Rebuild America

PARTNER UPDATE

Weatherization and Intergovernmental Program

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Energy Fund Boosts Louisiana's Surge of Building Improvements

Louisiana, putting its new Energy Fund to work, has completed the awarding of a first wave of energy performance contracts, mostly to upgrade schools. Those have been followed by three more projects, including the state government's first performance contract, while progress is being made on big plans for improving hospitals and public housing.

The first pool of contracts adds up to more than $13.6 million in work, spread among six school districts and one local-government office building. The districts are primarily in low-income areas, especially rural localities, where capital to improve school buildings can be hard to find.

"We have extreme deferred maintenance in our schools," says Louis McArthur, manager of the Energy Fund at the state Department of Natural Resources (DNR).

The first decisions on Energy Fund performance contracts were announced last fall, and the last contractual details were

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In This Issue

The new water plant at the University of Utah was an addition financed through guaranteed savings.

University Saves Millions with Massive Performance Contract

Five years ago, the University of Utah campus was plagued by aging infrastructure and high utility bills. With the help of a $39 million performance contract completed in the summer of 2002, the university improved over 5 million square feet of space in 81 buildings in just four years – all paid for by future energy savings.

Now, the campus is benefiting from the capital improvements and the university is saving millions in energy costs.

The scope of the project was enormous, one of the largest energy performance contracts ever undertaken by a university. Improvements ranged from equipment upgrades to operations and maintenance changes.

Nearly 68,000 light fixtures were upgraded or replaced to use less energy. Eighty-two variable-frequency drives for HVAC (heating, ventilation and air-conditioning) systems and 95 energy-efficient motors were installed. Three new chillers and two new cooling towers were put in place. Four hundred fume hoods received energy upgrades.

More than 600 low-flow toilets replaced older fixtures that wasted water, and 1,441 low-flow aerators were installed on sinks. Hundreds of radiator valves were also fixed. Water savings from the improvements totaled 11.6 million cubic feet in about two years.

With an energy performance contract, future savings pay for retrofit projects. At the University of Utah, one of the most substantial improvements was the construction of a chilled and high-temperature water plant that serves the cooling and heating needs of the eastern part of campus. For the new plant, CMS Viron Energy Services – the performance contractor and a Rebuild America Business Partner – guaranteed excess savings that will cover

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Energy Fund

cemented in place this spring. A large amount of the energy-efficiency work is now well underway.

The school districts, listed by parish (Louisiana's version of a county), are: Allen, Avoyelles, Iberville, Natchitoches, St. Charles and St. James. An Evangeline Parish government office building, in need of retrofits and a new annex, provided the seventh contract in the pool.

Tax-exempt bonds are providing the initial capital for the Louisiana projects. The Energy Fund, created by the DNR, serves as a "first-loss reserve fund" to back up the bonds in the event of a default – a reassurance that helped earn the bonds triple-A ratings and low interest rates.

Because Energy Fund projects are being done through performance contracts, all costs, including repayment of the bonds, are to be covered by savings on energy and water utility bills.

The Energy Fund was developed with the assistance of Rebuild America, working through partnership Rebuild Louisiana. DNR is the lead partner in Rebuild Louisiana. Sources of expert advice included the Energy Services Coalition, a Rebuild America Strategic Partner.

The fund will backstop much more work than what has been announced so far.

Two more performance contracts were awarded recently – a $1.7 million lighting retrofit for Louisiana Tech University, in Ruston, and a $1.5 million project to improve Sabine Parish schools. The significance of the Louisiana Tech project is that it is the first in which the state is the customer.

Siemens Building Technologies, a Rebuild America Business Partner that won several school projects in the first pool, was awarded the Sabine Parish contract, while Carrier Corp. won the Louisiana Tech retrofit. Other companies that won contracts in the first pool are TAC Americas and Trane Co. – the latter also a Rebuild America Business Partner.

Still another energy-efficiency project developed this spring is a $1.2 million upgrade of Madison Parish schools, but that will be using public bid laws rather than performance contracting.

A request for proposals (RFP) was issued for a performance contract to upgrade the state's charity hospital system, which includes about six public hospitals for the poor. Johnson Controls (another Rebuild America Business Partner) and Siemens responded.

Public housing also is to be upgraded with help from the Energy Fund. Projects have been approved and are being reviewed by the U.S. Department of Housing and Urban Development.

Hahnville High School in St. Charles Parish, LA, one of the Energy Fund project schools.

