HALFWAY THERE

Generous Donors Help RMI Meet First $1.5-Million Goal for Windstar Land

One year ago, Rocky Mountain Institute launched a $3-million capital campaign to secure a permanent home for itself and preserve a large parcel of land for wildlife.

We're pleased to announce that RMI has reached its first and most urgent goal. Thanks to hundreds of donors and a handful of institutions, the Securing the Future campaign has topped the crucial $1.5-million mark in cash and pledges. That's how much RMI needed to come up with by year-end to purchase an undivided half-interest in the 957-acre Windstar property from the National Wildlife Federation.

Title to the land has already been transferred to the Windstar Land Conservancy, a nonprofit land trust. Upon completion of the purchase, a perpetual conservation easement already placed on the property by RMI and the owner of the other half-interest, the Windstar Foundation, will formally go into effect.

"Barring any unforeseen hitches, the land is now safe," said RMI Executive Director Hunter Lovins. "I can't tell you what a privilege and a relief it is to be able to say that."

The Securing the Future campaign now moves into a second and final phase to raise the other $1.5 million for building renovation and land restoration and endowment.

MAJOR STEP

The purchase of the Windstar property, located a half-mile from RMI's headquarters, represents a major step in the Institute's nearly 15-year history.

RMI has finally, as of mid-October, united all its key staff in one place—an existing 7,000-square-foot building on the Windstar property. Protected from future office cost increases and the need to relocate, RMI will be more financially stable. In time, the Institute may be able to build new staff housing, greatly enhancing its ability to attract and retain highly qualified staff.

The purchase will also ensure Windstar's continued preservation for wildlife. The land is critical elk winter range, and also serves as a vital elk and deer migration route: with the growing pressure on habitat in our valley, access to and through Windstar is essential for the survival of one of the largest migratory elk herds on the continent.

Had it not been for the generosity of RMI's supporters, the land eventually would have been subdivided for housing, leaving both the Institute and the elk without a home.

A list of the more than 500 individuals and institutions who have donated to the Securing the Future Campaign as of 31 August can be found on page 10. RMI would especially like to thank an anonymous major donor, the Gates Foundation, the Great Outdoors Colorado Trust Fund, and the Pitkin County Open Space & Trails Board for their key gifts, and the John D. & Catherine T. MacArthur Foundation for its special grant to cover campaign costs.

DEMONSTRATION SITE

RMI has always used its own facilities as a demonstration site for resource-efficient technologies. The Windstar land offers a new opportunity to demonstrate cutting-edge land-restoration techniques.

Windstar is a microcosm of rangelands throughout the American West. Ranched for nearly a century, it has lately fallen into disuse. Invading plant species are crowding out natives, unbalancing the ecosystem. Natural succession can't occur because wildfires are no longer allowed to burn freely and because wildlife, hemmed in by humans, have changed their grazing patterns.

In short, the land is not capable of reverting to its original wild state. Instead, it must

(continued on page 11)

INSIDE

Natural Selection	2
Hypercars Shift Gears	3
Economic Renewal—by the Book	4
Ask RMI	5
Twenty Years on the Soft Path	6

The *RMI Newsletter*

The Rocky Mountain Institute *Newsletter* is published three times a year and distributed to nearly 21,000 readers in the U.S. and throughout the world.

Please ask us before reproducing, with attribution, material from the newsletter.

We want to hear your comments, criticism, or praise relating to any article printed in the newsletter.

Please address all correspondence to:
Rocky Mountain Institute
1739 Snowmass Creek Road
Snowmass, CO 81654-9199
Tel: (970) 927-3851 / Fax: (970) 927-3420
Email: orders@rmi.org
Web site: http://www.rmi.org

EDITOR .....Dave Reed
WRITERS....Dave Reed, Robert Alcock, RMI Staff
LAYOUT .....Kate Mink

About the Institute

Rocky Mountain Institute is an independent, nonpartisan, nonprofit research and educational foundation with a vision across boundaries. Seeking ideas that transcend ideology, and harnessing the problem-solving power of free-market economics, our goal is to foster the efficient and sustainable use of resources as a path to global security.

RMI believes that people can solve complex problems through collective action and their own common sense, and that understanding interconnections between resource issues can often solve many problems at once. The Institute focuses its work in seven main areas: corporate sustainability, economic renewal, energy, green development, security, transportation, and water.

RMI is a §501(c)(3)/509(a)(1) public charity, and contributions to it are tax-deductible (#74-2244146).

Visit Us

RMI's headquarters facility in Snowmass, Colorado (14 miles west of the Aspen airport) is a working example of resource efficiency and renewable energy in harmony with people and the environment. Should you be in the Aspen/Snowmass area, please drop by for a guided tour (2 pm on Tuesdays and Fridays), or use our visitors' guide for a self-conducted tour between 9 am and 4:30 pm Monday through Friday.

NATURAL SELECTION

By L. Hunter Lovins, Executive Director

Anniversaries are a good time to take a step back and put things in perspective.

Twenty years ago, I was working for an environmental group in Los Angeles, and there was a paper floating around the office called "Energy Strategy: The Road Not Taken?" by a guy I'd never heard of named Amory Lovins. I'd been trying to teach myself energy policy, sorting through all the ideology, propaganda, and woolly-minded pronouncements of a crisis in search of a discipline. My colleagues said, "Here, *you* read it." Though not easy to decipher, I realized it was the first thing I'd ever read about energy that was internally consistent and solved more problems than it created.

PERSPECTIVES

That paper turned the establishment on its head and more or less changed the course of national energy policy (see page 6). It also served as a blueprint for the resource policy institute that I co-founded six years later with the man I'd just married—Amory Lovins.

"The Road Not Taken" was prophetic in all sorts of ways. Twenty years ago, it seemed a foregone conclusion that the folks in charge were going to carpet the planet with power plants, most of them nukes. Now, there isn't a sane utility executive in a market economy who'd contemplate building even one. Thanks to efficiency, which everyone scoffed at when Amory proposed it, they don't have to.

But the more things change, the more they stay the same. Much government policy still comes down firmly on the supply side (U.S. military presence in the Persian Gulf certainly hasn't diminished). Industry is getting more efficient, but these days companies are, if anything, trying to squeeze more out of their workers than their raw materials. And after two decades, organizations like RMI still haven't conveyed to the vast majority of consumers just how profitable and powerful resource efficiency is.

In a way, we jinxed ourselves with early success. The unprecedented gains in energy efficiency in the late 1970s and early '80s helped create another apparent glut. Prices crashed. Complacency returned. In the past decade, Americans have grown almost as reliant on cheap energy and foreign oil as they were in '76.

Of course, that doesn't mean we're back where we started. In 20 years we've made, well, about 20 years' worth of progress. Human nature being what it is, it's probably too much to expect us to take problems seriously until they become crises. As Abba Eban once said, "People and nations behave wisely—once they have exhausted all other alternatives."

Twenty years of economics has dragged us along Amory's "soft path" almost in spite of ourselves. The paradigm has shifted markedly from the time when Americans, locked in an obsolete frontier mentality, believed that there was always more of what we needed over the next hill. Nowadays, most people instinctively weigh the cost of getting more of something against the cost of making better use of what they've already got. The smarter ones are figuring out better ways of accomplishing the same task, forcing their competitors to do the same. As Amory and Paul Hawken and I will argue in our forthcoming book, *Natural Capitalism*, the basis of the next industrial revolution will be the recognition that prosperity comes not from using more resources, but from using them more productively.

We're on an evolutionary path. The "end-use/least-cost" approach that Amory worked out in "The Road Not Taken" has an inexorability about it that's almost Darwinian. It's survival of the most efficient. It may take longer than expected, but the resource-guzzling dinosaurs will pass—market forces will see to it.

