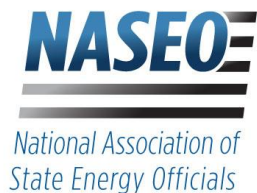


Renewable Energy Demand: State and Federal Drivers

October 2012



About NASEO

- Only national non-profit organization whose membership includes the 56 governor-designated energy officials from each state and territory
- Improve the effectiveness of state energy programs and policies
- Seven Regional Coordinators across the nation to aid in sharing lessons learned for successful policy and program replication
- Act as a repository of information on issues of particular concern to the states and their citizens (e.g., financing, buildings)
- Committee structure includes, Renewables, Electricity, Buildings, Industry, Energy Assurance, Financing, Government Affairs
- Serve as the voice of SEOs in Washington, DC



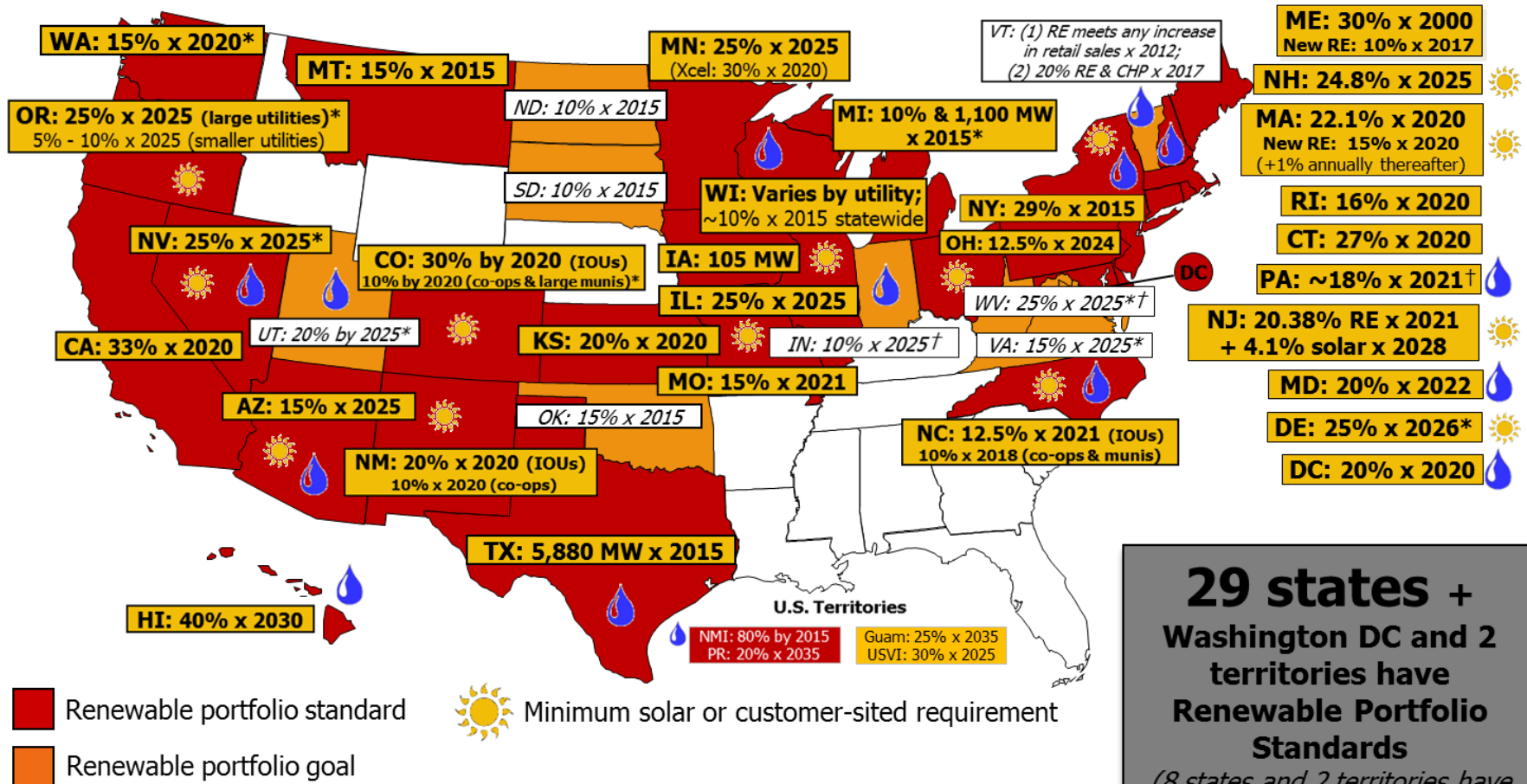
Presentation Outline

Demand Drivers

- State Policy and Leadership
- State Financial Incentives
- State Economic Development Initiatives
- Regional Infrastructure Initiatives
- Federal Initiatives



+ State Renewable Portfolio Standards



+ State Renewable Portfolio Standards

RPS States (Goal)	RPS Obligations by Year (MWh)						
	RPS Achievement by Year (% of RPS Obligations)						
	1999	2001	2003	2005	2007	2009	2011
Iowa (105 MW)	295,800 (100%)	295,800 (100%)	295,800 (100%)	295,800 (100%)	295,800 (100%)	295,800 (100%)	295,800 (100%)
Arizona (15% x 2025)		54,261 (85%)	217,024 (30%)	407,842 (25%)	631,122 (30%)	824,430 (90%)	1,181,860 (100%)
Maine (40% x 2017)		3,532,009 (100%)	3,360,998 (100%)	3,598,072 (100%)	3,510,587 (100%)	3,514,043 (100%)	no data (no data)
Minn. (30% x 2020*)			2,025,750 (72%)	3,297,996 (81%)	3,910,100 (99%)	3,860,255 (100%)	no data (no data)
Nevada (25% x 2025)			1,289,903 (30%)	1,714,769 (95%)	2,775,882 (50%)	3,551,815 (100%)	4,468,124 (100%)
Texas (10,000 MW x 2025)			1,322,161 (96%)	1,505,855 (99%)	3,421,626 (99%)	6,799,347 (100%)	no data (no data)
Calif. (33% x 2020)				21,748,036 (100%)	25,643,076 (100%)	29,537,501 (89%)	35,651,409 (98%)
