

Dominion's Wind Energy Developments

Commonwealth of Virginia Energy & Sustainability Conference

Track 4: Energy Efficiency and Clean Technology
Options

Session 12: How Do We Produce Cleaner Electricity?

September 18, 2008

Robert Hare

Agenda

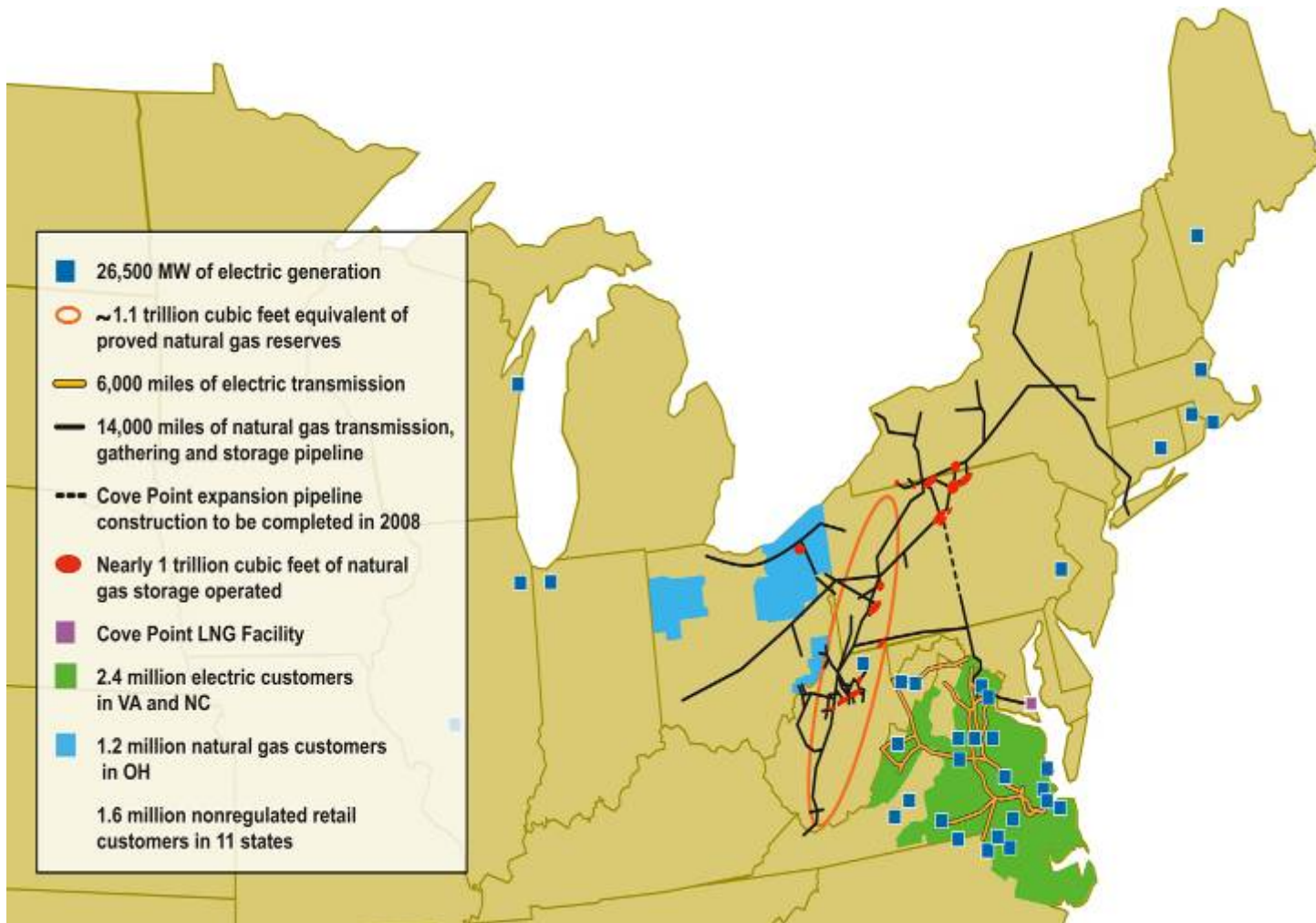
- Overview of Dominion
- Virginia's Energy Demand
- Dominion's Renewable Assets
- Dominion's Wind Energy Developments
- Meeting Virginia RPS Goals
- Summary