MOVING FROM 'WHY' TO 'HOW'

RMI's Hypercar Center Shifts Gears from Theory to Practice

"The energy problem is conceptually solved," Amory Lovins declared in the early 1980s, "but about 50 years of details remain." He and others had shown why reducing demand through efficient end use was better than increasing supply—bottom line, it worked better and cost less. The challenge was to get it done—a slow but steady process of overcoming technical and institutional barriers.

A decade and a half later, RMI's concept of a superefficient, superclean "hypercar" now stands at the same threshold between theory and practice.

As reported in previous newsletters, the hypercar RMI envisions would combine ultralight, ultraslippery construction and hybrid-electric drive to achieve 90 or more miles per gallon. Ultralight materials could cut mass by more than half. The car would run on electricity, but instead of hauling around nearly half a ton of batteries, it would generate its own power onboard with an engine, gas turbine, or fuel cell buffered by a small energy-storage device. Individually these advances improve efficiency only modestly, but together they yield spectacularly better mileage and many other benefits.

Until recently, the main goal of RMI's Hypercar Center was simply to convince the auto industry that hypercars were worth looking into. Researchers refined the concept through extensive computer modeling, demonstrating that hypercars could work, that they could meet or beat all market requirements, and that myriad technical and cost challenges could be overcome. The team wrote technical papers and a book, made conference presentations, conducted confidential briefings.

Gradually the list of converts has grown: RMI now advises nearly 30 car, parts, polymer, aerospace, and electronics companies, with R&D commitments now totalling over $1 billion. The missionary work continues, but in the past few months the focus has begun to shift. Fewer manufacturers are asking, "Why hypercars?" The question on more and more lips is: "How do we build them?"

Of course, the easiest way to show how to do something is actually to do it. But RMI's Hypercar Center has no laboratory, testing facility, or factory—mainstays in developing and manufacturing cars. Nor does it have the $5–20 million (or more) needed to commission a refined prototype ultralight-hybrid vehicle.

But after five years' research, the Hypercar Center has plenty of intellectual capital, experience, and contacts. The center is helping many companies choose the best technologies and is connecting them with people and firms who can make the technologies work profitably.

Several collaborations now being explored would further establish the Hypercar Center as a consultant and matchmaker for the emerging ultralight-hybrid vehicle industry. Watch this space.

WALKMAN ON WHEELS?

In October, RMI research director Amory Lovins and senior researcher Timothy Moore traveled to Japan to plant more seeds of interest in hypercars.

Invited to present papers at the 13th International Electric Vehicle Symposium in Osaka, the two introduced the ultralight-hybrid concept to about 1,500 influential members of the Asian automotive industry, who have had far less exposure to hypercars than their counterparts in North America and Europe.

Cultivating the right contacts within the Asian car industry will take time, and it will be tough to coax Asian automakers away from steel. But it's all part of a long-term strategy. The Japanese, in particular, are renowned for their skill at re-engineering technologies and mass-producing them in highly reliable form. Just think what the inventors of the Walkman could do with a hypercar…

Thanks to Mitsubishi Motor Sales and Mitsubishi Electric America and Japan's Central Research Institute of Electric Power Industry for making this trip possible.

PV SYSTEM UPGRADE

Kate Mink

Photovoltaic technology keeps getting better. This fall, electrician Donna Fischer helped RMI install a number of nifty new devices at its headquarters, including this Midway Labs tracking array (soon to be doubled) that uses powerful lenses to concentrate the sun's rays onto small solar cells. Other upgrades include state-of-the-art array-mounted inverters—devices that convert PV panels' output into power suitable for selling back to the electric company—and a new, environmentally friendly, long-lasting nickel-iron battery bank. Most of these components have been kindly donated by Midway Labs, Heliotrope General, Trace Engineering, Exceltech, and Trojan Batteries.

ECONOMIC RENEWAL—BY THE BOOK

A Massachusetts Town Turns Itself Around

What does a public fountain have to do with sustainable development?

On the face of it, not much. Yet in a small but profound way, the fountain in downtown Orange, Massachusetts stands as a symbol of sustainability and hope.

A small town with a light-manufacturing past, Orange was, in 1993, economically downcast. Sixty percent of the commercial space in the downtown core was vacant. Employment opportunities were few. Domestic abuse and juvenile delinquency were high.

In late 1993, the town got a grant for a downtown revitalization effort and hired community organizer Deborah Becker as its director. Becker started talking to other towns around the country that had implemented successful economic development projects. Two that she talked to recommended RMI's Economic Renewal process, so she ordered a copy of *The Economic Renewal Guide* and started following instructions.

She and a team of volunteers spent nine months leading the citizens of Orange through a series of town meetings that encouraged them to envision their "preferred future," figure out what the town needed and what it had to work with, and choose projects that weighed the town's social and environmental values alongside its economic needs.

Separate project committees have since helped establish seven new downtown businesses; raised $300,000 for open-space purchases and the development of a bikeway/greenway along the main river in town; started a farmers' market; and established a system for publicly recognizing outstanding achievers. Others are now working with Orange teens to create a teen-run coffeehouse; turning two old mill buildings into space for a newly formed artists' co-op; and working with the local bank to buy an old gas station and turn it into a park.

Deborah Becker

Orange's Economic Renewal effort even boasts a downtown storefront office.

Citing the success of youth programs in keeping kids out of trouble, residents convinced local officials to fix the town fountain, which had been abandoned after repeated vandalism. Even as they fixed it, workers jokingly took bets on how long it would be before the vandals would strike again. They haven't yet.

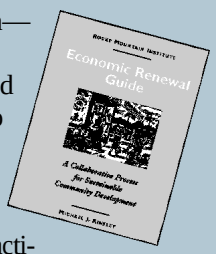
What's unusual about Orange is that, unlike most other towns that have undergone Economic Re–newal, it achieved all this without the benefit of special seminars and training. All Orange had was the book. "We bought *The Economic Renewal Guide*, did what it said, and it worked," Becker says. "It gave us a structure to work with on a problem that once seemed overwhelming."

But what does all this have to do with sustainable development?

Communities, like utilities, too often concentrate on supply-side solutions—courting outside businesses, approving new subdivisions and malls—instead of trying to do better with what they've already got. RMI's Economic Renewal process empowers communities like Orange to develop without necessarily growing. It fosters self-sufficiency, which is a necessary condition for sustainability, and increases local prosperity, without which sustainability may seem a luxurious abstraction. And it emphasizes that there is hope, which is the only basis for positive change.

By themselves, Orange's fountain and other projects might not seem like great leaps toward a sustainable economy. But what is? There's no shortcut to sustainability: achieving it is an incremental process of replacing unsustainable activities with sustainable ones. The same could be said of prosperity. On both counts, Orange is heading in the right direction.

A New Economic Renewal Guide



RMI's *The Economic Renewal Guide* is out in its third edition—completely updated, revised, and expanded.

Filled with worksheets, media materials, success stories, and resources, the guide is a do-it-yourself toolkit for anyone who wants to get sustainable economic development moving in their community. Hopeful, creative, civil, and fun, the process it sets out is designed to defuse factionalism, encourage citizen involvement and collaborative decision-making, and lead to practical projects that benefit everyone. *The Economic Renewal Guide* costs $17.95 plus $3.50 shipping and handling. To order, call RMI's Publications Department.

Ask RMI

"Ask RMI" is a new regular feature where we'll be answering readers' questions on everything to do with resource-efficient technologies, resource policy, and RMI's research.

We're priming the pump this time with a couple of questions we hear a lot, but from now on we'll take your questions. Due to space constraints, we'll be able to answer only one or two questions per newsletter. Questions with the broadest interest will be given preference. Sorry, we are unable to respond to individual letters for this column.

Check out our new Frequently Asked Questions page, scheduled to be posted to our Web site (http://www.rmi.org) by 1 January.

Should I buy a rechargable battery pack?

