



# **The 2005 Annual Report of the Sustainable Development Fund**

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## I. INTRODUCTION

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Since its inception six years ago, the Sustainable Development Fund (SDF) has played a leading role in accelerating the region's investment in a clean energy economy. SDF has been one of the nation's most creative and effective champions of sustainable energy. Financing projects ranging from wind farms to high energy performance buildings, TRF's efforts have been critical in Pennsylvania's emergence as a leading center for clean and renewable energy.

This 2005 Annual Report was prepared by SDF and is submitted to the Pennsylvania Public Utility Commission and to the Joint Petitioners in the PECO Energy restructuring proceeding. This report discusses the initiatives and accomplishments of SDF in 2005.

## II. ACCOMPLISHMENTS

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### A. Highlights

During 2005, SDF approved loans, investments, grants and incentives totaling \$6,842,143, which company and project financing leveraged an additional \$210,687,000 from private and public capital sources.<sup>1</sup>

In 2005, SDF's portfolio of projects generated 276,021 MWh of wind power and 356 MWh of solar photovoltaic power, and conserved 4,487 MWh of electricity. SDF's cumulative figures since inception are 757,278 MWh of wind power and 616 MWh of solar photovoltaic power generated, and 8,297 MWh of electricity conserved.

Other highlights for the twelve-month period include:

- As agent for the four Pennsylvania regional sustainable energy funds (PA SEFs), SDF syndicated a \$5.75 million loan among the PA SEFs (\$2,000,000 of which was retained by SDF) for the 24 MW Bear Creek wind project being developed by Community Energy, Inc. in Luzerne County. This wind farm is the first Pennsylvania project to use Gamesa 2.0 MW wind turbines and was under final construction as 2005 ended.
- SDF approved \$1.75 million in production incentives for two new wind projects that will add 120 MW of generating capacity in Pennsylvania in 2006. The incentives are expected to leverage over \$175 million in private investment. These two projects were Casselman and Allegheny Ridge.
- SDF led a \$3.25 million equity investment round (\$500,000 of which was retained by SDF) for Franklin Fuel Cells, Inc., a developer of fuel cells that operate on a wide range of hydrocarbon

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<sup>1</sup> This figure includes \$363,000 in portfolio company investments made through our \$2 million investment in the Pennsylvania Advanced Industrial Technology Fund (PA-AIT), a limited partnership that SDF created with Blue Hill Partners. Please see Section II.B of this report, as well as our report to the PUC for the six-month period ending June 30, 2002, for further details regarding PA-AIT.

fuels without the need for a reformer. Co-investors in this equity round included EnerTech Capital and most of the PA SEFs.

- In 2005, SDF's Pennsylvania Advanced Industrial Technology (PA-AIT) Fund (a venture incubator fund created with Blue Hill Partners) invested \$163,000 in Encelium Technologies, Inc., a manufacturer of lighting control and energy management equipment, and a \$200,000 equity investment in Connected Energy, Inc., an internet-based load monitoring and energy management company.
- Other financings in 2005 included the approval of a \$139,500 pre-development loan to the Friends Center Corporation (the non-profit real estate holding entity that owns the Central Friends Meeting House and Friends office building in Center City Philadelphia) to finance the design of a deep well geothermal system and the construction of a test well. Additionally, a \$200,000 loan was made to M&M Displays, Inc., to fund the purchase of highly energy efficient production equipment for a manufacturer of point-of-sale commercial displays and signs.
- In 2005, the SDF solar photovoltaic grant program grew to 158 approved systems totaling 660 kW of capacity.
- As part of the Pennsylvania Clean Energy Campaign, SDF also sponsored \$300,000 of television and radio spots in the fall of 2005 to encourage support for clean energy, including the PECO WIND product.

## **B. Financing Approvals**

### *1) Community Energy, Inc. (Bear Creek Wind Farm)*

In June of 2004, SDF approved \$1,500,000 for the proposed 21.45 MW Bear Creek Wind Farm located ten miles southeast of Wilkes-Barre. Although SDF successfully syndicated among the four Pennsylvania sustainable energy funds of a loan package totaling \$4,500,000 for this project, the renewal of federal Production Tax Credits (PTCs) came too late for this project to be completed in 2004. In 2005, Community Energy, Inc. (CEI) restructured this project to a 24.0 MW wind farm using Gamesa 2.0 MW wind turbines. As agent for the four PA SEFs, SDF syndicated a \$5.75 million loan among the Pennsylvania funds (\$2,000,000 of which was retained by SDF) and closed on the financing in September, 2005. This wind farm was under final construction as 2005 ended<sup>2</sup> and is the first Pennsylvania project to use Gamesa wind turbines. Our debt financing completed a unique capital structure created by CEI's investment banker, Babcock & Brown Financial Co., LLC, which involves two classes of equity investors, including a number of institutional equity investors who are participating in wind development for the first time.

### *2) Franklin Fuel Cells, Inc.*

In December, 2005, SDF led a \$3.25 million equity investment round for Franklin Fuel Cells, Inc., a developer of fuel cells that operate on a wide range of hydrocarbon fuels without the need for a reformer. Co-investors in this equity round included EnerTech Capital, a number of angel investors

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<sup>2</sup> Bear Creek began commercial operation on February 14, 2006.

and most of the PA SEFs. Franklin Fuel Cells, Inc. is an early stage company with breakthrough solid oxide fuel cell technology developed at the University of Pennsylvania. Initial commercial applications are focused on auxiliary power units. SDF retained \$500,000 of this \$3.25 million equity round, resulting in total SDF disbursements invested in the company of \$950,000. Franklin Fuel Cells was included in our report to the PUC for the six-month period ending June 30, 2002, which reported our initial \$200,000 approved investment in Franklin Fuel Cells, Inc. and a \$300,000 reserve for follow-on investment in the company.