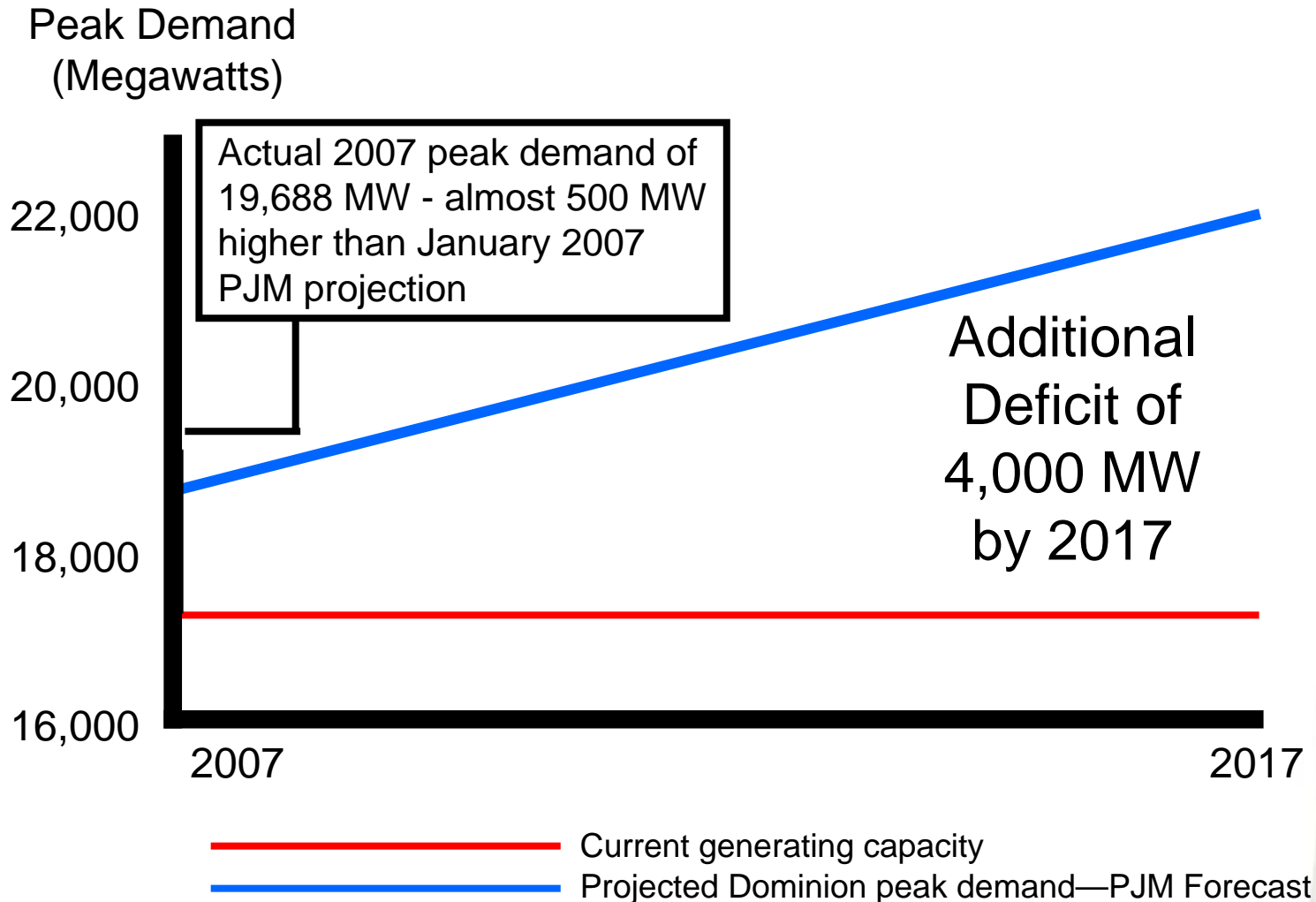
Overview of Dominion: Financial Summary

- Fortune 500 U.S. (2008): Ranked 161st
- Forbes Global 2000 (2008) Ranked 276th
- Total 2007 Revenues: \$15.7 billion
- Total Assets (12/31/07): \$39.1 billion
- Trading Symbol: D (NYSE)