And then there is the little matter of state agencies. There is more than $1 billion of deferred maintenance in Louisiana state agencies, says McArthur. Possibly one-third of that will involve energy-efficiency measures, and all of it is likely to be done through performance contracts, he says.

All of which leads McArthur to suggest that performance contracting in his state is in the early stages of an explosion.

For more information on the projects of Louisiana DNR's Energy Fund, call Louis McArthur at 225-342-1298 or visit www.dnr.state.la.us.

NEW PARTNERSHIPS

Bay de Noc Community College, MI
CHPS, Inc., CA
City of Galveston, TX
City of Meridian, ID
City of Valparaiso, IN
County of Henrico, VA
Fremont Unified School District, CA
Fulton County Community Unit School District #3, IL
Great Lakes Renewable Energy Association, MI
Hancock County Schools, KY
Langley Hill Friends Meeting, VA
Luke's Regional Medical Center, ID
Michigan State University, MI
Montgomery County Public Schools, MD
Stickney Township Energy Program (S.T.E.P.), IL
Traverse City Light and Power, MI
Village of Maywood Community Energy Program, IL

Building Homes with Habitat for Humanity

The New York State Energy Research and Development Authority (NYSERDA) is partnering with local chapters of Habitat for Humanity to build New York ENERGY STAR® Labeled Homes for low-income New Yorkers.

Habitat for Humanity is a non-profit organization dedicated to building affordable housing in both the United States and abroad. Volunteers team up with a designated homeowner to construct or renovate a house, which is then sold to the future occupants at cost. The mortgages carry no interest. Habitat for Humanity has built about 45,000 homes in the United States alone.

NYSERDA first started working with Habitat for Humanity by providing technical assistance and financial incentives to the Livingston County and Schenectady County affiliates to build New York ENERGY STAR Labeled Homes. A case study developed from the Livingston County project served as a springboard to help other Habitat for Humanity affiliates throughout the state.

Habitat for Humanity recognizes the importance of sustainable building practices and energy efficiency in homebuilding. To further these efforts, the New York City

Habitat for Humanity house being built in Rensselaer Falls, NY.

affiliate of Habitat for Humanity formed a partnership with NYSERDA last year. In October 2002, the two organizations showcased 20 new energy-efficient homes being built in Brooklyn, NY.

The houses are among the first New York ENERGY STAR Labeled Homes built by a non-profit entity in New York City. They were featured as part of the five-day Building on Faith Blitz Build of Habitat for Humanity-NYC. While hundreds of volunteers worked on the homes, NYSERDA representatives conducted tours.

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View From DC

by Daniel Sze

Rebuild America's efforts to transform its Web site into a valuable vehicle for advancing energy-efficiency solutions are bearing fruit. The Web site reached a milestone of more than 1 million visitors in April.

The continuing effort to build the Web site infrastructure and content has paid dividends by opening up access to information about energy efficiency – an important step to removing barriers to the widespread use of energy technologies. The Web site functions as a hub for the multi-faceted, geographically diverse Rebuild America network.

For the record, the Web site attracted 1,008,346 hits and 145,414 "page views" during April, up 285 percent and 484 percent respectively from activity recorded for April 2002. It's a long way from December 2000, when the Web site started with 60,000 hits and 1,300 page views.

Other results for April peg the number of "document views" at 90,952, up 434 percent from April 2002. Activity during 2003 has steadily increased since January, when 812,523 hits were recorded.

Likely factors contributing to the growth include the increasing number of community partnerships, the addition of the Rebuild Network Project Assistance Center – an online system of technical assistance that connects local partnerships with experts – and the expansion of the Solution Center.

The Project Assistance Center, introduced in January 2003, has contributed to a 100 percent increase in the number of technical assistance requests generated during the first four months of 2003.

The Solution Center contains information to assist local partnerships with energy-saving and renewable-energy projects. This section of the Web site has been enhanced to provide more resources and increased capabilities for ordering booklets, CDs and documents.

It is gratifying for me to see how far we have come with the Web site and to know that we will continue to improve and expand our offerings and capabilities. And while energy technology is central to the Rebuild America mission, we must never lose sight of the fact that people, relationships and energy-smart leadership are integral to the continued success of the program.

Dan Sze is National Program Manager of Rebuild America. Your comments are always welcome at danielsze@rebuild.org.

The Animals Get Their Own Energy Improvements

Grahm S. Jones, Columbus Zoo and Aquarium

Solar panels atop Habitat Hollow in Columbus Zoo and Aquarium.

