

# The Pennsylvania Energy Development Authority

Annual Report 2018-19



Tom Wolf, Governor

Patrick McDonnell, Secretary of Environmental Protection & Chairman of the Board

7200-RE-DEP5222 12/2019

# Pennsylvania Energy Development Authority Board

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**David A. Althoff, Jr**

Acting Executive Director

**David A. Althoff, Jr. – Staff**

**Libby Dodson – Staff**

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## **Introduction/Executive Summary**

This annual report covers the operations of the Pennsylvania Energy Development Authority (PEDA) for the period July 1, 2018 to June 30, 2019. Significant activities include project management of the approved financial assistance awards made in October 2014. PEDA and Pennsylvania Department of Environmental Protection (DEP) staff members continue to monitor progress and implementation of the 2014 awarded grant projects. A listing of all current open projects is provided in Appendix A.

## **Background**

PEDA was created by the Energy Development Authority and Emergency Powers Act of 1982. PEDA is a public corporation governed by a 19-member Board of Directors and managed by an executive director and staff. PEDA became active when its first Board of Directors was confirmed on June 26, 1984, and it remained active until 1995. After a period of dormancy, on April 8, 2004, Executive Order 2004-5 was issued revitalizing PEDA and transferring it to DEP, which now provides staffing for the authority.

PEDA's mission is to promote the development and use of Pennsylvania's clean, indigenous energy resources and to stimulate economic development and job creation in Pennsylvania's growing energy sector in an environmentally beneficial manner.

## **Accomplishments in the 2018-19 Fiscal Year**

**Background:** A total of 184 applications for clean and alternative energy projects were submitted to PEDA on August 15, 2014 to be considered for financial assistance awards. The proposed projects totaled approximately \$81 million in requested funding. PEDA, utilizing available funds from the Energy Development Fund, Growing Greener II, Duquesne Light Settlement Fund and the Growing Greener Community Environmental Initiative fund, selected 28 projects totaling nearly \$12.5 million in financial assistance. PEDA utilized a competitive scoring system to rank the proposed projects. PEDA's Technical Review subcommittee including: Gibson C. Armstrong, Representative R. Lee James, Bernie Lynch, Tanya McCloskey, and Steve Drizos representing Secretary C. Alan Walker, selected the final list of recommended projects for presentation to the PEDA board for approval.

Awarded projects:

- 19 Advanced Energy Projects
- 5 Clean Alternative Energy Projects
- 3 Advanced Energy Projects to be deployed in the Duquesne Light service territory,
- 1 Community Environmental Initiative project

**Results:** Twenty-one PEDA projects were successfully deployed. Twenty projects have been completed and are operating. One project is still under construction and one project is awaiting administrative close out. Seven projects were mutually determined to be unable to move to completion as proposed. Of those seven projects, three projects were withdrawn prior to grant contracting and four were terminated. All funds awarded to the seven projects were liquidated and no grant funds were expended on those projects.

Nineteen projects have submitted their required one-year follow-up annual report. The two outstanding reports include the Knouse Foods CHP project, due to be received in the fall of 2019, as well as the Hydro Green Energy project which is still under construction. The total reported alternative energy generation and annual energy and CO<sub>2</sub> savings calculated from the one-year follow-up reports received were:

- Alternative energy generation: 12,744 MWh/yr.
- Electricity savings: 12,221 MWh/yr.
- Natural gas savings: 35,372 Mcf/yr.
- CO<sub>2</sub> savings ~ 8,950 tons/yr.

The anticipated alternative energy generation natural gas savings and emissions savings for the remaining two projects are:

- Alternative energy generation: 41,761 MWh/yr.
- Natural gas savings: 23,0086 Mcf/yr.
- CO<sub>2</sub> savings: ~ 14,570 tons

To highlight success of the implementation of the 2014 projects, PEDAs has completed 14 case studies based on both final and one-year follow-up reports received from Grantees. The development of these case studies served to confirm the actual outcomes described in the one-year follow up reports submitted and were used as a check on the success of the project related to the anticipated outcomes described in the applications vs the actual outcomes. The case studies developed include: project size, project cost, grant share, a statement or quote from the grantee regarding the beneficial nature of the project and their overall impressions as well as pictures, and description of results and benefits.

Five case studies are still under development. Two case studies are pending awaiting a one-year follow-up report and project completion.