Overview of Dominion: Dominion's Footprint

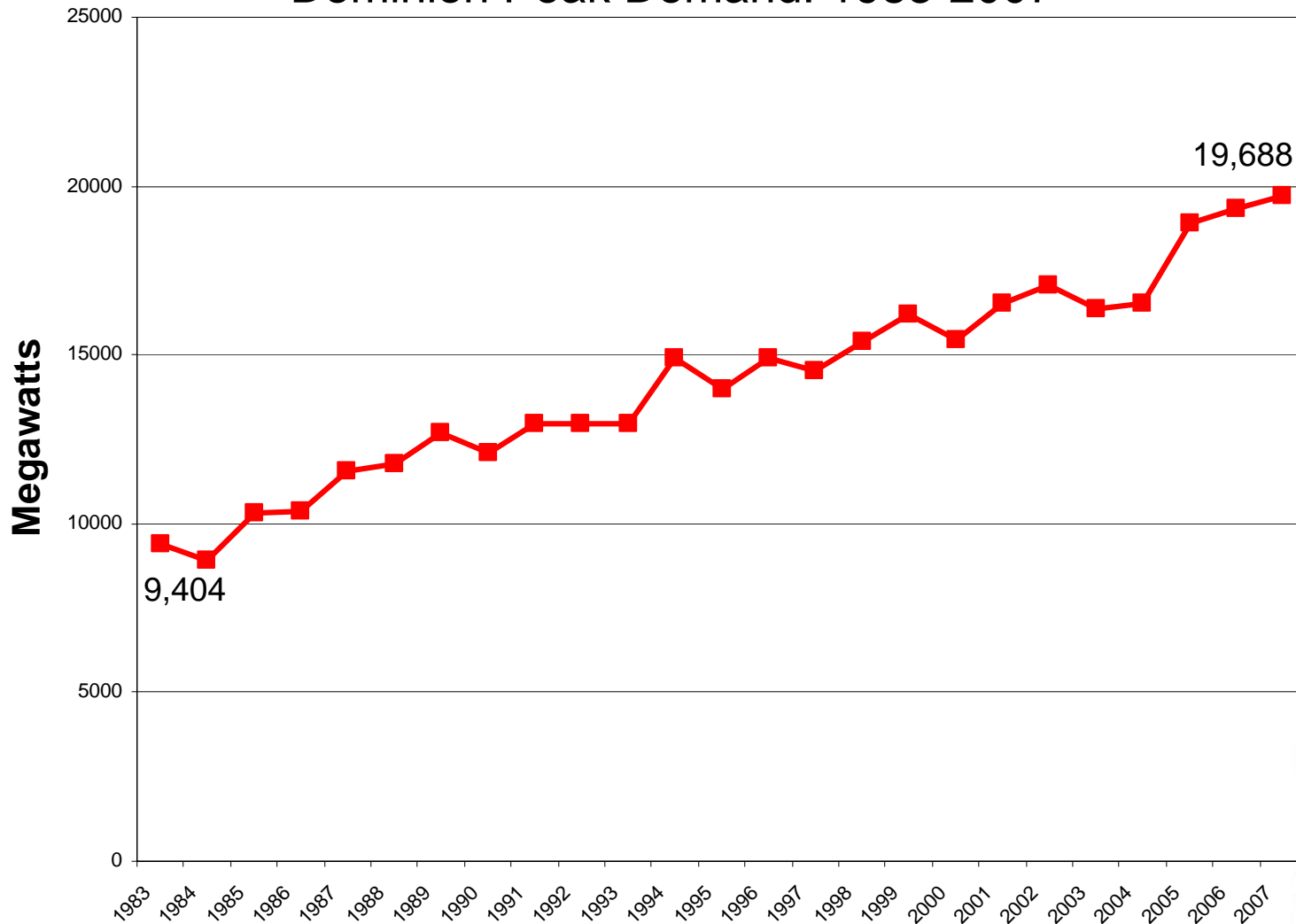


Virginia's Energy Demand



Growing Energy Demand

Dominion Peak Demand: 1983-2007



Meeting Needs of Virginia's Still Growing Economy

Dominion's challenge:

- Virginia's economic growth requires reliable, affordable energy for our customers.

