

PENNSYLVANIA SUSTAINABLE ENERGY BOARD

2003 ANNUAL REPORT

Introduction

This is the first Annual Report of the Pennsylvania Sustainable Energy Board, filed pursuant to the Commission's August 7, 2003 Order at Docket No. M-00031715.

Background

The electric utility industry restructuring process in Pennsylvania brought together stakeholder groups representing residential consumers, large commercial and industrial customers, environmental parties, and other interested participants. These groups contributed to the development of the restructuring settlements for Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), PECO Energy (PECO), PP&L (PPL), and Allegheny Power/West Penn Power Company (WPP). These settlements provided new opportunities for renewable and sustainable energy production services and enterprises.

Specifically, each of the five settlement agreements established a separate and independent sustainable energy fund to promote:

- ◆ The development and use of renewable energy and clean energy technologies,
- ◆ Energy conservation and energy efficiency,
- ◆ Renewable energy business initiatives, and
- ◆ Projects which improve the environment in the Companies' service territories, related to the transmission and distribution facilities. (Met Ed & Penelec)

Funding

Under terms of the settlements, approximately \$55 million was collected through these companies' distribution rates to promote the development of sustainable and renewable energy technologies. The PECO sustainable energy fund received an additional \$18.5 million in funding over a 5-year period as a result of the PECO/Unicom merger. Through a merger of GPU, Inc. with FirstEnergy Corp., the Met-Ed and Penelec funds received an additional \$10 million (\$5 million each) toward their sustainable energy funds.

Regional Board Administration

The settlements provided that a seven-member board, nominated by the parties to the agreements, and approved by the Commission, would manage each fund. The board of directors for each fund drafted by-laws that address the responsibilities and powers of the board and the fund administrators. The by-laws required that directors represent a cross-section of interests - the financial community, consumers, environmental interests, business and industry, electric distribution companies and electric generation suppliers. The by-laws also address project selection and the funds' investment strategies.

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The Commission approved the individual by-laws for each Regional Fund on the following dates:

- ◆ December 2, 1999 - PECO Energy
- ◆ January 27, 2000 - Met-Ed and Penelec
- ◆ June 2, 2000 - PPL and Allegheny Power/West Penn Power

Fund Administrators

The fund administrators for each of the regional boards are as follows:

- ◆ The Reinvestment Fund (at the time of the settlement agreement, it was known as the Delaware Valley Community Reinvestment Fund) (PECO Energy).
- ◆ Berks County Community Foundation (Met Ed).
- ◆ Community Foundation of the Alleghenies (Penelec).
 - Both Met Ed and Penelec follow the same funding approach and guidelines.
- ◆ The Sustainable Energy Fund of Central Eastern Pennsylvania (PPL).
- ◆ The Energy Institute of Penn State University, in partnership with Energetics, Inc., (Allegheny Power/West Penn).

The regional boards meet on a regular basis and Commission staff attend these meetings as liaison representatives. Regional boards are required to submit annual and semi-annual reports to the Commission on their activities, expenditures, and investments.

Statewide Activities

By a Commission Order dated July 1, 1999, a statewide board was created to “provide oversight, guidance and technical assistance to the regional boards.” Statewide coordination of the four regional funds was viewed as essential to establish Pennsylvania as a leader in renewable energy technologies. In its order the Commission noted that the success of the renewable power initiative required a partnership between the regional boards and the state agencies. The Commission directed that the statewide board should operate in conjunction with regional boards in identifying opportunities, prioritizing objectives and developing an outreach plan to garner further support for the initiatives.

On August 7, 2003, the Commission adopted an Order further defining the role of the Pennsylvania Sustainable Energy Board (PASEB). The Commission directed the PASEB to hold annual meetings, establish by-laws and develop a “best practices” business model for each of the regional funds. The Order also modified the reporting obligations of the regional funds and imposed an annual reporting requirement on PASEB.

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In addition to the Commission, PASEB members include a board member of each of the four regional funds, as well as designees for the Department of Environmental Protection, Department of Community and Economic Development, Office of Consumer Advocate and Pennsylvania Environmental Council. The PASEB held meetings in 2004 for the purpose of addressing its obligations arising from the August 7, 2003 Order and to develop a plan to comply with the Commission's mandate. This 2003 Annual Report is product of those efforts.

Regional Board Activities

The following chart shows the loan and grant activity of the five regional funds in 2003:

2003 Expenditures

FUND	LOANS	GRANTS	TOTAL
Met/Ed	400,682	62,250	462,932
Penelec	50,000	97,800	147,800
PECO Energy	3,319,338	1,689,238	5,008,576
PPL	2,550,000	195,779	2,745,779
West Penn	1,025,000	230,646	1,255,646
Totals	7,345,020	2,275,713	9,620,733

Met Ed Sustainable Energy Fund

<http://www.bccf.org/pages/gr.energy.html>

The Metropolitan Edison Company Sustainable Energy Fund's (within Berks County Community Foundation) purpose is to promote:

- ◆ The development and use of renewable energy and clean energy technologies.
- ◆ Energy conservation and efficiency.
- ◆ Sustainable energy businesses.
- ◆ Projects that improve the environment in the company's service territories, as defined by their relationship to the company's transmission and distribution facilities

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While the fund is a component fund of Berks County Community Foundation, it is dedicated to serving the entire Met Ed service territory. A companion fund was established to serve the company's Penelec service territory.

The accomplishments of Metropolitan Edison Company/Pennsylvania Electric Company Sustainable Energy Fund for the year 2003 include:

Financial Approvals

During the year January 1, 2003 – December 31, 2003 the Metropolitan Edison Company Sustainable Energy Fund approved financing totaling \$462,932. Of that total, \$62,250 was authorized for grants and \$400,682 was authorized for loans.