Projects to increase energy efficiency and add renewable energy are proliferating at zoos and aquariums around the country.

Zoos have considerable heating, cooling and lighting requirements – "space conditioning" of various kinds – to keep their animals healthy. At the same time, zoos have an obvious educational role. People go to zoos to see and learn – making them natural demonstration sites for such things as solar power, wind turbines and various energy-efficiency measures.

"Zoos are fantastic places for Rebuild America projects because they are centers of conservation and education and demonstration," says Glen Kizer, president of The Foundation for Environmental Education. "They will actually become the embodiment of what Rebuild America is all about."

Kizer's foundation, a Rebuild America partner, has joined with Rebuild Ohio to work on energy-related improvements at the Cincinnati, Columbus and Toledo zoos. His foundation also is advising the zoo in Brookfield, IL, on the same sorts of improvements. His group is the lead partner in a Rebuild America partnership called 1,500 Days: The Ohio Energy Efficiency Project.

The zoo improvements mostly are in exploratory or preparatory stages, but they are coming. Analyses and plans are in the works not only at the zoos in Ohio and Brookfield but zoos in St. Louis; Duluth, MN; and Syracuse, NY; and at the National Aquarium in Baltimore.

Kizer encourages zoos to start quickly with installation of photovoltaic panels, which are easy to install and serve as very visible signs of the possibilities being explored. In order to spur interest and action, that is better than relying entirely on the relatively invisible process of slow behind-the-scenes studies, in his view.

The St. Louis Zoo, a partner in Rebuild Missouri, has hired an energy auditor to explore the zoo's options and produce a report. About 45 percent of the cost of hiring the auditor and getting the report written will be covered by Rebuild America, if it results in implementation.

"It's going to be a robust program," says Patrick Justis of Rebuild Missouri and the Missouri Department of Natural Resources.

The auditor's report must be completed by the end of the year, and Justis also expects work to start on implementation before year's end. Missouri will be able to financially assist the zoo improvements by tapping a low-interest energy loan program that typically provides up to $2 million for projects.

The New York State Energy Research and Development Authority (NYSERDA), manager of the Rebuild America program in its state, teamed up with Camroden Associates and Steven Winter Associates to study the potential for energy-efficiency improvements at the Rosamond Gifford Zoo in Syracuse. The study concluded that a renovation of the zoo's main building could reduce the building's overall energy costs by 26 percent.

The study anticipated such measures as: glazing and overhangs to reduce solar heat gain in summer; daylighting, including skylights; downsizing of air conditioning equipment; and use of insulated concrete form walls.

There may be a mistaken idea that the goals of energy efficiency and renewable energy do not fit well with zoos, that because alternative energy sources are not as tested as conventional systems, they will not be safe for the animals, says Kizer. "It takes a while to get over misconceptions," he remarks.

The reality is that energy-saving improvements for zoos and aquariums – like those for human habitations – do not require compromising the health and comfort of the occupants. Instead, the changes can free up money to be spent on enhanced care of the furred, feathered and finned residents.

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Kizer hopes to see each zoo become a Rebuild America partnership rather than relying on the initiative of existing partnerships. "The idea is that we will not have to help them very long," he says.

American Electric Power has joined in the plans for upgrading the Columbus Zoo and Aquarium. Solar panels have been installed atop Habitat Hollow, an interactive exhibit on habitat conservation in a section of the zoo called the North America Region. Many other energy-saving ideas are being discussed for a conservation master plan.

"They want to be one of the greenest zoos in the United States," Kizer says, explaining that he expects the Columbus Zoo to serve as a model for others. That will be easier than trying to bring many zoos along at the same time.

"Once the Columbus project takes off, we'll visit others again," he says.

Michael W. Pogany, Columbus Zoo and Aquarium

A manatee can benefit from energy efficiency, too.

As energy costs rise, all zoos in the country eventually will want to make energy-efficiency upgrades, both for the conservation message and cost savings, Kizer predicts.

For more information, contact Glen Kizer, 614-336-0776, email gkizer@columbus.rr.com; Patrick Justis, 314-340-5900, email nrjustp@mail.dnr.state.mo.us; Craig Kneeland of NYSERDA, 518-862-1090 ext. 3311, email cek@nyserda.org. Also see a Jan. 16, 2003, story in the news archives of the Rebuild America Web site (www.rebuild.org) headlined Rebuild Minnesota Helps Zoo Save Energy.

