



Companies Go Green

There's good news, and there's bad news, but the nation—and the world—is coming to grips with the staggering responsibility of recycling and waste management.

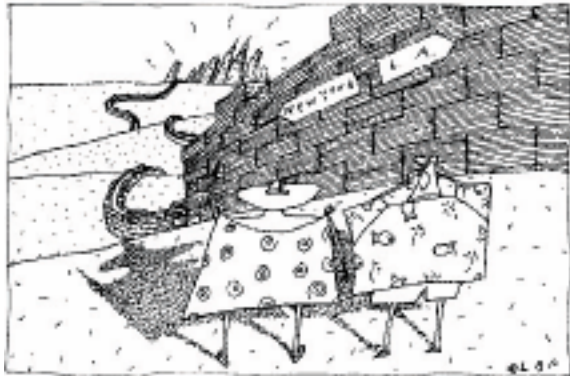
Consumers aren't the only ones asking what we're going to do. Corporations have been facing the challenges head-on, too, from car manufacturers to fast food vendors to plastics and paper producers to architects and designers. Businesses around the globe are actively seeking ways to develop, produce, market, and sell more earth-friendly products.

So both at home and at work, people have changed from a philosophy of "buy, use, and abandon" to a rallying cry of "reduce, reuse, recycle": Reduce the amount of goods produced in the first place, reuse in other ways what is already produced, and recycle everything that's possible to recycle.

The attention is evident in the new catch phrases now buzzing throughout the corporate Green Movement: "closing the loop," "cradle to grave," "environmentability," "recyclable vs. recycled," "precycling," "environmentally friendly," and "disassembly."

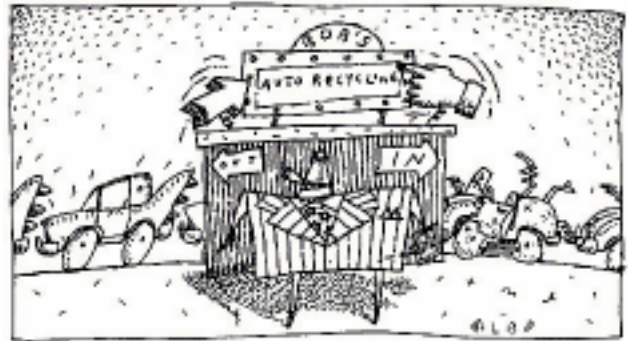
And the aftereffects are being felt from the front office to the mail room, where packages are as likely to arrive packed in popcorn as they are in plastic. Corporate responsibility is "no longer lip service, but for real," says Thomas Kuczarski, a Chicago-based environmental consultant.¹

An estimated 70,000 companies in the United States are already committed to some form of environmental commerce.² A Price Waterhouse survey found that almost half of the 445 companies they surveyed make their boards of directors responsible for environmental accountability, and nearly three-fourths are conducting environmental audits.³ Pressure is also coming from investors. The Coalition for Environmentally Responsible Economies (CERES) established a public standard for environmental performance in 1989; and major investor groups, such as state pension funds, increasingly demand that corporations adopt the CERES principles.⁴ In a recent survey conducted by *Training & Development* magazine, all the respondents indicated that their organizations recycle office paper and newsprint, and half said their companies educate them or encourage them to recycle. But environmental concerns also go beyond the office: 80 percent of those surveyed buy products made from recycled materials, and 70 percent



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A favorite vacation stop for the Zeno family is America's 'Great Wall of Paper'



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Finding that owning a junkyard was really flapping at parties - Bob decided to up date.

participate in recycling programs either at work or at home.⁵ But Americans still have a long way to go. With just five percent of the world's population, Americans produce 50 percent of its solid waste—averaging 1,900 pounds per household per year.⁶

Waste paper.

