

Prince George's County, Maryland



Prince George's County

Photo: Prince George's County, MD

CASE STUDY

SOLAR
OUTREACH



PARTNERSHIP

A Solar Leader in the Capitol Region

Prince George's County, Maryland, with a population of 863,420, has a geographic area of 483 square miles and wraps around the eastern, northern, and southern borders of Washington, D.C.¹ The county has a council-executive form of government and an annual operating budget of \$3.3 billion.² The largest department is the Prince George's County Public School (PGCPS) Board of Education, which accounts for nearly 60 percent of all general fund expenditures.³ Other large departments include the Police Department, the Fire/EMS Department, and the Department of Family Services.

Prince George's County has long been focused on energy efficiency, renewable energy, and green building; as a result, its energy programs are based on a strong legislative and policy framework.

In 2008, the county developed an [energy policy](#) to promote energy efficiency and the use of renewable energy, and to reduce greenhouse gas (GHG) emissions from government operations. In 2009, Prince George's County developed an [energy efficiency and conservation strategy](#) to both (1) to meet the strategic planning requirements of the Energy Efficiency and Conservation Block Grant (EECBG), a program funded by the American Reinvestment and Recovery Act (ARRA), and (2) to give priority to projects that would enable the county to most effectively meet its energy efficiency, climate change, and renewable energy goals. The county is in the process of finalizing a climate change action plan for government operations and the community at large. The draft goals for the action plan include reducing the GHG emissions county-wide by 80 percent by 2050 (in comparison to 2008 levels).^{4,5}

In 2013, the county updated its energy policy with funding from the Maryland Energy Administration's (MEA) [Smart Energy Communities Program](#) (see text box). The goals of the updated policy now entitled the Smart Energy Communities Policy are to:

- Reduce conventional centralized electricity generation serving applicable county government buildings by meeting 20 percent of those buildings' electricity demand with distributed renewable energy generation by 2022 as compared to 2012; and

Maryland's Smart Energy Communities

To facilitate local government implementation of the ambitious [statewide energy goals](#) set by Governor Martin O'Malley, the Maryland Energy Administration launched the Smart Communities Program, which requires cities, counties, and other local governments to adopt policies (either legislatively, or through executive orders) to achieve at least two of the following energy goals:

- Establish an energy consumption baseline, and develop a plan to reduce energy consumption by municipal buildings by 15 percent within five years.
 - By 2022, meet 20 percent of the electrical demand generated by local government buildings through distributed renewable energy.
 - Establish a baseline for petroleum consumption by all local government vehicles, and develop a program to reduce that baseline by 20 percent within five years.
- Reduce the county's applicable on-road vehicle consumption by 20 percent by 2018 as compared to 2012.

According to Lauren Urbanek of the MEA, "the Smart Energy Communities Program . . . was built on the successful Massachusetts Green Communities program, which demonstrated that local governments could contribute to the successful achievement of statewide energy goals if provided support and funding for implementation." Thus, in addition to providing local governments with funding to develop energy policies, MEA provides funding to help local governments implement those policies through energy efficiency, renewable energy, and transportation projects. In 2013 the program's first year, thirty-four Maryland local governments took part in the Smart Energy Communities Program.⁶

In the spring of 2013, to begin moving toward the county's ambitious goals, county executive Rushern Baker and the county council created a sustainability division within the Department of Environmental Resources, and the Office of Central Services hired Erica Bannerman as energy manager.⁷

Solar Energy Tax Credit

On November 20, 2012, the Prince George's County Council adopted Council Bill -77-2012, which expanded energy-conservation real-property tax credits by allowing county residents who enter into a solar power purchase agreement (PPA) or leasing arrangement to receive a tax credit of \$1,000, to cover part of the up-front installation cost or the first twelve months of lease payments.⁸

In 2008, the county enacted legislation offering a property tax credit for residential structures equipped with solar or geothermal systems. As originally designed, the credit could apply only to systems used to heat or cool a structure, or to provide hot water for a structure. In April 2009, however, the county enacted additional legislation extending the property tax credit to solar photovoltaic systems.⁹