Grants

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Southern York Co Library	\$10,250	For energy modeling and assistance in obtaining the US Green Building Council's LEED Certification
York Co Commissioners	\$20,000	To assist with the US Green Building Council's LEED Certification for the former courthouse
Twin Valley SD	\$10,000	To assist with the US Green Council's LEED Certification for a new "green" elementary school
United Corrstack	\$15,000	To fund a feasibility study that will determine if the Reading, PA plant energy system can be economically converted to a biomass form of energy usage
West Penn Power Sustainable Energy Fund	\$5,000	To assist with the Clean Energy Expo scheduled for April 2-4, 2004
US Green Building Council	\$2,000	To co-host an event at the International Conference in Pittsburgh on November 12-14, 2003

Loans

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Hundredfold Farms, Inc.	\$280,000	To outfit fourteen homes with photovoltaic roof systems, battery backups and solar hot water systems
United Corrstack	\$40,000	For Phase Two of the Biomass Energy Conversion Project
Police Athletic League of Greater Reading	\$30,682	For a new energy efficient HVAC system

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Met-Ed SEF Loans (cont'd)

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Native Energy	\$50,000	For the development of a renewable energy credit (Green Tags) marketing and sales program dedicated to the biomass field

Pennsylvania Electric (Penelec) Sustainable Energy Fund

www.cfalleghenies.org/gpusef.htm

The Community Foundation for the Alleghenies purpose is to promote:

- ◆ The development and use of renewable energy and clean energy technologies
- ◆ Energy conservation and efficiency
- ◆ Sustainable energy businesses
- ◆ Projects that improve the environment in the Penelec region.

Financial Approvals

During the year January 1, 2003 – December 31, 2003 the Penelec Sustainable Energy Fund approved financing that totaled \$147,800. Of that total, \$97,800 was for grants and \$50,000 for loans.

Grants

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Somerset Conservation District	\$8,800	To assist in the obtaining of US Green Building Council LEED Certification. Funds will be used for the site design portion for a new building in the Somerset Industrial Park
Allegheny-Clarion Valley Development Corporation	\$25,000	For the installation of a geothermal system in the community health center
Human Service Center	\$22,000	For assistance with the construction of an energy efficient roof for a LEED building. This project has the endorsement of the Pittsburgh Green Building Alliance
WPSX-TV	\$10,000	To develop a one-hour documentary called Water: The Resource We Must Reclaim
Cambria County War Memorial Arena	\$25,000	To assist with an energy efficient chiller for an ice rink as part of a major public renovation
Western Pennsylvania Sustainable Energy Fund	\$5,000	To assist with the Clean Energy Expo scheduled for April 2-4, 2004
US Green Building Council	\$2,000	To co-host an event at the International Conference in Pittsburgh November 12-14, 2003

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Loans

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Native Energy	\$50,000	For the development and building of a renewable energy credits (Green Tags) marketing and sales program dedicated to developing the biomass field

Throughout this reporting period, Met-Ed/Penelec Sustainable Energy Fund joint staffs worked with and partnered on the following projects:

- ◆ Met with the other PA Sustainable Energy Funds on four different occasions (January 8, March 26, June 2 – 4 and October 10). June 2 - 4 was the annual meeting of all the PA Sustainable Energy Funds. At the October 10 meeting, the funds heard from wind developers and discussed future joint projects. Jointly the funds are working to add to the Wind Farm Mix and support the development of green tags.
- ◆ Attended the Clean Energy States Alliance workshop, which is an alliance of Sustainable Energy Funds in the United States. The purpose of the workshop was to promote cooperation among the funds in order to better accomplish the sustainable energy mission.
- ◆ Participated in the September 8 meeting with DEP Deputy Secretary Daniel Desmond. The discussion centered on new ways to market alternative energy.
- ◆ Participated in an alternative fuels conference.
- ◆ Attended the PennFuture/Mid-Atlantic Renewable Energy Coalition's Green Awards and Annual Meeting.
- ◆ Attended and participated in the US Green Building Council's Annual Conference held in Pittsburgh, PA, November 12-14. The purpose of the conference was the continued promotion of building "green."
- ◆ Participated in a one day review and planning process for a new business plan.

In addition, Met-Ed /Penelec Sustainable Energy Fund staff attended numerous meetings and presentations:

- ◆ Met Ed Sustainable Energy Fund staff attended and participated in the December 11 Advisory Committee Meeting to the Northeastern Region of the Ben Franklin Technology Partners. This was a brainstorming session on how to better promote the Partnership to more entrepreneurs.

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- ◆ Met-Ed Sustainable Energy Fund staff participated in a one day panel discussion on the relationship of Smart Growth Activities and Sustainable Energy held by the Surdna Foundation on December 5.
- ◆ Met-Ed Sustainable Energy Fund staff participated in the September 25 meeting of the Pennsylvania Biomass Working Group. The Working Group seeks to develop and promote biomass projects in the Commonwealth.
- ◆ Penelec Sustainable Energy Fund staff attended a presentation on modified technology for low-head hydropower presented by Universal Power Associates and the West Penn Sustainable Energy Fund in Greensburg on March 12th.
- ◆ Penelec Sustainable Energy Fund staff attended a DEP presentation at the David L. Lawrence Convention Center in Pittsburgh on March 13th to learn more about upcoming DEP programs.
- ◆ Penelec Sustainable Energy Fund staff attended a presentation on venture funding opportunities for Ebara Solar, Inc., in Rostraver on March 26th.
- ◆ Penelec Sustainable Energy Fund staff made a presentation to Penelec economic development managers in Clearfield on April 15th.
- ◆ Penelec Sustainable Energy Fund staff attended a presentation by McKissick & Associates of green building design in Lewisburg on May 16th.
- ◆ Penelec Sustainable Energy Fund staff made a presentation at a DEP-sponsored seminar on Green Buildings at Mercyhurst College in Erie on May 28th.

Sustainable Development Fund

<http://www.trfund.com/sdf/>

The Sustainable Development Fund (SDF), which operates in the PECO Energy service territory, invests in the following types of ventures:

- ◆ Companies and ventures that generate electricity using renewable energy sources.
- ◆ Manufacturers, distributors and installers of renewable energy, advanced clean energy and energy-conserving products and technologies.
- ◆ Companies and organizations that are end-users of renewable energy, advanced clean energy and energy-conserving products and technologies.

