

Challenges and Successes on the Path
toward a Solar-Powered Community

Solar in Action



New Orleans, Louisiana

Includes case studies on:

- Educating and Training a Solar Workforce
- Streamlining Permitting and Interconnection Processes
- Implementing a Solar Schools Initiative
- Enacting Citywide Net-Metering Rules



The solar installation at Warren Easton Senior High School, pictured, was the first of four installations placed on local schools as part of the Solar Schools Initiative. At 28 kW of thin-film photovoltaics, it is the largest installation in the City of New Orleans. The system was completed by South Coast Solar in 2009 using Uni-Solar thin-film technology. *Photo from Garrett Crawford, NREL/PIX 18358*

Cover photos from iStock/8274472, New Orleans landmarks.

About the U.S. Department of Energy's Solar America Communities program:

The U.S. Department of Energy (DOE) designated 13 Solar America Cities in 2007 and an additional 12 cities in 2008 to develop comprehensive approaches to urban solar energy use that can serve as a model for cities around the nation. DOE recognized that cities, as centers of population and electricity loads, have an important role to play in accelerating solar energy adoption. As a result of widespread success in the 25 Solar America Cities, DOE expanded the program in 2010 by launching a national outreach effort, the Solar America Communities Outreach Partnership. As the Solar America Cities program evolved to include this new outreach effort, the program was renamed Solar America Communities to reflect DOE's commitment to supporting solar initiatives in all types of local jurisdictions, including cities and counties. Visit Solar America Communities online at www.solaramericacommunities.energy.gov.

New Orleans' Starting Point

New Orleans was designated by the United States Department of Energy (DOE) on June 20, 2007, as a Solar America City. At that time, the city had a unique opportunity to include solar technologies in its building stock. In 2005, Hurricanes Katrina and Rita damaged 130,000 homes, tens of thousands of businesses, and hundreds of government and nonprofit buildings, all of which have and continue to require major renovation or replacement. The funds for construction—from private and government insurance programs, government disaster relief grants, foundation support, and private investment—will eventually total in the tens of billions of dollars.

Improving response time relating to all of the city's many recovery activities was a top priority for then Mayor C. Ray Nagin. Mayor Nagin said the following about the city's participation in the Solar America Cities program: "This further demonstrates our commitment to rebuilding a New Orleans that is stronger and smarter than in the past." In December 2007, he formed the Office of Recovery Management (ORM). Prior to that date, decisions about infrastructure in New Orleans, like in many other cities, were made by a variety of city and other government agencies, which could delay the process of change and renewal. With the formation of ORM, policies and programs that, in the past might have operated at cross-purposes, were streamlined.

The passage of 2007 state legislation enabled Louisiana to provide significant tax incentives for residential renewable energy systems. Additionally, 2009 legislation furthered Louisiana's aggressive stance on renewable energy incentives by enacting acts 348 and 467 to allow for the transfer of residential renewable energy tax credits to third parties and the ability to create renewable energy financing districts. These two acts could have significant impacts on the local solar industry by offering options for lowering the high up-front costs associated with solar technologies—a strategy that has proven successful in other municipalities across the nation.

Building Partnerships and Setting Goals

As part of the city's recovery efforts, New Orleans:

- Became a Solar America City

- Developed and implemented the city’s Energy Smart program
- Developed a sustainability action plan.

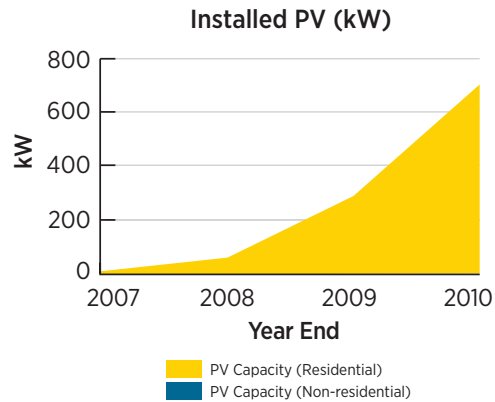
These three activities involve studying and assessing the market, creating demand for renewable energy and energy efficiency products and services, educating consumers, and promoting a green workforce by recruiting and training interested contractors.

The New Orleans Solar America Cities project is a collaborative effort led by the City of New Orleans in partnership with the DOE, Alliance for Affordable Energy, FutureProof, Global Green USA, and Louisiana CleanTech Network. Specific goals that the partnership identified are outlined below.

- Use the Solar America Cities program as a springboard to plan and initiate a publicity and outreach program that will induce demand for solar among individuals, businesses, and institutions.
- Use the technical assistance provided by the DOE to study current and future incentives that will promote and support solar technologies in public and private development.
- Analyze and recommend modifications and enhancements to the city’s codes, regulations, and policies to foster the adoption of solar technologies.

Installed Capacity

New Orleans



Installed PV capacity increase from December 31, 2007, to December 31, 2010

- Use the Solar America Cities program to attract commercial suppliers and manufacturers of solar technologies and services. Offer a “green collar” workforce training program that will provide individuals with the requisite skills to support a robust local solar industry.
- Foster the adoption of solar technologies in municipal buildings, beginning with schools.



