City of Dover
City Council Meeting

2030 Energy Plan Committee
Status Report

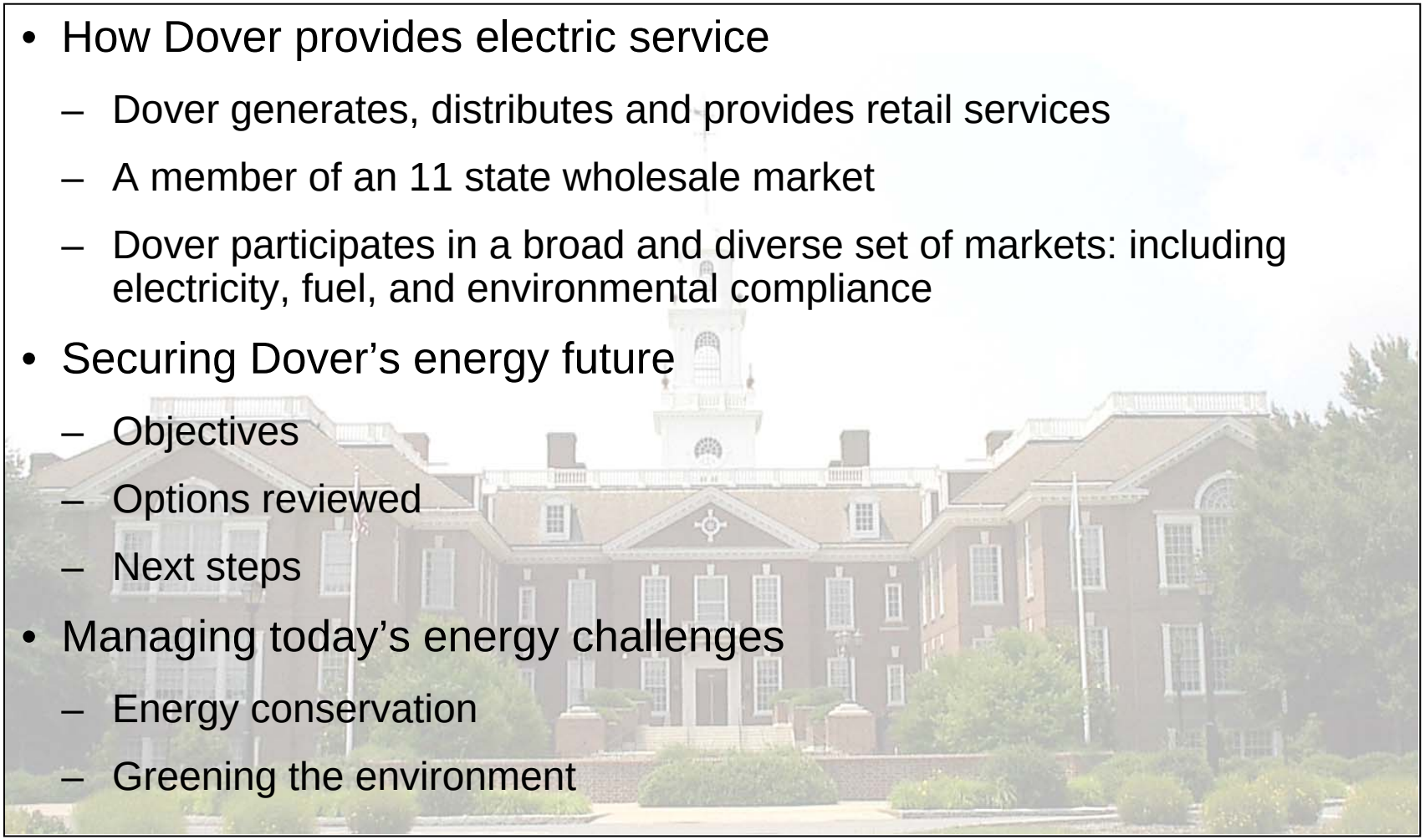
December 1, 2008

PACE

EXHIBIT #1
Council Workshop of 12/1/2008

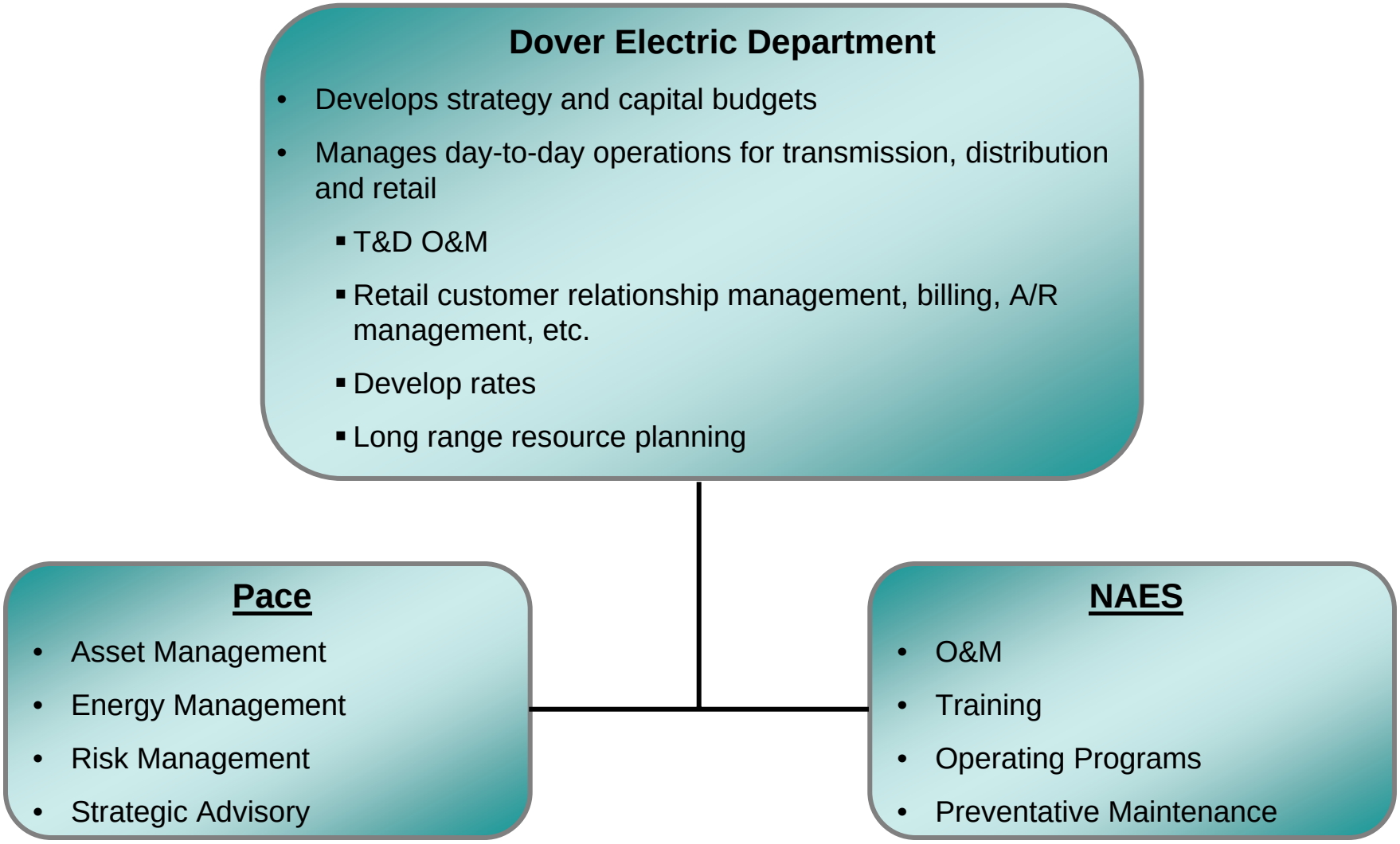
Agenda

- How Dover provides electric service
  - Dover generates, distributes and provides retail services
  - A member of an 11 state wholesale market
  - Dover participates in a broad and diverse set of markets: including electricity, fuel, and environmental compliance
- Securing Dover's energy future
  - Objectives
  - Options reviewed
  - Next steps
- Managing today's energy challenges
  - Energy conservation
  - Greening the environment

