Future Paths and Financial Realities

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AEP AMERICAN ELECTRIC POWER

American Electric Power

Strength & scale in assets & operations

- 5.1 million customers in 11 states.
- Largest Transmission Owner in the US with 2,100 miles 765kV

Asset	Size	Industry Rank
Domestic Generation	~38,400 MW	#2
Transmission	~39,000 miles	#1
Distribution	~208,000 miles	#1

Generation	Transmission	Distribution	Customers
			

• Environmental Projects
• Wind
• IGCC
• Carbon Capture & Storage
	• I-765™
	• Electric Transmission Texas JV
	• Electric Transmission America JV
	• AEP-ABB Alliance
		• Distribution automation
		• Self-healing distribution circuits
		• Advanced metering
		• Communications infrastructure
		• Mobile workforce
		• Internal energy efficiency
		• Integration platform for advanced visualization and analytics
		• Distributed generation and energy storage
			• Customer programs and incentives
			  • Energy efficiency
			  • Direct load control
			  • Peak demand reduction
			• Energy storage

Existing generation and transmission control systems	**gridSMART**℠: bridging the gap to provide integrated two-way communications & control across the electricity value chain	Home energy automation

National Landscape

Challenges

- Increasing focus on renewable sources of energy has highlighted the weakness in the existing system and in the planning processes used to develop new transmission

- Concerns over the environmental impact of burning fossil fuels will continue to challenge the industry

- Existing transmission system:
  - aging and in need of upgrades
  - was not built to support competitive regional markets and is not adequate to meet future demand growth and integrate potential renewable generation resources
  - not designed to be adaptive to major changes in the generation supply mix

Opportunities

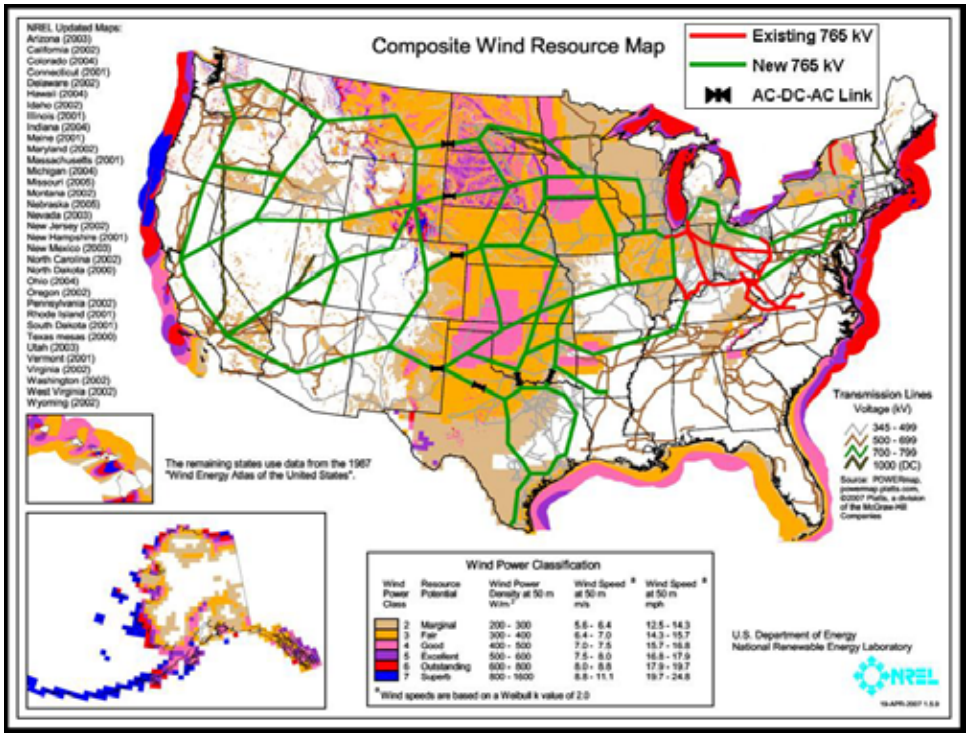
- Strategic expansion of the transmission grid, including development of a robust national EHV transmission system can better prepare the United States to address these challenges in a timely, cost effective and efficient manner.

Challenges for Renewables: Resource Isolation

Today…..

- Transmission infrastructure is designed to serve regional needs
- Limited if any ability to transport energy between regions
- Areas with the largest, most efficient and cost effective renewable generation have more than they can consume and are electrically isolated
- Timely development of needed infrastructure requires *"Changing the way we think"*
- Transitioning the way we plan the system will enable us to meet national and regional challenges!

