



**pennsylvania**  
DEPARTMENT OF COMMUNITY  
& ECONOMIC DEVELOPMENT

# Commonwealth Financing Authority

Alternative Energy Program Annual Report  
FY July 1 2010 – June 30 – 2011

> ready > set > succeed



Commonwealth of Pennsylvania  
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Department of Community  
& Economic Development  
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## Alternative Clean Energy Program - Annual Report Approved Project List

Applicant/Contact	Project	County	Description	kWh/yr saved	kBTU/yr saved	Gallons Per Year	MMBTU/yr	MWh Generated/YR	Approved Amount
<b>Grant :</b>									
<b>1 Accelergy Corporation</b> 600 Travis Suite 3680 Houston, TX 77002 Timothy Vail	Pennsylvania ICBTL Demonstration Project	Allegheny	Accelergy Corporation is requesting an Alternative and Clean Energy Program grant for the purchase and installation of a coal liquefaction validation unit, coal and bio-liquids unit, and photobioreactors at the Pittsburgh Applied Research Center (U-PARC) in Harmar Township, Allegheny County. Accelergy Corporation is planning to install a coal liquefaction validation unit, coal liquids and bio-liquids upgrading units, and a series of photobioreactors at the U-PARC facility. The validation and upgrading units will provide configurations for coal and waste coal conversions. The photobioreactors will demonstrate algae production runs and also provide research and quantification of terrestrial sequestration by the bio-fertilizer byproduct.						\$1,300,648
<b>2 Roaring Spring Blank Book Company</b> 740 Spang Street Roaring Spring, PA 16673-0035 Daniel B. Hoover	Roaring Spring Blank Book Biofuel	Blair	Roaring Spring Blank Book Company, a paper conversion company, was founded in 1887 and currently employs 378 people in its three divisions. They plan to start a fuel cube division that will use corrugated board, wood and low grade mixed paper products to make brick-syle fuel cubes at their facility in Roaring Springs. Program funds will help them to purchase a Rotary Waste Grinder, one of the main pieces of equipment needed to manufacture the fuel cubes. Roaring Spring Blank Book Company expects to manufacture 6,500 tons/year of the fuel cubes which will produce 92,300 MMBTU's/year. The cubes will be sold to institutional and industrial companies, that can burn the cubes in coal furnaces and provide a cheaper way to heat while lowering the amount of waste paper in landfills. The project will create 7 new full-time jobs in three years.				92,300		\$70,000
<b>3 Y-Carbon, Inc.</b> 360 George Patterson Blvd. Bristol, PA 19007 James Horan	Development of Y-Carbon's Alternative Energy Manufacturing	Bucks	Y-Carbon, Inc., a nanotechnology start-up company, is conducting research and product development of tunable activated carbon technologies. Y-Carbon is developing specialized carbon materials which allow for greater storage capacity in supercapacitors, gas storage devices and fuel cells. They plan on purchasing equipment that will allow them to increase their current production rate by 200 times. The activated carbon market is a developed global market and Y-Carbon's tuning of pore sizes makes their product superior to competing materials. Y-Carbon has 13 patents pending with the USPTO.						\$67,190
<b>4 Highland North LLC</b> 44 East 30th Street, 10th Floor New York, NY 10016-7605 James Spencer	Highland North Wind Project	Cambria	Highland North LLC (Highland) plans to construct the Highland North Wind Project, a 75 MW wind farm. The project is the expansion of the Highland Wind Project, which was commissioned in August 2009. Combined, both phases will total 137.5 MW of wind energy capacity. This project will increase the total wind energy in PA by 10%. The project is expected to begin in the 1st quarter of 2011 and be operational by the end of 2011.					178,000	\$6,000,000
<b>5 Penns Valley Area School District</b> 4528 Penns Valley Road Spring Mills, PA 16875 Brian K. Griffith	Penns Valley Area School District Biomass Boiler Project	Centre	Penns Valley Area School District plans to construct a 4,500 square foot biomass boiler facility to heat a 155,000 square foot high school, 105,000 square foot elementary school, and a 5,000 square foot maintenance building. The facility will be located centrally on vacant district property. The project will utilize a Pennsylvania manufactured boiler which will provide low-cost, renewable fuel heat for the schools served. The project is expected to reduce conventional fuel oil and electric utilization by nearly 84,000 gallons and 400,000 KWH annually. The district plans to use the biomass facility as an educational tool to demonstrate the environmental and cost benefits of renewable energy sources.				12,180	400	\$868,959

<p><b>6 Clean Green Hydro, LLC</b></p> <p>12410 Maple Lane</p> <p>N. Huntingdon, PA 15642</p> <p>James Powell</p>	<p>VFH In-Line Turbine - AMD Reclamation</p>	<p>Greene</p>	<p>Clean Green Hydro, LLC plans to purchase and install a 25 kW VFH In-Line Turbine at AMD Reclamation Inc.'s industrial treatment plant at a Commonwealth owned abandoned mine, where they treat the water that fills the abandoned mine. Approximately 4 million gallons of water is treated daily at the site. The water is pumped from the mine, treated and discharged. The VFH In-Line Turbine will be installed at the discharge point of the wastewater treatment plant and produce electricity. The Commonwealth owns and is responsible for treating the water that fills the mine for eternity, so a reduction in energy costs will save the Commonwealth money. The turbine will produce 138 MWh annually at this site. Clean Green Hydro, LLC will enter into a power purchase agreement with AMD Reclamation Inc. to sell the electricity for \$0.03/kWh.</p>	<p>138</p>	<p>\$31,250</p>
<p><b>7 Clean Green Hydro, LLC</b></p> <p>12410 Maple Lane</p> <p>N. Huntingdon, PA 15642</p> <p>James Powell</p>	<p>VFH In-Line Turbine - Dana Mining</p>	<p>Greene</p>	<p>Clean Green Hydro, LLC plans to purchase and install a 25 kW VFH In-Line Turbine at Dana Mining Company of Pennsylvania, LLC's 4 West Mine, where they treat the water used in the mining process. Approximately 3.5 million gallons of water is treated daily at the site. The water is pumped from the mine, treated and discharged. The VFH In-Line Turbine will be installed at the discharge point of the wastewater treatment plant and produce electricity. The turbine will produce 120 MWh annually at this site. Clean Green Hydro, LLC will enter into a power purchase agreement with Dana Mining Company of Pennsylvania, LLC to sell the electricity for \$0.03/kWh.</p>	<p>120</p>	<p>\$31,250</p>
<p><b>8 Clean Green Hydro, LLC</b></p> <p>12410 Maple Lane</p> <p>N. Huntingdon, PA 15642</p> <p>James Powell</p>	<p>VFH In-Line Turbine - Warwick Mine</p>	<p>Greene</p>	<p>Clean Green Hydro, LLC plans to purchase and install a 25 kW VFH In-Line Turbine at Duquesne Light Company's Warwick Mine Dewatering Plant, where they treat the water used in the mining process. Approximately 2.5 million gallons of water is treated daily at the site. The water is pumped from the mine, treated and discharged. The VFH In-Line Turbine will be installed at the discharge point of the wastewater treatment plant and produce electricity. The turbine will produce 120 MWh annually at this site. Clean Green Hydro, LLC will enter into a power purchase agreement with Duquesne Light Company to sell the electricity for \$0.03/kWh.</p>	<p>120</p>	<p>\$31,250</p>
<p><b>9 Illuminex Corporation</b></p> <p>1064 New Holland Ave.</p> <p>Lancaster, PA 17601</p> <p>Dr. Youssef Habib</p>	<p>Development of NanoStructured Lithium Ion Battery Anodes</p>	<p>Lancaster</p>	<p>Illuminex Corporation is conducting research and product development of advanced batteries for storage and deployment of energy derived from alternative sources, such as wind, waste energy, and solar. While wind and solar energy have significant potential as alternative energy sources, they are intermittent sources. Electrical energy storage systems, such as the high capacity stationary batteries being developed by Illuminex, will be used to improve the reliability, stability, and efficiency of alternative energy sources on the electrical grid. Illuminex Corporation is developing a high energy density anode which will improve the Lithium-ion Battery with respect to storage capacity, lifetime, and safety. Illuminex is collaborating with MaxPower Inc. of Harleysville, PA to develop the high capacity anode for Lithium-ion Batteries. Illuminex Corporation, founded in 2003 by MIT trained physicist Dr. Youssef M. Habib, develops nanowire arrays which can be used for thermal management, photovoltaic cells, batteries and chemical detection.</p>		<p>\$63,976</p>
<p><b>10 Jay C. Sensenig &amp; Andrea J. Sensenig</b></p> <p>245 Spring Hill Road</p> <p>Kirkwood, PA 17536</p> <p>Jay Clifford Sensenig</p>	<p>Small Co-op Digester at Sensenig Family Farm</p>	<p>Lancaster</p>	<p>Jay C. and Andrea Sensenig operate a 150 acre, 150 cow dairy farm where they plan on constructing an anaerobic digester to offset their current electric consumption. The anerobic digester will generate energy for the main dairy site and provide improved nutrient management for the Cheseapeake Bay Watershed. The digester will produce enough biogas to power a 130kW engine generator and provide approximately 879MWh of electricity annually. This will offset all the electrical needs of the farm with the excess being sold to the utility.</p>	<p>879</p>	<p>\$575,000</p>