You pay a lot for the convenience of batteries: the cost of a kilowatt-hour of electricity from an alkaline D-cell is around $127, and from an AA it's $530! Non-alkaline batteries work out to be even more expensive. Since the same amount of electricity from the grid only costs about 8 cents, it's obviously more economical to plug your gadgets into a socket whenever possible.

But if you need portable power, rechargeable batteries can definitely save money and resources. Unlike disposables, they last for several hundred discharge/recharge cycles, and cost only pennies to recharge. Recharging allows you to get vastly greater use out of the battery's "embodied energy" (the amount of energy that went into making it).

A rechargeable setup costs more upfront. A multi-battery charger will run $30–60, and a selection of rechargeable batteries (two each of AA, C, and D) will add another $30. But even if you only buy a couple of disposable batteries a month, your investment will pay for itself in 18 to 28 months, and you'll save about $38 a year thereafter.

The better rechargers can accommodate all battery sizes, typically charge faster, and have smart chips to prevent overcharging. Solar rechargers are inexpensive and cost nothing to run, but they charge slowly and work best in full sun (even haze will limit charging).

Rechargeable batteries aren't environmentally perfect. Most are "nicads" (nickel-cadmium), which must be recycled—throwing them away will cause more environmental harm than using disposables. (Call 800/8-BATTERY to find your nearest nicad recycling center.) Newer nickel-metal-hydride or lithium rechargeables, available from Real Goods and others, are almost nontoxic.

Note that nicads last only a third as long as single-use alkalines before needing to be recharged, and lose 1 percent of their charge per day even when they're not being used, so they're not suitable for smoke detectors or emergency uses.

When can I buy a hypercar?

We believe that early hypercars could start appearing within about four years. Light battery-electric vehicles like GM's two-seat EV-1 (in production for release this December), Honda's four-seat EV (1997), and Solectria's all-composite four-seat Sunrise (1998) are two-thirds of the way there—they have light, aerodynamic bodies and electric propulsion. Replace the heavy batteries with a small engine, generator, and buffer storage device and you've got a functional hypercar. Adapting an existing battery-electric vehicle would still involve many technical hurdles—development and testing would take at least an extra year—but it would be easier than building a hypercar from scratch.

We can't comment on whether specific manufacturers are planning to do this, but we wouldn't be surprised to see this sort of modified battery-electric vehicle officially come on the market around 2000. However, such first-generation hypercars would be manufactured in small volumes, and hence would be relatively expensive and not widely available. They'd probably appeal more to "early adopters" than to the average motorist.

But affordable, production-volume hypercars are likely to appear rather quickly thereafter. Industry/government collaborations, foreign competition, and flexible regulatory incentives are compelling America's Big Three to converge toward production hypercars—some of them aggressively. Within one or two decades, we could see a diverse range of quite refined hypercars incorporating all-advanced-composite bodies and probably fuel cells.

While these are just rough estimates, we can say with confidence that automakers have strong incentives—chiefly profit and market share—to move very quickly. If you're looking to improve your mileage in the meantime, you can choose from among several conventional cars on the market that get better than 40 mpg.

Can We Can the Can?

Recycling containers saves energy, but *reusing* them saves more. It takes about 7,000 BTUs to manufacture an aluminum can from scratch, and 2,550 to make it from metal recycled many times, losing some each time—but reusing a bottle 10 times requires only 610 BTUs per use. (A BTU is roughly the amount of energy in a kitchen match.)

Saved energy is only one of several benefits of deposit/return beverage systems, RMI researcher Scott Chaplin noted in a speech this summer at North America's first Reuse Conference in Toronto.

It so happens that Ontario, whose recycling council sponsored the conference, has one of the world's best deposit/return systems; nine out of 10 beer containers are reusable bottles, which are used on average 15–20 times. In the United States, where only a few states have deposit systems, most soft drinks and beer are sold in aluminum cans, and only three-fifths of those are recycled.

FALL/WINTER 1996 ROCKY MOUNTAIN INSTITUTE NEWSLETTER VOLUME XII NUMBER 3

IT WAS TWENTY YEARS AGO TODAY…

The Paper That Gave RMI Its Marching Orders Remains Relevant and Timely

Think back—those who can remember—to 1976. OPEC had struck fear into the hearts of American motorists. The nation was in the grip of "stagflation" as the 1973–74 oil shock worked its way through the economy. More price hikes loomed. America was galvanized to act decisively to solve its "energy crisis."

What to do? More supply—of any kind, from any source, at any price—advised the energy industries. Policy-makers concurred. This was, as President Carter would soon declare, "the moral equivalent of war."

That fall, 29-year-old Amory Lovins published "Energy Strategy: The Road Not Taken?". He proposed a "soft path" of efficiency and appropriate-scale renewable energy sources, as contrasted with a complex, centralized, inefficient energy system based on fossil and nuclear fuels—the "hard path."

Appearing in *Foreign Affairs* just two months before the presidential election, the paper's central thesis touched a nerve with the energy priesthood. Industry executives and consultants lambasted Lovins in print. The Edison Electric Institute devoted an entire issue of its magazine to slamming the article. Congressional hearings were held.

But if the denunciations were meant to strangle the soft path at birth, they backfired. The article became required reading, and the ensuing debate spelled the beginning of the end of the hard path.

NO CLOTHES

"The Road Not Taken" revealed that the supply-at-any-cost doctrine had no clothes. Using the energy industry's own data, Lovins showed that there wasn't enough money in the economy to build new power plants at a rate of one a day to heat uninsulated buildings and run inefficient factories.

Instead of basing an entire policy on increasing supply, he wrote, let's look more closely at demand. People don't want kilowatt-hours of electricity or barrels of oil, but rather the "end-use services" they provide. They want illumination, comfort, and mobility. The trick is to satisfy those demands in the most efficient way—which, barring market distortions, will also tend to be the cheapest way. This "end-use/least-cost" approach has since become a standard tool in RMI's analysis of all resource issues.

But, Lovins continued, it's not enough just to seek the optimal amount of energy. It's also necessary to match the scale, quality, and source of energy supplied to the end use demanded. For example, electricity generated by central coal- and nuclear-powered plants is mismatched with about 93 percent of all end uses: electricity is simply too valuable to justify for low-grade uses like space heating, and producing and distributing it on such a grand scale is inherently wasteful and risky.

Though much misunderstood, Lovins's soft path focused first on achieving greater efficiency through "technical fixes" such as better insulation and windows, passive solar design, and cogeneration (making electricity along with industrial heat). The shift to "soft" technologies—those that are both renewable and appropriate in scale and quality—was seen as a long-term goal.

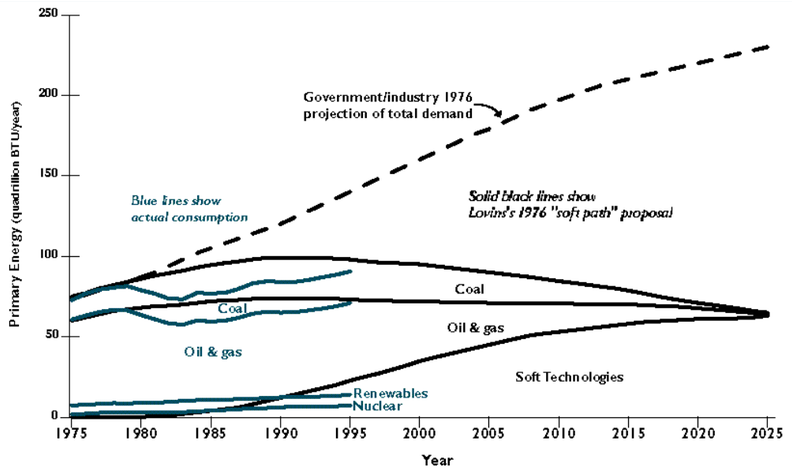
Lovins contrasted the hard and soft paths in two graphs of energy supply patterns for 1975–2025. Though his critics often construed the soft-path graph as a projection, Lovins himself was careful to describe it as a proposal. It wouldn't necessarily come to pass, but it could if chosen and pursued. And since it was preferable to the hard path, it was worth trying to make happen.