Biomass Gains Ground as Domestic, Renewable Energy and Synthetics

Natural fibers have been used in furniture and fabrics for ages, but the modern concern for developing domestic and renewable resources is pushing the frontiers for agricultural products – into diesel, heating oil and a variety of synthetic products for home and office.

The transportation fuel ethanol is the best known of the modern biomass products. Now biodiesel is gaining ground in transportation, and some people have begun blending it into heating oil. And the federal Biomass Program is promoting development of plant-derived materials not only for those fuels but for plastics and chemicals.

"Domestic" and "renewable" are the magic words used in support of biomass products. Years of weak prices for corn and soybeans are the drivers behind political and farm-region advocacy.

Robert Cerio, energy educator/manager for Warwick Public Schools in Rhode Island, has saved money for his school system by blending biodiesel into heating oil, producing a product that is 20 percent biodiesel.

"Rhode Island is the first state in the country to use biodiesel to heat schools," says Cerio, head of the Rebuild Warwick partnership. "We want to be out in the forefront and help build an infrastructure to support the use of biodiesel."

Biodiesel fuels a variety of large vehicles in some localities. It typically is 20 percent agricultural product and the rest conventional diesel. The blend, called B20, is burned in the school buses and all heavy equipment of Arlington County, where Arlington Public Schools and the county government are Rebuild America partnerships.

The most obvious market for biomass has been the fuel market for farm equipment. The less obvious markets have been in products commonly made from petrochemicals.

"There are lots of biobased products that could be used in the Rebuild America program," says Mark E. DeCot, an energy technology program specialist in the Biomass Program, within the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy.

Paint, roofing, carpeting, upholstery and plastics are among the potential uses DeCot cites for biomass.

"The beauty of it is, it's actually going to reduce our reliance on foreign petroleum," he says, echoing the "domestic not imports" theme.

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New Life from the Seedbeds of Brownfields: Projects Revitalize Polluted and Decayed Areas

For community redevelopment, some of the tougher nuts to crack are brownfields – sites where a legacy of pollution discourages activity. At such locations, almost inevitably, neighborhoods also have been enduring poor economic fortunes.

Federal funds for cleanup of brownfields were doubled in fiscal year 2003, and last year President George W. Bush signed the Small Business Liability Relief and Brownfields Revitalization and Environmental Restoration Act, designed to promote cleanups.

Rebuild America has been contributing to the economic rebirth of such areas. In urban and rural areas, on former dumps and former industrial sites in down-at-heels neighborhoods, revitalization is occurring.

The Sustainable Technology Park building near Cape Charles harbor.

In California, just a bridge away from prosperous Palo Alto is lesser known East Palo Alto, historically polluted by pesticides, herbicides, solvents, heavy metals and leaked petroleum products. East Palo Alto also has suffered from high levels of poverty, unemployment and crime in recent decades.

The U.S. Environmental Protection Agency (EPA) designated East Palo Alto as one of its Brownfields Showcase Communities. The town formed the Rebuild East Palo Alto partnership and worked closely with Program Representative Cyane Dandridge and Pamela Peak.

Rebuild America provided advice on energy efficiency and photovoltaics. The town has needed guidance on such things as street lighting, green buildings and energy-project financing. The efforts especially have been channeled into the Ravenswood Industrial Area, the town's largest redevelopment site. Strategic Energy Innovations (SEI), another partnership, provided energy-efficiency training for small business owners, especially Latinos.

Other federal agencies helping the town include the U.S. Army Corps of Engineers, the National Park Service and the Departments of Housing and Urban Development, Health and Human Services, and Transportation. Because brownfields are notable challenges, a recurrent theme in their redevelopment is the array of supporting agencies.

"East Palo Alto is a great example of building a comprehensive Rebuild America partnership, linking federal agencies, city staff, community groups and the school district," says Peak of SEI.

Revitalization has progressed farther in the Jewelry District downriver from the heart of Providence, RI. There, new businesses are beginning to thrive in a long-decayed former center of the jewelry industry. A centerpiece of the area's rebirth will be a Rebuild America partnership, Heritage Harbor Museum, which is taking shape within the structural shell of a former power plant.

"This area was once basically abandoned, left to ruin in many ways," says R. Mark Davis, chief executive officer of the museum.

Power-generation coal residues, petroleum tank leakage, acids, solvents and heavy metals contributed to making the area a brownfield. Poverty flourished.