### 3) *Friends Center Corporation*

One of the SDF's goals last year was to create a Green Building Pre-Development Loan Fund in conjunction with the Delaware Valley Green Building Council (DVGBC). The goal of this fund would be to incorporate L.E.E.D. (Leadership in Energy and Environmental Design) practices into the planning and design of building projects throughout the tri-state region. This program was launched in 2005. The Friends Center Corporation, a 501(c)(3) organization, was approved for a \$139,500 pre-development loan to fund the design of a Deep Standing Column Well Geothermal Exchange system for the Friends Center at 15<sup>th</sup> and Cherry Streets and to drill a test hole at the site to prove the efficacy of the full geothermal project (estimated to cost \$580,000). The proposed geothermal heat exchange system is part of a \$10.6 million renovation to the 100,000 square foot Friends Center campus located at 15<sup>th</sup> & Cherry Streets in Center City Philadelphia. The project combines Pennsylvania's first installation of a Deep (in excess of 1,000 feet) Standing Column Geothermal Exchange system with other clean energy measures which include a 16kW photovoltaic solar array, an improved thermal envelope, efficient daylighting and lighting controls, a power purchase agreement for 100% wind-generated electricity, and tenant conservation policies designed to maximize opportunities for energy efficiency. By using these demand reduction and renewable energy technologies, Friends Center will reduce its heating and cooling energy demand by 47% (a reduction of 3,654 Mbtu per year) and its fossil fuel emissions by 100% (a reduction of carbon emissions by 326 tons per year). The Friends Center is an optimal site for demonstrating and promoting the feasibility of this innovative and highly efficient geothermal exchange system that can be replicated in other dense urban settings where other forms of geothermal exchange are not feasible due to the lack of available real estate. Visitors and pedestrians will be educated through permanent interpretive displays at street level and in the lobby of the Friends Center. Collaborative agreements with the Delaware Valley Green Building Council, the Philadelphia Chapter of the American Institute of Architects, and the Energy Coordinating Agency of Philadelphia will provide educational opportunities on environmentally responsible design for building professionals, school children, visitors and regional Friends Meetings.

### 4) *Connected Energy Corp.*

Through our Pennsylvania Advanced Industrial Technology Fund (PA-AIT), the limited partnership that SDF created with Blue Hill Partners, SDF approved and closed on an additional \$200,000 preferred stock investment in Connected Energy in 2005. The company has developed a commercial product that monitors, controls, verifies and reports on the performance of widely varying energy assets at multiple sites. Customers are able to access this information remotely and in

real time, from anywhere in the world. Customers include Verizon, Wendy's, Southern California Edison, Ingersoll-Rand, GTI, Cinergy, Cummins, Kodak, etc.<sup>3</sup>

#### 5) *Encelium Technologies, Inc.*

In 2005, SDF through its Pennsylvania Advanced Industrial Technology Fund (PA-AIT) approved and closed on an additional \$163,000 in follow-on preferred stock investments in Encelium Technologies, Inc. Encelium has developed a lighting control and energy management technology that is able to reduce lighting energy costs by 65% to 80%. Our investment in the company in 2005 is being used to develop their wireless capability and achieve an additional 20% cost reduction in manufacturing key components.<sup>4</sup>

#### 6) *M&M Displays, Inc.*

In 2005, SDF made a \$200,000 equipment loan to M&M Displays, Inc., a manufacturer of point-of-purchase displays for gasoline stations, convenience stores, and other retailers. Our loan enabled the company to purchase a new 6-color in-line screen printing press. M&M will save nearly 70% in electricity costs for a printing job performed with the new equipment when compared to the same printing job performed on their previous screen printing press. M&M currently employs 60 full-time employees, and between 10-25 part-time workers. Current customers include Mobil/Exxon, Gulf Oil, DuPont, Pep Boys, Wendy's International and Wawa.

### **C. Core Grants**

In 2005, the SDF board approved 9 new core grants. The total of the grants approved was \$148,100 and the total value of the projects supported by these grants was approximately \$1,099,660. The core grants approved in 2005 include:

1) A grant of \$25,000 to the Fairmount Park Conservancy to help with the cost of replacing the incandescent roof lighting system at Boathouse Row with energy-efficiency LED lights. The new lighting technology will reduce energy use by 87% (from \$8,000 per year to \$1,000 per year) and reduce the current maintenance costs of \$50,000 a year (to replace burned-out bulbs) to virtually zero. The LED technology also provides the ability to change the color of the lights for special occasions. The total project cost is \$546,000, half of which is being paid by PECO.

2) A grant of \$7,500 to Citizens for Pennsylvania's Future to support PennFuture's annual clean energy conference (Getting to 10%) and their green power awards luncheon.

3) A grant of \$22,600 to the Energy Coordinating Agency of Philadelphia, Inc. for the design and publication of a brochure about zero-energy homes (i.e. high levels of efficiency combined with solar PV and solar water heating). The "brochure" will be heavy paper that folds

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<sup>3</sup> SDF made its initial investment in Connected Energy Corp. as part of the \$2,000,000 funding approval SDF made in April, 2002 to launch PA-AIT.

<sup>4</sup> SDF made its initial investment in Encelium as part of the \$2,000,000 funding approval SDF made in April, 2002 to launch PA-AIT.

into a three dimensional house, with each energy measure graphically represented in the house. ECA will create a web-based version of the house which will provide detailed information about the individual design strategies, technologies and products highlighted on the house.

4) A grant of \$3,000 to Temple University's Urban Center for Sustainability to help sponsor a student project in the Dominican Republic that involves the installation of two home-made wind turbines as part of a sustainable agriculture project. The Center will be making additional turbines when it returns to Philadelphia. The SDF grant was limited to reimbursement of materials.<sup>5</sup>

5) A grant of \$10,000 to the Mid Atlantic Renewable Energy Coalition, managed by Citizens for Pennsylvania's Future, to help fund the PA effort in a national education and public relations campaign of the American Wind Energy Association to address wind siting issues. The purpose of that national effort is to respond to the growing public concern about wind development and to counter the not-in-my-backyard (NIMBY) arguments with truthful information about wind projects.<sup>6</sup>

6) A grant of \$5,000 to SmartPower to do message research about public attitudes about wind. This grant will be PA's share of a joint project sponsored by the Clean Energy States Alliance to have SmartPower use its innovative research tools to develop more effective messaging about wind projects. If the CESA project fails to get the necessary support from other states, the SDF grant will be rescinded.