Challenges for Renewables: Lost Opportunities



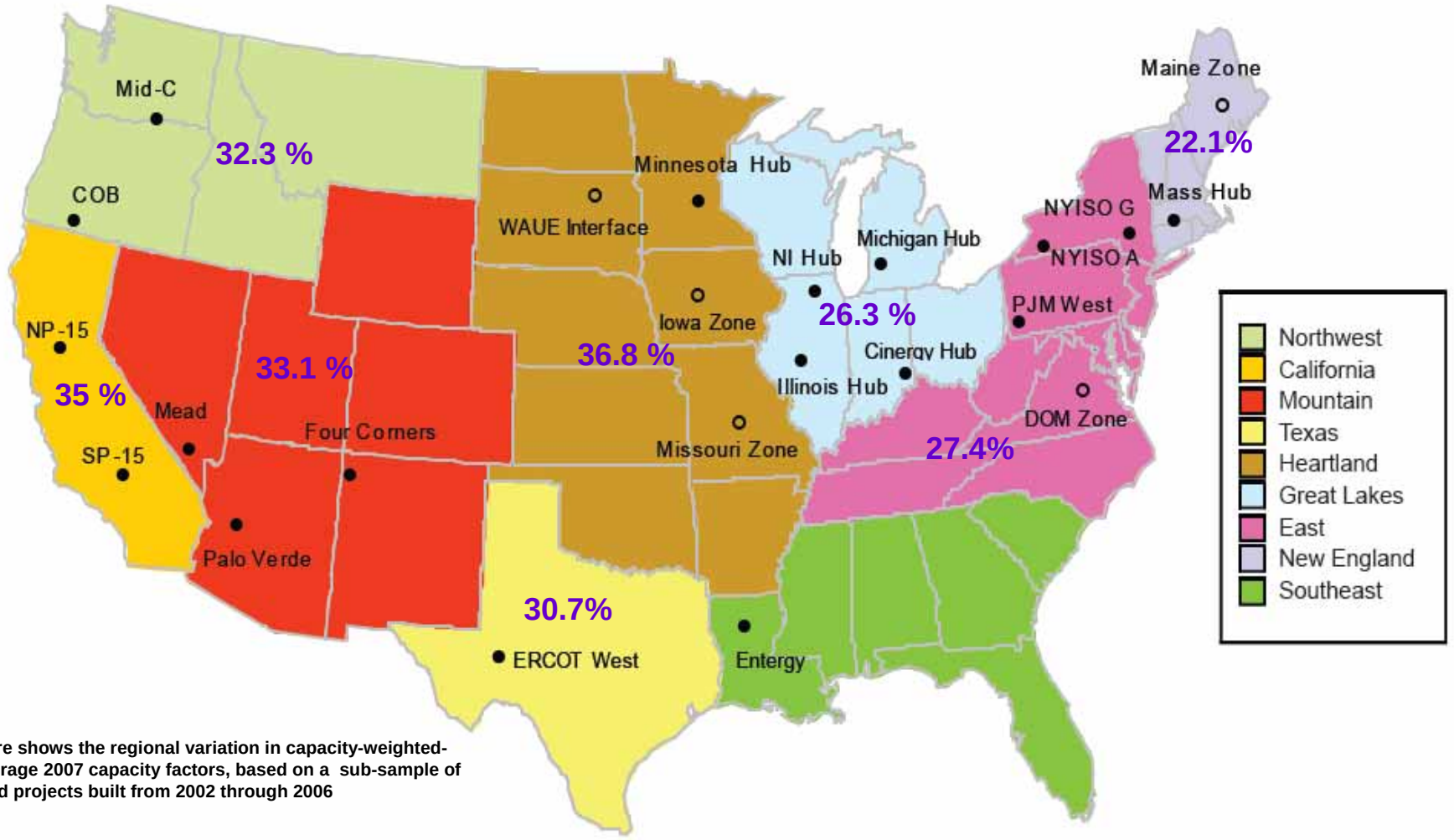
Risks to Our Future….

- Limitations of our current system prevents utilities and regions from "leaning" on each other for support.
- Current transmission planning processes identify solutions to reliability problems with a limited if any focus on grid optimization.
- Renewable generation resource development cycles have been reduced to 5-24months with transmission development stagnating.
- Maintaining the traditional planning model of G driving T will inhibit our ability to integrate large scale renewables.