<b>11 Providence Township</b>	Wood gasification boiler	Lancaster	Providence Township is embarking on a capital improvement project to build a new 4,025 square foot township office building and a 12,950 square foot maintenance building. The township has chosen to install a wood gasification boiler heating system to heat both buildings. Providence Township has an abundant supply of wood chip fuel from the township's road-side tree-trimming waste. The biomass boiler will burn the township's wood chips to generate hot water, which will provide heat to both buildings. The system will offset 7,200 gallons of fuel oil annually. Providence Township is seeking LEED certification for the office building.	293	\$43,687
200 Mt. Airy Road					
New Providence, PA 17560					
C. William Shaffer					
<b>12 City of Allentown</b>	Waste to Energy, Allentown	Lehigh	City of Allentown will partner with Delta Thermo Energy plan to take sludge from the waste water treatment facility plus municipal solid waste collected in the municipality and processes this waste as biomass to produce clean efficient energy to power the waste water treatment facility and sell the excess power to the substation. Using the 100 tons of municipal solid waste and 50 tons of sludge produced per day, Allentown plans on generating 3 MW of alternative electricity. The site is designated a KOEZ zone and is a brownfield site.	25,200	\$2,000,000
435 Hamilton St.					
Allentown, PA 18101					
Ed Pawlowski					
<b>13 Advanced-Tec Materials LLC</b>	Advanced Tech Materials Manufacturing Project	Luzerne	Advanced-Tec Materials LLC has developed a revolutionary new fly-ash based foam insulation product for use in the commercial and residential fire door, overhead door and refrigerated truck door industries. The product has several advantages, including the utilization of a waste coal product (fly-ash), it is non-flammable, it has higher "r values" or insulating values compared to traditional foam material and it uses a soy-based polyol. The product saves energy and is competitively priced with traditional foam materials. Advanced-Tec Materials is commercializing the product and developing a manufacturing facility in the Humbolt Industrial Park. The company will create 26 full-time jobs within three years.		\$182,352
103 Rotary Dr					
West Hazleton, PA 18202-1193					
Jack St. Pierre					
<b>14 Postlewait Logging Company</b>	Pellet Mill	McKean	Postlewait Logging Company plans on constructing a wood pellet manufacturing facility at their site in Liberty Township, McKean County which currently operates a satellite wood yard for Domtar Paper Mill. Postlewait currently produces certified wood chips used to make paper. The proposed use of the property as a pellet mill by Postlewait is a natural expansion of its current wood chipping business. The facility will have the capacity to produce up to 17,500 tons of pellets per year. In addition to the wood pellet mill equipment and housing, Postlewait Logging plans on installing a natural gas generator set to produce electricity for the pellet mill. The company plans on creating 18 jobs within three years of commencing the project.	287,000	\$180,000
4894 Route 155					
Port Allegany, PA 16743					
Grant Postlewait					
<b>15 Furman Foods Inc. dba Furmano Foods</b>	Furmano's Waste to Energy	Northumberland	Furman Foods, Inc. plans to expand their waste water treatment plant to continue operating in compliance with the Chesapeake Bay Tributary Strategy. In addition, they are going to utilize an anaerobic digester to generate methane gas that will be harnessed as a source of renewable energy, generating electricity for the waste water treatment plant. It is estimated that Furman Foods will realize \$215,000 in electrical cost savings per year with the digester installed.	1,620	\$1,750,000
P.O. Box 500					
Northumberland, PA 17857					
David N. Geise					

<p><b>16 Pennsylvania State University</b></p> <p>227 W Beaver Ave Ste 401  Research Accounting  State College, PA 16801-4819</p> <p>David Richardson</p>	<p>Grid STAR: Smart Grid Training &amp; Application Resource Center</p>	<p>Philadelphia</p>	<p>The Pennsylvania State University (PSU) is developing the GridStar Center in partnership with the Philadelphia Industrial Development Corporation (PIDC). PSU has secured \$5 million in funding from the Department of Energy to help advance and promote the growth of smart grid technologies that enable clean energy projects. The new center, headquartered at the Philadelphia Navy Yard, will join four new research and education programs, including the Greater Philadelphia Regional Innovation Cluster. The project will conduct research on the interaction of buildings, renewable energy, energy storage and electric vehicles with the grid. The Philadelphia Navy Yard's electric grid is owned by PIDC, who will allow PSU to upgrade the system for research on smart grids. This project will create initial capacity in five areas of research: (1) measuring the benefits of price-responsive electrical demand, (2) characterizing the variability of small-scale intermittent energy generation, (3) valuing portfolios of distributed generation, energy storage and demand curtailment in restructured electricity markets, (4) developing a design tool for hybrid renewable energy systems and (5) suggesting strategies for mitigating localized security threats against smart meters and advanced metering infrastructure. The research is led by Dr. David Riley, who will work collaboratively with the PSU College of Architectural Engineering Department, PIDC and Duke Energy (PIDC's operating grid contractor).</p>		<p>\$1,022,500</p>
<p><b>17 Zoological Society of Pittsburgh</b></p> <p>One Wild Pl.  Pittsburgh, PA 15206</p> <p>Dr. Barbara Baker</p>	<p>ICC Biomass Burner</p>	<p>Somerset</p>	<p>The Zoological Society of Pittsburgh (Pittsburgh Zoo) plans to construct and operate an alternative fuel biomass burner at the International Conservation Center (ICC) in Somerset County. The biomass burner will use switchgrass grown and harvested at the site to provide heat for the barns which house the animals. The biomass burner enables the ICC facility to be self-sufficient, providing heat to its barns without bringing external fuels onto the property through the use of a sustainable energy resource. The model of burner was selected by the Pittsburgh Zoo for its versatility, with the ability to burn switchgrass, wood chippings, elephant manure and other biomass.</p>	<p>345</p>	<p>\$267,000</p>
<p><b>18 Sullivan County School District</b></p> <p>101 East Main Street  P.O. Box 346  Dushore, PA 18614</p> <p>Steven Gobble</p>	<p>Sullivan County School District Biomass Project</p>	<p>Sullivan</p>	<p>Sullivan County School District plans to construct a 1,750 square foot biomass boiler facility to heat its elementary and high schools. The facility will be connected to an existing boiler facility and HVAC systems, and will utilize Pennsylvania manufactured equipment which will provide low-cost, renewable fuel heat for the schools served. The project is expected to reduce conventional fuel oil utilization by approximately 85%, or 53,000 gallons. The district plans to use the biomass facility as an educational tool to demonstrate the environmental and cost benefits of renewable energy sources.</p>	<p>2,157</p>	<p>\$250,000</p>
<p><b>19 Power Source LLC</b></p> <p>66 White Tail Lane  Pleasant Mount, PA 18453</p> <p>Frank Materazzo</p>	<p>Sodium Sulfur Energy Storage</p>	<p>Wayne</p>	<p>Power Source is requesting assistance in order to develop a sodium sulfur battery for energy storage. The sodium sulfur battery has about six times the energy storage capacity and roughly eight times the life span of a standard lead acid battery. It has over double the energy storage capacity and triple the life span of a lithium ion battery. The batteries will be designed to meet the large scale energy storage needs of the renewable energy production industry. Energy produced from renewable sources are not constant and production doesn't always coincide with demand. These batteries will be able to store the renewable energy produced until the energy is needed. The development will take place over a three year period, where different designs can be tested to maximize performance, safety and ease of manufacturing.</p>		<p>\$2,000,000</p>

**20 Alcoil USA, LLC**

250 N. Main St.

Jacobus, PA 17407-1011

Mr. Steven Wand

High Efficiency, Microchannel  
Heat Exchanger Production

York

Alcoil, Inc. plans to purchase an aluminum brazing furnace for their facility in Jacobus Borough. This equipment will allow Alcoil to manufacture new heat exchanger technology which can reduce the energy use of air conditioning and refrigeration equipment by up to 40%. Alcoil, Inc. is a startup company led by their President and CEO, Steve Wand who has 31 years experience in air conditioning and refrigeration systems. He is the founder and former co-owner of GEA FlatPlate, Inc., a leading U.S. manufacturer of heat exchangers which currently employs over 120 people. Alcoil, Inc. currently has 8 full time employees. 52 jobs will be created as a result of the project.