Colorado (30% x 2020)					898,043 (100%)	1,646,899 (100%)	3,682,075 (100%)
New York (29% x 2015)					2,376,659 (25%)	4,868,849 (61%)	4,572,910 (67%)

+ Procurement and Planning Mechanisms



■ Procurement Strategies

- Long-term power purchase contracts
 - Massachusetts: 15 year PPA for off-shore wind
 - Rhode Island: 2009 Long-Term Contracting Standard for Renewable Energy
 - Michigan: PSC approval of 2, 20-year wind contracts
 - Arizona: Arizona Public Service 2, 25 year PPA for solar energy
 - Nationwide: prolific use of non-utility scale solar PPAs
- Feed-in Tariffs
 - California authorization the purchase of up to 480 MW of renewable energy generating capacity from systems < 1.5 MW

■ Resource Planning

- Shift from “least cost” generation resource planning to an approach that includes non-economic benefits
 - Arizona: utilities should consider fuel diversity
 - Delaware: utilities should identify resources with environmental benefits, increase fuel diversity, improve reliability, and encourage price stability

+ Renewable Energy on Public Sector Facilities

■ State Lead by Example (LBE) and ESPC

- Massachusetts - 15% of state agency annual electricity consumption is procured from renewable sources by 2012, and 30% by 2020
- Minnesota: Executive Order 11-12 – use of Guaranteed Savings Contracts for EE and RE

■ Qualified Energy Conservation Bonds (as of June 2012)

- 111 projects financed with QECBs across 23 states for a total of \$671 million
- \$2.5 Billion unspent bonds
- 33 states had not used any of their allocation
- 75% of QECBs issued in the Southwest have financed renewable energy installations

■ Net-Zero Energy Building Movement

- Richardsville Elementary School
- Solar PV key to getting to net-zero

Renewable Energy in CA's State Facilities
Source: California's Renewable Energy Directory



Richardsville Elementary School. Warren County KY School District.

