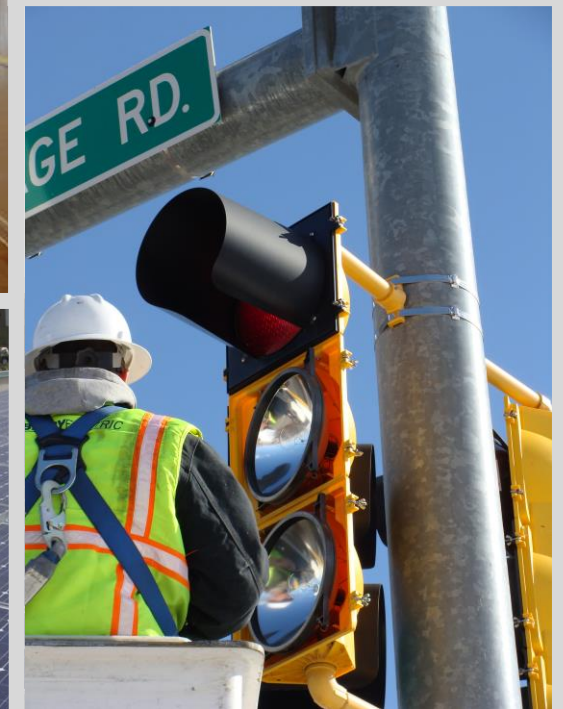
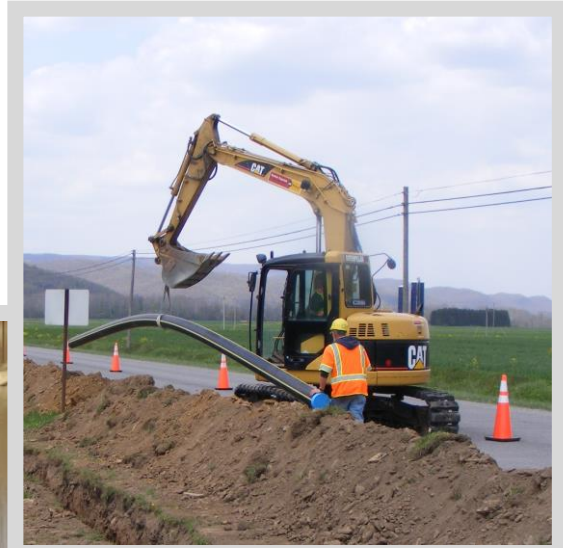




National Association of
State Energy Officials



U.S. State Energy Program

*An activity report of U.S. State Energy Program success stories
from the State and Territory energy offices.*

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2014



**U.S. State Energy Program
Briefing Book**

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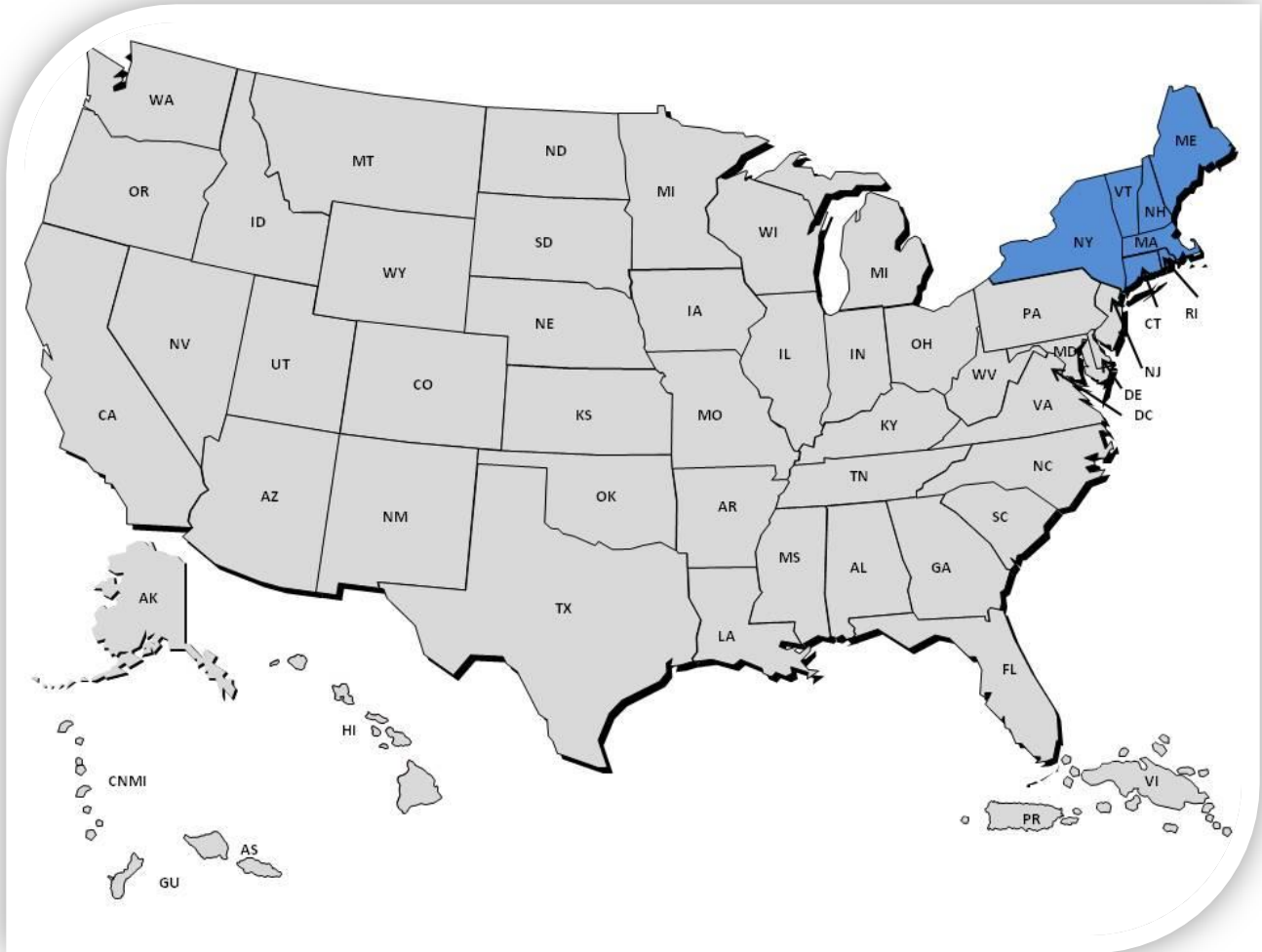
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NORTHEAST REGION



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State Success Story

SEP Cutting Energy Costs at Connecticut Facilities

In the summer of 2009 the State of Connecticut obligated \$5 million in SEP funds to upgrade 12 state buildings and facilities with energy efficient technologies. The state building retrofit program was designed to modernize aging buildings and save taxpayers thousands of dollars on future energy bills, while at the same time creating green jobs.

During the summer of 2010, eight of the 12 buildings identified for energy retrofit projects were completed at a cost of \$2.58 million. Among the eight projects completed was the health campus at Uncas-on-Thames in Norwich. The facility was awarded \$264,006 for a number of energy upgrades paid for through the State Energy Program.

The Uncas-on-Thames project, overseen by the state Department of Public Works (DPW), included low-wattage LED lighting and installation of occupancy sensors throughout the campus. As a result of a utility rebate program that provides funding for the installation of energy efficient technologies the State received an incentive check from Norwich Public Utilities for \$79,219.

"This project has already begun paying for itself and there are more like it around the state," Governor Jodi Rell said. "We can bring down the cost of energy bills for taxpayers and, at the same time, provide work for a range of Connecticut businesses, including engineers, installers and suppliers."

Additional projects funded through the SEP include a \$79,884 energy efficient lighting and controls retrofit project in Litchfield Hall dormitory at Western Connecticut State University. The energy improvement project, also completed this summer, is estimated to save the university \$14,000 annually in utility costs and will recoup the SEP investment in less than six years.

The energy efficiency retrofit of the historic Danbury Courthouse in Danbury has also been completed. The energy improvements in the courthouse cost \$320,000 and were paid for with SEP funds.

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State Success Story

Green Improvements Benefit Maine Manufacturer

In 2008, facing a declining economy and soaring energy costs, Tex Tech Industries of North Monmouth began to evaluate two possible plans for lowering operating costs: one, move part of their Maine-based operations closer to manufacturers in China; or two, upgrade to cost-effective alternative energy and lower energy costs to retain 40 Maine jobs.

After learning about new biomass equipment that could replace an old inefficient boiler, saving the company more than \$400,000 a year in fuel costs, Tex Tech officials chose to upgrade. The company needed help acquiring the new equipment, however, and turned to Efficiency Maine for access to more than \$746,000 in Industrial Grant funds. A manufacturer of tennis ball felt, Tex Tech Industries is one of the first Maine businesses to benefit from the new Efficiency Maine Large Project Fund that is funded in part by the State Energy.

“Green improvements can be challenging for businesses,” said Ken Bundy, Director of Engineering Services. “Changing infrastructure can be costly up front, and many businesses like ours find it hard to make that kind of investment right now, even though improvements will pay for themselves in the long run. The grants through Efficiency Maine made it possible for us to get the improvements going.”

Tex Tech was one of 63 companies and organizations that submitted competitive grant proposals seeking a combined \$30 million dollars from Efficiency Maine’s \$9 million fund for large industrial projects. Tex Tech was among the top 16 companies that received project funding based on cost effectiveness, readiness and economic impact.

Biomass Project Improves Energy Efficiency

“The Tex Tech biomass project is outstanding,” says Efficiency Maine’s Ian Burnes. “We are thrilled to be able to work with the company to reduce greenhouse gas emissions and increase their competitive position in the marketplace.”

The design phase for the biomass project is done, and site prep is near completion. When the project is finished at the end of 2010, the new system will not only save Tex Tech money, it will also reduce the company's use of oil by at least 165,000 gallons per year, thereby dramatically reducing its carbon footprint.

The biomass project works on every level. "It benefits the plant's production capabilities by making us more efficient, strengthens the local economy by preserving 40 local jobs, and benefits the environment," explained Bundy.

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State Success Story

Massachusetts Solar Rebates a Down Payment on the Future

The Commonwealth's solar incentive program, launched earlier this year, is having the desired effect of stimulating Massachusetts' economy. In addition to putting people back to work it is also changing the state's energy future.

Administered through the Massachusetts Clean Energy Center (CEC), the solar rebate program is funded through the State Energy Program. Capitalized with \$8 million, the program has leveraged \$32 million in outside capital that has triggered the construction of eight megawatts of new solar photovoltaic capacity at 100 sites around the Commonwealth.

The CEC rebates were offered through two application rounds, one launched in January and the other in April. The popularity of the program was immediate as on both occasions the program oversubscribed within hours, providing rebates to public and private entities for new solar systems between 5 and 200kW.

Among the projects that received funding and have either already been completed or are currently under construction, are three solar projects at the Mass Audubon Society's wildlife sanctuaries in Belmont, Princeton and Edgartown.

"Showcasing solar supports Mass Audubon's mission to protect the Massachusetts environment for people and wildlife," said Laura Johnson, president of the 114 year-old conservation and wildlife organization.

Goal: Reduce Carbon Footprint

Since 2003, Mass Audubon has reduced its carbon footprint by 46 percent by increasing energy efficiency and adding solar to its sanctuaries. By the end of this year it will have 30 solar energy systems on buildings at 22 of its staffed sanctuaries representing a total of 173.5 kilowatts (kW) of solar power.

Looking for additional opportunities to implement green technologies at their sanctuaries and showcase them for the public and their 100,000 plus members, Mass Audubon applied for SEP funding.

Two of the Society's three SEP funded projects are in communities served by a municipal electrical system and thus were ineligible for the same state funding that made the other sanctuary solar projects possible.

According to Society officials, without the assistance of the federal SEP money these three projects would never have come about.

"Mass Audubon put this federal grant to work to expand the use of solar energy on buildings at our wildlife sanctuaries," Johnson says. "Using clean energy enables us to live lighter on the land, saves money on our energy costs, and educates our members and the public about green technologies."

Providing Electricity and Awareness

Mass Audubon used the SEP funding to install a 5.98 kW solar array at the Wachusett Meadow Wildlife Sanctuary in Princeton. A second array at the sanctuary, a 5.06 kW ground mounted system, is scheduled to start construction in late-September. Together, the two systems will produce an estimated 86 percent of sanctuary's electricity load.

Two additional Mass Audubon SEP funded solar projects are currently under construction. The Habitat Education Center and Wildlife Sanctuary in Belmont, eight miles west of Boston, received SEP funding for a 9.2 kW ground mounted array that will produce 31 percent of its electricity load. While the project at Felix Neck Wildlife Sanctuary in Edgartown is in the final design stages of what will be a 14.67 kW system providing 50 percent of the sanctuary's electricity.

In addition to reducing the electricity load and carbon footprint of these facilities, each project will be incorporated into Mass Audubon's educational programs and used to teach others about solar energy and sustainability.

SEP Projects Build on a Solid Foundation

Statewide, all the Mass Audubon staffed wildlife sanctuaries will now produce some or all of the electricity they consume through solar power. Four sanctuaries also produce domestic hot water from the sun, using solar thermal technology.

"One of the most important things we can do is reduce our footprint on this planet and help others to do so as well," said Christy Foote-Smith, Sanctuary Director, Mass Audubon's Drumlin Farm.

To that end, Drumlin Farm, in the center of the state, sports a 7.5 kW roof-mounted PV array and a 9.9 kW roof-mounted array will soon be installed on the sanctuary's sheep and goat barn.

But when it comes reducing its footprint, the Saltonstall Nature Center at Mass Audubon's Broadmoor Wildlife Sanctuary is the example that all others strive to match. The Nature Center gets 100 percent of its heating needs through solar energy and the center's solar electric system produces 100 percent of the sanctuary's electricity needs.

“At Mass Audubon we are determined to reduce the impact of climate change by putting our collective hands, minds and hearts to work to power our world,” said Taber Allison, Vice President of Science, Policy and Climate Change for Mass Audubon.

These efforts, enhanced by SEP funding, are helping shape an alternative future for Massachusetts. It is a future exemplified by Mass Audubon's effort to be more energy efficient and increase its use of renewable energy production.

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State Success Story

New Hampshire Program Funds New Businesses

The New Hampshire Green Launching Pad – a new public-private partnership between the Governor’s Office, the State Office of Energy and Planning, and the University of New Hampshire (UNH) – funds state businesses in the nascent clean tech sector. Funded by the State Energy Program (SEP), the Green Launching Pad is an investment in the future of New Hampshire business.

The success of the program’s first round is best described by the turnout. The Board planned to distribute around \$90,000 to each of three winning teams. Instead, the more than 70 teams that applied saw five teams each receive between \$20,000 and \$60,000 to further develop their products.

The Green Launching Pad funds a diverse portfolio of businesses, stimulating different sectors of the State’s clean technology sector. Biomass power generation, CO2 reduction technologies, innovative financing solutions, organic semiconductors and industrial energy efficiency were among the technologies selected in the first round.

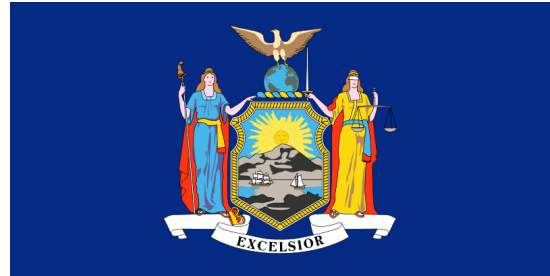
In October of 2010, The Green Launching Pad organized five “Energetic Conversations” programs across the state to showcase green innovation and entrepreneurship statewide. The five recipient companies from the first round each presented at one "Conversation" in the state. Communication of the Launching Pad’s success and potential are important to encourage more entrepreneurs to invest in New Hampshire.

The program is currently preparing to initiate a second round of funding. Whereas the first round had a maximum funding amount of \$60,000, the second will increase the award amounts to \$100,000. With increased rewards, larger and more innovative projects will be encouraged. Winners will be announced in April of 2011.

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State Success Story

New York Green Jobs Training Center Goes Green

Two Projects – Two Opportunities to Teach and Learn

The Wayne Finger Lakes (WFL) Board of Cooperative Educational Services (BOCES) covers more than 2,200 square miles across four New York counties. Each year the WFL BOCES provides career and technical education to 1,110 students, and adult and continuing education to 1,200 adults. It is within these capacities that the WFL BOCES extends ‘green-collar’ training to students and adults alike.

The WFL BOCES is in the process of teaming with the New York State Energy Research and Development Authority (NYSERDA) to install a 50kW Solar Electric System on the roof of an Early Childhood Education Building (where ???). With an annual production estimated at 55,640kWh, the system is expected to reduce electric consumption at the site by 43% and save approximately \$9,361 in utility costs each year.

Funded by a \$326,511 grant of from the State Energy Program (SEP) distributed in New York State by the NYSERDA, the WFL is moving forward with a project that otherwise would not have happened.

Beyond energy savings, the project will provide educational and environmental benefits to the community, which is extremely important to Mr. Logan and the administrative staff at the WFL.

“Education, Education, Education, said Crag Logan, Principal at Wayne Technical and Career Center. “Unlike private installations, the primary goal of these projects, from our perspective, is to help educate the public. The fact that they simultaneously provide an energy savings is secondary to the real goal of spreading the knowledge and supporting the growth of the industry.”

Five solar thermal panels and 18 solar photovoltaic panels will comprise a new Solar Combined Heat and Power system (SCHP), which is the WFL BOCES’ second SEP project made possible by an \$119,121 grant from NYSERDA.

The design is optimized to offset nearly 70 percent of the January heating load at the WTCC Modular Construction Building, the building currently used for building assembly training, and will combine with a heat pump to boost radiant floor temperatures to meet 100 percent of the building thermal load. The solar electric component of the system will be sized to cover the operation of the solar and radiant system pumps and the heat pump.

The WFL BOCES expects that both projects will coincide with green job training curriculum. “Both projects are a 1-1 match with curriculum goals on the campus. The solar thermal project at the Wayne Technical and Career Center is the next installment of a long list of NYSERDA-sponsored projects that have been incorporated into the programs and curriculum. The Finger Lakes Technical Center’s PV array will be the inaugural project to introduce renewable energy systems to the building trades curriculum on the campus,” says Logan.

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State Success Story

Rhode Island Awards \$4.7 Million in SEP Grants for Renewable Energy Projects

Rhode Island has conditionally awarded \$4.7 million in funds to 25 businesses, municipalities, and non-profit organizations throughout the state for renewable energy projects. The non-utility scale renewable energy program, administered by the Office of Energy Resources, is designed to offset up to 25 percent of project cost. Funding for this program was made available through the State Energy Program (SEP). The Office of Energy Resources has accepted applications and made conditional awards for two rounds of funding. A third round of funding may be available upon completion of the second round of funding.

Renewable energy projects include biomass, solar, wind, geothermal, and hydro-electric installations, as well as any other proven and accepted renewable energy system. Businesses could apply for up to \$500,000 for projects, and municipalities and institutions that serve or house 1000 or more persons, were eligible to apply for a maximum of \$750,000.

The application process was competitive among type of applicant and type of renewable-energy system. Within each category selections were based on job creation, energy production, funds leveraged from other sources to complete a project, and the cost effectiveness of the system.

Applicants receiving notice include two large scale commercial/industrial projects totaling \$577,560 (12% of the total allocation), eleven Community and Institutional organizations totaling \$3,542,464 (76% of the total allocation), and twelve small business projects totaling \$563,738 (12% of the total allocation).

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State Success Story

Family Owned and Operated Dairy Farm to Generate Electricity from Biogas

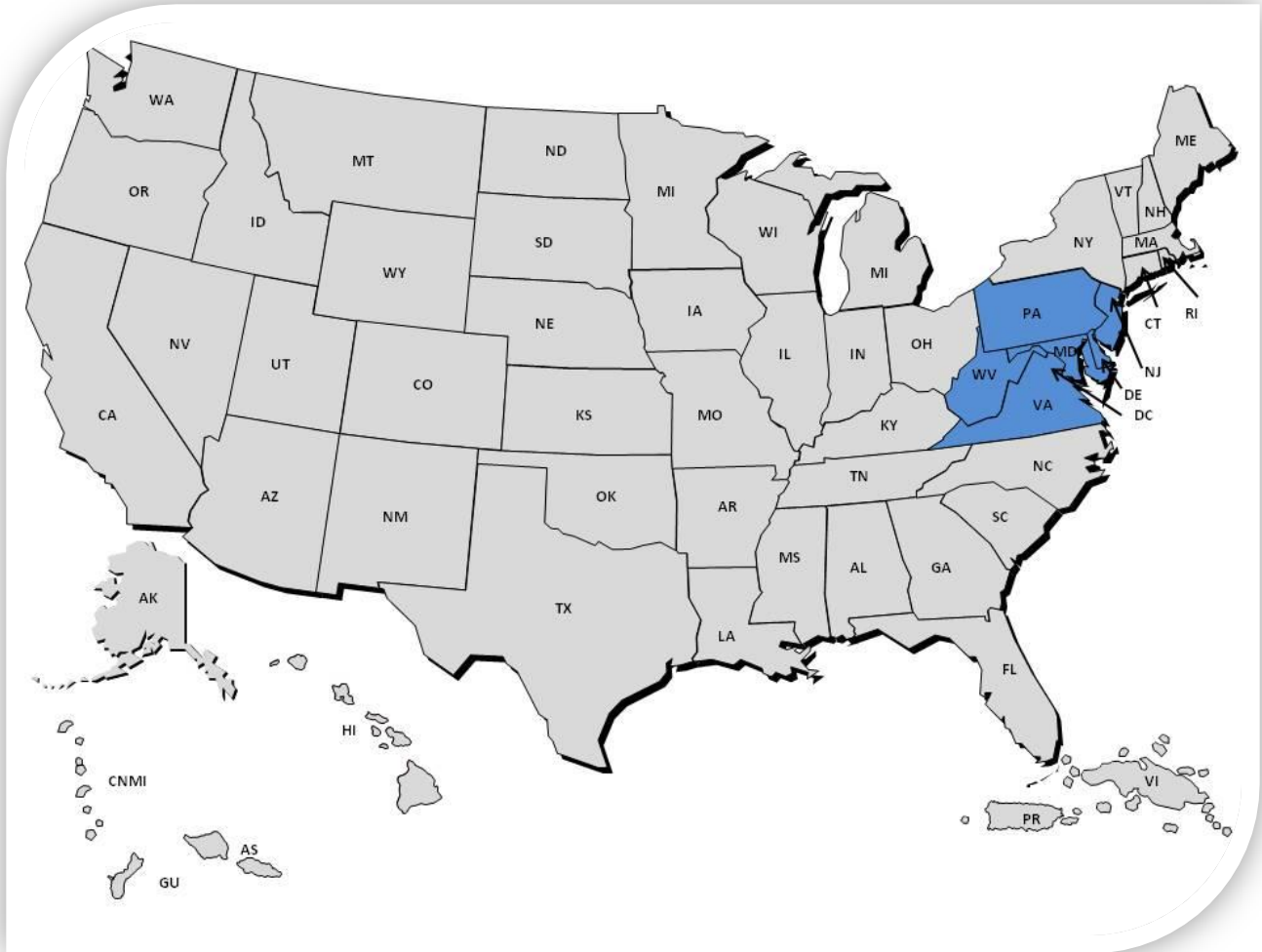
Conan Eaton, a milk farmer in Lunenburg, Vermont manages the 425-acre Auburn Star Farm. More than 430 Holstein cows call Auburn Star Farm home. Competing with the low cost of milk from other farms, Eaton is looking in every corner to find ways to lower his operating costs.