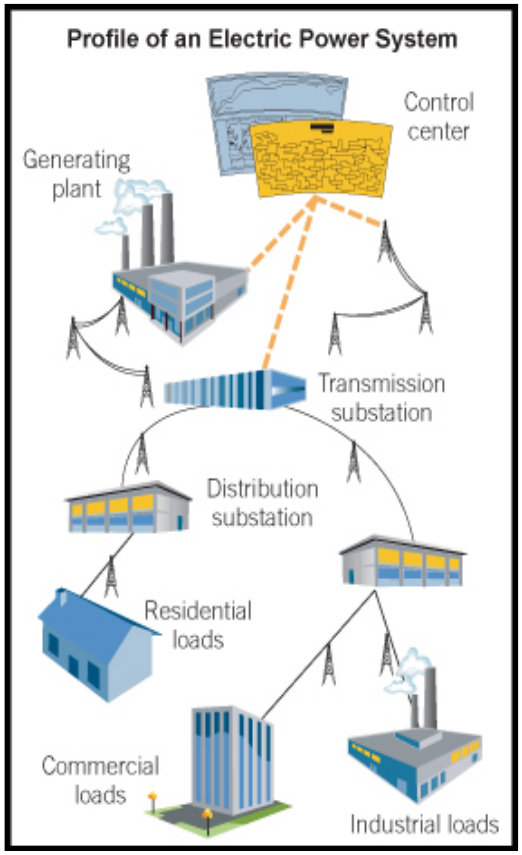


Dover …
Electric Service Provider

Delivering Electrical Service Relies on Numerous Functions

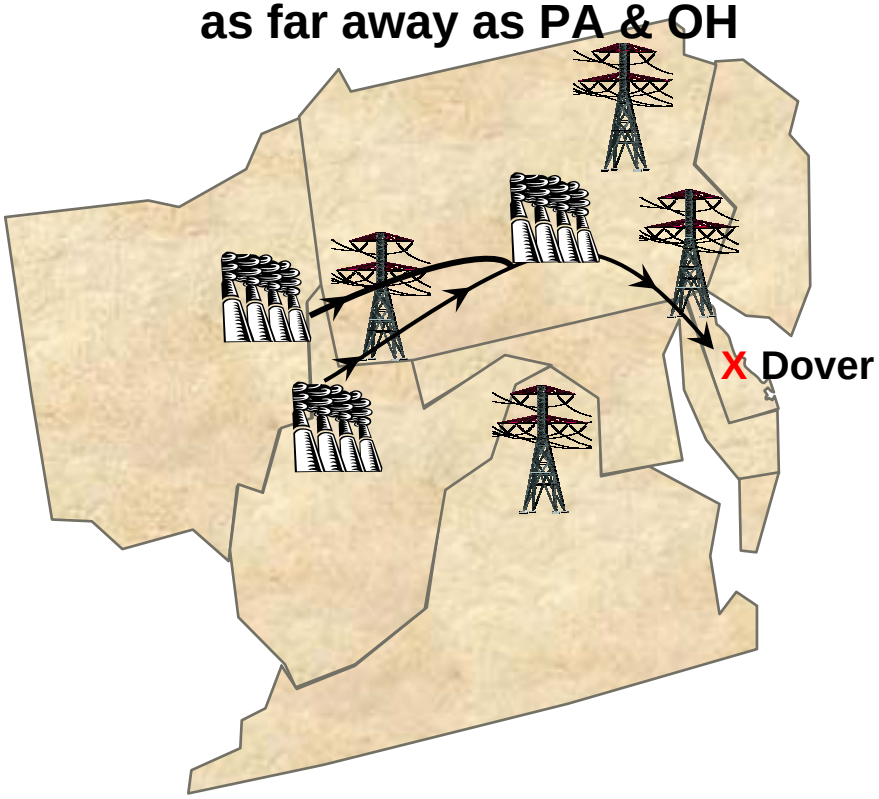


Dover Receives Electricity From Numerous Sources



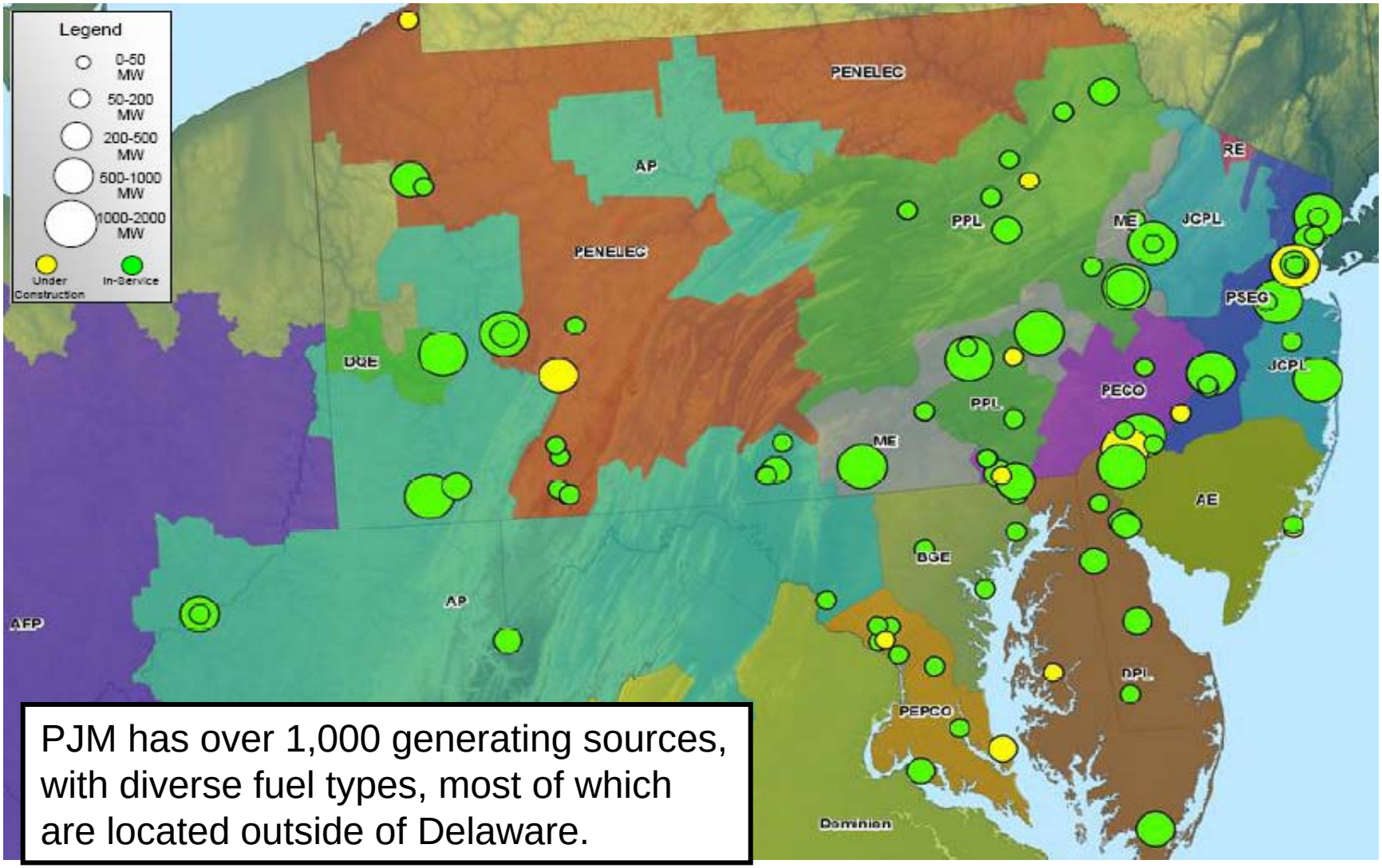
Source: PJM

Power Flows to Dover from Plants as far away as PA & OH



98% of Dover's electricity is sourced from plants outside of Dover's electrical grid.

