



# Rebuild America 2002

**Saving Energy**

**Saving Money**

**Reducing Pollution**

*In Our Communities . . .*

*By Our Communities*

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U.S. Department of Energy  
**Energy Efficiency  
and Renewable Energy**

Weatherization and Intergovernmental Program

## **Mission Statement**

To build partnerships among communities, states and the private sector to improve building performance and connect people, resources, ideas and practices for energy solutions to community needs.



## **Rebuild America 2002**

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***In Our Communities . . .***

***By Our Communities***

**A report documenting program performance  
and accomplishments.**

## The Program

Rebuild America is a growing network of community-driven voluntary partnerships that make use of energy-efficiency and renewable energy technologies for commercial, government and public-housing buildings. At the federal level, it is part of the Weatherization and Intergovernmental Program within the Office of Energy Efficiency and Renewable Energy (EERE) of the U.S. Department of Energy (DOE). Rebuild America has several important purposes:

- Conserve energy
- Accelerate use of the best available energy technology
- Reduce air pollution
- Lower U.S. reliance on energy imports
- Save money for more productive uses
- Help revitalize aging city and town neighborhoods

Why is Rebuild America needed? Launched in 1994, Rebuild America fits with local and national energy and environmental strategies. On May 17, 2001, when the federal National Energy Policy was unveiled, President George W. Bush said: "Our new energy plan begins with a 21st century focus on conservation . . . Our energy plan will speed up progress on conservation where it has slowed, and restart it where it has failed . . . Outdated buildings and factories have to be upgraded or replaced to consume less and pollute less."

Buildings are a prime source of energy waste. The energy consumption of older buildings commonly can be cut 25 percent through retrofits and better operation. Because most of the nation's 4.7 million commercial and government buildings were built prior to 1980, there is a vast opportunity for savings. Many new buildings, too, can benefit from improvements in technology and operations.

Recognizing that markets often have much inertia and unclear economic incentives, it is wise for federal, state and local governments to become voluntary partners with each other and with the private sector to promote energy efficiency.

## Strategic Plan

Rebuild America's seven strategic goals for 2001-2010: increase the number of high-performance buildings; help partnerships implement community-wide energy-efficiency and renewable-energy improvements; provide technical assistance tools, resources and services; ensure a well-trained and sufficient force of program representatives; leverage partnership support with public benefit funds; ensure a viable, integrated network of Strategic and Business Partners; promote and market the program and partnerships.

The 10-year strategic plan, set near the start of the decade, sets ambitious numerical goals:

- Completed or committed improvements to 2 billion square feet of building space by 2005, 4 billion square feet by 2010
- Completed or committed savings of 42 trillion Btu of energy annually by 2005, 85 trillion annually by 2010
- \$2.75 billion in private investment completed or committed by 2005, \$5.5 billion by 2010.

## 2 This Report

The information in this report represents Rebuild America's progress through December 31, 2002. Project information is reported by the partnerships as projects are completed. A concerted effort is undertaken twice a year to update data and produce mid-year and year-end assessments under the Government Performance and Results Act. For a small number of projects where all metrics have not been collected, the reporting system uses conversion multipliers that are based on building energy use data provided by the Energy Information Administration. The results are intended to be an indicator of overall impact. The results are not monitored and verified by the program. For more information, please visit [www.rebuild.gov](http://www.rebuild.gov).



## Quantifiable Results

The close of 2002 marked a year of important progress for Rebuild America. At year end, nearly 500 voluntary public/private partnerships operated in every state and in Puerto Rico, the Virgin Islands and Guam. Collectively, they delivered impressive results:

- Partnerships were engaged in more than **800 projects**, up more than 33 percent from 600 projects a year earlier.
- Projects had completed improvements to **528 million square feet** of building space, up 26 percent from 419 million in 2001.
- Projects committed to and underway involved another **569 million square feet** of building space, up 35 percent from 420 million in 2001.
- Cumulatively, partnerships achieved **\$1.5 billion in savings** on energy costs.
- On an annual basis, the program's work achieved nearly **9 trillion Btu of energy savings** and **\$131 million in energy cost savings**.
- Annual reductions in pollution reached **3,349 metric tons of sulfur dioxide (SO<sub>2</sub>)** and **1,576 metric tons of nitrogen oxides (NO<sub>x</sub>)**, estimated in terms of reduced electrical power consumption. The work achieved annual reductions of **768,239 metric tons of carbon dioxide (CO<sub>2</sub>)**, a greenhouse gas, as estimated by reduced electricity consumption.
- For every federal dollar invested, energy savings equaled **\$18.43**, up more than 13 percent from \$16.26 in 2001.
- Every federal dollar invested in a project generated **\$9.38** in private energy-efficiency investments.
- Cumulative private investment because of the program reached **\$600 million**.
- Projects committed or underway represent another **17.8 trillion Btu of annual energy savings**, which could entail emission reductions of **6,623 metric tons of SO<sub>2</sub>**, **3,117 metric tons of NO<sub>x</sub>** and more than **1.52 million metric tons of CO<sub>2</sub>**.

## Measuring Success

To understand what Rebuild America is accomplishing in energy savings, the most useful figure may be for energy saved annually: nearly 9 trillion Btu. By applying conversion factors developed by the Energy Information Administration, this can be expressed as equivalent to:

- Taking 131,000 passenger cars off the roads, or
- Preventing the burning of all of the coal carried in 4,266 100-ton railroad cars, or
- Saving all of the electricity used by 270,000 average Americans during a year.

The 529 million square feet of renovated and new building space is the equivalent of 264,500 single-family U.S. homes.

All savings, in Btu and dollars, are calculated from energy reductions. That leaves uncoun- ted the sizable savings that typically come from reduced costs of operations and maintenance after an energy-efficiency upgrade.



## Getting the Job Done

The community-based partnerships of Rebuild America have been achieving savings in all of the program's market sectors. In terms of completed renovations of building space, the results have been:

- Local and state governments: 144.5 million square feet
- Commercial buildings: 122.3 million square feet
- K-12 schools: 188.4 million square feet
- Colleges and universities: 44.4 million square feet
- Public and multifamily housing: 28.4 million square feet

The program tracks only partnership work. It does not include other buildings that are undergoing energy improvements as an indirect result of the Rebuild America program – as a consequence of business managers and building owners learning about the potential savings and launching renovations privately. Partners, projects and technical seminars unquestionably spread knowledge and ideas from the Rebuild America program. Similarly, many local governments and school districts may be upgrading buildings on their own after learning from the example of Rebuild America methods and technologies. But the beneficial results of work outside the program are not counted here.

## Local Government Results: Bergen County, NJ

Through its Energy Conservation Initiative, Rebuild Bergen County has supported a number of significant building retrofits and has offered all municipalities, school districts, water or wastewater treatment plants and commercial or industrial businesses free energy audits.

Total energy savings from the projects has surpassed \$1.2 million a year. The projects include improvements to two county buildings, two county special services facilities, a sewage treatment plant and several municipal and school buildings.

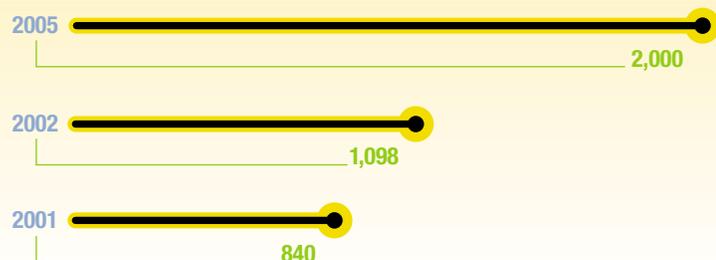
More than 3 million square feet of local government building space in Bergen County has benefited from energy retrofits since Rebuild Bergen County became a community partnership in 1996.