Narragansett Electric Company contributed its closed South Street Power Plant for the museum, which will become Rhode Island's first state history museum. Decisions on energy-efficient technologies for the museum have yet to be made, but the goal is for all equipment to meet green-building product standards, Davis says.

A building-design charrette focusing on energy efficiency was scheduled for the first week of June. Scientists from national energy laboratories were expected to tour the site and meet with the design team and other stakeholders on the project. Solar hot water, photovoltaics, wind turbines and fuel cells all are being considered.

In Northampton County, VA, on a thin strip of land between the Atlantic Ocean and Chesapeake Bay, people have been struggling to deal with the long decline of local agriculture and seafood processing. Complicating that challenge are brownfields at the site of an old unofficial town dump and closed agricultural and seafood processing

Heritage Harbor Museum

A former power plant serves as the building for Heritage Harbor Museum downriver from the heart of Providence, RI.

facilities near the town of Cape Charles.

EPA designated Cape Charles a Brownfields Showcase Community. The county has pulled together assistance from a variety of sources, including EPA, the U.S. Small Business Administration, the National Oceanic and Atmospheric Administration, the Department of Agriculture, the state government and Rebuild America.

"Our big issue is really the fear of the unknown," says Timothy Hayes of the Northampton County Department of Sustainable Development.

He had found, as people at other brownfield sites have discovered, that there can be exaggerated fears of pollution residues. EPA provided grants and expertise for site tests to determine the hazard level.

He had found, as people at other brownfield sites have discovered, that there can be exaggerated fears of pollution residues.

"We're able to show a clean bill of health," Hayes says.

Northampton County has become a Rebuild America partnership. Its vision is to develop green industries, especially at its Sustainable Technology Park.

The first businesses have gone into that recently created industrial park. Atlantis Energy Systems now employs more than 30 people to manufacture roofing slates and glass laminates that are photovoltaic. Wako Chemicals USA has set up a laboratory to extract a protein from horseshoe crabs – without killing them – for use in pharmaceutical testing.

A company called proVENTO America is developing a wind farm and plans a second wind farm nearby at a site that will become a park. The two facilities, each with 9 megawatt capacity, will produce more power than the sparsely populated county needs, allowing for power sales into the regional grid.

"So the economic engine is starting to go," Hayes says.

Rebuild America has been helping the county network with experts and power-industry market players. At offices of the National Renewable Energy Laboratory, Rebuild America convened a three-hour meeting of about 40 federal, state and local interested parties, public and private, to boost the plan for wind energy.

To help design an energy-efficient, cost-effective building that will house Northampton County offices, a courthouse and a jail, specialists from Oak Ridge National Laboratory have been reviewing the county's plans.

In St. Paul, MN, a multifamily housing project has been built on a cleaned-up brownfield that had been an unofficial dump. The site was a swampy patch of scrub woods in the middle of a residential area. Its most significant pollution was fly ash from power generation.

Now, instead of fly ash and mud, the site houses low-income families. People began moving into the 25-unit housing project, called Jackson Street Village, at the start of March. Of the three buildings, two were filled while work was being completed on the third.

To make Jackson Street become a reality, the Amherst H. Wilder Foundation (a Rebuild America partnership) received assistance from Rebuild Minnesota and Xcel Energy, resulting in a major commitment of the project to energy efficiency. They also linked up with the U.S. Department of Housing and Urban Development and other partners.

For more information, contact Pamela Peak, 415-507-2182, email pam@SEIinc.org; Cathy Blaney of Heritage Harbor, 401-751-7979, email cblaney@heritageharbor.org; Timothy Hayes, 757-678-0414, email thayes@esva.net; Tom Schirber, Wilder Foundation, 651-223-7288, email TJS1@wilder.org.

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University Saves Millions

the cost of the plant. Normally, an energy service company (ESCO) will not guarantee excess savings, notes Bret Hunter, formerly with CMS Viron and now president of Hunter Consulting.

When an ESCO and the customer form a true partnership, you see success, explains Hunter, who serves on the board of directors of the Energy Service Coalition, a Rebuild America Strategic Partner. "Communication is critical," he notes.

The multi-year energy project received funds from the Utah Energy Office to study the feasibility of the campus improvements. The university, a partner of Rebuild Utah, also used draft procurement documents developed by the Energy Services Coalition. The Utah Energy Office, which leads Rebuild Utah, offers technical assistance to state institutions for performance contracting through the State Building Energy Efficiency Program. Assistance in customizing procurement and contracting documents is also available to state agencies.