Thanks to a \$50,000 grant and \$500,000 loan from the Vermont Clean Energy Development Fund (CEDF), the farm will soon be home to a digester designed to produce biogas from farm waste. The gas will then be used to generate electricity – offsetting both the energy purchased by the farm and the waste to be disposed of. The Auburn Star award was made possible by the State Energy Program (SEP), funded by the U.S. Department of Energy.

In response to its January solicitation the CEDF received proposals from thirty-two different projects requesting over \$7 million in financial assistance. In all, more than \$3.3 million was distributed across the state.

The fourteen other Vermont businesses, non-profits and public institutions that received funding from the CEDF to pursue energy-based solutions to high electricity bills include: Caledonia Kiln, the town of St. Albans, Maple Grove Farms, Kane's Scenic River Farms, Four Hills Farm, Burlington Airport, Goddard College, Landmark College, Georgia Mountain Community Wind, Dynapower, AgNorth and Southport Power.

MID-ATLANTIC REGION



- DELAWARE
- DISTRICT OF COLUMBIA
- MARYLAND
- NEW JERSEY
- PENNSYLVANIA
- VIRGINIA
- WEST VIRGINIA

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State Success Story

Energize Delaware Rebates Have Potential for Big Savings

In the summer of 2010, Delaware's Sustainable Energy Utility (SEU) unveiled a new program to provide rebates for energy efficient heating and cooling systems and efficient lighting. The new rebate program, Efficiency Plus for Homes, launched on July 7, and is being funded with \$500,000 from the State Energy Program.

“With more than 290,000 central air conditioning systems in the state, homeowners could collectively save enough energy to provide all the electrical power needs for over 18,000 homes and save more than \$30 million per year by upgrading to an ENERGY STAR® cooling systems,” said Collin O’Mara, Secretary of Delaware Department of Natural Resources and Environmental Control. “We know that Delawareans want to participate in the state’s transition to a cleaner environment and green economy, and the ongoing SEU rebates make it possible for more residents to take part and save money at the same time.”

Partnership with Retailers

SEU representatives are working with retailers to offer rebates for heating and cooling and lighting opportunities. Part of this effort includes a marketing campaign with a new "spokesbird" for Energy Delaware, Delaware SEU (pronounced Sue). SEU is a red-knot Delaware shorebird designed to increase energy awareness. The red knot is symbolic of the connection between nature and wise energy consumption.

But energy awareness extends beyond the new mascot and includes an education effort focused on retail sales staff. Sales staff is being instructed on ways they can help customers reduce their energy bills even further by participating in the Efficiency Plus for Homes program or through the purchase of CFLs.

Efficient Lighting Discounts Add Up to Big Savings

Big Box stores, including The Home Depot and Sam's Club, are offering discounts electronically at the cash register for select ENERGY STAR CFLs. Participating smaller retailers offer customers coupons that can be redeemed at the register. Discounted prices can range from 99 cents for a 4-pack to \$1.50 per bulb.

The savings potential is enormous. Market research commissioned by the SEU shows that there are 13.4 million residential sockets in Delaware, and 85 percent are estimated to still use inefficient incandescent bulbs. An ENERGY STAR CFL saves about \$30 over its lifetime and pays for itself in about six months.

Heating and Cooling Upgrades Is Phase One

The Efficiency Plus for Homes program major focus is HVAC upgrades. More than 20 participating contractors are now qualified to offer homeowners rebates from \$400 to \$550 for replacing their existing heating and cooling system with select ENERGY STAR qualified equipment.

The heating and cooling system rebates represent the first phase of the program. The second and third phases of the program will start in the fall, allowing homeowners to take advantage of comprehensive whole home audits and financial help for more comprehensive energy solutions. Energize Delaware has a variety of additional energy solutions and incentives for businesses, schools, hospitals and nonprofits:

- Rebates of up to 20,000 per facility for upgrading to more efficient commercial kitchen equipment, motors and drives, lighting, HVAC and water heating.
- Up to \$2,000 to help pay for energy audits
- Loans up to \$250,000 per project.
- An energy performance contracting program for government buildings, schools, hospitals, universities and nonprofits to identify and finance upgrades that lock in long-term energy and cost savings.

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State Success Story

District of Columbia Kicks-Off \$7.5 Million Energy Retrofit Project with SEP Dollars

Project to Improve Energy Efficiency of One Judiciary Square

The District of Columbia's Department of Real Estate Services (DRES) launched a \$7.5 million project in August to reduce the energy consumption of one of the District's busiest office buildings, One Judiciary Square. The project is being funded in partnership with the District Department of the Environment (DDOE) using funds through the State Energy Program.

Comprised of 850,000 square feet, One Judiciary Square is one of the major buildings owned and operated by the government of the District of Columbia and hosts multiple D.C. agencies in mission-critical roles.

Twenty Percent Savings Projected

The contract for the project was awarded through a competitive procurement process to Pepco Energy Services. Pepco is installing a number of energy efficiency measures including a building management system, direct digital controls and HVAC upgrades. In addition to saving money and energy, the project is creating the equivalent of 16 full-time construction jobs.

“The District will not only improve the energy efficiency of the building systems,” said DRES Director Robin-Eve Jasper, “the District will also be improving the air quality and overall comfort of the building.”

Most of the building's 30-year old HVAC units are being replaced with energy efficient units and the air distribution is being upgraded with new variable air volume boxes. Once complete, the energy consumption for the HVAC system will be reduced by almost 20 percent.

Demonstrating a Commitment to Efficiency

“When we first received the State Energy Program funding, we targeted our own government buildings to receive energy retrofits, knowing that the savings would be considerable,” said DDOE Acting Director Christophe A.G. Tulous. “We are confident that retrofitting One

Judiciary Square will help to bring us closer to the goal of being a national leader in reducing energy consumption within our building sector.”

The project is expected to take 18 months to complete and the building will remain in full operation during the construction.

President and Chief Executive Officer of Pepco Energy Services John Huffman said, "The One Judiciary Square retrofit project demonstrates the D.C. government's commitment to increasing the district's energy efficiency."

That commitment includes a green roof project that was installed on the One Judiciary Square building in the fall of 2007. The green roof covers over 50 percent of the building's roof area. The roof is planted with low-maintenance, native species, and is designed to help reduce energy costs while also reducing storm-water runoff into the Anacostia River.

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State Success Story

Maryland Car Wash Goes Solar With No Upfront Costs

The addition of solar paneling to the iconic College Park Car Wash pushes this local small business into the future. It also means noticeable monthly savings for Dave Dugoff, owner of the self-serve wash.

Through a partnership with budding finance company Skyline Innovations and a \$4,469 grant from the Maryland Energy Administration's State Energy Program funding, Dugoff installed the solar paneling with no initial costs. The car wash uses 1,500 to 2,200 gallons of hot water every day, and now 30 percent of the electricity it uses to heat that water comes from solar energy.



The solar array on the College Park Car Wash saves approximately \$370 to \$400 every month. After a portion is used to pay off the original installation costs, Dugoff still manages to save \$55 to \$60 each month.

Project is First Sale for New Company

Skyline Innovations was founded to provide solar thermal technology to small businesses. “[College Park Car Wash] was our first sale after the company was founded,” says Kate Heidinger, project manager at Skyline Innovations. “We actually approached him” says Heidinger, who had heard through a mutual contact that Dugoff was considering solar.

The day of installation was filled with excitement and anticipation. Heidinger recalls, “The first day the panels went up, everyone in the company went out” to support Dugoff with a cookout. Heidinger jokes about a Prince George’s County police officer who stopped to ask why they

were grilling in the car wash parking lot. The team answered, “We’re watching our solar system go up!”

Skyline Innovations, despite their recent arrival to the solar stage, has an in-depth knowledge of the many incentives available both at the Federal and State level. Heidinger confirmed that their understanding of MEA’s Mid-Sized Solar Grant Program played a central role in the company’s ability to create monthly savings for Dugoff.

SEP Solar Projects Multiply In Maryland

Through the success of MEA's Mid-Sized Solar Grant program, there are 12 other approved projects for solar photovoltaic systems around the State that are estimated to add 244 kW of clean renewable electricity to Maryland’s grid, and save nearly 70 MWh annually.

NEW JERSEY

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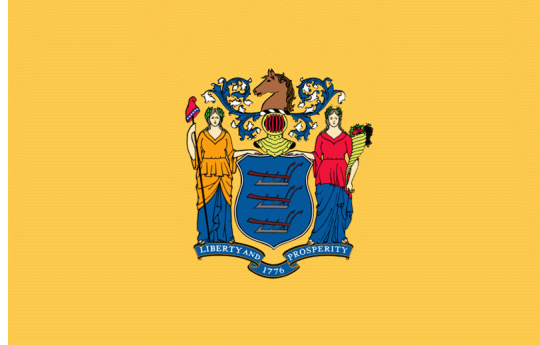
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State Success Story

New Jersey Energy Projects Aim to reduce Costs and Pollution

In 2009, The New Jersey Board of Public Utilities awarded grant funds to seven energy projects ranging in size from a \$63,000 boiler retrofit project at Rutgers University, to an \$8.5 million landfill solar project with the New Jersey Meadowlands Commission. The projects, located throughout the state, are all at different stages in their development.

The projects were selected through a competitive application process for the state's "Innovation in Energy Efficiency and Renewable Energy - Public Entities" program. Projects funding comes from State Energy Program.

The grant program was designed to provide funding to state departments, agencies, authorities, colleges and universities that utilize innovative renewable or energy efficiency technologies or innovative applications for renewable energy applications and energy efficiency projects.

The New Jersey Institute of Technology (NJIT) is one of New Jersey's state universities taking advantage of SEP funds. NJIT is using a variety of technologies to reduce energy usage and for energy generation, including variable frequency drives for motors on heavy system equipment, variable speed drives on air circulating units, higher efficiency lighting, solar water heating and solar photovoltaics.

Upon final completion, the implemented measures will reduce building facilities management cost by approximately 75%, will reduce electric energy use by approximately 50% and will reduce the total building fossil energy use by approximately 40% through efficiency improvements and renewable energy generation.

PENNSYLVANIA

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State Success Story

Pennsylvania Uses SEP Funds to Help Crayola Go Green

For more than a century, Crayola has made every color under the sun. Now, the sun is making those colors with the help of a 15-acre solar farm that began generating electricity earlier this summer at the company's headquarters in Easton, Pennsylvania.

The Crayola plant was one of eight large-scale solar projects in the state that received funding from Pennsylvania's State Energy Program (SEP) funds administered by the Pennsylvania Office of Energy and Technology Deployment.

Crayola received \$1.5 million in SEP funds to help offset the \$15 million cost of the 1.9 megawatt (MW) solar installation. Nearly 26,000 thin-film photovoltaic panels, manufactured by First Solar at their Perrysburg, Ohio factory, were used in the project.



Pennsylvania's Green Energy Works! Solar program is one of four competitive grant opportunities using a combination of state, private and SEP funds to create green jobs, green energy and to stimulate economic development. Biogas, combined heat and power, and wind are the other three.

Crayola Green Team

According to Mike Perry, President and CEO of Crayola, the 15 acre solar farm's electricity will be fed to the company's nearby manufacturing plant.

"That power will produce a third of the crayons we make here in Easton, Pennsylvania," Perry said "A little over a billion crayons is what this power will be used to produce."

In addition to labeling on its boxes that identify the crayons were made by solar power, the company has also constructed an exhibit to help educate the more than 350,000 visitors a year that tour the plant to the benefits of solar energy.



"Kids all over the world can now say that their crayons were made with the power of the sun," Perry added. "And, it won't cost them anymore money to do it."

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State Success Story

A New Small Wind Center for James Madison University

Virginia wants to green its workforce, and it's looking to James Madison University to help make it happen.

The Virginia Department of Mines, Minerals & Energy, with funding from the State Energy Program, awarded the university's Center for Wind Energy \$800,000 to build a wind testing and training center, a new project geared towards both students and companies in the state that may want to break into the wind industry.

“We can reach out to potential industries that may be interested in this area,” says Jonathan Miles, a professor in the department of integrated science and technology and director of the Center for Wind Energy. “And without this facility, it would be hard to provide the level of support that this will enable.”

JMU has an existing 1 kW turbine that will be moved to a yet-to-be-determined location and be joined by a new 5 to 10 kW turbine, along with other wind and weather monitoring devices.



Growing a Wind Workforce

The wind training center will be a place for companies to send its workers to learn about small wind turbines, like how to install, operate and maintain the systems.

“One of the things that we expect to grow is the workforce,” Miles says. “For instance, a company that does crane work may see an opportunity here. With this center, they could get people trained and certified.”

“And we’ve identified a lot more companies than we expected that are interested to engage,” he adds.

Miles expects JMU, which is a designated U.S. Department of Energy “Wind for Schools” university, to break ground in May or June 2011, with the project completed by the end of that summer.

Training existing workers is important to the state and the university as is engaging the upcoming workforce. The new center will be wrapped into the school’s curriculum, Miles says, which has classes like “Role of Energy in Modern Society” and “Sustainable Energy Development.”

“It’s about expanding what we already offer,” he says. “We have some classes that touch on wind energy, but we want to expose students to a greater number of aspects pertaining to wind. I envision an entire course on wind energy. Maybe even wind as a minor.”

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State Success Story

SEP Funding Helps West Virginia's Correctional Facilities Save Energy

Work began in April on a fuel-switching project at Huttonsville Correctional Center in Randolph County that will save money and make the facility a little greener.

The project, administered by the West Virginia Division of Energy and funded by the State Energy Program, will cost \$2.1 million and is expected to be completed within 10 months. It will reduce annual operating costs for West Virginia's most expensive facility to heat by more than \$400,000. This project, which will upgrade the existing natural gas distribution system in the area approximately eight miles to the correctional facility, also reduces its dependence on imported oil.

Huttonsville, the oldest and largest facility in the state, was built in the 1930s, said Ad Oji, contracts manager with the West Virginia Division of Corrections.

"When Huttonsville was built, it used a coal-fired furnace. Then they went to propane and heating oil and now they are moving to natural gas."



By switching from an oil heating system to natural gas, the facility will have a uniform heating source, he explained. Once the switch to natural gas is completed, the facility is estimated to realize an annual savings of \$400,597 per year, with a five-year payback period.

"I would like to express my gratitude to Jeff Herholdt, Kelly Bragg and Marie Butler of the West Virginia Division of Energy for their assistance with this project," Oji said. "None of our achievements would have been possible without them."

Energy Upgrades Save Taxpayers' Dollars

In addition to the Huttonsville project, Mount Olive Correctional Complex in Fayette County and Pruntytown Correctional Center in Taylor County, also are undergoing an energy upgrade with SEP funds. These projects are in the audit stage to determine the energy savings opportunities, before the recommended new equipment is installed.

“The work consists of improvements to make the buildings energy efficient. We’re looking at HVAC systems and lighting in those facilities,” Oji said.

“These upgrades will make it a little less heavy on the carbon footprint. Some of the systems that are going to be replaced are old and not as environmentally friendly as what we will be able to do in 2010 with ENERGY STAR ratings.”

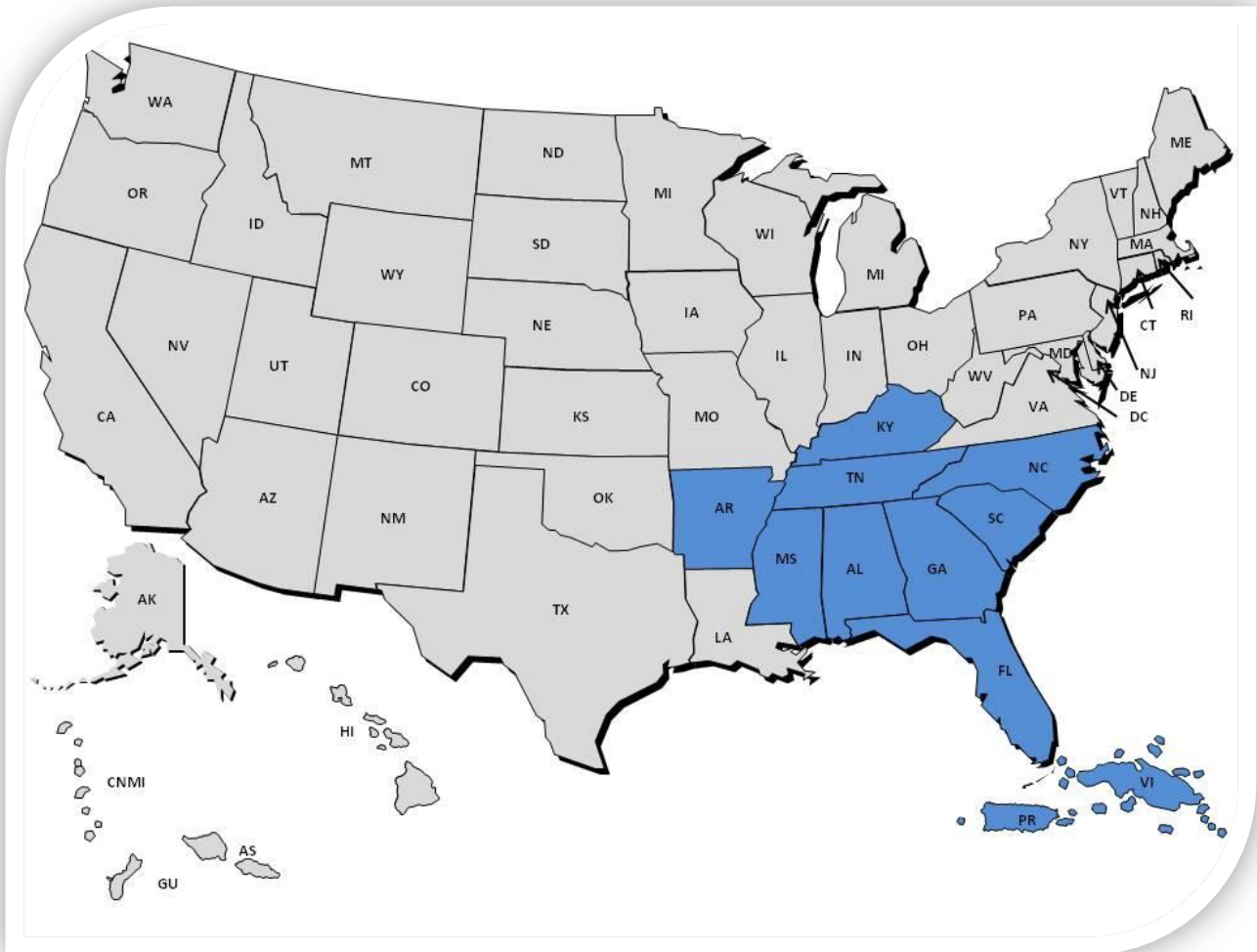
With an improved heating system in place, “it is important to also ensure the windows are updated to realize the benefit of the fuel switch.”

Denmar Correctional Center in Pocahontas County also is set to get new windows. Built in 1939, the facility originally served as a hospital for TB patients, Oji said. “It is heated by oil, and when it gets too hot, they don’t have a thermostat or any way to regulate the temperature in the building.”

Rapidly changing outdoor temperatures result in frequent opening and closing of windows, he explained, which wastes a lot of heat.

“We are hoping that we get additional funding to update that building so it will have central heating and cooling, but in the meantime, we are replacing the windows with more energy efficient models.”

SOUTHEAST REGION



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State Success Story

Alabama Schools Upgrade Lighting and Reduce Costs

The new school year is a little brighter for Walker County schools thanks to a recently completed lighting upgrade that will save \$146,000 per year in energy costs. A \$304,750 State Energy Program (SEP) grant administered by the Alabama Department of Economic and Community Affairs enabled the school system to upgrade lighting in 15 schools. New fixtures that produce the same level of light using less electricity were installed along with sensors that automatically turn lights off when buildings are unoccupied.

The ADECA grant paid for the equipment and provided more than 960 hours of employment for local workers who installed the fixtures.