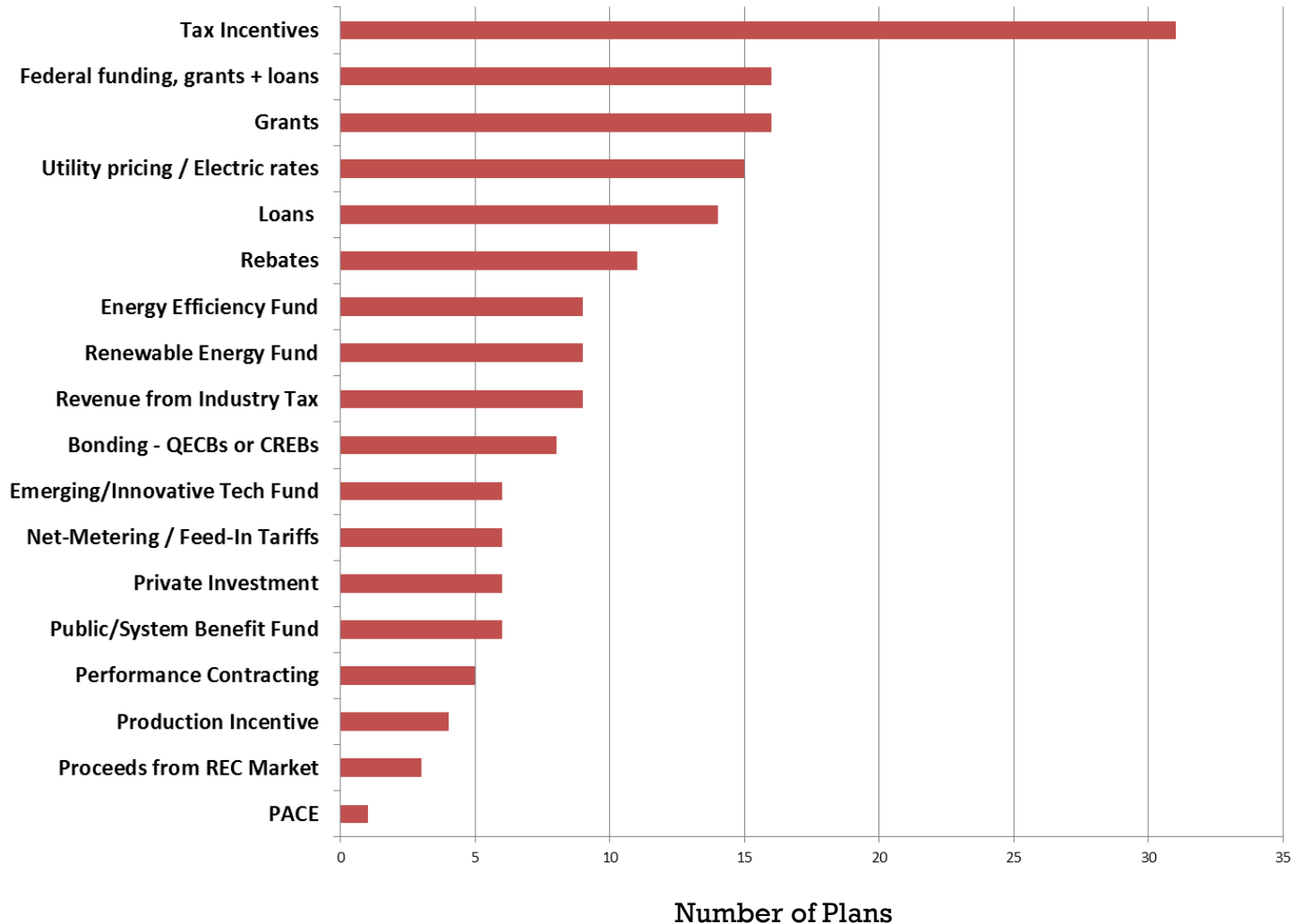
+ State Renewable Energy Financial Incentives

