-line resource center of the BSR, a particularly useful source of information regarding sustainability, can be accessed at: <http://www.bsr.org/resourcecenter>.

CONTACT: Business for Social Responsibility
609 Mission St., 2nd Floor
San Francisco, CA 94105
Telephone: 415.537.0890 x127
Internet: <http://www.bsr.org>

3. The Natural Step

The Natural Step (TNS) is an international organization dedicated to building an ecologically and economically sustainable society. It offers a scientifically-based framework that serves as a compass for businesses, communities, academia, government entities and individuals working to redesign their activities to become more sustainable. At its core is a set of four "systems conditions" that describe the scientific underpinnings of all environmental problems and their solutions. TNS uses these systems conditions to help companies and other institutions align their operations with the principles of sustainability.

In the United States, TNS assists organizations and corporations that embrace sustainability by holding seminars, workshops, presentations, executive briefings, and annual five-day conferences.

CONTACT: The Natural Step
P.O. Box 29372
San Francisco, CA 94129
Telephone: 415.561.3344
Internet: <http://www.naturalstep.org>

4. Management Institute for Environment and Business (MEB)

The Management Institute for Environment and Business (MEB), a part of the World Resources Institute (WRI), is dedicated to educating current and future business leaders about environmental issues. It seeks to build bridges between companies and academia by helping integrate environmental topics into core business school curricula. It also provides outreach and training directly to industry by helping companies develop management protocols and skills that foster the implementation of environmental technologies and practices. MEB aims to educate business leaders through a variety of means:

Educational Services: The BELL program concentrates on educating business school students about environmental concerns. A related program, LA-BELL, focuses its efforts on Latin America. MEB also produces case studies on environmental topics for use in business schools.

Outreach Services: The SPLASH (Strategic Partners Learning About Sustainability Horizons) program promotes business practices that assist companies in their efforts to move towards sustainability. MEB also operates the Sustainable Forestry Project, which helps businesses understand and integrate sustainable forestry practices through corporate partnerships and other methods.

Information Services: MEB publishes a quarterly newsletter as well as occasional reports covering a range of topics. Past reports have focused on such topics as corporate environmental metrics and the "greening" of business school curricula.

Events: MEB holds an annual BELL conference that brings academics together with companies and other experts. It also hosts an annual Sustainable Enterprise Summit, which focuses on leading-edge themes related to corporate sustainability.

CONTACT: Management Institute for Environment and Business
1709 New York Ave., N.W.
Washington, DC 20006
Telephone: 202.434.1990
Internet: <http://www.igc.org/wri/meb/index.html>

B. MECHANISMS TO INCREASE CORPORATE ACCOUNTABILITY

(1) Corporate Environmental Standards and Mission Statements

Corporate environmental standards and mission statements help to institutionalize corporate environmental commitment. In their environmental mission statements, companies set their own environmental goals. By contrast, corporate environmental standards are frequently established by a third impartial party organization. These third parties also verify compliance, thereby ensuring a higher level of corporate accountability.

Despite their increasing popularity, environmental management standards and mission statements can be limited in their usefulness for helping companies move toward sustainability. In practice, environmental standards and mission statements usually focus on industrial operations and management practices. They typically do not target products and services as prime areas for environmental achievement. Nonetheless, this tendency may change as sustainable consumption issues receive greater attention.

1. The Coalition for Environmentally Responsible Economies (CERES)

The Coalition for Environmentally Responsible Economies (CERES) is a non-profit coalition of investors, public pension funds, foundations, labor unions, and environmental, religious and public interest groups. The coalition works in partnership with companies toward the common goal of corporate environmental responsibility worldwide. By publishing the CERES principles, this organization has established a set of environmental standards to which companies can aspire. By endorsing these Principles, companies not only formalize their dedication to environmental awareness and accountability, they actively commit to an ongoing process of continuous improvement, dialogue, and comprehensive public reporting.