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Highlights

During the twelve-month period ending December 31, 2003, the Sustainable Development Fund (SDF) approved loans, investments, grants and incentives totaling \$5,008,576¹.

Other highlights for the twelve-month period include:

- ◆ As per the PECO/Unicom merger, phases to distribute funding were established. All four of the new Phase III Pennsylvania wind projects that SDF is supporting with wind power production incentives have obtained long-term power purchase agreements or other commitments for their output from creditworthy purchasers. Three of these buyers are entering the wind power market for the first time. No other eastern state has had this kind of success in their proposed wind projects obtaining long term power purchases
- ◆ The SDF has enjoyed immediate success in co-marketing its energy performance contract financing product through energy service companies. During the report period, the SDF approved energy performance contract financing for four projects totaling \$2,592,848.
- ◆ The SDF has implemented a new marketing plan to increase public awareness of SDF's accomplishments, and to increase SDF's deal flow for its core lending and investing activities, as well as its solar photovoltaic program.

Financial Approvals

Investments

Encelium

Through Pennsylvania Advanced Industrial Technology Fund (PA-AIT), the limited partnership that SDF created with Blue Hill Partners, SDF approved and closed on \$276,371 in preferred stock investment 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%. This early stage Canadian company has several system installations in the Toronto area. The investment has provided working capital and managerial investment to the company to open a Philadelphia sales and service office with the expectation of hiring additional Pennsylvania employees and dramatically accelerating the company's growth.

¹ This figure includes \$321,490 in portfolio company investments made through a \$2 million investment in the Pennsylvania Advanced Industrial Technology Fund, a limited partnership that SDF created with Blue Hill Partners. An additional \$80,000 of this figure represents an approval under a \$300,000 reserve for follow-on investment to Franklin Fuel Cells, Inc.

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The \$276,371 investment in Encelium is part of the \$2,000,000 funding approval made in April, 2002 to launch PA-AIT, a new venture capital/incubator fund for early stage renewable and clean energy companies.

Princeton Energy Systems

Through the Pennsylvania Advanced Industrial Technology Fund (PA-AIT), SDF approved and closed on an additional \$45,119 in preferred stock investment in Princeton Energy Systems (PES), an early stage photovoltaic systems integrator located in Philadelphia that is focused on commercial and institutional markets in the Philadelphia metropolitan area and the mid-Atlantic region. The company provides turnkey development and management services for commercial PV systems, including system design, engineering, project management and long-term system service and maintenance. The company couples its PV sales with HVAC energy efficiency retrofit measures to significantly reduce payback periods. SDF's funds were used to provide working capital and managerial investment to PES, and SDF's total investment in PES is \$355,119.

The investment in PES is part of the \$2,000,000 funding approval made in April, 2002 to launch PA-AIT.

Franklin Fuel Cells, Inc.

The SDF approved a follow-on \$80,000 investment in Franklin Fuel Cells, an early stage company with breakthrough solid oxide fuel cell technology developed at the University of Pennsylvania. Commercial applications include stationary distributed generation and auxiliary power units. The \$80,000 leveraged an additional \$1,420,000 of investment in the current round. SDF's total investment in Franklin Fuel Cells is \$280,000.

Albert Einstein Healthcare Network

The SDF arranged financing for a \$3,035,000 energy performance contract designed and to be implemented by Alliant Integrated Services Corporation (Alliant) for Albert Einstein Healthcare Network (AEHN). SDF's portion of the total financing package was \$910,500. The energy conservation project will reduce electricity consumption by 2,620 MWh per year, which represents an energy savings to AEHN of over \$399,000 per year.

The SDF's financing leveraged an additional \$2,124,500 approval from The Reinvestment Fund. This project is another example of how SDF strives to leverage SDF dollars with TRF dollars, something encouraged by the SDF board. By doing so, SDF leverages TRF's considerable resources and portfolio relationships for energy efficiency loans, multiplying the impact of SDF's limited resources.

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Bellevue Associates

The SDF approved a \$323,476 term loan to Bellevue Associates to finance energy efficiency measures for the Bellevue, a multi-use commercial building in Center City, Philadelphia. The projected electricity savings are 1,067 MWh per year. The Bellevue includes office and retail space, a health club, a food court, a parking garage and a 170-room luxury hotel (the Park Hyatt Philadelphia at the Bellevue).

PPL, Inc. (Starwood Hotels)

The SDF approved \$468,872 in financing for an energy performance contract proposed by PPL, Inc. for Starwood Hotels. Specifically, the loan would finance the design and installation of a combined heat and power distributed generation system at the Sheraton Suites Philadelphia Hotel near the Philadelphia Airport. This energy conservation project will reduce electricity consumption by 35%, and decrease energy inputs by 1,820 MWh per year.

Thomas Jefferson University Hospital

The SDF approved \$890,000 in financing for an energy performance contract designed and to be implemented by Alliant Integrated Services Corporation (Alliant) for Thomas Jefferson University Hospital (TJUH). The energy conservation project will reduce electricity consumption by 797 MWh per year.

Energy Cooperative Association of Pennsylvania

The SDF arranged a one-year \$325,000 performance guaranty agreement for Energy Cooperative Association of Pennsylvania (ECAP). This financing agreement has enabled the company to purchase electricity directly under its own wholesale power agreement and to evolve from a power aggregator to a fully licensed independent power supplier. ECAP is one of only five electricity suppliers that are active in the PECO territory. It is one of only three that presently provide a renewable electricity option.