STORMING THE GATES

Lovins was not a dispassionate critic. He was known as an ardent opponent of nuclear power, and with some justification the energy establishment saw "The Road Not Taken" as anti-nuclear. Young and at times arrogant, Lovins seemed to relish the role of the outsider storming the gates. Then, as now, he presented a provocatively different vision of how things could be, and stuck to his guns.

All this earned Lovins a reputation as a radical idealist and an irresponsible troublemaker. His critics accused him of stacking the deck to make the hard path look costlier and the soft path cheaper. They said there was far less scope for efficiency than he claimed, and that gains would only come at the expense of economic growth and standards of living. They charged that soft technologies didn't exist, or couldn't work, or were uneconomic.

20 YEARS ON THE SOFT PATH



Total U.S. energy demand is running even lower than what Lovins envisaged in his 1976 "soft path"—one-third lower per dollar of real GDP. The widening gap between actual total demand (the uppermost blue line) and official forecasts (the dashed black line) represents savings from improved efficiency. However, Lovins's soft path can't be exactly compared with actual demand, for two reasons: being a proposal and not a projection, it dismissed nuclear power entirely; and its "soft technologies" category excluded certain pre-existing large-scale energy sources (mainly hydroelectric), making it slightly incompatible with "renewables" as tracked here from official data.

But 20 years on, Lovins's position has been largely borne out:

- The hard path's great white hope—nuclear power—has proved far more expensive than anyone (even Lovins) imagined. Electricity from fossil fuels has gotten cheaper, but the cost of many renewable energy technologies has fallen even faster. Shell Group Planning now considers plausible a scenario of mainly renewable energy use by 2050.
- The scope for efficiency has, if anything, increased. In 1976, the argument was whether 10 percent or 30 percent could be cost-effectively saved. Now, after saving $180 billion a year, it's 50 percent vs. 90 percent (or, Lovins would now say, perhaps even 99 percent).
- The record of the past two decades proves beyond doubt that economic growth is not tied to energy use. Most observers also now accept that increased efficiency boosts living standards and international competitiveness.
- Workable soft technologies do exist, and consumers are proving their cost-effectiveness in many applications.

MANIFEST DESTINY

Even Lovins's most sympathetic readers saw the soft path as a fine utopian ideal, but probably unattainable. Yet, as of 1995, America's total energy consumption was actually *lower* than what Lovins had proposed (see graph), and GDP even higher.

Since Lovins never called his soft-path graph a projection, he can't claim credit for having predicted this. And in fact the energy trend is departing from his graph in some significant ways. Notably, soft technologies have been slower to catch on, although it should be noted that Lovins based his graph on a scenario in which there was full government support for the soft path—the opposite of what happened in 1980–92.

But while renewables have lagged, efficiency is playing an even greater role in curbing energy demand. Despite government irresolution and continued market distortions, individuals and businesses have discovered they can accomplish the same services more cheaply through greater efficiency; and inventors, seeing the opportunity, have continually improved the efficiency of technologies and techniques. Meanwhile, U.S. nuclear power has all but died of an "incurable attack of market forces," as Lovins likes to say, although installed plants may keep contributing to the grid for decades to come.

The moral of the story? If there's one safe bet for the future, it's that people will follow the path of least economic resistance. The advocates of the hard path were trying to sell the public something it didn't need, at an inordinately high price. They were fighting economic manifest destiny. Whether or not the soft path comes to pass as Lovins hoped, he put his finger on a powerful economic truth—end-use/least-cost—that remains relevant to every area of resource policy.

OTHER HARD PATHS?

The supply-siders were wrong in 1976. It's now clear that building lots of expensive power plants is neither feasible, socially desirable, nor affordable. We've learned that lesson pretty well. But are we marching down other hard paths?

Take forests. As reported in previous newsletters, RMI is coordinating an ad-hoc effort, called the Systems Group on Forests, to explore the underlying causes of unsustainable forest practices, which are partly due to the same sort of flawed economics that the hard-path advocates applied to energy. Like fuel-miners, the forest industry still values its assets—trees—at their original, rather than replacement, cost, and disregards most of the forests' wider benefits. Leveling the playing field in these respects would help reveal and elicit better ways of satisfying the end uses now met by wood.

How about transportation? Highway planners, like energy planners before them, still tend to view trend as destiny: traffic will continue to increase, so we should subsidize it by building more and bigger highways.

Yet this trend may actually be on the brink of reversing. Driving is now so underpriced that its high demand may be as artifactual as was the heavy energy demand in the old Soviet Union. The high costs of sprawl are colliding with local governments' infrastructure budgets; commuters are beginning to realize how much money and time they're wasting behind the wheel; telecommunications are providing more access with less mobility. Especially with congestion pricing, today's highway projects could be white elephants 10 or 20 years from now. It may sound far-fetched, but no more so than the energy soft path did in 1976.

Yes, Lovins is an incorrigible optimist. (RMI staff like to joke that "Amory thinks he can run the world on a D-cell battery.") But he was right about energy—or at least more right than his critics. To the extent policy-makers listened to him, they avoided committing society to needless, ruinously costly supply-side expansions.

Can we apply the same thinking to avoid other such mistakes? Can we afford not to?

RMI Catalog

The 1997 *RMI Catalog* is now available. Call, fax, or e-mail us for a free copy. You can also view it and order publications from our Web site (http://www.rmi.org).

SURVEY RESULTS

We're grateful to the 300-plus readers who took the time to fill in the survey in the previous newsletter. The results were extremely useful and gratifying. We learned a lot about what you like and don't like, confirmed hunches about how we could improve the newsletter, and got great new ideas we hadn't thought of.

Most readers seem to like the newsletter as is. Many specifically commented that they appreciate its brevity in an age of information overload, and urged us not to pump up the page count or go glossy. (Don't worry, we won't.)

When asked what they'd like to see more of in the newsletter, readers pummeled us with suggestions. The most frequent request was for more practical tips on making one's home or lifestyle more sustainable. We hope the new "Ask RMI" readers' query column (page 5) fills this gap. Other top vote-getters: more information on how to get involved, follow-ups on past articles, status reports on ongoing projects, and analyses of failures (not just successes). We'll be looking into how we can take on board these and many other ideas, space permitting.

As for what they'd like to see less of, quite a few readers singled out our list of donor names. Whoops—this issue lists more than ever! But there's a good reason those names are there. Printing them in the newsletter is the least we can do to acknowledge the generosity of the people whose donations make our work possible.

Several people also rebuked us for "self-praise" and "bragging." We hear you. True, we've done it again a bit in this issue, owing to the 20th anniversary of Amory Lovins's *Foreign Affairs* article, but we promise to be more humble in the future. A few others said they'd like to see less technical content, but since just as many said they'd like to see *more*, the balance is probably about right as it is.

We also asked readers' opinions about the suggested minimum donation and the possibility of RMI's becoming a membership organization. Those issues were put to the RMI Board after this newsletter went to press. We'll report back on them in the next newsletter.

RMI Newsletter Online

A surprising 39 percent of readers responding to our survey said they'd prefer to receive the newsletter electronically, rather than on paper. Of those, nearly three-quarters requested an email message notifying them when each new edition of the newsletter had been posted to our Web site. Relatively few said they wanted to receive the newsletter itself by email.

So, starting with the spring issue, we'll send out email notices to anyone who wants them. There will be no charge for this service. If you'd like to be put on our electronic mailing list, please send us a message at <orders@rmi.org>. If you already provided your email address on the survey, we'll be contacting you shortly.