A Lower Ninth Ward home is rebuilt through Brad Pitt’s Make It Right Foundation. *Photo from Scott Oman, NREL/PIX18359*



Craig Elementary School, located in New Orleans, installed one of the largest solar systems in the city. Photo from Emil Albrecht, NREL/PIX 18360

Accomplishments and Highlights

New Orleans has taken the following steps:

- Simplified the photovoltaics (PV) interconnection application and procedures for Entergy, the local utility company
- Streamlined local PV permitting procedures
- Trained more than 100 local individuals through the North American Board of Certified Energy Practitioners' (NABCEP's) curriculum to install solar systems
- Provided inspector training for the Office of Safety and Permits for both solar thermal and solar electric systems from two of the leading code official trainers in the nation
- Created the www.SolarPowerNola.com website, which acts as the clearinghouse for solar-related information in the New Orleans area
- Selected four schools for the installation of solar arrays, which will be used as models for solar installations on municipal buildings.

New Orleans partnered with the local utility to streamline PV permitting and interconnection.

Case Studies: Successes and Challenges

Educating and Training a Solar Workforce

A significant part of the city's comprehensive plan for the expansion of solar technologies is educating and training a solar energy workforce. New Orleans' Solar America Cities project partner, nonprofit Louisiana CleanTech Network (LCTN), in partnership with Louisiana Technical College, offers a solar technology installation course that gives students hands-on experience. The course, which has had more than 100 participants, is a combination of lecture and training covering real-world solar applications, National Electrical Code® information, explanations of state and federal tax credit incentives, and Louisiana solar installation contractor requirements. The class includes 48 hours of

professional training presented in two 3-day sessions and addresses the learning objectives for NABCEP's entry-level PV program. All course graduates receive the LCTN certificate of training, which satisfies one of Louisiana's solar system installation contractor requirements. Training costs pose a challenge for some individuals. The city is evaluating options to offset high up-front costs for low-income contractors so that they may gain access to solar installation classes.

The city also held training courses for city inspectors to become more familiar with solar technologies. It was difficult to obtain time commitments for inspector training, particularly when all inspectors were

required to miss a day of field work inspections, which meant a delay in approving permits.

Streamlining Permitting and Interconnection Processes

To streamline the permitting and interconnection processes, the New Orleans Office of Safety and Permits worked with Entergy, the local utility company, to establish a formal communications protocol. The utility created a new category in its call center dedicated to grid-tied PV system work orders. When a PV system passes city inspection, Safety and Permits notifies Entergy via the call center that a PV system is ready for interconnection. This not only shortens the time

between inspection and interconnection but also ensures that the proper inspection and the appropriate paperwork are complete. In addition, the city and Entergy worked together to improve what had been a lengthy and confusing application process. What was once a 50-page application was reduced to an easy-to-complete two-page document. A protocol was established for meter installation, thereby significantly reducing customer wait time between inspection and final commission.

Implementing a Solar Schools Initiative

The City of New Orleans is working with Entergy, the U. S. Green Building Council (USGBC), and DOE's technical assistance team to implement the New Orleans Solar Schools Initiative. DOE's technical team was brought on board to analyze new construction and major renovations of municipal buildings and schools for applicability of energy efficiency and solar technologies. Four schools have been selected for the installation of solar arrays and used as models for solar installations on municipal buildings. These schools are the foundation for the creation and implementation of a solar curriculum that is being used to teach students about energy efficiency and renewable energy. Energy audits of the New Orleans schools are being included in the curriculum, which allows students to participate in "hands-on" experience with actual building energy consumption.

In summer 2009, Warren Easton Senior High School was the first New Orleans public school to receive solar power equipment under the New Orleans Solar Schools Initiative. The purpose of the Warren Easton installation is to develop an environmentally sustainable school that incorporates state-of-the-art solar energy technologies and provides

Students install modules on a workshop roof during hands-on training at Delgado Technical College. Louisiana Clean Tech offers solar energy installation training classes around the state, in partnership with the Louisiana Community and Technical College System. *Photo from Louisiana CleanTech, NREL/PIX 18361*



firsthand learning tools to research and report on how energy conservation can integrate with solar power. The installation includes monitoring equipment, which allows students and others to monitor the performance of the system online at: <http://siteapp.fatspaniel.net/siteapp/simpleView.jsf?eid=367116>.

Financing the project was complex because the funds needed to go directly to the school and because commercialized carbon credits and matching funds were required. The project proceeded when the USGBC helped get funds to the school so that the installation could take place. Entergy purchased carbon credits from Nike, which was registered on Winrock International's American Carbon Registry. The city is using grant funds to purchase teaching materials for the schools through the National Energy Education Development Project. Entergy donated \$1.5 million and Nike \$150,000 to fund the initial stages of the program, while Winrock International and the USGBC-Louisiana Chapter coordinated logistics and disbursement of funds. Other partners included the Greater New Orleans Foundation, Think Energy, and DOE.

