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DEPARTMENT OF ENVIRONMENTAL PROTECTION

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# American Recovery and Reinvestment Act

**Pennsylvania  
Department of Environmental Protection**

**John Hanger, Secretary**

**January 13, 2011**



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1



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# Agenda

- Overview of Energy Funds
- Goals and Goals Met
- Rankings
- Program Details
  - ARRA Funds
  - Match/Leverage Investments
- Case Studies
- Updates for Other Funds



**Slide 2**

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khoover, 1/11/2011



# Energy Program Goals

- **CREATE NEW ENERGY SOURCES**  
*Increase the amount of renewable & alternative energy generated*
- **INCREASE EFFICIENCY**  
*Save energy dollars in PA through conservation and efficiency*
- **SPUR ECONOMIC DEVELOPMENT**  
*Maximize private sector investments to multiply the impact of ARRA funding*
- **CREATE LONG-TERM CAPITAL INVESTMENTS**  
*Develop long-term assets that operate for 10 to 30 years.*
- **PUT PEOPLE TO WORK**  
*Create jobs and enduring opportunities for employment.*





## ***How Did We Meet the Goals?***

- ***CREATE NEW ENERGY SOURCES***

*Increase the amount of renewable & alternative energy generated*

***128 Megawatts of Renewable Energy Capacity***

**Enough to power 36,000 homes**

# ***How Did We Meet the Goals?***

## ■ ***INCREASE EFFICIENCY***

*Save energy dollars in PA through conservation and efficiency*

### ***ANNUAL SAVINGS***

***160 million kWh electricity*** = enough to power 16,000 homes

***25 million Mcf natural gas***

***225,000 gallons distillate oil*** = 26 tanker trucks

***4,700 tons coal*** = 47 rail cars



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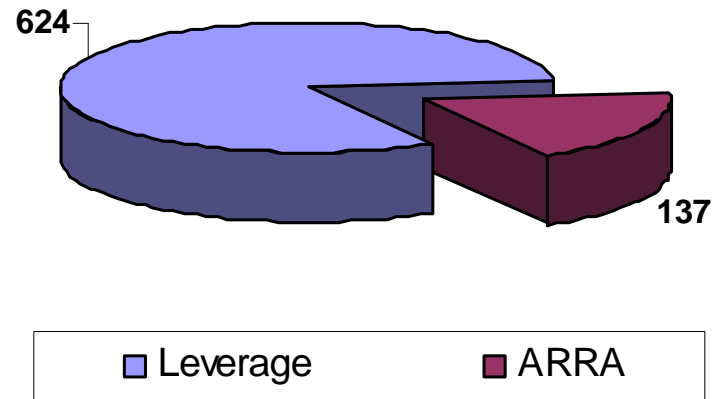
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# How Did We Meet the Goals?

## ■ SPUR ECONOMIC DEVELOPMENT

*Maximize private sector investments to multiply the impact of ARRA funding*

**Leverage Stimulated  
(Million \$)**



***\$861 million invested in Pennsylvania's economy***



# *How Did We Meet the Goals?*

- **CREATE LONG-TERM CAPITAL INVESTMENTS**

*Develop long-term assets that operate for 10 to 30 years.*

***Over 20,000 projects***

***lasting an average of 20 years***

➤ ***Wind turbines, Solar panels, Home heating equipment***

# How Did We Meet the Goals?

- **PUT PEOPLE TO WORK**

*Create jobs and enduring opportunities for employment.*

**164 Direct Permanent Jobs**

**1892 Direct Temporary Jobs**

*"Every good paying manufacturing job supports up to 5 other jobs. We believe the best use of our U.S. tax dollars is exactly what it is being used for today: creating and saving good U.S. jobs."*