Core Grants

As of December 31, 2003, the SDF board had approved a cumulative total of 38 core grants, totaling \$990,987 in SDF support. Of this, the SDF board approved fourteen new grants totaling \$495,250:

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<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Invensys Home Control Systems	\$25,000	To expand their testing of a home energy control system to small commercial customers
Johnson-Matthey Fuel Cells	\$250,000	To help develop and fund a demonstration project involving their prototype 75 kW proton exchange membrane (PEM) fuel cell. This grant would leverage an additional \$1,381,000 in funding and will help Johnson-Matthey formalize a joint venture with an established stack maker, thereby establishing itself as a fuel cell manufacturer in Pennsylvania
Institute for Local Self Reliance	\$25,000	For a house deconstruction pilot project involving five houses. Deconstruction, an alternative to demolition and land-filling, involves separating and recycling usable materials and their embedded energy resources. If the pilot demonstrates a cost savings as is expected, it may be expanded to a far larger number of buildings as part of the City of Philadelphia's Neighborhood Transformation Initiative
Philadelphia University Engineering and Design Studio	\$25,000	For the purchase of library materials. The Engineering and Design Studio is quickly becoming a valuable resource for design professionals in the area to learn about high performance green building design. The SDF grant will allow the Studio to expand its reference collection and to hire a part-time librarian to manage the collection
Eastern University	\$5,750	To support a student-developed website about hydrogen energy. ²
Mid Atlantic Renewable Energy Coalition	\$25,000	Will match private member contributions collected above \$100,000, dollar for dollar, up to \$25,000. This challenge grant was designed to be an incentive for private companies to contribute to MAREC. ³
Greenbuild 2003 National Conference	\$4,500	A joint exhibit with the other Pennsylvania sustainable energy funds
Penn State Energy Center Clean Energy Expo	\$10,000	A joint exhibit with the other Pennsylvania sustainable energy funds on April 2 and 3 2004

² Eastern University subsequently declined the grant when the professor who sponsored the project left the university.

³ MAREC satisfied the terms of the challenge by the end of 2003, so the \$25,000 will be added to the funding MAREC received in Year Three of the renewable energy education programs.

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PECO SDF Core Grants (cont'd)

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
PennFuture	\$25,000	For a Digital Load Control business opportunity
Hartig Heat Exchangers	\$25,000	For testing and certification by several national testing organizations of their air-to-air welded plastic heat exchanger that has great promise for commercial kitchen exhaust systems due to the unit's ability to handle grease without clogging
Peace Valley Nature Center in Bucks County	\$15,000	To design a new passive and active solar wing to their facility
Acadia Water Technologies	\$20,000	A firm that designs and installs energy efficiency measures and methane-to-electricity generation in waste water treatment centers
Encelium Technologies	\$25,000	To support four to five pilot demonstrations of their new advanced efficient lighting management system in the Philadelphia market

Wind Development Program

The \$12 million for wind energy development that SDF received under the PECO Energy/Unicom merger settlement agreement is now fully committed. Counting the two Phase I projects, SDF has enabled the construction of six wind farms with a total capacity of 183.5 MW. The estimated total investment in these six projects is approximately \$220 million, or an 18:1 leveraging of the \$12 million program.

The Waymart Wind Farm began commercial operation on October 20, 2003. Upon receipt of a Letter of Credit from the developer, SDF issued a payment of \$3 million, to be earned by the production of the wind farm.

The Meyersdale wind power project began commercial operation on December 14, 2003. It will be submitting quarterly reports of wind energy production and receiving quarterly payments based on those production reports.

The Photovoltaic Program

In 2003, SDF approved 43 new applications under the Solar PV Grant Program. These 43 approved systems represent 175.7 kW of capacity and an estimated SDF commitment of \$693,988 in new grants. The total cost of these new systems is approximately \$1,723,872. There were no approvals in 2003 for new multi-family residential systems or for large commercial systems.

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The cumulative total of PV activity as of the end of 2003 is shown on the following table.

Approved PV Projects	kW	SDF Grant	Total Cost
RESIDENTIAL SYSTEMS			
SDF Solar PV grant program – 53 approved systems	202.1	\$799,468	\$1,948,510
Reinhard Street (11 systems @ 1.5 kW)	16.5	\$66,000	\$232,160
Norris Square (8 systems @ 1.2 kW)	9.6	\$27,000	\$115,000
<i>Subtotal - Residential Systems</i>	<i>228.2</i>	<i>\$892,468</i>	<i>\$2,295,670</i>
COMMERCIAL SYSTEMS			
Ortho-McNeil Laboratories	75.0	\$25,000	\$654,000
Philadelphia Police Forensic Science Center	15.0	\$25,000	\$125,000
<i>Subtotal - Commercial Systems</i>	<i>90.0</i>	<i>\$50,000</i>	<i>\$779,000</i>
TOTAL - All Systems	318.2	\$942,468	\$3,074,670

To increase the visibility of PV, the SDF board approved a motion to expand the PV program to showcase installations outside of the PECO Energy service territory. The other Pennsylvania sustainable energy funds will forward applicants to SDF staff, who will review the proposed projects and determine if they meet the public visibility and impact criteria. If they do, the SDF PV program administrator will process an application just as he does for local projects, but other costs of project administration and inspection will be borne by the local sustainable energy fund.

The SDF board approved setting aside \$250,000 for showcase commercial installations that are larger than 5 kW. Staff would be able to negotiate the subsidy level and would not be limited to the \$25,000 cap. The goal is to get three or so new large installations. One possible grantee is the Philadelphia Eagles, which have discussed a PV system to power the stadium scoreboard.

The Renewable Energy Public Education Program

Year Two

The Year Two contractors, and their activities, are shown on the following table. Most of these contracts ended on June 30, 2003, but several have extended their work until the end of the year.