7) A grant of \$15,000 to Bat & Wind Energy Cooperative to follow up on the prior research by developing and testing ultrasonic acoustic devices to deter bats from wind turbines. The first BWEC research project has been widely praised and this second phase has the continuing support of the wind industry, government and environmental groups.

8) A grant of \$10,000 to Philadelphia University's Engineering and Design Institute for scholarships for local design professionals to attend energy modeling trainings in Ecotect, DOE2 and daylight modeling. The Institute is becoming a leading center for sustainable design training and this grant will allow the Institute to offer its programs to local design professionals at a reduced rate.

9) A grant of \$50,000 to AFC First Financial for contractor recruitment and marketing support for the Keystone Home Energy Loan Program. This new residential energy efficiency loan product is being capitalized by \$20 million from PA Treasury Department. Additional marketing support is being provided by the other PA regional sustainable energy funds.

As of December 31, 2005, the SDF board had approved a cumulative total of 59 core grants, totaling \$1,346,157 in SDF support. The total value of these 59 projects is approximately \$86,273,200.

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<sup>5</sup> Following approval of the grant (and before the grant agreement was executed), SDF was informed by the Urban Center for Sustainability that they had successfully raised all of the necessary funds for the project from other sources. SDF will continue to follow the work of this interesting student initiative.

<sup>6</sup> Following approval of the grant (and before the grant agreement was executed), SDF was informed by Citizens for Pennsylvania's Future that AWEA had decided against proceeding with the regional campaigns and would be concentrating on a single national effort.

## D. SDF Marketing and Networking Activities

In 2005, SDF continued to expand its marketing efforts by both sponsoring and speaking at a number of successful conferences, and meeting with companies, non-profit organizations, major institutions and public entities. During the report period, SDF pursued the following marketing strategies:

### 1) *The SDF website* ( [www.trfund.com/sdf](http://www.trfund.com/sdf) )

The SDF website, which is part of The Reinvestment Fund's website, continues to be an essential means of distributing information regarding SDF. The website contains information about SDF's financial products and program offerings, financing request forms, requests for proposals, SDF documents and reports, background information about SDF, and links to related websites.

### 2) *Conferences and Speaking Engagements*

In 2005, SDF continued to participate in numerous conferences and public meetings as speakers and active participants in order to raise awareness of SDF activities among key stakeholder groups, including:

- Participated in the PUC Technical Conference on AEPS (January 19, 2005, Harrisburg).
- “Wind Project Permitting: The Major Challenges and Potential Resolutions” (January 19, 2005).
- Participated in the CESA manager monthly conference calls (January 21 and every third Friday thereafter).
- Participated in a lighting products conference sponsored by the Association of Energy Engineers (AEE) (January 27, 2005, Upper Darby, PA).
- Participated as a member in the meetings of the Pennsylvania Energy Advisory Board (February 2 and May 31, 2005, Harrisburg).
- Presented “TRF's Sustainable Development Fund: Financing Energy Efficiency and Renewable Energy Projects” to large C&I customers and real estate developers in a breakfast meeting hosted by PECO Energy. (February 8, 2005, Philadelphia)
- Participated in a Chemical Heritage Foundation Fuel Cell Development conference (February 10, 2005, Philadelphia).
- “Transmission Concerns in Renewable Power Generation” (February 16, 2005).
- Participated in the Association of Energy Engineers Trade Show (February 24, 2005, Philadelphia).
- Presented “Supporting Wind Development” at a conference of the Ohio Department of Development and members of the Ohio Wind Energy Coalition (March 2, 2005, Columbus, OH).
- Presentation to the staff of the Office of the Small Business Advocate (March 3, 2005, Harrisburg).
- Participated in the Commission's AEPS Working Group meeting (March 3, 2005, Harrisburg).
- Presentation to the American Wind Energy Committee's wind siting meeting (March 7, 2005, Boston, MA).
- “Meeting the Green Finance Challenge” (March 16, 2005).
- Presentation to the staff of the Office of Trial Staff (March 30, 2005, Harrisburg).

- Brief comments at the dedication of the new PV system on the Governor’s Residence (March 30, 2005, Harrisburg).
- Brief comments at the dedication of the Los Balcones Photovoltaic Project of the Norris Square Civic Association (April 21, 2005, Philadelphia).
- Presentation at the Ballard Spahr seminar on the Advanced Energy Portfolio Standard (April 25, 2005, Philadelphia).
- Presentation to Tobin Harvey, Senior Advisor to the Assistant Secretary, Office of Energy Efficiency and Renewable Energy, US Department of Energy (April 29, 2005, Philadelphia).
- Presentation to the Clean Energy States Alliance semi-annual meeting (May 2, 2005, Chicago).
- Participated in a Mid-Atlantic Distributed Resources Initiative (MADRI) meeting (May 5, 2005, Philadelphia).
- Participated in the Million Solar Roofs Merit Review Committee meeting (May 17, 2005, Philadelphia).
- Presentation and discussion with US DOE staff - Ellen Lutz and David Berg – regarding non-grant financing (May 18, 2005, Philadelphia).
- Panel presenter for PennFuture’s conference “Implementing Pennsylvania’s Alternative Energy Portfolio Standards Act” (May 25, 2005, Mechanicsburg, PA).
- Participated as one of five participants in the US DOE Green Power Peer Review meeting (May 26, 2005, Washington, DC).
- Participated in the Bloustein School Issue Forum on CO<sub>2</sub> emission reduction and renewable energy (June 13, 2005, New Brunswick, NJ).
- Presentation and advice to the UK Carbon Trust regarding the Transatlantic Investment Initiative (June 22, 2005, NYC).
- Participated as a member in the executive committee meetings and conference calls of the Mid Atlantic Renewable Energy Coalition (July 19, September 12, November 2 and November 15, 2005, Philadelphia and Harrisburg).
- Convened SDF’s ESCO Roundtable Discussion (July 19, 2005, Philadelphia).
- Presentation to Philadelphia Housing Authority about SDF and high performance buildings (August 31, 2005, Philadelphia).
- Presentation to the Energy Efficiency Policy Conference, National Council on Electricity Policy (September 15, 2005, Newark, NJ).
- “Biofuels: Their Future is Now” (September 19, 2005).
- Participated in the PennFuture Partners’ Retreat (September 21-22, 2005, Harrisburg).
- Participated in the regional meeting of NAESCO (October 18, 2005, Harrisburg).
- “The Energy Act of 2005: Impacts on Renewable Energy Resources” (October 19, 2005).
- “TRF Sustainable Development Fund: Incentive Financing for Clean Energy Market Development,” presentation to the United Nation’s Environment Program’s Sustainable Energy Finance Initiative Conference (October 27, 2005, NYC).
- Presented testimony to the House Environmental Resources and Energy Committee testimony (November 1, 2005, Harrisburg).
- Brief comments upon receiving the Green Power Finance Award at the Green Power Awards Luncheon (November 2, 2005, Philadelphia).
- Presentation to the Clean Energy States Alliance semi-annual meeting (November 7, 2005, Boston).
- Presentation to the William Penn Foundation (November 10, 2005, Philadelphia).
- Participation in the Joint Strategy Session for Community Development and Environmental Leaders (November 15, Washington, DC).
- Participation in a Pennsylvania Treasury Department meeting regarding the creation of