Grading the Navy

Last year, more than 70 Navy personnel attended two intensive building design workshops led by RMI's Green Development Services (see Summer 1995 *Newsletter*). The Navy then applied what it learned to eight pilot projects—and invited RMI back to judge their success.

RMI staff who reviewed the designs gave most of them an A for architecture and a B+ for integration of design and environmental responsiveness, but only a C for mechanical engineering. Value-engineering techniques were sometimes applied piecemeal—that is, to individual parts of a building, rather than to the whole system—leading to "pessimizing" lifecycle costs and performance.

But the Navy's request to be graded shows a commendably strong commitment to the principles of sustainable design, one of which is feedback. If you measure how a building actually performs and compare it with expectations and with realistic baselines, you can learn what works and what doesn't, and you can continuously improve the design process. Similarly, by having RMI assess the designs before breaking ground, the Navy will be able to gauge objectively how much its facilities staff have learned, and learn to correct design problems before plans are cast in concrete.

Kate Mink

RMI's newest staff members (left to right): Michelle Sinsel, administrative assistant for Green Development Services; Chris Lotspeich, senior research associate and executive assistant to the research director; and Carrie Scholl, receptionist/housekeeper. And a fond farewell to Danny Kermode, Robert Alcock, and summer interns and volunteers Jason Czaja, Kim Kernan, Swapna Sundaram, and Prema Trettin.

1996: THE YEAR IN REVIEW

Here are the highlights of RMI's year:

Transportation

- Published a revised and expanded edition of *Hypercars: Materials, Manufacturing, and Policy Implications*, a 450-page design primer and technology assessment of ultralight hybrid vehicles.
- Published other technical papers on hypercars and made presentations to major conferences and to many other industrial and policy venues in North America, Europe, and Japan.
- Became more involved with the Partnership for a New Generation of Vehicles, briefing both private- and public-sector members.
- Explored how hypercars could accelerate the commercialization of hydrogen fuel cells, the distributed utility, and the hydrogen economy.
- Further expanded hypercar collaborations to include nearly all the major U.S. and European automakers, as well as plastics, aerospace, and electronics firms.
- Initiated a scenario planning exercise on how automakers can shift to advanced-composite bodies.
- Launched "Omissions," an employee incentive program to encourage carpooling and public transit use.
- Helped local citizens and governments develop alternative transportation proposals for our own Colorado valley.

Green Development

- Wrote *Green Development: Integrating Ecology and Real Estate*, a guide for real-estate professionals to be published in 1997.
- Reviewed the design of eight green buildings for the U.S. Navy, offering feedback to improve the new design process RMI launched in 1995.
- Negotiated contracts for four large buildings, which will be the subjects of a multi-year study to test how performance-based design fees can help create energy-efficient buildings.
- Participated as a non-equity partner in the Meritt Alliance, a consortium to develop superefficient large commercial buildings. A pilot building in Chicago is now in the financing stage.
- Consulted on green designs for new eco-communities in Arizona and Virginia, the National Museum of the American Indian in Washington, the 2000 Sydney Olympics, affordable housing for Habitat for Humanity, and three Monsanto facilities complexes.

Corporate Sustainability

- Coordinated the Systems Group on Forests' nine task forces exploring profitable ways to make the global forest industry sustainable.
- Advised numerous chemical, manufacturing, utility, oil, and other companies and the Conference Board on strategy and practice.
- Collaborated with Paul Hawken on *Natural Capitalism*, a revised and expanded version of *Factor Four* to be published in 1997.

Economic Renewal

- Published a completely revised and expanded third edition of *The Economic Renewal Guide*.
- Conducted Economic Renewal seminars and follow-up visits in four states, and made presentations on community growth and sustainable economic development in two others.
- Assisted in a Department of Energy effort to foster sustainable development in newly created federal "empowerment zones" in six cities.
- Helped the U.S. Forest Service establish a way to measure sustainable development in rural communities.

Water & Agriculture

- Published "Water 2010: Four Scenarios for 21st-Century Water Systems," summarizing the results of a scenario planning exercise sponsored by EPA.
- Launched RMI Water Associates, a new consulting service on water efficiency.
- Presented a paper at the Sixth Annual Stockholm Water Symposium.
- Testified against a proposed dam expansion in British Columbia.
- Consulted on projects for the U.S. Army Corps of Engineers and the Czech government.
- Participated in conferences of the American Water Works Association and Public Officials for Water and Environmental Reform.

Energy

- Prepared "Good Things In Small Packages," a paper and presentation on the hidden economic benefits of decentralized electric resources, due out in early 1997.
- Influenced state and federal officials and utility executives in sensibly restructuring the electricity industry.
- Helped a Hawaiian citizens' group to block a proposed power plant on an undeveloped coast, and to implement cheaper efficiency and renewables instead.
- Addressed audiences in Russia, Ukraine, Japan, Mexico, and many Western European countries on energy efficiency.

Facilities & Operations

- Raised $1.5 million to purchase a half-interest in the nearby 957-acre Windstar property in order to preserve the land, protect its major elk herd, and provide RMI with a permanent home. The land is now protected and the purchase should be completed by year-end.
- Renovated existing office and storage space at Windstar and consolidated all major staffs into that space.
- Convened a distinguished scientific advisory committee to guide the Windstar land's ecological restoration (funding being sought).
- Upgraded RMI's headquarters building, staff housing, and photovoltaic systems.

Communications

- Publicized and marketed key RMI books and papers, and filled thousands of orders for publications.
- Organized fund-raising events and coordinated publicity for RMI's capital campaign.
- Upgraded RMI's presence on the Internet by redesigning the RMI Web site (in progress), posting many more publications to the site, setting up a secure server for online donations, and simplifying the address to http://www.rmi.org.
- Created a list of frequently asked questions about RMI, to be made available online.
- Fielded an average of over 200 queries a week by telephone, letter, and email.
- Showed RMI's facility to over 1,000 visitors.

SECURING THE FUTURE CAMPAIGN
1995–96 GIFTS AND PLEDGES (as of 31 August 1996)

RMI appreciates the generosity of all the anonymous donors.

LAND LEGACY CIRCLE $100,000 and over

Anonymous gift in honor of the wisdom of the grandparents' generation, notably Farley Sheldon and Miriam & Gerald Lovins
Gates Foundation
Great Outdoors Colorado Trust Fund
John D. & Catherine T. MacArthur Foundation
Pitkin County Open Space & Trails

PHILANTHROPISTS $50,000 to $99,999

Hunter & Amory Lovins
Susan & Ford Schumann

GUARANTORS $25,000 to $49,999

Mary H. & Myron P. Curzan
Helen & James T. Mills

BENEFACTORS $10,000 to $24,999

Susanne B. Bush
Dorine & Seymour Levine
Lee Eng Lock
Carol Noyes
Tina Robinson & Irvin C. Bupp
Rocky Mountain Elk Foundation

SUSTAINERS $5,000 to $9,999

Drs. Mary & John Frantz
Ruth Kapes
Michael Stranahan
Dyan Zaslowsky & Michael Edesess

SUPPORTERS $2,500 to $4,999

Wayne Cogswell
Rosamond A. Dean
Robin Henry
Susan Krivin & David Ohanesian
Judith Moffatt
Hensley & James Peterson
Robert J. Schloss

PATRONS $1,000 to $2,499

Jim, Regina, Becky, & Logan Bock
Robert M. Boyar
William Browning
Annie Cooke
Richard C. Goodwin
Esther & Richard H. Goodwin, Sr.
Richard L. Jentgen
Gary Mullard
Anthony P. Pennock
Mariann Quinn
Cathleen & Peter Schwartz
Frances Tyson

SPONSORS $500 to $999

Barbara & David Butler
Victor Daniels
Lucy Fellowes, in memory of N.A. Fellowes
Richard C. Goodwin
Gary Mullard
Barbara & Daniel J. Packard
Mark M. Paulsen, M.D.

