

PURCHASING ENVIRONMENTALLY PREFERABLE ELECTRICITY

Governor's Green Government Council
Commonwealth of Pennsylvania

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Sustainability is driving concern

- Long-term - need orderly transition from non-renewable to renewable energy sources
- Near term - balance development of renewables with clean conventional sources

Participants:

- Governor's Green Government Council as policy driver
- Department of General Services as buyer on behalf of major Commonwealth agencies
- Penn State Facilities Engineering Institute as consultant to General Services
- Major Commonwealth agencies

Goal

- To demonstrate environmental leadership by buying "greener" electricity thereby:
 - Creating public awareness of the environmental choices available
 - Alerting the industry to a developing market for alternative generation

Background

- No mandate
- No dedicated budget

Pennsylvania's List of Renewable Generation Sources

- Wind
- Solar
- Geothermal
- Fuel cells
- Hydro
- Ocean tides
- Methane
- Biomass

2000 Contract Asked For

- 37,500,000 kWh as follows:

Source	Estimated kWh	Description
Renewable	3,750,000	Electric generation from wind, solar, geothermal, fuel cells, conventional hydro, ocean tides, methane, biomass
Ultra-Clean	7,500,000	Electric generation from sources with the requirement that air emissions not exceed 1.2 lbs. Of CO ₂ /kWh
Clean	26,500,000	Electric generation from sources with the requirement that air emissions not exceed 0.3 lbs. Of NO _x /kWh
Total	37,500,000	

2000 Contract Got:

- 100% renewable
 - existing hydro
 - very small amount of wind
- Contract term 1 year
- Cost 5.8c/kWh
- Average premium 1.3c/kWh
- Supplied by Green Mountain Energy
- Bid in real-time electronic auction

Problems

- Only one bidder on “green” lot
- Bid 9c/kWh
- Rebid later on-line using different bidding model

2001 Contract:

- Exercised option for 1 year renewal
- Got:
 - 10% renewable
 - 1% new wind
 - 9% existing hydro and landfill gas
 - 90% natural gas
- No increase in price
- Average premium dropped significantly

2002 Contract:

- Bid 50,000 MWh:
 - either as “green” electrons
 - bid attributes from renewable generation sources or emissions credits
- To be generated within power pools serving Pennsylvania - PJM, PJM West, and ECAR

2002 Contract:

Lot	Lot Name	Description	Annual Quantity
EA-1	All Renewables	Renewable Attributes (certificates)	50,000 MWh
EA-2	NOx and Renewables	NOx Emission Allowances, and Renewable Attributes (certificates)	150 tons 35,000 MWh
EA-3	SO2 and Renewables	SO2 Emission Allowances, and Renewable Attributes (certificates)	900 tons 35,000 MWh
EA-4	NOx, SO2 and Renewables	NOx Emission Allowances, and SO2 Emission Allowances Renewable Attributes (certificates)	150 tons 900 tons 20,000 MWh

2002 Contract Got:

- No bid on the power
- Two bids on the attributes
 - Green Mountain – all hydropower
 - Community Energy – mix
- Contract awarded to Community Energy since Green Mountain's bid was for generation not within the defined area

2002 Contract Got:

Community Energy provided:

23% new renewables:

- 20% new Pennsylvania wind
- 2% new Pennsylvania landfill methane
- 1% new Pennsylvania solar
- Remainder certified environmentally preferable hydro (Conowingo)

Total additional cost: \$386,500

2004 Contract:

- 100,000 MWh – 10% of load
- Green attributes
- *Pennsylvania Preferred Power*
 - Renewables
 - Methane – landfill and coalbed
 - Waste coal