Mid-Atlantic Wind
Overcoming the Challenges

For:
Virginia Wind Energy Collaborative

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Harrisonburg, Virginia

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Project Objectives

1. Define technical, economic, legal and policy issues impeding development of wind energy in:
   Delaware, Maryland, Virginia, North Carolina and District of Columbia

2. Identify mechanisms for overcoming barriers

3. Communicated results to leaders and decision makers in regional organizations, state and local governments and to the general public.
## Project Participants and Roles

### Princeton Energy Resources International, LLC
- Project management
- Market Definition
- Data Collection on DE, MD, DC, NC, VA
- Stakeholder Meetings
- Business Economic Assessment
- Environmental

### University of Maryland - Baltimore County
- Resource Potential
- Low Level Jets
- Seasonal/Temporal/Spatial

### Maryland Department of Natural Resources
- Cost share work at UMBC

### Chesapeake Bay Foundation
- Perspectives on Environmental Issues
- Data on Dead Zones and other Environmental Concerns
- Regional Air and Water Shed Implications
- Information Dissemination

### Consultants

- Bruce Buckheit – Policy and Legal Issues
- Dan LoBue – Transmission Issues
Mid-Atlantic Market - Issues vs. Myths

Task 1 Market Definition
- Distinct differences in 5 States and 4 markets
- In context of coal-base mentality

Task 2 Fact Finding
- Goals without tools
- Toothless RPS
- Rule making with ZERO local experience

Task 3 Business and Economics
- Comparison of ridges/coastal; shallow/deep water markets
- Transmission market and PJM Rules
- Market options: PJM, utility, green power sales, and others
- Seasonal/temporal/spatial effects

Task 4 Wind Resource
- Land-based and offshore
- Low level jets

Task 5 Environmental Implications – wind and conventional energy sources
Wind Is Missing in Mid-Atlantic – So Far

16-36 GW Potential Per DOE
Large Markets for Wind - DE+MD+VA+NC

- Distinct Markets – to be defined for
  - Mountain ridgelines
  - Coastal plains
  - Shallow sheltered waters
  - Continental shelf
- Separate and distinct issues
- Economics
- Regulatory and approval process
- State-specific differences
Currently more than 80% of Renewable Energy Credits are from other states in PJM

Land-based and offshore wind are expected to contribute most
Maryland Progress toward Solar RPS Goal

- Solar deployment in state current 47% of needed
- Alternative Compliance Payments in MD currently $450/MWh then decrease: compared to NJ $711. MWh.
- Tax credits and other incentives to be extended.
Mid-Atlantic Wind Modeling Planned

- Evaluate seasonal winds, temporal correlation and distribution at ridgeline, coast and offshore sites

- Meso scale model simulation August 2-3, 2007 spatial distribution of wind power at 7 pm and 2 am at 50m, 100m, & 150m AGL, evidence of seasonal nocturnal Mid-Atlantic LLJ (Low Level Jet) event

- Abrupt increase in wind speed begins 5 - 7 pm coincident with peak load but needs statistical evaluation

Mengs Weldegaber and Dr. Lynn Sparling UMBC
Balancing Environmental Issues

Wind
- EMI
- View shed
- Birds, bats and aquatics
- Property value

Coal, Natural Gas and Nuclear
- Emissions (NO$_x$,$PM_{10+2.5}$,$SO_x$)
- Water pollution
- View shed
- Birds, bats and dead zones
- Property value
- Health effects
- Waste disposal
Invitation to Discuss
Barriers and Solution/Mitigation Mechanisms

- Please contact us with your anecdotes, thoughts and ideas

Interviews can be:
- On the Record
- On Background – Quote what you say but not the source
- Off the Record – Can use information to find a quotable source

Thank you for your attention