To display the case studies PEDAs created a story map, which includes a GIS map of Pennsylvania identifying the location of every PEDAs project from the 2014 grant round in the state. Each location includes a brief synopsis of the project, pictures of the project, and a link to the completed case studies. PEDAs will continue to add to this story map as additional case studies are completed.

The link to the PEDAs Story Map is accessed through the PEDAs website.

## **Project Implementation**

**Advanced Energy Projects:** Projects which deploy: solar energy, wind, low-impact hydropower, geothermal, biomass, biologically derived methane gas including landfill gas, fuel cells, coal-mine methane, waste coal, coal liquefaction, coal polygeneration, integrated gasification combined cycle, and demand management measures including recycled energy and energy recovery, energy efficiency and load management.

**City of Harrisburg (Dauphin County):** The project replaced 6,161 Metal Halide/Mercury Vapor and High-Pressure Sodium Roadway Luminaires with energy efficient LED Roadway Luminaires.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed
- Energy Savings: 3,741,417 kWh/yr.
- Cost savings: \$525,000/yr.
- Emission savings: 1,526 tons of CO<sub>2</sub>/yr.

**Dairy Farmers of America (Tioga County):** The project replaced the mechanical burner linkage at the Middlebury facility with an electronic controlled combustion head and diffuser plate, as well as the addition of a variable frequency drive on the blower motor.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed
- Energy Savings: 1,303,097 kWh/yr. & 13,490 Mcf/yr.
- Cost savings \$172,544/yr.
- Emission savings: 1,351 tons of CO<sub>2</sub>/yr.

**Estes Express Line (Mercer County):** The project installed a 687.9kW solar PV system in West Middlesex, Pennsylvania on the roof of Estes' terminal.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed
- Energy Generated: 795,320 kWh/yr.
- Cost savings: \$67,125/yr.
- Emission savings: 324 tons of CO<sub>2</sub>/yr.

**Green Building Alliance (Allegheny County):** The project installed energy efficiency upgrades focusing on replacing light fixtures with LED and dynamic lighting controls at six free standing parking garages in Pittsburgh, PA.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed
- Energy Savings: 2,122,606 kWh/yr.
- Cost savings \$181,950/yr.
- Emission savings: 866 tons of CO<sub>2</sub>/yr.

**Shamokin Area School District (Northumberland County):** The project installed a state-of-the art building automation controls, upgrading the HVAC system at the High School, including a new chiller and rooftop units, and installing new campus wide exterior lighting.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed
- Energy Savings: 433,774 kWh/yr. & 1,805 Mcf/yr.
- Cost savings: \$70,253/yr.
- Emission savings: 287 tons of CO<sub>2</sub>/yr.

**West Branch Area School District (Clearfield County):** The project installed a biomass boiler system to provide up to 80% of its heating needs, replacing heating oil.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed
- Energy Savings: 55,148 Gal/yr. fuel oil
- Cost savings: \$124,853/yr. through fuel displacement and increased system efficiency
- Emissions savings: 618 tons of CO<sub>2</sub>/yr.

**Robert Packer Hospital (Bradford County):** The project deployed broad range of demand side efficiency improvements including: chiller plant retro-commissioning, replacement of inefficient energy recovery ventilation near end-of-life, and conversion of constant volume to variable volume air handlers.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed
- Energy Savings: 4,535,254 kWh/yr., & 11,910 Mcf/yr.

- Cost savings: \$395,703/yr.
- Emission savings: 2,573 tons of CO<sub>2</sub>/yr.

**Westtown School (Chester County):** The project upgraded Westtown School's central steam plant to a high efficiency hot water condensing boiler system and converted ten campus buildings (317,000 sq. ft.) from natural gas to electric heating. Additionally, lighting upgrades in Westtown's Lower and Middle Schools, and the Athletic Center was undertaken.

- Project Status: Project has been completed, annual reports have been received.
- Energy Savings: 84,844 kWh/yr.
- Cost savings: \$30,740/yr.
- Emission savings: 35 tons of CO<sub>2</sub>/yr.

**Aria Health System (Philadelphia County):** The project installed a new 1.1 MW combined heat and power system at the Torresdale Campus, the largest hospital in the Aria Health Systems group of three hospitals.

- Project Status: Project has been completed, annual reports have been received.
- Energy Generated: 8,585,412 kWh/yr.