The Bergen County Improvement Authority provided financing, while energy service company Metro Energy Solutions provided much of the initiative and expertise.



### Floor Space Improvements

COMPLETED OR COMMITTED  
(MILLION SQUARE FEET)



## Local Action

Rebuild America is designed to foster voluntary local action rather than federal mandates. Thus, the growth of community-driven partnerships is a central factor in the program's success. Local and state officials are in good positions to identify prospects for energy-efficiency upgrades. Local business leaders and facilities managers similarly are "close to the ground" and can discover a multitude of opportunities for building improvements.

It is the combination of local and state initiative, private-sector capabilities and federal expertise that allows partnerships to take action.



**Partnerships:** Rebuild America partnerships have grown rapidly in number since the 1994 launch of the program, increasing from 9 in 1995 to 494 in 2002.

**Projects:** Rebuild America projects now number in the hundreds. Among the program's partnerships, 50 percent had projects, either planned or underway, at the end of 2002.

## State Government Results: Colorado

Twenty state agencies and higher-education institutions have upgraded their facilities through assistance from Rebuild Colorado. That work has involved \$43 million in capital investments and yields about \$5 million in annual energy cost savings.

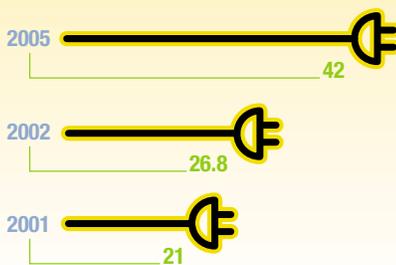
Colorado also is demonstrating how performance contracts can maintain or even accelerate the pace of energy-efficiency work despite tight state budgets.

The Governor's Office of Energy Management and Conservation, which takes the lead in Rebuild Colorado, has been convincing state agencies, schools and universities to cut their energy bills through a wave of performance contracts. Near the end of 2002, Rebuild Colorado had 10 new performance contracts in the works, worth roughly \$18 million.



### Energy Savings Annually

COMPLETED OR COMMITTED  
(TRILLION BTU)



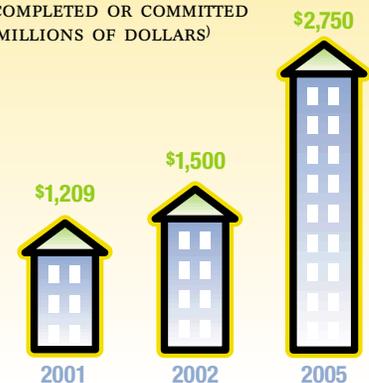
### Energy Cost Savings Annually

COMPLETED OR COMMITTED  
(MILLIONS OF DOLLARS)



### Private Investment Cumulatively

COMPLETED OR COMMITTED  
(MILLIONS OF DOLLARS)



## Market Sectors

The work of Rebuild America is grouped into five market sectors: state and local government; commercial buildings; EnergySmart Schools (K-12); colleges and universities; and public and multifamily housing. Each presents somewhat different challenges and opportunities. Market sectors cut across DOE's six regions: Atlanta, Boston, Chicago, Denver, Philadelphia and Seattle.

### State and Local Government

A very active market sector is that of state and local government. More than 6 billion square feet of building space fall under the purview of state and local governments. State energy officials play a central role in the Rebuild America network as advocates, advisers and project developers.

State and local governments have been wrestling with budget squeezes, including some severe deficits. As a result, many states have a stronger motivation to save money on energy through heightened efficiency. States also are resorting to more use of performance contracts, which rely on reductions in energy expenses to cover the costs of building upgrades, leaving the state budget untouched.

### Commercial Buildings

Potentially the largest sector for Rebuild America retrofit work, U.S. commercial buildings number more than 4.1 million. Competitive pressures to cut costs can motivate business owners to retrofit buildings, but many probably do not realize the extent of the savings possible. Commercial building owners pay \$100 billion for electricity, natural gas, fuel oil and district heat annually.

