

# ***PennSEF PIONEERS CLEAN ENERGY FINANCING FOR 35 MUNICIPALITIES***

May 2017



PENNSYLVANIA  
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Foundation for Renewable  
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SUSTAINABLE  
ENERGY FUND



BECKER CAPITAL & FINANCE

## **THE PENNSYLVANIA SUSTAINABLE ENERGY FINANCE PROGRAM (PENNSEF)**

### **A partnership of the Pennsylvania Treasury Department and FREE**

#### ***HEADLINE***

Pennsylvania Treasury Department and FREE partner in an innovative LED street & outdoor lighting solution that enables 35 municipalities in the Philadelphia area to achieve a triple bottom line:

- Reduce cost of local government service through an investment in high efficiency lighting that pays for itself from guaranteed savings. For the 35 municipalities, street and outdoor lighting upgrades save more than 40-60% in energy use.
- Create jobs and add value to the local economy. The project created more than 70-80 jobs and is adding over \$18 million in net savings after all costs of the investment are deducted.
- Lower our environmental footprint by cutting greenhouse gas emissions up to 150 thousand tons, an amount equal to the avoided emissions for 20 years of operation of a 7 MW<sub>p</sub> solar power plant.

#### ***PennSEF PIONEERS CLEAN ENERGY FINANCING***

The Pennsylvania Treasury Department has partnered with the Foundation for Renewable Energy and Environment (FREE), with financial support from the West Penn Power Sustainable Energy Fund, to develop a prudent, market- based investment vehicle that promotes energy and water efficiency, clean energy generation, economic development and environmental improvement.

Created in 2014, the Pennsylvania Sustainable Energy Finance Program (PennSEF) is a clean energy investment program that provides technical, economic and legal assistance, as well as low-cost capital, for energy improvement projects by municipalities, universities, schools and hospitals, and county and local governmental agencies).

The FREE team includes in-house experts and experienced legal support from Drinker Biddle and financing expertise from Becker Capital.

In 2016 PennSEF organized its first financing pool. The Regional Streetlight Procurement Project (RSLPP) is an opportunity brought to it by the Delaware Valley Regional Planning Commission (DVRPC). PennSEF provided a suite of services, including: pre-qualification of ESCOs; development of RFP documents (in consultation with DVRPC); vetting of replies to the RFP and assistance with energy service company (ESCO) selection; assistance to DVRPC and Johnson Controls Inc. (JCI – the selected ESCO for the project) in designing a procurement plan, installation schedule, and monitoring and verification approach; the development of PennSEF-stipulated energy price escalators; preparation of PennSEF's common contract documents – its Guaranteed Savings Agreement (GSA), Program and Installment Payment Agreement; and PennSEF-organized financing for 24 of the 35 participants.

Concurrently, DVRPC assembled the team to design and manage the administrative processes associated with the RSLPP initiative, including the means for municipalities to actively participate in choosing the LED street lighting and high efficiency exterior lighting tailored to meet their specific needs.

PennSEF offers financing strategies that ordinarily would be out of reach of smaller municipalities. By pooling buying power and adopting common contracts, PennSEF and DVRPC enabled participating local governments to achieve significant economies of scale in purchasing high-efficiency equipment. The project also cut energy requirements by up to 60%, a significant amount when 60-70% of a town's annual energy costs can come from street and outdoor lighting. The project saves taxpayer dollars, significantly lowers transaction costs, and provides guaranteed savings that must be equal to or greater than project costs (and for those who used PennSEF financing, debt service must be covered by guaranteed savings too).

While the RSLPP is focused on energy/water efficiency upgrades, economic and environmental benefits are critical co-benefits that considerably enhance the bottom line of the project.

Construction is under way and is expected to be complete by the end of 2017.

### Summary Statistics

The project upgrades more than 28,000 streetlights, exterior lights, and traffic signals. The project will generate gross energy savings of \$30.6 million. After all costs are deducted (including capital equipment, installation and fees to complete the transaction), the participating municipalities are expected to realize a combined net savings of \$15.6 million. With an average payback of 10.64 years for the 35 projects, nearly \$2.9 million in gross annual energy bill and operating cost savings are expected.

Total reductions in electricity use over the expected payback period will be 118.5 million kWh, and avoided CO<sub>2</sub> emissions of approximately 80,000 metric tons. Annual electricity reductions are nearly 10.6 million kilowatt hours, with about 7,200 metric tons of CO<sub>2</sub> emissions avoided each year. As a benchmark, the project CO<sub>2</sub> impact is equivalent to the 20-year operation of a nearly 7 MW<sub>p</sub> solar power plant.<sup>1</sup>

### Project Cost, Energy & Economic Savings, Environmental Benefits

Twenty-four of the thirty-five municipalities financed their projects through Univest Bank and Trust Company. Eleven municipalities either paid case or found their own financing. 19 municipalities have payback years of 12 years or less and are paying 2.95% in annual interest, while 5 municipalities have longer paybacks (up to 20 years) and are paying 3.05% in annual interest. Treasury has agreed to finance the tail portions of the five longer term loans.

Project cost and money savings, energy savings and environmental benefits (measured in CO<sub>2</sub> emissions avoided), and job creation are reported below.

