



Pennsylvania Department of Environmental Protection

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June 4, 2009

Secretary

717-787-2814

Dear Stimulus Oversight Commission Member:

The enclosed information about 14 energy projects is provided to follow up on the presentation made in May to the Oversight Commission about the energy funds that the Commonwealth anticipates receiving as a result of the American Recovery and Reinvestment Act.

Due to the limits of state resources, the Department of Environmental Protection (DEP) has not been able to fund all of the excellent energy projects that seek funding through the Energy Harvest program and the Pennsylvania Energy Development Authority. As a result we have a backlog of worthy projects that are ready to move forward if funding was available. Fortunately, the American Recovery and Reinvestment Act provides us with the opportunity to fund some of these excellent energy projects that are awaiting funding.

The U.S. Department of Energy released 10% of the \$99.6 million to State Energy Plan funding to the Commonwealth and we, of course, would like to put these funds immediately toward the best of the pending projects that also meet the DEP Green Energy Works program guidelines for stimulus funds. DEP has identified 14 strong projects that are ready to be built and that both meet the requirements of the American Recovery and Reinvestment Act and the Green Energy Works' goals. The enclosed information provides more information about these 14 projects.

Six of the 14 projects support the goals for our biogas projects – they are bio-digesters projects that would be located on farms; two are geothermal projects; three are solar; and 3 are combined heat and power/biomass projects. These 14 projects would receive a total of \$6.3 million in funding; would be matched by \$12.8 million of additional funding; and would produce 12 million kilowatt-hours of energy per year for the next approximately 20 years or enough electricity to supply 1200 homes for 20 years.

I appreciate the oversight committee's interest in the energy investments made possible by the Stimulus bill and look forward to keeping you apprised as we make future announcements.

Sincerely,

John Hanger
Secretary

Enclosure



RECOMMENDED

| Identifier | ProjectTitle | Grantee | ProjectDescription | ProjectType | Municipality | County | Region | Recommended | Requested | Match |
|------------|---|--|---|--|------------------------|-----------|--------------|-------------|-----------|-------------|
| SC080085EH | Meadow Valley Dairy Methane and Energy Recovery Unit | Lancaster County Conservation District | The Lancaster County Conservation District is applying on behalf of Meadow Valley Dairy for \$500,000, matched with \$1,329,855, to deploy a modified-plug flow anaerobic digester for electricity generation. Meadow Valley Dairy milks 750 dairy cows, and have plans to expand to 1150. The system is expected to generate 2,014,800 kWh/yr of electricity, enough for 200 homes, and heat will be captured from the gen-set to heat water and buildings, which will reduce fossil fuel use, saving the farm approximately \$11,000 annually. The project will displace air and water pollution from conventional generation, including 4,239,139 lbs per year of CO2, and 15,039 lbs per year of SOx. The project will save the farm and or generate electricity sales by up to \$250,722 per year. | Biologically Derived Methane Gas | West Cocalico Township | Lancaster | Southcentral | \$500,000 | \$500,000 | \$1,329,855 |
| SC080078EH | Compact Manure Digester for Electricity Generation and Odor Control | PP&L Sustainable Energy Fund | The PPL Sustainable Energy Fund is applying for \$263,416, matched with \$263,417, to construct a compact anaerobic digester for manure conversion and on-farm electricity generation at the Meadow Springs Farm. Meadow Springs is a dairy farm with approximately 370 cows that generate approximately 43,300 lbs of manure each day. The system is expected to generate 390,000 kWh/yr of electricity, enough for 39 homes, and will save the farm \$52,000 per year in electricity purchases. The project will displace air and water pollution from conventional generation. | Biologically Derived Methane Gas | Lititz | Lancaster | Southcentral | \$263,416 | \$263,416 | \$263,417 |
| SC080105EH | Energy Production and Conservation: An Integrated Approach to Energy Management | Lancaster County Conservation District | Esbenshade Greenhouses requests \$474,502 to install a combined heat and power system powered by biomass-wood and possibly chicken litter. In addition to generating electrical power & heat, plans include an energy conservation program anticipated to reduce current electrical demands a minimum of 5%. An interconnection agreement application with PPL has been filed. Approximately 300kW (1,980MWh - enough for 198 homes) @ 90% output is to be generated - 500kWh in excess of current consumption. Generated heat is to provide over 75% of facility needs. The value of marketed excess power is estimated at \$188,000 annually. | Biomass | Elizabeth Township | Lancaster | Southcentral | \$474,502 | \$474,502 | \$1,853,518 |
| SC080018EH | Air/Water Quality and Energy Conservation Project | Delaware County Solid Waste Authority | The Delaware County Solid Waste Authority requests \$428,926 to install a landfill gas to energy plant at Rolling Hills Landfill using an engine generator set capable of delivering 1.06 megawatts. Heat recovered from the engine will be used to improve landfill treatment of leachate saving 11,277 gallons of propane annually and improve treatment plant discharge quality. | Other Clean or Renewable Energy Source | Earl Township | Berks | Southcentral | \$428,926 | \$428,926 | \$566,000 |