In cities and towns with older commercial areas that have declined in economic vitality, energy-efficiency retrofits can contribute to neighborhood revitalization. Through Rebuild America, companies can save money and invest more of their revenues in other, productive endeavors. Consider an aging Main Street in a small town that is undergoing revitalization after many businesses and customers have fled to newer shopping centers and corporate parks on the edge of town. In extreme cases, commercial buildings benefit from renovation in brownfields, those areas burdened by a heritage of pollution and abandonment.



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#### State and Local Governments: Key Metrics

Improvements Completed .....144.5 million square feet  
Annual Cost Savings .....\$43.3 million  
Annual Energy Savings .....4.6 trillion Btu  
Total Energy Investment .....\$227 million

#### Commercial Buildings: Key Metrics

Improvements Completed .....122.3 million square feet  
Annual Cost Savings .....\$17.9 million  
Annual Energy Savings .....1.3 trillion Btu  
Total Energy Investment .....\$109 million

## EnergySmart Schools (K-12)

The United States spends about \$6 billion a year on energy costs for K-12 schools. With the average U.S. school building about 42 years old, there are ample opportunities for cutting that aggregate energy bill. The program has been improving school buildings rapidly and contributing to student educations at the same time. Those functions are intertwined:

- Energy-efficiency and alternative-energy technologies installed in a school also serve as teaching tools
- Building improvements for energy efficiency create a more pleasant environment for learning, with better student performance reported as a consequence
- Students taught energy efficiency often form “patrols” to identify energy waste within their own schools, leading to energy savings in those schools
- Students taught energy efficiency will in some cases become the energy technologists and policymakers of the future

During 2002, the EnergySmart Schools sector saw the rollout of DOE's *Energy Design Guidelines for High Performance Schools*, a seven-book series of guidelines tailored to climate zones. The *National Best Practices Manual for Building High Performance Schools* was published as a companion guide to provide in-depth technical detail in support of the guidelines.

Also during 2002, the schools sector saw the completion of pilot testing and editing for the *Light Up My Life* physics education book, an addition to the books in the Active Physics series. Rebuild America provided support for development of *Light Up My Life*, which focuses on lighting and energy efficiency.

## EnergySmart Schools Results: The Dalles, OR

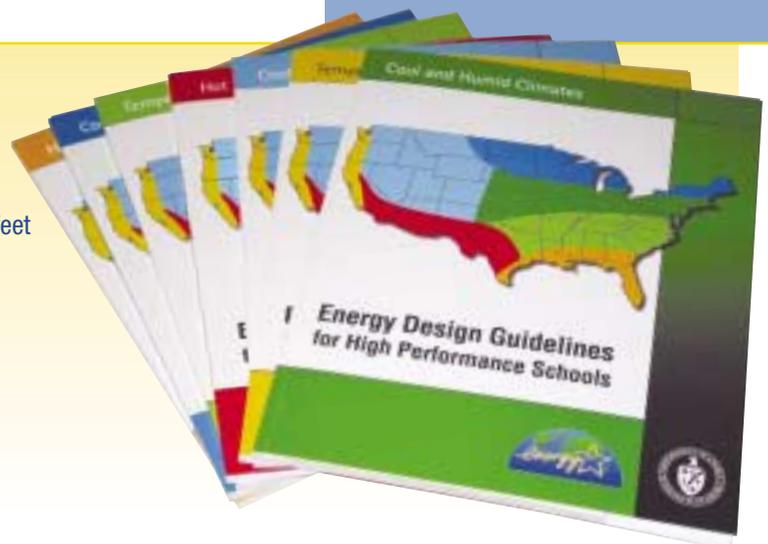
The old middle school was falling apart. Literally. It had cracks in the walls, and much of it was condemned and closed, having been damaged by a landslide. So the school district in The Dalles, OR, formed Rebuild The Dalles Schools and built a new school.

While the new school was under construction, a nearby vacant grocery store was converted into makeshift classrooms. Students not using those rooms were in mobile modular classrooms at other school sites, and school offices and classes also were located in such temporary places as a school gymnasium.