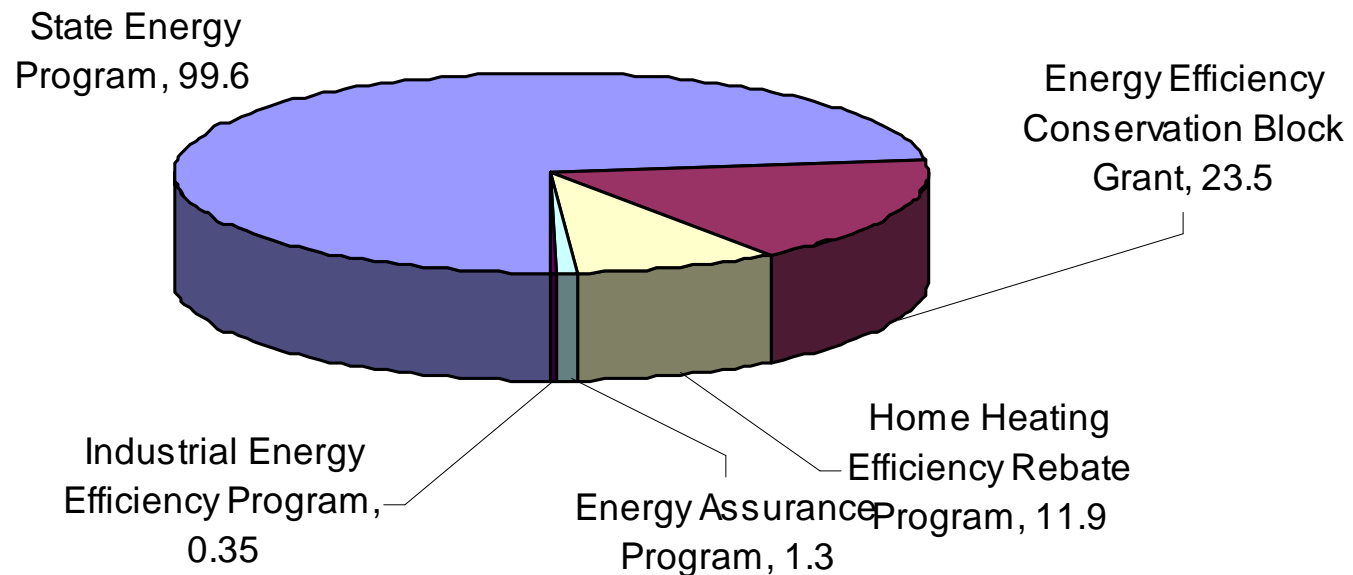
**Rob W., Gamesa  
Ebensburg, PA**



*Turkey Hill Wind Project*

# \$136 Million Invested in 5 Energy Programs

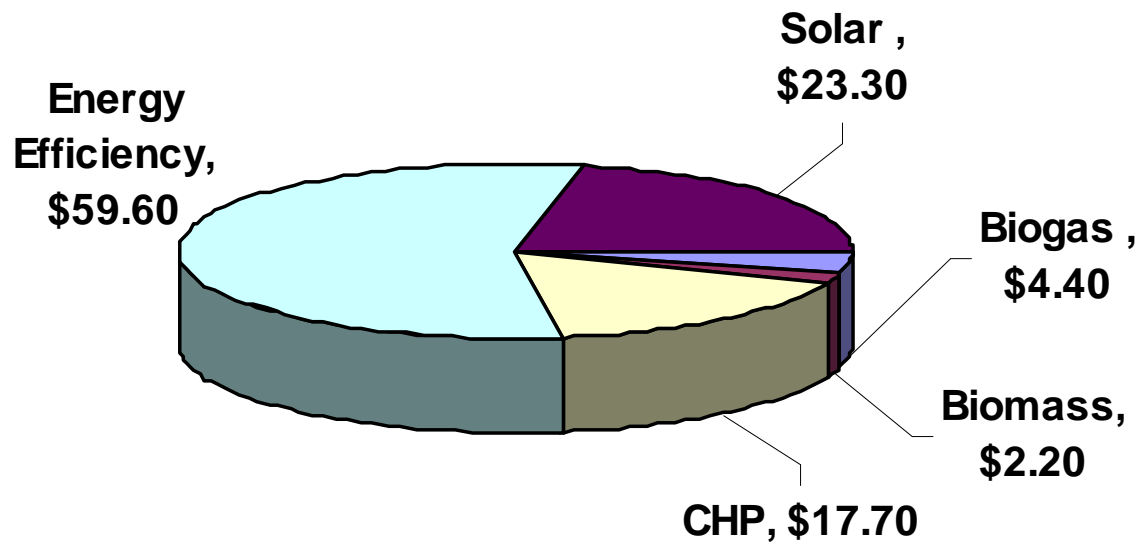
## ARRA Energy Program Expenditures (\$ Million)