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Organization	Short Summary of Tasks
Alternative Energy Now	Produce, distribute and conduct public screening of “Velocity” a documentary film about wind with Pennsylvania footage.
Alliance for a Sustainable Future	Held the Philadelphia area Earth Charter Summit and broadcast it on the web. Build coalitions that network sustainability groups, student campuses, appeal to municipalities & interfaith groups to increase consumer demand and publicize their efforts.
Alliance to Save Energy	Introduce renewable energy by building a solar battery charger in four elementary and middle schools as part of the Green Schools Program. Encourage participation in Junior Solar Sprint.
Clean Air Council	Using a technical advisory committee, design and place an interactive, multi-media educational kiosk on renewable energy technology in central locations such as the Franklin Institute, the contents of which will be placed on the web.
Clean Energy States Alliance	A multi-state comprehensive education strategy funded by five northeast funds to research, implement, monitor and evaluate a public education campaign to encourage people to buy renewable energy.
Green Plains Energy	Work with Million Solar Roofs to educate the public about solar photovoltaics through trade shows, speakers bureau and an answer desk for inquiries.
Mid-Atlantic Renewable Energy Coalition	Clean Your Air work continues from last year and will be expanded to include Philadelphia and Pittsburgh public radio advertising, events, web site changes and collateral development.
Northeast Sustainable Energy Association	Continuation from last year’s grant, NESEA is finalizing their work as “energy ambassadors” by providing presentations for schools using professional architects. (also working directly with Philadelphia Solar Energy Assn. on Junior Solar Sprint)
Pace University School of Law	Update energy source data for the Power Score card and the website. Work with suppliers, policy makers, energy associations and others to gain support for the cards’ acceptance as a tool for understanding energy sources.
Philadelphia Solar Energy Association	Working with the schools and hosting workshops on Junior Solar Sprint while partnering w. the Philadelphia Green Schools program. Will also coordinate publicity & use video to promote the race.
Pennsylvania. Resources Council	The contractor has teamed up with Philadelphia Self Reliant & the Delaware Valley Green Building Council to sponsor and manage a sustainable products/services conference and expo called “Building the Town Green” that was held on May 1-3, 2003 at University of Pennsylvania.

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Year Three

The Year Three Request for Proposals was issued by SDF on July 30, 2003. A meeting was held with interested potential applicants on August 13, 2003 and the proposals were due September 4, 2003. SDF received 16 proposals for a total funding request of \$1,536,439.

The SDF board reviewed the proposals and approved the allocation of the \$500,000 in Year Three funding as follows:

Organization	Short Summary of Tasks
Green Plains Energy	Work with Million Solar Roofs to educate the public about solar photovoltaics through numerous trade shows and other meeting opportunities. (\$50,000)
GreenTreks Network	Produce brief Flash animation and video shorts for the SDF website and for emailing to public. (\$15,000)
Mid-Atlantic Renewable Energy Coalition	Clean Your Air work continues from last year and will be expanded to include Philadelphia and Pittsburgh public radio advertising, events, web site changes and collateral development. (\$150,000: \$125,000 from Year Three and \$25,000 from the core grant fund (the challenge grant))
Northeast Sustainable Energy Association	Continuation from last year's grant, NESEA will continue their work as "energy ambassadors" by providing presentations for schools using professional architects. (\$25,000: \$10,000 from Year Three and \$15,000 for the core grant fund (the Tour de Sol grant))
Philadelphia Solar Energy Association	Working with the schools and hosting workshops on Junior Solar Sprint while partnering w. the Philadelphia Green Schools program. Will also coordinate publicity and use video to promote the race. (\$5,000)
Philadelphia Green Schools	Support a school-based, student-centered renewable energy education and outreach program in Philadelphia and the surrounding area. (\$20,000)

Contracts were being executed with these organizations at the close of the year.

In addition to these six individual contracts, the SDF board authorized SDF staff to work to develop two initiatives to address issues which were identified by multiple applicants.

The two initiatives are:

Initiative	Short Description
Bounty	Five proposals sought funding to encourage organizations, government and other large customers to purchase green power. Rather than trying to predict which applicant would be most successful, SDF will work to design a bounty program that rewards marketers or third-party entities for the actual new green power sales they obtain. The SDF bounty payments would need to be used for incremental customer marketing work. The board reserved \$150,000 for this initiative.

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Initiative	Short Description
Energy Exhibits	Three proposals sought funding to produce energy exhibits. SDF will work with the Zoo, local museums and environmental centers to try to develop two generic exhibits – one for large institutions and one for small institutions. The board reserved \$70,000 for this initiative.

And finally, the SDF board approved continuing Maureen Mulligan as SDF’s part-time Energy Education Coordinator. Funding in the Year Three budget was also reserved for additional evaluation work.

SDF Marketing / Networking Activities

The SDF made considerable progress in expanding 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.

Conferences and Speaking Engagements

The SDF continued to make numerous presentations at conferences and public meetings in order to raise awareness of SDF activities among key stakeholder groups, including:

- ◆ “Energy Symposium for School Districts, Non-Profits and Municipalities,” April 11, 2003, organized by Rep. Ellen Bard. SDF spoke and moderated a panel on energy efficiency and renewable energy.
- ◆ “Building the Town Green” conference (May 2). SDF gave one of the opening plenary talks at this conference organized by the new Delaware Valley Green Building Council.
- ◆ Penn Future’s “Getting to 10%” conference (May 8). SDF moderated the “Financing Green PPAs” panel.
- ◆ Penn Future’s Renewable Portfolio Standard Working Group (May 9 and subsequent meeting). SDF has been an active participant in this ongoing group process to clarify the issues involved in developing an RPS for Pennsylvania.
- ◆ “Sustain 2003 Conference and Expo” (Amsterdam, May 13-14). As a representative of the Clean Energy States Alliance, and at no cost to SDF, SDF staff spoke at this biennial international conference on SDF’s financing activities to accelerate market development of sustainable energy technologies.
- ◆ “Taking Control of Energy Costs! Mid-Atlantic Energy Management Workshop” (May 20). SDF co-sponsored this conference with the Association of Energy Engineers (AEE) and the Philadelphia Regional Office of the DOE. Staff also spoke on financing that is available for solar PV and energy conservation measures. More than 90 people participated in the conference, which qualified for continuing education credits for participating AEE members.