The middle school virtually went from worst to first. All kinds of energy-saving measures went into the new state-of-the-art building, from the use of groundwater in temperature control to various manipulations of natural light. Completed in August, the new school was designed to have energy expenses about 45 percent below those of a conventional replacement building.

## EnergySmart Schools: Key Metrics

Improvements Completed .....	188.4 million square feet
Annual Cost Savings .....	\$36 million
Annual Energy Savings .....	1.9 trillion Btu
Total Energy Investment .....	\$184 million



## Colleges and Universities

The campuses of colleges and universities are especially suited to Rebuild America retrofit projects. They typically have many large, older buildings grouped together, and they most likely have one facilities manager in charge of them. A single project can accomplish a great deal on a campus. A series of projects can be coordinated and inspired by the same on-campus champion.

For institutes of high learning as for K-12 schools, energy-efficiency upgrades also can become teaching tools. Nothing could be more appropriate at a community college oriented toward producing technologists. Even the most broad-spectrum university is likely to have a choice of studies where students will benefit from the study of on-campus energy-efficiency upgrades and installed renewable-energy technologies.

## Public and Multifamily Housing

Approximately 1.3 million public housing units are located in more than 13,000 housing developments around the country. This sector poses obvious challenges, because it is oriented toward buildings with low-income occupants with subsidized rent, and because the occupants typically have little or no incentive to save energy. Public housing authorities also may find themselves low on the order of budget priorities in their states or localities.

Nevertheless, progress is being made. Reduced spending for utility bills becomes a powerful incentive for housing authorities operating on tight budgets.

Rebuild America works with the U.S. Department of Housing and Urban Development (HUD) to make sure that potential regulatory problems are solved. As an example, HUD has made provision in its regulations for use of the energy performance contracts that Rebuild America encourages.

## University Results: U. of New Hampshire

Already strong on energy efficiency, the University of New Hampshire became a Rebuild America partnership in 2001. The relationship began when UNH turned to Rebuild America for advice on procuring efficient lighting for a gymnasium.

According to a study by Oak Ridge National Laboratory, UNH ranks within the top 5 percent of its peer group in terms of energy efficiency. Its annual energy expenditures are \$4 million less than the mean for its peer group.

The university's partnership with Rebuild America has helped guide the institution in an array of decisions on new and old buildings. These include a new central hot-water system for 10 buildings, a new central chiller for air conditioning of five buildings, energy-efficiency elements for a new dormitory building and a new dining hall, renovation of the air handling in a chemistry lab building, and automation systems that will be added to the heating systems in three buildings.

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### Colleges and Universities: Key Metrics

Improvements Completed .....44.4 million square feet  
Annual Cost Savings .....\$10.8 million  
Annual Energy Savings .....598 billion Btu  
Total Energy Investment .....\$37.2 million

### Public and Multifamily Housing: Key Metrics

Improvements Completed .....28.4 million square feet  
Annual Cost Savings .....\$22.9 million  
Annual Energy Savings .....394 billion Btu  
Total Energy Investment .....\$41.5 million

## Community Partnerships

The heart of the Rebuild America program is its community partnerships. The end goal is to foster self-sufficient, action-oriented partnerships that can institutionalize change in their community where optimizing building performance becomes “business as usual.”

Over the last five years (1998-2002), the program has been adding community partnerships at an average rate of almost 80 each year. Partnership formation begins with a lead organization, or champion, whose job it is to identify potential energy improvements and sell the local community on how Rebuild America can help. Getting “buy-in” from key leaders of local government, schools, community-based organizations, other public entities, and private industry is at the foundation of partnership success.

The right mix of partners is also essential to this process. Any organization can lead a partnership, but it must include at least one public and private partner. Partnerships are not rigid entities and will contain different partners at different stages of activity.

## Strategic Partners

Rebuild America teams with national associations and other organizations to draw on the collective resources of those organizations’ memberships. At the same time, the program helps those organizations by bringing them together with state and local officials and others within the Rebuild America network.