The average American consumes about 600 pounds of paper each year (mostly newspapers, cardboard, office paper, and computer/copier paper)—enough to build a wall stretching from Los Angeles to New York City.⁷ Paper and paper products still compose most of the volume of municipal solid waste in the United States.⁸ Conservationists estimate that if all Americans recycled just their Sunday paper, it would save an entire forest of 500,000 trees each week.⁹ The paper industry has set a goal of recovering 50 percent of all paper used in the U.S. by the year 2000. That may happen sooner. In 1994, Americans recovered just over 40 percent of all paper used, and more paper was recovered (over 39 million tons) than was landfilled. Office paper reached an estimated 25 percent recovery rate in 1993; and by the year 2000, that rate is expected to reach 45 percent.¹⁰ A global shortage of fiber sources has sent the prices skyrocketing for all grades of recyclable paper, from office paper to corrugated cardboard. The price for used newsprint rose from \$20 a ton in 1993 to \$120 a ton by the end of 1994—a 600 percent increase. And export prices have risen to \$165 a ton.¹¹ It's become so profitable that people are actually stealing recyclable paper. *The New Yorker* reported that thieves cost New York City \$4.5 million in 1995 by beating the Sanitation Department to the papers on recycling days.¹²

The waste of getting there.

Even if people are making the effort to raise their collective consciousness once they're at work, getting to the office creates another problem. There are 193 million registered vehicles on the roads of America, and one-third of all private auto mileage is accumulated commuting to and from work. In 1990, 73 percent of the country's 115 million workers drove alone to their jobs compared to 64 percent in 1980. During the same period, mass transit ridership declined.¹³ These statistics exist, despite the fact that if each car carried just one more person, Americans would save 600,000 gallons of gas per day and would prevent 12 million pounds of carbon dioxide from polluting the atmosphere.¹⁴

Cars cause a major headache, not only here, but around the world. In this country alone, Americans junk nine million passenger cars a year.

Germany, a pioneer in auto recycling, recently announced a plan to enact legislation which would require that every carmaker make every part recyclable—from the tires and glass to the plastic and fuel.¹⁵

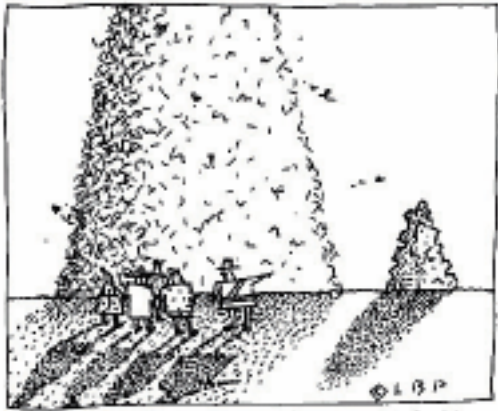
Mercedes Benz currently has two recycling facilities, one that takes the car apart—disassembly—and the other that burns the plastic parts to provide power for its assembly plant. By recycling, the company will use less plastic, and consequently less oil, reducing consumption of that resource as well.

Design for Disassembly (DFD) is the biggest new production trend. Companies like Safety-Clean, Kodak, Xerox, and IBM are recycling and reusing everything from used motor oil to disposable cameras. Fueling this trend is legislation that makes manufacturers accountable for their products from cradle to grave. For example, a computer manufacturer is liable if old computers improperly disposed in landfills pollute surrounding land and water. In addition, used products often contain valuable parts that can be remanufactured, thus reducing raw material costs for companies and making reuse profitable.¹⁶ General Motors, Chrysler, and Ford have formed the Vehicle Recycling Partnership to work on the full range of recycling issues, including DFD. Currently metals, which account for 75 percent of an average vehicle, are routinely recycled. Efforts are underway to reduce the remaining unrecycled materials from 25 percent to seven percent, and some believe that by the year 2000 no materials will be left unreclaimed.¹⁷

Plastic: The high-profile target.

Another high-profile culprit in the effort toward environmentability is plastic. But while plastic has been labeled a major offender (conjectured to be responsible for up to 70 percent of the solid waste stream), the plastics industry is quick to point out that plastic represents only about 20 percent, by volume, of the substances in the solid waste stream.

Serious efforts are now being made to recycle many types of plastic. A unique plastics recovery facility in Salem, Oregon, is expected to handle four million pounds of plastic scrap annually by late 1997, and will help in meeting a state requirement that 25 percent of rigid plastic containers be recycled.¹⁸



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*On a tour of Landfill
National Monument-Ranger
Tweeb comments on 'Point
Plastic' rising a mere 150 feet
next to 1,000-foot Mt. Garbage.*

Nationwide over 3,700 communities have implemented programs to recycle plastics. Polyethylene (the material such widely used items as milk bottles are made of) is now recycled, reground, baled, and used for decking, park benches, and flower boxes. In addition to the advantage of its durability over wood, "plastic lumber" is advantageous from a forest-conservation standpoint as well.