- the Keystone Green Investment Fund (November 22, 2005, Harrisburg).
- Presentation to the Transatlantic Investment Initiative meeting (Clean Energy Group/UK Carbon Trust, November 28, 2005, Pocantico, NY).
- Presentation to the K-12 School Clean Energy Buyers Roundtable meeting w/ NESEA (December 1, 2005, Radnor, PA).

### 3) *Marketing to Energy Service Companies*

In 2005, SDF staff continued to market to Energy Service Companies (ESCOs) that are active in the PECO Energy service territory. These marketing activities included joint calls and shared prospecting of area manufacturers and large institutions. In addition, SDF convened an ESCO Roundtable meeting on July 19, 2005, in order to discuss the key issues facing ESCOs and the energy service industry. This meeting included many of the region's largest ESCOs, whose participants met to engage in a lively discussion that recognized shared barriers to energy project implementation, as well as identifying recommendations needed to overcome those barriers.

### 4) *The Clean Energy States Alliance* ( [www.cleanenergystates.org](http://www.cleanenergystates.org) )

SDF continues to be an active participant in the programs and activities of the Clean Energy States Alliance (CESA). CESA works to increase communication and coordination among its members, which consist of 16 clean energy funds and two state agencies in 14 states. SDF continues to find this group of professional peers to be an important sounding board and test bed for SDF's programs. SDF staff attended both the spring and fall 2005 meetings of CESA members.

In 2005, SDF authored *Financing Affordable Housing: A Primer for the State Clean Energy Funds*, a resource that seeks to help bridge the clean energy and community development worlds.

### 5) *The Delaware Valley Green Building Council* ( [www.dvgbc.org](http://www.dvgbc.org) )

In 2005, SDF continued to support the work of the Delaware Valley Green Building Council by participating in several executive committee meetings and speaking at their sponsored conferences.

### 6) *The Philadelphia Million Solar Roofs Partnership* ( [www.phillysolar.org](http://www.phillysolar.org) )

SDF staff continues to play an active role in the Philadelphia Million Solar Roofs Partnership. Many of the PMSR organizations are providing publicity for the SDF Solar PV program. SDF participated in several PV marketing meetings of PV installers and advocates that were organized by PMSR.

### 7) *The Ben Franklin Technology Partners*

SDF met several times during the report period with Ben Franklin Technology Partners (BFTP) portfolio managers to discuss prospects and referrals. SDF staff continues to serve on BFTP's investment committee.

## 8) *Other SDF networking*

During 2005, SDF staff participated in meetings or other events with a large number of regional companies and organizations, including:

- AFC First Financial
- Air Products
- Albert Einstein Health Network
- Alliant Integrated Services
- American Bar Association Renewable Energy Committee
- American Council on Renewable Energy
- American Wind Energy Association
- Association of Energy Engineers
- Ben Franklin Technology Partners
- Blue Hill Partners
- CERES
- CESA Fuel Cell Consortium
- Cinergy Corp.
- Citizens for Pennsylvania's Future (PennFuture)
- Clean Air Council
- Clean Airport Partnership
- Clean Energy Group
- Clean Energy States Alliance
- Community Energy, Inc.
- Connecticut Clean Energy Fund
- Constellation Energy Services
- Delaware Valley Green Building Council
- Delaware Valley Industrial Resource Center
- DEP/SEFs Fuel Cell Alliance
- Energy Cooperative Association of Pennsylvania
- Energy Coordinating Agency
- Energy Trust of Oregon
- Enertech Capital Partners
- Enterprise Foundation
- Entre Advisors
- Exel Energy
- Exelon Power Team
- FPL Energy
- Gamesa USA
- GE Energy
- Gemstone Group
- Green Mountain Energy
- Green Plains Energy, Inc.
- Greentech
- Gridpoint
- Innovation Philadelphia
- Invensys Energy Services
- Johnson Controls, Inc.
- Johnson Matthey
- Liberty Property Trust
- Lincoln Financial Field
- Massachusetts Renewable Energy Trust
- McConnell Development
- Mid Atlantic Renewable Energy Coalition
- National Community Capital Association
- National Council on Electricity Policy
- National Renewable Energy Laboratory
- Natural Resources Defense Council
- Networked Energy
- New Jersey Board of Public Utilities
- Ohio Department of Development
- Orion Energy Corporation
- PECO Energy
- Pennsylvania Climate Change Working Group
- Pennsylvania Department of Conservation and Natural Resources
- Pennsylvania Department of Environmental Protection
- Pennsylvania Energy Advisory Board
- Pennsylvania Energy Development Authority
- Pennsylvania Environmental Council
- Pennsylvania Governor's Action Team
- Pennsylvania Housing Finance Agency
- Pennsylvania Office of the Consumer Advocate
- Pennsylvania Office of the Small Business Advocate
- Pennsylvania Public Utility Commission
- Pennsylvania Public Utility Commission's Office of Trial Staff
- Pennsylvania Sustainable Energy Board
- Pennsylvania Treasurer
- Philadelphia Area Industrial Energy Users Group
- Philadelphia Million Solar Roofs Program