The Strategic Partners represent industry trade groups and professional societies, including energy service companies, energy professionals, architects, school and college officers, state energy officials, state lawmakers, housing officials and others.

## Business Partners

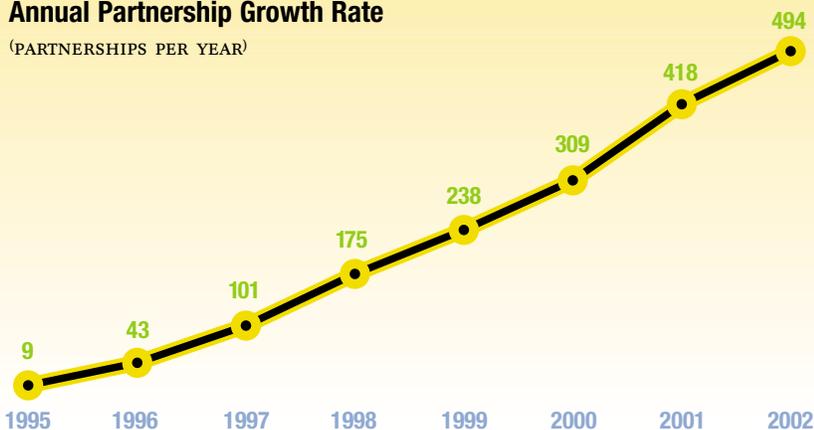
Businesses link up with Rebuild America to provide much of the equipment and services that partnership projects need. The networking that companies are able to do through the program is potentially important to the companies. Business Partners not only meet potential customers through the partnerships but also participate in the program’s conferences, partner meetings and technology seminars. At conferences and seminars, the Business Partners educate each other and government officials about the challenges and solutions in implementing projects – a spread of information that benefits all participants.

Business Partners and Rebuild America gain increased credibility from each other. For the companies, it is an opportunity to connect with decision-makers, who may be interested in their products and services. For Rebuild America, it means program support from practical, results-oriented business executives, a demonstration of program utility.

Business Partners can gain exposure to markets through program publications, media activities, educational opportunities, Web sites and events.

### Annual Partnership Growth Rate

(PARTNERSHIPS PER YEAR)



## EERE Programs

Rebuild America is part of a family of EERE programs designed to address many of the goals of the National Energy Policy. As a step toward meeting those goals, EERE reorganized in July 2002 to a streamlined, flatter structure that provides greater visibility for its 11 primary programs.

Among those 11 is the Weatherization & Intergovernmental Program, which includes Rebuild America, ENERGY STAR® (a joint program with the U.S. Environmental Protection Agency), Weatherization Assistance (retrofitting low-income single-family homes), the State Energy Program (administering grants to states), Clean Cities (promoting alternative vehicles) and other programs.

## DOE Laboratories

Much of the work of Rebuild America benefits from interaction with several national energy laboratories. The laboratories conduct a very large portion of DOE technological research and development, and laboratory specialists join in providing technical assistance for many segments of other DOE programs, including Rebuild America.

Rebuild America especially benefits from working with Lawrence Berkeley National Laboratory (LBL), National Energy Technology Laboratory (NETL), National Renewable Energy Laboratory (NREL), Oak Ridge National Laboratory (ORNL) and the Pacific Northwest National Laboratory (PNL).

## Educational Organizations

Education is an essential part of Rebuild America. It affects current and future social policies, corporate practices, building designs and basic human behavior. Several organizations enhance the work of Rebuild America through their roles in energy education.

National Energy Education Development (NEED), the National Energy Foundation and the Council of Great City Schools are Rebuild America Strategic Partners that devote considerable efforts to the education of K-12 students on energy issues. For another Strategic Partner, the American Institute of Architects, continuing education for member architects is an important responsibility, and U.S. DOE/Rebuild America has become a Registered Provider of continuing education to those members.