And contrary to popular belief, polystyrenes—which include that plastic foam disposable coffee cups are made of—are recyclable. (Fortunately so, because consumption of polyurethane products—of which polystyrene products are a part—grew from 500,000 metric tons in 1960 to in excess of 5,000,000 metric tons in 1990.)

Even plastics that are used primarily for long-life durable products such as furniture, bedding, automobiles, appliances, and construction are now being recycled. They're seeing new life as automotive accessories, insulation, construction board, video cassette cases, office accessories, cafeteria lunch trays, egg cartons, toys, and push pins.¹⁹

Companies like General Felt Industries, one of the world's largest carpet underlay suppliers, recycles several hundred thousand pounds of polyurethane per month for carpet underlay. Approximately 28 percent of all soft-drink bottles are now recycled. But even with all this, only one percent of plastic waste and four percent of plastic packaging is being recycled.²⁰

The need for joint efforts.

Recycling has become a national issue. According to the National Solid Waste Management Association, 48 states have passed some type of recycling law in the last few years. At least nine states require that recycled paper be used to make newspaper. Over 30 states bar materials that can be recycled from being thrown into landfills.²¹

Obviously, recycling alone will never solve all the environmental problems. Consider these issues: Even if it can be made recyclable, what if nobody's buying? And, even if a manufacturer wants it, what if there's no way to collect it and get it there?

One of the ways everyone can fight these obstacles is through communication. It's no longer an "us vs. them" situation; a partnership is being formed as business and industry recognize and react to the problems at hand. Ongoing communication, education,

and the sharing of knowledge is encouraged among all groups—not just environmental groups to consumers, but businesses to businesses, too. Plastics companies are communicating with auto companies, paper companies with the publishing industry, government with business, and environmental groups with everyone.

As an executive with Arm and Hammer recently stated, "I don't do anything anymore without checking with one of the green groups."²² And when McDonald's Corporation began its major waste management program, the company worked hand-in-hand with the Environmental Defense Fund. "We are hamburger experts, not environmental issues experts," said Alan Burack, Environmental Coordinator for Michigan McDonald's Restaurants. Though by now, the company may be both.

The year-long joint effort resulted in over 40 waste-reduction action plans, from vendor packaging to consumer recycling. The effort even spawned a full-page ad in the Wall Street Journal, targeted to the construction industry and other trades, offering to buy \$100 million worth of recycled products for such things as outside seating, insulation, and construction materials.

And that seems to be the growing trend in the Green Decade. Environmental issues are now routinely included in many of today's business conferences—sharing ideas on what companies are doing to solve the immense problems of recycling and waste management.

Closing the loop.

Cooperation and communication are vital in all industries. And it's happening more and more—at conferences, in newsletters and trade magazines, and among association groups.

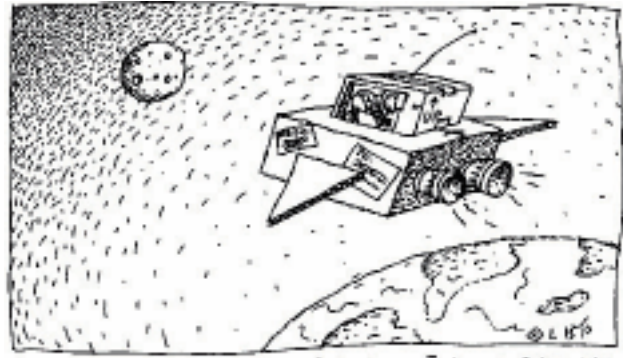
The National Materials Exchange Network, funded by the U.S. Environmental Protection Agency (EPA), now has 40 member exchanges throughout the U.S. and Canada. These exchanges allow one business's waste products to become another's resource, saving businesses about \$27 million each year. The number of businesses using the exchange jumped from 122 to more than 1,600 during a recent eight-month period.²³

The EPA's Design for the Environment (DFE) program provides expertise to help businesses design and redesign their products and services to incorporate pollution-prevention considerations. For



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After living out his life as deck furniture—Uncle Fred is buried by the Redwood family.