“Walker County schools have made an investment that will pay dividends for many years to come,” ADECA Director Doni Ingram said. “I hope these energy-saving measures will help the school system to cope with reduced funding caused by the economic downturn.”



SEP Funds Making a Difference

The grant was awarded by Gov. Riley in November 2009 from funds made available to Alabama as part of the State Energy Program.

As the State Energy Office, ADECA’s Energy Division is administering grants for 27 projects totaling \$52.06 million as part of the State Energy Program. The projects focus on reducing energy consumption in public school buildings, improving the energy efficiency of state prisons, providing low-interest loans to businesses making energy improvements and offering training seminars for construction industry professionals.

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State Success Story

Alternative Lighting in Pilot Poultry House Shows Promise

Jerry Hutton has been around chickens all of his life. His family built some of the first chicken houses in the Prairie Grove area of Northwest Arkansas and today Hutton maintains eight houses. Last year, the University of Arkansas (U of A) Division of Agriculture approached Hutton about participating in a pilot energy efficiency project. “I’ve worked with the university before and am always willing to help when I can because they’re real advocates for the farmer,” Hutton said. “When they asked me to do this, it was just a natural to say ‘yes.’” Funded by a \$1.5 million grant from Arkansas Economic Development Commission's Energy Office and the State Energy Program, U of A researchers are testing alternative lighting for poultry houses.

Four of Hutton’s houses, which typically use incandescent light bulbs, were replaced with a mix of LED (light-emitting diode) and compact fluorescent lights. Each house is 500-feet long with solid sidewalls. Dimmable LED bulbs were placed approximately every 10 feet and compact fluorescents were installed in the center. Previously, Hutton had no way of knowing what portion of his overall operating costs was dedicated to electricity. With the assistance of Ozarks Electric Cooperative, he and the U of A will soon be able to identify the amount of power used in the four pilot houses and compare the expected cost savings with his other houses.

“LED is a new technology and it’s similar to the introduction of the cell phone 15 years ago,” Dr. Susan Watkins, an associate professor in the U of A’s Poultry Science Department, explained. LEDs are actually semiconductor chips that directly convert electricity into light. LED bulbs that are the equivalent of a 25 to 35 watt incandescent bulb use about 0.7 watts. Unlike incandescent bulbs that have a filament that must be heated to produce light, LED bulbs don’t have filaments that require heat, which is one of the reasons they are more efficient.

Prior to the pilot project with private producers, various energy efficient bulbs were, and continue to be, tested at the U of A Applied Broiler Research Farm. According to Tom Tabler, manager of the research farm, all of the lights — dimmable LEDs, compact fluorescents and cold cathode lamps — have proved to be more energy efficient than incandescent bulbs. The cost savings at the research farm have been, on average, \$100 over a 45-day period, which is generally the amount of time commercial birds are raised before being slaughtered.

An added bonus of installing energy-efficient lighting appears to be a better product. Studies indicate that alternative lighting does not appear to adversely affect bird weight or production numbers and may, in fact, have a positive effect on bird behavior. According to Hutton, the chickens in the four houses in which alternative lighting was installed have been larger and healthier. “These are some of the best birds I’ve ever raised,” he said.

Installing LEDs has a high up-front cost. Bulbs can range from \$32 to \$45 each compared with \$0.50 for incandescent bulbs. However, the estimated LED life expectancy can range between 35,000 to 50,000 hours, compared to 6,000 hours for traditional bulbs. With a reduction in energy usage of up to 80 percent, poultry producers could recoup their initial investment within a short amount of time. Dr. Watkins said that LEDs will be a tougher sell to poultry farmers, but sees adoption of the technology getting less expensive as demand for the product increases.

“It all boils down to cost versus return, and if we can find ways of being neutral or make a little money and reduce energy needs at the same time, I think an awful lot of farmers will participate,” Hutton said.

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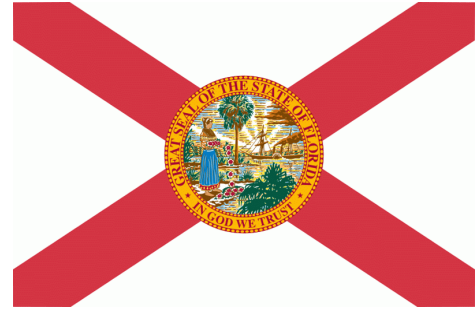
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State Success Story

Florida Billboards Show Signs of the Recovery

Shovel-ready certainly defines a renewable energy demonstration project underway in Florida. When completed, one megawatt of solar and wind will be installed on 1,531 existing billboards along stretches of I-10, I-110, I-75 and other major traffic corridors throughout the state.

In February, the Florida Energy and Climate Commission awarded a \$2.5 million grant to Lamar Advertising. The grant monies were part of Florida's State Energy Program allocation and leveraged a \$10 million investment by Lamar in an effort that combines renewable energy, energy efficiency and public education.



Project Creates Jobs throughout the US

Through the end of August roughly ten percent, or 150 billboards, had been retrofitted. "The first five months were devoted to organization, planning and logistics," said Greg Gauthier, manager of strategic projects for Lamar. "In August, we started installations in earnest, and we expect that our pace will allow us to complete the project by the end of 2011." Lamar has ten employees dedicated to the project at various levels, from mechanical to electrical.

"We have calculated that the business volume associated with this project supports over 60 jobs nationally," Gauthier says.

A portion of those jobs are at Southwest Windpower, a US manufacturer of small wind turbines. Lamar is using the company's Skystream wind turbine to supply power for a number of its Florida billboards.

Andy Kruse, Southwest's Co-founder and Executive Vice President, said the collaboration with Lamar Advertising has had positive impact on employment at his company's factory and with its affiliates in Florida.

"The job impact comes from a new application meaning more jobs on the ground both at our factory and for field installers," Kruse says.

In addition to the renewable technologies and the associated job opportunities in those fields, each installation is being augmented by energy efficiency technologies which create additional jobs. Lamar is employing LED lighting in lieu of existing metal-halide lighting, and digital lighting controllers with online control capabilities in lieu of conventional timers or photocells.

Growing Florida's Green Economy

While the value of the project is being measured in energy savings, estimated at \$232,000 a year, what isn't being measured is the impact of the project beyond the energy offset.

It is this combination of platform and technology along Florida highways that will result in the distribution of information intended to increase public awareness and acceptance of renewable energy. This clear message regarding renewable energy's effectiveness is being conveyed to millions of Florida residents and visitors every day and the public awareness component will continue over the 20 to 25 year lifespan of these systems.

"This project brings more awareness to the availability and utility of renewable energy, in the hope that both homeowners and business owners will consider it as an alternative to conventional grid power," Gauthier says. "The ultimate goal is to grow the green energy industry in Florida, and all the associated economic development that goes along with it."

SEP Creates New Business Strategy

Gauthier says that he had no way of knowing that Lamar would be impacted so deeply by the State Energy Program.

Over the past two years Lamar had experimented with several wind and solar options. Those options included storing the power generated by the renewable technologies to light the billboards at night. However, the SEP funded project uses the billboard infrastructure to feed a significant amount of renewable energy back into the grid during daytime peak consumption hours.

"We are now considering other similar programs, and are continuing our strategy of incorporating sustainability into our business wherever possible," Gauthier adds. "We think this will improve our long term competitiveness by lowering our electricity consumption and placing an emphasis on lean operations."

For Southwest Windpower, Kruse says the collaboration with Lamar Advertising has allowed his company to explore the use of its product in a new application.

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State Success Story

SEP Funds Move Georgia Community toward Carbon Neutrality

Clark Gove, an energy efficient neighborhood located near downtown Covington, Georgia, is one of the few live/work environs in the Southeast. It is also in the process of becoming one of the first carbon neutral communities anywhere. To reach that end, homeowners and community leaders have embraced a phased-in approach of leveraging renewable energy to reach carbon neutrality over the next five years.

That timeline, however, was provided a big boost earlier this year when the community successfully partnered with Hannah Solar on a \$250,000 grant application to the Georgia Environmental Finance Authority.

According to Pete Marte, CEO of Atlanta-based Hannah Solar, the grant provided for the installation of solar panels on five buildings in the community. These installations were completed over the summer and the buildings outfitted with solar included the Clark Grove homeowners association building, a University of Georgia design studio, an energy consultant's office, the Montessori School, and the Center for Community Preservation and Planning.

With nearly a 25 percent match provided by each participant, the total investment in the solar project came to more than \$340,000. Moreover, in keeping with the founding-ideals of the community, the solar panels purchased for the project were produced in nearby Norcross, Georgia by Suniva, Inc.

Earlier this year, U.S. Department of Energy Secretary Steven Chu heralded Suniva as "an American success story." The comments came in a White House blog by Secretary Chu who



was recounting his visit to the Georgia Institute of Technology, the genesis of Suniva's industry-leading technology.

As heralded as Suniva is, the Clark Grove solar project is a success story in its own right, and one with the potential to have a long-term impact that goes well beyond the SEP funding.

Clark Grove a Model for Sustainable Green Development

"Clark's Grove was built as a model community to demonstrate how compact, mixed-use, pedestrian-friendly communities could be great places to live while reducing dependency on the automobile and fossil fuel usage at every possible opportunity," said Randy Vinson, the City of Covington's Town Planner and an adjunct professor at the University of Georgia.

Vinson explains that the community's original master plan, developed in 2000 by Andres Duany, follows the principles of new urbanism and traditional neighborhood design.

"Covington is on the eastern edge of the metro Atlanta sprawl line and we were seeing a lot of growth pressure over the past two decades," he says. "A local charitable foundation, The Arnold Fund, financed the project (master plan) as a model to show other developers how to build a community -- not just a subdivision."

The goal was to also make the community a model for sustainable green development. Clark Grove is an EarthCraft Community, a program initiated in 2003 by Southface Energy Institute to develop broad sustainable development guidelines. Among these guidelines is the requirement that houses be built to EarthCraft Home standards, which means they are extremely energy efficient.

SEP Brings Solar Electricity to Georgia

Despite its focus on energy efficiency and environmental design, distributed solar generation wasn't part of Clark Grove's original plan.

"We had explored using solar and geo-thermal early on, however, the price-points we needed to maintain in Covington kept us using more conventional systems," Vinson says. "We knew what people were willing to spend on a home in our area and were trapped in those economies."

When the State announced its SEP grant program Vinson sent an email inquiry to the Clark Grove property owners to gauge their interest. A quick and positive response from all residents confirmed the community's desire to take the next logical step in its effort to demonstrate sustainable development.

"As it turned out there was a lot more interest than funding," he says. "We narrowed the participants down after a closer look at the (grant) requirements."

Hannah Solar ended up installing 175 photovoltaic panels in all, 35 on each building, which will produce a total of 43 kilowatts of electricity. Marte said the panels will replace about 15 to 20 percent of the traditional electricity usage by those buildings.

But those numbers could change slightly because property owners are just now seeing their first utility bills since the solar systems became fully operational. "Over the next few months we will be able to determine the actual return on investment," Vinson adds.

Market Transformation and Long-Term Effects

Vinson and Marte believe Clark Grove and Covington have an opportunity to become known as the "renewable energy capital of Georgia." And the first phase of this project has the potential to go a long way toward making that a reality as well as helping transform many other communities across Georgia, enabling them to see the value in solar and wind power.

"We hope that our project will bring a focused attention to what solar technologies can offer and will enable the industry to expand to every aspect of society," Vinson says. "We believe this is the future for not only our community, but for the rest of the world as well."

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State Success Story

New School Energy Managers in Place Serving Kentucky School Districts



Growing from a pilot program in a few buildings in 2006, Kentucky’s push to make its public schools more energy efficient – and return resulting savings to classroom instruction – now will impact more than 1,000 schools.

Thirty-five energy managers have been hired to create and implement energy-efficiency practices in 130 districts statewide. The jobs are funded in part with dollars from the State Energy Program. A partnership of the Kentucky Department of Energy Development and Independence and the Kentucky School Boards Association (KSBA) is putting the SEP funds to work for the School Energy Managers Project (SEMP).

“From the lessons in those pilots over the past four years, we know schools and districts can save thousands of dollars in avoided energy costs,” said KSBA Executive Director Bill Scott. “The

record in two of those pilots – Bullitt County and Kenton County – is hundreds of thousands of dollars in savings.

“And the potential to cut costs isn’t limited to large districts. We’re confident that all 130 participating school systems will realize lower utility expenditures as they put improved facility management practices in place,” he said.

Energy managers are employed by a lead agency but work in all partnering districts. The 29 lead agencies (28 districts and the Green River Regional Education Cooperative in Bowling Green) will share \$2.5 million in federal SEP grant funds during the next two years. The grant covers up to 77 percent of salary and benefits in the first year and approximately 50 percent in the second year. All 130 districts share the remaining costs, based on the number of schools per district.

Impacts Extend Beyond School Walls

Earlier this summer the new energy managers underwent intensive training in the requirements of the federal grant, best practices in developing local energy policies and establishing networks among the managers to share ideas.

Ron Willhite, SEMP director for the school boards association, said the training was heavy on educating the energy managers on resources they may call upon in their work.

“Expertise in facility energy practices exists from the National Energy Education Development Project, the Green and Healthy Schools initiative and the Kentucky Energy Efficiency Program for Schools at the University of Louisville,” Willhite said. “These programs, plus the districts in the pilots, have people with the skills to help the new energy managers hit the ground running.

“We want the impact of this program to go beyond school walls,” he said. “For example, schools in Kenton, Muhlenberg and Nelson counties and the educational co-op have energy curriculum coordinators. We want students and staff to take energy lessons home and help their families to make wise energy choices. We believe these cost savings can be realized all across the state.”

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State Success Story

Mississippi Invests SEP Funds in State's Industries

Five years ago Hurricane Katrina slammed ashore along the Gulf Coast and its impacts were far reaching touching not only homes and families, but also industries and jobs. Last year when monies became available to help states re-invest in their economic infrastructure no state may have been more prepared than Mississippi. The Mississippi Development Authority (MDA) allocated \$10 million of its State Energy Program funds to the Mississippi Job Protection through Energy Economic Development Program.

To date, Mississippi has completed two grant rounds and awards have been made to 55 companies. The size and nature of the projects vary among grantees which represent a cross-section of Mississippi's business community. These companies include small businesses, large manufacturers and minority and woman-owned firms from around the state. But while the applicants may differ, the results are the same: more efficient workplaces where the energy savings are being diverted back into operations, maintenance and the workforce to make these companies more competitive in the current market.

"As Mississippi strives to become more energy efficient and energy independent, we are seeking innovative ways to reduce energy consumption and spur economic growth," said Gray Swoope, MDA's executive director. "SEP funding through the Mississippi Job Protection through Energy Economic Development Program provides Mississippi companies with the support they need to be more energy efficient, thus reducing operating costs. This leads to stabilizing current employment levels and, ultimately, will create new jobs."



SEP Funds Save Jobs at Historic Laurel Manufacturer

One of the companies that received funding from the program is Laurel Machine and Foundry Co., located in Laurel, Mississippi. The company is the oldest industry in Laurel, established in 1904, and has been owned by the same family since 1911. What started out as a manufacturer and supplier of metal parts for the Lindsey eight-wheel wagon factory today has 150 employees and more than 800 customers in 33 states.

The \$500,000 grant from MDA will help offset a majority of the \$734,000 in energy upgrades that are currently underway at the company's facilities. These upgrades include replacing inefficient furnaces, power units and electronic controls that were originally purchased in 1979.

The Laurel project will be completed by the end of the year. Going forward the new energy efficient measures will save the company \$85,000 a year in energy costs.

Laurel's Chief Financial Officer, Chuck Bridges, says he never envisioned when the SEP bill was winding its way through Congress that it would ever reach down and impact Laurel Machine. But he is glad it did.

"Without the award from MDA we would never have been able to implement these changes," Bridges says. "In the present economy, and due to tight credit and new banking regulations, we would not have been able to finance the replacement of this equipment through normal financial facilities."

He also points out that without the equipment upgrades, Laurel Machine would have been forced to close one of its facilities and lay-off approximately 32 employees. "It allowed us to continue to operate this facility and compete in the current market," he says.

The Laurel story is not unique to the Job Protection Program. The 55 companies receiving awards are expected to see a combined estimated annual energy savings of nearly \$3.5 million. And, as is the case at Laurel Machine, these savings are reducing production costs, thereby allowing the companies to be more competitive and, in turn, to increase market share.

"We could possibly have to add additional employees to meet demand," Bridges adds.

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State Success Story

Residential Initiative to Boost Energy Savings 15 Percent with Energy Star Certifications

The North Carolina Energy Office recently launched a \$3.7 million program to improve energy efficiency in new single-family homes and multi-family housing under construction. Two agencies were selected to work with the state to develop, implement and monitor a statewide residential energy efficiency program that will provide sustainable energy savings in new homes for both homeowners and renters, while improving the comfort and durability of the homes.

The Appalachian State University Energy Center in Boone and Systems Building Research Alliance, a nonprofit consortium of electric utilities and major manufactured and modular home building companies, have been designated by the Energy Office to lead the effort.

Plans are to improve energy efficiency in nearly 2,500 single-family homes and 480 multi-family units, along with 1,700 manufactured homes. The program, administrated by the North Carolina State Energy office and funded through the State Energy Program, will demonstrate to builders and homeowners that energy improvements make homes more attractive to buyers generate greater marketplace demand for energy-efficient homes and result in long-term energy savings.

Appalachian State University was awarded \$2.6 million and is focusing on site-built single-family and multi-family home energy efficiency improvements. Systems Building Research Alliance received \$1.1 million and is focused on manufactured homes built to federal standards, addressing energy efficiency improvements. The alliance is currently responsible to the federal Environmental Protection Agency for quality control oversight of Energy Star for both manufactured and modular homes.

The two agencies are responsible for managing the program, recruiting and training local builders and contractors, recruiting participants, monitoring construction and verifying energy savings along with economic benefits – including job creation and retention. Homes participating in the program must achieve a minimum of 15 percent in energy savings, including heating and cooling.

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State Success Story

Puerto Rico Promotes Solar Technologies

For years Puerto Rico's Energy Affairs Administration (EAA) focused their efforts on providing guidance on how to conserve energy. However, in 2009 the EAA used State Energy Program funds to expand its efforts to include building the territory's distributed generation infrastructure.

Earlier this year the Puerto Rico EAA began a campaign to promote five programs that aim to reduce dependence on oil for electricity generation. Among those programs, funded through the State Energy Program, are two efforts that promote the adoption of renewable energy technologies.

Solar Rebates Target Water Heating and Electricity

A solar water heating program is helping people who are interested in switching their electric water heater tank. The program offers a \$1,000 incentive to help homeowners afford the switch. The average price of a solar water heater is about \$1,900, according to the head of the EAA.

The other program, the Sun Energy Program, offers Puerto Rico homeowners a one-time rebate for a portion of the costs of installing a photovoltaic system. The rebate is \$4 per watt and is capped at 50 percent of project cost up to \$30,000. Businesses are eligible for a 50 percent rebate up to \$200,000. In the case of public buildings the grant program provides 100 percent of the installation costs.

One recent project resulted in the installation of photovoltaic panels on the Gurabo City Hall. The \$99,000 investment will result in an estimated savings of \$5,400 annually through the generation of 20,145 kWh a year.

Businesses may also receive grants to help offset the cost and install wind turbines. This program is also capped at 50 percent of the cost up to \$200,000.

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State Success Story

Columbia College Receives SEP Funds for Clean Energy Project

The South Carolina Budget and Control Board’s State Energy Office awarded Columbia College \$193,530 in federal SEP funding to install solar thermal water heating on student dormitories. The college installed solar thermal water heating systems in two dormitories, the Mirse and Wesley Halls. The 32 panel solar system replaced steam water heating produced from natural gas.

This clean energy project funded by the Energy Office is part of \$3.3 million renewable and alternative energy grants awarded to 12 non-profit organizations and government entities in South Carolina.

“By installing these solar thermal water heaters, Columbia College will make significant steps towards energy efficiency as the college replaces older systems which cost much more to operate,” John Clark, director of the Energy Office, said.

Other South Carolina projects funded through this program are:

- \$500,000 to Renewable Water Resources (ReWa) to install generators that create electricity from methane gas released from the breakdown of waste from the water waste treatment process.
- \$500,000 to Claflin University to install the first solar adsorption cooling system on its campus that uses solar power to create hot water and then cool water to provide a portion of its heating and cooling needs for the new Bio-Energy Park and Research Campus.
- \$500,000 to Central Electric Power Cooperative, Inc. to install 70 solar water heating systems in homes of members of York, Berkeley, Santee and Pee Dee Electric Cooperatives.
- \$475,000 to Santee Cooper to install solar panels on the roof of its buildings in Myrtle Beach, creating the “Grand Strand Solar Station,” the largest solar system in the state.
- \$340,000 to Furman University to install solar panels on the roof of the Physical Activities Center which will provide electricity to the campus.

- \$240,000 to Plug In Carolina to install 28 electric vehicle charging stations in Union, Rock Hill and Myrtle Beach.
- \$213,521 to The Columbia Museum of Art to install solar panels on the roof of its building and to create a monitoring system where patrons will be able to view the amount of power created.
- \$176,626 to the North Myrtle Beach Chamber of Commerce to install seven wind turbines on ocean-front high rise towers.
- \$111,500 to the St. Christopher Camp and Conference Center on Johns Island, S.C. to install 17 solar hot water systems on 15 housing structures and conference center.
- \$17,239 to the Powdersville Water District to install solar panels to provide power to a tank facility.

TENNESSEE

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State Success Story

Tennessee Small Businesses See Solar as New Possibility

Two years ago, if you told Jan and Karl Heinrich, owners of H&H Design, that their rural, family-owned custom piping business in Gallatin, Tenn., would be part of the rapid expansion of installed solar capacity in the state, both would have responded skeptically.