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- ◆ Pennsylvania Fuel Cell Commercialization Symposium (May 29). SDF was facilitator and co-sponsor with the Pennsylvania Department of Environmental Protection of this successful meeting that brought together key fuel cell industry leaders, federal and state agencies and private funders to better understand obstacles facing the commercialization of stationary fuel cell electricity generation.
- ◆ Sustainable Energy Funds' Annual Partners Retreat (June 4). This annual meeting drew 60 participants representing public and private funders, private industry, advocacy groups and government. SDF staff spoke on the economic development impact of the Pennsylvania Sustainable Energy Funds' financing activities.
- ◆ Carbon Trust's visit (June 12). SDF hosted a day-long meeting with the UK Carbon Trust leadership to learn more about best practices of SDF and the other state clean energy funds. Their CEO was particularly interested in SDF's energy performance contract financing product, and asked for sample documents so they can replicate the program.
- ◆ Ford Foundation and International Leadership Forum field visit to Somerset County wind farms (July 26-27).
- ◆ DOE 2003 Mid-Course Review meeting, (September 4).
- ◆ Public Fuel Cell Alliance meeting, Washington, D.C. (October 22)
- ◆ A meeting in Harrisburg with Bärbel Höhn, Minister for Environment, Nature Protection, Agriculture and Consumer Protection of the German State North Rhine-Westphalia (October 27)
- ◆ Social Venture Network presentation, Philadelphia (November 6).

Request for Qualifications (RFQ) from Energy Service Companies

In December 2002, SDF staff prepared an RFQ to solicit technical qualifications from energy service companies (ESCOs) that propose energy conservation programs to candidates within the five county PECO service territory. The purpose of this RFQ was twofold: to identify and give preference to those ESCO's that may have projects in the pipeline that can make use of SDF funding, and to pre qualify ESCO's as a qualified contractor for the use of SDF funding.

Of eight companies that responded to the RFQ, five companies were approved for participation in the SDF Energy Performance Contract financing program: Siemens, GreenTech, Constellation, Alliant Energy/Cogenex and Viron. As a result of this marketing initiative, SDF has approved energy performance contract financing for four projects during the report period, totaling \$2,592,848.

"Clean Energy Initiative" Published Report

In June, Lew Milford (Clean Energy Group), together with SDF staff and Phil LaRocco (E + Co), completed a report entitled, *Clean Energy Initiative: A Report on How Foundations, State Funds and Social Investors Could Pursue Joint Investment*. The

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report was written for the Rockefeller Brothers Funds, Surdna Foundation and Oak Foundation. The aim of the report was to investigate approaches to accelerating the commercialization and distribution of clean energy in the United States. The report is comprised of a summary of current circumstances, barriers and opportunities facing clean energy in the United States; a description of the characteristics of a possible collaboration between state clean energy funds and foundations; and a framework for moving forward.

The report found that there is interest on the part of foundations and state clean energy funds to collaborate in leveraging each other's knowledge and investment in clean energy projects and companies. Consistent with this finding, a number of foundations, state clean energy fund managers and venture capital funds were convened by the Rockefeller Brothers Fund, the Surdna Foundation and the Oak Foundation from November 18-20 at the Pocantico Conference Center of the Rockefeller Brothers Fund, the Rockefeller family estate north of New York City.⁴ A follow-up investor working group has been organized which SDF has remained active in. This group has focused on pulling together an inventory of state clean energy fund approaches to commercializing clean energy technologies and on exploring public/private structured finance models to accelerate the deployment of new products and services for portfolio companies.

The Clean Energy States Alliance (www.cleanenergystates.org)

The SDF continues to be an active participant in the programs and activities of the Clean Energy States Alliance, the successor to the Clean Energy Funds Network. CESA works to increase communication and coordination among the 17 clean energy funds in 12 states. SDF staff attended both the spring and fall 2003 meetings of CESA members. The SDF also participates in the Public Fuel Cell Alliance that CESA helped establish.⁵

The Delaware Valley Green Building Council

The SDF continued to support the start-up of the Delaware Valley Green Building Council by participating in executive committee meetings and conferences.

⁴ In addition to Rockefeller Brothers Fund, Surdna Foundation and Oak Foundation, some of the participants included Enertech Capital, Nth Power Investments, Energy Investors Fund, Peregrine Financial Corporation, Triodos Bank, Blue Hill Partners, Massachusetts Renewable Energy Trust, UK Carbon Trust, California Energy Commission and the Sustainable Energy Fund of Central Eastern Pennsylvania.

⁵ The Public Fuel Cell Alliance is a group of U.S. and Canadian state and federal entities responsible for fuel cell deployment that seeks to accelerate the widespread adoption and commercialization of the technology through greater communication and cooperation among public funding agencies in North America.

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The Philadelphia Million Solar Roofs Partnership (www.phillysolar.org)

The 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.

Thomas Jefferson University – TRF George Bailey Award Winner

On June 5, the SDF presented its George Bailey Award to one of its portfolio companies, Thomas Jefferson University, for its leadership in energy conservation and workforce development practices. The SDF's first energy performance contract financing was to Thomas Jefferson University.

The Ben Franklin Technology Partners (BFTP)

The SDF met several times during the report period with BFTP's portfolio managers to discuss prospects and referrals. SDF staff continues to serve on BFTP's investment committee.

The Mid-Atlantic Green-e Advisory Committee

SDF staff serves on the Mid-Atlantic Green-e Advisory Committee, a body that is charged with the responsibility of creating the rules for the Green-e labeling program in the mid-Atlantic region. A major issue this year has been the PJM expansion to include Virginia, which would mean that the Green-e region would also be expanded. The controversy has involved some interests in Virginia pushing to expand the Mid-Atlantic guidelines and definitions of Green-e eligible resources.

The SDF website (www.trfund.com/sdf)

The Reinvestment Fund's website, which includes the SDF web page, was redesigned in 2003. The SDF's financial offerings, financing request forms, SDF documents and reports, grant guidelines, background information about SDF, and links to related websites are all readily available at www.trfund.com/sdf.

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Pennsylvania Power and Light (PPL) Sustainable Energy Fund

<http://www.sustainableenergyfund.org/>

The Sustainable Energy Fund (SEF) invests in the following types of projects, which are referred to as Program Related Investments or PRIs:

- ◆ Renewable energy projects which draw power from naturally replenished sources. These may include solar power, wind power, geothermal power, or power generated from biomass sources.
- ◆ Clean energy projects that produce energy using technology and processes that have minimal impacts on the environment, such as micro turbines, fuel cells, distributed generation projects, etc.
- ◆ Energy Efficiency/Energy Conservation Projects - that save electricity or other energy. These may include green building technologies, efficient lighting, energy load management controls, etc.
- ◆ Grants - the SEF may disburse a limited number of grants to organizations seeking funding of projects consistent with the Fund's mission, such as education projects. Research projects are not eligible for grant financing.