The CERES Principles promote a range of corporate environmental activities. To maintain standing as a CERES member, an organization must produce an annual environmental report that is consistent with the core expectations of the CERES Report Form. It must also make the following commitment to safe products and services:

“We will reduce and where possible eliminate the use, manufacture or sale of products and services that cause environmental damage or health or safety hazards. We will inform our customers of the environmental impacts of our products or services and try to correct unsafe use.”

CONTACT: Coalition for Environmentally Responsible Economies (CERES)
11 Arlington St, 6th Floor
Boston, MA 02116
Telephone: 617.247.0700
Internet: <http://www.ceres.org/>

(2) Corporate Environmental Reports

Corporate environmental reports signal an increasingly analytical approach to corporate environmental performance. Such reports document the results of businesses' pollution prevention programs, resource efficiency strategies, and green design initiatives. The growing popularity of corporate environmental reports also demonstrates a growing understanding of the link between environmental and financial performance.

In general, corporate environmental reports document facility-level environmental achievements and do not account for the life-cycle performance of consumer products and services. As the sustainable consumption movement progresses, reports may provide more information about the environmental attributes and performance of such products and services.

1. Benchmark Environmental Consulting

Benchmark Environmental Consulting (BEC) has developed indicators of environmental management and sustainable industrial development, as well as methodologies for benchmarking global environmental management and reporting, for a range of public and private sector clients. BEC annually publishes the *Benchmark Report on the State of the Global Environmental Reporting among the Global 100*, which examines and benchmarks large corporations' corporate environmental reports across several themes. BEC also evaluates corporate environmental reports for Fortune 500 companies.

CONTACT: Riva Krut
Benchmark Environmental Consulting
111 North Central Avenue, Suite 245
Hartsdale, NY 10530
Telephone: 914.422.2655
E-Mail: benchmark@mindspring.com

C. AWARD AND RECOGNITION PROGRAMS

Award and recognition programs encourage companies to undertake environmental projects, including sustainable consumption efforts. These programs are sponsored by a variety of governmental and non-governmental organizations, including Renew America, the President's Council on Sustainable Development, the European Communities and the United Nations Environment Programme, and the Industrial Designers Society of America. These award programs recognize companies for a range of environmental achievements, including (but not limited to) sustainable consumption.

1. National Awards for Environmental Sustainability

Renew America and the President's Council on Sustainable Development (PCSD) collaborate to honor success stories that contribute to the environment and the U.S. economy. The National Awards for Sustainability recognize exemplary programs that show how corporations can make communities more livable by integrating environmental protection, social equity, and economic progress. Award categories include: Biological Diversity, Renewable Energy, Transportation Efficiency, Green Building & Real Estate Development, Ecological Economy, and Job Creation & Enrichment.

CONTACT: Internet: <http://sustainableusa.org/>

2. Presidential Green Chemistry Challenge Awards

The U.S. Environmental Protection Agency's Green Chemistry Program was established to promote the development of products and processes that reduce or eliminate the use or generation of toxic substances associated with the design, manufacture, and use of chemicals. Since 1995, the program has administered the annual Presidential Green Chemistry Challenge Awards to recognize outstanding chemical technologies that incorporate green chemistry principles into chemical design, manufacture, and use and that provide human health and environmental benefits. An independent panel selected by the American Chemical Society judges nominations for the Awards, which are open to all individuals, groups, and organizations in the United States. Presidential Green Chemistry Challenge Awards recipients receive national public recognition for their green chemical technology accomplishments.

In addition to administering the Awards, the Green Chemistry Program supports fundamental research in the area of environmentally benign chemistry as well as a variety of educational activities, international activities, conferences and meetings, and tool development, all through voluntary partnerships with academia, industry, and other government agencies. The Program produces the Green Chemistry Expert System (software that helps users build a green chemical process, design a green chemical, or survey the field of green chemistry) and is currently compiling a Green Chemistry Literature Database.