“It just wasn’t anything I had thought about until June of this year,” Heinrich said.

This was before Heinrich learned that the State of Tennessee had established the Tennessee Solar Institute and launched the Solar Installation Grant program earlier this year. The program paid off for Heinrich – H&H Design received a \$67,000 grant under the Solar Installation Grant Program to install a 34.56 kW solar PV system on its rooftop.

“I started seeing news stories about other solar projects being developed in the state and decided to look into the possibility of installing a system at our office,” Heinrich said. “If it wasn’t a positive investment, we wouldn’t have done it, but the payoff and rate of return was a good fit for us personally. As a small business, anything that helps reduce our costs will help sustain our business long term, and this system will do just that. This system will save us thousands per year in energy costs.”

H&H Design is one of the first recipients of the Solar Installation Grants awarded by the Tennessee Solar Institute. Since the launch of the program, 108 grants totaling just over \$9 million have been awarded by the Institute. Once complete, these projects will bring an estimated 5.8 MW of additional installed nameplate solar capacity to the electrical grid in Tennessee. The \$9 million of grant funds has leveraged approximately \$24 million of additional private



capital, bringing the aggregate investment of all projects to just over \$33 million.

“The Solar Installation grants are an important tool in the expansion of Tennessee's renewable energy portfolio and one of the reasons Tennessee is considered a leader in the deployment of clean energy technology under Governor Bredesen," said Matt Kisber, commissioner, Tennessee Department of Economic and Community Development. "Tennessee companies, like H&H Design, understand using renewable energy makes them more competitive, and they should be applauded for their vision."

H&H's story is illustrative of the rapid expansion of the solar industry over the last three years in Tennessee. In 2008, less than 1 MW of solar was installed in Tennessee; today, there is about 2.5 MW. By June 1, 2011, it is projected that there will be 15 to 20 MW of solar capacity on Tennessee's electrical grid.

This rapid increase is due much in part to a push by the State of Tennessee to boost solar capacity through a series of programs, including Tennessee Governor Phil Bredesen's Volunteer State Solar Initiative.

The Volunteer State Solar Initiative, a comprehensive solar energy and economic development program focusing on job creation, education, renewable power production and technology commercialization was established in 2009 using funds received by the Department of Economic and Community Development through the State Energy Program. The Tennessee Solar Institute is a component of the Initiative and will focus on industry partnerships to improve the affordability and efficiency of solar products for consumers like Jan and Karl Heinrich.

The state-established Tennessee Solar Institute is a center of excellence between the University of Tennessee and Oak Ridge National Laboratory that brings together scientists, engineers and technical experts with business leaders and policymakers to help speed the deployment of solar photovoltaic technology. Its mission is to advance the understanding of solar innovation and to inspire new ideas that speed the deployment and implementation of solar-based technology in Tennessee.

U.S. VIRGIN ISLANDS

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State Success Story

Virgin Island Rebates are Hot! Hot!! Hot!!!

The Virgin Islands Energy Office, a division of the Governor's Office, is using SEP funding for rebates and loans for solar water heating systems. A television advertisement campaign promoting the programs asks viewers if they "Want to get into hot water?" The ad goes on to describe solar water heating as "Hot! Hot!! Hot!!!"

The programs are designed so homeowners can purchase a solar water heater with no money down through a combination of an instant \$1,000 rebate, and up to \$3,500 in loans. Launched earlier this summer, the programs' goals are to facilitate the installation of 1,000 new solar water heaters throughout the territory. The loans would be repaid through the homeowner's electric bill, and the payment would be offset by the savings, estimated at about 30 percent of the bill.

These programs are helping Virgin Island residents comply with a new law that Gov. John P. deJongh Jr. signed last year mandating the installation of solar water heaters in new developments. The law states that the "developer shall use energy-efficient solar systems for providing not less than 70 percent of water heating."

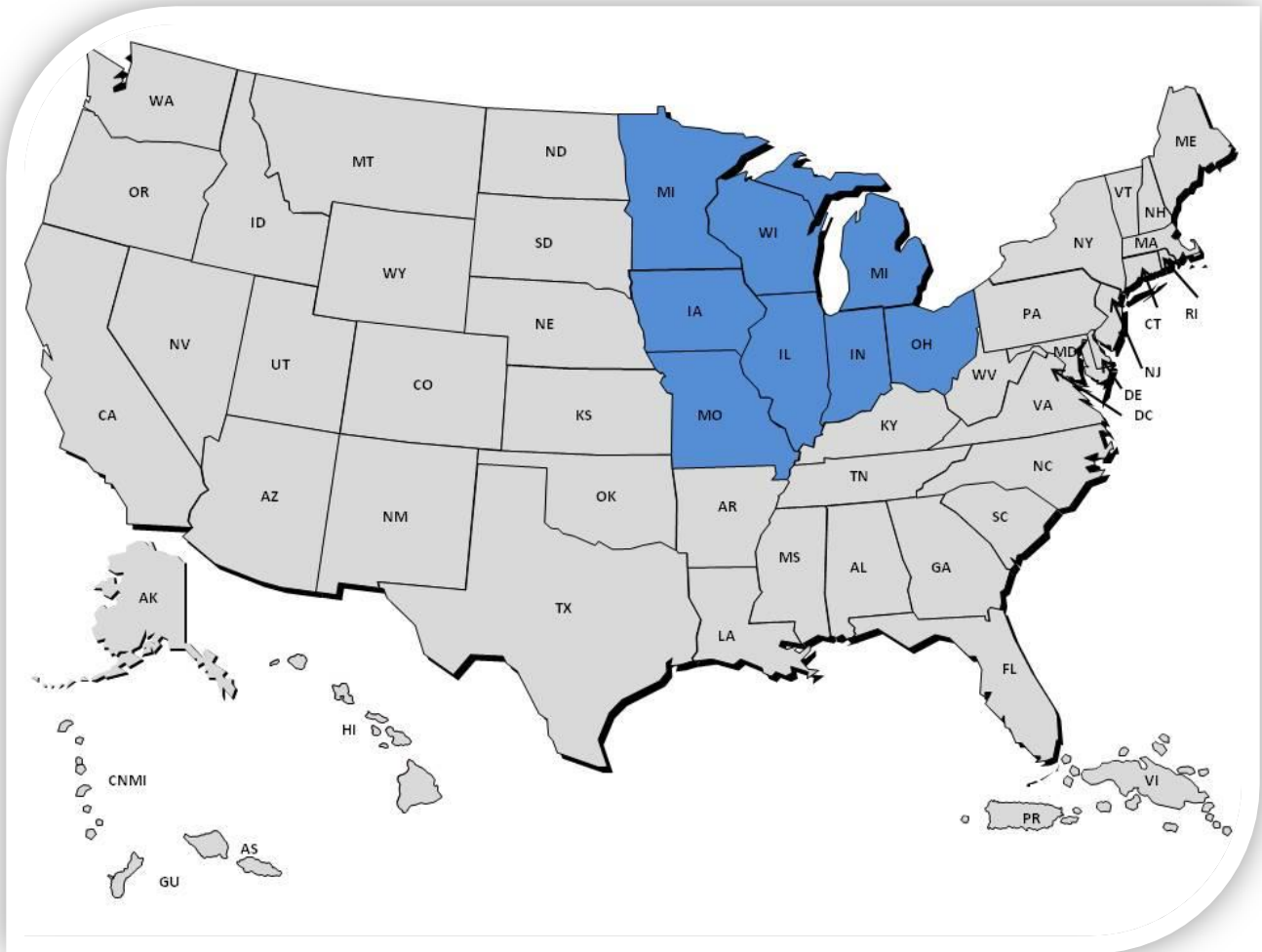
DeJongh said the SEP-funded programs available through the Energy Office are consistent with the dual objectives of achieving energy efficiency and reducing the cost to the ratepayer.

"Our focus continues to be on programs that educate the community on ways they can reduce energy costs and then having the means to take advantage of the opportunities, especially during these financially difficult times," he said.



In an effort to make sure that a green workforce can handle the increase demand created by the loans and rebates, the Energy Office has implemented a new training program in partnership with the Career Training and Education Center that is designed to provide training for 26 people to become solar water heater installers.

MIDWEST REGION



- ILLINOIS
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- OHIO
- WISCONSIN

ILLINOIS

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State Success Story

Geothermal Heating and Cooling Systems Replace Outdated HVAC Systems

Four Rantoul, Illinois schools have used a \$480,000 grant to install geothermal heating and cooling systems. The project will significantly reduce the district's energy usage and resulted in the hiring of approximately 145 local workers.

“Through the State’s Energy Plan, we are investing in projects that will support Illinois’ green industry and further our long-term energy goals,” said Illinois Governor Pat Quinn. “I commend Rantoul City Schools for recognizing the value of conservation measures like this in protecting the environment, saving money and making a more comfortable learning environment for their students.”

The grant was awarded to Rantoul City School District 137 through the Thermal Efficiency for Public Facilities program, a component of the State’s Energy Plan, administered by the Illinois Department of Commerce and Economic Opportunity (DCEO) and funded through the State Energy Program (SEP).

The project will result in more than 118,000 therms of natural gas being saved, enough to heat approximately 125 homes for a year.

“Conservation is good for the environment and makes good business sense,” said DCEO Director Warren Ribley. “This project is a great example of how organizations of all sizes can incorporate environmental stewardship into their business models while improving their bottom line.”

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State Success Story

CHIP Program Funds 11 Industrial Energy Efficiency Upgrades

If you want to make a big dent in energy usage, start with the biggest energy users. That is the theory behind the Indiana CHIP program that provided \$2.2 million in grants to commercial or industrial facilities. Eleven companies in Indiana were selected as part of the Conserving Hoosier Industrial Power (CHIP) grant program. The grants, ranging from \$52,000 to \$400,000 were awarded through a competitive process funded by the State Energy Program.

“These companies will now be able to make significant reductions in their energy consumption,” said Lt. Governor Becky Skillman. “Industrial users are the largest energy users in Indiana. Now these 11 companies can be among the largest energy savers as well. Every dollar that is saved through energy efficiency can go toward business retention and jobs.”

The winning applications came from:

Company/Organization	Facility Location (County)	Grant Amount
Analytical Engineering, Inc.	Columbus (Bartholomew)	\$200,000.00
ArcelorMittal Burns Harbor	Burns Harbor (Porter)	\$375,693.00
Atlas Foundry	Marion (Grant)	\$121,424.00
Frito-Lay, Inc.	Frankfort (Clinton)	\$400,000.00
Haynes International, Inc.	Kokomo (Howard)	\$200,100.00
Koetter & Smith, Inc	Borden (Floyd)	\$ 76,653.00
Louisiana Pacific	Middlebury (Elkhart)	\$114,748.00
Minnich Poultry	Portland (Jay)	\$ 52,117.00
Perennial Washington Street, LLC	Indianapolis (Marion)	\$400,000.00
ThyssenKrupp Waupaca Plant 5	Tell City (Perry)	\$ 61,163.00
Vertellus Specialties Inc	Indianapolis (Marion)	\$200,000.00

Beginning in July, 2010, interested companies went through an online application process. Eligible applicants included commercial entities with project facilities of at least 30,000 square feet and annual energy costs in excess of \$30,000 and industrial users with minimum annual energy costs of \$100,000

“Energy efficient retrofits of existing structures help conserve energy and manage costs,” said Kristen Trovillion, Director of Programs at the Indiana Office of Energy Development. “In a time of rising energy costs and increased energy supply volatility, it is vital to our economic future to decrease energy consumption.”

Eligible project technologies included lighting, lighting controls/sensor, chillers, furnaces, boilers, heat pumps and building insulation. The CHIP program is funded through federal State Energy Program (SEP) funds and is administered through the Indiana Office of Energy Development, which Lt. Governor Skillman oversees.



IOWA

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State Success Story

Energy Efficiency Demonstration Benefits Apartments and Tenants

At a time when many apartment complex owners are more concerned about finding renters, Sun Prairie Vista Court Apartments is concentrating on reducing energy use by implementing and documenting the performance of new, energy-efficient technologies. “The most important part of this project is that it can be duplicated and can motivate others to save energy. We are going to change the way apartment owners build and maintain their buildings,” said Keith Denner, owner of Sun Prairie Apartments.

With a grant from the Iowa Office of Energy Independence funded by the State Energy Program and over \$1.7 million in matching dollars by Sun Prairie, the project will further its strategy in utilizing new technologies to complete a number of energy efficiency projects that include installing:

- Variable speed pumps
- Thermal solar collectors to heat water
- Low-volume flush toilets
- High-efficiency boilers
- Energy Star commercial washers
- Induction and LED exterior lighting
- Energy Star metal roofing shingles

Sun Prairie has agreed to be a demonstration site accessible to the public for teaching others about the benefits of the efficiency upgrades. By setting aside a demonstration classroom where the new technologies will be displayed, building owners and others who are unfamiliar with or unsure of the performance of the new technologies will be able to see firsthand the effectiveness, as well as the money saving potential, of the energy-efficient products. To measure the benefits of the efficiency upgrades, the apartment complex will monitor before and after results, including real-life temperature information from the metal shingles and water and energy use.



Tenants are benefiting from the community's energy efficiency. Sun Prairie guarantees electricity costs based on the size of the unit, without usage restrictions, and pays one half of the cost that exceeds the guaranteed cost if a tenant goes over. This kind of assurance gives the apartment complex incentive to maintain and improve energy efficiency for its tenants while saving tenants money. In 2008, Sun Prairie only paid \$2,000 for costs that exceeded the guaranteed amounts.

This demonstration project is expected to employ 21 individuals responsible for installing the energy-efficient products, as well as create an annual energy savings of \$111,417. This project has not only received the attention of other apartment complex owners, but also the West Des Moines Police Department, who is interested in learning more about how the new exterior lighting technologies improve visibility and security.

Energy efficiency is not a new focus for Sun Prairie Vista Apartments. When the apartment complex was built in 1987, owner Keith Denner crafted a plan to build energy-efficient, low-maintenance buildings. He invested \$5,000 more for each of the 1,075 units and proved the payback more than justified the expenditures.

Utilizing readily available technologies has been a guiding principle of Denner's over the years and he has proven that higher start-up costs of energy-efficient construction and upgrades can be profitable in the long run because of the resulting lower operational costs. As an innovator in the conservation of natural resources, the apartment complex also harnesses the power of nature, having planted 15,000 trees and shrubs on the property, which reduces the effects of the sun and helps cut utility costs.

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State Success Story

Michigan Lessens Burden on Tax Payers with Public Building Energy Efficiency

A 9.85 kilowatt solar panel array has been installed at the Michigan Department of Natural Resources and Environment (DNRE)'s Saginaw Bay District Office building as a result of a cooperative agreement between the Michigan Department of Energy, Labor and Economic Growth (DELEG) and DNRE. The 25,000 square foot building will generate approximately 60 percent of its electrical needs with the solar panel array and a previously installed wind turbine which was installed in the fall of 2009.

This project was funded through the State Energy Program (SEP) through the DELEG with the understanding that the DNRE will maintain the equipment and monitor system performance which will benefit future solar projects.

"The goals of the State Energy Program are to increase energy efficiency to reduce energy costs for consumers, businesses, and government and reduce reliance on imported energy," said DELEG Acting Director Andrew S. Levin. "By retrofitting state-owned buildings we are saving taxpayer dollars while reducing the impact of energy production and use on the environment."

These projects continue the momentum of state government leading by example in retrofitting their building stock. In addition, the projects will demonstrate building retrofit technologies that can be adopted and used by local units of government and others, and will collect energy savings data to help develop further energy savings strategies.

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State Success Story

Minnesota Project ReEnergize is Model Program

Energy Efficiency Rebates Delight Homeowners, Contractors Alike

Project ReEnergize, Minnesota’s energy efficiency rebate program designed to save homeowners energy and money and create jobs in the residential construction industry, was so successful that it’s been called a model for other proposed federal SEP projects, including the Home Star program.

“I don’t think I have ever seen a government-generated program that has directly assisted the building industry as Project ReEnergize has,” said Pam Perri Weaver, president of the Builders Association of Minnesota (BAM). “Project ReEnergize created an environment where consumers wanted to spend money. Consumer confidence soared with the help of Project ReEnergize.”

Project ReEnergize was the \$3 million program funded by the DOE State Energy Program and administered by BAM on behalf of the Minnesota Department of Commerce. The program, which launched in the fall of 2009 with a half-day training for qualified licensed contractors, issued average rebates of \$2,200 to about 1,200 homeowners. The average cost per home improvement project was \$13,700. The program was so popular that rebates were fully committed by March 2010.



Energy efficiency measures eligible for rebate included replacement ENERGY STAR windows without attic air sealing (\$250 per window) and with attic sealing (\$300 per window), advanced air sealing of attics (\$800), exterior wall insulation (\$800), and replacing orphaned atmospherically vented water heaters (\$750). Maximum rebate was \$4,000 per home, or \$4,750 if replacing an orphaned water heater.

Construction Field Gets Boost

“We found that for every \$1 in rebate money issued by Project ReEnergize, consumers spent \$5 upgrading their homes with energy efficient improvements and other upgrades,” Perri Weaver said. “Project ReEnergize was a consumer-based program, one in which government looked to the private market to create construction jobs and encourage homeowners to upgrade their homes.”

Contractors agree that the program gave a boost to their business, but they are anxious for more programs like Project ReEnergize. Eligible contractors were limited to two rebate packages each. “I got two (rebate) packages, but I could have sold 20,” said David Raskob of DB Raskob Construction in Maple Plain, Minn. “Many clients with limited funds were on the fence about doing work, but when Project ReEnergize came around they said, ‘Let’s do it.’ Many others are still waiting for new incentives.”

One of Raskob’s rebate jobs went to Brenda Miller, a single mother from Shorewood, Minn., who had her attic air sealed, insulation blown in (20 inches R-44), and 12 windows replaced. Miller’s home improvements cost \$10,200, but with a \$4,000 rebate she paid only \$6,200. “I did it because of the discount,” she said. “I couldn’t afford it otherwise. And now I look forward to significant savings on my heating bill next winter.”

“Brenda’s home needed the work badly,” said Raskob. “It was heartwarming to be able to make it happen for her.”

Rebates Spur Additional Construction

Project ReEnergize propelled some rebate recipients to proceed with additional home improvement work, according to contractor Shawn Nelson of New Spaces in Burnsville. For instance, one of Nelson’s Project ReEnergize clients in Eagan received attic air sealing, insulation, eight new windows for the upper level, and a new water heater. The client’s rebate of \$4,750 convinced the family to go ahead on a kitchen remodel.

“We had a lot of people interested in Project ReEnergize,” said Nelson. “But a lot did not move forward when they couldn’t get the rebate. I’d love to see more funding—I’ve got a long list of people waiting.”

Said Jim Barrato of Baratto Brothers Construction in Cross Lake, Minnesota: “Project ReEnergize was money well spent. It made homes more energy efficient and it put people to work. However, in my opinion, it should be done on a much larger scale. If the country could spend a few billion dollars on this, it would have a huge economic impact.

“Project ReEnergize gave a great boost to our industry as a whole,” added Baratto, “because it got so many different people involved—insulators, painters, HVAC installers, inspectors, manufacturers and more. It was a great idea and neat that it came from Minnesota. BAM worked hard on this and made the most of the funds it received.”

Creating ‘a Smarter Workforce’

Project ReEnergize effectively forged a partnership between contractors and consumers, said Perri Weaver. “We trained a whole group of (Minnesota-based) contractors with the intent of assisting homeowners to determine if they qualify for rebates or Fix-Up Fund home improvement loans. In essence, the training has created a smarter workforce. Project ReEnergize has become a stepping stone for working with government to improve energy efficiency and stimulate the home retrofit market.”

MISSOURI

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State Success Story

Department Awards \$2.25 Million in *Energize Missouri Renewable Energy Biogas Grants*

The Missouri Department of Natural Resources announced the five selected projects for subgrant awards totaling \$2.25 million to develop farm and landfill biogas projects in the state.

The department has made the *Energize Missouri Renewable Energy Biogas Grants* available through funding received from the U.S. Department of Energy's State Energy Program. The subgrant funds will support agricultural and industrial projects that use anaerobic digestion-to-energy systems and landfill biogas-to-energy projects to produce biopower, bioheat or other forms of bioenergy.

“Developing Missouri’s bioenergy potential when it offers energy and environmental benefits offers us a host of advantages,” said Department Director Mark N. Templeton. “Using these Missouri-based renewable resources to generate heat and electricity creates jobs, boosts local economies, reduces greenhouse gas emissions and bolsters our energy security.”

The subgrant recipients include:

- **Hampton Feedlot Inc.** - an animal feeding operation in Chariton County, will receive a \$450,000 subgrant to assist in the installation of an anaerobic digester to renewable electricity system which uses cattle manure. The total project cost is nearly \$4 million.
- **JCEF BioStar LLC** - a biogas technology developer in Kansas City will receive a \$450,000 subgrant to assist in the installation of anaerobic digesters for biogas production on Johnson County Egg Farm in Johnson County. The project will also produce premium organic fertilizer through a solid recovery process. The total project cost is almost \$13 million.
- **Element Markets LFG LLC** - a renewable energy project developer in Houston, TX, will receive a \$450,000 subgrant to assist in the implementation of a landfill gas to electricity project at Maple Hill Landfill in Macon County. The total project cost is approximately \$5 million.
- **Fred Weber Inc.** - a solid waste services company in St Louis County, will receive a \$450,000 subgrant to assist in the expansion of its existing landfill gas collection system

to produce more biogas for direct heating usage and electricity generation. The total project cost is approximately \$2 million.

- **KCP&L Greater Missouri Operations Company** - an investor-owned utility in Kansas City, will receive a \$450,000 subgrant to assist in the implementation of a landfill gas to electricity project at the City of St. Joseph Landfill in Buchanan County. The total project cost is nearly \$6 million.