Financial Approvals

During the reporting period, the Sustainable Energy Fund (SEF) approved \$2,745,779 in Grants and Program Related Investment commitments (\$195,779 in twenty-one Grants and \$2,550,000 in four Loan commitments).

These investments supported:

- ◆ Wind power development
- ◆ Green and smart building technology
- ◆ Economic development
- ◆ Education
- ◆ Partnering to better achieve mission

The two funded wind farm projects lie within PPL's service territory. Each has also received some form of commitment from the other regional funds, particularly production rebate commitments from the Sustainable Development Fund (SDF). These wind farms represent both clean, fuel-less energy production for about 15,000 homes and \$50M of new capital investment in the region. The Advantek loan commitment joins other funding from PaDEP, SDF, DCED, Ben Franklin Technology Partners, the federal government, and private sector. This company, focused on advanced technology improvements to the blades of wind farms, relocated to Pennsylvania as a direct consequence of this renewable power initiative.

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The SEF also led the syndication for the construction of a new Energy Resources Center, as a Green LEED Silver Building, for the 11 county SEDACOG economic development organization. Three Pennsylvania Funds and a local bank are all involved. The SEF hopes this center will serve as a foundation for the development of energy efficient and environmentally benign construction in the region.

An education theme is reflected in many of the grants made. Most noteworthy is the sustainable energy educational exhibit sponsored with PaDEP at Hershey Park. 2.4 million visitors per year can see this demonstration of wind and photovoltaic power technology. A theme theater performance is held five times daily to educate consumers on the need for sustainable energy development.

The SEF also added to staff capability and worked extensively to develop the potential for sustainable energy production from agricultural biodigestion of animal manure. By combining grant funds from the PaDEP Energy Harvest program, with loan funds from SEF, and the sale of green certificates from the private market, they hope to be able to address a major obstacle to a healthy Pennsylvania agricultural economy. After a year of SEF development effort, DEP hopes to shortly be able to report on a program to convert a potential nuisance, water pollution, and climate change problem into green power at a cost affordable to the farmer.

Listed below are the various loans and grant projects that the SEF completed during the year January 1 – December 31, 2003:

Grants and Loans

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Community Basics, Inc.	\$20,000	Fund a feasibility study on the application of a deep quarry reservoir as a source of heating/cooling for a community development project.
City of Lancaster, Dept. of Public Works	\$21,000	Support a demonstration project for the use of LED technology for traffic lights within the city, energy savings of 90 kwh and a 2 year payback.
Hershey Park	\$16,000	Development of the Sustainable Energy Green Team Theater production that accompanies the Renewable Energy Exhibit, partnered with equal contribution from PA DEP
Illicks Mill Partnership for Environment Education	\$19,500	Support the installation of PV on the roofs of several new entrance canopies planned for the mill.
St. Stephens Cathedral & School	\$15,000	Install up to 6kW of roof-mounted photovoltaic panels on the existing buildings as part of the grades K through 8 project underway at the site.

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PPL SEF Grants and Loans ((cont'd))

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Wilson College	\$25,000	Develop sustainable energy curriculum to extend to its current field programs and summer camp
Souderton Area School District	\$5,000	Install solar PV panels donated by Community Energy
Alternative Fuels Council	\$5,000	Fund conferences focused on alternative fuels
Geisinger Medical Center	\$5,000	Install Solar-Powered lighting at the patients and visitors bus shelters
CH&E Construction	\$1,000	Install PV lighting for a project sign at the St. Stephens Cathedral and School green building project.
Nature's Grace	\$1,500	Install PV solar panels at the store
Community Basics	\$4,900	Expand the feasibility study on an application of a deep quarry reservoir as a source of heating/cooling for a community development project
Penn Future	\$20,639	Install a solar PV 3.8kw system with an educational exhibit on how the solar PV system works and the importance of renewable energy
Twin Valley School District	\$12,250	LEED registration fee, design/document fee, and review fee for the construction of a 70,000 gross square feet two-story elementary school building that will strive to attain LEED silver certification, and incorporate into their curriculum
Clean Energy Expo	\$10,000	Showcase clean energy technologies, activities in clean energy development in the Commonwealth, clean energy education, and the accomplishments of the SEFs in PA
PA Environmental Council	\$150	Green Building International Conference & Expo
Citizens for PA Future	\$500	Co-Sponsor the 2003 Green Power Awards
Earth Charter Alliance	\$250	Support the summit to endorse Earth Charters promotion of ecology
Highland United Church	\$955	Energy audit for their house of worship

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Program Related Investments

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Energy Unlimited, Inc	\$200,000 Loan	Mountaintop Wind Farm Project, to help fund interconnection costs
Advantek	\$250,000 Loan	Purchase, install and grid connect two 450 kW wind turbines at Energy Unlimited's Mountaintop Wind Farm to test Advantek's IPC technology
Community Energy, Inc.	\$1,500,000 Debt	Bear Creek Wind Farm
SEDA-COG	\$600,000 Loan	Design and construct a 7,500 square .feet certified green building addition to this regional economic development agency's existing structure. Syndicated with West Penn Fund and Met-Ed Fund

West Penn Power Sustainable Energy Fund (WPPSEF)

<http://www.wppsef.org/>

There are three key elements of the WPPSEF mission. They are:

- ◆ To promote the use of renewable energy and clean energy among commercial, industrial, institutional and residential customers in the West Penn market region. Renewable energy includes energy produced from solar, wind, low-impact hydro, and sustainable biomass such as closed-loop biomass and biomass gasification. Clean energy refers to advanced technologies (such as fuel cells) which use fossil fuels but which have significantly lower emissions and wastes than currently commercialized technologies and fuels that are derived from waste.
- ◆ To promote energy conservation and energy efficiency among commercial, industrial, institutional and residential customers in the West Penn market region.
- ◆ To promote the start-up, attraction, expansion and retention of sustainable energy businesses in the West Penn market region. Job creation and other local economic development impacts are an important component of this element of the mission. A sustainable energy business is one that designs, develops, manufactures, sells, installs or otherwise derives income from energy conservation, energy efficiency, renewable energy or clean energy.