- Philadelphia Municipal Energy Office
- PJM
- PJM's Demand Response Working Group
- PowerLight
- PPL Energy Services
- PPM Energy
- PV Now
- Rutgers Center for Energy, Economic and Environmental Policy
- ShoreBank
- Siemens Building Technology
- SmartPower
- Solar Energy Industries Association
- Solar Roofing Systems, Inc.
- Sovereign Bank
- Stellar Energy Solutions
- Sun Farm Network
- SunEdison
- Sustainable Business Network
- Sustainable Design Resource Center
- Sustainable Energy Fund of Central Eastern Pennsylvania
- Sustainable Jobs Fund
- Swiss Re
- Thomas Jefferson University
- Tri-State Light and Energy, Inc.
- U.S. Department of Energy
- U.S. Environmental Protection Agency
- UK Carbon Trust
- University of Pennsylvania, Center for Technology Transfer
- US Department of Energy
- US Fish and Wildlife Service
- US MicroGrid
- William Penn Foundation
- Wilmington Trust

### III. ORGANIZATIONAL ISSUES

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#### A. Board Membership

The SDF board is comprised of seven members, whose two-year terms are staggered so that the terms of an approximately equal number of directors end each year. Current board members may serve two consecutive full terms.

Board members whose terms expired as of December 31, 2005 are Sharon Barr, Ellen Lutz and Peter Shaw. The SDF Board appointed a Nominations Committee comprised of Board members Randy Haines, Al Koenig and Dick Webster and SDF staff Roger Clark and Rob Sanders. The SDF Board also approved selection criteria for new candidates to be recommended to the Board. Public notice regarding the seeking of nominations to the SDF Board was given by a variety of means including:

- A written notice to the PUC and the original parties to the PUC settlement order creating SDF (October 21, 2005),
- An e-mail notice to SDF's e-mailing list (October 21, 2005), and
- A notice posted on SDF's website (October 21, 2005).

The following individuals requested nomination to the SDF Board:

- Sharon Barr, attorney and development consultant (self-nominated)
- Ellen Lutz, Director, Philadelphia Regional Office of the U.S. Department of Energy (self-nominated)

- Peter Shaw, Director in the Utilities Operations practice of Navigant Consulting (self-nominated)
- Thomas Balderston, Principal, Balderston Capital, LLC (self-nominated)

The Nominations Committee recommended the following nominees for election to the Board, which the Board unanimously approved at its December 15, 2005 meeting. A brief bio for each follows:

*Sharon Barr* – Sharon Barr is an attorney and development consultant, with extensive experience in real estate, public/private partnerships and energy project development. Since 1999, she has been working with the Philadelphia Industrial Development Corporation on the redevelopment of the former Philadelphia Navy Yard. Among her accomplishments at the Navy Yard was the acquisition of the utility systems serving the 1000-acre site and the establishment of a private utility serving current tenants. Prior to her work with PIDC, Sharon worked at several large law firms in real estate and energy-related matters, the City of Philadelphia Law Department and was in-house counsel to a developer of independent power and cogeneration projects. Sharon Barr has been active in many civic and cultural organizations in Philadelphia, including Scribe Video Center, NetworkArts Philadelphia, Mt. Airy USA, the Preservation Alliance of Greater Philadelphia, Mishkan Shalom, and the Painted Bride Art Center. Sharon Barr has a law degree and a Masters of City Planning from the University of Pennsylvania (where she was an Editor of the Law Review) and an undergraduate degree from Oberlin College.

*Ellen Lutz* – Ellen Lutz is director of the Philadelphia Regional Office of the U.S. Department of Energy. She oversees the activities of DOE's Office of Energy Efficiency and Renewable Energy in Delaware, Maryland, New Jersey, Pennsylvania, Virginia, West Virginia and the District of Columbia. Ms. Lutz holds an M.S. in Energy Resources Management from Southbank University in London, an M.A. in Environmental Science from Montclair University, and a B.A. in Sociology. She has taken extensive graduate classes in business and marketing at the University of Pennsylvania and the Wharton School of Business.

*Peter Shaw* – Peter Shaw is a Director in the Utilities Operations practice of Navigant Consulting. He has extensive experience in a broad range of energy issues, including energy services program design, new business planning, e-business product development and distributed energy. Mr. Shaw has been an active board member of ECAP, leading their transition from being an aggregator to a licensed energy supplier. Mr. Shaw has a B.A. in international studies from Bucknell University and an M.S. in energy policy from the University of Pennsylvania.

SDF submitted to the Commission these four individuals for Commission review and approval. Assuming the Commission's approval, the SDF board members for 2006, together with the expiration dates of their terms, are as follows:<sup>7</sup>

- Charlotte Arnold, Meridian Venture Funds (12/31/06)
- Sharon Barr, attorney and development consultant (12/31/07)
- Randy Haines, Thomas Jefferson University (12/31/06)

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<sup>7</sup> On March 2, 2006, the Commission issued their approval of the newly elected SDF board members.

- Al Koenig, Ben Franklin Technology Partners (12/31/06)
- Ellen Lutz, Philadelphia Regional Office, DOE (12/31/07)
- Peter Shaw, Navigant Consulting (12/31/07)
- Richard Webster, PECO Energy (12/31/06)

## **B. SDF Board Meetings**

During this reporting period, meetings of the board were held on March 8, June 21, September 28 and December 15, 2005.

## **C. Coordination with the Other Pennsylvania Sustainable Energy Funds**

In addition to the Pennsylvania Sustainable Energy Board meetings discussed below, the regional sustainable energy funds met as a group on March 4 in Carlisle, July 14 in Carlisle and November 1 in Allentown. These meetings are an essential means of discussing projects of mutual interest and better coordinating future activities.