FRIENDS $100 to $499

David J. Allee
Alpine Bank
Dorothy Anderson
Lorraine Anderson
Ingrid Antony
Mary & Richard Ash
Nancy & Tom Atchison
Christine A. Asher & Mark R. Campbell
Aspen Camp School for the Deaf
Aspen Wilderness Workshop
Monica M. & Paul Bancroft III
Jacque Battle & David Frank
Judith Bernard & Michael Fain
John L. Boehne
Jean & Ernest Boyce
Cheryl & Ralph Braden
Cabell Brand
Ellie Brickham
Shelley Burke
Annie Chappell
Joe R. Chovan
Amy A. & Paul Clark
Dr. & Mrs. John B. Cobb, Jr.
Sally & Joseph Conklin
P.T. Costin
David Cutler
Robert Dawyot
Hans Dumoulin, M.D.
Katie & Brad Dunn
Fred Elmer
Peter Ewing
Judy & Kenneth Foot
Carol Gault
Sara & Eugen Goin
Sarah Groves
Sonia Ruth Weinstock Hamel & Jean-François Hamel
Shawn & Dustin Harris
Rick Heede
Edward H. Helm
Susan Helm
Anne Hillman & George E. Comstock
Robin & Mike Hoy
Patricia A. Huberty
Michael P. Hydro
Dana L. Jackson
Sarge Kennedy
Peter Kilkus
Michael Kinsley
Terry Kinzel
Sam Kjellman
Konrady Plastics
Gari Krogseng
Dr. & Mrs. Patrick T. Lally
Jean M. & Walter R. Lamb
Carol & Thomas Lamm
Carol R. Langner & Fritz Fritschel
Peggy Lauzon & Tim Kelly
Wolfgang Lechleitner
Lowell Lebermann
Elaine & Robert LeBuhn
Robert Levin, M.D., J.D.
Wendy Loren
Ethel Lossing
Sam Luxton
Margaret & Daniel Lynch
Myron A. Mann
John J. Maxwell
Margarita & Donald Metzger
Peter Miller
Peter H. Miller
Kate Mink
Peggy & Barry Mink
Johnny M. Mullen, in memory of Benjamin Mullen
J.D. & V.R. Newbold
Morris J. Nicholson, M.D.
Ann Richards Nitze
Barry Northrop, in memory of Stan Niemczycki Sr.
Ed Nystrom, in honor of Kittie Spence
Patricia O'Connor
Avis R. Ogilvy
Overly Construction
Katherine M. & Paul Page
Virginia Parker
Glenda C. Pehrson
Gregory Penniston, D.C.
Susan Phillips
Andrew Quiroz
Red Hill Dezignz, Inc.
Jack Roberts
Steven Rothstein
Anita E. Russel
Gary Sabula
Marnie Schaetti
Mimi Schlumberger
Joyce & John Schwartz
Basil Seaton
Christine & Bill Shahan
Mary Jo & Robin Shaw
Burnette T. Sheffield
Dwight Shellman
Dr. and Mrs. Edward M. Shepard
Sloan Shoemaker
Steve Shull
Luis Silva
Louise Singleton
James Skinner
Mary & Peter Smith
Victoria Smith
Stacy Standley
Gordon Stewart
Duncan Storlie
Michael P. Totten
John C. Twombly
Joanna Underwood
Mary Jane & Mike Underwood
Judy Waite, in honor of Carol Young
Tom Warren
Fred Weed
Margaret & William Westerbeck
Harry Wilker
Sam K. Williams

ASSOCIATES $1 to $99

Jennifer & Paul Adams
Susan & Eric Anderson
Michael P. Andreyuk
Janie Arnold
Nancy & John Artz
Mary-Lane Baker
Paul Barnes
Diane Pitcher Bedell
Edward G. Beeley
Dominick Belardo
Edward L. Bennett
Michelle A. Berkowitz & Anthony Leofsky
Carol & Robert Bertrand
Bart Bickle
Cheryl L. Birdsall
Rebecca A. Biscaro
Lesly Black & Vance Lemley
Alan L. Boyer
Margaret & Thomas Bradylong
Margot A. Brauchli
Sally & Dick Brigham
Bill Brooks
Emily & Sylvester Brown
Lawrence Bruk
Bob Burrow
Bradley W. Cameron
Beverly A. Campbell
Jennifer & Jim Cantele
Kathryn & Jefferson Carleton
Bob Carpenter
Linda & Kit Caspar
Joy M. Caudill
Cynthia & Roy Chamberlin
Norene O. & Thomas W. Chase
Victoria S. & John F. Clancy
Theresa E. Collins, in honor of Katherine G. Collins
Kurt J. Conger
John Connell
Elaine S. Cook & Zhahai Stewart
G. Allen Cook
Mary Lou & Courtney Cook
Peter B. Cook
Patricia A. Cooper
Nancy H. & Joe B. Corpening
Sherilyn J. Coulter
Jacqueline R. & Douglas D. Crockett
Jill Curran
C.W. Dahlgreen
Raymond Davi
Catriona Davies & Dean Kubani
Lawrence Davino
Don Dean
Lynnette Debell & Michael Grier
Lynda C. & John E. delNero
Paul DeMaio
Displays for Jewelry
William W. Durrell
David G. Eber
Eric C. Eldering
Carolyn Eldred & Dennis Krug
Elyse Elliott & Jeremy Bernstein
Marion & Merritt Elmore
Thomas J. Elpel
John M. Ely, Jr.
Kim T. & Marshall Evans
Donna Feiner
Douglas J. Fink
Elizabeth Nystedt Fletcher & Richard A. Fletcher
Kim & David Floria
Carolynne Foltz
Susan O'Terra Foster
John J. Fritz
Ray V.D. Gerhart
Cheryl Lynne Gersch
Mark Gibson
JoAnn Glassier
Alice & George Gless
Marshall Glickman
Martha Sue & Louis Goldman
Bobby Grayson
Kate Greenspan & Steven Epstein
Wesley A. Groesbeck
Diane Hall
David M. Halpern
Richard Hathaway
Shirley Hathaway
Linda L. Heald
Patti J. Hecht
Carol G. & Tony E.C. Henderson
Carl L. Henn
Molly Hiatt
Barbara Hibbard
David Hiser
Arvid Hogen
Patricia A. Huberty
Michael P. Hydro
Rob Hyks
David W. Inouye
Katia & John Jacobs
John Jeffries
Jane & William Jennings
Eric D. Johanson
James G. Jones
Patricia & Robert Jones
Dana Judy
Irene & Al Juvshik
Debora & Keith Kaback
Loretta & Allan Kiron
Kenneth Klacik
Stacie A. Knapp
Jeffrey P. Knight
Dinah Koehler, in honor of Isabelle Headrick & Michael Horewitz
Robert Y. Kono
Kraft Construction
Robert Kuchta
Vivianne & Robert I. Kurzweil
Daisy P. & Daniel R. LaPoma
Mary & Joseph Lechuga
Patrick Leeds
Timothy E. Lehane
Barbara & Charles Leiden
Marion & Lee Leiserson
Marvina Lepianka & Charles Jaffe
Geoffrey Lester
Rob Leventhal
Martha J. Lillie & Anthony G. White
Roger Lippman
David Little, in memory of Neil Little
Daniel Lucachick
Frank M. Masters
Capt. Jeff Mathieu
Cynthia Metzep-McCarty & Shawn McCarty
Diana McCourt
Robert S. Means
Chad Medcroft
John Menger
Annette Mercer & Alexis P. Wieland
Sylvia & Sam Messin
Michaela E. Millard
Byard W. Mosher
David Mueller
Mary Ellen & Herman Muenchen
Herminia & Thomas Neet
Ed Nelson
Lynda J. Nicolls
Judy & Neil O'Donnell
Nancy & Clifford O'Neill
Ned Orrett
Mathew E. Overeem
Joseph A. Padula
Robert F. Paashaus
Clayton Pederson
Judith & Terry Penney
Kristine Permild & Sam Harris
Charles Petty
Margaret E. Philbrick
Shawn Porter
Mark Raulston
Shelagh G. & Terrence M. Regan
Gretchen Renshaw & Robert A. Zwissler
Don Revis
Barbara & John Rhead
Dan Ridgeway
Don Riggs
Vickie Rightmyre
Robin & David Rittenhouse
Jill Robinson
Blake Rodgers
Mary Roy
Eli Rubinstein
Catherine I. Sandell
Marshall E. Saxe, in memory of Don Lamson
Randy K.R. Schmidt
Louis Schultz
Rosemary Cseh-Senn & James F. Senn
Mark Shaffer
Lori Shields & Stephen G. Connor
Gabriel Shirley
Steve Shull
Sierra Solar Systems
Signs & Designs by Wanda
Anthony Simmonds
Matthew Simon
Nancy & Walter Simpson
Sylvia Skolnick
Peter B. Sloan
Barbara W. Smith
Jennifer Smith
Shane Smith
Florian Smoczynski
Narvel Somdahl
Tim Spears
Dr. & Mrs. Gregory C. Speer
Nicole Spiegelthal & Bradley Ack
Wanda & Bob Stadum
Walter Stark, in memory of Irene Dickinson
Dierdre A. Stegman & Oliver R. Bock
Dale Stille
Geraldine St. Onge
Sunheart
Doris & Bob Swehla
Jesse S. Tatum
Harry Teague Architects
Ken Thomas
Peggy & Tod Tibbetts
Molly & John Ugles
Judith A. & Terry R. Valen
Roger Valentine
Frank W. VanBerlo
Paul Wack
Erika Walker & Donald Weinshenker
Scott Wallace
Diane L. Weber
Marion Weber
Rick Weeks
James S. Weinberg
Robert Westby
William H. Wheeler
David J. Whitbeck
Virginia J. Whitcomb
Mary-Alice White, M.D.
Priscilla S. & Timothy S. White
Perry R. Wilkes
Lorraine Wiltse
Shane S. Woodruff
Alexis Woods
Paul Yahnke, in memory of my grandfather
Trudy & Richard Zauner