Together the recipients will receive \$2.25 million to support renewable biogas projects. Overall, the projects are expected to create about 30 permanent jobs and more than 100 temporary jobs. The projects will produce more than 1.2 trillion BTU of biogas, and generate more than 30 million kilowatt hours of green electricity annually. In addition to reducing water pollution and odors, the projects will reduce greenhouse gas emissions by the equivalent of more than 400,000 metric tons of CO₂ annually. This reduction is the equivalent of removing more than 75,000 passenger vehicles from the road.

The department's Division of Energy will administer the *Energize Missouri Renewable Energy Biogas Grants program*. All funded projects need to be completed by February 28, 2012 in order to be eligible for cost reimbursement.

The department is administering more than \$200 million in State Energy Program funding to support *Energize Missouri* projects to create jobs and improve energy efficiencies and renewable energy for Missouri. The department is committed to working closely with businesses, industries and communities to assist with funding efforts that support energy efficiency and renewable energy projects and provide financial savings.

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State Success Story

Ohio Bakery Helps Community Turn Back Hard Economic Times

New Horizon Bakery, a family-owned bakery in Norwalk, Ohio, is one of the town's larger manufacturers and employers. Being a major employer, New Horizon is an important ingredient to the resiliency of the small community -- especially during hard times.

In February of 2009, Norwalk and surrounding Huron County's unemployment rate exceeded 18 percent, the highest rate in the state of Ohio. The company's importance to Norwalk was magnified even more when it began to discuss expansion for its hamburger bun and muffin operations that supplies major food corporations including McDonald's.

Despite the economic downturn, that expansion became a reality earlier this summer due largely to a grant from the Ohio Energy Resources Division, funded by the State Energy Program. As a result, the 160 employees at New Horizons will soon be joined by 25 new employees and the company will remain an important part of the Norwalk community for many years to come.



SEP Provides Opportunity to Grow

The company's growth started with a \$1 million award from the State Energy Program's Targeting Industry Efficiency Grant. New Horizons used the SEP funds for the purchase of new energy efficient bake ovens that are now producing bread products for 1,330 fast food restaurants in seven states. The new ovens replaced 42 year-old equipment and have increased energy efficiency by 25 percent and increase production by approximately 20 percent

"This (grant) program was a game changer," said Ellen Heinz, Norwalk Economic Development Director. "New Horizons could have done this project at their Indiana facility, but they chose to reinvest in Ohio because of the enormous opportunity this grant program provided them."

Heinz said that over the past 18 months the Norwalk businesses and community stakeholders have worked hard to retain jobs and bring back those lost. New Horizon's expansion is a huge reward for their efforts.

"This grant award not only retained 160 jobs and helped this expansion become a reality, it also paved the way for their third expansion in 12 months," Heinz said. "This latest development will create 25 jobs, helping support 25 more families in a community that was hit hard by this economy."

Trina Bediako, Executive Vice-President of New Horizons, credits Heinz with playing a pivotal role in their expansion in Norwalk.

"Ellen provided instrumental guidance on what funds were available," Bediako says. "Once we found out about the (SEP funding) options, we went to work to put together our best presentation."

Energy Savings Pay Big Returns

New Horizons was one of 18 grantees that received a total of \$11.8 million from the program administered by Ohio Energy Office. Grants were awarded to a variety of companies representing a wide-spectrum of industries including aerospace, agriculture, motor vehicle parts and food processing. The funds will help these industries adopt energy efficient technologies in their manufacturing processes.

While the new ovens have increased the company's production capacity, growing from 4000 to 5000 dozen buns per hour, they have not increased their production costs. For New Horizons, the new energy efficient technology means they will not only use less energy in their baking operation, but the waste heat will be used in the proofer -- a device that allows bread to rise -- and a tray wash system that will eliminate the use of an existing boiler in the bakery.

But New Horizon's Bediako puts it all into perspective, "Local and state-wide support have allowed us to grow," she says.

WISCONSIN

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State Success Story

Wisconsin Invests in Companies to Reduce Greenhouse Gases and Cut Energy Costs

Wisconsin recently announced \$5 million in funding for Milwaukee Metropolitan Sewerage District (MMSD) in Milwaukee, Milwaukee County, and \$3 million for Price Engineering Co, Inc. in Hartland, Waukesha County. The funding will allow both companies to invest in their operations. It comes from the State Energy Program (SEP), which is administered by the Wisconsin Office of Energy Independence.

"Investing in companies that make efforts to reduce greenhouse gases and cut energy costs is vital to the success of Wisconsin," Governor Jim Doyle said. "I am pleased that we could help Milwaukee Metropolitan Sewerage District and Price Engineering Co, Inc. address environmental challenges."

"This green energy project will bring tens of millions of dollars in savings to MMSD customers," Milwaukee Mayor Tom Barrett said. "I want to thank the State Energy Program for supporting this important landfill gas pipeline project."

"The SEP funds will allow us to purchase equipment for the gear-driven wind turbine remanufacturing facility," Price Engineering Co, Inc. President Tom Price said. "It will also allow us to develop funds for remote monitoring and diagnostics. This is a new and important market and we plan to be a leader in it."

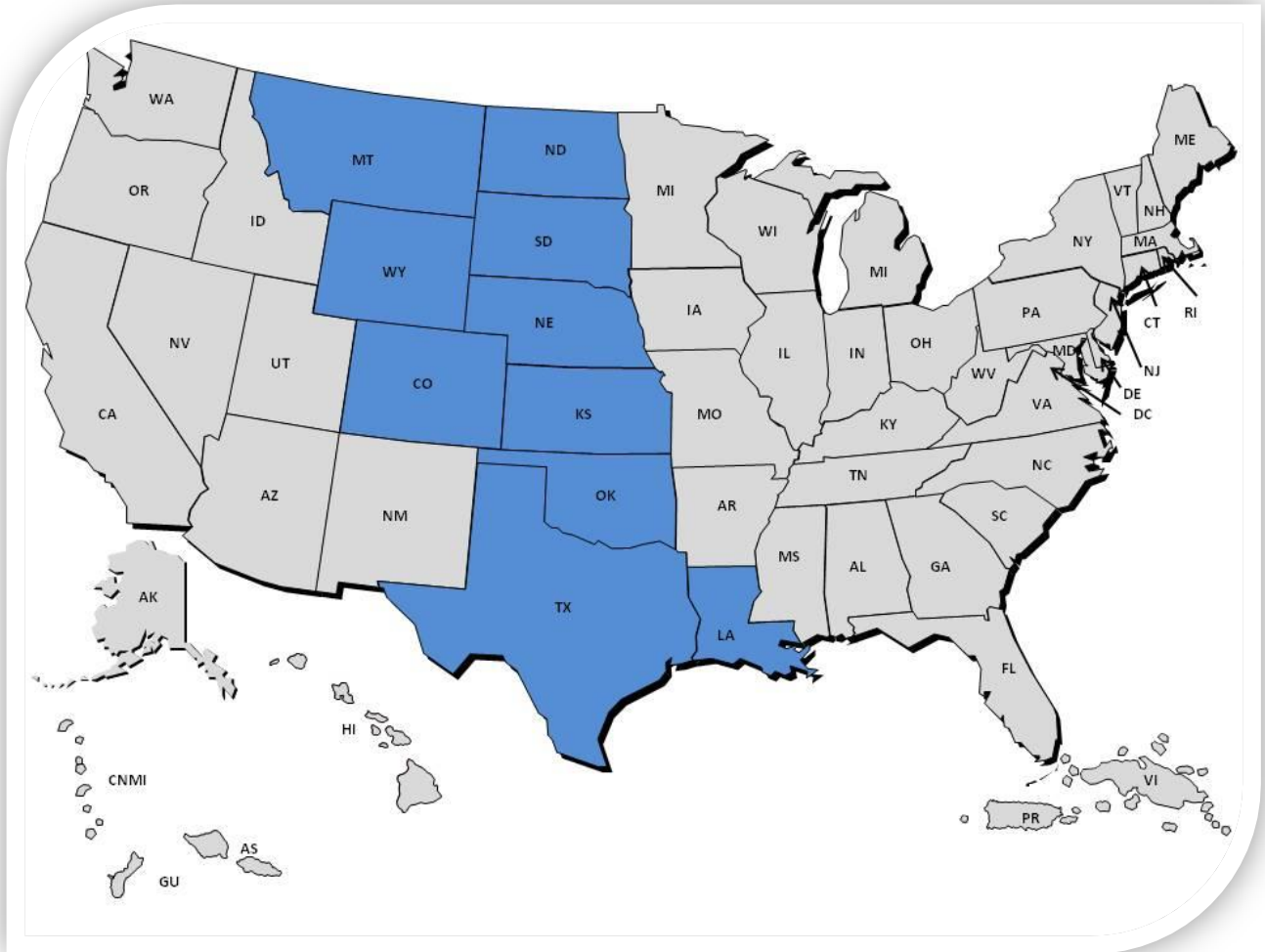
Milwaukee Metropolitan Sewerage District is a regional government agency that provides water reclamation and flood management services for communities in the Greater Milwaukee Area. MMSD will purchase equipment and install new turbines at its facility that manufactures natural organic fertilizer from biosolids. The State Energy Program funds will be used to purchase the turbines that are capable of burning landfill gas. The landfill gas will be converted to electricity and used in the manufacturing process. Total project cost is \$88 million.

Price Engineering Co, Inc. is establishing a wind-turbine service facility in Hartland. The company will provide maintenance services and repairs for wind-turbine gear-driven systems. The SEP funds will allow it to purchase equipment for the gear-drive remanufacturing facility. The facility will include material handling, testing capabilities, and a gear-drive spares-

management process to ensure replacement of worn gear boxes in turbines. This project creates 111 jobs and represents a total investment of \$9 million.

The State Energy Program has helped several Milwaukee area companies develop jobs and investment. Among these are Weldall Manufacturing, Waukesha; TecStar Manufacturing, Germantown; Helios USA, Milwaukee; ZBB Energy Corporation, Menomonee Falls; and Idle Free Technologies, Watertown.

CENTRAL REGION



- COLORADO
- KANSAS
- LOUISIANA
- MONTANA
- NEBRASKA
- NORTH DAKOTA
- OKLAHOMA
- SOUTH DAKOTA
- TEXAS
- WYOMING

COLORADO

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State Success Story

Colorado School Reaps Big Benefits from Energy Project

For more than a decade, students and teachers at Calhan School have been sweltering under the oppression of worn-out boilers and failing temperature controls in their rural school northeast of Colorado Springs.

“I’ve been teaching at Calhan since 1993, and I remember there were some hot afternoons where you could barely catch your breath,” recalls Linda Miller, now district superintendent. “It was so hard to teach – and learn. We have a four-day week; classes go from 8 to 4; I would venture to guess not much learning took place after 2 p.m. on some of those days.”



Those days are over come the fall of 2010, when a new highly efficient heating and cooling system using a ground-source system will transform the school’s indoor environment – and save taxpayers tens of thousands of dollars a year in utility costs. The ground-source system uses the relatively constant temperature of the earth to maintain comfortable temperatures indoors using to 40 to 70 percent less energy than conventional systems.

“The school had ancient equipment, with failures and maintenance issues, indoor air quality problems due to a lack of ventilation, the need to add cooling because it’s hot in Calhan, and they used propane as their main source of heating,” explained Leslie Larocque, Business Development Manager for McKinstry, the contractor on the Calhan School project. “All those things combined made it an obvious choice to go to a ground-source heat pump system, so they could add cooling without adding energy costs,” Larocque added.

Using the ground-source system eliminates the need for costly propane fuel to run the school’s antiquated boilers. It also does away with the patchwork maintenance costs – tens of thousands

of dollars a year - that were required to keep the boilers operating. Eliminating propane, adding efficient cooling technology and reducing maintenance costs could save the school as much as \$80,000 a year, Larocque said.

Partnership Creates Economic Splash for Community

The project benefited from a partnership with various Colorado government agencies. The Governor's Energy Office provided a \$305,000 New Energy Economic Development (NEED) grant – its largest NEED grant ever. The Department of Local Affairs contributed \$400,000. The Colorado Department of Education put up nearly \$1.6 million and the Calhan school district contributed \$725,000 for the roughly \$3 million project.

Not only does the new project promise to make life – and learning – far better for Calhan School's 600 students, teachers and administrators, it has created an exciting economic splash in this tight-knit town, as McKinstry turned to area companies for much of the work. Calhan graduates now working for local contractors are among those who have worked on installation of the new system, Miller said.

“You drive by our one and only hotel, and you see sub-contractors and their vans and trucks and how they're putting money into our economy,” Miller said. “This is huge for the town of Calhan. It makes me very proud of this project.”

KANSAS

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State Success Story

State Energy Program Trains Energy Auditors

The State of Kansas has made energy efficiency a focus of its programs. Key among these efforts is a program focused on training and certifying residential energy auditors.

"Energy auditors inspect homes to identify energy-saving measures that reduce energy costs, while increasing comfort and safety," said Ryan Freed, who manages the State Energy Programs at the State Energy Office, a division of the Kansas Corporation Commission.

"Following an inspection of the property, the energy auditor provides the homeowner with a list of recommended improvements, the cost of which is covered by the estimated savings," Freed said.



Number of Energy Auditors Multiply as a Result of Trainings

Currently, 60 energy auditors have received training and as a result are certified to work in another SEP funded program, Efficiency Kansas, which is a residential energy efficiency revolving loan program. Of the 60 certified energy auditors now working in the state, many of these are contractors that added energy auditing to the services they offer in their heating and cooling, insulation, and remodeling businesses after participating in training offered by the Energy Office.

While the number of auditors actively working in the state has increased significantly since the revolving loan program launched last November—from around 10 to 60—the Energy Office has identified the need for more auditors in Western Kansas. Earlier this summer two auditor trainings were held in Western Kansas to help fill that gap.

The week-long training programs are provided by one of three certified providers that have been approved by the Energy Office to offer trainings that qualify the auditor to work under the residential revolving loan program.

In addition to attending the training, to become certified an energy auditor must pass an exam, complete a field data collection test, and successfully submit two audits for desk review.

"Energy auditors are a crucial part of Efficiency Kansas' public-private partnership," said Freed. "The program was designed to channel SEP funds through private businesses into local communities. We hope these trainings will help get more auditors working in currently underserved areas."

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State Success Story

SEP Funds Have Louisiana Homeowners Seeing Green

The Louisiana Department of Natural Resources (DNR) has a long track record of using rebates to promote energy savings to the Bayou State's homeowners. Following the recent success of its Appliance Rebate Program, the DNR recently rolled out an expanded version of its decade-old Home Energy Rebate Option (HERO) program.

The State Energy Program (SEP) funding provided to Louisiana allowed the DNR an opportunity to expand and enhance its successful HERO program. The program, which originally launched in 1999, provides homeowners rebates for making their homes more energy efficient.

"The HERO program has been a popular program within DNR for many years," said DNR Secretary Robert D. Harper, "but the focus has been on retrofits of existing homes."

In May the HERO Program was expanded using State Energy Program funding.

"The original HERO Program that was in place prior to SEP funding only applied to existing homes and awarded a maximum rebate of \$2,000" said Buddy Justice, who is overseeing implementation of the expanded HERO program for the DNR. "The SEP funding allowed us to expand the program to include new homes and existing commercial properties as well as increase the rebate for existing homes to a maximum of \$3,000."

More than \$15 million in SEP funds have been allocated to the program to cover the cost of expanding both the rebate amount and the categories of property owners who can apply. The amount of the rebate is based solely on energy savings and will include a one to two cent SEP incentive to each rebate for every KWh saved over a 15 year period.

"The benefit of expanding this program, beyond increasing the number of Louisiana property owners who will enjoy savings in the short and long-term, is that it generates greater awareness

in a wider range of people throughout the state of what opportunities exist to be more energy efficient,” said Lt. Governor Scott Angelle.

Rebate Equals Lower Utility Costs

The DNR estimates that the HERO program will mean lower utility costs for years to come for property owners. Energy savings estimated at \$900 per year per home will result based on the highest amount that an existing home would be eligible for under the rebate program.

For homeowners, the rebates can be as high as \$3,000, depending on the level of energy savings obtained. Existing homes must show a minimum 30 percent reduction in energy usage, while new homes must meet certain federal guidelines to qualify.

For commercial buildings, the rebates can be as high as \$5,000, depending on the level of energy savings achieved from the retrofit. The minimum energy reduction for commercial buildings to meet HERO standards is 10 percent.

Putting Louisiana to Work

As with the original HERO program, every home and commercial property requires an energy rating from a specially trained “home energy rater.” The energy rater is selected by the homeowner from a list of qualified providers maintained by the DNR.

Since the program expanded the demand for energy raters has increased resulting in the need for more certified energy raters. In the first two months of the expanded program Louisiana increased the number of RESNET certified home energy raters from 30 to over 80 statewide.

Jennifer Waddick, a LEED specialist with The Energy Group in Baton Rouge, has been working on HERO projects since the program expanded. For the past five years The Energy Group has provided energy modeling and consulting for residential and commercial buildings.

Waddick says she has noticed a small uptick in business since the program expanded with most of the work coming from changing out HVAC equipment and adding insulation. "It is still not widely known," she adds.

But that is set to change with the launch of a major marketing campaign to promote the expanded program.

Since May the expanded program has processed 421 rebate applications from existing homeowners. The program has budgeted for 2,528 rebates. In addition to the existing homes, 49 new homes and five commercial properties also received rebates for energy improvements. The budget provides for 2,247 rebates to new homes and 1,264 rebates for existing commercial properties.

As the program ramps-up the demand for more home energy raters will increase and the DNR estimates more than 600 full-time jobs will result from the energy efficient improvements being implemented in homes and commercial buildings throughout the State.

Benefits to Homeowners Threefold

From May through August, more than \$1 million in SEP funds were leveraged by homeowners who successfully completed energy retrofits in their homes and as a result received rebate checks by mail.

In addition to the rebate and lower utility costs, homeowners are benefitting from the expanded network of certified energy professionals working in Louisiana.

“The strength of this program is that property owners get the opportunity to work with professionals to better understand where best practices and best values are in energy efficiency,” said Justice.

But the long-term benefits extend beyond the energy cost savings to the increased potential for home values.

“Our association intends to promote the HERO program at every chance we can” said Jon Luther, Executive Vice President of the Home Builder’s Association of Greater New Orleans. “It’s a total benefit to all, and in the long-term, we certainly see the value of homes increasing with the installation of new energy efficient products.”

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State Success Story

Montana Loan Program Creating Jobs and Delivering Economic Benefits

Montana's state building infrastructure and its construction industry are both benefitting greatly from a new energy revolving loan program approved by the state's legislature and signed into law by Governor Brian Schweitzer. The State Buildings Energy Conservation Program Revolving Fund is putting \$22.3 million of State Energy Program (SEP) funds to work in the state.

With almost two decades of experience in retrofitting state government buildings as a foundation, the SEP-funded revolving energy loan program has accelerated the pace of Montana's reinvestment in its public building infrastructure to a level unseen in recent years. Using SEP funds Montana will invest as much in energy retrofits in the next three years as it has in the past 18 years combined. Because the SEP funds are in the form of loans that require repayments from the energy savings, additional projects will result in future years.

But it isn't just the energy improvements to the state building infrastructure that are paying dividends to Montanans. The SEP funds are also providing jobs. Beginning last fall the SEP funded energy loans are having their desired effect by creating jobs.

Louise Moore, Chief of Energy and Pollution Prevention Bureau within the Montana Department of Environmental Quality, discussed job creation and the economic impacts of the State Energy Program at a recent briefing on Capitol Hill. To illustrate these impacts Moore read a letter from Dan Stevenson, a principal of CTA, a large engineering and architectural firm in Montana. CTA was among the first to feel the impact of the SEP funds in Montana.



“The economic downturn of 2008/2009 has taken its toll on CTA, albeit less dramatic than many firms have experienced,” Stevenson wrote in his letter last fall to the Montana Department of Environmental Quality.

Moore quoted Stevenson's letter as it outlined the benefits to his firm of the State Buildings Energy Conservation Program and additional work created by other SEP programs. Prior to the SEP funds being put into the economy, CTA had implemented company-wide reductions in force that impacted 10 percent of its workforce.

"I can emphatically state that SEP funded energy conservation efforts in the State of Montana have preserved jobs in Bozeman and throughout our firm," Stevenson wrote. "In times where every project is a necessary win, these projects that are beneficial to society and grounded in good will and the spirit of public/private cooperation have provided CTA a crucial economic and morale boost."

Stevenson's letter went on to estimate that the cumulative effect of SEP funded energy projects had resulted in the preservation of jobs for more than 20 CTA professionals.

Success Stories Multiplying Throughout the State

Today, there are 89 energy projects being funded with loans through the State Building Conservation Program Revolving Fund. And each of these projects is generating economic activity. These projects include both large and small office buildings, fish hatcheries, traffic signals, state hospitals, maintenance facilities and prisons.

As of July 1, three projects have been completed, 38 are currently in construction, 18 have completed 65 percent or more of the design phase and will be bid this summer and fall, and the remaining 30 are moving quickly through design and analysis. The one-time investment of SEP funds will result in annual savings to Montana of about \$2 million a year, and it provides an on-going, self-funded financing program for additional energy retrofits. These benefits will increase in future years as funds are repaid and new loans are made with the repayments.

Moore said that Montana followed the advice of the Department of Energy by setting up this revolving financing mechanism in an effort to extend the benefits of SEP beyond the three-year initial time period for program implementation. The first step, she explained of the loan process, is an investment grade audit. "If we are going to require a payback and a return on investment, then we need to insure the agencies that these savings are in fact going to be there."