\$520,000

## Alternative Clean Energy Program - Annual Report

Applicant/Contact	Project	County	Description	kWh/yr saved	kBTU/yr saved	Gallons Per Year	MMBTU/yr	MWh Generated/YR	Approved Amount
<b>Loan :</b>									
<b>1 Gettysburg Energy and Nutrient Recovery Facility, LLC</b> 71 Old Mill Bottom Road North Annapolis, MD 21409 Patrick C. Thompson	Gettysburg Energy and Nutrient Recovery Facility	Adams	EnergyWorks BioPower, LLC plans to establish a Nutrient Recovery facility located on 29 acres in York Springs, Adams County. EnergyWorks will produce 2.5 Megawatts of electrical generation while recovering nutrients from more than 700,000 tons of manure annually. A chicken manure supply agreement exists between EnergyWorks and Hillandale-Gettysburg, LP, and the Nutrient Recovery facility will be located adjacent to the farm host. Manure will be removed daily from the farm host to the facility, where it is processed within fully enclosed systems. Annually, more than 1 million pounds of nitrogen pollutant emissions in the form of ammonia and oxides of nitrogen will be eliminated, improving air quality locally and reducing nitrogen loading in the Chesapeake Bay. EnergyWorks plans to create 12 full-time jobs at the facility.					20,805	\$5,000,000
<b>2 Mount Oliver Borough</b> 400 Holiday Drive, Suite 300 Pittsburgh, PA 15220-2727 Joanne Malloy	Mt. Oliver Borough Street Lighting Upgrade	Allegheny	Mount Oliver Borough is replacing 85 street lights with energy efficient LED lighting. The borough plans to replace 15 fixtures and upgrade to LED bulbs at another 70 locations. The energy savings that will result from the project is expected to be 34,405 kWh, saving the borough \$4,128 annually.	34,405					\$27,159
<b>3 Albright College</b> 13th & Bern Sts. Reading, PA 19604 Lex McMillan	Albright Sustainability Project	Berks	Albright College is planning to install a cogeneration combined heating and power plant to generate campus energy requirements for electrical distribution, heating and chilled water. The cogeneration plant will consist of a 1 MW natural gas fired generator and a waste-heat-steam boiler. Albright also plans to add an absorption chiller and air handling unit which will allow the unit to operate at off-peak times when grid congestion is at its lowest. The project has an anticipated energy savings of \$429,241 annually.	6,053,000					\$295,000
<b>4 County of Blair</b> Blair County Court House 423 Allegheny Street, Suite 142 Hollidaysburg, PA 16648 Diane Meling	Blair County (Blair County Airport Project)	Blair	The County of Blair is applying on behalf of the Altoona Blair County Airport Authority for an energy efficiency project at the Blair County Airport. The project includes the installation of compact fluorescent lamps in place of traditional incandescent lamps, more efficient T-8 fluorescent lamps and ballasts, better lighting technologies for outdoor applications and the appropriate use of occupancy sensors to control the operating hours of multiple fixtures. Hangars will be updated with 32W and 44W compact fluorescent technology. Additional controls will be installed to allow the taxiway and runway lighting to be turned off at night when no air traffic is present.	193,451					\$86,681
<b>5 KGRA Energy LP dba Liberty WHR I LLC</b> 736 North Western Ave, #356 Lake Forest, IL 60045 Jason Gold	KGRA: Liberty Waste Heat	Bradford	KGRA Energy Corporation intends to build a 1,225 kW waste heat recovery system that harvests exhaust heat emitted from eight reciprocating engines used at a natural gas gathering station operated by Chesapeake Energy Corporation. The facility will capture waste heat to generate clean electricity. The produced electricity will then be delivered to Chesapeake as well as to the local electric company (Penelec) under a net-metering contract. The facility is estimated to produce 10,194,450 kWh annually.					10,198	\$2,000,000
<b>6 Clarion Hospital</b> One Hospital Drive Clarion, PA 16214 Byron Quinton	Clarion Hospital Chiller	Clarion	Clarion Hospital currently has a 29 year old inefficient chiller that they plan to replace. The project includes the purchase and installation of a Trane 325 ton chiller and a 325 ton cooling tower with two variable speed drives to allow for more efficient operations and energy savings. The project will reduce energy consumption by 335,000 kWh a year, a net annual energy savings of \$25,000.	335,000					\$179,000

<p><b>7 Delta Commerce Park Developers, LLC</b>  2000 Technology Parkway Mechanicsburg, PA 17050 LeRoy D. Kline, Jr.</p>	Delta Pointe at Silver Spring	Cumberland	<p>Delta Commerce Park Developers, LLC is constructing a 60,000 square foot high performance building which will serve as corporate headquarters for Delta Development Group, Inc., a consulting company founded in 1988 specializing in community and economic planning, information technology, real estate development, and economic development. The project will provide an anchor tenant for the developing Delta Pointe at Silver Spring, a new business park located in south-central Pennsylvania. The building will incorporate green features, including sustainable site design, water efficiency, energy efficiency, recycled materials, and indoor environmental quality. The building will utilize the GBI Green Globes rating system and achieve Three Globes.</p>	525,154	\$5,000,000
<p><b>8 The City of Harrisburg</b>  10 North Second Street Suite 202 Harrisburg, PA 17101-1678 Linda D. Thompson</p>	City of Harrisburg Clean Energy Retrofit	Dauphin	<p>The City of Harrisburg is seeking to upgrade its heating and cooling system at the Rev. Martin Luther King Jr. City Government Center. The project involves the replacement of the city's non-operational chiller with a new high-efficiency chiller, installing a heating and cooling controls system, and a desuperheater instillation system. Currently the city spends approximately \$240,500 per year in energy costs. At current energy rates, it is anticipated that the City of Harrisburg will save approximately \$51,127 per year with the upgrade.</p>	669,829	\$0
<p><b>9 Quanta Technologies, Inc.</b>  5 Great Valley Parkway, Suite 349 Malvern, PA 19355 Jay R. REYHER</p>	QuantaPanel™ IGS Manufacturing Operation	Lancaster	<p>Quanta Technologies, Inc. plans to expand their manufacturing facility located at the former RCA manufacturing facility at Burle Business Park. Quanta will produce the QuantaPanel Insulating Glass Systems (IGS), which is a low e storm window system that provides a cost effective means to insulate existing windows. The IGS installed cost is typically less than 30% of the installed cost of a replacement window. Quanta will acquire and install equipment that will provide for more automated and efficient handling, assembly, packaging and shipping of glass. This will allow Quanta to produce 240,000 units annually and employ 60 employees within the first three years.</p>		\$585,298
<p><b>10 Kurt Weiss Greenhouses of Pennsylvania, Inc.</b>  225 Arcos Drive Post Office Box C Mount Carmel, PA 17851-2613 Russell Weiss</p>	Renewable Energy Biomass Boiler Project	Northumberland	<p>Kurt Weiss Greenhouses of Pennsylvania, Inc., an established agricultural operation with over 18 locations throughout the United States, is planning to upgrade its current natural gas fired boilers with a wood chip boiler. The upgrade will use a carbon neutral fuel that is expected to reduce carbon dioxide emissions by 10 million pounds per year. Currently, Kurt Weiss Greenhouses spends approximately \$790,000 per year for natural gas. With the boiler system upgrade, it is anticipated Kurt Weiss Greenhouses will spend approximately \$270,000 per year in wood chip fuel, a savings of \$520,000 per year.</p>	79,000	\$959,500
<p><b>11 Schuylkill Intermediate Unit 29</b>  Schuylkill Intermediate Unit 29 Education Services P.O. Box 130 17 Maple Avenue Mar Lin, PA 17951 Dr. Diane M. Niederriter</p>	Energy Improvement Project	Schuylkill	<p>SIU plans to improve the energy efficiency of their 137,732 square foot Maple Avenue campus building through the implementation of two energy conservation measures outside of the current ESCO contract. SIU addressed three energy conservation measures under an ESCO agreement, which included building envelope improvements, but due to budget constraints, upgrades including the replacement of the existing chiller system and the re-commissioning of eleven air handling units were not included. Replacing the chiller system involves decommissioning and removing the existing 32 year old system and replacing it with a high efficiency frictionless centrifugal chiller, replacing the rooftop cooling tower, as well as installing chiller system controls to serve the building. The air handling units are used to condition and circulate air as part of the building's HVAC system.</p>	154,770	\$496,368