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'No kidding, Sid—They say we can use this thing up to a hundred times!'

example, the agency is currently working in partnership with the dry cleaning industry to find ways to reduce exposure to chemical solvents, examine alternative technologies, and implement pollution-prevention methods.²⁴

The American Institute of Architects recently reported that groups must work more closely with one another to “close the loop. . . . Architects and other designers need to be more aware of the environmental aspects of construction materials to help them become more effective partners in creating sustainable environments,” reported its *Environmental Resource Guide (ERG)*.²⁵

Updated quarterly, the ERG gives architects, designers, and builders the information they need to make decisions that will protect the environment. It contains information on the entire life-cycle of a material or products, from cradle to grave.

The stages are described as these: material acquisition—including mining, harvesting, and chemical production; manufacturing/fabrication/packaging—including primary and secondary production, finishing, and shipping; construction/use/maintenance—including installation of the material or product, use, cleaning and refinishing, and repair and replacement; and reuse/recycling/final disposal—including recovery of the material for reuse or recycling and disposal of the material.

Other industries are also in the midst of a flurry to form self-policing and self-help groups to address environmental issues, such as the Society of the Plastics Industry’s Council for Solid Waste Solutions.

In an effort to help its industry, the Virginia-based Institute of Packaging Professionals (IoPP), for example, recently developed guidelines to help packaging professionals and corporate decision makers evaluate packaging options. In its guidelines, printed in the October 1990 issue of *Beverage World* magazine, IoPP says the first question packaging professionals should ask is, “Can the package or any of its components be eliminated entirely? (i.e., Does the product really need an individual package or can it be sold in bulk?)” And finally, in its cradle-to-grave thinking mode, the guidelines ask, “Can the package and its components (e.g., inks, dyes, pigments, etc.) be made without toxic materials such as mercury and lead?”

Determining which materials are “best” for a particular product is very complex: What will the impact on the product be? Will one step toward recyclability result in another step back for energy consumption? The group encourages individual package suppliers and their customers to consider the *total* manufacturing/distribution/marketing/consumer system when making decisions.

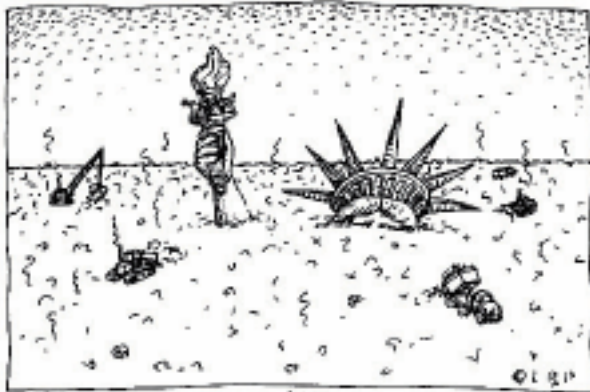
In Germany, legislation has forced corporations to take responsibility for waste disposal. Manufacturers are now required to take back the packaging in which products are sold. This has led to a dramatic change in the way products are packaged and has prevented 600 million tons of packaging from ending up in landfills.²⁶

As corporations become more aware, they begin to demand more from their suppliers and vendors. Procter and Gamble, for example, recently ordered bottle suppliers to use 25 percent post-consumer recycled materials in detergent bottles. And Sonoco Graham announced a \$20 million recycling project in York, Pennsylvania, to produce 15 to 20 percent recycled oil bottles for Amoco and Citgo oil companies.²⁷

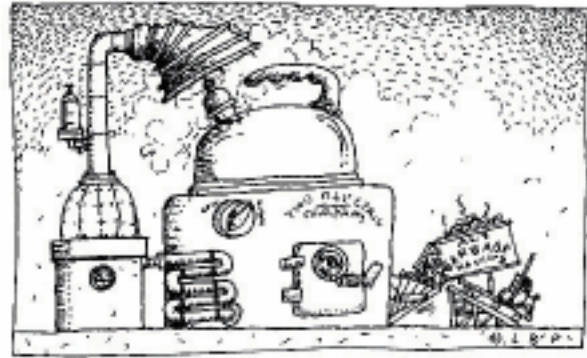
Companies are finding that environmentally sound changes can be economically wise, too. Based on guidelines it has developed over a period of years, Herman Miller changed its packaging materials in several areas, resulting in substantial savings. For example, approximately 250,000 to 300,000 Equa chair shells are sent from Grand Rapids to Holland, Michigan, each year. They used to be packaged in groups of 28 in a heavy corrugated box, with a bag around each shell and internal fillers for added protection. After a one-way trip of 30 miles, all the packaging materials were thrown away. But a new sleeve-pack method eliminates the carton—which saves up to 70 percent on materials—and can be used over and over, for 50 to 100 trips.