Power Generation in PJM Widely Disbursed



PJM has over 1,000 generating sources, with diverse fuel types, most of which are located outside of Delaware.

Dover Manages Markets that are Diverse & Individually Complex

	**Forward Electric contracts**	Purchase of a pre-defined quantity of electricity delivered to a specific location at a pre-defined price. Dover has procured Power through 2013.
	**Spot ISO Electricity (DA & RT)**	Daily purchases of the projected wholesale electricity needs in the Day Ahead (DA) market and then the balancing of the wholesale load in the Real Time (RT) market.
	**Natural Gas Commodity & Transport**	Purchase commodity in spot OTC market on Transco & Columbia pipelines; purchase of interruptible transport services; and balancing of actual vs. projected usage.
	**Fuel Oil Markets**	Purchase of distillate fuel oil for inventory to be used as back up fuel; and manage oil deliveries and quality control.
	**SO_2 and NOx Compliance Allowances**	**Sale of sulphur dioxide (SO2) and nitrogen oxide (NOx) allowances in the Over-The-Counter (OTC) markets and transfers through the EPA Allowance Tracking System.**
	**RGGI Carbon Compliance Allowances**	Purchase in auction or OTC and sales in OTC; Authorized Account Representative transfers carbon allowances through the RGGI Allowance Tracking System

Dover 2030 Energy Committee has a Focused Objective & a Broad Based Membership

Objective:

Identify and pursue options for long-term reliable, cost competitive and environmentally prudent electricity for the citizens of Dover.

Membership:

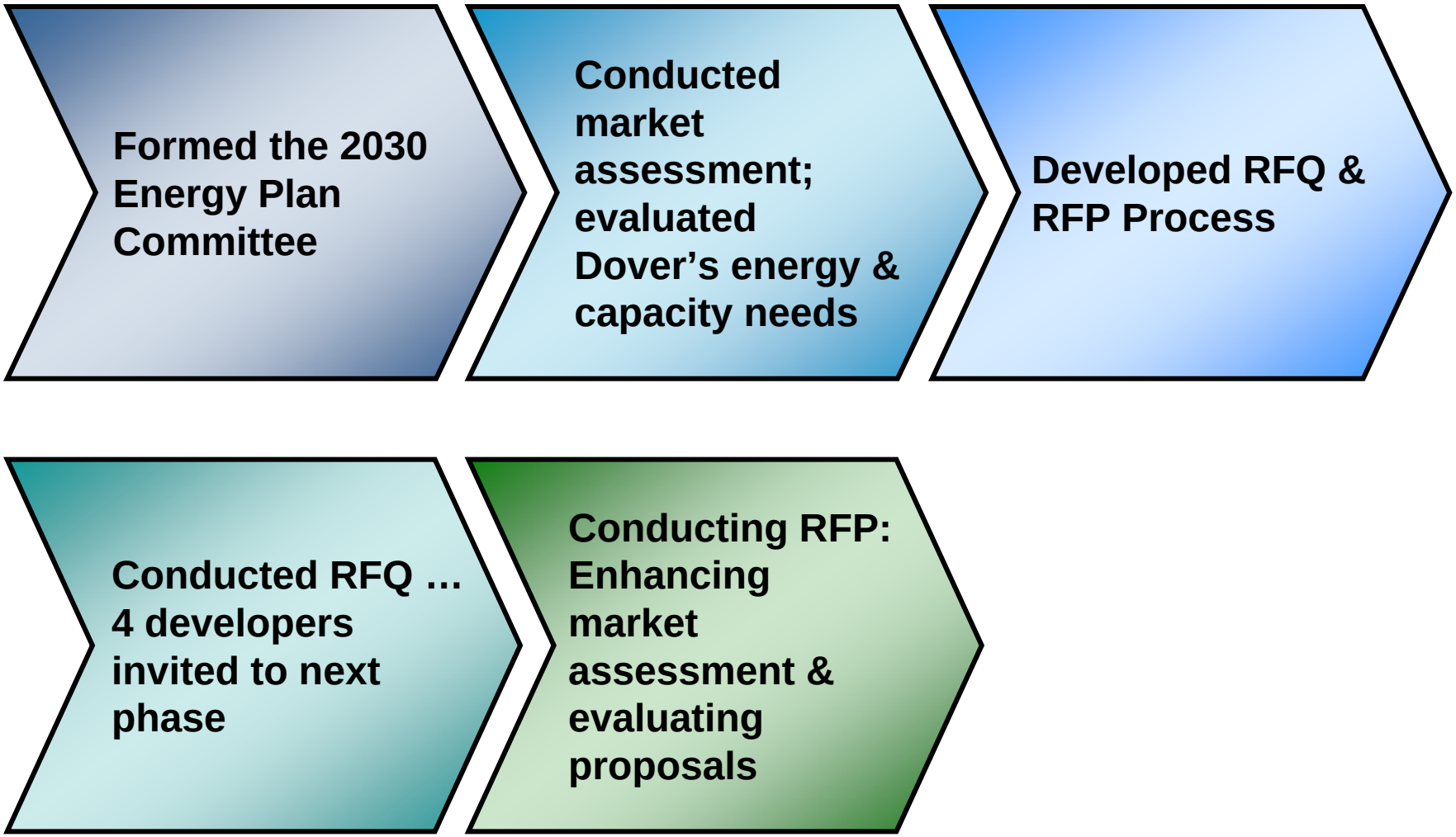
The City of Dover

- Council Member and Committee Chair Eugene B. Ruane
- Council Member Beverly C. Williams
- Mayor Carleton E. Carey, Sr.
- Anthony DePrima
- Ronald Lunt
- Donna Mitchell

Outside Representation

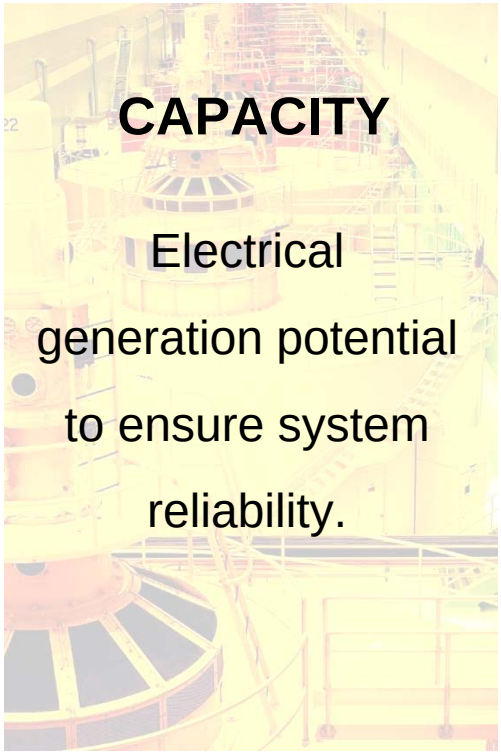
- Frederick James, Pace
- Francis Hodsoll, Pace
- Keith Mills, Pace
- Vincent Scire, NAES Corporation

The Committee has Achieved Substantial Progress Toward its Objective



Securing Dover's Energy Future

Electricity Service Requires Both Capacity and Energy



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Capacity and energy are sold and priced independently.