<b>12 Tamaqua Area School District</b> PO Box 112 Tamaqua, PA 18252-0112 Carol Makuta	Tamaqua Area SD Energy Efficiency and Geothermal Project	Schuylkill	The Tamaqua Area School District is planning on installing energy conservation measures in five school district buildings. The project includes the installation of direct digital HVAC controls and building envelope upgrades at the Tamaqua Middle School, the installation of low e window film and building envelope upgrades at the Tamaqua High School and building envelope upgrades at Tamaqua Elementary School, West Penn Elementary School and Rush Elementary School. The building envelope upgrades include weather stripping doors, sealing roof edges and roof-to-wall intersections and installing high-value insulation to reduce air leakage. The energy conservation measures will help the school district decrease energy consumption, saving the school district approximately \$48,000 annually. The other major component of the conservation efforts includes converting the three HVAC systems to geothermal systems at Tamaqua Elementary School, West Penn Elementary School and Tamaqua High School Natatorium and locker rooms. The geothermal systems will help the buildings decrease energy consumption by over 50%, saving the school district approximately \$127,000 annually.	1,950,235	\$754,980
<b>13 Sullivan County School District</b> 101 East Main Street P.O. Box 346 Dushore, PA 18614 Steven Gobble	Sullivan County School District Biomass Project	Sullivan	Sullivan County School District plans to construct a 1,750 square foot biomass boiler facility to heat its elementary and high schools. The facility will be connected to an existing boiler facility and HVAC systems, and will utilize Pennsylvania manufactured equipment which will provide low-cost, renewable fuel heat for the schools served. The project is expected to reduce conventional fuel oil utilization by approximately 85%, or 53,000 gallons. The district plans to use the biomass facility as an educational tool to demonstrate the environmental and cost benefits of renewable energy sources.		\$691,340
<b>14 Evangelical Community Hospital</b> One Hospital Drive Lewisburg, PA 17837 Michael O'Keefe	Evangelical Community Hospital Biomass Boiler	Union	Evangelical Community Hospital, as part of a larger \$32 million expansion, is planning to install a biomass boiler, outfitted with a micro-turbine and single-effect absorber chiller system for co-generation. The upgrade will provide 1,200,000 kWh of electricity per year, reducing energy expenditures by more than 50%, or \$637,268 annually. Additionally, the project will eliminate 2,720 pounds of carbon dioxide emissions per year.	1,200	\$800,000
<b>15 Monongahela Valley Hospital, Inc.</b> 1163 Country Club Road  Monongahela, PA 15063 Louis J. Panza, Jr.	MVH Energy Efficiency Project	Washington	Monongahela Valley Hospital is undertaking energy efficiency upgrades and evaluations at three separate buildings at the hospital. The upgrades include lighting retrofitting, replacement of existing air handling units, controls, and steam system efficiency improvements. The hospital includes three primary buildings along with a parking garage, storage and mechanical buildings. The total energy savings is estimated to be 925,376 kWh/year and 81,983 therms of natural gas (2,402,111 kWh/yr) or a net annual energy savings of \$266,199.	3,327,487	\$1,948,000
<b>16 York City Sewer Authority</b> 1701 Blackbridge Road York, PA 17402 Joseph T. Hand	Micro-turbine Co-generation System Project	York	York City Sewer Authority is replacing a 20-year old co-generation system with a more efficient micro-turbine co-generation system at the York City Waste Water Treatment. The new micro-turbine co-generation system will provide 2,500,000 kWh of electricity from the methane produced as a naturally occurring by-product during the wastewater treatment process. The project will result in a cost savings of approximately \$277,775 per year. The authority serves over 17,000 residents in eight townships in York county.	2,986	\$1,500,000

## Renewable Energy Program - Annual Report

Applicant/Contact	Project	County	Description	Energy Savings Per Year(KBTU)	MWh Generated/Yr	Approved Amount
<b>Loan :</b>						
<b>1 Ambar Falcon Property LP</b> 730 William Pitt Way Pittsburgh, PA 15238 Lalit Chordia	100 Ton Geothermal System	Allegheny	Ambar Falcon Property LP plans to install a geothermal heating and cooling system for their 78,000 sq. ft. building that will be used as the new global headquarters for three affiliated companies including Thar Process, Inc., Thar Energy, LLC, and Thar Geothermal, Inc. The geothermal system will save 1,047,719 kWh or approximately \$80,377 per year.	3,428,243		\$234,000
<b>2 Joseph &amp; Marilyn Ging</b> 49 Ridge Dr Fleetwood, PA 19522 Joe Ging	Home Geothermal Project	Berks	Joseph & Marilyn Ging plan to eliminate their reliance on oil to heat their home by installing a closed loop geothermal heating and cooling system in their 2,200 sq. ft. home. The geothermal system will replace the existing 16-year old oil burner and has an anticipated energy savings of \$1,297 per year.	52,572		\$10,478
<b>3 Randy and Marilyn Moses</b> 2131 Hill Road Palm, PA 18070 Randy Moses	Geothermal residence HVAC installation	Berks	Randy and Marilyn Moses are requesting a Renewable Energy Program loan for the purchase and installation of a geothermal system in their residence located in Hereford Township, Berks County. Randy and Marilyn Moses plan to eliminate their reliance on electric heating and cooling sources by installing a 3 ton closed loop geothermal heating and cooling system in their 2,240 sq. ft. home. The geothermal system will replace the existing electric baseboard heating system, 10 year old central AC system, and hot water heater. The energy saving will be approximately 10,841 kWh per year.	35,761		\$8,000
<b>4 David and Amanda Bokash</b> 105 Maple Glen Drive Harmony, PA 16037 David Bokash	Geothermal Installation	Butler	David and Amanda Bokash plan to install a geothermal system to heat and cool their new 3,000 square foot home and 2,100 square foot basement. The geothermal system is expected to save \$2,639 per year if installed instead of a propane system.	95,157		\$14,802
<b>5 Michael DeLeo and Kimberly DeLeo</b> 1410 Johnnys Way West Chester, PA 19382 Michael J DeLeo	Geothermal low interest loan	Chester	Michael and Kimberly DeLeo plan to replace their 18 year old electric heat pump with a 4-ton geothermal closed loop heating and cooling system in their 2,742 sq. ft. home. The geothermal system will reduce the current energy use at their residence by 66%.	34,121		\$13,492
<b>6 John and Christa Zitko</b> 538 Randall Circle Hummelstown, PA 17036 none	John Zitko Residential Geothermal Heat Pump Installation	Dauphin	John and Christa Zitko plan to replace their aging electric heat pump with a 3-ton closed loop geothermal heating and cooling system in their 2,022 sq. ft. home. The geothermal system will reduce the current energy use at their residence by approximately 11,337 kWh or \$907 per year.	35,458		\$8,250
<b>7 Kenneth L. and Jennifer E. Eshleman</b> 3 Tim Drive Lititz, PA 17543 Kenneth L. Eshleman	Tim Drive Geothermal Unit	Lancaster	Kenneth L. and Jennifer E. Eshleman plan to replace their existing heat pump system with a forced air, ground source, geothermal heating and cooling system in their 2,835 sq. ft. home. The new geothermal system will provide an energy savings of 19,000 kWh per year.	64,790		\$9,427
<b>8 Jody and James Rule</b> 568 Hostetter Lane Annville, PA 17003 Jody Rule	Residential Geothermal Heating and Cooling	Lebanon	Jody and James Rule plan to replace two 18-year old heat pumps by installing a closed loop geothermal heating and cooling system in their 2,520 sq. ft. home. The geothermal system has an anticipated energy savings of \$2,193 per year.	47,312		\$11,760
<b>9 Mirosław &amp; Margaret Baranowski</b> 30 Shafer Dr Brookheads ville, PA 18322 household	Home Geothermal	Monroe	Mirosław and Margaret Baranowski plan to eliminate their reliance on oil to heat their home by installing a closed loop geothermal heating and cooling system in their 2,250 square foot home. The geothermal system will replace the existing oil burner and has an anticipated energy savings of 24,911 kWh per year.	84,999		\$15,625

## Renewable Energy Program - Annual Report

Applicant/Contact	Project	County	Description	Energy Savings Per Year(KBTU)	MWh Generated/Yr	Approved Amount
<b>Grant :</b>						
<b>1 Chestnut Flats Wind, LLC</b> 1801 Market Street, Suite 2700 Philadelphia, PA 19103 Cisneros Humaran	Chestnut Flats Wind Farm	Blair	Chestnut Flats Wind, LLC, a special purpose entity formed by Gamesa Technology Corporation, Inc., plans on constructing a 38 MW wind farm on the Chestnut Flats plateau located in Blair County. The site is currently used for logging, recreation, gas exploration and as a watershed property. Chestnut Flats Wind, LLC will own the wind farm, which will consist of nineteen 2MW turbines manufactured in Pennsylvania. When fully operational, the project will deliver approximately 115,000 MWh of electricity or the equivalent amount of electricity used by 11,000 average Pennsylvania homes. Gamesa manufactures wind turbines and develops and constructs wind farms throughout the world.		115,000	\$1,000,000
<b>2 Coca-Cola Refreshments USA, Inc.</b> 2500 Windy Ridge Parkway  Atlanta, GA 30339 Mr. Maynard Ferguson	Coca Cola Enterprises - Erie, PA - Wind	Erie	Coca-Cola Enterprises plans to utilize 5,000 square feet of their property in the City of Erie to construct a 50 kW wind turbine system. Coca-Cola Enterprises will contract with Orion Energy Systems to design and install the wind turbine system, which when fully operational will generate 119,481 kWh of energy. The wind turbine system will offset 42% of the facility's electrical consumption, and Coca-Cola Enterprises will implement a solar energy system to account for the remainder of the facility's energy load. Orion Energy Systems is a designer, manufacturer, and deployer of energy efficient technology.		153	\$37,500
<b>3 Offsite Data Backup Service LLC</b> 22 Village Road Beach Lake, PA 18405 Michael C. Morris	Vertical Wind Turbine - Wayne	Wayne	Offsite Data Backup Service, LLC is a start-up business that will build and test software, specializing in the development and implementation of computer information systems. The installation of a 25 kW wind power unit will offset the large overhead and electrical consumption of the data center. The turbine is a gearless permanent magnetic system that is expected to generate approximately 44,912 kWh annually. This will be the first production application of a magnetic vertical turbine in the United States, and the company principals have a draft agreement from the patent holder to manufacture and sell components in the northeast quartile of the country.		45	\$25,000
<b>4 Hillandale Farms East, Inc.</b> 2862 Daron Road Spring Grove, PA 17362 James Minkin	Hillandale Farms East Wind Turbine Project	York	Hillandale is a chicken egg producer that owns a flock of 1,000,000 chickens that produce 100,000 dozen eggs daily. In order to provide a safe, comfortable and healthy environment for the flock, ventilated buildings kept at a constant temperature are required. In addition to regulating temperature and air quality for the chicken houses, electricity is used for automated egg handling, sorting, washing, egg packing, processing equipment and refrigeration units. The two proposed 50kW wind turbines will produce a total of 250,000 kWh per year, offsetting 18% of Hillandale's electricity usage.		250	\$100,000