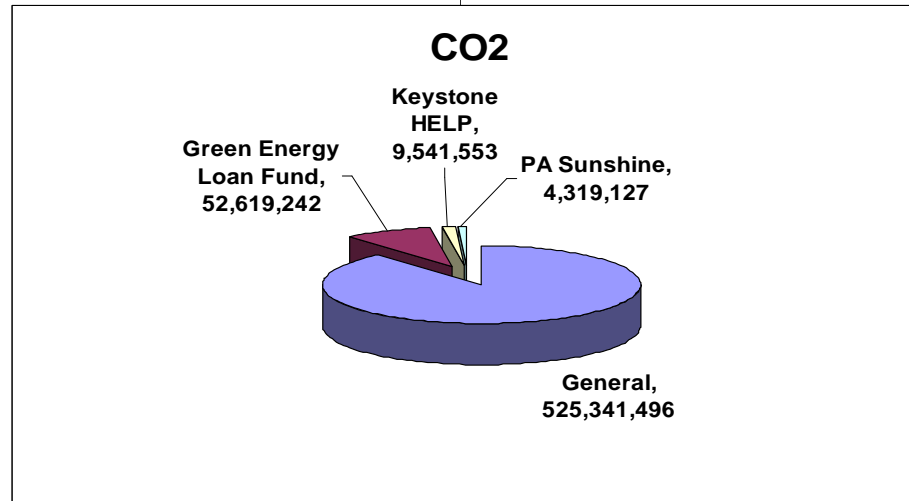
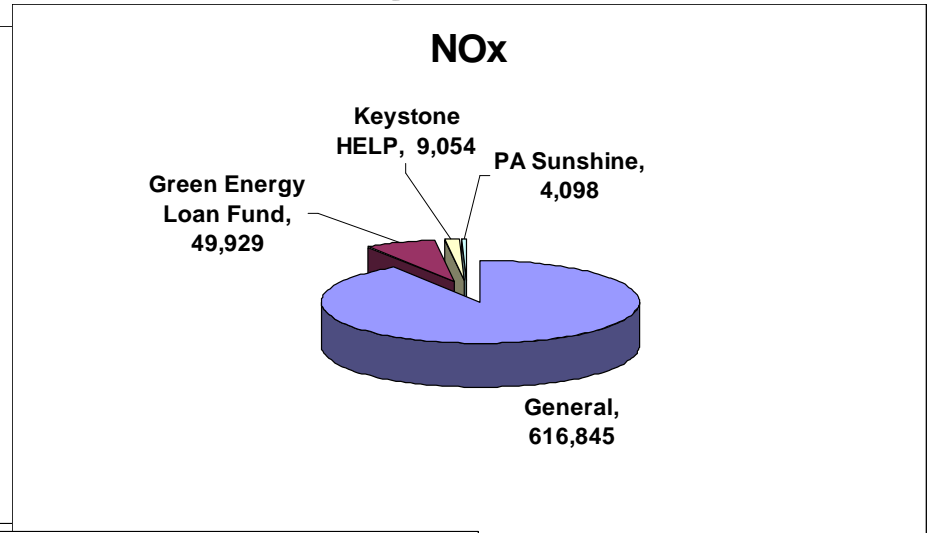
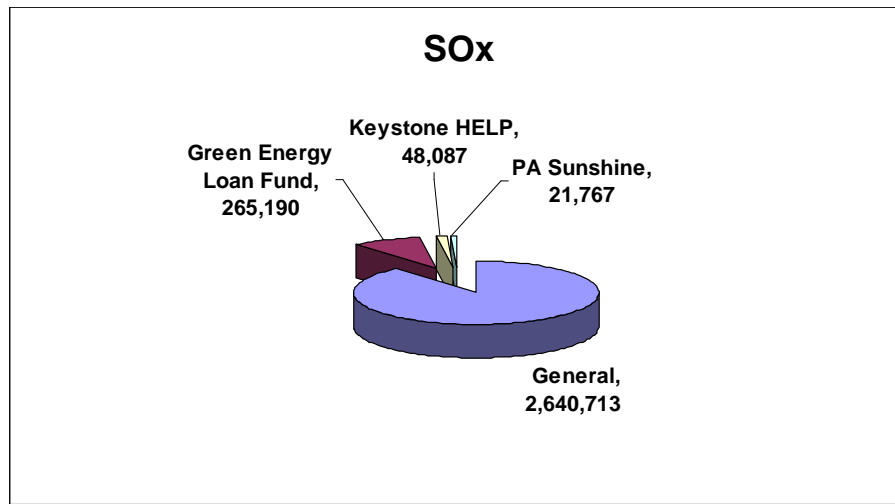