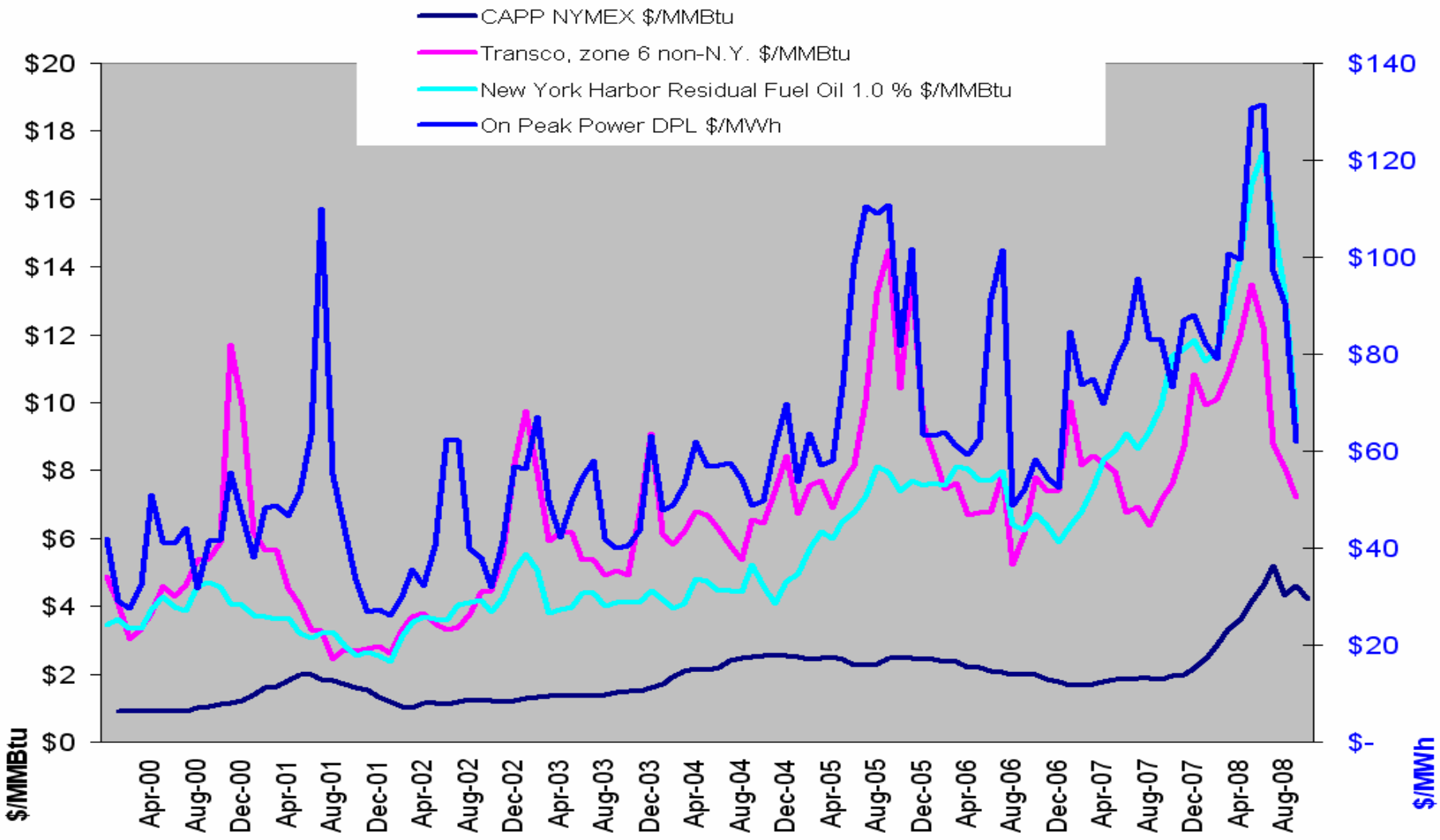
Dover Faces Net Deficits in Energy and Capacity

Dover Generation Deficit: FY 2007-08 Actuals			
	Energy	**Capacity**	**Total Energy & Capacity**
Dover Obligation	770,999.0 MWh	190.2 MW*	--
Cost	($56.9) M	($12.2) M	($69.1) M
Value from Dover Generation	$1.0 M	$11.7 M	$6.4 M**
Dover Dependence on PJM Market (effective purchases)	($55.9) M	($0.5) M	($62.7) M
Supplied by Dover Generation	1.7 %	96.4 %	9.3 %

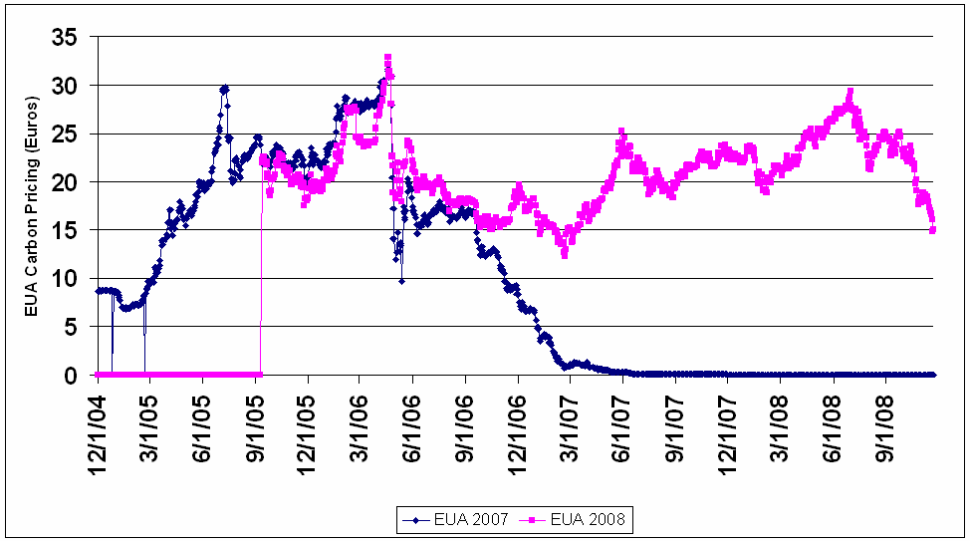
* Weighted average capacity obligation accounting for change in obligation with the start of the PJM 2009 Capacity Year