The tax credit is equal to 50 percent of the cost of the system, up to \$5,000 for heating or cooling systems and up to \$1,500 for water-heating systems. (The 2009 legislation that expanded the tax credit to include solar-powered electrical systems is silent on the topic of monetary limits.) Eligible costs include reasonable installation costs, as well as parts and accessories

Solar Power Purchase Agreements

A solar power purchase agreement is a financial arrangement in which a third-party developer, called a solar services provider, owns, operates, and maintains a photovoltaic system, and a host customer agrees to (1) site the system on its roof or elsewhere on its property and (2) purchase the system's electric output from the solar services provider for a set period. Under this arrangement, the host customer receives stable—and sometimes lower-cost—electricity, while the solar services provider acquires valuable financial benefits, such as tax credits and income from the sale of electricity to the host customer.¹¹

necessary to operate the device; only costs incurred during the twelve months preceding a credit application are eligible. Finally, all systems must meet performance and safety standards set by a nationally recognized testing laboratory.

Clean Renewable Energy in Public Buildings Law

On November 19, 2013, the County Council unanimously approved CB-83-2013, [Clean Renewable Energy Technology in Public Buildings](#). This law requires clean renewable energy technology (e.g. solar PV or thermal, wind, and geothermal) in the construction of new public buildings or in major renovations of public buildings. This legislation makes Prince George's County the first jurisdiction in the State of Maryland to require clean energy systems in all new public buildings and major renovations of public buildings.

Solar Energy Projects at County and Municipal Facilities

Photovoltaic Solar System at the Consolidated Warehouse and Fleet Maintenance Facilities

In 2011, Prince George's County received \$493,000 in grant funding from the MEA's Project Sunburst, an ARRA-funded program designed to promote cleaner, affordable, and reliable energy. MEA set aside a significant portion of the project funding to promote the installation of renewable energy systems on public buildings. Using the Project Sunburst grant, Prince George's County installed two photovoltaic (PV) systems, with a combined capacity of 404 kW, at its Consolidated Warehouse and Fleet Maintenance Facilities in Landover and Capitol Heights. To undertake the project, the county entered into a PPA with [SunEdison](#) which designed, installed, and maintains the system. The system produces approximately 527,000 kWh of electricity and offset over 1.3 million pounds of carbon dioxide emissions annually.

Solar Farm Public Private Partnership

In April, 2014, the County released a Request for Qualifications (RFQ) to develop solar photovoltaic projects ("Solar Farms") at Brown Station Road Sanitary Landfill (BSRSLF) and Sandy Hill Creative Disposal Project Landfill (SHCDPLF). The projects are anticipated to supply 4 to 6-megawatts of renewable energy to the



Solar photovoltaic panels at the Consolidated Warehouse and Fleet Maintenance Facility. Photo: Office of Central Services, Prince George's County.

County's power grid, enough to power approximately 800 homes.

Moreover, the county received technical assistance grants from the Department of Energy via Metropolitan Washington Council of Government to develop and promote a [Solar Road Map](#), a [web-based tool](#) that provides guidance on how to transform the local solar market.

University Park Elementary School Solar Array

In 2010, the U.S. Department of Energy awarded the Town of University Park a \$1.425 million Small Town Energy Program (STEP) grant. STEP was a three-year grant program intended primarily for residential energy efficiency audits and upgrades. The town set aside \$200,000 of the grant to fund a 65 kW PV solar array on the roof of the University Park Elementary School—a move that was in keeping with the town residents' strong interest in solar energy, as indicated by an earlier community initiative to invest in a solar array on a local church.

The project resulted from a partnership between the Town of University Park, which owns and operates the array, and the PGCPs Board, which provided the roof space. The system will generate approximately \$18,000 annually, through a combination of energy savings and the sale of renewable energy certificates (see text box). John Tabori, mayor of University Park, described the installation as “a terrific example of a successful public-private partnership that delivers multiple benefits to the community,” and said that the town was “pleased to be part of it.”