Dominion's strategy:

- Meeting the need with three major tools
 - Conservation and efficiency
 - Renewable generation
 - Baseload and intermediate generation and other infrastructure improvements



Dominion's Assets: Renewable Generation Portfolio

Operating Facilities

	<u>Capacity</u>	<u>Type</u>
Pittsylvania – Virginia	83 MW	Biomass
Altavista – Virginia	6 MW	Biomass
Gaston – North Carolina	225 MW	Hydro
Roanoke Rapids – North Carolina	99 MW	Hydro
Cushaw – Virginia	2 MW	Hydro
North Anna – Virginia	<u>1 MW</u>	Hydro
	416 MW	

Facilities – In Development (announced)

Virginia City Hybrid Electric Center *	117 MW	Biomass
Various Sites – Wind Projects with BP	<u>TBD</u>	Wind

Utility-Owned Facilities Total: **533 MW**

* Represents up to 20% of proposed Virginia City Hybrid Electric Center 585 MW coal station

Dominion's Renewable Assets: Pittsylvania Power Station (Biomass)

- Pittsylvania Power Station
- Capacity: 83 MW
- Largest biomass facility in eastern U.S.
- High reliability
- Base-load resource



Dominion's Renewable Assets: Gaston Hydro Station

- Capacity: 225 MW
- High reliability



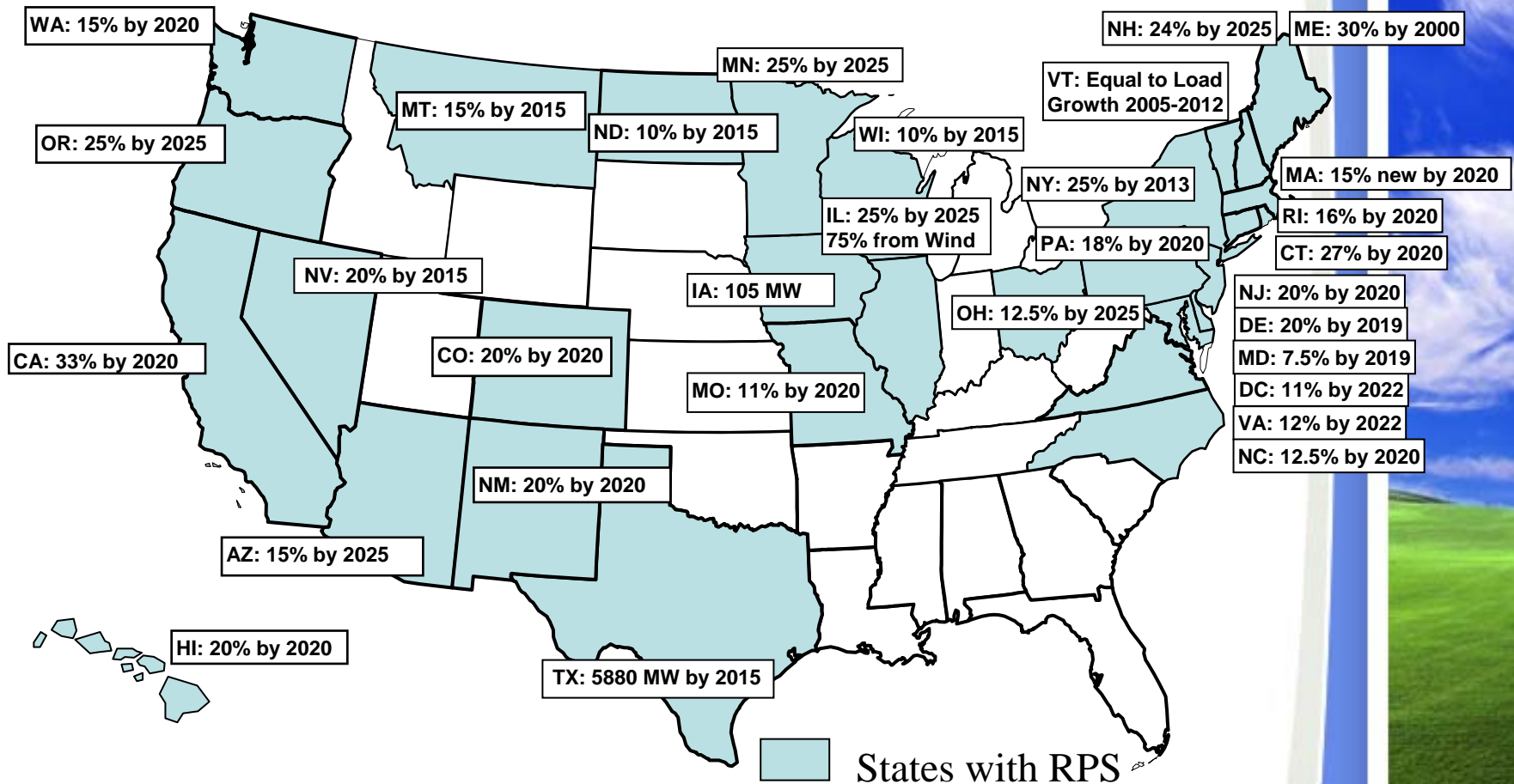
Dominion's Renewable Assets: Other Renewable Generation Assets