SECURED *from page 1*

be reclaimed and managed intensively as habitat for wildlife species forced off other lands. Secondarily, it will be managed for livestock and for such passive recreation as hiking, horseback riding, and cross-country skiing.

As the human population increases, land—perhaps more than any other resource—will have to be used more efficiently. At Windstar, RMI hopes to show how managing private land to serve both environmental and social needs can increase its value and ecological richness.

Assisting in this will be a scientific advisory committee that includes Allan Savory, an expert in sustainable rangeland management. The advisory committee toured the Windstar land this summer, and will reconvene as needed to draft recommended practices for the land.

A wetlands report has been commissioned, and a county biologist is conducting a baseline biological assessment. RMI and Windstar volunteers have constructed a nature trail along the main valley floor, rebuilt a small dam, and begun removing thistles. More extensive restoration work, possibly including the planting of native shrub willows to enhance alpine wetlands and provide more wildlife cover, will begin next summer.

If you have a question, want a brochure, or would like to help, please contact RMI Executive Director Hunter Lovins or Campaign Coordinator Judy Moffatt.

Lysa's Wish List

The Windstar land purchase opens up new horizons for RMI, including the chance to teach children about the land and RMI's work through the Windstar Land Conservancy.

This fall, environmental education coordinator Lysa Usher launched a series of half-day courses for local students, and in the future she hopes to offer other day programs for school groups from farther afield. Ideas for a summer environmental education day camp and a "Rocky Mountain Summer Institute" for adults are also being considered.

To create an indoor space for year-round educational programs, Usher and Jeanie Tomlinson, the Windstar Foundation's program coordinator, have their sights set on converting Windstar's old garden shed into a learning center. The classroom will be solar-powered and will provide another point of interest for the hundreds of visitors touring RMI and Windstar each year.

However, the project is unfunded, so they're hoping to furnish the new classroom with donated materials and equipment. Here's a list of items needed:

- television monitor and VCR
- books and videos on children and the environment
- art supplies
- large floor cushions
- chalk board and/or dry erase board
- binoculars
- snowshoes (children's sizes)
- Polaroid cameras/film
- pellet stove (to heat the classroom)
- low-VOC paint (various colors)

Items may be new or used, but should be in good condition. All offers will be greatly appreciated! In particular, let us know if you think your employer might be willing to donate materials.

Water for the World

RMI water specialists Richard Pinkham and Scott Chaplin traveled to Sweden in August to give presentations on scenario planning and water utility partnerships at the Sixth Annual Stockholm Water Symposium, thanks in part to a gift from Michael Stranahan.

Six hundred delegates from more than 80 countries discussed strategies for providing clean, reliable drinking water to the world's 5.5 billion people. Understandably, but unfortunately, participants seemed interested mainly in large-scale strategies for increasing supply—efficiency, which RMI has helped put high on U.S. water authorities' agendas, was little discussed. Yet efficiency is a vital tool in leveraging any water strategy, Chaplin notes, since it enables scarce development funds to be stretched that much further.

INSTITUTE SUPPORTERS

Our sincere appreciation is offered to these friends who have contributed to RMI's support between 1 May and 31 August 1996. Numbers in parentheses indicate multiple donations. Please let us know if your name has been omitted or misspelled so it can be corrected in the next issue.

BENEFACTORS $10,000 and over

Compton Foundation, Inc.
John A. (Jay) Harris IV
Vira I. Heinz Endowment
John D. & Catherine T. MacArthur Foundation

PATRONS $1,000 to $9,999

EarthShare
G.A.G. Charitable Corporation
John B. Gilpin
Ted Goudvis
Bud B. Konheim, In memory of Eric Konheim
Carolyn Konheim, In memory of Eric Konheim
Nicole Miller, in memory of Eric Konheim
Isaiah Orozco
Miles Pennybacker
Real Goods
Arent Schuyler
Jane Sharp
Michael Stranahan
The Hon. Henry Y.Y. Tang

SPONSORS $100 to $999

Anonymous (5)
Maurice Benoit
Donna Brenner, in memory of Betsy Anne Brenner
Louise & Tom Burns
Barbara & David Butler
Shirley Caldwell-Patterson
Citibank-Matching Gifts Center
Mary & Atlee Clapp
William Cline
Dr. John Cobb, Jr.
Colorado Hospitals for a Healthy Environment
George Comstock & Anne Hillman (3)
Brownlee Cote
Mr. & Mrs. Arthur Crocker
Marion Culhane & Louis Kunz
Dakota Smith, in memory of Eric Konheim
Lois-ellin Datta (4)
Rosamond A. Dean
Marilyn & Bob Dixon
Environmental Resource Department of the Cuningham Group
Annette & Frank Gallagher
Marian & Bob Gerecke
Katherine & Paul Gerke
Jenifer & P.M. Gibbons, in memory of Eric Konheim
Jack Goering
Sara & Eugene Goin
Nelson Gordman
Robert Gray
Farha Joyce Haboucha
Sonia Hamel
Nicholas Howes
Scott Huffman (2)
Sonja Jones
Elorduy Josu
Jane & Joseph Kasov, in memory of Eric Konheim
Peter Kilkus
William Kint
Allison & Michael Landau, in memory of Eric Konheim
Jonnie & William Lazarus
Nell Lepla
Traci & David Maddox
Penny McManigal
Carolyn & Herb Nelson
Vivian Newbold
Bonnie & Joel Neymark
Ann & Bill Nitze
Ed Nystrom, in honor of Kittie Spence
Avis Ogilvy Moore
Daniel Packard
Edwin Parker
Kent & Karen Pressman
Tom Riesing
Estelle & Steven Rose, in memory of Eric Konheim