In addition to providing cost savings and reducing GHG emissions, the solar installation will serve as

Renewable Energy Certificates

As renewable generators produce electricity, they create one renewable energy certificate (REC) for every 1,000 kilowatt-hours of electricity added to the grid. If the electricity and the associated RECs are sold to separate buyers, the electricity is no longer considered “renewable” or “green”; it is the REC that embodies the positive environmental impacts of renewable energy and conveys the attributes and benefits of renewable electricity to the REC owner.¹²

the basis for STEM (science, technology, engineering, and math) education. With funding from the grant and support from the STEP program, parent teacher association members, teachers and administrators, have been working in three elementary schools on the [Power Save Schools](#) initiative to incorporate lessons on solar energy into the curriculum. In addition, all PGCPs students will have access to a web portal that will allow them to track the performance of the solar energy generation system.

Chuck Wilson, STEP program director, noted that “it took us two years to bring this project to fruition, and that time was necessary to the project's success. As a group of large and diverse stakeholders from the town (mayor, council), PGCPs (administration, facilities, legal, and engineering), and the University Park community, we had a steep learning curve. We took our time to get educated and get comfortable with the project.” Even though the cost of the project was funded by the grant, it was the first solar project of its kind on a PGCPs facility, so there was no road map in place. To support other communities interested in developing similar projects, the project team is posting agreements, lessons learned, and other materials on the [project website](#). Because it is critical for all players to be comfortable with the project, Wilson offered this advice: “Take your project timeline and double it.”

Collaboration of Municipalities Solar Energy Recovery Plan

In an effort to reduce electric bills and GHG emissions and demonstrate how municipalities in Prince George's County could unite around a common goal, City Manager John Moss, of the Town of Bladensburg, established the Collaboration of Municipalities Solar Energy



Rooftop solar photovoltaic panels at University Park Elementary School. Photo: Ross Salawitch.



Solar panels on the roof of the Bladensburg Municipal Building.

Recovery Plan (SERP). In 2009, in response to the EECBG funding opportunity, Moss facilitated the development of an action plan to install solar PV systems on the roofs of government buildings in nine county municipalities, which would reduce CO2 emissions by 209.05 tons and energy costs by \$29,058 annually. According to Moss, “The goal of this collaboration was to demonstrate how municipal cooperation, as opposed to competition for limited resources, can generate results that far surpass what a single municipality can achieve on its own.”

In addition to Moss, SERP project leaders include mayors and commission chairs from all nine jurisdictions, as well as Sergeant James Flynn, Bladensburg Police Department; Mayor Walter James, Town of Bladensburg; Mow-Soung Cheng, special assistant to the deputy director of the Department of Environmental Resources, Prince George’s County; Wesley Queen, coordinator of the Legacy Leadership Institute at the University of Maryland; and Bryan Hacker, of Standard Solar, Inc.

With the cost savings generated by the reductions in electricity bills and the income generated by the sales of the renewable energy certificates (RECs), each jurisdiction was able to contribute to a joint fund supporting energy assistance for senior citizens, and a scholarship for students from participating jurisdictions wishing to pursue green careers. The cost savings and the REC sales also enabled municipalities to set aside funding for maintenance and enhancements of solar energy projects. For example, in the Town of Colmar Manor, these funds were used to purchase and install solar-powered street lighting. Table 1 summarizes the characteristics of the nine rooftop municipal PV projects.¹⁰



Solar Panels on the roof of Cottage City Government Office Building

The SERP partnership has continued, growing to include fourteen of the twenty-seven municipalities in Prince George’s County. The Town of Bladensburg is the project lead and writes proposals for all participating members. According to SERP project manager James Flynn, of the Bladensburg Police Department, “SERP is a true collaboration and keeps our jurisdictions from wasting valuable staff time competing with one another.”

In addition to having undertaken the PV projects, the Collaboration of Municipalities has received MEA funding for weatherization, and funding from the county Department of Housing and Community Development to support weatherization of older housing stock.