	<u>Capacity</u>	<u>Type</u>
<u>Other Renewable Facilities – Under Construction</u>		
NedPower Mount Storm Wind Farm** - West Virginia	132 MW	Wind
Fowler Ridge Wind Farm (Phase I)** - Indiana	150 MW	Wind
<u>Other Renewable Facilities – In Development (announced)</u>		
Fowler Ridge Wind Farm (Phase II)** - Indiana	175 MW	Wind
Prairie Fork Wind Farm - Illinois	<u>300 MW</u>	Wind
Other Renewable Facilities	757 MW	
TOTAL RENEWABLE FACILITIES:	1,290 MW of Renewable Assets	

** Capacity shown as Dominion's net share (projects are 50/50 partnerships)

What's Driving the Demand: U.S. Renewable Portfolio Standards

30 States with Renewable Portfolio Standards/Renewable Goals



Source: DSIRE Database of State Incentives for Renewables and Efficiency

Dominion's Wind Energy Developments: Our Interest in Wind Energy

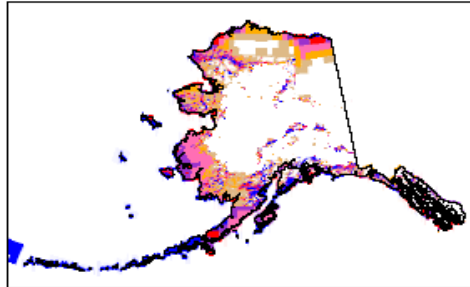
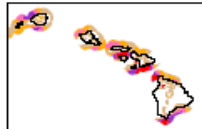
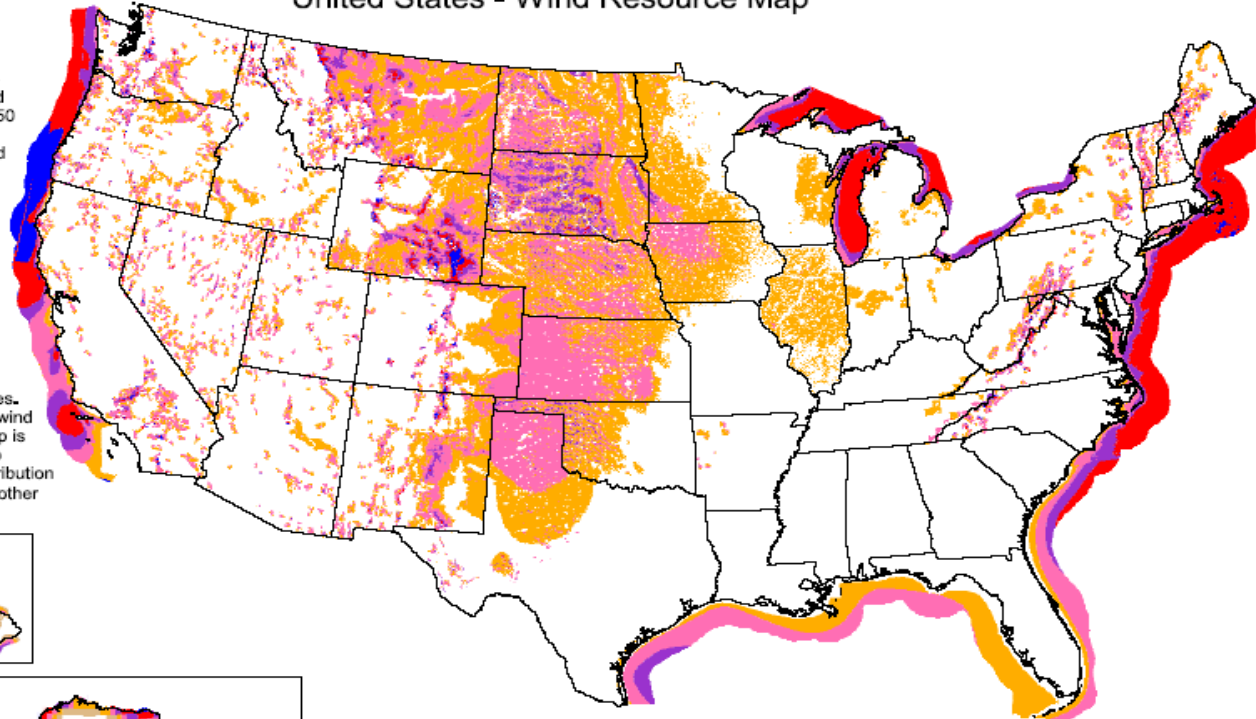
- Wind Energy has the Lowest Cost and Highest Scalability of all Renewable Resources
- Committed to Meet RPS Goals in Virginia and North Carolina
- Reduce our Carbon Intensity
- Hedge Against Rising Fuel Costs
- BUT.....WHERE ARE THE WIND RESOURCES?