**Elizabethtown College (Lancaster County):** The project installed a 2 MW ground-mounted solar photovoltaic (PV) array on campus owned property.

- Project Status: 95% completed, in administrative close out
  - The solar construction was completed in 2016; however, due to a heavy snow load, some portions of the solar racking was damaged. The solar project is functioning (generating electricity), but because of the damaged racking, the grantee (Community Energy, LLC. DBA Elizabethtown Solar, LLC) has not made a final payment to its contractor. In turn, DEP has been unable to make a final payment to the Grantee.
  - The grantee is working on a schedule for repairs to reinforce and replace the damaged racking. This activity should take place over the fall of 2019, with final payment and closeout before winter 2019-20.
- Energy Generated: 3,268,408 kWh/yr.
- Emission savings: 1,334 tons of CO<sub>2</sub>/yr.

**Knouse Foods Co Op (Adams County):** The project was provided grant funding to install a 1,200 kW Combined Heat and Power (CHP) system at its Peach Glen facility to utilize the biologically derived methane biogas to generate electricity, steam, and hot water to support Knouse Foods' on-going operations.

- Project Status: Project has been completed, and awaiting receipt of the one-year follow up annual report
- Anticipated Energy Generated: 9,498,016 kWh/yr.
- Estimated Natural gas savings: 23,086 Mcf/yr.
- Estimated emissions savings: 1,402 tons CO<sub>2</sub>/yr.

**Hydro Green Energy (Allegheny County):** The project will result in the design and the deployment of a 5.2 MW low environmental impact hydropower facility at the U.S. Army Corps of Engineers Braddock Locks and Dam on the Monongahela River.

- Project Status: 30% completed. Geotechnical drilling and analysis are complete and made significant progress on PPA. The project is behind the original period of performance schedule due to hydropower licensing time frames. A construction time schedule has been set upon receipt of final permitting. An extension has been granted and the new project completion date is March 31, 2022.

- Anticipated Energy Generation: 32,263,000 kWh/yr.
- Emissions savings: 13,163 tons of CO<sub>2</sub>/yr.

**Constellation New Energy (Montgomery County):** The project installed a locally-manufactured UltraBattery®; a hybrid lead acid battery device containing an ultra-capacitor to be placed in Aqua's Upper Merion Water Treatment Plant and act as a reference project to provide increased grid stabilization and power resiliency at the water treatment plant.

- Project Status: Project has been completed, annual reports have been received.
- The project goal was to demonstrate the installation of a battery and ultra-capacitor, which could provide frequency regulation via storage and dispatch of electricity while increasing resiliency. The results of the project were successful.

**Clean Alternative Energy Projects:** Projects which support manufacture of component parts of the alternative energy sector and projects which support research to advance or commercialize alternative energy projects.

**Alcoa Inc. (Westmoreland County):** The project successfully built and tested an innovative system to recycle deactivated electrolyte from the Alcoa Al-air battery system.

- Project Status: Project has been completed, annual reports have been received.
- The project goal was to increase the commercial viability of the use of the Al-Air battery in extending the range of electric vehicles, and to reduce gasoline/diesel use. Following successful commissioning of the system, a series of trials were conducted. The results of these trials demonstrated that the energy requirements for large-scale deployment outweighed the environmental benefits; consequently, the project was concluded in June 2017.

**Interstate Building Materials Inc. (Luzerne County):** The project included the acquisition of equipment, as well as job training to increase production capacity to support new production lines for development and production of window and door products with insulation values more than two times as efficient as current commercial products.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed.
- The project goal was to increase energy efficiency in building and reduce heating and cooling loads through the deployment of highly insulated building products. The grantee successfully expanded their energy-efficient window system manufacturing capabilities and continues to manufacture best of breed energy-efficient composite window systems.

**J.V. Manufacturing Company (Allegheny County):** The project resulted in the construction of dies, which are used to create the component parts in the manufacturing process for fuel cells. The project output increased production of fuel cells by over 30%.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed.
- As of April 2017, 282,733 fuel cell anodes and cathodes had been manufactured.
- Manufacturing of parts to contribute to a 20 MW increase in fuel cell deployments.

**Summit Steel & Manufacturing, Inc. (Berks County):** The project developed a solar photovoltaic panel mounting system called Solstice High Profile, which will reduce overall installation time and costs which are not possible with conventional mounting systems.

