

American Recovery and Reinvestment Act (ARRA)

PA Green Energy Works!

Delivering Independence and Creating Growth





Program Goals

Deliver Independence and Create Growth through the Allocation of 99.6 million dollars from DOE for the State Energy Plan:

- Increase the Amount of Renewable and Alternative Energy Installed and Generated
- Reduce Energy Usage Through Conservation and Efficiency
- Utilize Private Sector Contributions for Maximum Return on Investment
- Create Jobs and Competitive Advantages



PA Green Energy Works Outcomes

- Creating 450 Mw of Clean Energy, Enough to Power Over 150,000 Homes
- Leveraging nearly one half billion dollars in Additional Investments
- Creating Over 2,500 Construction and 750 Full-Time Permanent Jobs
- Annual Carbon Dioxide Avoided Equivalent to Taking Over 250,000 Cars Off the Road.



PA's Energy Independence Strategy

- Diverse Sources of Renewable Energy Generation
- Maximize Efficiency and Conservation
- Electricity and Thermal Technologies
- Pollution Reduction
- Geographic Inclusion
- Building on Existing Programs to Deliver the most effective and efficient program possible



Strategy Implementation and Methodology

Diverse Renewable Energy Technologies to Hedge Against Future Energy Price Volatility

- PEDDA: Sustainable Business Recovery
- PA Wind Initiative
- Sustainable Heat and Power
- Solar Projects Fund
- Clean Biogas
- Green Development Loan Program
- PA Geothermal Buildings

PEDA:

■ Funding: \$10 Million in Grants
Sustainable Business Recovery leveraging private dollars 4:1

- Activities: Equipment and facilities for commercially available renewable energy and energy efficiency technologies
- Eligible: Businesses
- Outcomes:
 - Projected Jobs: 500 full-time permanent
350 construction
 - Alternative Energy: 1,140 Mwh/yr
 - Energy Saved: 1,960 Mwh/yr
 - Environmental Benefits: 3,780 tons CO2/yr
pollutants avoided or reduced 27.8 tons NOx/yr

PA Wind Initiative:

Capturing PA's Natural Resource Potential ■ Funding: \$200 million

- Activities: Wind energy projects, equipment and transmission expenses
- Eligible: Wind energy developers and manufacturers
- Outcomes:
 - Projected Jobs: 1,400 construction, 36 full-time permanent
 - Leverage: \$500 million of investment
 - Alternative Energy: 270 Mw installed
Potential Additional 720 Mw
 - Environmental Benefits: 490,000 tons of CO2 avoided
90,000 cars taken off the road

Sustainable Heat and Power:

Integrated Technology to Utilize Wasted Energy

- Funding:

\$10 Million in Grants

- Activities:

Projects that make both electricity and steam for heating, cooling and other operations

- Eligible:

Unrestricted

- Outcomes:

- Projected Jobs:

160 full-time permanent jobs, 300 construction

- Leverage:

\$30 million in other investment

- Alternative Energy:

33 Mw - Steam for heating and cooling

- Environmental Benefits:

148,000 tons CO₂ avoided or 26,000 cars removed from the road.

Solar Projects Fund:


Peak Reduction, Cost Savings

- Funding: \$16.5 Million in Grants
- Activities: Equipment and development expenses for large solar projects and manufacturers
- Eligible: Solar energy developers and manufacturers
- Outcomes:
 - Projected Jobs: 350 construction, 30 full-time permanent
 - Leverage: \$60 million of other investment
 - Alternative Energy: 15 Mw installed, enough to power 2,100 households
 - Environmental Benefits: 10,000 tons of CO2 avoided or 1,800 cars removed from the road.

Clean Biogas:

Turning Waste to Fuel

- Funding: \$5 Million in Grants
- Activities: Costs Associated with Biodigester Purchase and Installation
- Eligible: Unrestricted
- Outcomes:
 - Projected Jobs: 350 full time construction
30 permanent jobs
 - Leverage: \$10 million in other investment
 - Alternative Energy: 26,171 mwh/year or enough to power 2,900 homes
 - Environmental: Avoided 119 tons of SO₂ and 1,480 tons of CO₂ or 270 cars removed from the road

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- Green Development Loan Program:**
- Funding: \$12 Million in Revolving Loans
 - Activities: Energy Efficiency in Buildings and Renewable Energy Projects
 - Eligible: Businesses and Non-Profits
 - Outcomes:
 - Projected Jobs: calculations ongoing
 - Leverage: \$36 Million of investment
 - Alternative Energy: **125** Mw generated
 - Energy Saved: 5,130,095 Kwh/year or \$513,000 cost savings and 24,408 gallons of heating oil at \$536.00/year
 - Environmental: Over 1,200 tons of CO2 annually or 222,000 cars off the road

PA Geothermal Buildings:

■ Harnessing the Temperature of the Earth

- Activities: Incremental Equipment and Costs of Geothermal Heating and Cooling Systems
- Eligible: Residential, Schools, Non-Profits, Local Governments
- Outcomes:
 - Projected Jobs: Calculations Ongoing
 - Leverage: \$59 million in other investments
 - Energy Saved: 2,865 mwh/year, enough to power 318 homes
 - Environmental: 1,832 tons of CO2 annually or 333 cars off the road



Proposed Criteria

Maximum Economic, Energy and Environmental Returns

■ Proposed Criteria

- Financial feasibility
- Project readiness
- Quantity of clean energy generated
- Amount of energy saved
- Return on investment (\$/kwh generated or saved, \$/kw installed)
- Jobs created
- Amount of funds leveraged
- Pollution reduction

Federal Delivery Timeline

- PA Green Energy Works Program funded by ARRA State Energy Plan (SEP) Allocation
 - Certification (~\$10 Million) submitted on 3/23
 - Approval expected shortly
 - State Application (~\$40 Million) due to DOE on 5/12
 - DOE to approve no earlier than late June or early July
- Quarterly Progress Report are Also Required by DOE



DEP Delivery Timeline

- Guidelines, Scoring Criteria & Compliance and Monitoring Protocols:
 - PEDDA – Available now
 - Wind – Late May
 - Heat and Power – Late May
 - Biogas – Mid June
 - Solar – Mid June
 - Revolving Loan – Late June
 - Geothermal – Late June

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