Since energy savings reporting started in November 2000, the university has saved $6.6 million in energy costs – $400,000 more than projected.

"It's been very successful," notes Orfeo Kostrencich, financial analyst for the university.

"We've been able to improve the campus without requiring any additional taxes from the citizens of Utah."

The university's success in saving energy and water has been recognized with numerous awards over the past several years including the Rebuild America Energy Champion Award for Universities and Colleges (2001); an Energy Champion Award from the Association of Professional Energy Managers, Utah Chapter and the Utah Energy Office (2001); an award from the World Wildlife Fund (2001); and selection for the 1999 ENERGY STAR® Buildings program honors society.

Pieter van der Heev, director of plant operations for the university, offered some advice for other universities looking to use performance contracting: Be sure there is good communication between building occupants, the university and contractors before improvements are to begin. For example, it is necessary to understand how a change in the indoor environment could affect the work of university researchers and scientists.

He also emphasized the importance of working closely with a university's financial officials when entering into an energy performance contract.

For more information on Rebuild Utah, contact Bernell Loveridge at 801-538-5413 or email bernellloveridge@utah.gov.

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Biomass Gains Ground

Biomass soon will be an expanding part of purchases by federal agencies. Section 9002 of the Farm Security and Rural Investment Act of 2002 mandates that agencies give purchasing preference to those products "composed of the highest percentage of biobased products practicable." Regulations still need to be promulgated.

Agencies will not need to purchase such products if availability or price are considered unreasonable, or if the products' performance standards are inadequate.

Biomass also was given a boost by the Agricultural Risk Protection Act of 2000, which focused one section on federal research and development.

The private sector is not waiting for government R&D. One of the largest agricultural companies has teamed up with one of the largest chemical companies to form a joint venture, Cargill Dow LLC, that manufactures biomass products. Its two chief product lines are Ingeo fibers – for various textile uses – and NatureWorks packaging resins.

If the many markets for oil products actually shift to biomass products, the supplies of soybeans and corn and other common agricultural products will not be sufficient to meet the demand, DeCot admits.

"We need cellulosic material as a source," he says. "We can do it already, but it's expensive."

By cellulosic material, he is referring to corn stalks, woody plants and other things not now considered agricultural products. Ethanol, biodiesel and other biomass products are being made from corn kernels and soybeans, which means they are being siphoned off the edges of the supply streams that primarily sell as food for humans and livestock.

If a breakthrough can turn cornstalks and woody material into sugars and then into alcohols at a reasonable price, that will be when the markets are transformed.

For more information, visit the Biomass Program Web site, www.eere.energy.gov/biomass.html, and the EnergySmart Schools Web site, www.energysmartschools.gov. To learn more about Cargill Dow LLC, visit www.cargilldow.com.

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Habitat for Humanity

The units, which range in size from 1,350 square feet to1,450 square feet, should save the homeowners about $300 to $500 each year in utility costs, depending on such variations as household size, weather and energy usage.

The new homes are expected to be finished this summer. The houses feature ENERGY STAR appliances, high-performance windows and high-efficiency boilers and hot water heaters.

In addition to services provided through the New York ENERGY STAR Labeled Homes program, NYSERDA provided a grant to Habitat for Humanity-NYC to obtain engineering and training services from Steven Winter Associates. The firm also trained the Habitat for Humanity-NYC staff on best practices for building.

The New York ENERGY STAR Labeled Homes program builds upon the national ENERGY STAR program by requiring added ventilation and electricity consumption standards.

Habitat for Humanity-NYC plans to build all of its single-family residences to the New York ENERGY STAR Labeled Homes standards from now on. The organization will also continue its relationship with NYSERDA, with plans to build 33 new homes and perform 17 rehabilitations over the next three years. "It's been a very fruitful partnership for both of us," explains Kevin Sullivan of Habitat for Humanity-NYC.

Work in the Building on Faith Blitz Build in New York City

NYSERDA is teaming up with another Habitat for Humanity affiliate through its New York Energy $mart Communities program. Raquette Valley Habitat for Humanity is working with NYSERDA to build a New York ENERGY STAR Labeled Home in Rensselaer Falls. The town is a partner of the North Country Energy $mart Communities, a Rebuild America community partnership. NYSERDA gave Raquette Valley Habitat for Humanity technical and financial support.

The home utilizes ENERGY STAR windows, energy-efficient lighting, a heat recovery ventilator, an insulated slab and radiant floor heating. An ENERGY STAR propane boiler will provide heat and hot water.