# Technology Investments

## SEP Expenditures Under ARRA (Million \$)



# Annual Benefits from Energy Saved



# Pennsylvania Ranks #2 in the Nation (100% Obligated) for SEP Program

Rank	State	Allocation	Cumulative Payments		June FY11
			\$ Spent	% Spent	June 30th 2011
Data Current As Of:			January 2		50%
1	WI	\$55,488,000	\$54,150,446	97.6%	\$27,744,000
2	PA	\$99,684,000	\$58,476,596	58.7%	\$49,842,000
3	CO	\$49,222,000	\$25,307,427	51.4%	\$24,611,000
4	MT	\$25,855,000	\$12,842,804	49.7%	\$12,927,500
5	ID	\$28,572,000	\$13,484,885	47.2%	\$14,286,000
6	DE	\$24,231,000	\$11,390,470	47.0%	\$12,115,500
7	NV	\$34,714,000	\$16,176,731	46.6%	\$17,357,000
8	MD	\$51,772,000	\$23,862,560	46.1%	\$25,886,000
9	NE	\$30,910,000	\$13,933,439	45.1%	\$15,455,000
10	AS	\$18,550,000	\$8,249,558	44.5%	\$9,275,000



# Pennsylvania Ranks #3 in the Nation (100% Obligated) EECBG Program

Rank	Grantee	Allocation Total	Total Payments	% Payments
Data Current as of Jan 3rd 2011				
1	Nevada	\$ 9,593,500	\$ 8,733,478	91%
2	Kentucky	\$ 10,427,000	\$ 6,196,665	59%
<b>3</b>	<b>Pennsylvania</b>	<b>\$ 23,574,800</b>	<b>\$ 13,785,432</b>	<b>58%</b>
4	Massachusetts	\$ 14,752,100	\$ 7,720,545	52%
5	Colorado	\$ 9,593,500	\$ 4,184,247	44%
6	Georgia	\$ 21,630,700	\$ 7,462,163	34%
7	Michigan	\$ 19,599,600	\$ 5,455,962	28%
8	New Mexico	\$ 9,593,500	\$ 2,507,897	26%
9	Arkansas	\$ 9,593,500	\$ 2,506,294	26%
10	Oklahoma	\$ 9,593,500	\$ 2,439,432	25%



# Home Heating Equipment Rebates

- 17,000 Homeowners benefit
- Gas & Oil furnaces, boilers & water heaters replaced
- ARRA:           **\$11 million**
- Leverage:       **\$72 million**
- Energy Saved: **403 billion Btus/yr**