Among the first projects funded was the Montana Veterans Nursing Home in Columbia Falls. The Veterans Nursing Home is a 105-bed facility that offers skilled and intermediate nursing facilities and ancillary services, including an Alzheimer's unit. The facility has a mix of older structures and facilities and additions that date from the 1970s through the early 2000s. Revolving loan funds were used for mechanical and electrical upgrades including modern digital controls, a new high-efficiency boiler, heat recovery system, variable air volume equipment, and a groundwater cooling system.

These energy improvements were completed in June and will save an estimated \$27,000 per year in energy costs. These energy savings will be used to repay the \$400,000 of SEP funding invested in this project, plus the three percent interest charges for the loan. In addition to the SEP funds, an additional \$900,000 of state deferred maintenance funds were leveraged to make for a larger project.

"State agencies are realizing that three-percent interest cost them money," Moore said. "And as a result we will have our first project repaid in about three months, a \$1.2 million project. It is great to be able to revolve that (loan) so quickly."

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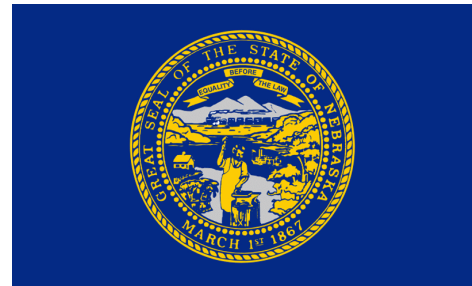
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State Success Story

Solar Sprouts to Life on Nebraska Plains

Nebraska corn farmers have an expression 'knee-high by the fourth of July'. It is an expression used to describe a corn crop which is expected to turn out well. If plants reach knee-high by early July the prospects are good for a bumper crop.

The same could be said of a recently completed solar "plant" installation in Norfolk, Nebraska. The two-story high 44.1 kWh system which rose out of ground in early July to full completion in a matter of weeks may compare favorably to a good Nebraska corn crop.

"The installation went together fairly smoothly," says Brian Wilcox with Nebraska Public Power District (NPPD). "The system is working great."

SEP Provides Funding to Innovative Projects

The solar project at the NPPD's Norfolk Operations Center is one of the largest solar installations of its type in the state. Funded in part through the Nebraska State Energy Office with monies from the State Energy Program (SEP) the project utilizes a tracking system to increase the energy generation capacity of the solar unit.

According to Julie Hendricks of the Nebraska State Energy Office, the project is one of ten the office intends to fund through SEP grants for renewable energy projects.

"We issued a \$5 million competitive grant for advanced renewable energy projects," Hendricks said. "We were looking for projects that were both innovative and commercially available."

The tracking system on the Norfolk project helped the project stand-out on both fronts. Not only was it innovative, it is commercially available within the State of Nebraska.

Manufactured in Columbus, Nebraska by Behlen Manufacturing, the tracking device uses a rail mounted one-axis system developed by a German company to "follow the sun" during the course of daily operations. The tracking system increases the arrays output and improves its ability to

generate electricity at a lower cost per kilowatt hour. Compared to fixed installations, the system is estimated to generate up to 30 percent more energy.

Grant Provides New Opportunity for Nebraska Manufacturer

The German company that developed the tracking system, Suncarrier, recently partnered with Behlen Manufacturing to fabricate the support structure for the solar photovoltaic array as part of their entry into the US market. This partnership will retain jobs with the Nebraska manufacturer and has the potential to create new jobs as the solar market grows in the future.

The 75 year-old Behlen Manufacturing Co. was an ideal partner for Suncarrier. The company has grown over the years from founder Walter Behlen's garage, into a global manufacturer exporting products to more than 70 countries. Its main products are livestock and grain equipment; however, the new partnership is helping the company expand into manufacturing products for the renewable energy supply-chain and position it for future growth opportunities in that sector.

Growth is vitally important to a company that employs more than 1200 people at facilities in Oregon, Tennessee, Alabama and Indiana. And to demonstrate its commitment to this new product line, Behlen is planning a similar installation at its Columbus facility where the steel for the unit, as well as the wheels, motors, gears and chains were made.

Innovative Technology Taking Root in Norfolk

Although thousands of SunCarrier units exist in Europe and Asia the industry is in its infancy here in the states. The Norfolk unit is the first installation of the innovative tracking technology in North America.

The tracking technology turns on an east to west track axis to best capture the sun's rays regardless of the season. A programmable logic control system adjusts the array's position every ten minutes. During the night hours it very slowly rotates back to its starting position. To withstand high winds, which are common to the central plains, the system has a derailing device that prevents it from being lifted on its rail.

The NPPD Norfolk Operations Center system is also being monitored on an hourly basis for energy production and will be compared to the predicted energy output from the National Renewable Energy Laboratory Solar Advisor Model (SAM). Additional data will be collected for maintenance costs to calculate the total cost of energy on a per kilowatt-hour basis. The total installation cost was \$413,685, of which the SEP funds paid \$343,359 and the company contributed \$70,326.

The amount of renewable energy produced by the project is estimated at 79,100 kWh per year, and will avoid over 50 metric tons of carbon emissions compared to NPPD system's average generating emissions.

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State Success Story

North Dakota Utility Rebate Program Making a Difference

Almost 14 percent of the funding allocated to the North Dakota Utility Rebate Program has already been paid out to homeowners and small businesses during the program's first three months of existence. The program, which launched on the first of June, is offered statewide in partnership with the state's three privately owned utilities, all seventeen members of the North Dakota Association of Rural Electric Cooperatives, and the North Dakota Propane Gas Association.

According to Zachary Weis, the State Energy Engineer for the Department of Commerce, \$2.4 million was allocated to the energy efficiency rebate program. The monies were from the state's funding under the State Energy Program and are being used to provide rebates through the utility partners for high efficiency furnaces, air conditioners, lighting retrofits, thermal storage, insulation packages, and other energy conservation measures.

Weis explained the new rebate is unrelated to the state's Energy Star Appliance Rebate, which rebated \$615,000 in five weeks, from April 6 to May 13. Among the differences between programs is what technologies qualify. Under the Appliance Rebate program, North Dakota provided \$150 rebates for Energy Star qualified refrigerators.

The simplicity of that program, focusing on a single appliance, laid the foundation for the more comprehensive program that is currently underway.

Rebates Create Win-Win for Everyone

Weis says the most popular items so far have been the ground source heat pump and the natural gas furnace. But, the biggest bang for buck is lighting.

Gefroh Electric, an electric contractor in the Verendrye Electric Cooperative service area, recently took advantage of the rebate for its own facility. Gefroh has done various electrical

contracting jobs for the US Air Force, but in this case they were on the receiving end of an SEP energy makeover.

New Lights Prove Effective

In 2004, Gefroh Electric built its present shop in Minot, North Dakota. The facility's lighting, which Saari describes as "effective for the time," consisted of nine, 400-plus-watt metal halide lights.

But over the years as lighting technology advanced the shop's lighting became outdated.

"We had to wait for them to warm-up every time we turned them on," Saari said. "Our employees come in and out of the shop all day long for parts. It was a much better option to have something that came on right away instead of having to wait so they could see what they were looking for."

Savings and Rebates Provide Quick Payback

The North Dakota Utility Rebate Program offered the perfect opportunity to save the company energy and money.

As it turns out the local electric utility coop, Verendrye also offers a matching rebate program through one of its power suppliers, Basin Electric Power Cooperative. So by upgrading its lighting, Gefroh Electric received two rebates.

Saari purchased nine new lights, which cost about \$200 apiece. Gefroh employees removed the old lights, which were a high source of heat, and replaced them with six-lamp, 336-watt, T5 bulbs. Saari says he was immediately impressed with the results. "The shop is brighter and the lights come on right away," he says. "We don't have to wait for the warm-up."

The new lights also have motion sensors preset for three or four minutes. When an employee steps into the shop, the lights turn on.

Gefroh Electric will receive a rebate of 40 cents per watt saved with the North Dakota Utility Rebate Program, and 50 cents per watt saved with the Verendrye/Basin matching rebate program. In total, the company will receive \$1,360 in rebates.

Because Gefroh employees were able to do the installation in-house, the company's out of pocket expense was rather low. After the rebates the company's investment should pay for itself in a couple of years.

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State Success Story

Oklahoma SEP Funds Help School District Convert to CNG Buses

The Tulsa Public Schools (TPS), using \$3.95 million of State Energy Program (SEP) funding and a combination of federal and state tax credits, is converting its entire fleet of 177 diesel-powered buses to compressed natural gas (CNG). The SEP funds were provided in the form of a grant through the Oklahoma Department of Commerce.

The TPS project is being undertaken in a partnership with NGV Fleet Partners of Guthrie, Oklahoma. The conversion process, which started earlier this year, is expected to wrap up around the first of the year. To date, 63 conversions have been completed. Once all buses are converted the school district expects to save between \$750,000 and \$1 million annually on fuel costs.

This is the second go around with compressed natural gas for TPS. In 1989 the district converted a number of buses to CNG, and in 1991 they purchased 47 dedicated CNG buses. The district also invested in a CNG fueling station infrastructure. But as diesel and gasoline prices collapsed during the 1990s the school district gradually replaced its fleet of CNG buses with diesel buses.

Fuel Costs Savings Provide Incentive to Go Green

Fuel costs are a big concern for school districts. Most school buses throughout the country run on diesel fuel. School districts set their fuel budgets in advance for the entire school year, and any rise in fuel costs has the potential for wreaking havoc on that budget. Higher costs translate to higher costs transporting students to and from school.

"At less than a dollar a gallon for CNG, compared to an average of about \$2.30 for diesel, it makes good sense to convert fleets," says Ottway Burkhalter, director of transportation for Tulsa Public Schools. "The savings are substantial. During this past summer school session we ran 40 CNG buses and realized huge savings."

Burkhalter said the cost savings that are generated from this project are going back into upgrading the TPS's fueling infrastructure.

"Our compressor stations were put in during the 1990s and we are starting to replace them," he said. "The cost savings are being used to offset those costs."

While the cost savings are substantial they are not the only reason TPS is converting its bus fleet.

"Our objective is both cost savings and to use a clean energy source," Burkhalter said. "We want to save money, reduce our carbon footprint, and set a green example for other districts across the state. This allows us to do that."

Legislature Recognizes Importance of CNG

Oklahoma House Speaker Chris Benge praised the move by TPS to convert its fleet. "This is just one more sign that Oklahoma is becoming a national leader in alternative energy," said Benge, R-Tulsa. "In recent years we have placed much focus on making the transition to lower-cost, locally produced alternative fuels feasible for both citizens and businesses, and I am pleased that our local schools will realize savings as result of those efforts."

Last year, Benge, one of the state's biggest champions for alternative fuel vehicles, authored an extension and expansion of an existing CNG tax credit. He also authored the Oklahoma Energy Security Act. That legislation, which passed earlier this year, sets an alternative energy goal for the state as well as a goal of having one public CNG station located every 100 miles along the state's interstate system by the year 2015 and every 50 miles by 2025.

To help incent that goal, Oklahoma provides a 75 percent tax credit for the costs that are associated with entities investing in qualified clean-burning motor vehicle fueling stations.

"Energy security is one of the most important issues facing our nation right now," Benge said. "In Oklahoma, we made great progress by pushing a locally-available, plentiful and cheaper option in natural gas, which not only helps reduce our country's dependence on foreign oil, but creates jobs and wealth right here in America instead of shipping our money overseas."

Benge says it is his hope that other states will see the success Oklahoma had in expanding natural gas usage for transportation and will mimic the legislation in their own states.

The National Association of Pupil Transportation is also hoping that people take notice of what is happening in Oklahoma. The NAPT would like to duplicate the Tulsa program at other school districts throughout the country and has partnered with NGV Fleet to apply for SEP funding to test the program in other areas of the country.

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State Success Story

South Dakota SEP Project Replaces Obsolete Boilers

A boiler replacement project in South Dakota, funded through the State Energy Program, has already produced some very favorable results. And the new system hasn't even been through its first winter heating season yet.

"Our first SEP project was a boiler replacement for the Capitol Complex," said Michele Ferris, State Energy Manager for the South Dakota Bureau of Administration.

According to Ferris, the project which was completed over the summer, addressed a number of concerns that went far beyond energy savings. A number of environmental issues as well as maintenance and operations concerns were positively impacted by the \$820,000 project.

Natural Gas Retires Heavy Oil

The South Dakota Capitol Building's original boiler plant was constructed almost 100 years ago. The plant produced low-pressure steam exclusively for heating, and over the years its distribution system grew to cover more than 350,000 square feet of buildings in the Capitol Complex.

"Today, ten buildings make up the complex served by one central boiler plant," Ferris said.

"Until 1961, the boiler plant burned coal. In 1961, the coal-fired boilers were replaced with Scotch marine boilers with heavy oil as the fuel."

The boilers have undergone additional upgrades in the past 50 years but still continued to burn Number Six Heavy Oil.

"Previously, there were two 250-ton Number Six fuel oil boilers and through this project we were able to replace them with four modular natural gas boilers," Ferris said.

The boiler replacements will not only save South Dakota more than \$2 million in energy costs over the life of the new equipment, but the reduced maintenance and operations costs will produce substantial savings as well.

"The facility folks are quite happy," Ferris says. "Number Six fuel oil is the bottom of the food chain when it comes to heating fuel. It is like the dinosaur bones of fuel oil."

Operations Savings Start to Accumulate

Heavy oil fuel is an uncommon heating choice now days. High prices and environmental concerns have made it unfashionable. Yet, the operational cost savings can't be overlooked when discussing the project's profitable bottom-line.

Number six fuel oil must be stored at 100°F and heated to 150°F to 250°F before it can be pumped for transport or into a boiler for burning. Even storage tanks need to be heated, regardless of the season, in an effort to keep the oil from congealing into a tarry semi-solid substance. "It is a delicate fuel," Ferris says.

Adding to the operational difficulties was the fact that the boilers in the Capitol Complex were extremely temperamental. "Maintenance staff was always being called out in the middle of the night to get the old boilers back on-line," she says.

But thanks to the SEP funding and the new natural gas boilers, the late night maintenance calls, like the Heavy Oil fuel for the old boilers, are a thing of the past. The new boilers having passed all preliminary tests and stand ready to perform when the weather conditions require heat for the buildings they serve.

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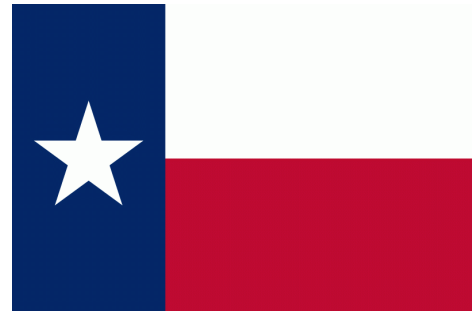
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State Success Story

Texas Town Uses SEP Funding to Install and Synchronize Efficient Streetlights

Green is a versatile color. It can mean “go,” it can mean money and it can mean energy efficiency. It's becoming all of those things for Beaumont, thanks to a traffic signal SEP grant.

In Texas, 15 cities and one county were awarded \$7.8 million in State Energy Program funds through the State Energy Conservation Office in early 2010 to update their traffic signals. The goal of the Traffic Signal Program is to synchronize traffic signals through the installation, updating and/or maintenance of traffic synchronization technologies and/or the replacement of traffic signal lights with Light Emitting Diodes (LEDs).

Beaumont needed all of that.

A 2006 city-commissioned study by Midtown Engineers, LLC examined the effectiveness, function and maintenance of the southeast Texas city's traffic regulation system. Beaumont scored a 38 on a scale of 100, a failing grade by any measure. “That's not what any city would hope for,” says Patrick Donart, Beaumont's director of engineering.

So the city's public works department started searching for funding to fix the problem and got some help from two storms – one literal and one economic.

Those included a \$33 million hazard mitigation grant from the Federal Emergency Management Agency to Drainage District 6 in Jefferson County for drainage improvements after Hurricane Rita battered the region in 2005. Government grants provided the bulk of funding for a \$62 million project to make structural and drainage improvements to Calder Avenue in Beaumont, including traffic signals.

Then came the recession and the State Energy Program, which awarded a \$17 million transportation efficiency grant to Texas, including \$7.8 million for the Traffic Signal Program. Beaumont got \$2.06 million, which coupled with a match of nearly \$500,000 provided the city almost \$2.6 million to use toward improving traffic operations.

Not only could the roads be improved, but so could the regulation of the traffic upon them.

City officials re-examined the 2006 study and identified 62 of the city's 168 traffic signals for improvements, including installation of fiber optic cables and more energy-efficient LED lights and linkage to an Advanced Traffic Management System (ATMS).

LED lights save energy because they use as little as 1/30th the power of incandescent bulbs and last longer. The ATMS will connect each light management cabinet to a mainframe computer, allowing officials to quickly and universally adjust light synchronization based on traffic conditions.

The ATMS will also have cameras at each intersection to allow officials to visually monitor traffic flow.

“If someone calls in and says they're stuck at a light that won't change, we can call it up and take a look,” Donart says.

“It will enable us to have a smooth flow of traffic. We can time signals for drivers to get from point A to point B in an efficient manner. If there's construction, we are able to route around the delays.”

The project is set for completion in March 2013. Donart says he doesn't have current estimates of energy and money savings, but notes that some of the bids have come in under projections and the project could be expanded.

“I'm almost certain we'll be able to do more than the initial budget and grand scheme called for,” Donart says.

That's what you call catching all the green lights.

WYOMING

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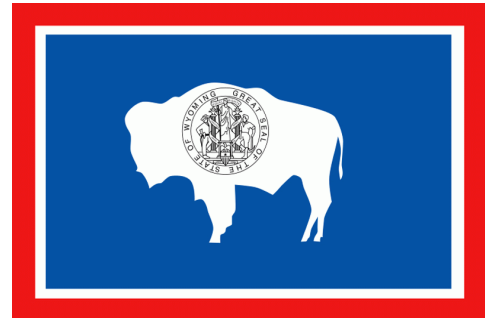
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State Success Story

Renewable Energy Projects Underway on Wyoming Homes

A program to help install residential renewable systems in Wyoming launched earlier this year and it wasn't long before the first solar and wind energy projects were installed.

Wyoming residents Terry Sandstrom and Chris Hill of Wheatland and Douglas, Wyo., respectively, were the first to use the State Energy Program funds through the Wyoming State Energy Office to install renewable energy projects on their homes.

The residential renewable energy program provides grants of up to \$10,000 or 50 percent of project costs, whichever is less, for installing photovoltaic (solar), small wind, and ground source heat energy systems at Wyoming homes.

"This has proven to be a popular program and I'm glad that Wyoming residents are recognizing the benefits of renewable energy," said Shannon Stanfill, State Energy Office program manager.

In March, Sandstrom used the funding to upgrade his stand-alone system to increase battery charging efficiency and battery life on his solar energy system, and to add solar panels for greater photovoltaic input.

"The house is not a small cabin," said Sandstrom. "I have the internet, several small computers, and two large-screen televisions, and all of that. I'm not living a rural type of lifestyle up here. I use electricity just as someone would in town."

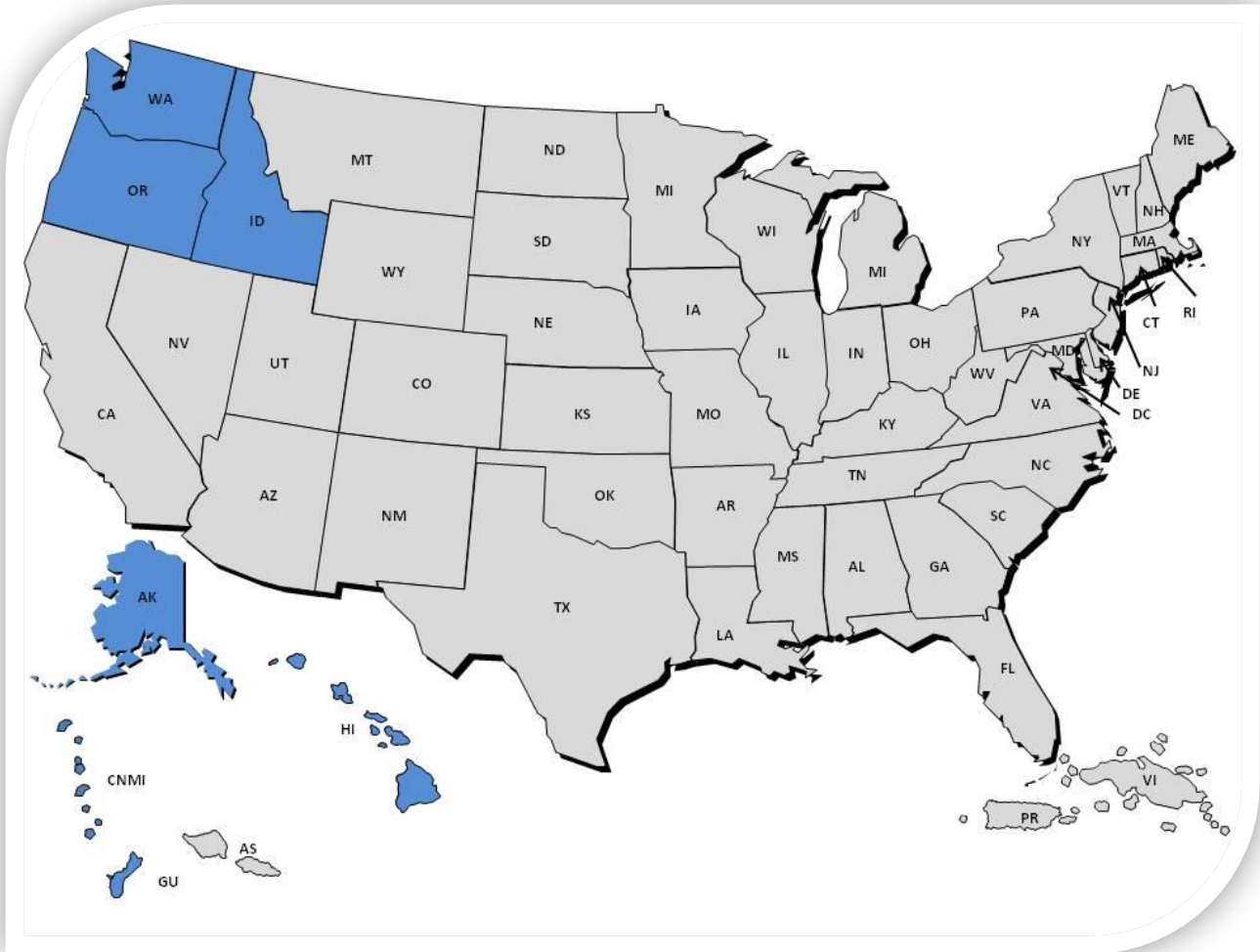
A month later he completed phase two when he added six more panels for a total of 12, and installed a larger turbine. "Between those two, I would think I'd almost be as close to self-sufficient as you could be," he said. Hill installed a 2.4 kW small wind turbine with the goal of reducing utility bills on his two-year-old home.