Key accomplishments for the WPPSEF during this reporting period are the Board commitments of \$1,255,646 to support sixteen funding requests. The WPPSEF funding commitments can be categorized as either program related investments or grants.

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The WPPSEF Board approved \$1,025,000 to co-fund four program related investment requests in 2003.

Investments

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Penns Valley Area School District	\$350,000	For Act 57 Performance Based Efficiency Improvements to reduce energy costs in the Penns Valley High and Gregg Township Elementary Schools
EBARA Solar	\$25,000	For a market opportunity and prospect (strategic partners search) identification project. This investment was aimed at assisting the continued existence and operation of the only photovoltaic manufacturer in the West Penn Power market region.
Susquehanna Energy Development Authority Council of Governments	\$450,000	To construct a LEED-Silver rated energy resource center. The WPPSEF worked closely with the Sustainable Energy Fund of Central Pennsylvania and the Penelec Sustainable Energy Fund which committed an additional \$600,000 and \$500,000 in funding to the project, respectively
Native Energy, LLC	\$200,000	To work with Pennsylvania-based farms to install anaerobic digesters for on-site power generation. In addition to clean power generation, this digester will reduce farm odors and be part of a nutrient management runoff program. The WPPSEF approved the entire Native Energy funding request of \$200,000.

Grants

The WPPSEF Board approved \$230,646 to co-fund twelve funding requests. In 2003, the WPPSEF efforts were directed towards grants, sponsorships, and memberships. These grants included:

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
Central Pennsylvania Institute of Science and Technology	\$26,000	To install an ENERPRO 20-30 kW wind turbine for on-site power generation and educational purposes. The CPI, a vocational school, desires to integrate emerging clean energy technologies into their teaching curriculum in an effort to train the next generation of energy technicians.
Fayette County Community Action Agency	\$50,000	To deploy the use of internet-based, programmable smart thermostats to effectively manage energy use and costs in single and multi-dwelling low-income housing. Allegheny Power is donating up to 200 thermostats to the project, will monitor energy usage, qualify installers, and educate case-workers and consumers

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WPPSEF Grants ((cont'd))

<i>Project</i>	<i>Amount</i>	<i>Comments</i>
State College Friends School	\$30,000	To install a 3.6 kW photovoltaic (PV) system for on-site electricity production and to integrate solar energy into their teaching curriculum.
Westmoreland County Cooperative Extension Service	\$25,000	For the installation of a Bergey Wind Turbine (10 kW Excel-S system) at the Donahoe Center located in Westmoreland County. The funds will be used to attract additional potential funding from the Pennsylvania Department of Environmental Protection Energy Harvest Grant Program
Borough of Allenport	\$12,000	For a lighting energy efficiency and improvement renovation at the Borough's municipal building
Penn State's Public Broadcasting Station (WPSX)	\$72,000	For the development, filming, and distribution of a multimedia educational program on sustainable energy.
Clean Energy States Alliance	\$5,246	To support joint projects and information exchange between various clean energy funds
American Wind Energy Association	\$400	Membership fee for the WPPSEF approved membership for 2003 and 2004 (\$200/ yr).
Alternative Fuels Council	\$1,500	Membership fee for the WPPSEF approved membership for 2003 and 2004 (\$750/ yr)
Penn State's Housing Research Center	\$2,500	Membership fee to develop a network of residential building contractors offering EnergyStar compliant housing.

WPPSEF Regional Funds Coordination

The five regional sustainable energy funds in Pennsylvania work together to stimulate the development of sustainable energy technology and business in Pennsylvania. The following collaborative activities were conducted in 2003:

- ◆ Clean Energy States Alliance (CESA). The regional funds provided a block grant to CESA in 2003. This allowed the regional funds to reduce their overall funding commitment to CESA.
- ◆ GreenBuild International Conference & Expo (November 11-12, 2003). The regional funds committed funding towards a Silver-Level sponsorship for the GreenBuild Expo. The WPPSEF committed up to \$5,000 in co-funding towards this sponsorship.

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A joint exhibit booth was designed by the WPPSEF and staffed by the funds. A small reception for Pennsylvania companies was held.

- ◆ The WPPSEF worked with the Sustainable Energy Fund of Central Pennsylvania and the Penelec Sustainable Energy Fund to provide a funding commitment to the Susquehanna Energy Development Authority Council of Governments (SEDA-COG) to construct a LEED-Silver rated energy resource center. The WPPSEF Board approved up to \$450,000 to co-fund the SEDA-COG funding request.
- ◆ The WPPSEF has taken the lead role to secure funding for Native Energy, LLC which is seeking funding to assist Pennsylvania farmers to install anaerobic digesters. The WPPSEF is working with the Penelec Sustainable Energy and the Metropolitan Edison Company Sustainable Energy Funds to co-fund the Native Energy request. The WPPSEF Board approved up to \$200,000 to fund the Native Energy request.

Conclusion

Through approval of restructuring and merger settlements establishing five regional sustainable energy funds, the Commission sought to promote the development of sustainable energy technology and business in Pennsylvania. This first Annual Report of the Pennsylvania Sustainable Energy Board provides loan and grant information for each of the regional boards in 2003, and highlights the key projects and significant accomplishments of the regional boards.

As shown in this Annual Report, the funding approved by the Commission has enabled the regional boards to provide financial support to a variety of sustainable energy initiatives, with loans and grants totaling over \$9.6 million in 2003. The PASEB's Annual Meeting is scheduled for June 29, 2004, which will present interested parties with an opportunity to obtain additional information about the activities of the regional boards and the market status of sustainable energy technologies.

Date: May 11, 2004