- Project Status: Project was completed in October 2017, annual reports have been received.

- Case study has been completed.
- The project goal was to fill the need in the marketplace for a low-profile ballasted mounting system which could be installed in areas such as landfills or brownfields.

**Duquesne Light Settlement Funding:** Duquesne Light funding was provided to PEDAs through a settlement, approved by Order of Dec. 1, 2007 in Pennsylvania Public Utility Commission, et al. v. Duquesne Light Company. The remaining balance of \$259,694.91 in the PEDAs Duquesne Light fund was reserved to be used for grant projects to be deployed in the Duquesne Light service territory. The funding was used for renewable energy projects and/or energy efficiency and education projects benefitting the customers of the Duquesne Light Company.

**AIM Ventures, LLC (Allegheny County):** The project installed a 30.21 kW ballasted PV system on a privately-owned building in the Larimer neighborhood of Pittsburgh.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed
- Energy generated: 34,632 kWh/yr.
- Cost savings: \$1,504/yr.
- Emissions savings: 14 tons of CO<sub>2</sub>/yr.

**Allegheny County:** The project was to insulate high volume steam traps and monitor performance of the steam system in four county buildings using a Carnegie-Mellon University developed technology, Smart Jackets.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed.
- Energy savings: 7,405 Mcf/yr.
- Cost savings: \$175,997/yr.
- Emissions savings: 450 tons of CO<sub>2</sub>/yr.

**Borough of Monaca (Beaver County):** The project installed a 55.80 kW ground mounted solar array.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed.
- Energy generated: 60,166 kWh/yr.
- Cost savings: \$7,220/yr.
- Emissions savings: 25 tons of CO<sub>2</sub>/yr.

**Community Environmental Initiative (CEI) Project (Northumberland County):** The CEI Program allows Counties to designate a project under a grant program, which they choose, to utilize the Growing Greener II funds provided to them. Northumberland County Board of Commissioners requested their project as a part of the PEDAs 2014 Program solicitation.

**Northumberland County:** The project installed a boiler upgrade for the Careerlink Building, home to several state and local agencies which directly service low to moderate income persons in Shamokin, resulting in 30% greater fuel use efficiency.

- Project Status: Project has been completed, annual reports have been received.
- Case study has been completed.
- Energy savings: 762 Mcf/yr.
- Cost savings: \$3,000/yr.

- Emissions savings: 46 tons of CO<sub>2</sub>/yr.

**Withdrawn and Terminated Projects:** The following is a summary of the seven projects that were withdrawn prior to grant execution or terminated during the period of performance. None of the following projects expended any grant funds. All funds committed were returned to the PEDAs.

#### **Withdrawn Projects:**

**Juniata Solar Partners** – Juniata Solar Partners, LP proposed to install a 2.3 MW solar PV located array located on the main campus of Harrisburg Area Community College (HACC), and at HACC's Midtown Campus. The project was to consist of various solar mounting systems including; attached and ballasted roof mounts, ground mount and solar parking canopies. The project was withdrawn in August 2015 due to Juniata Solar Partners and HACC being unable to reach an agreement to complete the project as proposed.

**Advanced Technologies & Land Services** – The proposed project was to result in the installation of a 1 MW photovoltaic array on a sustainable tree farm. The project was to be grid tied using a power purchase agreement with the farm, community, and Armstrong School District. The project was withdrawn in the 1<sup>st</sup> quarter of 2015 due to a number of obstacles and availability of school district resources to purchase the power.

**Solar Secured Solutions LLC** – The proposed project was to result in the development and production of a cost effective solar-hybrid mobile high intensity LED illumination system for use in emergency relief, mining, construction, oil, gas or other industrial applications. The proposed units could be sold without the lights as back-up power for emergency relief including communications, traffic applications, pumping and other vital infrastructure requirements, replacing traditional diesel power. The project was withdrawn in May 2015 due to the inability to commit to the project within the contracting period.

#### **Terminated Projects:**

**Nicholas Meat, LLC** – Nicholas Meat proposed to install an anaerobic digester system to more effectively manage the wastewater flow, control odors and produce biogas to offset propane purchases for hot water heating and steam production (278 gallons daily; 101,470 gal per year). This digester system was intended to anaerobically treat a total of 36,500,000 gal per year of waste water from the meat processing facility and as much as 7,600 tons of food wastes. This grant was terminated by DEP in September 2016 due to the grantee's inability to complete the project within the period of performance, as well as ongoing environmental compliance issues.