## Solar Energy Program - Annual Report

Applicant/Contact	Project	County	Description	kWh/Yr	Hot Water Tank Capacity	Approved Amount
<b>Grant :</b>						
<b>1 BLUERE-PA Solar / Gettysburg, LLC</b> 50 Main Street, White Plains New York, NY 10606 Konstantin Braun	Gettysburg College	Adams	Blue Renewable Energy, LLC plans to install a 366 kW solar photovoltaic system on the roof of Gettysburg College's Bream Wright Houser Athletic Center located in the Borough of Gettysburg, Adams County. All electricity generated will be purchased by the college from a special-purpose entity created by Blue Renewable Energy, LLC prior to system commissioning. The system will generate 403,976 kWh annually, providing 30% of the facility's demand. Under a proposed 20-year power purchase agreement, the electricity will be bought at a rate of \$0.0628/kWh in year one, with an escalator of 1.5% each year thereafter. Blue Renewable Energy, LLC is a special purpose subsidiary of Essco Wholesale Electric, the U.S. based subsidiary of Sonepar Corporation, the world's largest privately-held electrical equipment distributor. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$1,831,649. Complete Lending & Investments, Blue Renewable Energy's financing arm, has committed \$1,374,149 in matching funds.	403,976		\$457,500
<b>2 JLTwin Land Co LP</b> 24 Summit Park Drive Pittsburgh, PA 15275 Gary Kassem	SingleSource Roofing Solar PV System	Allegheny	SingleSource Roofing Corporation is a leading designer of solar-ready and traditional roofing systems. The company plans to install a 71 kW solar PV system on the roof of its headquarters facility in North Fayette Township, Allegheny County, occupying approximately 8,700 square feet. The system will provide approximately 74,635 kWh annually and supply 10% of the onsite electricity demand. Solar Energy Program funds will be used for the purchase only of solar PV modules and other system equipment. The total project cost is \$384,771. Single Source Roofing Corporation will provide \$274,721 in matching funds. Single Source Roofing Corporation requested a \$110,050 grant; DCED recommended a \$110,050 grant; the CFA Board approved a \$110,050 grant at its meeting on July 7, 2010.	74,635		\$110,050
<b>3 Urban Redevelopment Authority of Pittsburgh</b> 200 Ross Street, 12th floor Pittsburgh, PA 15219 Rob Stephany	EECO Center Solar PV	Allegheny	The Urban Redevelopment Authority of Pittsburgh is purchasing and installing an 8 kW rooftop solar photovoltaic system on their Energy and Environment Community Outreach Center located in the City of Pittsburgh, Allegheny County. The solar photovoltaic system will produce 8,620 kWh per year for use at the center. The purpose of the center is to serve as a neighborhood resource center for education, training, and support programs with a specific focus on energy efficiency and renewable energy. Solar Energy Program funds will be used for the purchase and installation of the rooftop solar thermal system. The total solar project cost is \$46,415. The Urban Redevelopment Authority of Pittsburgh will provide \$32,415 in matching funds.	8,620		\$14,000
<b>4 Urban Redevelopment Authority of Pittsburgh</b> 200 Ross Street, 12th floor Pittsburgh, PA 15219 Rob Stephany	EECO Center Solar Hot Water	Allegheny	The Urban Redevelopment Authority of Pittsburgh is purchasing and installing a rooftop solar thermal system on their Energy and Environment Community Outreach Center located in the City of Pittsburgh, Allegheny County. The solar thermal system will service an 80 gallon storage tank and will offset the use of 31.3 therms of natural gas per year at the center. The purpose of the center is to serve as a neighborhood resource center for education, training, and support programs with a specific focus on energy efficiency and renewable energy. Solar Energy Program funds will be used for the purchase and installation of the rooftop solar thermal system. The total solar thermal project cost is \$7,500. An Allegheny County Economic Development Community Infrastructure and Tourism Fund grant will provide \$3,750 in matching funds.		80	\$3,750

<p><b>5 Beaver Solar LLC</b> P.O. Box 1140 206 Gale Lane, Suite C Kennett Square, PA 19348 Dean Musser</p>	<p>1 MW Solar PV Project</p>	<p>Beaver</p>	<p>Eaton Beaver Solar LLC is requesting a Solar Energy Program grant for the installation of a ground-mounted solar photovoltaic system at Eaton Corporation's testing facility located in Vanport Township, Beaver County. Eaton Beaver Solar LLC plans to install a 1 MW solar photovoltaic system on the rooftop of Eaton Corporation's high power testing facility. The system will generate 1,103,760 kWh annually, offsetting 18% of demand. All electricity generated will be purchased by the Eaton Corporation from Eaton Beaver Solar LLC under a proposed 20-year power purchase agreement at a fixed-rate of \$0.0943/kWh. Eaton Beaver Solar LLC is a newly created special purpose entity formed by Tangent Energy Solutions, Inc., a Pennsylvania based developer and owner/operator of numerous renewable energy and efficiency projects. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. The total project cost is \$4,198,935. Pardee Resources Company, the equity investor, has committed \$3,198,935 in matching funds. Applicant requested \$1,000,000 grant; DCED recommended \$1,000,000 grant; CFA approved \$1,000,000 grant at its meeting held July 7, 2010.</p>	<p>1,103,760</p>	<p>\$1,675,000</p>
<p><b>6 Yuasa Solar LLC</b> P.O. Box 1140 206 Gale Lane, Suite C Kennett Sq, PA 19348 Dean Musser</p>	<p>Yuasa Battery</p>	<p>Berks</p>	<p>Yuasa Solar, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a rooftop solar photovoltaic system on the Yuasa Battery facility located in Laureldale Borough, Berks County. Yuasa Solar, LLC plans to install a 307.5 kW solar photovoltaic system on the roof of Yuasa's US headquarters and manufacturing plant. The system will generate 307,082 kWh annually, offsetting 2% of demand. All electricity generated will be purchased by Yuasa from Yuasa Solar, LLC under a proposed 20-year power purchase agreement at a fixed rate of \$0.088/kWh. Yuasa Solar, LLC is a newly created special purpose entity formed by Tangent Energy Solutions, Inc., a Pennsylvania based developer and owner/operator of numerous renewable energy and efficiency projects. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$1,384,870. Pardee Resources Company, the equity investor, has committed \$1,000,495 in matching funds.</p>	<p>307,082</p>	<p>\$384,375</p>
<p><b>7 NewAge Industries, Inc.</b> 145 James Way Southampton, PA 18966 Kenneth Baker</p>	<p>NewAge Solar Project</p>	<p>Bucks</p>	<p>NewAge Industries, Inc. manufactures plastic and rubber tubing and hose as well as distributes various plastic and metal fittings and clamps for pharmaceutical and biotechnology industries. NewAge Industries plans to install a 998.99 kW solar PV system on the roof of its manufacturing facility in Upper Southampton Township, Bucks County, occupying approximately 200,000 square feet. The system is projected to generate 1,200,120 kWh annually, which is estimated to represent approximately 54% of the company's energy consumption. Solar Energy Program funds will be used for the purchase and installation of a solar PV system. The total project cost is \$4,700,188. NewAge Industries and Wachovia Bank/Wells Fargo will provide \$3,700,188 in matching funds. NewAge Industries, Inc. requested a \$1,000,000 grant; DCED recommended a \$1,000,000 grant; the CFA Board approved a \$1,000,000 grant at its meeting held on July 7, 2010.</p>	<p>1,137,649</p>	<p>\$1,000,000</p>
<p><b>8 Aqua Pennsylvania, Inc.</b> 762 W. Lancaster Ave. Bryn Mawr, PA 19010-3402 Nicholas DeBenedictis</p>	<p>Aqua Pickering Solar Farm</p>	<p>Chester</p>	<p>Aqua Pennsylvania is requesting a Solar Energy Program grant for the purchase and installation of a ground mounted solar photovoltaic power system for their Pickering Water Treatment Plant located in Schuylkill Township, Chester County. The project is the installation of a 1.5 MW solar photovoltaic system that will be constructed on 6.5 acres on the site of the Pickering Water Treatment Plant. This solar project will generate 1,931,580 kWh per year and will provide 20% of the treatment plant's electricity demand. Aqua Pennsylvania provides water and wastewater service to more than 1.4 million PA residents in 30 counties, and they have previous experience with solar projects, having recently completing a 1.02 MW ground mounted project in West Chester, PA.</p>	<p>1,931,580</p>	<p>\$1,500,000</p>