Challenges for Wind Expansion

- **Remote Location**: Best wind resources far from load centers.
- **Wide Geographic Scope**: Many broad regions have excellent resources.
- **Variability**: Impact on system operations may be a concern.
- **Congested Connections**: Existing congestion limits the economic viability of connecting large scale renewables.
- **Timing**: Time line for wind projects much shorter than backbone transmission projects that must be planned now for in-service dates far into future.
- **Policy**: Differences in policies from state to state and at the federal level.

Defining the Challenge: Capacity Factors (2007)



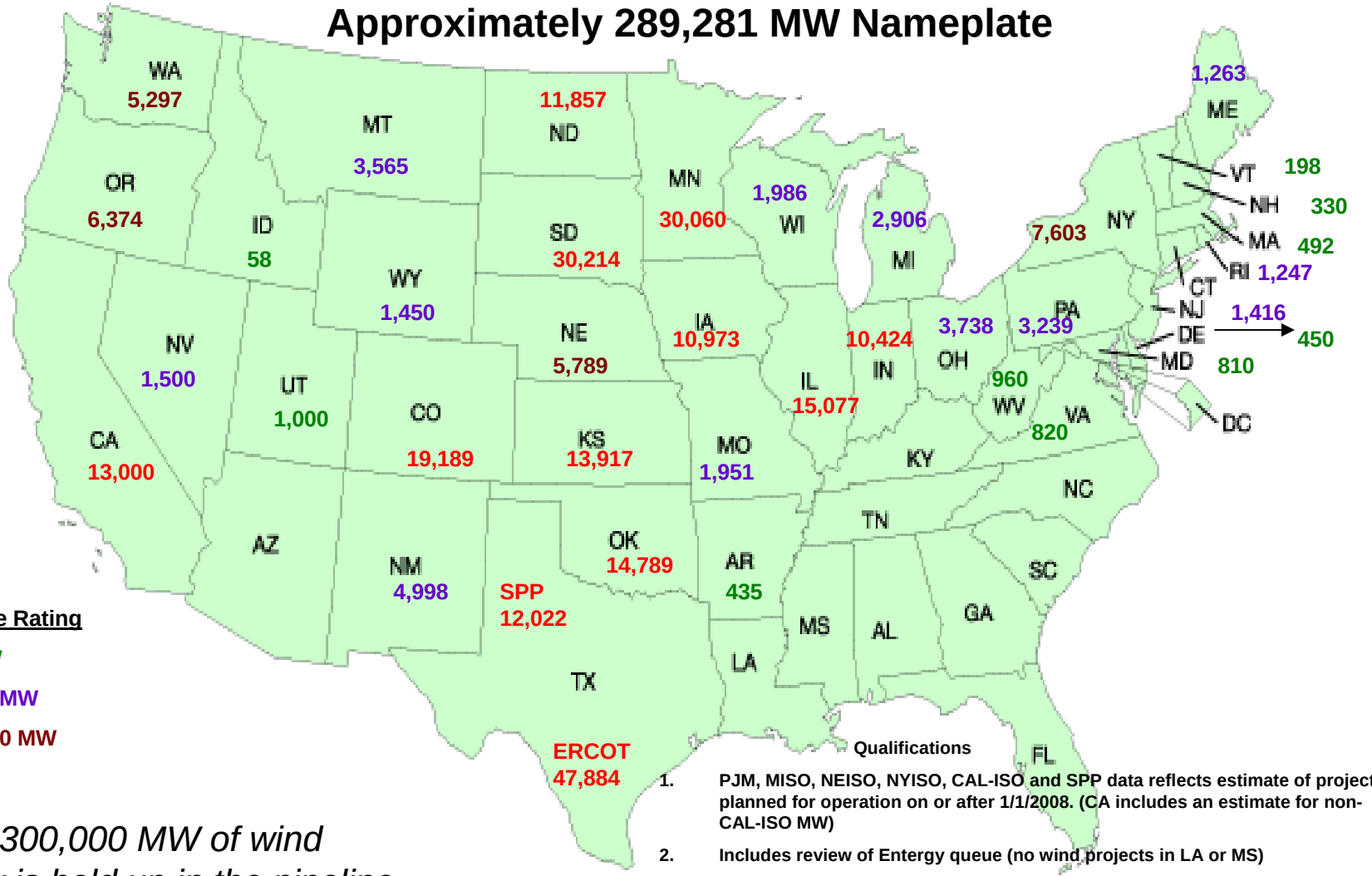
Note: Figure shows the regional variation in capacity-weighted-Average 2007 capacity factors, based on a sub-sample of wind projects built from 2002 through 2006

Capacity factors drive project economics.