The National Science Foundation has a big role in education on science and technology subjects, and Rebuild America has at times teamed with it, such as in the development of the *Light Up My Life* physics education book. DOE also has supported the Partnership for Environmental Technology Education (PETE), dedicated primarily to helping community colleges expand technical training on energy and environmental subjects.

## Public Housing Results: SHIP

The Sustainable Housing Innovative Partnership (SHIP) is developing a model example of an energy-efficient housing complex for low-income residents in Spokane, WA.

SHIP – led by Spokane Neighborhood Action Programs (SNAP), a Rebuild America community partnership – brought the first phase of construction near to completion last year. Projected annual energy savings, thanks to a variety of “sustainable” characteristics, were to be 50 percent of a traditional project.

SNAP did a remarkable job of pulling together a grass-roots group of more than 70 partners for the SHIP project. Financing came from many different sources, including banks, foundations, the State of Washington Trust Fund and the U.S. Department of Housing and Urban Development, a Rebuild America Strategic Partner.



## Energy-Wise Investments

**What Rebuild America does.** Rebuild America is a marketplace of ideas and best practices and a resource for expertise. It helps people learn what can be accomplished in their own communities and assists them in achieving their goals. It is not theoretical. From the Rebuild America network, building owners, managers and engineers learn best practices, are informed about available technologies and are provided with model local programs.

When it comes to taking first steps toward improvements, Rebuild America often is the source of the energy audits that allow for concrete energy-efficiency plans. A menu of options also can come from the Rebuild America network – a menu that can get down to the detail of such things as model contracts, model building codes and the latest specialized software. Energy service companies often make connections with customers through the Rebuild America network. Government officials throughout the country make connections with fellow decision-makers to benefit from each other's experience.

Technical seminars around the country provide energy-efficiency decision-makers with briefings on equipment and services. Brochures and manuals provide detailed information on design guidelines for high-performance buildings. Networking opportunities are numerous. Financing options are explained. Economic information assures that government and private-sector decision-makers have enough information to make wise choices about investing in energy efficiency.

**What Rebuild America can do.** The commercial energy sector consumes about 1 trillion kilowatt hours (kWh) annually, or 30 percent of U.S. electricity, at a cost of about \$73.7 billion. The commercial sector also consumes about 3.18 trillion cubic feet of natural gas annually, at a cost of approximately \$21 billion. (Statistics derived from Energy Information Administration data for 2000.)

Experience has shown that the energy consumption of older buildings can be cut about 25 percent through retrofits and better operation. Even new buildings often give a poor energy-efficiency performance, either because of design flaws or inadequate operations.

If the United States were to cut its commercial-sector electricity and natural gas consumption by 25 percent, and that reduction went straight to the bottom line on utility bills, the savings would amount to \$18.4 billion on electricity and \$5.25 billion for natural gas, again extrapolating from 2000 data. That is a vast amount of money that could be devoted to more productive uses, and a reduction in the strains on state, local and corporate budgets. It also would reduce reliance on energy imports. (In practice, the dollar savings would be somewhat less than 25 percent, because part of the cost of energy is in infrastructure rather than the commodity.)

**Additional benefits.** Rebuild America counts up savings on energy, but there are other significant gains that should be noted. Smart retrofits reduce operations and maintenance expenses, by reducing the need for repair and replacement of equipment. Water consumption often is

## Public Benefits Fund Results: Energy Fund, LA

Many states have public benefits funds of one sort or another. Louisiana has found a great use for \$5 million from a state fund: It has launched a wave of energy-efficiency retrofits, with the fund backstopping state bonds to get the work rolling.

Leadership on creating the Energy Fund came from Rebuild Louisiana – a partnership of the Louisiana Department of Natural Resources and Rebuild America. The fund uses money paid by oil companies that had violated regulations. It is a “stop-loss” fund to reassure state bond investors that the bonds will be paid off.

After state legislative and regulatory action cleared the way last year, the first contracts were awarded. Most of them were devoted to school retrofits in parishes where money for improvements is hard to find.