Dealing with mounting landfills.

The best-known watchdog of all, the Environmental Protection Agency, considers source *reduction* its highest priority, because the most obvious and significant step in reducing waste is to reduce the amount of “stuff” manufacturers make in the first place.



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Despite all the efforts, the end of a product's life is still the beginning of America's most visible waste problems. Put quite simply, the United States is producing more waste than it can handle. Although disposing of waste is primarily a local responsibility, solid-waste management has become a national priority. On average, each American produces about 4.3 pounds of solid waste every day. Nationwide, that adds up to 195 million tons of garbage per year.²⁸ The EPA estimates that at the current rate, Americans will produce 216 million tons of garbage per year by the year 2000. Half the nation's landfills have already shut their gates, in part because of noncompliance with new EPA regulations that took effect in 1993, but also because many states, particularly those in the northeastern United States, are running out of landfill space.²⁹ By the year 2000, 80 percent of the nation's existing landfills will be closed.³⁰

In addition to the lack of space, another problem with landfills is the lack of biodegradation. While even some plastic can be biodegradable, the dark and relatively dry conditions in landfills are not at all conducive to biodegradation or photodegradation—the breaking down of materials. So even if a product is labeled biodegradable, its being placed in the landfill doesn't necessarily mean it will be.³¹

So landfills continue to grow. And grow. And grow. The largest municipal landfill in the world today, Fresh Kills on Staten Island, takes over 90 percent of New York City's garbage and almost half the state's. Twenty-four hours a day, six days a week, Fresh Kills absorbs more than 40 million pounds of refuse from households and businesses. It's estimated that at its present growth rate, Fresh Kills will evolve into a 505-foot mountain of trash by the year 2005. If New York City continues to bring most of its garbage to Fresh Kills, it will eventually surpass the Great Wall of China as the world's largest man-made structure.³²

Because of figures like these, one of several national goals set by the EPA is to reduce the amount of waste Americans produce. To help achieve its goal, the EPA recommends an integrated solid-waste management system with these four components: source reduction—which reduces volume and weight of packaging before it's produced; recycling—which conserves natural resources; resource recovery—which produces energy while reducing waste volume by up to 90 percent; and landfilling—which handles nonrecyclable wastes that can't be managed in other ways.³³

It's a generally accepted truth that the United States will never completely eliminate the need for landfills, only lessen the amount of material that needs to be disposed of in them. Currently, landfills handle about 67 percent of American waste, about six percent is burned, and another 17 percent is recycled. But judging by new recycling technologies and new products that are being developed, the percentage of waste recycled will rise dramatically.³⁴

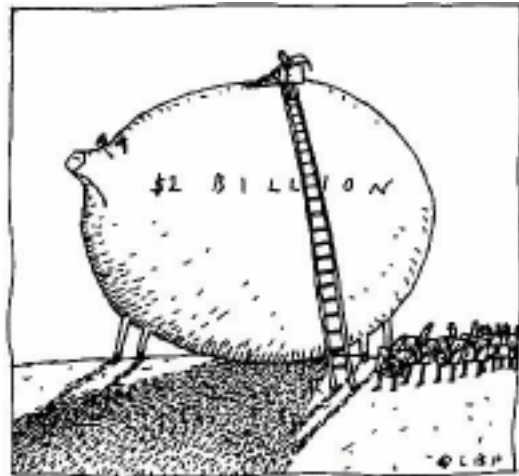
Incineration as an alternative for handling waste.

Incineration is becoming more and more popular as an alternative way to handle the leftovers, as waste-to-energy (WTE) planning takes on a vital role in integrated solid-waste management planning. With WTE, trash is brought to a facility where it's burned to generate either steam or electricity.

Herman Miller has had tremendous success with its WTE Energy Center, started way back in 1982. The Energy Center incinerates waste that would normally go to a landfill—paper, corrugated cardboard, and wood scraps—to generate electricity and steam for heating and cooling. The steam heats the entire main site in Zeeland—approximately 800,000 square feet—during the winter and powers absorption chillers for cooling during the summer. According to Jim Gillespie, supervisor of Waste and Grounds, the cogeneration plant reduced landfill volume by nearly 90 percent, while reducing dependence on natural gas, fuel oil, and nonrenewable fossil fuel.