Solar Energy Installation Jobs Training

The Workforce Services Division of Prince George’s County Economic Development Corporation teamed up with the Joint Apprenticeship and Training Committee

Table 1: Collaboration of Municipalities Solar Energy Recovery Plan Solar Photovoltaic Installations

MUNICIPALITY	PROJECT SUMMARY	PROJECT COST
Town of Bladensburg	20.2 kW system on the Bladensburg Municipal Building: provides 12,237 kWh/year, cost savings of approximately \$1,834/ year, and greenhouse gas (GHG) reductions of 46,457 lbs./year	\$127,300
Town of Brentwood	12.425 kW system on town hall: provides 16,164 kWh/year, cost savings of \$6,772, and GHG reductions of 29,450 lbs./year	\$89,200
Town of Colmar Manor	19.6 kW system on municipal building and community center: provides 25,499 kWh/year, cost savings of \$10,760/year, and GHG reductions of 46,457 lbs./year	\$127,300
Town of Cottage City	19.6 kW system on government office: provides 25,499 kWh/year, cost savings of \$10,760/year, and GHG reductions of 46,457 lbs./year	\$127,300
Town of Forest Heights	14 kW system on government building: provides 18,341 kWh/year, cost savings of \$7,739/year, and GHG reductions of 33,184 lbs./year	\$92,500
City of Glenarden	19.6 kW system on government building: provides 25,499 kWh/year, cost savings of \$10,760/year, GHG reductions of 46,457 lbs/year	\$127,300
City of Mt. Rainier	15.4 kW system on government offices: provides 20,175 kWh/year, cost savings of \$8,513/year, and GHG reductions of 36,502 lbs./year	\$101,300
Town of North Brentwood	19.6 kW system on government structure: provides 25,499 kWh/year, cost savings of \$10,760/year, and GHG reductions of 46,457 lbs./year	\$127,300
City of Seat Pleasant	19.6 kW system on government building: provides 25,499 kWh/year, cost savings of \$10,760/year, and GHG reductions of 46,457 lbs./year	\$127,300

Source: Collaboration of Municipalities Energy Grant Submission, August 2009.

of Local Union 26 of the International Brotherhood of Electrical Workers (IBEW) to provide ninety hours of training to new workers in solar generation and electrical construction. The effort was funded by a Maryland Energy Sector Partnership grant, and the workers were enrolled as residential trainees with IBEW Local 26.



FedEx Field, home of the Washington Redskins, has eight thousand solar panels in the parking lot and in the area outside the stadium. Photo: Washington Post.

Solar Energy at Redskins Stadium

In September 2011, the Washington Redskins Football team and [NRG Energy](#) launched the largest solar installation in the Washington metropolitan region and the largest at a football stadium. Located at FedEx Field, home of the Washington Redskins, the solar installation includes 8,000 solar panels and yields 2 mW—enough to meet 20 percent of the stadium’s power needs on game days, and all of its power on nongame days. The Prince George’s County government was very supportive of this high-profile project.

Lessons Learned

The county and its municipalities have undertaken a wide variety of policies, initiatives, and projects—yet, taken collectively, they reflect a number of common themes.

- *Leadership from the top.* Maryland governor Martin O’Malley has long been a staunch advocate for renewable energy and the reduction of GHG emissions. Under his leadership, the

MEA has provided support and funding for local governments, enabling them to play a role in meeting statewide goals. Similarly, in Prince George's County, county executive Rushern Baker has been a vocal supporter of both statewide and countywide renewable- energy and GHG-reduction goals, and has put the people and the resources in place to implement county policies and plans.

- *Coordination between state and local government.* As illustrated by the Smart Energy Communities and the Project Sunburst examples, the Prince George's County government has eagerly participated in innovative state programs to achieve shared goals.
- *Collaboration and communication between local government stakeholders.* As demonstrated by the University Park Elementary School and SERP examples, county, municipal, and school board members have played integral roles in the success of joint projects. These players have learned to communicate and collaborate to achieve common objectives, creating long-term partnerships with long-term payoffs.
- *External financial support.* Like most local governments today, Prince George's County and its municipalities face challenging financial conditions. For new initiatives—especially large projects, such as solar PV systems—to get off the ground, outside funding is often required.

Contacts

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Dawn Hawkins-Nixon, Acting Associate Director, Prince George's County Department of Environmental Resources, Sustainable Initiatives Division

Lauren Urbanek, Energy Policy Manager, Maryland Energy Administration

Endnotes

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