Source: Annual Report on U.S Wind Power Installation, Cost, and Performance Trends: 2007

Wind Generation Interconnection Queue by State

Approximately 289,281 MW Nameplate



Name Plate Rating

1-1000 MW

1001-5000 MW

5001-10,000 MW

>10,000

"*Nearly 300,000 MW of wind capacity is held up in the pipeline due to transmission limitations*. **~Denise Bode, CEO of AWEA,**

Qualifications

1. **PJM, MISO, NEISO, NYISO, CAL-ISO and SPP data reflects estimate of projects planned for operation on or after 1/1/2008. (CA includes an estimate for non-CAL-ISO MW)**
2. **Includes review of Entergy queue (no wind projects in LA or MS)**
3. **ERCOT - Texas reflects 47,884 MW total projects characterized as "public" - 7,194 MW and "non-public" - 40,691 MW.**
4. **West state data includes: BPA, WAPA, Tri-State, Pacificorp, IdaCorp, Northwestern, NPPD, PSCo with Utah (RM supplement) (Non Central Source for WECC outside of CA.**
5. **Excludes TVA and SE USA . Also excludes Canadian provinces synchronized to the eastern and western USA interconnections.**

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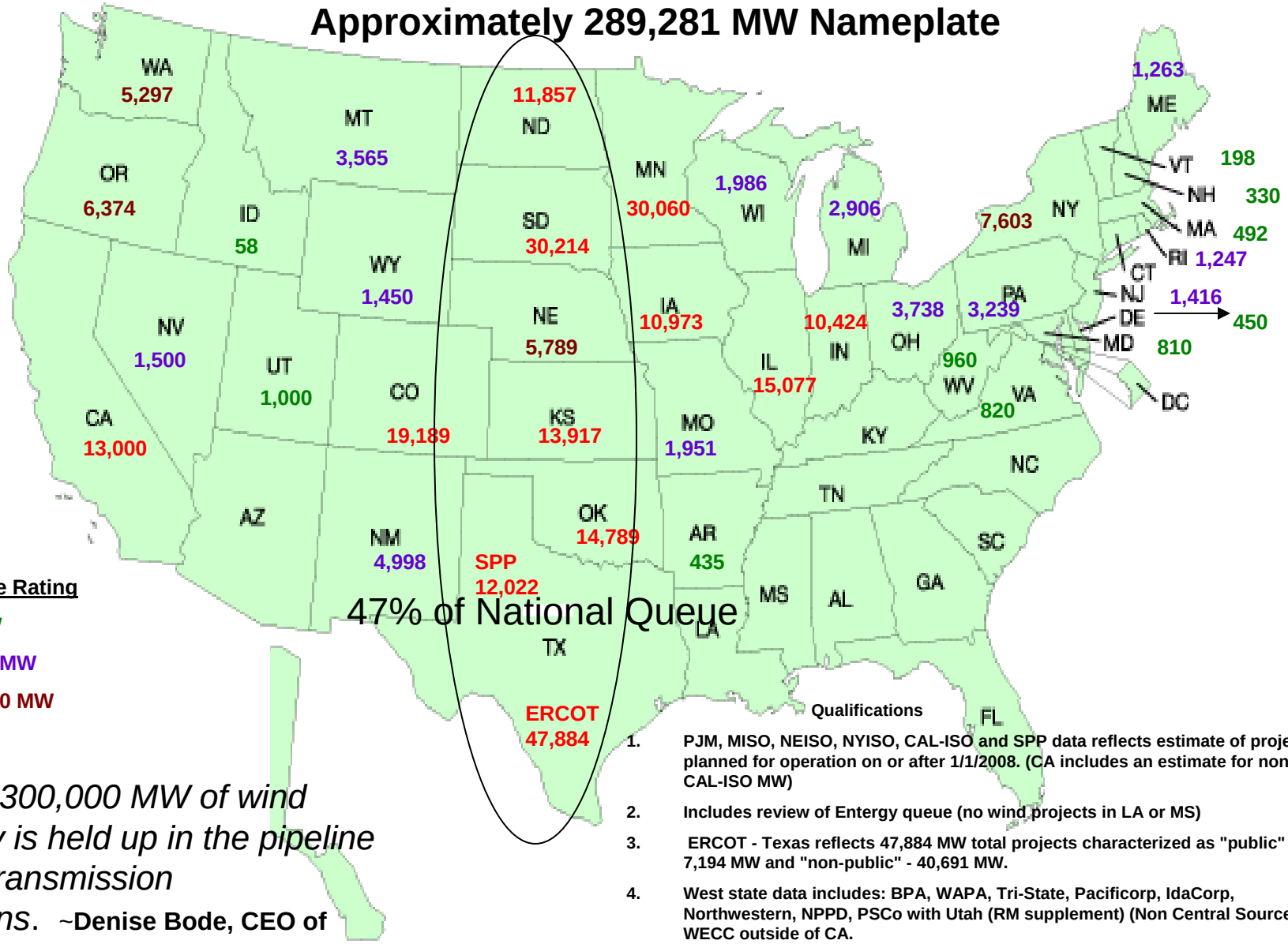