CONTACT: U.S. EPA Green Chemistry Program
Telephone: 202.260.2659
Internet: <http://www.epa.gov/opptintr/greenchemistry/>

3. Industrial Design Excellence Awards (IDEA)

For the last 19 years, the Industrial Designers Society of America has given Industrial Design Excellence Awards to foster business and public understanding about the impact of industrial design excellence on the quality of life and the economy. IDEA categories include: business and industrial products, consumer products, environmental

designs, furniture, medical and scientific equipment, packaging, graphics and user interface, design explorations and student designs.

CONTACT: Internet: <http://www.idsa.org>

III. GREEN PRODUCT DESIGN INITIATIVES

Green design programs assist in advancing the agenda of sustainable production by helping businesses develop greener products and services. The programs described in this section help stimulate or facilitate sustainable consumption efforts, albeit indirectly.

Green product design encompasses a variety of techniques and strategies aimed at minimizing a product's environmental impact. These might include: increasing a product's recycled content; replacing a product's toxic components; designing products that can be easily upgraded, rather than replaced, when they become outmoded, or that can be easily disassembled for reuse or recycling; or creating a system to take back a product (or its packaging) at the end of its useful life for reuse, refurbishing or recycling.

A team approach to product development is required to ensure that each phase of the process is considered concurrently, from a needs analysis through final disposition. These phases include conceptual design, assessment of physical and functional attribute trade-offs, materials selection, process planning, production, use and service, marketing, and distribution.

Green product design is still an emerging and evolving strategy. For this reason, there are relatively few documented industry standards or guidelines aside from various international product certification standards. One exception is the "Hannover Principles," a sustainable design protocol that was developed for the city of Hannover, Germany, in preparation for the World's Fair in 2000. As shown in Box 4-4, the Hannover Principles advocate that companies practice sustainable consumption by designing the "full life cycle of products and processes to approach the state of natural systems in which there is no waste."

1. Design Tex

Design Tex manufactures textiles for commercial use. The company used the McDonough Braungart Sustainable Design Protocol (developed by the authors of the "Hannover Principles) to design a green product line, the William McDonough Collection of upholstery textiles. Design Tex analyzed all of the materials, chemicals and processes used to produce the collection in order to eliminate any characteristics problematic to human or ecological systems. Because the Sustainable Design Protocol uses the effectiveness of natural systems as a model, the upholstery is designed to be composted at the end of its useful life.

CONTACT: DesignTex, Inc.
Susan Lyons, Vice President of Design
200 Varick Street, 8th Floor
New York, NY 10014
Telephone: 212.886.8100

McDonough Braungart Design Chemistry, LLC
410 East Water Street, Suite 500
Charlottesville, VA 22902
Telephone: 804.295.1111
Internet: <http://www.mbdc.com/>

Box 4-4
The Hannover Principles

- Insist on rights of humanity and nature to co-exist in a healthy, supportive, diverse and sustainable condition.
- Recognize interdependence. The elements of human design interact with and depend upon the natural world, with broad and diverse implications at every scale. Expand design considerations to recognizing even distant effects.
- Respect relationships between spirit and matter. Consider all aspects of human settlement including community, dwelling, industry and trade in terms of existing and evolving connections between spiritual and material consciousness.
- Accept responsibility for the consequences of design decisions upon human well-being, the viability of natural systems and their right to co-exist.
- Create safe objects of long-term value. Do not burden future generations with requirements for maintenance or vigilant administration of potential danger due to the careless creation of products, processes or standards.
- Eliminate the concept of waste. Evaluate and optimize the full life cycle of products and processes to approach the state of natural systems in which there is no waste.
- Rely on natural energy flows. Human designs should, like the living world, derive their creative forces from perpetual solar income. Incorporate this energy efficiently and safely for responsible use.
- Understand the limitations of design. No human creation lasts forever and design does not solve all problems. Those who create and plan should practice humility in the face of nature. Treat nature as a model and mentor, not as an inconvenience to be evaded or controlled.
- Seek constant improvement by the sharing of knowledge. Encourage direct and open communication between colleagues, patrons, manufacturers and users to link long term sustainable considerations with ethical responsibility and re-establish the integral relationship between natural processes and human activity.