## ***JOBS IMPACT***

***3,000 contractors employed***

***72% boilers made in US***

***90% furnaces made in US***

***30% boilers made in PA***

***PA's energy savings is approximately 3 times that of comparable states, per ARRA dollar spent***



# ***\$48 Million Revolving Loan Fund***

**\$12 million - *ARRA capital***

**PLUS**

**\$36 million - *Private Sector Investment***

## **\$48 million Revolving Loan Fund**

### **AFFORDABLE CONSTRUCTION FINANCING**

- **High Performance New Construction**
- **Energy Efficient Retrofits**

### **ANTICIPATED ANNUAL RESULTS:**

- **Energy Savings = 190,000 MMBTU's**
- **Cost Savings = \$1.5 million**



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## 3 Wind Projects

- ❑ Chestnut Flats – 38 MW (photo)
- ❑ South Chestnut – 46 MW
- ❑ Sandy Ridge Wind Farms – 18 MW

- **Turbines built in Pennsylvania**

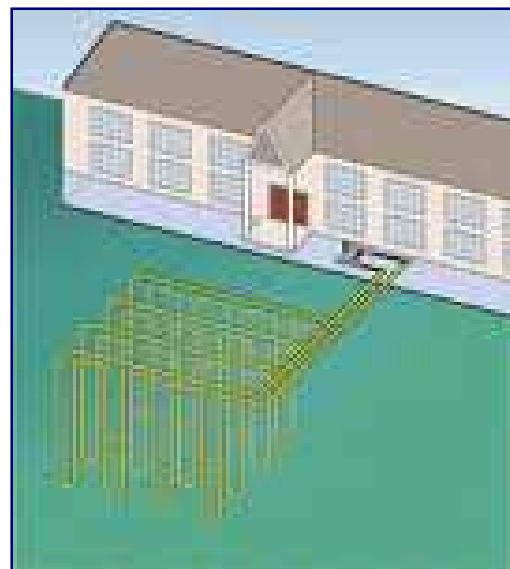
- Grant amount: \$21,800,000
- Match amount: \$139,578,000
- Additional Leverage amount: \$88,742,000
- ENERGY GENERATED (ANNUAL):  
182,977,000 kWh



# Geothermal Project Replaces Inefficient Coal Heating System

## Holidaysburg School District

- ARRA: \$ 500,000
- Leverage: \$1,900,000
- Energy: 1,932,000 kWh/yr



Geothermal Heat Exchange System

***An estimated 335 tons of coal per year will be saved***

# Innovative Solar Project Saves Money for School District

## Carlisle Area Middle School

- 1 MW solar array
- Will generate 16% of the school's energy needs.
- ARRA: **\$1,000,000**
- Leverage: **\$4,825,000**
- Energy: **1,020,000 kWh/yr**



Carlisle Area School District

**Annual energy savings to exceed \$160,000**



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# Loan Fund Assists Construction of New LEED Certified Hotel

## Homewood Suites Campus Apartments



- Energy Efficiency Technology Includes:
  - On-Site Storm Water Management
  - Low-Flow Plumbing Fixtures
  - Green Roof
- ARRA: **\$800,000**
- Leverage: **\$800,000**

***Building Designed To Use 26.4% Less Energy Than Conventional Building***

# Local Governments Invest in Energy Efficiency

## Turtle Creek Valley Council of Governments

- 500 incandescent traffic signals & street lamps converted to LED
- Project covers 10 municipalities
- ARRA: **\$483,800**
- Leverage: **\$ 15,000**
- Energy: **490,000 kWh/yr**



*Turtle Creek Lighting Retrofit Project*

***\$54,000/year estimated energy savings***

# Combined Heat and Power

## Geisinger Hospital

- Natural gas will fuel the 5 MW gas turbine and the exhaust will be piped to a heat recovery boiler.
- **Project will reduce hospital operating costs by \$1,400,000 annually.**
- ARRA:           **\$2,250,000**
- Leverage:       **\$3,357,500**
- Energy:           **19,810,000 kWh/yr**



# Residential Energy Incentives

- ARRA funds supplement existing residential programs
- Contractor training & certification
- ARRA: **\$10 million**
- Leverage: **\$55 million**