## **D. Pennsylvania Sustainable Energy Board**

In 2005, SDF continued to play an active role in the Pennsylvania Sustainable Energy Board (PASEB). SDF staff participated in the September 15 PASEB annual meeting. SDF staff prepared comments on the proposed PUC policies regarding the approval and distribution of future AEPS alternative compliance payments and drafted suggested PASEB bylaws changes.

## **E. Exelon / PSEG Merger Proceedings**

The Reinvestment Fund intervened as a party in the PA Public Utility Commission proceeding into the proposed merger of Exelon and PSEG. No SDF dollars were used in this intervention, only TRF funding from non-SDF sources. TRF sponsored the direct and rebuttal testimony of Lewis Milford, the president of the Clean Energy States Alliance. As a result of the settlement agreement that was reached by a majority of the parties and approved by the Commission, TRF is slated to receive \$7.2 million upon the merger of these two companies in order to continue its clean energy work. The merger still needs to obtain the approval of the New Jersey Board of Public Utilities and several federal agencies.

## **IV. THE PECO ENERGY / UNICOM MERGER PROGRAMS**

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### **A. The Pennsylvania Wind Development Program**

#### *1) Introduction*

SDF received \$12 million in the settlement of the PECO/Unicom merger for the purpose of developing new Pennsylvania wind projects. At the end of 2005, Pennsylvania had five utility-scale wind farms operating, for a total of 129.53 MW and an annual generation of 312,895 MWHs. All but Garrett, the first of the PA wind farms, were made possible by SDF wind energy production incentives.

In early 2006, the Bear Creek project came on line. By the end of 2006, SDF expects that Casselman and Allegheny Ridge will also be in commercial operation. These three projects will increase the PA wind capacity to a total of 272.9 MWs, generating 713,316 MWHs per year. This is enough to power 89,164 homes.

The total cost of the seven projects receiving SDF support is estimated to be approximately \$365 million, or a 30:1 leveraging of the \$12 million of program funding.

#### *2) The Final Payments to Meyersdale and Waymart*

The Waymart Wind Farm (64.5 MW) began commercial operation on October 20, 2003. In the first quarter of 2005, it earned the final portion of its production incentive of \$3.25 million.

The Meyersdale Windpower project (30.0 MW) began commercial operation on December 14, 2003. In the fourth quarter of 2005, it earned the final portion of its production incentive of \$2.5 million.

#### *3) Mountain Top*

Constellation Energy received a wind energy production incentive grant from SDF in the amount of \$2.25 million for a 39 MW wind farm that was to have come on line by the end of 2005. In the first quarter of 2005, it was apparent to SDF that the project was not meeting its project milestones. The primary problem was that the project was unable to find the turbines it needed. SDF issued a Notice of Default and Demand to Cure letter on January 27, 2005. After discussions with the developer team, Constellation Energy voluntarily withdrew from the grant, freeing up the incentive dollars.

#### *4) The Solicitation for 2005 Projects*

Using the funding freed up by the Mountain Top project, SDF issued a solicitation on March 15, 2005 for new PA wind projects that could come on line by December 31, 2005. By the application deadline of March 31, 2005, SDF received applications from three projects. These applications were reviewed by SDF and a team of outside reviewers. The review team recommended that SDF enter into negotiations for a production incentive agreement with the Casselman project, a 34.5 MW

project in Somerset County that was being developed by PPM Energy. SDF negotiated an agreement with PPM Energy, but the agreement was never executed as PPM Energy determined that it would not be able to secure turbines for the projects. In 2005, a turbine shortage was experienced throughout the industry.

### 5) *The Solicitation for 2006 Projects*

SDF issued a new solicitation on October 19, 2005 for new Pennsylvania wind projects that could begin commercial operation by the end of 2006. This solicitation also invited applications from community wind projects, which SDF defined as between 500 kW and 5 MW.

By the application deadline of November 23, 2005, SDF received applications from five projects. Four of these were utility-scale projects and one was a community wind project. The five applications represented a total of 171.1 MW of new wind projects, with a total estimated annual production of 482,300 MWHs per year. The total estimated cost of the five projects is \$272.5 million and the request for wind energy production incentives totaled \$7.7 million.

These applications were reviewed by SDF and a team of outside reviewers. The review team recommended that SDF enter into negotiations for production incentive agreements with the Casselman project<sup>8</sup> and the Allegheny Ridge project, an 80 MW project in Blair and Cambria Counties that was being developed by Gamesa. This recommendation was approved by the SDF board at its annual meeting on December 15, 2005.<sup>9</sup>

### 6) *Bear Creek*

On-site construction of the Bear Creek project began as scheduled in the summer of 2005, but delays in securing permits to transport the turbine components to the site resulted in a delay of the commercial operation date past the original December 31, 2005 milestone. SDF amended the agreement to extend the final milestone.

### 7) *Community Wind*

As noted in the previous section, SDF defines community wind as projects between 500 kW and 5 MW. Like utility-scale wind farms, community wind projects use large wind turbines, but usually only one, two or three of them. The most common owners of community wind projects are government entities (such as water treatment facilities), schools or groups of for-profit companies. Both PennFuture and the sustainable energy program at St. Francis University are working with clients to help develop community wind projects.

The review team for the 2006 solicitation recommended that SDF issue a solicitation that was exclusively directed at community wind projects and that had a project completion deadline at the end of 2007. SDF is planning to develop and issue this solicitation in mid-2006.

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<sup>8</sup> The Casselman project has decided to use the 2 MW Gamesa turbine, so the new project size is 40 MW.

<sup>9</sup> SDF staff successfully concluded the negotiations with both projects and executed wind energy production incentive agreements with both projects in the first quarter of 2006.

## 8) *Small Wind*

At the SDF annual meeting on December 15, 2005, the SDF board approved a grant of \$75,000 to the PA Department of Conservation and Natural Resources (DCNR) to install 10 kW wind turbines at six state parks as part of DCNR's Sustainable Energy Demonstration and Exhibit at State Parks program. In addition to the wind turbines, the exhibits will have a 2 kW solar PV system (which SDF has also agreed to support under its Solar PV Grant Program) and an exhibit to educate the visiting public on the benefits of sustainable energy and a sustainable environment.