Source: Business for Social Responsibility (<http://www.bsr.org/resourcecenter>)

2. Carnegie Mellon University Green Design Initiative

Carnegie Mellon University began a campus-wide Green Design Initiative in 1992 to promote environmentally conscious engineering, product and process design, and manufacturing. Through this initiative, the University has formed partnerships with industrial corporations, foundations, and government agencies to develop joint research and education programs that improve environmental quality while encouraging sustainable economic development. The Green Design Initiative also develops green design tools and provides information on best practices.

The Green Design Initiative's website links to research projects, industry programs, publications, designers, educational programs and other related Internet sites. Numerous studies, reports and papers can be ordered online.

CONTACT: Dr. Noellete Conway-Schempf
Executive Director
Green Design Initiative
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, PA 15213-3890
Telephone: 412.268.2299
Internet: <http://www.ce.cmu.edu/GreenDesign/>

CHAPTER 5: CONCLUSION

Businesses, government agencies, communities, and individuals are becoming increasingly interested in sustainable consumption issues. As the examples presented in this report demonstrate, there are a variety of projects and initiatives underway in the

United States to help different sectors of the economy practice and promote sustainable consumption. These include:

- (1) Innovative national efforts such as the neighborhood “EcoTeams” organized by the Global Action Plan for the Earth to help change consumer behavior, as well as the Shoppers Campaigns launched by Mothers & Others for a Livable Planet to increase demand for organic produce and cotton products;
- (2) Cutting-edge initiatives that target a smaller geographic area, such as the “Resource-full Showcase,” an environmental education exhibit that travels around Alameda County, California, to demonstrate the use of environmentally friendly materials in home construction and remodeling; and
- (3) More “standardized” initiatives that are being replicated by numerous organizations, such as the environmentally preferable purchasing programs in place at various public agencies and private companies.

Despite the encouraging growth in the number of organizations and entities involved in sustainable consumption efforts in the United States, the domestic sustainable consumption movement is still in its infancy. Only a few federal, state, and local public agencies have implemented formal environmental purchasing protocols, and a relatively small percentage of American companies are trying to “green” their supply chain or their products. Furthermore, while organic food products and products manufactured with less-toxic materials are increasing their respective market shares, many consumers still view these as specialty – or even luxury – items. As indicated in Chapter One, research suggests that the slowness with which the United States has moved toward sustainable consumption is attributable to multiple regulatory and cultural factors.

Additional learning is necessary (although far from sufficient) to hasten progress toward sustainable consumption practices in the United States. First, policymakers, economists, and activists would benefit from a better understanding of consumer behavior and why past consumer-oriented initiatives might have failed. Further research might shed additional light on the mechanisms by which sustainable consumption can penetrate into institutional and popular consciousness. Second, governments, companies, institutions, and individuals in the United States need to be made aware of sustainable consumption successes here and abroad. Countries such as Sweden, the Netherlands, Germany, and Canada are at the forefront of efforts to move toward sustainable consumption. Numerous sustainable consumption initiatives by private and public entities in these and other countries⁵¹ could serve as models for programs in the United States.

This report represents an initial foray into research on sustainable consumption programs and practices in the United States. As indicated in Chapter One, the report does not purport to describe the entire domestic landscape of sustainable consumption actors and initiatives. The information gathered to prepare this report will assist TURI in

⁵¹ While a review of sustainable consumption initiatives and programs outside the United States is beyond the scope of this report, examples include Philips Electronics and the O2 Network for industrial designers (the Netherlands), the Blue Angel Environment Label program (Germany), and the International Institute for Sustainable Development (Canada).

further assessing the role that sustainable consumption can play in helping reduce the production and use of toxic substances in Massachusetts. Further evaluation should be undertaken to determine the types of sustainable consumption initiatives that are most appropriate for TURI to undertake. It is further hoped that this report will help foster more extensive and public dialogue about sustainable consumption in Massachusetts and throughout the United States.

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