<p><b>9 BLUERE-PA Solar / Church Hill, LLC</b>  50 Main Street, White Plains  New York, NY 10606  Konstantin Braun</p>	<p>Church Farm School</p>	<p>Chester</p>	<p>Blue Renewable Energy, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a mixed rooftop and ground-mounted solar photovoltaic system on the Church Farm School campus located in West Whiteland Township, Chester County. Blue Renewable Energy, LLC plans to install a cumulative 1,017.92 kW solar photovoltaic system at the Church Farm School. A 997.92 kW system will be installed on 172,897 square feet of unused land on campus and a 20 kW system will be installed on the transportation building at Church Farm. All electricity generated will be purchased by the school from a special-purpose entity created by Blue Renewable Energy, LLC prior to system commissioning. The system will generate 1,114,710 kWh annually, providing 74% of the school's demand. Under a proposed 20-year power purchase agreement, the electricity will be bought at a rate of \$0.0694/kWh in year one, with an escalator of 1.5% each year thereafter. Blue Renewable Energy, LLC is a special purpose subsidiary of Essco Wholesale Electric, the U.S. based subsidiary of Sonepar Corporation, the world's largest privately-held electrical equipment distributor. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$4,991,947. Complete Lending &amp; Investments, Blue Renewable Energy's financing arm, has committed \$3,800,793 in matching funds.</p>	<p>1,114,710</p>	<p>\$1,191,154</p>
<p><b>10 BLUERE-PA Solar / DeVal Friends, LLC</b>  50 Main Street, White Plains  New York, NY 10606  Konstantin Braun</p>	<p>Delaware Valley Friend's School</p>	<p>Chester</p>	<p>Blue Renewable Energy, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a rooftop solar photovoltaic system at the Delaware Valley Friends School campus located in Tredyffrin Township, Chester County. Blue Renewable Energy, LLC plans to install an 83.16 kW solar photovoltaic system on the roof of the Delaware Valley Friends School campus building. All electricity generated will be purchased by the school from a special-purpose entity created by Blue Renewable Energy, LLC prior to system commissioning. The system will generate 90,332 kWh annually, providing 20% of the facility's demand. Under a proposed 20-year power purchase agreement, the electricity will be bought at a rate of \$0.1084/kWh in year one, with an escalator of 1.5% each year thereafter. Blue Renewable Energy, LLC is a special purpose subsidiary of Essco Wholesale Electric, the U.S. based subsidiary of Sonepar Corporation, the world's largest privately-held electrical equipment distributor. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$450,477. Complete Lending &amp; Investments, Blue Renewable Energy's financing arm, has committed \$325,737 in matching funds.</p>	<p>90,332</p>	<p>\$124,740</p>
<p><b>11 Frazer / Exton Development, LP</b>  855 Springdale Drive, Suite 110  Exton, PA 19341  Dan Sevick</p>	<p>Makemie at Whiteland</p>	<p>Chester</p>	<p>Frazer/Exton Development, LP is requesting a Solar Energy Program grant to assist in the purchase and installation of a ground-mounted solar photovoltaic system adjacent to a planned senior housing community to be located in East Whiteland Township, Chester County. Frazer/Exton Development, LP plans to install a 1,799.98 kW solar photovoltaic system on a 75-acre plot of land on the former Foote Mineral superfund site. This solar array will be built adjacent to Makemie at Whiteland, a planned senior housing community to be developed by Philadelphia Presbytery Homes, Inc. The system will produce 2,286,335 kWh annually, providing more than 90% of the planned community's electricity demand. Frazer/Exton will sell the power to Makemie at Whiteland under a proposed 20-year power purchase agreement at a rate of \$0.09/kWh for year one, escalating at 2.5% per year thereafter. Frazer/Exton Development, LP was formed in 1998 to purchase, remediate, and re-use the contaminated superfund site under the oversight of the US Environmental Protection Agency and was purchased in 2004 by Roskamp Management, a Florida retirement community development/management company. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$8,550,000. Frazer/Exton Development, LP plans to provide \$5,868,030 in matching funds.</p>	<p>2,286,335</p>	<p>\$2,681,970</p>

<b>12 Cumberland Valley School District</b> 6746 Carlisle Pike Mechanicsburg, PA 17050-1711 Michael Willis	Cumberland Valley School	Cumberland	Cumberland Valley School District plans to install a 1 MW rooftop and ground-mounted CHP-PVT system at the Cumberland Valley High School campus located in Silver Spring Township, Cumberland County. The PVT system is estimated to provide 1,401,600 kWh per year and will provide 15% of power demand. This type of system will include a specialized racking system to capture thermal energy to help heat the campus facilities. The design is similar to standard PV systems with the addition of an air ducting system that will provide heat to the school, while increasing the performance of the PV system. Solar Energy Program funds will be used for the purchase and installation of the PV portion of the system. The total project cost is \$5,625,000. Cumberland Valley will contribute \$4,113,000 in matching funds.	1,401,600	\$160,000
<b>13 SSA Solar of PA, LLC</b> 311 N. Bayshore Drive Safety Harbor, FL 34695 Matthew E. Kenyon	Borough of Shippensburg	Franklin	SSA Solar of PA, LLC plans to install a 1,004.3 kW fixed, ground-mounted, solar photovoltaic system at the Shippensburg Borough waste water treatment plant, which serves nine municipalities, and is located in Southampton Township, Franklin County. The system is estimated to provide 1,222,511 kWh annually and will provide 73% of the treatment plant's electricity demand. SSA Solar will own the system and sell power to the Borough of Shippensburg under a 20-year power purchase agreement at a rate of \$0.07/kWh for 24 months, increasing 3% annually after that. SSA Solar of PA, LLC is a wholly owned subsidiary of Kenyon Energy, LLC who is the newest company formed by Dana B. Kenyon Company (DBK). DBK was incorporated 25 years ago. Kenyon Energy is a renewable energy company and is the largest solar contractor in Florida. Solar Energy Program funds will be used for the purchase of solar photovoltaic equipment and installation. The total project cost is \$4,195,890. SSA Solar will contribute \$2,749,164 in matching funds.	1,222,511	\$1,446,726
<b>14 Mt. Joy Solar Power, LLC</b> 909 Milford Street Port Royal, PA 17082 Sylvia Berry	Mt. Joy Borough Solar Project	Lancaster	Mt. Joy Solar Power, LLC plans to install a 382.72 kW ground-mounted solar photovoltaic system on two acres of land at the waste-water treatment plant, located in East Donegal Township, Lancaster County, which serves 10,000 Lancaster County residents and is owned and operated by the Mt. Joy Borough Authority. Mt. Joy Solar Power will own the system and sell power to the authority under a proposed 20-year power purchase agreement at a rate of 9 cents per kWh for year one, escalating at 3% per year thereafter. The PV system will generate 425,784 kWh of electricity annually. Mt. Joy Solar Power, LLC is a newly created special purpose entity formed by two individual equity investors for this project. Solar Energy Program funds will be used to purchase machinery and equipment for the project. The total project cost is \$2,009,280. Other funding includes \$1,524,280 in equity contributions and vendor financing.	427,012	\$485,000
<b>15 Quarryville Power Partners, LLC</b> 1150 Greenwood Road York, PA 17408 Thomas Zech	Quarryville Solar Energy Project	Lancaster	Quarryville Power Partners, LLC plans to install a 448.50 kW ground-mounted solar photovoltaic system on three acres of land at the Quarryville Presbyterian Retirement Community, a continuing care retirement community serving senior citizens in East Drumore Township, Lancaster County. Quarryville Power partners will own the system and sell power to the retirement community under a proposed 20-year power purchase agreement at a rate of 8 cents per kWh for year one, escalating at 3% per year thereafter. The PV system will generate 534,325 kWh of electricity annually. Quarryville Power Partners, LLC is a newly created special purpose entity formed by two individual equity investors for this project. Solar Energy Program funds will be used to purchase machinery and equipment for the project. Total project cost is \$2,242,500. Other funding includes \$1,667,500 in equity contributions and vendor financing.	534,325	\$575,000