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|------------|--|--|--|----------------------------------|-----------------------|-----------|--------------|-----------|-----------|-------------|
| SC080002EH | Additions and Alterations to the Hollidaysburg Area Senior High School | Hollidaysburg Area School District | Hollidaysburg Area School District is seeking \$500,000 for the installation of a geexchange system at the senior high school. This school will be going through renovation and retrofit process and would like to incorporate ground source heating and cooling. The energy savings is expected to be around \$130,000, saving nearly 2,000,000 kWh (enough for 200 homes) and 335 tons of fossil fuels per year. The environmental benefit is 4,645,000 lbs of CO2, 30,150 lbs of SOx, and 5,987 lbs of NOx per year. | Geothermal | Hollidaysburg Borough | Blair | Southcentral | \$500,000 | \$500,000 | \$2,600,000 |
| SW080090EH | Dovan Farms Renewable Energy Expansion | Somerset County Conservation District | The Somerset County Conservation District is applying on behalf of Dovan Farms for \$199,000, matched with \$6,000, to increase the generation capacity of the anaerobic digester from 90 kW to 150 kW. The digester, originally funded by Energy Harvest, is operating at capacity, and there is additional biogas produced such that the excess needs to be flared. An additional generator and balance of system will be installed to utilize the excess biogas produced. The modification is expected to generate an additional 300,000 kWh/yr of electricity (enough for 30 homes) and will displace air and water pollution from conventional generation, including 2,543,483 lbs per year of CO2, and 18,863 lbs per year of SOx. The project will save the farm and or generate electricity sales by up to \$11,800 per year. | Biomass | Brothersvalley | Somerset | Southwest | \$199,000 | \$199,000 | \$6,000 |
| SC080084EH | Oregon Dairy Farm Methane Digester | Lancaster County Conservation District | The Lancaster County Conservation District is applying on behalf of Oregon Dairy Farm for \$296,070, matched with \$294,463, to deploy an anaerobic digester for electricity generation. Oregon Dairy milks 900 dairy cows, and has a retail lawn and garden and grocery store and restaurant on the farm. They have been operating an existing digester on the farm since 1985. The system is 100% undersized, due to recent herd expansion. The system is expected to generate 461,000 kWh/yr of electricity, enough for 46 homes, and heat will be captured from the gen-set for heat to dry solid manure and to heat the house. The project will displace air and water pollution from conventional generation, including 969,944 lbs per year of CO2, 1,429 lbs per year of NOx, and 7,193 lbs per year of SOx. The project will save the farm \$46,000 per year in electricity purchases, and \$5,000 to heat the house. Digested solids will be sold at their retail lawn and garden store. | Biologically Derived Methane Gas | Manheim Township | Lancaster | Southcentral | \$296,071 | \$296,071 | \$294,464 |