** Value remaining after $6.6M Generation O&M expense is subtracted.

Fuel and Power Prices Are Extremely Volatile …

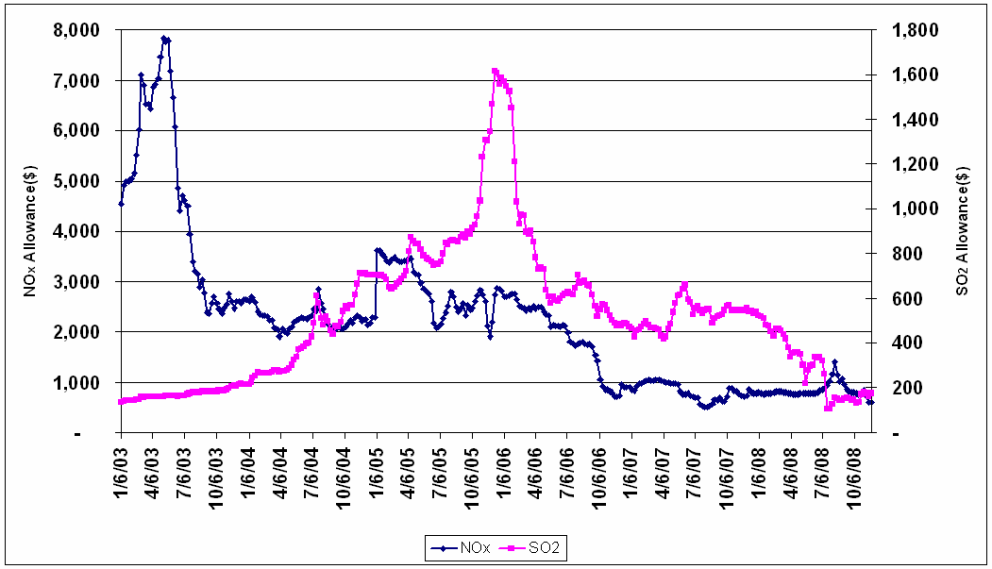


… Environmental Compliance Markets Are Likewise Extremely Volatile

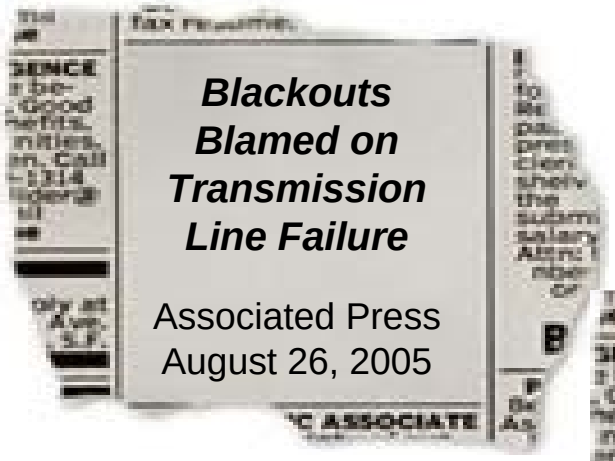


Historical EUA Carbon Allowance Prices

Historical SO2 and NOx Allowance Prices



Reliability Continues to Plague the Grid



Blackouts Blamed on Transmission Line Failure

Associated Press
August 26, 2005



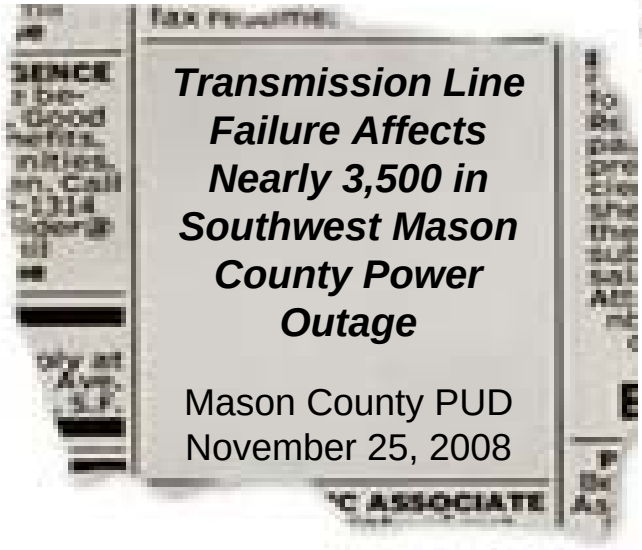
Dover, Del., Businesses Suffer Power Outage

Delaware State News
July 20, 2006



Transmission Line Failure Creates Potential for Rio Grande Valley Outage

AEP Texas
October 17, 2006



Transmission Line Failure Affects Nearly 3,500 in Southwest Mason County Power Outage

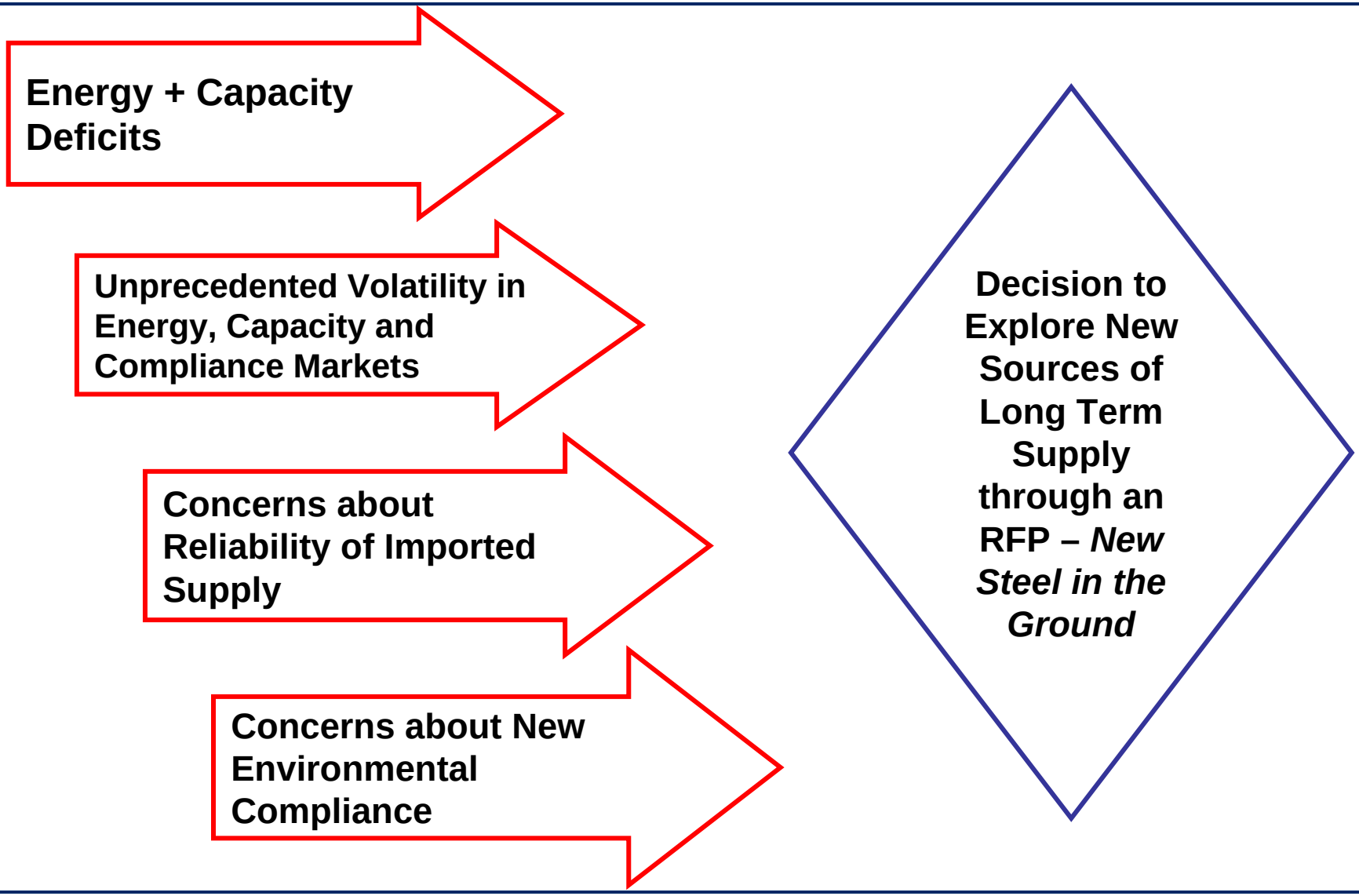
Mason County PUD
November 25, 2008



Edmonton Power Outages Fuel Blackout Fears – Increased Demand Across Transmission Lines Could Cause Catastrophic Failure