DCNR is completing the analysis of the wind resource at some major state parks and plans to install the wind turbines and the balance of the exhibit in mid to late 2006.

## **B. The Solar Photovoltaic Grant Program**

### 1) *The PV Grant Program*

The Solar PV Grant Program statistics as of December 31, 2005 are shown on the following table:

Number of Applications Received	172
Number of Applications Approved	158
Number of Systems Installed	118
Total Capacity of Approved Systems	582.4 kW
Estimated Annual Production of Approved Systems	691 MWH
Total of SDF Incentives for Approved Systems	\$2,697,666
Total Cost of Approved Systems	\$4,980,368

Program activity accelerated considerably during 2005. The Program Administrator approved 91 applications in 2005, which is more than during the first three years of the program.

### 2) *The PV Program Budget Becomes Fully Committed*

As of December 31, 2005, SDF stopped accepting new applications for solar PV grants. SDF took this step because SDF has approved or is currently processing applications that together would fully subscribe the initial program budget of \$4 million obtained in the settlement of the PECO/Unicom merger. The PV Program Administrator is working with all approved applicants to verify that they are moving quickly to install their approved systems, otherwise the funding commitment is being withdrawn and the money is made available for another PV installation.

### 3) *Larger Commercial PV Systems*

The federal Energy Policy Act of 2005 provided commercial taxpayers with a tax credit that was equal to 30% of the cost of a solar PV system. Combined with the federal rules on accelerated depreciation, commercial customers have significant incentives to install solar PV. SDF is working with various PV companies such as Sun Farm Network, Princeton Energy Systems and Sun Edison

and with the Pennsylvania Energy Development Authority to design a financial product that will encourage and enable companies to install large PV installations.

#### 4) *The PV Program Administrator*

Throughout 2005, SDF continued to contract with Ron Celentano, a mechanical engineer and PV expert, to administer the PV Grant Program. Ron works very well with the Participating Contractors and has earned the respect and trust of everyone in the program. Ron provides significant education and marketing work as well as reviewing and approving applications.

### **C. The Renewable Energy Public Education Program**

#### 1) *The Pennsylvania Clean Energy Campaign*

SDF worked closely in 2005 with an advisory team of clean power suppliers and local environmental and public interest groups to design the Pennsylvania Clean Energy Campaign. With a budget of \$300,000 from SDF and \$100,000 in additional funding provided by SmartPower, the campaign purchased a major buy of radio and television spots in the Philadelphia market during September and October 2005. The television spots, entitled *Houses, Hospitals, Factories and Stadiums*, each presented the message that clean energy is as strong and viable as conventional sources of electricity to power these buildings and institutions. The television spots were broadcast on such shows as *Meet the Press* and *Face the Nation*. The television spots can be seen on the campaign website: [www.GoCleanEnergy.com](http://www.GoCleanEnergy.com).

The radio spots had the same message and contained a call from Governor Edward Rendell to visit the campaign web site and to look in their September electric bill for the insert to learn more and to sign up for clean energy. The radio spots were broadcast during news programming on KQWY-AM, WBEB-FM and WHYI-FM.



SDF also sponsored a bill insert in the September PECO bill about clean energy and the SDF campaign.

#### 2) *The Customer Rewards Program*

The SDF Customer Rewards program, which provides incentives to clean energy suppliers who make new renewable electricity sales to PECO Energy distribution service customers, began in early 2005 with an initial budget of \$150,000. The suppliers received a Reward of \$40.00 per new customer regardless of customer class. SDF pre-approved both the clean energy products that were eligible for the program and the marketing strategies that would be recognized by the program. The marketing strategies that were pre-approved were strategies that are not cost-effective without the Rewards payment, so that SDF could be assured that the program was resulting in additional customer education that would not otherwise occur.

To encourage other marketing groups to participate in the Rewards Program, SDF approved five \$5,000 seed grants to the following organizations: Clean Air Council, Community Energy, Chesapeake Bay Foundation, Pennsylvania Interfaith Climate Change Campaign and Recycle Bank

These seed grants will defray some of the start-up costs associated with these organizations setting up their programs to encourage renewable energy sales in Eastern Pennsylvania. SDF reimbursed up to \$5,000 in marketing expenses of these grantees on a one-time basis.

In December 2005, the SDF board added \$75,000 to the Customer Rewards Program budget, which had been fully allocated by Rewards claims from the clean power marketers and their nonprofit marketing allies. The board also reduced the customer reward to \$35 per new customer. As of December 31, 2005, the Customer Rewards Program had paid out \$156,825 for 4,054 new customers who were purchasing clean energy.

### 3) *The Energy Exhibits Program*

On August 19, 2005, SDF issued a Request for Proposals to select a design team to conduct a design charrette with environmental education centers, museums and the solar industry to design generic messaging, signage, displays and larger educational exhibits about solar PV technology. These displays could then be customized by each organization for its own specific needs. SDF worked with the Philadelphia Million Solar Roofs program to identify organizations that were candidates for the displays because they had or were planning to install solar PV systems. This list included the Philadelphia Zoo, Hawk Mountain, the John Heinz Wildlife Refuge (the Cusano Center), the Governor's Residence, the Randolph/Dobbins Vocational High School, the new Microsoft High School, the Friends Center, the Pennsylvania State Parks local environmental education centers and others.

Following the evaluation of the 5 proposals that SDF received in response to the RFP, SDF selected Alt.Atica of New York, NY as the project designer and Re:Vision Architects of Philadelphia as the facilitator for the design charrette.<sup>10</sup>

### 4) *The Energy Curricula Project*

SDF's board approved a grant of \$41,900 to the Northeast Sustainable Energy Association for the preparation of curricula materials about energy conservation/efficiency and renewables specifically designed to address PA's Academic Standards for Environment and Ecology ([www.pde.state.pa.us/k12/lib/k12/envec.pdf](http://www.pde.state.pa.us/k12/lib/k12/envec.pdf)). NESEA will present the curricula at a one day session of the intensive training program of PA Master Teachers (the Governor's Institute) in the summer of 2006 and revise the curricula based on feedback received from the teachers. The PA Department of Education will print and distribute 3,000 copies of the curricula to Pennsylvania school teachers.