47% of National Queue

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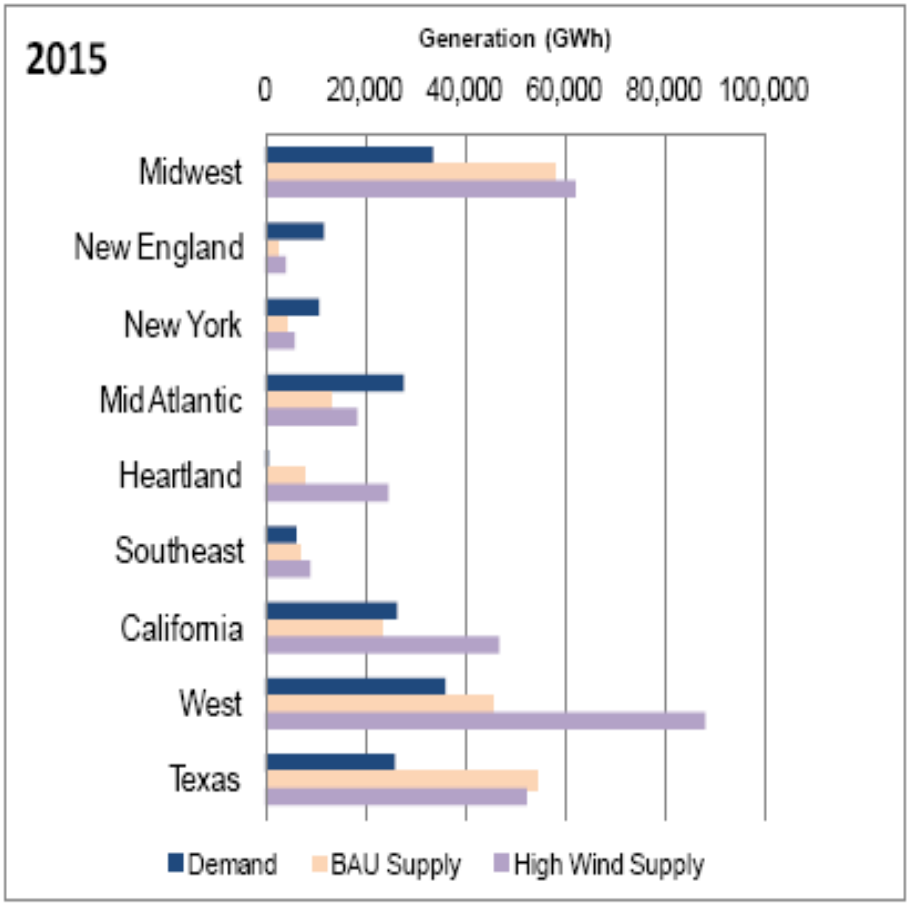
Regional Challenges: Supply and Demand

- NREL study assesses the balance between the demand and supply of new renewable electricity in the US on regional basis through 2015
- Two scenarios
  - A business as usual (BAU) scenario based on current growth rates in renewables in regions
  - A market-based scenario with higher wind energy development nationally
- Renewable energy deficits are projected for New England, New York and Mid-Atlantic areas
- Notable surpluses in the Midwest, the Heartland, Texas and the West