Stormwire
July 22, 2008

Dover's Position and Market Dynamics Drove Decision

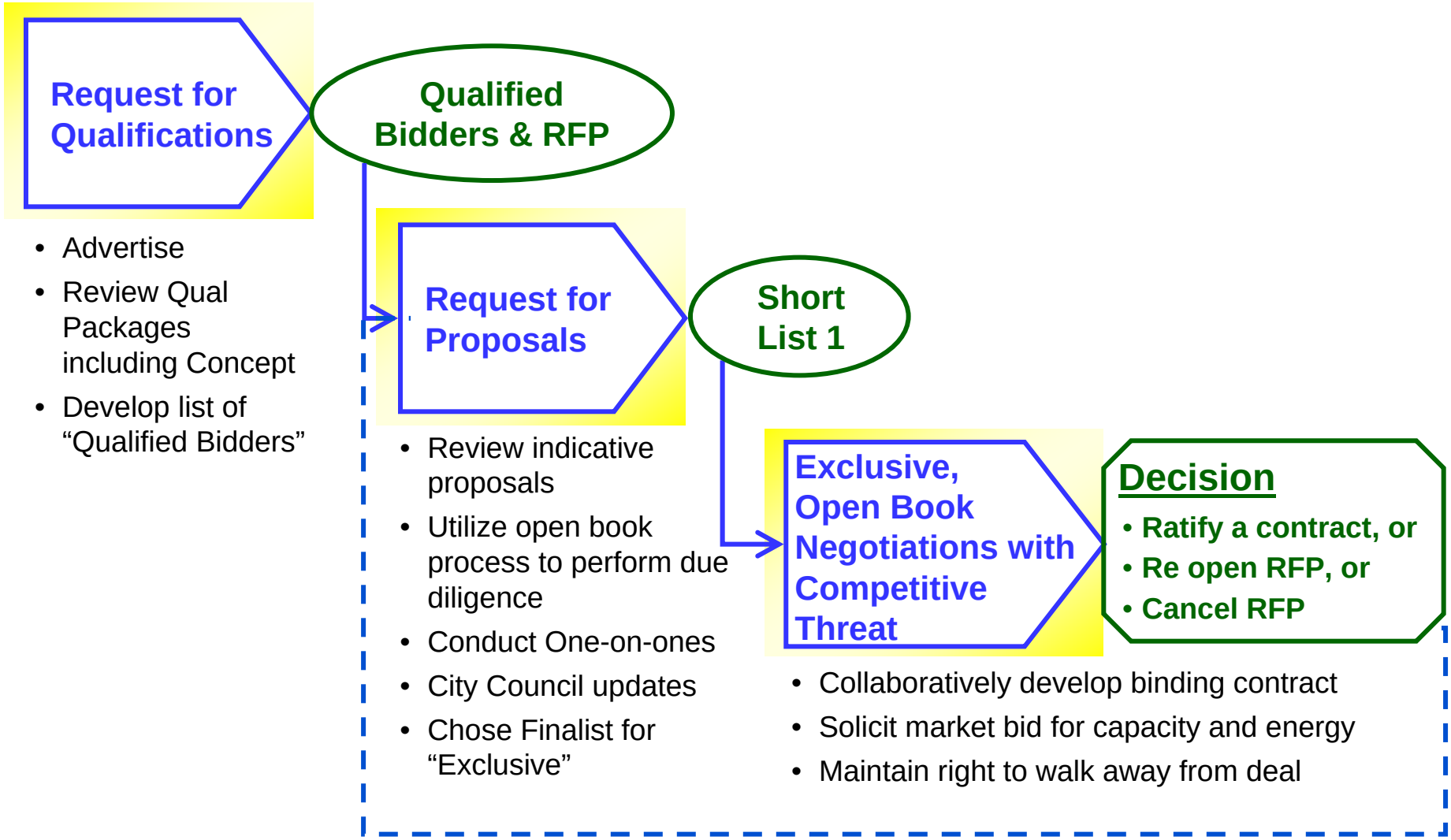


Request for Proposal (RFP) Designed to Leverage Competitive Market

Objectives

- Explore generation options for meeting the City's growing capacity shortfall
- Enhance reliability and provide cost effective energy solutions
  - The RFP stated "The City is particularly interested in cost-based, intermediate or higher dispatch generation to compliment its current supply portfolio. Dover is also interested in opportunities to integrate renewable energy sources into its supply mix. "
- Provide options for utilizing the Garrison Tract site
- Employ the development community to present viable options
- Utilize market based information from the development community, enhanced with Pace's independent view, to assess proposals