The next pools of contracts will be for hospitals and public housing.



reduced at the same time. Government and business leaders also learn how to do much of this off-budget, through energy performance contracts that pay for improvements through savings, avoiding any up-front expense. The serious budget difficulties that exist in many states and localities give this tool an extra importance.

Pollution reduction is a significant part of cuts in energy consumption. The requirements of the Clean Air Act Amendments of 1990 probably are more significant than most people realize. As state and local officials try to figure out how they can comply with national ambient air quality standards, cuts in energy usage become important tools. Energy savings bring reductions in such air pollutants as sulfur dioxide, nitrogen oxides, volatile organic compounds and ground-level ozone, or smog.

Comfort is improved for building occupants through the kinds of upgrades Rebuild America promotes – comfort through better lighting, air quality and temperature control, primarily. For K-12 and college students, those comfort improvements enhance the learning environment.

Education is an important component of the program. Because future decisions on energy will be made by people who are students today, the program’s support for education helps meet long-term energy-efficiency goals while improving science and technology education in America.

Finally, good social policy is a part of the benefits. U.S. citizens say they want greater energy savings and less pollution. Through Rebuild America, government officials and corporate executives can point to the real work of achieving those public and private goals.

## State and Local Government Results: Texas SB5

In urbanized counties of Texas, air pollution is a chronic problem and a violation of federal regulations. State lawmakers in 2001 passed Senate Bill 5 (SB5) to require energy-efficiency measures as a basic strategy for reducing pollution. To provide expert assistance to the 38 affected counties and their political subdivisions, the Texas Energy Partnership was formed as a joint effort of the State Energy Conservation Office, Rebuild America and the ENERGY STAR® program.

SB5 efforts are in their early stages, but they are showing results. More than 175 political subdivisions have formally adopted the mandated goal of reducing local-government electricity consumption by 5 percent each year over five years. Ambitious energy-saving plans have been devised and implemented in one jurisdiction after another.

Early numbers appear better than expected. Data collected for a first formal report by the State Energy Conservation Office indicate many local governments have been exceeding the first-year target for cuts in their electricity consumption. A lot of people can breathe easier because of that.





## A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. By investing in technology breakthroughs today, our nation can look forward to a more resilient economy and secure future.

Far-reaching technology changes will be essential to America's energy future. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a portfolio of energy technologies that will:

- Conserve energy in the residential, commercial, industrial, government, and transportation sectors
- Increase and diversify energy supply, with a focus on renewable domestic sources
- Upgrade our national energy infrastructure
- Facilitate the emergence of hydrogen technologies as a vital new "energy carrier."

## The Opportunities

### Biomass Program

Using domestic, plant-derived resources to meet our fuel, power, and chemical needs

### Building Technologies Program

Homes, schools, and businesses that use less energy, cost less to operate, and ultimately, generate as much power as they use

### Distributed Energy & Electric Reliability Program

A more reliable energy infrastructure and reduced need for new power plants

### Federal Energy Management Program

Leading by example, saving energy and taxpayer dollars in federal facilities

### FreedomCAR & Vehicle Technologies Program

Less dependence on foreign oil, and eventual transition to an emissions-free, petroleum-free vehicle

### Geothermal Technologies Program

Tapping the earth's energy to meet our heat and power needs

### Hydrogen, Fuel Cells & Infrastructure Technologies Program

Paving the way toward a hydrogen economy and net-zero carbon energy future

### Industrial Technologies Program

Boosting the productivity and competitiveness of U.S. industry through improvements in energy and environmental performance

### Solar Energy Technology Program

Utilizing the sun's natural energy to generate electricity and provide water and space heating

### Weatherization & Intergovernmental Program

Accelerating the use of today's best energy-efficient and renewable technologies in homes, communities, and businesses

### Wind & Hydropower Technologies Program

Harnessing America's abundant natural resources for clean power generation

To learn more, visit [www.eere.energy.gov](http://www.eere.energy.gov)



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