Dominion's Wind Energy Developments: U.S. Wind Resources

United States - Wind Resource Map

This map shows the annual average wind power estimates at 50 meters above the surface of the United States. It is a combination of high resolution and low resolution datasets produced by NREL and other organizations. The data was screened to eliminate areas unlikely to be developed onshore due to land use or environmental issues. In many states, the wind resource on this map is visually enhanced to better show the distribution on ridge crests and other features.



Wind Power Classification				
Wind Power Class	Resource Potential	Wind Power Density at 50 m W/m ²	Wind Speed ^a at 50 m m/s	Wind Speed ^a at 50 m mph
3	Fair	300 - 400	6.4 - 7.0	14.3 - 15.7
4	Good	400 - 500	7.0 - 7.5	15.7 - 16.8
5	Excellent	500 - 600	7.5 - 8.0	16.8 - 17.9
6	Outstanding	600 - 800	8.0 - 8.8	17.9 - 19.7
7	Superb	800 - 1600	8.8 - 11.1	19.7 - 24.8

^a Wind speeds are based on a Weibull k value of 2.0

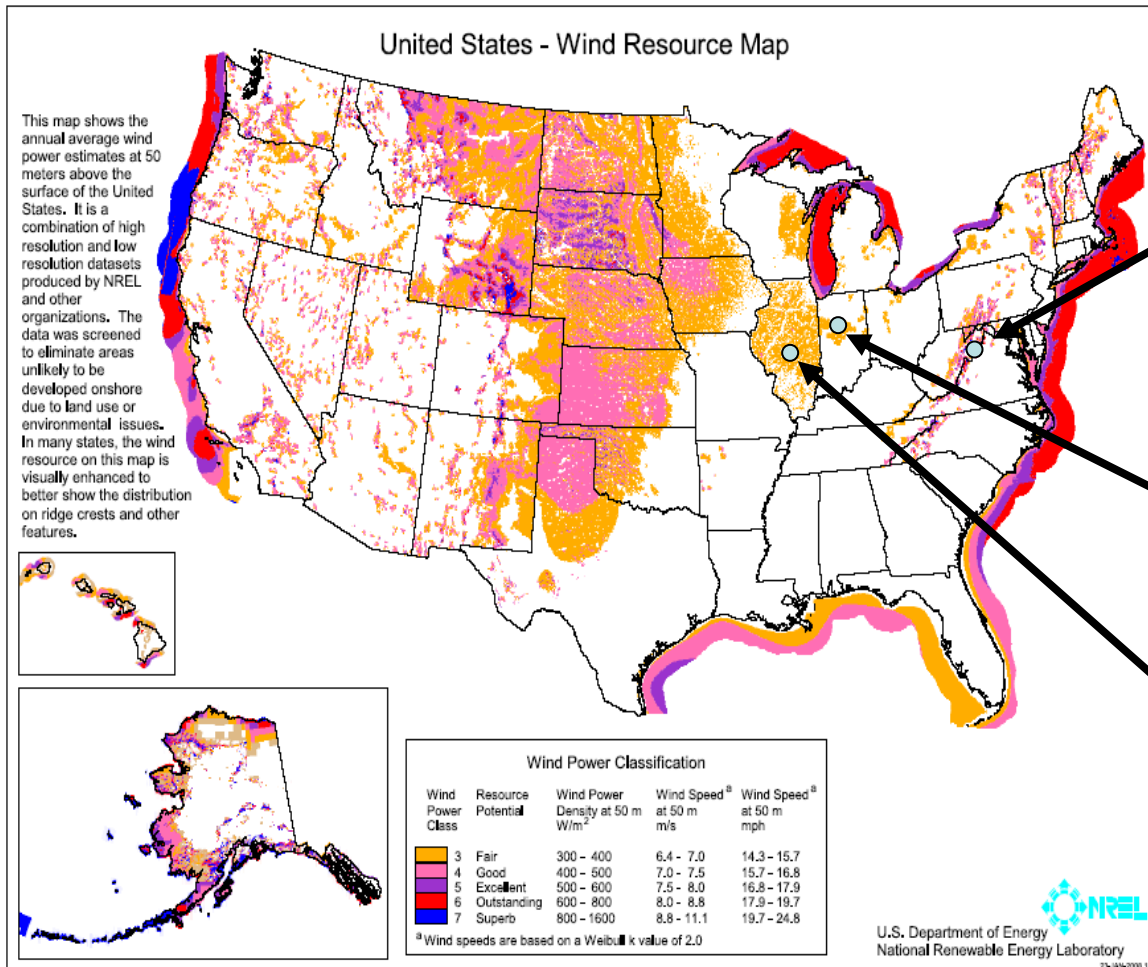


U.S. Department of Energy
National Renewable Energy Laboratory

23-JAN-2008 1.1.2



Dominion's Wind Energy Developments: Our Announced Wind Farms



Mount Storm
264 MW
(Operating /
In Construction)

Fowler Ridge
650 MW
(In Construction /
In Development)

Prairie Fork