RFP Process Designed for Flexibility Governed by Clear Objectives

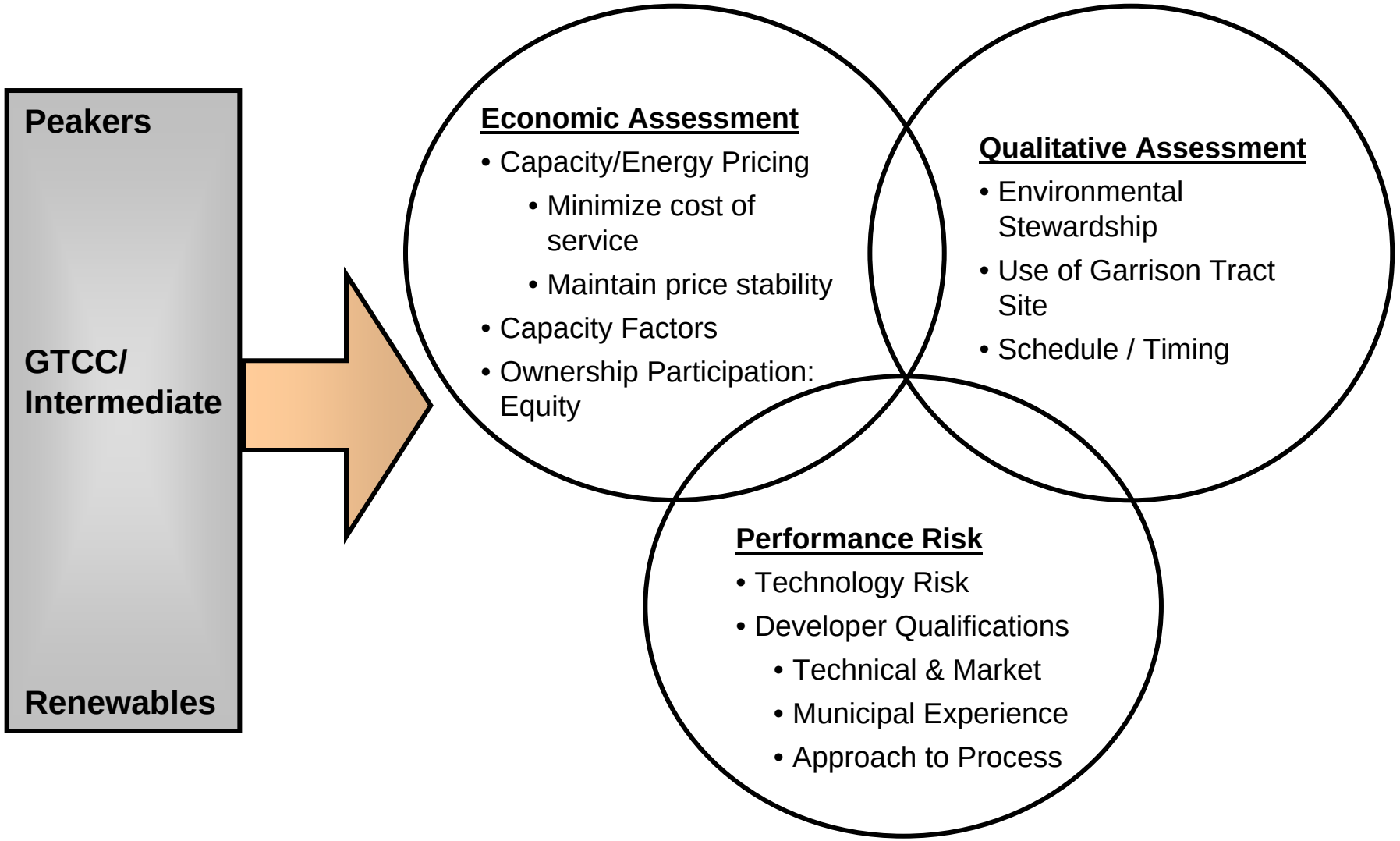


Seven Unique Proposals Received In Four Categories

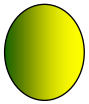
Option	Capacity (MW)	Fuel	Term*	In-Service Date	Location	Acres Required
Peaking Plant Option 1	98	NG / Fuel Oil Backup	30-yr PPA	2013	Garrison Tract	20
Peaking Plant Option 2	92	NG / Fuel Oil Backup	30-yr PPA	2013	Garrison Tract	20
Combined Cycle Out of State	100	NG / Fuel Oil Backup	20-yr PPA	2012	Off-Site - New Jersey	N/A
Combined Cycle Garrison Tract	150	NG / Fuel Oil Backup	30-yr PPA	2012-2013	Garrison Tract	30
Solar Panels	10	N/A	25-yr PPA	2011	Garrison Tract	80
Wind Turbine	15	N/A	25-yr PPA	2011	Off-Site - Delaware	N/A
Market Capacity & Energy	25	N/A	2-yr Forward Contract	N/A	DPL	N/A

* PPA: Purchased Power Agreement, a long term agreement with fixed terms for capacity, energy or both

Evaluation Approach Designed to Provide Both Structure and to Allow for Diversity of the Proposals



All Proposals Have Economic Pros, Cons and Risks

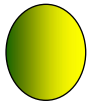
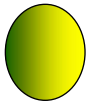
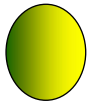
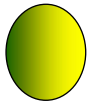
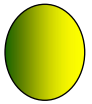
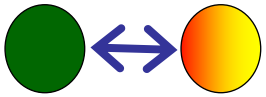
Proposal	Energy Price	Capacity Value	Levelized Cost	Fuel Risk	Environmental Compliance Risk
Peaking Plant Option 1					
Peaking Plant Option 2					
Combined Cycle Out of State					
Combined Cycle Garrison Tract					
Solar Panels					
Wind Turbines					

The Renewables levelized costs does not include the value from compliance with renewable portfolio standards and carbon regulations

All Proposals Had Strengths and Weaknesses

Option	Qualitative		Performance Risks		
	Renewable Attributes	Dover Site	Technology Risk	Developer Risk	City's Reliability
Peaking Option 1	✗	✓	●	●	●
Peaking Option 2	✗	✓	●	●	●
Combined Cycle – Out of State	✗	✗	●	●	●
Combined Cycle – Garrison Tract	✗	✓	●	●	●
Solar Panels	✓	✓	●	●	●
Wind Turbines	✓	✓	●	●	●

Several Proposals Appear to Dominate

Option	Economics	Qualitative Assessment	Performance Risk
Peaking Option 1			
Peaking Option 2			
Combined Cycle – Out of State			
Combined Cycle – Garrison Tract			
Solar Panels			
Wind Turbines			

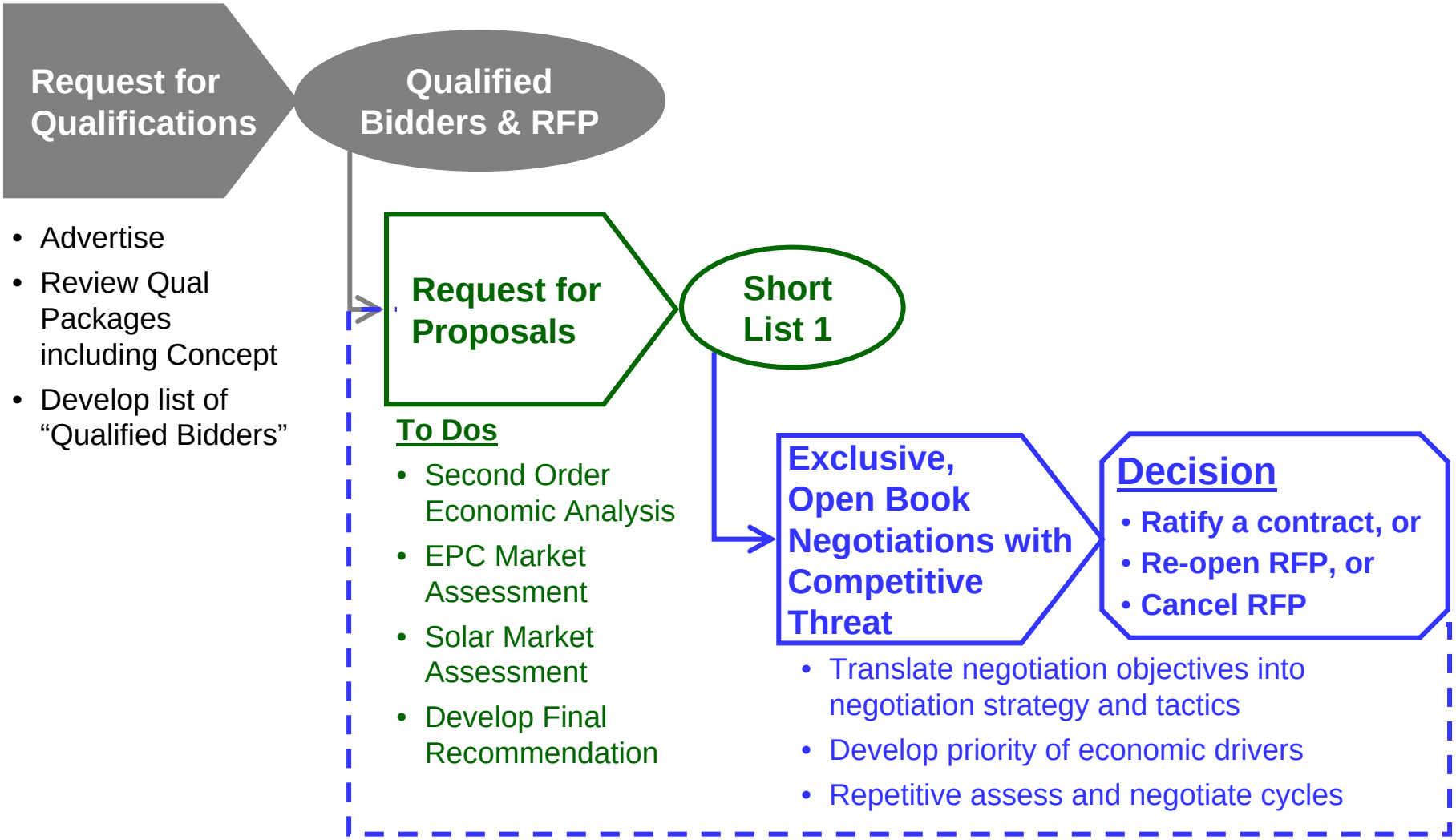
Conceptual Rendering of Combined Cycle Plant