Nationally, municipalities are turning to WTE, too. There are currently 169 operational waste combustion facilities. The price of building a WTE facility is high. The country's largest incinerator, in Detroit, Michigan, cost \$438 million. This huge incinerator produces enough steam to heat half of Detroit's central business district and enough electricity to power 40,000 homes. EPA estimates that by the end of the decade, incinerators will burn approximately 25 percent of solid waste, compared with 6 percent in 1992.³⁵

The greatest concern with a WTE plant, however, is ash management. The ash that remains after burning waste has the potential of releasing harmful substances into the groundwater. The EPA is currently offering guidelines for handling ash until new regulations are adopted regarding its handling, transport, storage, and disposal.



Well, Marvin, the bad news is...

Research and development going on at the university level has resulted in a breakthrough in treating that problem, however. It concerns a new way to burn hazardous wastes of the most deadly kind—mixed wastes. The new incineration process, developed at the University of Missouri, uses a form of charcoal to burn wastes more thoroughly (the heat is more uniform) and locks wastes into an insoluble form that can be sorted without fear of leaching into groundwater. Nor does it release toxic metals into the atmosphere in the form of fly ash.

In the meantime, progress continues. Indeed, it's becoming as difficult for private industry to keep track of the laws as it is to keep up with the problems.

The entire Green Movement has spawned a new generation of businesses—from environmental consultants to waste management experts—just to help companies keep up. The National Wildlife Federation's Corporate Conservation Council links activists with willing companies like AT&T, GM, and Shell to help them with environmental business practices.³⁶ The U.S. Administration will provide more than \$100 million over the next few years to help environmental businesses bring new technologies to the marketplace.³⁷

Green Seal, a nonprofit organization based in Washington, D.C., helps consumers identify environmentally friendly products. The organization develops technical environmental standards for various categories of products. Companies can have their products tested and those that equal or exceed the standards can use Green Seal's logo on product packaging. The program is modeled after similar eco-labeling programs developed in other countries, including Germany and Japan. Meanwhile, decision makers around the world are developing a new environmental standard known as ISO 14000. The new standard, like ISO 9000, is being developed by the International Standards Organization based in Geneva, Switzerland. Proposals are currently being drafted that will address a number of environmental issues, including environmental management systems and environmental auditing. Some observers believe that companies with ISO 14000 certification will have an international trade advantage over those that do not, and that countries that adopt the measure, like Germany and Japan, may create informal trade barriers that will keep uncertified companies from competing in those markets.³⁸

Across the country, across the world, people are aware that they can't go on like this forever. Something has to be done. The good news is, people are doing it. They're using popcorn for packing, and plastic for power. They're recycling, rethinking, researching, and regrouping to find solutions.

Some people feel that the new consciousness will be a boon for environmentally aware businesses. According to the U.S. Department of Commerce, the environmental industry is growing faster than the economy as a whole. It estimates that the environmental goods and services market is \$120 billion in the U.S. and \$250 billion worldwide. That number could total \$425 billion by 1997.³⁹ "This is a time when doing right can pay off at the bottom line," said Linda Water, a Michigan-based public relations consultant.

The bad news is, environmentality isn't easy—or cheap. Since 1990, the paper industry has spent approximately \$1 billion a year—about one out of every five dollars earned—on environmental improvements. By the end of this decade, U.S. paper companies will have invested \$10 billion in new manufacturing equipment that will allow them to make more recycled and recycled-content paper.⁴⁰ Over the next decade The Earth Action Network, an environmental watchdog, says that the government plans to spend \$2 trillion in environmental protection and cleanup.⁴¹

There's no getting around it; environmentality is here to stay. And everyone can benefit from the experience of others who are leading the way.

Pacific Gas and Electric's head, Richard Clarke, has set down a few guiding principles for corporations, based on what he has learned: Make environmental considerations and concerns part of any decision you make, right from the beginning. Don't think of it as something extra you throw in the pot. Develop an internal cadre of environmentalists. They have minds of their own and will advocate things. They may not get everything they want, but there certainly are occasions where they prevail. Put someone on your board to help you factor in environmental issues. Do these things because they are the right thing to do, not because somebody forces you to do them.⁴²

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