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| SE080003EH | Great Valley School District: Understanding Sustainability Through Solar Energy Generation | Great Valley School District | Great Valley School District is requesting \$500,000 for the purchase of a 131 kW solar array on the Middle School. The energy benefits will save 159,670 kWh, enough for 160 homes, and \$48,412 per year. The environmental benefit will reduce CO2 by 168,528 lbs, SOx by 1,230 lbs, and NOx by 261 lbs per year. | Solar Energy | East Whiteland Township | Chester | Southeast | \$500,000 | \$500,000 | \$500,000 |
| NC080100EH | Additions and Alterations to the Wingate E.S. and Bald Eagle M.S./H.S. | Bald Eagle Area School District | Bald Eagle Area School District is going through extensive additions and renovations to the school district. They are requesting \$500,000 for the installation of a geo exchange system. The energy savings is expected to be 2,100,000 kWh/year, enough for 210 homes, and 10.8 BCF natural gas per year. The environmental savings will be 4,860,240 lbs CO2, 36,180 lbs SOx, and 7,185 lbs NOx per year. | Geothermal | Wingate-Boggs Township | Centre | Northcentral | \$500,000 | \$500,000 | \$1,500,000 |
| SW080074EH | Utilization of Digester Gas for Electricity | Moon Township Municipal Authority | Moon Township Municipal Authority is applying for \$435,000, matched with \$145,000, for three 30 kW microturbines to generate electricity from unused anaerobic digester gas at their wastewater treatment plant (WWTP). Although they currently use some of their gas to heat digester sludge and the digester building, they flare a significant quantity. This project will allow them to capture the wasted gas to generate electricity while the microturbine exhaust will be used to heat the digester sludge. The microturbines are expected to generate 832,200 kWh per year, enough for 83 homes, and save the Authority \$66,000 per year in electricity costs. The upgrade will displace air and water pollution compared to the current system, including 1,780,000 lbs per year of CO2. | Biologically Derived Methane Gas | Moon Township | Allegheny | Southwest | \$435,000 | \$435,000 | \$145,000 |
| NC080011EH | Bloomsburg University Wood-Chip Boiler | Bloomsburg University | Bloomsburg University is requesting \$500,000 to replace one of 5 existing boilers with a biomass boiler using locally generated wood chips as fuel. The biomass boiler would supply the majority of the steam plant's load and reduce fossil fuel consumption, and emissions, by 67%. | Biomass | Town of Bloomsburg | Columbia | Northcentral | \$500,000 | \$500,000 | \$1,250,000 |
| NW080023EH | Biomass District Heating System | Crawford Central School District | The Crawford Central School District is applying for a \$500,000 grant to install a biomass (wood chips and switchgrass) fired, district hot water heating system. The project cost is \$1,982,500. A project feasibility study has been prepared by the PSU Cooperative Extension Service. The biomass feedstock is locally available and will provide costs savings, as compared to natural gas, of between 25% and 55%. | Biomass | City of Meadville | Crawford | Northwest | \$500,000 | \$500,000 | \$1,482,500 |

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| SC080079EH | Compact Manure Digester for Electricity Generation and Odor Control | PP&L Sustainable Energy Fund | The PPL Sustainable Energy Fund is applying for \$316,966, matched with \$316,967, to construct a compact anaerobic digester for manure conversion and on-farm electricity generation at the Shale Ridge Farm. Shale Ridge is a dairy farm with approximately 500 cows that generate approximately 58,500 lbs of manure each day. The system is expected to generate 525,000 kWh/yr of electricity, enough for 52 homes, and will save the farm \$70,000 per year in electricity purchases. The project will displace air and water pollution from conventional generation. | Biologically Derived Methane Gas | Lititz | Lancaster | Southcentral | \$316,966 | \$316,966 | \$316,967 |
| SE080064EH | Solar Photovoltaic System at the Educational Services Center in Downingtown | Chester County Intermediate Unit | Project to install a 100 kW solar photovoltaic system to reduce the IU's electric use by 8-9%. Requested funding is \$500,000. Projected to save the IU \$10,000/yr. The project is expected to generate 105,000 kWh/yr, enough for 10 homes, and to reduce air pollution by approximately 134,504 lbs of CO2; 1081 lbs SOx; and 199 lbs NOx. | Solar Energy | Downingtown Borough | Chester | Southeast | \$500,000 | \$500,000 | \$221,000 |
| SE080043EH | 104kW Flexible Membrane Photovoltaic Project for Bensalem Township | Township of Bensalem | Project to partially fund the integration of 104 kW flexible membrane thin film PV roofing system onto the Township building.. Requested funding is \$450,000 . Projected to save the Township \$43,200/yr. The project is expected to generate 127,546 kWh/yr enough for 12 homes and reduce air pollution by 268,356 lbs CO2; 1990 lbs SOx; 395 lbs NOx. | Solar Energy | Township of Bensalem | Bucks | Southeast | \$450,000 | \$450,000 | \$462,140 |
| TOTALS | | | | | | | | \$6,363,881 | \$6,363,881 | \$12,790,861 |