5 MW Solar Plant – Espenhain, Germany



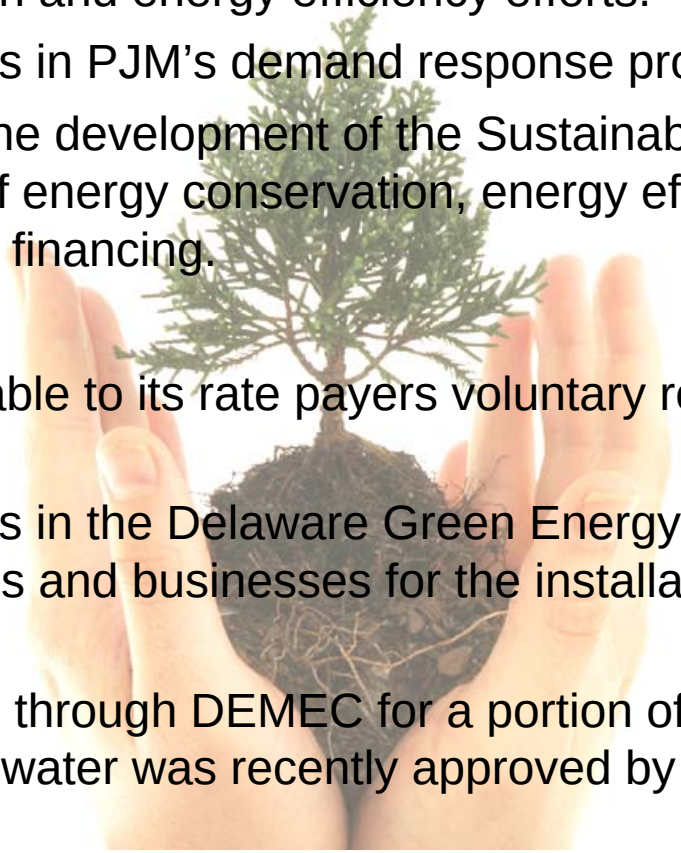
RFP Next Steps Focused on Finalizing Phase II



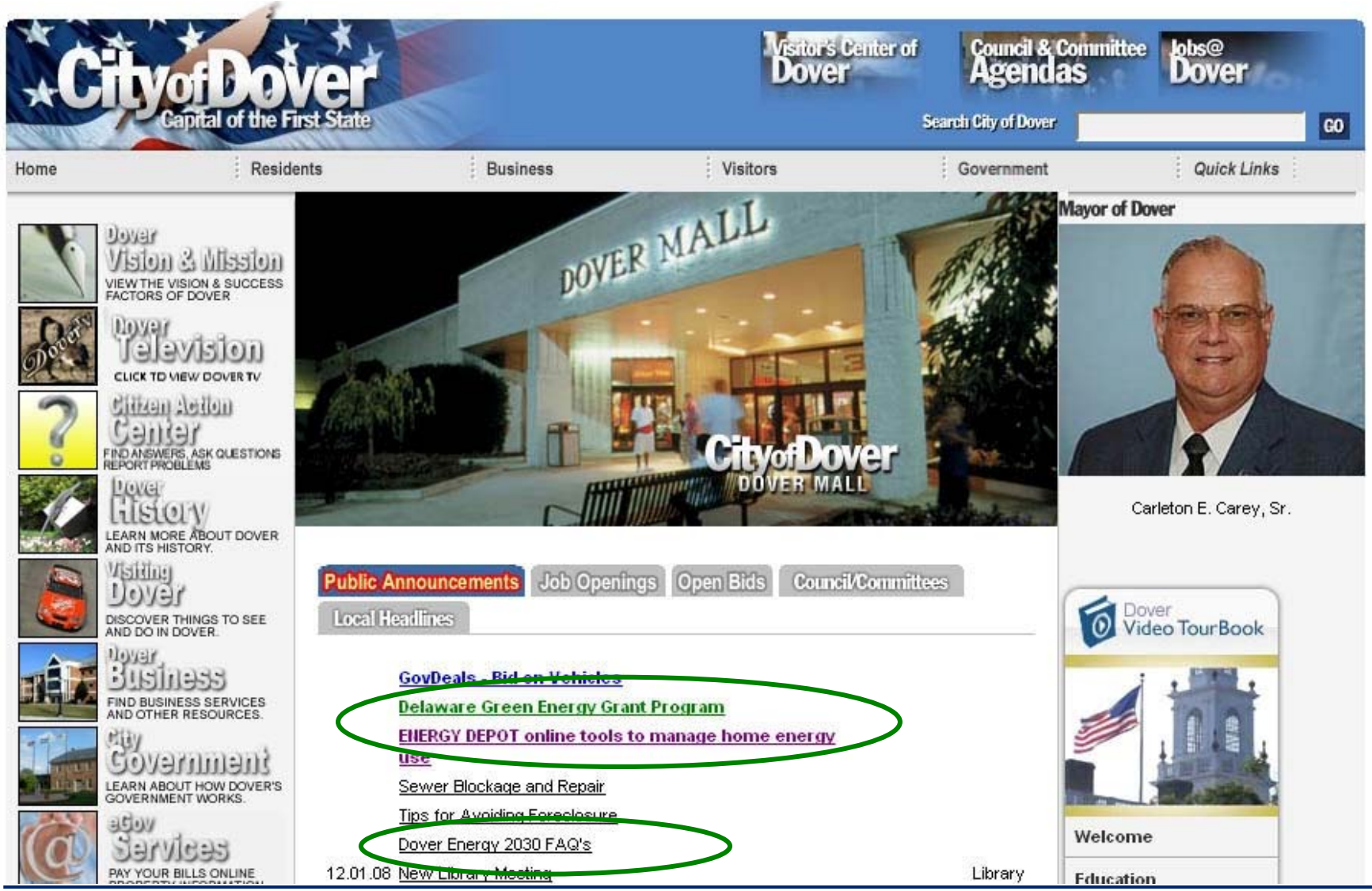
Managing Today's Energy Challenges

The City is Promoting Conservation and Renewables

- Conservation
  - The City has secured the services of Energy Depot to support rate payers' conservation and energy efficiency efforts.
  - The City participates in PJM's demand response program.
  - The City supports the development of the Sustainable Energy Utility (SEU): promotion of energy conservation, energy efficiency, renewable energy, and energy financing.
- Renewables
  - Dover makes available to its rate payers voluntary renewable energy credits.
  - The City participates in the Delaware Green Energy Program: cash incentives for homes and businesses for the installation of renewable energy systems.
  - The City contracted through DEMEC for a portion of the BlueWater Wind energy output. Bluewater was recently approved by the DE Public Commissioner.



Web Access to Conservation Resources and Renewable Support



City of Dover
Capital of the First State

PACE

NAES