### 5) *The Energy Education Coordinator*

SDF continues to contract with Maureen Mulligan to serve as SDF's part-time Energy Education Coordinator. She has been very effective in increasing communication between the various contractors and creating significant synergies in our program.

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<sup>10</sup> The design charrette was held at the Cusano Environmental Center on April 3 and 4, 2006.

## **V. FUTURE TASKS**

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It is one of SDF's chief priorities to deploy SDF's remaining funds in projects and companies in a way that makes the strongest possible case that the public interest is served through the continued funding of clean energy activities. To this end, focus has been placed on the following:

### **A. New Funding**

If and when the Exelon/PSEG merger is consummated, TRF will receive \$7.2 million under the terms of the settlement agreement to continue its clean energy work. SDF staff and board will decide how these funds should be allocated to various programs and new initiatives.

TRF is working with the parties in the New Jersey proceeding evaluating the Exelon/PSEG merger to generate support for funding TRF to provide energy lending and investing services in New Jersey. TRF is already active in the New Jersey market as a lender for affordable housing and community facilities projects and an equity investor in rapidly growing companies, and is prepared to take the SDF model east.

### **B. Marketing and Public Relations**

In the second quarter of 2006, TRF intends to use non-SDF funding to publish a major report on its sustainable energy work that spans more than a decade of innovative financing. SDF's portfolio companies and financed projects will feature prominently in the report. It is SDF's expectation that this new report will be used to more widely market SDF, increase its deal flow, and create new opportunities for innovative partnerships with key stakeholders.

### **C. SDF Wind Program**

SDF will work to ensure that the Casselman and Allegheny Ridge projects come on-line by the end of 2006. SDF will issue the solicitation for Community Wind projects in mid-2006.

### **D. SDF Solar PV Program**

SDF expects to reopen the solar PV grant program when new funding is available.

SDF will work with the recipients of SDF's solar PV grants to register their solar production with the PA Department of Environmental Protection and the PJM Generation Attributes Tracking System (GATS) and to obtain solar Renewable Energy Certificates for this production.

SDF will continue to explore opportunities to finance larger commercial PV installations.

### **E. SDF Public Education Program**

In the first SDF board meeting of 2006, the SDF board will be asked to approve a plan for allocating the \$591,000 that remains unallocated in the public education program budget. One new

program that will be included in the proposal is the Pennsylvania Clean Energy Communities Campaign, which will identify 3 or 4 southeastern Pennsylvania townships who will accept the challenge of purchasing 20% of their power from clean energy by 2010.

The final plan will also address the budget for the Customer Rewards program and propose to add a new incentive for non-residential sales based on the size of the clean energy commitment.

## **VI. FINANCIAL REPORT**

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As of December 31, 2005, SDF had received a total of \$31,815,216 from PECO Energy. This figure consisted of eight quarterly payments in 1999 and 2000 from distribution charges that total \$3,335,216, three installments of \$4,000,000 for the Pennsylvania Wind Development Program under the PECO Energy/Unicom merger agreement (total of \$12,000,000 received), the lump sum accelerated payment of PECO quarterly payments through December 31, 2006 totaling \$9,980,000, four annual installments of \$1,000,000 for SDF's photovoltaic program (total of \$4,000,000 received), and five annual installments of \$500,000 for public education about renewable energy (total of \$2,500,000).

SDF's unaudited financial statements for the twelve-month period ending December 31, 2005 show total income of \$644,775 for the period. Operating expenses for the 12-month period totaled \$744,228. The excess of expenses over revenue in 2005 totaled \$99,453, a \$35,751 favorable variance from the approved budgeted deficit of (\$135,204). This planned and approved deficit follows years of consistent surpluses, and recognizes the anticipated cumulative impact of SDF's performance-based grant making for its wind, solar PV and public education programs on its net financial income. SDF's retained surpluses are expected to continue to decline through 2006 when SDF hopes to have its funding increased as part of the expected Exelon/PSEG merger approval and related settlement order.

On December 31, 2005, SDF held funds in two accounts pending disbursement for its loans, investments, grants and operations: \$757,677 was held in SDF's sweep/liquidity investment account, and \$10,854,901 was held in SDF's Limited Maturity investment account. The Limited Maturity investment account is invested in government agencies, U.S. Treasuries, and investment grade corporate bonds and commercial paper. The average maturity of the underlying securities is approximately 12 months. Of these combined fund accounts, \$3,825,000 represented approved but not disbursed conditional wind production incentives for four new Pennsylvania wind power projects; \$439,001 in approved but not disbursed loans and investments; \$522,016 in unexpended balances of Core program and Renewable Energy Public Education grants that are under executed agreements; and \$1,548,731 that represented 104 approved PV systems with unexpended balances pending completed installation and/or an anniversary payment earned one year after installation. Outstanding loans, energy performance contract leases receivable and outstanding investments in portfolio companies at December 31, 2005 totaled \$6,501,759. SDF's liabilities at December 31, 2005 totaled \$482,257 and were comprised of general accounts payable and accrued expenses of \$17,834, an account payable of \$50,658 to The Reinvestment Fund for operating expenses approved under the 2005 operating budget, grants payable of \$413,515 and a wind project escrow account of \$250.

Audited financial statements for the year ending June 30, 2005 are available upon request by contacting Robert Sanders, Fund Manager, Sustainable Development Fund, The Reinvestment Fund, 718 Arch Street, Suite 300 North, Philadelphia, PA 19106-1591.

## **VII. CONCLUSION**

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2005 has been another good year for The Sustainable Development Fund. In addition to its existing lending, investing and grant-making activities, SDF found new ways to leverage its limited resources through innovative financial and program partnerships. SDF looks forward to continuing to work closely in 2006 with State agencies and administration to accelerate the adoption of clean energy technologies in the Commonwealth.