<b>16 Human Services Center</b> 130 West North Street New Castle, PA 16101 Dennis W. Nebel Psy.D	Human Services Center PV Solar System	Lawrence	Human Services Center is requesting a Solar Energy Program grant to assist in the purchase and installation of a rooftop solar photovoltaic system at its facility in New Castle City, Lawrence County. Human Services Center is a tax exempt 501(c)3 corporation which serves as Lawrence County's community mental health center. Human Services Center plans to install a 30 kW solar photovoltaic system on the roof of its building. The system will reduce their conventional electricity demand by 12% and will generate 33,901 kWh annually. Solar Energy Program funds will be used for the purchase of solar panels and related equipment. The total project cost is \$224,719. Human Services Center will invest \$176,570.	34,164	\$48,149
<b>17 Air Products and Chemicals, Inc.</b> 7201 Hamilton Blvd Allentown, PA 18195 John McGlade	1500 kW Solar Installation at Air Products and Chemicals	Lehigh	Air Products and Chemicals, Inc. intends to construct a 1.5 MW solar photovoltaic power generation facility at their Lehigh Valley worldwide headquarters campus located in Upper Macungie Township, Lehigh County. The project will provide up to 50% of the company's campus power demand, and will generate 1,839,600 kWh of electricity per year. Air Products and Chemicals, Inc., a global Fortune 500 company, sells specialty and bulk gases of which one (nitrogen trifluoride) is used in the manufacturing of silicon thin-film solar panels. Solar Energy Program funds will be used for the purchase and installation of the solar photovoltaic power facility. The total project cost is \$7,776,504. Air Products and Chemicals, Inc. will provide \$6,776,504 in matching funds.	2,624,934	\$1,000,000
<b>18 500 Virginia Solar L.P.</b> 25 West 45th Street, 7th Floor New York, NY 10036 Berndt Perl	500 Virginia Solar L.P.	Montgomery	500 Virginia Solar L.P. plans to install a 949.2 kW solar photovoltaic system on the rooftop of an office building and adjacent parking garage known as 500 Virginia Drive in the Fort Washington Office Park. The system will generate 1,288,824 kWh of electricity annually for the 381,653 square foot office building reducing peak hour electricity demand. 500 Virginia Solar L.P. is the special purpose entity created by APF Virginia L.P., the owner of the office building. APF is a New York City-based real estate investment company. The project site is in Upper Dublin Township, Montgomery County. Solar Energy Program funds will be used toward the purchase and installation of the solar PV system. The total project cost is \$4,408,032. Other funding includes \$3,648,672 in company equity.	1,288,824	\$759,360
<b>19 Colonial Solar LLC</b> PO Box 1140 206 Gale Lane, Suite C Kennett Sq, PA 19348 Dean Musser	Colonial Solar LLC	Montgomery	Colonial Solar, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a rooftop solar photovoltaic system at two schools within the Colonial School District and located in Plymouth and Whitmarsh Townships in Montgomery County. Colonial Solar, LLC plans to install a cumulative 704.5 kW solar photovoltaic system on the roofs of Colonial Middle School and Colonial Elementary School. The Colonial Middle School photovoltaic system size is 440 kW, and the Colonial Elementary School photovoltaic system size is 264.5 kW and, together, the systems will generate 876,342 kWh annually, offsetting 29% of demand. All electricity generated will be purchased by the school district from Colonial Solar, LLC under a proposed 20-year power purchase agreement at a fixed rate of \$0.08/kWh. Colonial Solar, LLC is a newly created special purpose entity formed by Tangent Energy Solutions, Inc., a Pennsylvania based developer and owner/operator of numerous renewable energy and efficiency projects. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$3,165,490. Pardee Resources Company, the equity investor, has committed \$2,461,040 in matching funds.	876,342	\$689,635

<b>20 Lower Moreland Township School District</b> 2551 Murray Avenue Huntingdon Valley, PA 19006 Dr. Marykay Feeley	Lower Moreland Township Solar PV	Montgomery	Lower Moreland Township School District plans to install a cumulative 575 kW solar photovoltaic system at three district school buildings all located in Lower Moreland Township, Montgomery County. Specifically, plans call for a 143 kW rooftop system for Lower Moreland High School, a 154 kW rooftop system for Murray Avenue School, and a 278 kW rooftop system for Pine Road Elementary School, all located in Lower Moreland Township. The cumulative system will generate approximately 669,921 kWh of electricity per year. Solar Energy Program funds will be used for the purchase of solar panels as part of the installation of the solar photovoltaic system. The total project cost is \$3,248,750. Lower Moreland Township School District will provide \$2,397,750 in matching funds.	669,921	\$851,000
<b>21 BASD Buchanan Solar LLC</b> PO Box 1140 206 Gale Lane, Suite C Kennett Sq, PA 19348 Dean Musser	BASD Buchanan Solar LLC	Northampton	BASD Buchanan Solar, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a ground-mounted solar photovoltaic system at Bethlehem Area School District's James Buchanan Elementary School located in the City of Bethlehem, Northampton County. BASD Buchanan Solar, LLC plans to install a 280 kW solar photovoltaic system on an unused plot of land behind the James Buchanan Elementary School. The system will generate 333,581 kWh annually. All electricity generated will be purchased by the school district from BASD Buchanan Solar, LLC under a proposed 20-year power purchase agreement at a fixed rate of \$0.09/kWh. BASD Buchanan Solar, LLC is a newly created special purpose entity formed by Tangent Energy Solutions, Inc., a Pennsylvania based developer and owner/operator of numerous renewable energy and efficiency projects. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$1,210,888. Pardee Resources Company, the equity investor, has committed \$874,888 in matching funds.	333,581	\$331,632
<b>22 BASD East Hills Solar LLC</b> PO Box 1140 206 Gale Lane, Suite C Kennett Sq, PA 19348 Dean Musser	BASD East Hills Solar LLC	Northampton	BASD East Hills Solar, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a rooftop solar photovoltaic system at Bethlehem Area School District's East Hills Middle School located in the City of Bethlehem, Northampton County. BASD East Hills Solar, LLC plans to install a 295 kW solar photovoltaic system on the roof of East Hills Middle School. The system will generate 348,867 kWh annually. All electricity generated will be purchased by the school district from BASD East Hills Solar, LLC under a proposed 20-year power purchase agreement at a fixed rate of \$0.09/kWh. BASD East Hills Solar, LLC is a newly created special purpose entity formed by Tangent Energy Solutions, Inc., a Pennsylvania based developer and owner/operator of numerous renewable energy and efficiency projects. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$1,278,857. Pardee Resources Company, the equity investor, has committed \$924,857 in matching funds.	348,867	\$354,000
<b>23 BASD Farmersville Solar LLC</b> PO Box 1140 206 Gale Lane, Suite C Kennett Sq, PA 19348 Dean Musser	BASD Farmersville Solar LLC	Northampton	BASD Farmersville Solar, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a ground-mounted solar photovoltaic system at Bethlehem Area School District's Farmersville Elementary School located in Bethlehem Township, Northampton County. BASD Farmersville Solar, LLC plans to install a 400 kW solar photovoltaic system on an unused plot of land behind Farmersville Elementary School. The system will generate 497,568 kWh annually. All electricity generated will be purchased by the school district from BASD Farmersville Solar, LLC under a proposed 20-year power purchase agreement at a fixed rate of \$0.09/kWh. BASD Farmersville Solar, LLC is a newly created special purpose entity formed by Tangent Energy Solutions, Inc., a Pennsylvania based developer and owner/operator of numerous renewable energy and efficiency projects. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$1,718,276. Pardee Resources Company, the equity investor, has committed \$1,318,276 in matching funds.	497,568	\$391,510

<p><b>24 BASD Freedom Solar LLC</b>          PO Box 1140          206 Gale Lane, Suite C          Kennett Sq, PA 19348          Dean Musser</p>	<p>BASD Freedom Solar LLC</p>	<p>Northampton</p>	<p>BASD Freedom Solar, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a canopy-mounted solar photovoltaic system on Bethlehem Area School District's Freedom High School campus located in Bethlehem Township, Northampton County. BASD Freedom Solar, LLC plans to install a 380 kW solar photovoltaic system above a parking lot on the campus of Freedom High School in the Bethlehem Area School District. The system will generate 432,744 kWh annually. All electricity generated will be purchased by the school district from BASD Freedom Solar, LLC under a proposed 20-year power purchase agreement at a fixed rate of \$0.10/kWh. BASD Freedom Solar, LLC is a newly created special purpose entity formed by Tangent Energy Solutions, Inc., a Pennsylvania based developer and owner/operator of numerous renewable energy and efficiency projects.</p>	<p>432,744</p>	<p>\$456,000</p>
<p><b>25 BASD Spring Garden Solar LLC</b>          PO Box 1140          206 Gale Lane, Suite C          Kennett Sq, PA 19348          Dean Musser</p>	<p>BASD Spring Garden Solar LLC</p>	<p>Northampton</p>	<p>BASD Spring Garden Solar, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a ground-mounted solar photovoltaic system at Bethlehem Area School District's Spring Garden Elementary School located in the City of Bethlehem, Northampton County. BASD Spring Garden Solar, LLC plans to install a 270 kW solar photovoltaic system on an unused plot of land east of Spring Garden Elementary School. The system will generate 319,302 kWh annually. All electricity generated will be purchased by the school district from BASD Spring Garden Solar, LLC under a proposed 20-year power purchase agreement at a fixed rate of \$0.09/kWh. BASD Spring Garden Solar, LLC is a newly created special purpose entity formed by Tangent Energy Solutions, Inc., a Pennsylvania based developer and owner/operator of numerous renewable energy and efficiency projects.</p>	<p>319,302</p>	<p>\$297,000</p>
<p><b>26 BLUERE-PA Solar / Moravian, LLC</b>          50 Main Street, White Plains          New York, NY 10606          Konstantin Braun</p>	<p>Moravian Academy</p>	<p>Northampton</p>	<p>Blue Renewable Energy, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a ground-mounted solar photovoltaic system on the Moravian Academy campus located in Bethlehem Township, Northampton County. Blue Renewable Energy, LLC plans to install a 1.296 MW solar photovoltaic system on unused land on Moravian Academy's campus. All electricity generated will be purchased by the school from a special-purpose entity created by Blue Renewable Energy, LLC prior to system commissioning. The system will generate 1,521,297 kWh annually, providing 84% of the school's demand. Under a proposed 20-year power purchase agreement, the electricity will be bought at a rate of \$0.066/kWh in year one, with an escalator of 1.5% each year thereafter. Blue Renewable Energy, LLC is a special purpose subsidiary of Essco Wholesale Electric, the U.S. based subsidiary of Sonepar Corporation, the world's largest privately-held electrical equipment distributor. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$6,133,517. Complete Lending &amp; Investments, Blue Renewable Energy's financing arm, has committed \$4,772,717 in matching funds.</p>	<p>1,521,297</p>	<p>\$1,360,800</p>