Financial Incentive	Number of States
Personal or Corporate Tax Credit	24
Sales Tax Deduction/Exemption	29*
Rebates	21**
Public Benefits Funds	20**
State Property Tax Incentives	33*
Loan Programs	37
Grant Program	16*

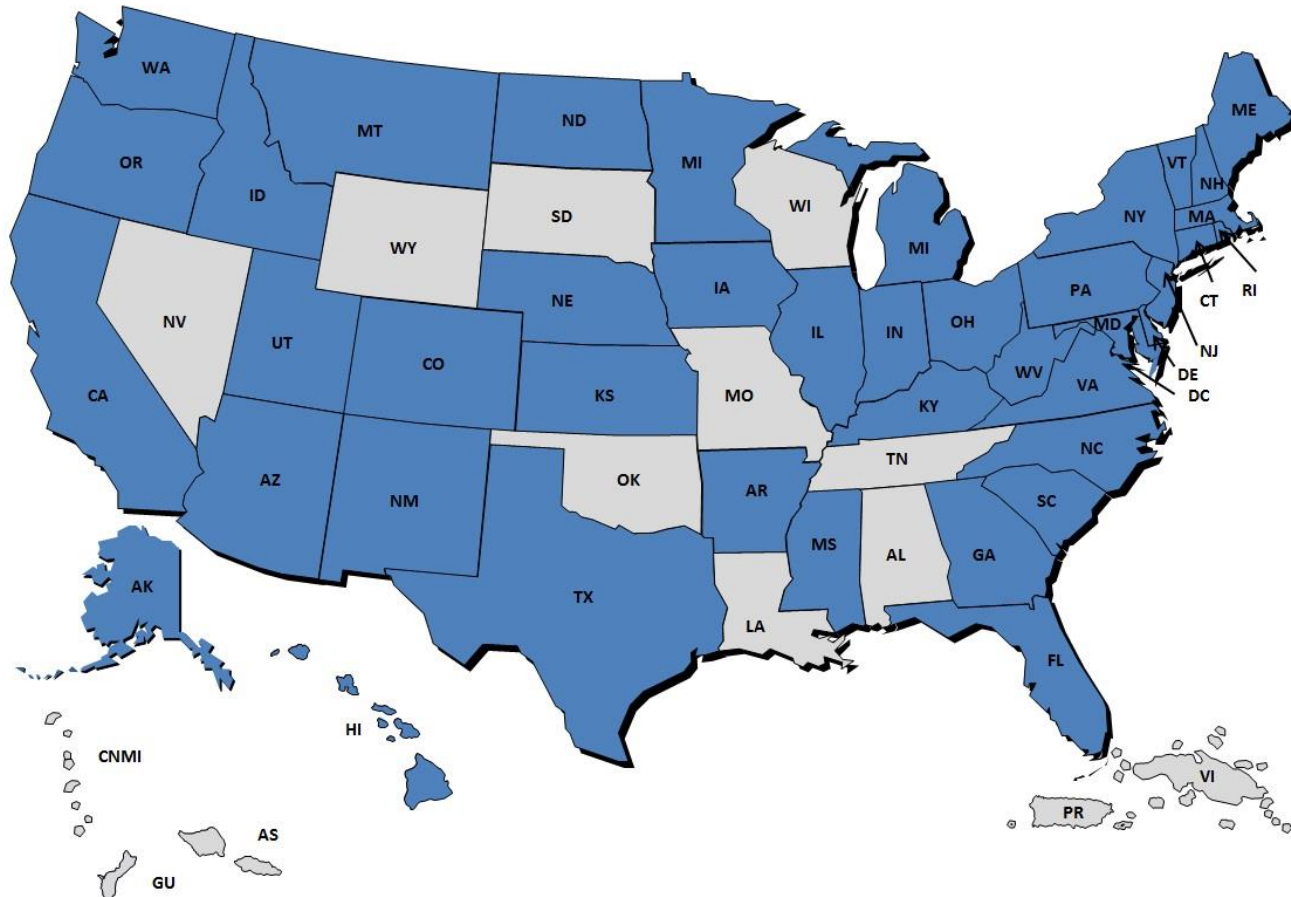
** includes Puerto Rico*

*** includes Puerto Rico and the District of Columbia*

+ State Comprehensive Energy Plans: Financing Mechanisms

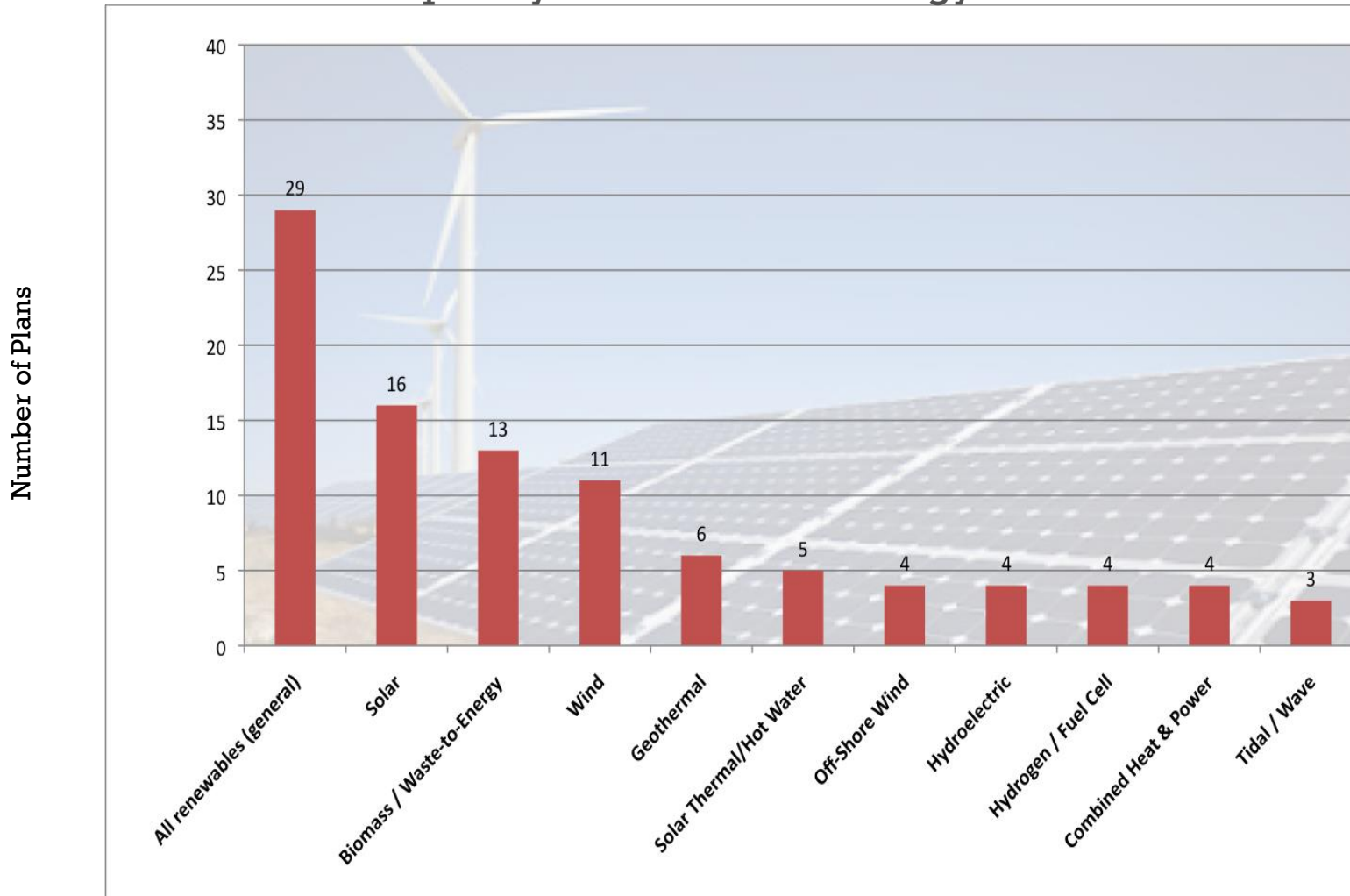


+ State Comprehensive Energy Plans



+ State Comprehensive Energy Plans: Renewable Energy

Frequency of Renewable Energy Sources





State Economic Development Opportunities

- **California** - California Infrastructure and Economic Development Bank (I-Bank)
- **Florida** - Enterprise Florida
- **Maryland** - Invest Maryland
- **Michigan** - Pure Michigan Business Connect