NYSERDA is partnering with other organizations to build similar homes. To encourage the construction of New York ENERGY STAR Labeled Homes, NYSERDA offers technical assistance and cash incentives to builders and homebuyers.

For more information on the New York ENERGY STAR Labeled Homes program, contact 1-877-NY-SMART or visit www.GetEnergySmart.org.

PETE Helps Colleges Create Energy Tracks

Eight colleges are developing pilot programs that may draw students into careers in energy services and technologies. The programs are steps toward creating curricula that lead to associate degrees and certificates.

With financial support from the U.S. Department of Energy (DOE), the educational effort has been spearheaded by the Partnership for Environmental Technology Education (PETE), a non-profit group.

PETE put together a "best practices" guide for both a two-year associate degree program and a one-year certificate program for community and technical colleges to train energy specialists. It also devised a "best practices" guide on how to launch a program that could attract technicians who want to increase their career options.

Now the colleges are testing the waters of such programs, and each institution is adapting in its own way.

The initial goal of Barton County Community College in Junction City, KS, was pretty much what PETE had mapped out, and that remains its final goal, the college reports.

"However, we have developed several classes ... and are offering them under our environmental program to get things going," says a May report from Barton.

Highline Community College in Des Moines, WA, surveyed 320 companies and organizations in the Puget Sound area and concluded that there was sufficient business interest to establish short-term non-credit training.

The University of Puerto Rico at Aguadilla decided to offer energy management options for students in its Electronics Technology Program. Development of a curriculum has been slowed by a lack of faculty knowledge and experience in energy management. But the university has no intention of giving up, apparently.

"This project must be continued to guarantee education and support by focusing mostly on practical experience," says a March report from the university.

For more information, call PETE at 207-771-9020. Its web site is www.ateec.org/pete.

Rebuild America Progress Calculator

Number of Partnerships:
530

Total Number of Committed or Completed Square Feet:
1,174,041,696

as of May 30, 2003

National Energy Labs Take Tech to Streets

When Rebuild America's program representatives encounter questions that require more in-depth technical assistance than they can provide, they refer partners to experts in the U.S. Department of Energy's national laboratory system.

Four of the national labs provide much of the technical assistance for Rebuild America partners: Oak Ridge National Laboratory, Pacific Northwest National Laboratory, National Renewable Energy Laboratory (NREL) and Lawrence Berkeley National Laboratory (LBNL). Their scientists and technologists have broadly overlapping responsibilities and fields of knowledge.

They also are available for special projects. NREL, for example, produced the *Energy Design Guidelines for High Performance Schools*, a set of climate-specific guidebooks rolled out in 2002.

When a call is made for assistance, it may go to any given lab based on such factors as geographic location, a particular technical interest or availability at that moment.

"Today I've been working with the City of East Palo Alto [California] to identify bulletproof, energy-efficient street lighting fixtures," Rick Diamond said recently.

Diamond, a staff scientist at LBNL's Environmental Energy Technologies Division, heads up the Rebuild America technical support at LBNL.

"We respond to about 50 to 60 calls per year for design assistance referred to us from Rebuild America's technical assistance coordinator, Bill Mixon, or we hear directly from the partnerships," says Diamond. "The help we provide can range from a simple telephone call to referrals to papers, Web sites and design guides, to design workshops, to spending a week or two working with a design team planning a retrofit project."

He draws on more than 20 researchers in LBNL's Environmental Energy Technologies Division for assistance on Rebuild America projects.

Design assistance includes "helping the client understand what kind of savings is possible to achieve through energy efficiency in their project, and acting as a resource to the design team, advising them on their energy modeling programs, for example," he adds.

Diamond and his LBNL colleagues also review specifications for energy-efficient systems in public buildings and teach workshops on energy-efficient design. Here is a sampling of a few projects aided by LBNL staff.

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Upcoming Events

July

8 **Texas Energy Code Training – Residential**, Omni Hotel Bayfront Tower, Corpus Christi, TX. Contact Angie Zikus at 979-458-0675 or email angie@esl.tamu.edu.

12-30 **NEED National Energy Conferences for Educators**, Chicago, IL; Galveston, TX; and Denver, CO. Contact NEED at 703-257-1117 or email info@need.org.

22 **Texas Energy Code Training – Residential**, Clarion Hotel, Houston, TX. Contact Angie Zikus at 979-458-0675 or email angie@esl.tamu.edu.