INSTITUTE SUPPORTERS

Ann Marie & Gary Sabula
Gillian & Basil Seaton
Burnette & John Sheffield
Dr. Tay Tanya
The Sun Microsystems Foundation Inc. Matching Gift
Carleton Thomas
Hans Tobeason
Michael Totten
United Technologies Carrier Corporation
John Warmath
Margaret & William Westerbeck
Dr. Rob Wilder
Brian Williams
Dorothy & John Wolfe

ASSOCIATES $1 to $99

Gary Adler
Mark Aitchison (2)
David Allee
Wayne Allred
Ronald Anderson
Ruth & Ray Anderson (2)
Nancy & Tom Atchison
Jim Augustin (2)
Alan Austin
Geoff Badger
Laura & Bill Baldwin
Newt Ball
Robert Ballou
Jacque Battle
Rex Bavousett
Jessica Bender Krow, in memory of Dr Rudolph Krohz
Daryl Bergquist
Dale Bickert
Cheryl Birdsall
Carolynn Biven
Nathan Black
Bob Bolles
Steve Bonowski
Verna Brandt
Lois Braun
Barry Brouillette
Kathie Brown
Buchanan Architects
Robert Bullard
Donna & Bob Burrow
Jennifer Cantele
Jefferson Carleton
Jeffrey Carstens
Joy & Sam Caudill
Jeremy Cavanagh
Charles Chesney
George Chimiklis
Richard Christie
Ron Cohen
Cole & Company Inc.
Bill Coleman
Rachel Coleman
Compaq Computer Corp. Matching Gift
Peter Condakes
John Connel
Steve Connor
Daniel Croce
D. Hiden Ramsey Library
C. W. Dahlgreen
John Dana
Allazondra Dancingwind
Leonie Daniels
Raymond Davi
Paul Davis
Michele Dearing
Miriam Della Cava
Daryl Delsignore
Mr. Dee Dewitt
Displays For Jewelery
Eric Dodge
Sabra Kranzfelder Driscoll
Donald Dyall
Armin Eberle & Elisabeth Eberle-Weber
Rebecca Echols
Harry Elder (2)
Thomas Elpel
Emanon Inc.
Steven Epstein (2)
Carlo Federiconi
Christopher Felicetti
Honey Sue Fishman, in memory of Eric Konheim
Jack Fitch
Richard Fletcher & Elizabeth Nystedt Fletcher
Fox Construction
Lon Gable (2)
Pat Gallagher
Paul Gardner
Vic Garrett
Glenn Gaskill
Sharon Gaughan
Richard Gelwick
R. Gerhart
Don Getzug
Larry Gillett
T Glauthier
Sandy Gold
James Goldstein (2)
Yosef Gotlieb
Bobby Grayson
Larry Guenther
HEAT Alaska, Inc.
Ingo Hagemann
Mary Hansel
Nancy Caroline Harney
Shawn & William Harris
Kris Hartley
Jim Harvey
Christopher Hay
Heartwood Publications
Ruth Heffernan Marsh
Bernhard Heinz
Louis Hellwig
Carl Henn
Dorothy Hesse
Melinda Hodge
Thomas Hollyday & Janet Symmon
Katherine Hopkins
Richard Hoye
Scott Huffman
Tom Ickes
Pat Imperato
Barbara Innes
Jeffrey Jacob
Charles Jaffee & Marvina Lepianka
William Jennings
David Jennings
Bertha & Jeff Johnson
Harry Johnson
Roger Johnson
Dana Judy
Irene & Alex Juvshik
John Katzenberger
William Kellogg
Regan Kenner
Lane Kirby
Loretta Kiron
Jill Klores
Neil Kolwey
Gene Koning
Konrady Plastics, Inc.
Gordon Koshinsky
Michael Kraft
Timothy Kroll, in honor of James Kroll
Dean Kubani
Richard Kuehner
Vivianne & Robert Kurzweil
Nan Lampka & Walter Simpson
Josh Lamp
Richard Langdon
Carolyn & C.T. "Chuck" Lange
Daisy & Daniel LaPoma
Dana & Thomas Larson
Philip Leach
J.W. Lehnert
Amira Leifer
Lee Leiserson
Marion Leonard (2)
Harry Lerch
Barbara & Irwin Linden, in honor of the marriage of Robert Linden & Maureen Orr
Charmaine Longanbach
Melanie Lord
Wendy Loren
Ethel Lossing
Christopher Lotspeich
Daniel Lucachick
Jean Ludtke (2)
Daniel Lynch
Tony & Lucia Macgregor
Kathryn Mack
Ronald Margolis
Charles Markley
Glenn Marshall
Maui Community College Business Office
JoAnn & John Maus
Betsy McBride
Jean McCoubrey
Kelly McMillen
Chad Medcroft
John Menger (2)
Sam Messin
Peter Miller
Peter Milliken
Joseph Moffat
Roger Moore
Byard Mosher
Harold Mosher
Berta Nelson
John O'Brien
Clifford O'Neill
Amy Oliver
Bruce Oneto
Chris Osborne
Mr. & Mrs. Robert Paashaus
Joseph Padula, in memory of Angela DeVito Padula
Rick Parrish
Anne & John Paterson
Enid Pearson
Clayton Pederson
Rick Penner
Terry & Judith Penney
Nancy Perez
Claire Perricelli
Henry Peters
Larry Phillips, in honor of Buckmeister Fuller
Randy Pierce
Rick Pietrusiak
Drew & Roseanna Pontz
James & Sharon Poole
Shawn Porter
D. Power
Premena
William Price
Shelagh Regan
Richard Renner
David Rindlaub
Dick Riseling
Ellen Roddick
Marsha Rosenberg
Harvey Rosenblum
Michael Rosse
Florence Rossi
Mary Roy
Eli Rubinstein
Kevin Ryan
Robert Rybisky
Phoebe Ryerson
Carlton Salvagin
Charles Sarahan
Kurt Sardeson
Marshall Saxe, in memory of Don Lamson
Paul Schimmelpfennig
Mary Sue Schmaltz
Joyce & David Schmoeger
Joyce Schowalter
John Sears
Charles Sexton
MaryJo & Robin Shaw
Barbara Shoemaker
E. Sloan Shoemaker
Danielle Sieh
Jonathan Simon
Judith Simpson
Louise Singleton
Kerin Sloane
April Smith
Doug Smith
Michele & James Spacek
Terry Spragg
Diana & Arnold Squire
Christopher Starbuck
Peter Stekl
Gayle Stone
James Storm
Richard Stout
Smoky Stover
Sunheart
Duane Sweeney
Bob Swehla
Sydney Water
William Talalayevsky
Mari Taylor
The Sunrise Company
I.G. Theaker
Maurice Touey
Ginger Uthmann (2)
Roger Valentine
David Vandervort
J. Vautour
Jeanne Vincent
Bill Walters
Dave Watt
Anthony White
Robert Whitney
Professor O.J. Whittemore
P. Wilkes
Perry Wilkes, Jr
Mark Willbie
Sam Williams
Joanne Williams
Nancy Winship Rathborne
Yampah Builders, Inc.
Peter Zauner
Richard Zauner (3)
Sergio Zori Architect
Alma & Michael Zwikelmaier, in honor of New Land Trust

Rocky Mountain Institute
1739 Snowmass Creek Road
Snowmass, Colorado 81654-9199

NONPROFIT ORG.
U.S. POSTAGE
PAID
DENVER, COLORADO
PERMIT NO. 1278

Printed on 100-percent recycled paper with soy-based inks