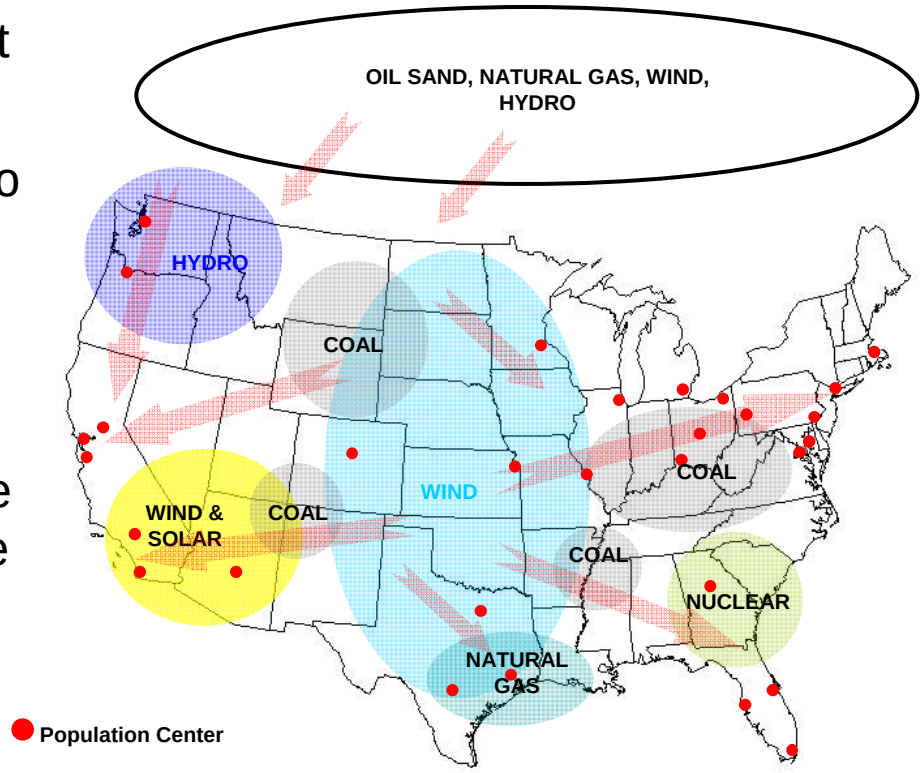


Source: http://www.nrel.gov/docs/fy09osti/45041.pdf

Regional/National Challenges….

Accessing America's Resources

- Optimal use of renewable and fossil fuels are constrained due to insufficient transmission infrastructure
- Economic growth remains closely tied to energy and climate related initiatives, requiring policies which understand these interdependencies.
- Investment in a a robust and efficient EHV transmission system will enable the US to use its resources when and where it may be needed in the future.



North Dakota, South Dakota, Texas, Kansas, Oklahoma, Minnesota, Montana, Wyoming, Nebraska and IOWA are ranked as the top ten states in wind capacity and resource ranking based on wind potential.

National Landscape: EHV Transmission Vision

Not All Transmission Solutions Are Created Equal…

- Extra-high voltage (EHV), high-capacity, highly efficient interstate transmission system provides unique benefits that sets it apart from lower voltage solutions:
  - Increases transmission performance and reliability for large geographic regions, across multiple states and regions
  - Enhances reliability, operational performance, reduces congestion and decreases costs to consumers
  - Integrates large-scale renewable generation in remote areas and facilitates efficient movement of energy to load centers
  - Provides long-term system benefits and avoids reliance on "Just in time" transmission planning

AEP's Vision for an Interstate Transmission System would establish EHV as the backbone of the US Transmission System

Issues Shaping Transmission Policy

21rst Century System Requires a 21rst Century Vision

- Recognition that EHV transmission is a unique class of infrastructure that provides unique benefits and drives the need for EHV policy development including:
  - Clear delineation between state and federal jurisdiction to foster EHV investment and its associated benefits
  - Federal siting of EHV lines
  - Cost allocation methodology which recognizes the broad system benefits associated with EHV development
- Recognize that "Efficiency Improvements" and "Grid Modernization" can be best secured by designing an efficient robust transmission grid

"We need a true nationwide transmission version of our interstate highway system; a grid of extra-high voltage backbone transmission lines reaching out to remote resources and overlaying, reinforcing, and tying together the existing grid in each interconnection to an extent never before seen." *Suedeen Kelly-Commissioner FERC*

Issues Shaping Transmission Policy (continued)

21rst Century System Requires a 21rst Century Vision

- Evolution in EHV Transmission planning
  - Planning Transmission Systems not Transmission Lines
  - "Common language/rules" for EHV planning
  - Transmission should be as transparent as possible to generation
- EHV planning is needed both "within and between" traditional planning regions
- Need to advance a "System-Based" approach to planning where policy decisions drive G and T investment

"Change is the law of life. And those who look only to the past or present are certain to miss the future." *John Fitzgerald Kennedy*