300 MW
(In Development)



Dominion's Wind Energy Developments: NedPower Mount Storm Wind Farm

- Location Grant County, West Virginia
- Status Operating/Construction
- Facility Owners Dominion (50%) / Shell (50%)
- Asset Type Merchant Generation
- Date of Dominion Acquisition December 2006
- Total Capacity (planned) 264 MW
- Number of turbines 132
- Output per Turbine 2 MW
- Commercial Operation Date 2008
- Land Area Covered 8,000 acres (12.5 sq mi)



Dominion's Wind Energy Developments: NedPower Mount Storm Wind Farm



Completed
Wind Farm



Dominion's Wind Energy Developments: NedPower Mount Storm Wind Farm



Turbine Rotor
Ready for Lift



Dominion's Wind Energy Developments: NedPower Mount Storm Wind Farm



Turbines being
Erected



Dominion's Wind Energy Developments: Fowler Ridge Wind Farm

Location	Benton County, Indiana
Status	UNDER CONSTRUCTION
Facility Owners	Dominion (50%) / BP (50%)
Asset Type	Merchant Generation
Date of Dominion Acquisition	January 2008
Total Capacity (planned)	650 MW (of total 750 MW)
Number of turbines	350+
Output per Turbine	Between 1.5 and 2.5 MW
Commercial Operation Date	2008 / 2009+
Land Area Covered	55,000 acres (86 sq mi)



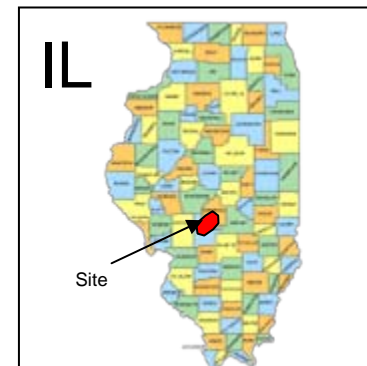
Dominion's Wind Energy Developments: Fowler Ridge Wind Farm