35 PARTICIPATING MUNICIPALITIES						
AVG PAYBACK (yrs)	TOTAL CONSTRUCTION COST	TOTAL PROJECT COST (incl M&V and other fees)	TOTAL DEBT SERVICE (incl capitalized interest) PAID BY 24 MUNICIPALITIES	AVG CONSTRUCTION PERIOD (mos)	GROSS SAVINGS	NET SAVINGS
10.64	\$11,863,390	\$14,922,544	\$2,066,904	4.64	\$30,586,648	\$15,633,874

	Aggregate Yearly kWhs Saved	Aggregate kWhs Saved Over 20 Yr Equipment Life	Aggregate kWhs Saved During Payback Period
ENERGY SAVINGS	10,552,846	211,056,925	118,524,297

	Aggregate Yearly CO <sub>2</sub> Avoided (Metric Tons)	Aggregate CO <sub>2</sub> Avoided Over 20 Yr Equipment Life (Metric Tons)	Aggregate CO <sub>2</sub> Avoided During Payback Period (Metric Tons)
CO <sub>2</sub> BENEFITS (Method 1) *	7,429	148,584	83,441
CO <sub>2</sub> BENEFITS (Method 2) **	7,092	141,830	79,648
EQUIVALENT # OF ZERO-CARBON HOMES ***	1,037	20,744	11,649
AVOIDED EMISSIONS EQUAL TO 20 Yr OPERATION OF SOLAR POWER PLANT ****		6.98	

Notes

- \* Using US avg CO<sub>2</sub> emissions/kWh = 0.000704 metric tons per kWh for non-baseload output emissions.
- \*\* Using East (RFCE) avg CO<sub>2</sub> emissions/kWh = 0.000672 metric tons per kWh for non-baseload output emissions. [https://www.epa.gov/sites/production/files/201702/documents/egrid2014\\_summarytables\\_v2.pdf](https://www.epa.gov/sites/production/files/201702/documents/egrid2014_summarytables_v2.pdf) Table 3.
- \*\*\* Average U.S. home releases ~7 metric tons of CO<sub>2</sub> per yr. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>
- \*\*\*\* 1MWp PV avoids 20,800 tons of CO<sub>2</sub> emissions over 20-25 years of operation. <http://www.solarresourceguide.org/solar-environmental-benefits/>

## Jobs Created

Another benefit of the PennSEF program is job creation. For this project Johnson Controls is hiring subcontractors to perform the installation of the streetlights in order to handle the workflow in a timely and efficient fashion. A conservative projection of direct plus indirect job creation is 70-80 new jobs in the regional economy.

## Who Participated

The 35 participating local governments are:

**Bucks County (7)** – Bensalem Township, Buckingham Township, Middletown Township, New Britain Township, New Hope Borough, Newtown Borough, Warrington Township

**Chester County (3)** – Kennett Square Borough, Phoenixville Borough, Uwchlan Township

**Delaware County (14)** – Aston Township, Brookhaven Borough, Collingdale Borough, Darby Borough, East Lansdowne Borough, Glenolden Borough, Lansdowne Borough, Marcus Hook Borough, Media Borough, Millbourne Borough, Morton Borough, Newtown Township, Rutledge Borough, Yeadon Borough

**Montgomery County (11)** – Cheltenham Township, Hatfield Township, Jenkintown Borough, Lansdale Borough, Lower Moreland Township, Lower Pottsgrove Township, Schwenksville Borough, Springfield Township, Towamencin Township, Upper Dublin Township, Whitemarsh Township

## Highlights

The PennSEF program reflects the Treasurer's commitment to developing and investing in prudent opportunities that also save taxpayer dollars while offering innovative solutions to issues of concern to Pennsylvanians.

Thirty-five local governments in the Regional Streetlight Procurement Project are saving millions of dollars and benefiting from a single buying pool developed using the PennSEF model. The program eliminated duplication of local government efforts that compounded the savings, while reducing energy costs and providing environmental benefits to the region.

### Treasurer Torsella Comments

"By working together, we have created a program that eliminates government inefficiencies, is environmentally responsible and that creates saving opportunities by providing access to low-cost capital for not only local governments, but also for our universities, our schools, and our hospitals.

All of the cost—let me say that again—all of the cost of these energy improvement projects are paid for by the savings they create. For this project alone, taxpayers will see a gross savings of almost \$30 million to get a better product and a better environment. Who knows what the next project can achieve, and the one after that.

Every dollar that comes from a Pennsylvania taxpayer doesn't just represent money. It represents their hard work. It represents their investment into our commonwealth.

The Regional Streetlight Procurement Project is a shining example of that investment paying off. By combining resources, experience, and skills, we've helped 35 separate entities come together into one buying pool to move from high-cost, old light bulb technology into lower-cost, greener and more reliable LED bulbs.

More than \$30 million in gross savings. Streetlights that work better, that shine brighter, that use less energy and cost less to operate. This is what a simple promise looks like fulfilled. To steward taxpayer money wisely. To make streetlights shine. To make government work."

### Comments from FREE's Dr. Byrne

"The Regional Streetlight Procurement Project of the PennSEF program sets the standard, not only for the Commonwealth, but also across the United States: extraordinary intergovernmental cooperation to achieve a shared goal of lower costs of government, a significant upgrade in technology with no upfront outlay, and a cleaner future for all!

The Foundation's goal is to help communities in Pennsylvania and throughout the world to achieve a triple bottom line – substantially reduced energy costs, a resilient new economy based on 21st century technologies, and a condition of environmental sustainability that bequeaths a better world for our children and grandchildren. Thirty-five communities saving \$30 million, growing the local economy and, for the next 20 years, reducing greenhouse emissions from street and outdoor lights everyday by 40-60%...a very good standard."



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