## Keystone HELP EE Loans

1,600 contractors

420,000 MWh energy saved

5,000 loans

## Keystone HELP Geothermal

1,600 contractors

50,000MWh energy saved

750 loans



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# PA Sunshine Program

- Existing \$100 million program to help fund solar electric and solar hot water projects for homeowners and small businesses.
- \$8.5 million of ARRA funding to supplement the existing program.
  - \$7.4 million in ARRA rebates have been paid to date
  - 586 completed projects using ARRA funding \$19.3 million has been provided as match funding
  - 4.05 MW of solar capacity
  - Average install is 7.42 kW

# ***UPDATES FOR OTHER FUNDS***

## **Leaking Underground Storage Tank (LUST)**

- PA ranks # 4 in nation in most grant money drawdown.
- \$6 Million Total Funding
- 70 abandoned and shutdown sites are located in 40 counties where property re-use may be jeopardized by environmental contamination.



*Malcolm's Auto Site, Bucks County*



# Diesel Emission Reduction Program

## State Clean Diesel Grant Program

- Total awarded/reimbursed to sub-grantees: \$1.73 million/\$965,000
- Reduces diesel emissions and improves Air Quality

## National Clean Diesel Funding Assistance Program

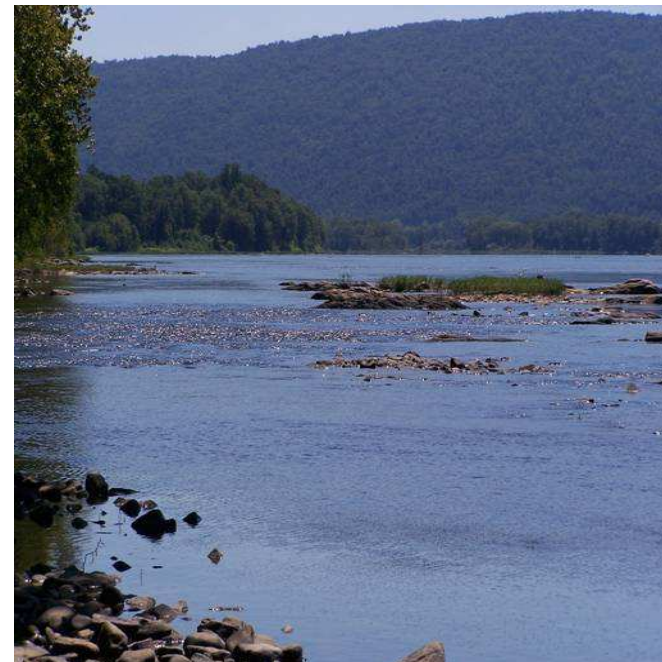
- Total awarded/reimbursed to sub-grantees: \$1.5 million/\$9500,000
- Reduces fuel use by 80,000 gallons annually

## Clean Diesel Emerging Technologies Grant

- Total awarded/reimbursed to sub-grantees:\$1.5 million/\$1.3 million
- Reduces fuel use by 39,000 gallons annually

# 604b Program: Water Monitoring

- **\$1.6 million in funding (\$918K 58% allocated)**
- **6 Surface Water Quality Assessment Projects**
  - Local Watershed Aquatic Life Use
  - Local Recreational Use
  - Potable Water Use
  - Large River Surveys
  - Water Quality/Land Use (TMDL) Modeling Revision Upgrade
- **2 Water Quality Criteria Development Projects**
  - Stream Temperature Effects on Aquatic Life
  - Nutrients (Phosphorus & Nitrogen)



# Energy Assurance Capabilities and Planning for Smart Grid Resiliency insures health and welfare of citizens



Investment of **\$1.3 Million** is resulting in:

- New energy assurance plans designed to help avoid energy supply disruptions which slow economic activity.
- Staff trained to implement the plans with access to data, information, analytical and communications tools needed to assist during energy disruptions
- State level expertise to help guide integration of smart grid and other new alternative energy systems which includes consideration of cyber security and other threats to system reliability.



# Questions?

## **Pennsylvania Department of Environmental Protection**

**John Hanger, Secretary**  
**January 13, 2011**