"We wanted to utilize the natural resource of wind to offset that cost," said Hill. "It's extremely easy to use. We don't have any type of maintenance on it. In fact, the first scheduled

maintenance is in 20 years. We've been looking at it (renewable energy) kind of off and on and once the grants came available we decided it was the most cost effective time to install.”

The State Energy Office allocated over \$2.2 million in federal SEP funding to help Wyoming residents defray the cost of installing renewable energy systems on their homes. The funding is part of the State Energy Program that prioritizes energy savings, increase the use of renewable energy, and create or retain jobs.

NORTHWEST REGION



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- OREGON
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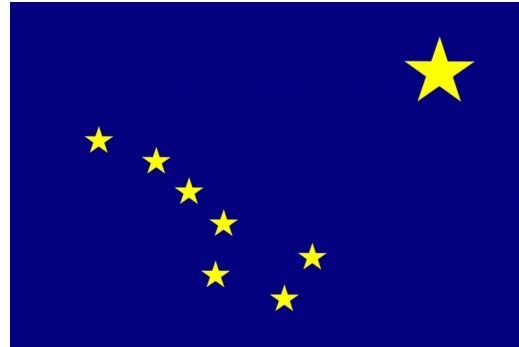
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State Success Story

Alaska Energy Efficiency Program Expands with SEP funding

For much of the past decade Alaska has maintained an energy efficiency program to address energy usage in small villages across the state. The program, Village End-Use Efficiency Measures (VEUEM), began several years ago under the federal Rebuild America Program. Through the years it has managed to continue to function although with a variety of funding sources and at different funding levels. Seldom, though, has the program had enough funds to do much in the way of comprehensive energy efficiency measures that address the backlog of energy needs of the villages.

That all changed with the State Energy Program. The Alaska Energy Authority (AEA) allocated \$3.72 million of its State Energy Program funding to expand the VEUEM program to include energy savings measures such as improved efficiency lighting, heating systems, motors, water systems, appliances, equipment, and building weatherization in public buildings and facilities in villages throughout the state.

All public buildings and facilities, including municipal buildings, schools, teacher housing, water and wastewater systems, laundromats, street lighting, and other public assembly buildings are eligible under the program.

The program expansion came at a critical time allowing the AEA to build upon a program that in recent years had reached 31 villages and netted a 4.5 percent total village power reduction. Under the new expanded program, that number has exploded with more than 400 energy projects taking place in villages throughout the state.

The program is also generating a great return on investment for the State Energy Program (SEP) funds. Energy costs are extremely high in Alaska villages, with heating fuels costing in excess of \$5 per gallon and electricity costs averaging over 50 cents per kWh, and sometimes soaring to more than 75 cents per kWh. Adding to the problem, severe weather conditions and building stocks that are generally old and poorly designed for the climate.

AEA is coordinating its efforts with the residential weatherization programs to provide a full village energy retrofit whenever possible. Additionally, AEA is targeting villages both with the greatest need and those that are scheduled for an electric generator upgrade through AEA's Rural Power Systems Upgrade (RPSU) program.

In an effort to make the program sustainable, AEA has incorporated a local workforce training component, whereby the selected contractor is training local personnel on boiler maintenance, installing and maintaining lighting, and the general care and maintenance of any measures taken.

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Territory Success Story

Guam Building Retrofit Program Provides for Audits and Investments

The Guam Energy Office is actively working to reduce energy consumption in public buildings. With \$535,323 in funding from the State Energy Program, Guam has initiated an energy audit program as a first step before investing in energy efficient improvements.

The audits are intended to demonstrate how building retrofits in schools, public buildings, government health clinics, community recreational centers, and state parks will reduce operating expenses and save taxpayers money from reduced utility costs. As part of this effort the Energy Office has teamed up with the community college to conduct energy audit workshops/training to develop skilled workers or building professionals with the knowledge of making energy audits a sustainable practice in all types of buildings upgrades.

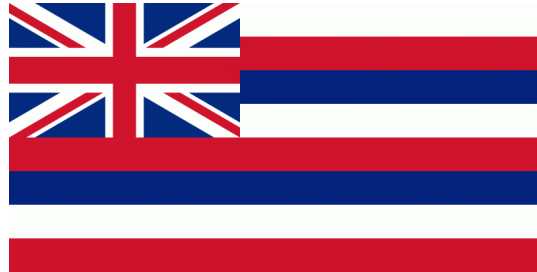
Upon the successful completion of the energy audits, the Government of Guam will "Lead By Example" and invest more than \$10 million of State Energy Program funds in public facilities for the purpose of taking the next step and implementing the energy efficiency measures identified in the audit that provide the fastest payback.

By having public buildings invest in making their facilities more energy efficient, less fuel is burned from the public power plants and less air pollutants are released into the environment resulting in significant reduction in greenhouse gas emissions.

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State Success Story

Hawai'i is Ready for Electric Vehicles

A few years from now the residents of the Aloha State may well look back at 2010 as the dawn of the electric car era in Hawai'i.

In January the first public charging station went into service in the Kaka'ako area of Honolulu. Less than six months later the State launched its Hawai'i EV Ready Grants Program, with funding of \$3 million from the State Energy Program.

The grant program, designed to accelerate the installation of electric vehicle (EV) charging equipment and to put in place an infrastructure to support the adoption of plug-in hybrid electric vehicles in Hawai'i, began accepting applications June 9.

The target audience was Hawai'i businesses, non-profit organizations, and State and County government entities.

"The grant program is intended to help the infrastructure market in Hawai'i get established, to support the electric vehicles arriving later this year and in 2011 and 2012," explained Ted Peck, Energy Program Administrator for the Department of Business, Economic Development and Tourism (DBEDT) .

Infrastructure Precedes EV Cars

The grant program is intended to complement another electric vehicle initiative, the Hawai'i Electric Vehicle (EV) Rebate Program. The grant program preceded by two months the rebate program which started August 1.

The Hawai'i Electric Vehicle Rebate Program, with \$1 million in SEP funding, is providing rebates of up to 20 percent of a vehicle purchase price, up to a maximum of \$4,500 per vehicle. In addition, up to \$500 is available for electric vehicle chargers.

"This (rebate) program sends a message to consumers, electric vehicle service equipment installers, and vehicle manufacturers that Hawai'i is EV ready," said Theodore Liu, Director, DBEDT. "These rebates and grants will stimulate our local economy while helping our transportation sector to become less dependent on petroleum fuels."

Grants and Rebates Attract Car Companies

Although the full \$1 million in rebates remained as of September 1, the first-come, first serve money is certain to run out quickly. More than 300 Hawai'i residents have already put down deposits on the Nissan Leaf electric car that is scheduled for shipment to the island in early January 2011.

Hawai'i is one of seven states chosen for the launch of the new Leaf.

The Wheego LiFe has also selected Hawai'i as one of the first states in the nation to receive the LiFe when it is released later this fall.

In addition, California-based Coda Automotive, has also announced it will launch its Coda Sedan in Hawai'i in the fall of 2011.

"The government and leadership of Hawai'i has clearly demonstrated that they are aggressively supporting the adoption of all-electric vehicles through their rebate program and commitment to developing charging infrastructure," said Kevin Czinger, President and CEO, CODA Automotive.

Transformation Years in the Planning

The foundation for this transformation started several years ago with the Hawai'i Clean Energy Initiative launched by Governor Linda Lingle and the U.S. Department of Energy. That initiative calls for Hawai'i to reduce its dependency on the use of fossil fuels and achieve a 70 percent clean energy goal by 2030.

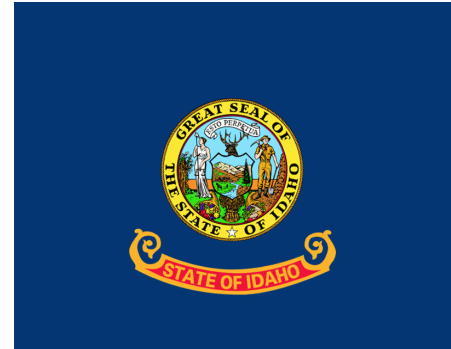
The legislature has also gotten into the act; in 2009 it passed Act 156 that set forth initial steps to integrate electric vehicles into the state's transportation policy goals. It also requires parking spaces for EV's in public and private facilities, set guidelines for government fleets to move toward non-petroleum vehicles, and required the development of a charging infrastructure for electric vehicles.

With everything that is happening one might wonder if the stars have aligned to make this transformation move quickly. Ask any of the government officials involved behind the scenes and they will likely tell you that none of this happened overnight. But they also will probably admit that it is moving quite quickly, thanks in no small part to availability of SEP funds.

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State Success Story

Idaho K-12 Energy Efficiency Project Impacts Hundreds of Schools Statewide

The Idaho K-12 Energy Efficiency Project, funded with State Energy Program monies through the Idaho Office of Energy Resources (OER), has made significant progress since its June 2009 launch. Energy scoping audits were completed on 894 school buildings statewide. HVAC system tune-ups were also completed on 894 school buildings across Idaho.

Approximately \$5 million was spent during 2009 and 2010 performing the HVAC tune-ups. It is anticipated that the tune-up portion of the project will save Idaho districts about 10 percent of their current energy budgets. Savings from the tune-ups have been estimated to be between 84,102,248 and 269,507,285 kBtu per year. Tune-up dollar savings based on site energy are estimated between \$1,254,169 and \$3,924,603 per year.

“Energy Expert software” was installed in a sample of 91 Idaho school buildings and the building operators were trained on the software application. This software provides fifteen-minute interval data on energy use and will help the school districts determine energy savings and, more importantly, help them understand how these buildings function over time. Fifteen of these schools also received kiosks to be used for energy use education.



OER sponsored three building operator trainings across Idaho for district operations and maintenance staff. Seventy-five personnel attended the trainings representing 51 Idaho school districts.

An Energy Use Index (EUI) of the 894 audited K-12 buildings is being developed. This baseline of energy use provides a snapshot of building energy use and will be used as a comparison to a

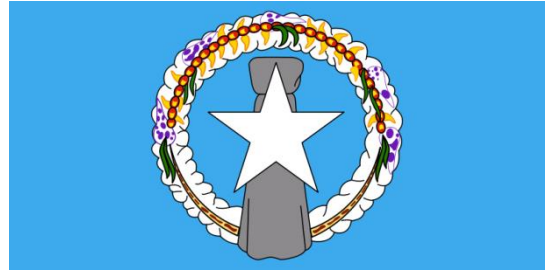
post Project EUI assessment. Five case studies are currently under development to document the project results.

For the final phase of the project, the K-12 Oversight Committee supported spending over \$9 million on energy efficient lighting upgrades. The lighting retrofit contract is drafted and school building distribution by contractor is being prepared. OER anticipates completion of the school building lighting retrofit by the end of 2011.

NORTHERN MARIANA ISLANDS

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State Success Story

SEP Funds Put to Work for the Commonwealth of the Northern Mariana Islands

The Commonwealth of the Northern Mariana Islands (CNMI) is funding several energy and renewable energy projects throughout the territory with monies from the State Energy Program through the CNMI Division of Energy. The projects that have been funded include replacement of parking light lamps and street light lamps to light emitting diodes (LED), lighting and air conditioning retrofits at several government facilities, retrofitting of turbo chargers, lube oil centrifuge and reclaiming watery oil separators for CUC's power plant and renewable projects at several locations within the public school system.

Lighting Retrofit Completed at Joeten-Kiyu Library

The lighting retrofit project at the Joeten-Kiyu Public Library was recently completed with anticipated savings of 30 to 40 percent on its power usage, according to the CNMI SEP Office, in association with the CNMI Division of Energy.

The project for the Joeten-Kiyu Library included the retrofitting of existing T-12 lighting and magnetic ballasts with Energy Star rated T-8 fluorescent lighting and matching electronic ballasts.

"This lighting retrofit project has been a long-time coming in our efforts to modernize the facility," said Joeten-Kiyu Public Library executive director John DLR. Gonzales. "The installation of the energy efficient lights could not have been more timely in view of our anticipated ambitious library programs, computer classes, and cultural activities lined up for the summer and beyond. Equally important this is a first major step in ensuring the state public library is up to par with green energy efficiency standards, not to mention the much needed cost savings we will realize."

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State Success Story

New School Lighting has Small Oregon Town Talking

“It’s the talk of the town,” Fossil School District 21J Superintendent Brad Sperry said of the new lights in the town’s elementary and high school. “Before, kids could hide in the hallways because it was so dark that you literally couldn’t see them. It was really a safety issue.”

Because the high school gym serves as an unofficial “community center” for sport events, art festivals and recitals, the new gym lights received the most attention.

“We got comments like ‘I need sunglasses!’ and ‘I don’t need a flash anymore for my camera,’” said Sperry. “It created quite a buzz.”

And it should. Fossil, located in a peaceful valley in North Central Oregon, is 72 miles from the nearest urban area. The town of 450 is a picture of the Old West. Cattle drives go right down the middle of Highway 19. No one blinks an eye at horseback riders on Main Street. Visitors can actually dig for their very own fossil in the middle of town. So, when the elementary and high school get new energy efficient lights to replace lights (many that were original fixtures), it is indeed, big news for the tiny town.

Wheeler High School, built in 1949, sits on a hillside above Fossil Elementary and Main Street. It serves 48 students in grades 7-12. Fossil Elementary, built in 1925, serves 43 students. The lighting projects were paid for primarily with State Energy Program funding awarded by the Oregon Department of Energy.



SEP Grant Program Provides Majority of Funds

The Wheeler High School gym lights were paid for with SEP funds in the first round of awards announced by the Oregon Department of Energy in the fall of 2009. The project consisted of replacing 32 400-Watt metal halide lamps with six-lamp T-8 high efficiency fixtures. The \$15,710 project was paid for with \$15,360 in SEP funds and \$350 from Columbia Basin Cooperative electric utility.

The classroom and other lights at Wheeler High and all the elementary lights were replaced with new energy efficient lights in another round of lighting awards made in March 2010. This project came in approximately \$2,600 under budget at \$58,728 with all costs paid for with SEP funds.

Contractors installed the Wheeler High gym lights in December and the classroom lights in May. The work was done with little disruption. Contractors arranged to work during school hours in vacated classrooms when possible or after regular school hours.

The Wheeler High gym lights are expected to reduce lighting electrical use by 50 percent saving approximately \$1,398 per year. The classroom lighting project is expected to save 61 percent of lighting electrical use or \$1,554 per year.

“We are pleased to make this award to the Fossil School District,” said Shell’ Honeywell, manager of the Oregon Department of Energy grants team. “Not only will students and staff enjoy a learning environment with better lighting, but the funds will put local contractors to work.”

SEP Has Positive Impact on Local Contractor

The “local” contractor for the Fossil lighting projects was Hire Electric with headquarters in The Dalles. “This job had a definite impact on our business,” said Dan McHale, president of the 22-employee family-owned business which has been in The Dalles since 1935. “Things have been really slow. Some of my electricians aren’t working full 40-hour weeks and some are on unemployment. But I was able to keep two electricians busy for two weeks on the Fossil job.”

In addition, McHale said the Fossil job had a “trickle-down effect.” “It kept our material handler and supplier busy. All the way around, it helped,” McHale said.

The two electricians stayed in Fossil for the job and ate at local restaurants which also helped the Fossil economy.

“It’s gratifying to see energy projects have such an impact on these rural schools and businesses,” said Paul Egbert, Lead SEP Project Manager. “They are very appreciative of the funds and the positive impact it has had for the kids.”

New Lights Are Source of Pride

Cistie Shaffer, deputy clerk with the Fossil School District for 25 years and a Wheeler High School graduate, is well aware of the difference. “The old lights gave out a yellow light. Now they’re white,” she said. “Best of all, the annoying humming sound of the old lights is gone. Sometimes we wouldn’t even turn on the old lights because the noise was so distracting.”

Even the cafeteria cook commented that she can read her recipe from her prep area. She doesn’t have to walk to an area beneath a light to read it.

Although the lighting projects were paid for, there is considerable work that comes with getting federal funds. Recipient funds must ensure that all federal regulations are followed. These include paying Davis-Bacon wages, getting approval from the State Historical Preservation Office, ensuring that all equipment is in compliance with the Buy American Act, interviewing all workers on the job, ensuring all official notices identifying the federally funded project are visible, and making sure that all reporting is done in a timely and accurate manner.

“Cistie did a wonderful job,” said Egbert. “She had to keep on top of a lot of details, in addition to her regular work. I was impressed how a small school district with limited resources accomplished what it did.”

Now that the lighting project is complete, Superintendent Sperry is considering his next project—painting the inside of Wheeler High this summer.

“It’s also a no-cost project,” said Sperry.

Just like the towns of the Old West, Fossil residents pull together and show pride in their schools.

WASHINGTON

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State Success Story

Water to Wire Hydro Project to Generate Clean Energy in Washington

The ten-foot wide concrete ditch that serves as diversion canal north of Pasco, Washington is about to get an energy makeover. By the end of 2010 the canal will be outfitted with a small turbine-generator that will create about 900 kilowatts of energy, enough to power several hundred homes.

"I went out there to view the canal and was amazed with the flow of water in it," said Cory Plantenberg, Energy Program Manager for the Washington Department of Commerce. "The water surges through the canal like the ocean."

Late last year the Washington Department of Commerce selected a local company's plan for the Pasco area canal for funding from the State Energy Program. A grant in the amount of \$898,175 was awarded to the project developers, Green Energy Today, of Kennewick, Washington. The grant is but one of 36 grants funded through the Energy Efficiency and Renewable Energy Grant and Loan Program offered by the Commerce Department's State Energy Office.

Plantenberg said that the potential of this application is enormous as there are hundreds if not thousands of ditches and canals of this type throughout the west, and will create 14.4 temporary and 1.2 permanent jobs with many more at additional sites the company has projected.



Putting the Run-off to Work

Jerry Straalsund, Green Energy Today Chief Executive Officer, described the canal as perfect for a micro-hydro project. "It runs year-round and has a 140 foot drop over about a quarter-mile. The water traveling through there is moving at about 100 to 120 cubic feet per second."

The canal system, which Straalsund and his partners identified for this project five years ago, was constructed in the 1950s by the US Bureau of Reclamation.

"The groundwater in the local area is elevated after decades of irrigation operations, resulting in springs and other runoff that occur at various rates throughout the year," Straalsund said. "A major function of this canal is to intercept the excess water and divert it to avoid flooding and water damage to non-irrigation lands in the lower Columbia Basin area."

SEP Helps Project Clear Financial Hurdle

Obtaining an SEP grant was never a sure thing for the Green Energy Today team. "The day SEP funding was first announced I didn't think it would impact us," Straalsund recalls. "Then when the State of Washington put out their specific requirements for their grants I remember saying, 'Gosh, we fit into that.'"

Straalsund doesn't hesitate when admitting that the project wouldn't be ready to start construction if it wasn't for the State Energy Program.

"That is the only reason we are in a position to do this now," Straalsund says. "The cost of the project versus the risk made obtaining capital difficult. SEP made the difference."

Green Energy Today is in the process of finalizing the detailed design before ordering the generator from another Washington company called Canyon Hydro, located outside of Bellingham.