**Blue Mountain Resort Management LLC** – Blue Mountain Resort proposed build a 2MWe CHP project to expand operations including the development of an outdoor water park and hotel. The economic viability of this project was dependent on a new pipeline and using natural gas both directly and to power a 2 MW CHP system to generate low cost electricity. The grantee requested termination of the grant in June 2016 due to the pipeline construction, upon which the project depended, being postponed.

**Community Energy Solar LLC dba Marywood Solar LLC** – The proposed project was to develop a 1 MW-AC solar energy generating facility located on the Marywood University campus in Scranton, PA. The project was to be constructed on land owned by Marywood University and interconnect into Marywood's campus power system. Energy from the project was to be sold to Marywood through a long-term power purchase agreement and supply up to 50% of campus demand. The grantee requested termination of the grant in December 2015 due to further financial analysis as well as technical and commercial risks associated with the project.

**PA Solar Park II, LLC** - PA Solar Park II was a proposed 10 MW AC solar PV facility to be located in Nesquehoning Borough in Carbon County, Pennsylvania. The project would have generated over 14,000 MWh of emissions-free and renewable electricity per year. The project was expected to be able to generate enough electricity to power 1,200 US homes for a year and avoid about 9,700 tons of CO<sub>2</sub> emissions. The grant was terminated by DEP in November 2017 due to the grantee's inability to commit the additional fund necessary to complete the project within the period of performance.

### **Financial Report**

As of June 30, 2019, the Energy Development Fund contained a total of \$3,482,422.07 in funds. The funds include designated administrative funds, revenue from interest on securities, claw back funds from 2014 grant projects who have returned grant funds. It is expected that the balance of funds in Energy Development Fund may be committed in the coming fiscal year through the action of the PEDDA board. Financial information for the Energy Development Fund is described in the Fund Balance Sheet, attached as Appendix B. The Unreserved Fund Balance Sheet is attached as Appendix C.

The Duquesne Light Settlement funds were fully committed and expended through the financial assistance awards made on October 22, 2014. The Duquesne Light Settlement funds are described in Appendix D.

Growing Greener II provided PEDDA with up to \$10 million annually for 5 years ending in FY 2009-10. Those funds are a part of the Commonwealth's general obligation bond issuances. As such, the funds are not deposited directly into the Energy Development Fund but are maintained by the Governor's Office of Budget as a part of the larger fund containing other general obligation bond proceeds. PEDDA grantees utilizing Growing Greener II monies are paid from this larger fund. A statement of commitments and expenditures for PEDDA's allocation of Growing Greener II funding is attached as Appendix E. An uncommitted balance exists in this fund of \$1,215,857.10 due to prior committed projects returning unspent funds. It is expected, however, that the balance of funds in the Growing Greener II bond fund may be committed in the coming fiscal year through the action of the PEDDA board. The Growing Greener Funds are described in Appendix E.

### **Activities Going Forward**

PEDDA staff has been continuing to identify investment opportunities to deploy both the PEDDA and Growing Greener uncommitted funds into clean energy projects. PEDDA intends to host a series of Board meetings in the 2019-2020 program year to develop a deployment plan for those funds. It will be a goal of PEDDA to look for opportunities to utilize PEDDA's available funds to leverage significant additional capital into projects that fit PEDDA's Mission. Additionally, the PEDDA Energy Development plan was last updated in 2014. PEDDA will develop a 2019-20 Energy development plan that reflects PEDDA's current mission and prioritizes it's financial assistance goals.

### **Conclusion**

PEDDA plans to work with Governor Wolf, the legislature, and the private sector to help finance innovative clean energy projects and companies and to promote clean energy in Pennsylvania. In the coming year, PEDDA's board and staff look forward to potential new financial opportunities so as to provide assistance for advanced energy projects and continue the work to foster growth in this important area of Pennsylvania's economy.