Turbine being
Erected



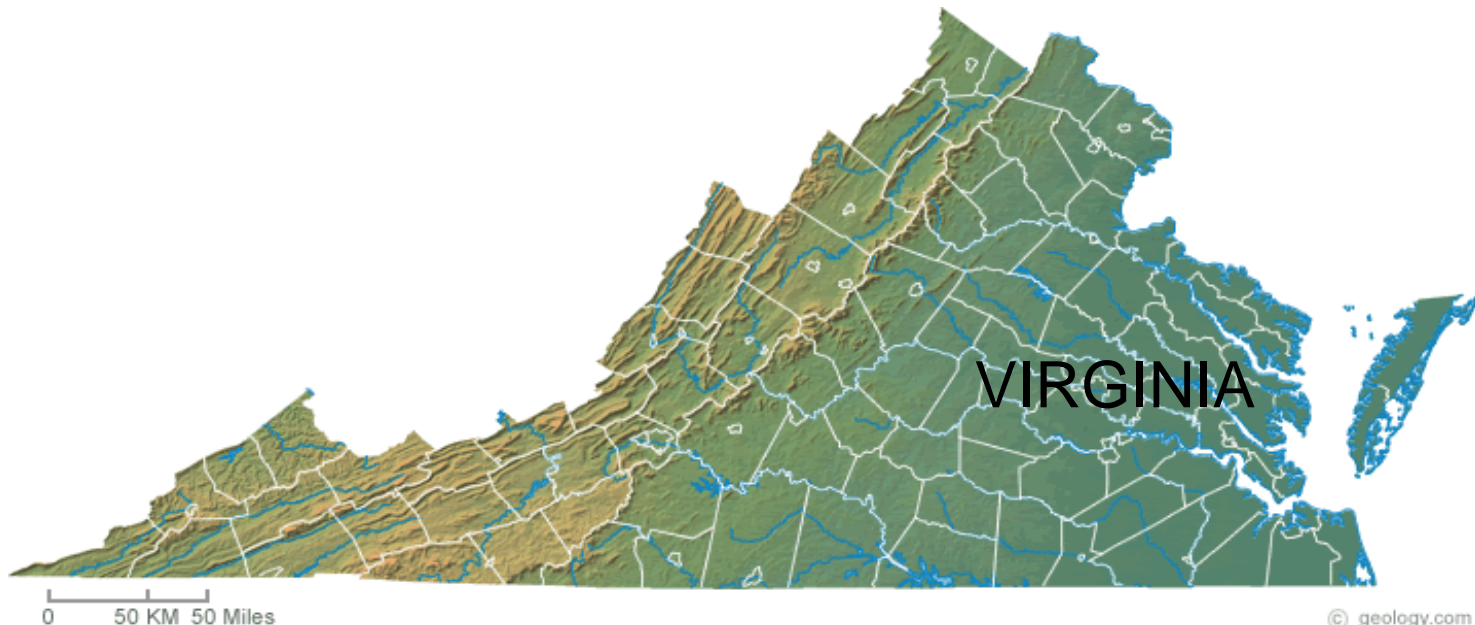
Dominion's Wind Energy Developments: Prairie Fork Wind Farm

Location	Christian & Montgomery Counties, Illinois
Status	UNDER DEVELOPMENT
Facility Owners	Dominion (100%)
Asset Type	Merchant Generation
Date of Dominion Acquisition	N/A – Greenfield Development
Total Capacity (planned)	300 MW
Number of turbines	150 - 200
Output per Turbine	Between 1.5 and 2.0 MW
Commercial Operation Date	2011
Land Area Covered	26,000 acres (40 sq mi)



Dominion's Wind Energy Developments: Partnership with BP in Virginia

- In April 2008, Dominion and BP announced their 2nd wind partnership
- Dominion & BP will jointly develop, construct, and operate wind projects in Virginia
- Dominion will participate through its utility, VEPCO



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Dominion's Wind Energy Developments: Partnership with BP in Virginia (cont'd)

- Evaluating several VA opportunities; our WV wind experience is readily exportable to VA wind development
- Dominion and BP are in the early stage of site analysis
- Utilizing the VA landscape classification system (VWEC/JMU)
- Performing Phase I environmental analyses
- Characterizing sites based on desktop and field analysis
- Plan to bring in state regulatory / environmental agencies early



Dominion's Wind Energy Developments: Dominion's Renewable RFP

- Dominion canvassed market for renewable opportunities including:
 - **Purchase of Renewable Energy Assets**
 - **Purchase of Renewable Energy Credits**
- RFP issued to the market Nov 2007 / bids received Feb 2008
- Targeted renewable assets in Virginia, North Carolina, or anywhere in PJM
- 36 respondents/49 proposals received
- Dominion is currently working with several respondents



Meeting Virginia RPS Goals: Options Available

1. Utilize existing utility-owned renewable assets or PPAs
2. Develop/construct new utility-owned renewable facilities
3. Purchase renewable energy or RECs from the market



Meeting Virginia RPS Goals: Dominion's Goals

- Dominion's existing utility-owned renewable assets reach 2% level
- To meet with RPS goals, Dominion needs:
 - 4% by 2010
 - 7% by 2016
 - 12% by 2022
- Plan to utilize all available options to meet targets



Summary

1. Dominion is committed to achieving Virginia's voluntary goal of 12% of base year electricity sales coming from renewable resources by 2022
2. Wind energy will be a major contributor to Dominion's renewable strategy
3. Virginia will be the next major step for Dominion's wind developments



Contact

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