<b>27 BLUERE-PA Solar / Sycamore Hill, LLC</b>	Sycamore Hill Farm Development	Northampton	<p>Blue Renewable Energy, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a rooftop solar photovoltaic system on the Flat Iron Building located in Bethlehem Township, Northampton County. Blue Renewable Energy, LLC plans to install a 36.96 kW solar photovoltaic system on the roof of the garage structure of the Flat Iron Building, owned by Sycamore Hill Farm Development. All electricity generated will be purchased by Sycamore Hill Farm Development from a special-purpose entity created by Blue Renewable Energy, LLC prior to system commissioning. The system will generate 40,147 kWh annually, providing 75% of the office building's demand. Under a proposed 20-year power purchase agreement, the electricity will be bought at a rate of \$0.109/kWh in year one, with an escalator of 1.5% each year thereafter. Blue Renewable Energy, LLC is a special purpose subsidiary of Essco Wholesale Electric, the U.S. based subsidiary of Sonepar Corporation, the world's largest privately-held electrical equipment distributor. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$202,191. Complete Lending &amp; Investments, Blue Renewable Energy's financing arm, has committed \$146,751 in matching funds.</p>	40,147	\$55,440
50 Main Street, White Plains New York, NY 10606 Konstantin Braun					
<b>28 CIT Solar LLC</b>	Career Institute of Technology	Northampton	<p>CIT Solar, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of rooftop and ground-mounted solar photovoltaic systems at the Career Institute of Technology (CIT) campus located in Forks Township, Northampton County. CIT Solar, LLC plans to install a cumulative 498.2 kW solar photovoltaic system on the roof of CIT's main building and on 54,000 square feet of unused land on the CIT campus. The systems will generate 471,337 kWh, offsetting 13% of demand. All electricity generated will be purchased by CIT from CIT Solar, LLC under a proposed 20-year power purchase agreement at a fixed rate of \$0.065/kWh. CIT Solar, LLC is a newly created special purpose entity formed by Tangent Energy Solutions, Inc., a Pennsylvania based developer and owner/operator of numerous renewable energy and efficiency projects. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$2,213,926. Pardee Resources Company, the equity investor, has committed \$1,715,776 in matching funds.</p>	471,337	\$498,150
P.O. Box 1140 206 Gale Lane Suite C Kennett Sq, PA 19348 Dean Musser					
<b>29 UGI Development Company</b>	Crayola Solar Project - Phase 3	Northampton	<p>UGI Development Company (UGI) plans to install a 400 kW solar photovoltaic system at the Crayola manufacturing plant located in Forks Township, Northampton County. This ground-mounted system is an expansion of the 1 MW solar project currently under development at the same site. The 400 kW system is estimated to provide 497,568 kWh of solar electricity annually, and offset approximately 2% of the plant's power requirements. UGI will own the system and sell the energy to Crayola under a proposed 25-year power purchase agreement ranging between 8 cents and 11 cents per kWh over the term. Solar Energy Program funds will be used for the purchase of solar photovoltaic panels. The total project cost is \$2,013,800. UGI will contribute \$1,505,800 in matching funds.</p>	497,568	\$508,000
1 Meridian Boulevard Suite 2C01 Wyomissing, PA 19610 Bradley Hall					

<b>30 BLUERE-PA Solar / Ancillae-Assumpta, LLC</b> 50 Main Street, White Plains New York, NY 10606 Konstantin Braun	Ancillae-Assumpta Academy	Philadelphia	Blue Renewable Energy, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a rooftop solar photovoltaic system at the Ancillae-Assumpta Academy campus located in Cheltenham Township, Montgomery County. Blue Renewable Energy, LLC plans to install a 101.64 kW solar photovoltaic system on the roof of the Ancillae-Assumpta Academy school building. All electricity generated will be purchased by the school from a special-purpose entity created by Blue Renewable Energy, LLC prior to system commissioning. The system will generate 112,186 kWh annually, providing 25% of the facility's demand. Under a proposed 20-year power purchase agreement, the electricity will be bought at a rate of \$0.1195/kWh in year one, with an escalator of 1.5% each year thereafter. Blue Renewable Energy, LLC is a special purpose subsidiary of Essco Wholesale Electric, the U.S. based subsidiary of Sonepar Corporation, the world's largest privately-held electrical equipment distributor. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$516,436. Complete Lending & Investments, Blue Renewable Energy's financing arm, has committed \$389,336 in matching funds.	112,186	\$127,100
<b>31 BLUERE-PA Solar / Springside, LLC</b> 50 Main Street, White Plains New York, NY 10606 Konstantin Braun	Springside School	Philadelphia	Blue Renewable Energy, LLC is requesting a Solar Energy Program grant to assist in the purchase and installation of a rooftop solar photovoltaic system on the Springside School campus located in the City of Philadelphia, Philadelphia County. Blue Renewable Energy, LLC plans to install a cumulative 194 kW solar photovoltaic system on six connecting rooftops of facilities on the Springside School campus. All electricity generated will be purchased by the school from a special-purpose entity created by Blue Renewable Energy, LLC prior to system commissioning. The system will generate 214,129 kWh annually, providing 66% of the facility's demand. Under a proposed 20-year power purchase agreement, the electricity will be bought at a rate of \$0.0916/kWh in year one, with an escalator of 1.5% each year thereafter. Blue Renewable Energy, LLC is a special purpose subsidiary of Essco Wholesale Electric, the U.S. based subsidiary of Sonepar Corporation, the world's largest privately-held electrical equipment distributor. Solar Energy Program funds will be used for the purchase and installation of a solar photovoltaic system. Total project cost is \$1,010,209. Complete Lending & Investments, Blue Renewable Energy's financing arm, has committed \$738,553 in matching funds.	214,129	\$271,656
<b>32 Philadelphia Port TMT Solar, LLC</b> 4 Embarcadero Center Suite 3670 San Francisco, CA 94111 Jeff Glavin	Tioga Marine Terminal Solar Facility	Philadelphia	Philadelphia Port TMT Solar, LLC plans to install a 1.3 MW rooftop solar photovoltaic system on the rooftop of the Tioga Marine Terminal warehouse facility in Philadelphia, occupied by Delaware River Stevedores. Philadelphia Port TMT Solar, LLC will own the photovoltaic system and sell the power to Delaware River Stevedores under a proposed 12-year power purchase agreement at a rate of 10 cents per kWh the first year, with the price escalating 2% each year thereafter. The solar PV system will produce about 1,400,724 kWh of solar electricity annually, which will provide over 35% of Delaware River Stevedores' electricity demand at this site. Philadelphia Port TMT Solar, LLC is the special purpose entity formed by MP2 Capital, LLC for the Delaware River Stevedore solar project. MP2 Capital develops, finances and operates distributed generation and small-scale utility solar projects throughout North America. Solar Energy Program funds will be used for the purchase and installation of the solar photovoltaic system. The total project cost is \$5,566,782. Philadelphia Port TMT Solar, LLC will provide \$3,766,782 in matching funds.	1,400,724	\$1,200,000

<b>33 Citizens Fire Company #2</b> P.O. Box 173 Mahanoy, PA 17948 Harry Wagner	Citizen's Fire Company #2 Solar Project	Schuylkill	Citizens Fire Company #2 is a volunteer fire department that plans to install a 38.6 kW rooftop solar PV system at its headquarters located in Mahanoy Township, Schuylkill County. The system will enable the company to reduce its reliance on conventional energy and to leverage existing community relationships to educate students and the public about the benefits of solar energy. The system is expected to generate 48,015 kWh annually, offsetting up to 48% of the building's power needs.	43,957	\$57,960
<b>34 GlaxoSmithKline Consumer Healthcare LP</b> 1000 GSK Drive Moon TWP, PA 15108 Larry Brown	York GSK RDC Solar Project	York	GlaxoSmithKline Consumer Healthcare LP (GSK) is requesting a Solar Energy Program grant for the purchase and installation of a rooftop solar photovoltaic power system that will be installed on GSK's newly leased distribution center in East Manchester Township, York County. The project is the installation of a 3 MW solar photovoltaic system that will be constructed on the roof of GSK's Consumer Health Northeast Regional Distribution Center. Headquartered in the UK and with operations based in the US, GSK is one of the industry leaders, with an estimated seven percent of the world's pharmaceutical market. It is anticipated that this project will offset the facility's annual electricity usage by approximately 3,390,120 kWh, providing over 90% of the electricity demand.	3,390,120	\$1,000,000
<b>35 Morningstar Marketplace, Inc.</b> 5309 Lincoln Highway West  Thomasville, PA 17364 Andrew Lentz	Morningstar Marketplace Solar Panel Installation	York	Morningstar Marketplace, Inc. is a farmer's market located along Route 30 (in Jackson Township, York County) that attracts close to 20,000 customers every weekend. The market currently uses solar energy to power its facilities through two separate systems that have eliminated its reliance on conventional energy resources. The company plans to install a 613.76 kW ground-mounted solar array on three acres of land adjacent to its facility. The new system is projected to generate 733,897 kWh annually and 100% of the energy will be transferred back to the grid.	733,897	\$733,200