## Appendix A

GRANT PROGRAM	PROJECT NAME	FUNDING RECIPIENT	COUNTY	PROJ STATUS	TOTAL PROJECT COST	TOTAL ARRA FUNDING	MATCHING FUNDS	TOTAL AMT INVOICED	EXPECTED COMPL DATE
PEDA 2014	Al-Air Battery Electrolyte Recycling	Alcoa, Inc.	Westmoreland	Complete	\$1,089,830	\$500,000	\$589,830	\$478,032	12/31/2015
PEDA 2014	Career Center Boiler Upgrade	Northumberland County Board of Commissioners	Northumberland	Complete	\$175,887	\$79,944	\$95,944	\$79,944	08/31/2015
PEDA 2014	Estes Express Lines - West Middlesex	Estes Express Lines	Mercer	Complete	\$1,410,195	\$400,000	\$1,010,195	\$400,000	04/30/2017
PEDA 2014	Gaining Ground by Going Green	Shamokin Area School District	Northumberland	Complete	\$4,299,993	\$500,000	\$3,799,993	\$500,000	11/30/2015
PEDA 2014	Interstate Energy Window Manufacturing Expansion	Interstate Building Materials, Inc.	Luzerne	Complete	\$2,170,000	\$470,000	\$1,700,000	\$469,950	10/21/2016
PEDA 2014	Modeling Biomass Excellence: Public Education Advancing the Land of Lumber	West Branch Area School District	Clearfield	Complete	\$1,261,675	\$500,000	\$761,675	\$500,000	10/31/2016
PEDA 2014	Monaca Water Reservoir Alternative Energy Project	Borough of Monaca	Beaver	Complete	\$150,000	\$75,000	\$75,000	\$75,000	12/01/2015
PEDA 2014	New Burner and Economizer for Johnston Boiler	Dairy Farmers of America	Tioga	Complete	\$151,952	\$75,976	\$75,976	\$72,918	10/31/2014
PEDA 2014	NextGen Fuel Cell Component Manufacturing	J.V. Manufacturing Company	Allegheny	Complete	\$1,486,435	\$500,000	\$986,435	\$500,000	09/30/2016

## Appendix A

GRANT PROGRAM	PROJECT NAME	FUNDING RECIPIENT	COUNTY	PROJ STATUS	TOTAL PROJECT COST	TOTAL ARRA FUNDING	MATCHING FUNDS	TOTAL AMT INVOICED	EXPECTED COMPL DATE
PEDA 2014	Pittsburgh Garage Energy Efficiency Initiative	Green Building Alliance	Allegheny	Complete	\$840,565	\$469,893	\$370,672	\$463,635	10/31/2016
PEDA 2014	Pittsburgh Non-Profit Power Purchase	AIM Ventures, LLC	Allegheny	Complete	\$98,630	\$28,800	\$69,830	\$28,800	05/15/2015
PEDA 2014	Steam System Insulation & Monitoring Project	Allegheny County	Allegheny	Complete	\$400,805	\$174,665	\$226,140	\$174,665	12/31/2017
PEDA 2014	Street Light LED Conversion Project	City of Harrisburg	Dauphin	Complete	\$2,837,653	\$500,000	\$2,337,653	\$500,000	12/31/2015
PEDA 2014	Upper Merion Ultra Battery Project	Constellation New Energy	Montgomery	Complete	\$1,598,840	\$500,000	\$1,098,840	\$500,000	12/15/2015
PEDA 2014	Robert Packer Hospital Energy Conservation Project	Robert Packer Hospital	Bradford	Complete	\$2,181,800	\$500,000	\$1,681,800	\$500,000	04/28/2017
PEDA 2014	Westtown School Comprehensive Conservation Plan	Westtown School	Chester	Complete	\$1,057,790	\$500,000	\$557,790	\$500,000	03/31/2017
PEDA 2014	Advanced Solar PV Panel Mounting Systems	Summit Steel & Manufacturing, Inc.	Berks	Complete	\$1,368,156	\$457,366	\$910,790	\$418,166	10/31/2017
PEDA 2014	Elizabethtown College and Clean Energy:	Community Energy Solar, LLC dba Elizabethtown Solar LLC	Lancaster	Complete	\$4,782,256	\$500,000	\$4,282,256	\$450,000	10/31/2017
PEDA 2014	Knouse Foods Peach Glen Biogas CHP System	Knouse Foods Co-Op, Inc.	Adams	Complete	\$2,028,900	\$1,000,000	\$1,028,900	\$1,000,000	10/21/2017