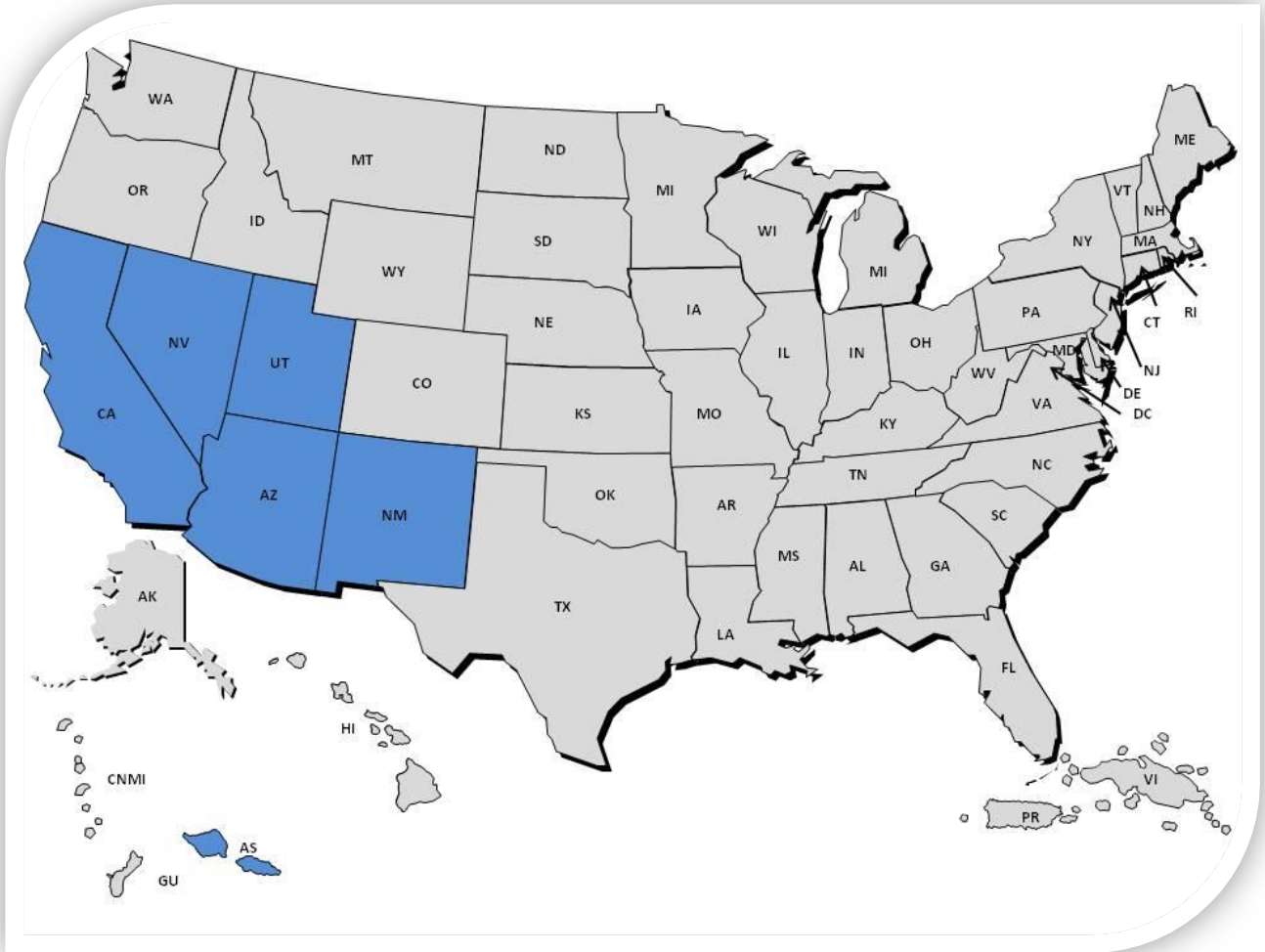
Canyon Hydro has been manufacturing small custom hydroelectric systems since 1976 and has been involved with Green Energy Today since the conceptual design phase of the project. The project also has to be approved by the US Bureau of Reclamation.

"We should start construction by October and could be generating electricity by the end of the year or shortly thereafter," Straalsund adds.

The power from the small hydro project will be sold as renewable energy. Green Energy Today has been negotiating with qualified utility companies interested in purchasing the electrical output and the associated green tags. Green Energy Today expects to sell the entire output of the project to a single entity at a price per kilowatt hour that should provide a breakeven for the project in less than seven years.

Once the project is constructed and on-line, it is expected to operate continuously for 40 years.

SOUTHWEST REGION



- AMERICAN SAMOA
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- CALIFORNIA
- NEVADA
- NEW MEXICO
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State Success Story

SEP Greatly Expands American Samoa Solar Capacity

The US Territory of American Samoa is part of the Samoan Island chain, located in the South Pacific Ocean. Energy products arrive by ship and as a result are expensive commodities. Electricity, produced by a series of diesel generators, typically costs more than 30 cents a kilowatt-hour (kWh).

Although there have been attempts to introduce solar energy here in the past, these efforts could best be described as small demonstration projects. The barriers that prevented solar energy from taking off were many, ranging from a high initial cost, a lack of demand, and no supporting industry.



However, the resources brought to the island by the State Energy Program (SEP) has changed that. The territorial government, through the Territorial Energy Office, has commenced two large solar initiatives with SEP funding. Combined, these two projects will result in 1.5 megawatts (MW) of grid-connected solar energy capacity. That is a staggering amount considering the island's total existing generation capacity is only 20 MW.

Green Workforce Develops to Meet Demand

Earlier this year the Territorial Energy Office awarded a contract for the installation of 616 kilowatts (kW) of distributed generation projects on a mix of 25 government and commercial buildings. The project was designed to get local vendors involved in the solar energy business.

“This will be a big boom for jumpstarting solar on the island,” said Jeff Shively, President of Island Energy and Marine. “Until now there really hasn’t been much of a solar industry. I am the sole company that has been providing solar services for as long as I have been here.”

With a couple of years’ worth of installation work as insurance, Island Energy and Marine spent the first part of the summer hiring and training new employees. Those employees started work in earnest the beginning of August with commencement of the first of 25 projects.

“I have sub-contracted with two electrical contractors and hired a number of trades people to work on this project,” Shively said. “We have brought in some expertise from the mainland to get our local guys trained.”

Shively said that three of his employees are going through an installer certification program and an additional training effort is aimed at getting building inspectors up to speed. “That (training) is what will make this sustainable,” Shively says. “We have to spread the knowledge around.”

According to John Kirby, who is the technical expert for all SEP grants for the Territorial Energy Office, capacity building is one of the intended by-products of the program. “We wanted to develop on-island capacity,” Kirby said. “Hopefully this will start other contractors thinking about going into solar.”

Solar Project Will Demonstrate Feasibility

The 25 buildings are a mix of 10 government, two non-profits and 13 commercial buildings. Systems will range from seven kW up to as large as 30 kW.

Kirby hopes that in addition to developing a local solar workforce, the SEP projects will demonstrate to the local government and the commercial sector that photovoltaic technology is a viable alternative to diesel generation.

Shively echoes Kirby’s comments. “My hope is that when the government officials and the large businesses see the results we are getting from solar that more and more installations will go in -- even if there isn’t any more incentives,” he says.

Under the current SEP grant program 100 percent of the cost is covered for the government and non-profit installations. Commercial entities are required to put up 15 percent of the installed cost. Shively says for the commercial businesses participating in the program, their investment will be repaid in less than four years. Those participants include ACE Hardware, the local Ford dealership, a food and beverage importer, and the local telecommunication company.

ARIZONA

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State Success Story

Days Are a Little Brighter for Arizona Non-Profit

The days are a little brighter at the Society of St. Vincent de Paul's donations warehouse in Phoenix, Arizona. This is thanks to a "daylighting" project funded by the Arizona Energy Office with monies from the U.S. State Energy Program (SEP). Daylighting is an affordable way to bring daylight into dark spaces where natural light had rarely been an option.

This project is in the process of installing 55 daylighting units that will allow St. Vincent de Paul to turn off the internal lighting system when there is plenty of light from the outside.

"When completed, this project will give us a great opportunity to transfer money that used to go to utility bills to provide more services for Arizonans," said St. Vincent de Paul Executive Director Steve Zabalski. "And the upgrade not only saves energy, it looks nice and makes this facility a brighter place."



The project will cost \$65,888: \$48,533 awarded by the State Energy Program and when completed, St. Vincent de Paul will apply for an Arizona Public Service rebate estimated at \$18,660.

“We awarded 14 non-profit organizations funding for renewable energy projects statewide and many will obtain additional project funding in rebates from local utilities which will help to offset project costs,” said Jim Westberg, State Energy Program Manager for the Arizona Department of Commerce Energy Office. “When completed, this project should save more than \$14,000 annually, reduce electricity use by 99,000 kWh and offset 128,000 lbs. in CO2 emissions.”

“Projects like this often have a 15-year lifespan, so that the annual savings may translate to saving more than \$210,000 over the life of the equipment,” said Bruce Bilbrey, Vice-President of the Natural Lighting Company. “That’s especially rewarding when it helps a non-profit that is helping people every day on a community-wide level.”

The Society of St. Vincent de Paul was one of 14 non-profit organizations statewide to receive SEP funding. Overall, more than \$637,000 was awarded to non-profits and more than \$616,000 will be obtained in additional funding by either utility rebates or grantee contributions.

Like the non-profit projects listed above, the Energy Office has been successful in obtaining an additional \$69.7 million in leverage funding for projects to supplement the \$55.7 million SEP award, giving Arizona a total of \$125.1 million for 157 energy-related projects statewide. Annual energy savings for these projects are estimated to exceed \$11.67 million.

CALIFORNIA

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State Success Story

California Awards \$29.6 Million in Funds for Clean Jobs Training, Energy Upgrades

In three separate awards, the California Energy Commission approved \$29.6 million to provide workforce development, create clean jobs and improve energy efficiency throughout California. Funding for the projects comes from the federal State Energy Program (SEP).

The three programs - *EnergySmart Jobs*, *Energy Technology Assistance Program (ETAP)*, and *the Downtown Oakland Targeted Measure Project* - were awarded funding from the California's State Energy Program (SEP) for energy programs focused on existing commercial and residential building energy efficiency (and water efficiency) retrofits.

"These exciting programs are models for leveraging private funding with public funds to create partnerships that are designed to bring new jobs into the market, boosting our statewide economy," said Karen Douglas, California Energy Commission Chairman. "By upgrading commercial buildings to be more energy efficient, we're showing building owners, operators and occupants that energy efficiency can provide cost savings and other valuable non-energy paybacks while at the same time benefitting the state with lower greenhouse gas emissions. Improved building comfort and reduced maintenance costs will help convince customers to accept and demand new energy efficient innovations, helping to transform the market."

The combined programs anticipate creating or retaining more than 1,200 jobs plus creating a new clean energy workforce through aggressive training programs. Energy savings are estimated to exceed 117,000 megawatt hours of electricity (or enough to power 234,000 homes for one month) and more than 52,000 tons of CO₂ equivalents annually.

The Municipal and Commercial Retrofit Programs

The Energy Technology Assistance Program (ETAP), another statewide venture, was awarded \$5.9 million to deploy cutting edge, energy-saving technologies in government buildings. The ETAP, administered by Energy Solutions, has a strong workforce development component creating more than 700 direct and indirect jobs, including training for professionals and apprentices in the lighting and heating, ventilation and air conditioning (HVAC) industries.

The statewide Energy Smart Jobs Program will use \$18.8 million to provide energy efficiency options for the approximately 40,000 commercial buildings throughout California that have retail refrigeration equipment facilities such as grocery stores, convenience stores, specialty markets and restaurants.

The Energy Smart Job Program has initially partnered with 14 entities, including community colleges, technology firms, utilities and manufacturers to leverage almost \$900,000 in private and public monies and more in-kind services. In a model partnership with the California Conservation Corps, 60 members will be trained and employed by the program administrator, PECCI, to conduct refrigeration efficiency surveys and upload the data to a central database. Participating energy services companies will then provide additional information and make recommendations to business owners about appropriate energy saving equipment.

Working with local utilities, the program will leverage about half of the funding to "buy down" the cost of energy efficient refrigeration equipment with direct incentives. The program estimates funding 5,000 retrofit projects saving the commercial retailers approximately \$40 million in energy costs over five years.

The ETAP is targeting 21 cities, counties and special districts in northern and southern California and are also leveraging \$13.5 million in public and private funds. The program is anticipated to save 17.6 million kilowatt hours (kWh) a year, reduce summer peak electricity demand by 1,700 kWh and diminish CO2 emission by 10,000 tons. Some of the energy-saving technologies to be installed include a bi-level parking lot and parking garage lighting fixtures with occupancy sensors. These devices will turn lights off when not needed, and provide wireless lighting and HVAC controls.

The public and private partnership program - Downtown Oakland Targeted Measure Project - will use \$4.8 million to install advanced energy efficient lighting in many of Oakland's commercial buildings. This unique program leverages \$2.3 million in public and private funds from utility companies, the local community college district and local workforce development programs like the nationally recognized Oakland Green Job Corps.

The pilot program, administered by Quantum Energy Services & Technologies, Inc., will retrofit classrooms, offices, parking lots and parking garages with advanced lighting and HVAC technologies. These measures are expected to reduce the area's annual energy use by 8.4 gigawatt hours (GWh) and cut greenhouse gas emissions by an estimated 4,417 tons of CO2 annually. Partners PG&E's East Bay Energy Watch program and the Clean Energy Workforce Training Programs are teaming up with the Peralta Community College District to train facility operators, contractors and installers.

The City of Oakland Economic Development staff, the Building Owners and Managers Association, and the Oakland Chamber of Commerce have already lined up 4 million square feet of building space as part of this huge retrofit effort.

NEVADA

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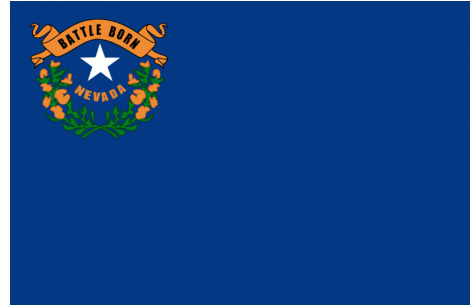
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State Success Story

Nevada Public Building Retrofits Save Money and Energy

The Nevada State Office of Energy (NSOE) is in the process of retrofitting 124 state-owned buildings with energy efficient and renewable energy technologies. The NSOE has allocated more than \$7.9 million for the energy efficiency and renewable energy upgrades. The money comes from Nevada's share of the State Energy Program funds allocated to all states and territories.

According to Tara Vogel, NSOE Renewable Energy Analyst, two projects have already been completed.

"A 30-kilowatt solar photovoltaic project at the Henderson Department of Motor Vehicles and a 1,300 lamp replacement project at the Bryan Building in Carson City are complete," Vogel said.

The lighting upgrade at the Richard H. Bryan Building in Carson City cost \$77,640 and will save taxpayers more than \$14,670 a year in energy cost savings. "The project has a five-year payback," Vogel added.



Besides lighting and photovoltaic installations, projects include HVAC system improvements, lighting control systems, and energy saving window treatments all of which are projected to save the state more than \$745,000 in energy costs per year.

A Broad Mix of Buildings Selected

With the exception of the two projects already completed, all other projects are currently in the engineering or construction phase. These range from a lighting upgrade at the 480 square foot

Nursery Shop in the Washoe Valley, to the 224,000 square foot energy efficiency and renewable energy project at the Sawyer Office Building in Las Vegas that is home to the Nevada Gaming Commission.

"We have several million square feet of facilities that are being retrofitted," said Jim Groth, Director of the Nevada State Office of Energy. "The buildings range anywhere from a majority being mid-1960s to current. We went through a nomination process to select projects and buildings for funding and we probably had \$25 million worth of projects submitted and only \$7.9 million to provision."

Groth said the NSOE, with assistance from the State Public Works Board, developed a Btu calculation that they used along with the return on investment to determine which projects to award.

"The money got broken down pretty evenly," Groth said, "there were four solar photovoltaic projects, about \$2.5 million worth of heating and cooling system upgrades and the remainder, \$3 million were lighting retrofit upgrades. There were a smattering of other projects like window replacements but most of those didn't have a good return on investment."

Nevada Workforce Was Ready For the New Energy Economy

Nevada was hard hit by the downturn in the economy but the state was also fairly unique in the sense that it had begun to diversify its workforce earlier in the downturn than most.

"The state's has a vertical economy," Groth said. "Our two drivers are the gaming and hospitality industry, and the mining industry. The increase in gaming across the US, with tribal gaming and a lot of states adopting gaming regulations, forced Nevada to start diversifying beginning around 2007."

Groth says the trades recognized early in 2007 that things were changing in Nevada with a new emphasis being placed on energy efficiency and the new energy economy.

"The electrical trades and mechanical trades made changes early on," Groth said. "The Department of Training and Rehabilitation has done an excellent job in getting funds out to companies to support retraining programs in those construction trades and mining trades -- to be able to assist in the transition to the new energy economy and to get skills in the trades to support energy efficiency and renewables."

As a result Nevada's workforce has poised itself to stay on the leading edge of this transformation.

"We saw this change coming and I think there is a movement out of such a reliance on the gaming, hospitality and mining -- that in the last five years, and certainly in the last year, that the pace has quickened among the smaller trades and material suppliers specifically to diversify."

SEP Funds Create Jobs Statewide

The bulk of the activity in Nevada within the SEP state building retrofit program will happen between summer 2010 and the first of 2011. But the implementation plan also includes provisions to insure that the SEP dollars are spread among many contractors and many suppliers, in many counties across the state.

"We wanted to make sure that Elko suppliers and Elko workers were put to work on a per capita basis working on state building retrofits in their area. In doing that we are not awarding one contractor a large amount of money and allowing that contractor to take 18 months to go from building to building to building. We spread the money statewide and are spending it in a quick fashion from now through the end of December 2010." Groth said.

This approach of having a large number of projects underway throughout the state in concurrent fashion is a conscious effort to help stimulate the economy throughout Nevada.

To that end the NSOE has put the right amount of monies in the right areas with projects going on con-currently.

NEW MEXICO

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State Success Story

Solar Systems Saving Money and Generating Electricity at NM Schools

Students learn about solar energy while school districts save thousands

In New Mexico, State Energy Program (SEP) funds are supporting the installation of solar photovoltaic (PV) systems in 15 school districts around the state. The participating school districts are Belen, Carrizozo, Corona, Dulce, Elida, Gallup, Hatch, Los Alamos, Los Lunas, Moriarty, Peñasco, Portales, Rio Rancho, Ruidoso and Taos.

Each school system received up to \$300,000 to install a 50-kilowatt grid-tied PV system that generates significant electrical power for the school and community, saves money and energy for each school district, and provides educational opportunities about renewable energy for local students and the surrounding community. The installation of these 15 PV systems also helps generate jobs for local suppliers, installers and manufacturers of PV equipment in New Mexico.

Los Lunas Schools installed the first system at the high school. The 50 kW array is visible from both I-25 and State Road 6, the main thoroughfare in town. The school's engineering class prepared the proposed solar system layout and location, through an educational initiative called Project Lead The Way. The output of the system is monitored on a big screen TV inside the lobby, so everyone in the school can see how much energy the system is producing throughout the day.

Terry Othick, Chief Operations Officer with Los Lunas Schools, estimates that the two banks of solar panels mounted on raised tracks in the south parking lot of the high school will generate 94,000 kWh of electricity per year. At current rates, and with Renewable Energy Certificate (REC) payments, this translates to about \$20,000 in annual savings for electricity costs. PNM currently makes REC payments of 15 cents per kWh.

“This all started with our Project Lead The Way class. We look forward to those students continuing to be involved, looking at the data, and teachers using this system as part of the classroom environment to educate students about renewable energy,” said Terry Othick. “Our

district pays over a million dollars a year in electric bills, so we're very interested in expanding our energy savings to other schools sites, if we can partner up with agencies to help with the funding."

Schools throughout New Mexico were invited to submit proposals for PV system funding in September 2009. The \$4.5 million became available in June 2010. Los Lunas High School's PV system was the first of the 15 to be installed, going online October 2010.

"This is a great electric utility savings opportunity that will reduce energy costs, promote the solar industry in New Mexico, and teach our students about renewable energy," said Dr. Veronica Garcia, Secretary of Education.

Each participating district has its own unique implementation of the renewable energy PV systems being installed. Some are mounted on rooftops, while others are on the ground. In Portales, a wind turbine will supplement the PV system. In Gallup, the PV array will use Emcore modules that follow the sun, a pioneering technology made in New Mexico.

Consolidated Solar Tech of Albuquerque is the contractor installing systems at six of the schools, and Sacred Power, B&D Industries, DPW Solar and Paradise Power are doing the installations at the other schools. New Mexico-built products like Schott solar panels and UniRac mounting systems are being installed, adding to the number of jobs retained by this project.

In the smaller town school districts, the annual cost savings of about \$20,000 generated by the PV panels will have a dramatic money-saving impact on school budgets. The combined savings of all 15 school districts is about \$300,000 a year. The combined energy generated will be more than 1.4 million kWh per year. Environmental benefits of the PV systems include avoiding emissions of two million pounds a year of the greenhouse gas carbon dioxide (CO₂).

COST/BENEFIT FOR THE 15 SCHOOL DISTRICT PROJECT:

COST: Total cost = \$4.5 million

BENEFIT:

- Cost recovery in 15 years or less depending on electricity rate increases
- Total savings = \$6 million over the 20 year life of the PV panels
- 1.4 million kWh generated annually
- Two million pounds of CO₂ emissions avoided annually
- Provides renewable energy demonstrations and learning experiences for students and community

JOBS CREATED/RETAINED:

- The contracts with the 15 school districts funded the purchase of equipment from the following New Mexico companies: Schott Solar, UniRac, and Emcore, as well as installation by Consolidated Solar Tech (CST), Mosher Electric, Sacred Power, B&D Industries, DPW Solar and Paradise Power
- Threatened teacher and support staff positions retained due to utility bill savings

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State Success Story

Utah State Energy Program Launches Solar for Schools Program

Program to showcase value of renewable energy solutions to students, overall community

The Utah State Energy Program recently announced the beginning of Solar for Schools, a statewide energy education initiative designed to help educate students throughout Utah on the benefits of renewable energy. The program is funded by a \$3 million grant from the U.S. Department of Energy’s State Energy Program (SEP)

Solar for Schools includes a comprehensive renewable energy education curriculum that will be implemented in elementary, middle and high schools throughout the state. The program also includes the installation of 73 solar photovoltaic (PV) arrays at schools, with at least one array in each of the state’s 41 districts. The first installation was celebrated recently at a ceremony featuring all program participants at Salt Lake City School District's Hillside Middle School.

“Solar technology is one of the best sources of renewable energy in Utah and is at the forefront of the national energy mix. With Solar for Schools, the state will be able to produce clean energy while providing students with the opportunity to learn about these technologies,” said Elise Brown, renewable energy coordinator, Utah State Energy Program. “The program is an investment in energy education, Utah communities and Utah kids.”

Solar for Schools provides the scholastic resources for Utah students to learn about renewable energy technologies through interactive projects. The comprehensive renewable energy curriculum allows students the ability to track live data from the solar arrays, compare this data with other schools across the state, and ultimately gain a better understanding of how temperature and location influence energy output.