24-27 **National Association of Housing and Redevelopment Officials 2003 Summer Conference**, Tampa Marriott Waterside, Tampa, FL. Visit http://www.nahro.org/conferences/summer.html

26-29 **National Association of College and University Business Officers Annual Meeting**, Gaylord Opryland Hotel and Convention Center, Nashville, TN. Visit http://www.nacubo.org/annual_meeting/

27-29 **2003 Educational Facilities Leadership Forum**, co-located with the NACUBO conference at the Gaylord Opryland Hotel and Convention Center, Nashville, TN. Presented by the Association of Higher Education Facilities Officers. Visit http://www.appa.org/

August

11-15 **Summer Energy Education Program,** for teachers of third through fifth grades, Courtyard by Marriott, Hyannis, MA. Contact Debbie Fitton of Cape Cod Cooperative Extension at 508-375-6703.

17-20 **Energy 2003 Workshop and Exposition**, Wyndham Palace Resort and Spa, Lake Buena Vista, FL. Contact JoAnn Stirling at 800-395-8574.

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Labs Offer Tech

Rick Diamond, at right in cap with box, at Oakland Housing Authority site.

Oakland Housing

The Oakland Housing Authority (OHA) provides housing for low-income residents of this California city. "We have been providing design specifications for improving the energy efficiency of ventilation and of HVAC [heating, ventilation and air conditioning] systems to OHA for the rehabilitation of old units," says Diamond. This has been an ongoing project for several years.

Occupied in Hawaii

Energy-efficient lighting is often at the top of the list in retrofit projects. LBNL has assisted cities with a great variety of lighting projects. LBNL researcher Judy Jennings responded to a request from Rebuild Hawaii about occupancy sensors connected to lighting controls.

"Their question was whether occupancy sensors reduced the life of energy-efficient compact fluorescent lamps," she says. "I put together a brief study and a spreadsheet for them answering the question. … Occupancy sensors help save so much money on lighting energy that the effect overwhelms other factors such as a slight decrease in lamp life."

A Greener Pittsburgh

The city of Pittsburgh has built a new convention center that will be the first facility of its kind in the United States to receive a rating by the U.S. Green Building Council through its LEED (Leadership in Energy and Environmental Design) Green Building Rating System™. The center's features include natural ventilation, extensive use of daylighting and other energy-efficiency measures. The completed David Lawrence Convention Center opened at the end of April.

LBNL scientist Vladimir Bazjanac responded to a Rebuild America request for assistance with the daylighting design of the center. Bazjanac went to Pittsburgh, where he conducted an analysis at the site using a scale model of the design. Then, says Bazjanac, "we used DOE-2 to create a model of energy use in the building. The building's geometry is so complicated that it was very difficult to model."

DOE-2 is building energy simulation software developed by LBNL researchers. Bazjanac created a shading system for the main entry area and the exhibit hall that would reduce cooling load and provide protection from glare in one of the exhibit halls.

Training Programs

One of LBNL's most active areas for technical assistance is in setting up training programs. The work keeps LBNL's Doug Avery busy enough that he's rarely in his office.

"We provide training seminars for Rebuild America partners all over the United States," Avery said recently, in between one of many training and consultation trips.

The seminars attract anywhere from 25 to 200 people. The audience can include business owners, local government officials, utility staff, electricians, school officials, facility managers and operators, managers of low-income housing, and the general public.

Last year, Avery organized 14 seminars. "This year we expect to do between 50 and 70," he says, adding, "The high demand for these seminars is both gratifying and fearsome."

Reaching Energy Labs

Rebuild America partnerships seeking technical assistance can get some of the best in America, courtesy of the national energy laboratories. The route to that help is through a partnership's customer service representative.

After talking to the partnership to clarify what is needed, the customer service representative will use the Rebuild America Web site to submit a technical assistance request. Web-based communications provide an efficient system of obtaining help and tracking the progress of a request.

Before going to a customer service representative, partnerships are encouraged to go to the program Web site (www.rebuild.org), enter the Solution Center and click on "Services" to see what forms of assistance are available.

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

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Rebuild America is a network of partnerships – focused on communities – that save money by saving energy. These voluntary partnerships choose to improve the quality of life in their communities through energy efficiency. Rebuild America supports them with customized assistance backed by technical and business experts and resources.

Published bimonthly by the U.S. Department of Energy, Partner Update also incorporates news of other programs within the Office of Energy Efficiency and Renewable Energy.

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