## Appendix A

GRANT PROGRAM	PROJECT NAME	FUNDING RECIPIENT	COUNTY	PROJ STATUS	TOTAL PROJECT COST	TOTAL ARRA FUNDING	MATCHING FUNDS	TOTAL AMT INVOICED	EXPECTED COMPL DATE
PEDA 2014	Aria Health System - CHP	Aria Health System	Philadelphia	Complete	\$3,864,506	\$500,000	\$3,364,506	\$450,000	02/27/2017
PEDA 2014	Braddock Locks and Dam Low Environmental Impact Hydropower Project	Hydro Green Energy, LLC	Allegheny	Healthy	\$8,428,913	\$499,913	\$7,929,000	\$0	03/31/2022
PEDA 2014	Anaerobic Digester for Nicholas Meats	Nicholas Meat, LLC	Clinton	Terminated	\$1,797,649	\$500,000	\$1,297,649	\$0	03/15/2016
PEDA 2014	Blue Mountain CHP and Natural Gas Pipeline Project	Blue Mountain Resort Management LLC	Carbon	Terminated	\$1,464,333	\$500,000	\$964,333	\$0	06/30/2016
PEDA 2014	Marywood Solar Project	Community Energy Solar LLC dba Marywood Solar LLC	Lackawanna	Terminated	\$3,675,000	\$500,000	\$3,175,000	\$0	11/01/2015
PEDA 2014	PA Solar Park II - PEDA 2014	PA Solar Park II, LLC	Carbon	Terminated	\$9,000,000	\$750,000	\$8,250,000	\$0	09/15/2017
PEDA 2014	HACC	Juniata Solar Partners	Dauphin	Withdrawn	\$9,089,657	\$484,559	\$8,605,098	\$0	N/A
PEDA 2014	Solar Power on a Sustainable Tree Farm	Advanced Technologies & Land Services	Armstrong	Withdrawn	\$4,068,000	\$500,000	\$3,568,000	\$0	N/A
PEDA 2014	Solar-diesel Hybrid Light Tower	Solar Secured Solutions LLC.	York	Withdrawn	\$4,313,320	\$500,000	\$3,813,320	\$0	N/A

## Appendix B

### ENERGY DEVELOPMENT FUND BALANCE SHEET June 30, 2019

<b>ASSETS</b>	
Cash with Treasurer	\$0.00
Cash in Transit	-\$4,026.97
Temporary Investments	-\$1,842,307.63
Long-term Investments	\$5,328,756.67
Loans Receivable	\$0.00
<b>TOTAL ASSETS</b>	<b>\$3,482,422.07</b>
<b>LIABILITIES AND FUND BALANCE</b>	
<b>LIABILITIES</b>	
Invoices/Accounts Payable	\$2,049.78
Due to Political Subdivisions	
<b>TOTAL LIABILITIES</b>	<b>\$2,049.78</b>
<b>FUND BALANCE</b>	
Reserved for Loans Receivable	\$0.00
Reserved for Encumbrances - Restricted Revenue	\$0.00
Reserved for Encumbrances	\$0.00
Reserved Non-Lapsable Balance	\$73,971.96
Reserved for General Fund Lapse	\$0.00
Reserved - Restricted Revenue	\$0.00
Reserved for General Fund Transfer per Act 44	\$0.00
Unreserved/Undesignated	\$3,406,400.33
<b>TOTAL FUND BALANCE</b>	<b>\$3,480,372.29</b>
<b>TOTAL LIABILITIES AND FUND BALANCE</b>	<b>\$3,482,422.07</b>

## Appendix C

### ENERGY DEVELOPMENT FUND UNRESERVED FUND BALANCE STATEMENT June 30, 2019

UNRESERVED FUND BALANCE, July 1, 2018	\$3,359,929.91
Reserved for Encumbrances - Restricted Revenue, July 1, 2018	\$0.00
Reserved for Restricted Revenue, July 1, 2018	\$0.00
Reserve for Transfer to General Fund, July 1, 2012	\$0.00
REVENUE	
PEDA Application Fees	\$0.00
Transfer from AFIG	\$0.00
Loan Repayment	\$0.00
Interest Payments	\$0.00
Late Fees	\$0.00
Miscellaneous Revenue	\$0.00
Interest on Securities	\$110,189.22
Duquesne Light Settlement	\$0.00
<b>TOTAL REVENUE</b>	<b>\$110,189.22</b>
Pending Prior Year Lapses	\$108,281.20
<b>TOTAL FUNDS AVAILABLE</b>	<b>\$3,578,400.33</b>
DEDUCTIONS:	
Expenditures - Current	\$98,028.04
Reserved for Non-Lapsable Balance	\$73,971.96
Expenditures - Restricted Revenue	
Commitments - Current	\$0.00
Commitments - Restricted Revenue	\$0.00
Reserved for Restricted Revenue	\$0.00
General Fund Lapse	\$0.00
Transfer to General Fund per Act 44	\$0.00
Reserved for Loans Receivables	\$0.00
<b>TOTAL DEDUCTIONS</b>	<b>\$172,000.00</b>
<b>UNRESERVED FUND BALANCE, JUNE 30, 2019</b>	<b>\$3,406,400.33</b>