Enacting Citywide Net-Metering Rules

In 2007, the New Orleans City Council adopted net metering rules requiring jurisdictional utilities—particularly Entergy New Orleans, an investor-owned utility regulated by the city—to offer net metering to customers with systems that generate electricity using solar, wind, hydropower, geothermal, or biomass resources. The rules apply to residential facilities with a maximum capacity of 25 kilowatts (kW) and commercial and agricultural systems with a maximum capacity of 300 kW. These capacity limits and certain other conditions are specified in Louisiana's net-metering statute, which applies to all utilities in the state. New Orleans requires utilities to provide customer generators with a meter capable of measuring the flow of electricity in both directions. Customers can be charged a one-time fee for meter installation. Net excess generation is credited at the utility's retail rate and carried over to the customer's subsequent bill indefinitely.

The associated paperwork presented a challenge and hindered the ability for homeowners and local solar installers to easily apply for and employ net metering.

Much collaboration was required by the project lead and Entergy to clearly outline the process and reduce the amount of paperwork.

Top Takeaways

- Financial mechanisms are vital to advancing the local solar market.
- Having a designated solar coordinator to facilitate relationships between the various partners is critical.
- The city sees its role as ensuring ease of navigation through city systems, such as obtaining a permit for a solar installation.
- High training costs are a disincentive to the solar market in terms of making access to green jobs equitable and fair in the city's diverse market. The ability for an individual to be trained is an ongoing issue.
- Utility-grid access for large-scale installations in downtown districts continues to be a challenge. Downtown utility grid system security needs to be addressed in order for the city to focus on large-scale installation in the downtown area.

Next Steps

The City of New Orleans, through its Solar America Cities grant, has completed a comprehensive city plan for the expansion of solar technologies. The city continues to explore and evaluate ways in which it can support or encourage the adoption of solar technologies, reduce and eliminate obstacles to solar adoption, and stimulate the supply-side of the solar marketplace. The city will continue the process of recruiting private sector businesses to operate in New Orleans and be involved in the supply of solar technologies. It will support the training of developers, builders, and craftspeople about the technology. The city will also continue its public outreach activities by educating the public on the benefits and affordability of solar power technology for their homes and business.

New Orleans learned that having a designated solar coordinator is vital.

New Orleans will use its 2009 Solar America Cities Special Projects funding to focus on financing. The city and its partners will review financial opportunities for large-scale commercial solar installations such as Property Assessed Clean Energy (PACE) financing, shared tax credits, and solar leasing. The city is exploring ways to work collaboratively with Sustainable Environmental Enterprises to advance solar financing models in New Orleans.

New Orleans will specifically focus on the following activities:

- Establish a financing structure for renewables and large-scale solar deployment within the city limits
- Continue to explore PACE opportunities
- Train solar installers
 - Consider lessons learned from New York City regarding installing PV on complex network grids to help promote PV installations in the downtown business district
 - Support solar education for schools by working with Winrock, Entergy, and the USGBC on completing the curriculum
 - Complete the city's solar carbon report in partnership with ICLEI - Local Governments for Sustainability USA
 - Work with the Alliance for Affordable Energy to host monthly solar round tables for solar professionals in and around New Orleans
- Develop and launch a New Orleans Solar Map to help customers determine the environmental and financial benefits of installing solar on their rooftops.

Additional Resources

- GreeNOLA: A Strategy for a Sustainable New Orleans, presented in 2008 by the Louisiana Disaster Recovery Foundation:
www.nola.gov/residents/greenolasite/about%20greenola/-/media/files/greenola/greenolawithldrfcoverpage.ashx
- The Energy Smart New Orleans Plan: www.energyneworleans.com/content/IRP/Energy_Smart_slides.pdf
- Solar Power NOLA Website: www.solarpowernola.org/
- Global Green Website (Partner): www.globalgreen.org/neworleans/
- Alliance for Affordable Energy: www.all4energy.org/
- Louisiana CleanTech Network: www.lacleantech.net/
- FutureProof: www.futureproofnola.com/
- Sustainable Environmental Enterprises—SEE the Movement: www.seethemovement.com/

For more city information, contact:

Ron Harper, Office of Coastal and Environmental Affairs Email: rgarper@nola.gov Telephone: 504-658-4071

For more information on going solar in your community, visit *Solar Powering Your Community: A Guide for Local Governments* at http://solaramericacommunities.energy.gov/resources/guide_for_local_governments/

For more information on individual cities' solar activities, visit www.solaramericacommunities.energy.gov/solaramericacities/action_areas/

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Clockwise from top left: Photovoltaic system in Philadelphia Center City district (photo from Mercury Solar Solutions); rooftop solar electric system at sunset (photo from SunPower, NREL/PIX 15279); Premier Homes development with building-integrated PV roofing, near Sacramento (photo from Premier Homes, NREL/PIX 15610); PV on Calvin L. Rampton Salt Palace Convention Center in Salt Lake City (photo from Utah Clean Energy); PV on the Denver Museum of Nature and Science (photo from Denver Museum of Nature & Science); and solar parking structure system at the Cal Expo in Sacramento, California (photo from Kyocera Solar, NREL/PIX 09435)

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