## Appendix D

### ENERGY DEVELOPMENT FUND DUQUESNE LIGHT SETTLEMENT June 30, 2019

BALANCE JULY 1, 2007	<b>\$0.00</b>
FY 2007-08 Revenue	\$3,000,000.00
FY 2008-09 Revenue	\$0.00
FY 2009-10 Revenue	\$1,500,000.00
FY 2010-11 Revenue	\$1,500,000.00
FY 2011-12 Revenue	\$0.00
FY 2012-13 Revenue	\$0.00
FY 2013-14 Revenue	\$0.00
FY 2014-15 Revenue	\$0.00
FY 2015-16 Revenue	\$0.00
FY 2016-17 Revenue	\$0.00
FY 2017-18 Revenue	\$0.00
FY 2018-19 Revenue	\$0.00
<b>TOTAL REVENUE</b>	<b>\$6,000,000.00</b>
COMMITMENTS	<b>\$0.00</b>
EXPENDITURES	
FY 2009-10 Expenditures	\$729,166.16
FY 2010-11 Expenditures	\$1,101,352.84
FY 2011-12 Expenditures	\$1,956,460.32
FY 2012-13 Expenditures	\$1,703,325.77
FY 2013-14 Expenditures	\$0.00
FY 2014-15 Expenditures	\$0.00
FY 2015-16 Expenditures	\$434,694.91
FY 2016-17 Expenditures	\$75,000.00
FY 2017-18 Expenditures	\$0.00
FY 2018-19 Expenditures	\$0.00
<b>TOTAL EXPENDITURES</b>	<b>\$6,000,000.00</b>
<b>TOTAL COMMITMENTS AND EXPENDITURES</b>	<b>\$6,000,000.00</b>
<b>BALANCE JUNE 30, 2019</b>	<b>\$0.00</b>

## Appendix E

### GROWING GREENER II BOND FUND EXECUTIVE AUTHORIZATION STATEMENT June 30, 2019

BALANCE JULY 1, 2005	<b>\$0.00</b>
FY 2005-06 Executive Authorization	\$10,000,000.00
FY 2006-07 Executive Authorization	\$10,000,000.00
FY 2007-08 Executive Authorization	\$10,000,000.00
FY 2008-09 Executive Authorization	\$10,000,000.00
FY 2009-10 Executive Authorization	\$10,000,000.00
<b>TOTAL EXECUTIVE AUTHORIZATIONS</b>	<b>\$50,000,000.00</b>
COMMITMENTS	<b>\$549,913.00</b>
EXPENDITURES	
FY 2005-06 Expenditures	\$323,562.07
FY 2006-07 Expenditures	\$2,925,987.35
FY 2007-08 Expenditures	\$3,596,835.59
FY 2008-09 Expenditures	\$4,967,237.88
FY 2009-10 Expenditures	\$7,389,308.92
FY 2010-11 Expenditures	\$10,734,584.94
FY 2011-12 Expenditures	\$6,887,968.37
FY 2012-13 Expenditures	\$3,790,487.65
FY 2013-14 Expenditures	\$685,906.41
FY 2014-15 Expenditures	\$99,973.89
FY 2015-16 Expenditures	\$3,798,872.59
FY 2016-17 Expenditures	\$2,570,054.59
FY 2017-18 Expenditures	\$363,449.65
FY 2018-19 Expenditures	\$100,000.00
<b>TOTAL EXPENDITURES</b>	<b>\$48,234,229.90</b>
<b>TOTAL COMMITMENTS AND EXPENDITURES</b>	<b>\$48,784,142.90</b>
<b>BALANCE JUNE 30, 2019</b>	<b>\$1,215,857.10</b>