- **New York** - Regional Economic Development Council
- **Ohio** - Ohio Third Frontier
- **Tennessee** - Jobs4TN/INCITE
- **Texas** - Texas Enterprise Fund
- **Virginia** - Commission on Economic Development and Job Creation

+ Infrastructure: Transmission

■ Eastern Interconnection States Planning Council

- 39 states + DC, City of New Orleans, 8 Canadian Provinces
- State Utility Commissions, Governor's Offices, State Energy Offices, and others
- Clean Energy Zone Study and Mapping Tool



■ Western Governor's Regional Transmission Expansion Planning

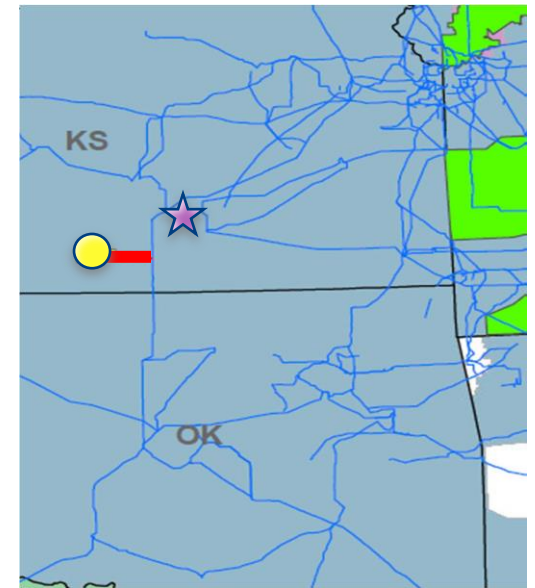
- 2008 Western Renewable Energy Zones
- Draft recommendations for improved siting and permitting guidelines

■ Texas Competitive Renewable Energy Zones



+ Infrastructure: Transmission

- **Kansas: Flat Ridge 2 Wind Farm**
 - 419 MW – largest in the state
 - 100 wind turbines across 66,000 acres
 - Expected online end of 2012
- **Economic Development**
 - 500 construction jobs
 - 30 operations jobs
 - Payments to landowners and local governments
- **Interconnection**
 - 2 interconnection agreements with Westar of 600 MW
 - Point of interconnection – new 345 KV substation
 - 45 mile 345 kV transmission line



- ★ Wichita, KS
- Flat Ridge 2
- New 345 kV line
- Existing t-lines

+ Infrastructure: Transmission

■ Champlain Hudson Power Express

- 320 kV; 1,000 MW HVdc
- 333 miles from Canada to New York metro area
- Bringing wind and hydro power into New York
- \$2.2 billion project
- Expected completion in the fall 2017



■ Economic Development

- 300 direct construction jobs; 1,200 indirect jobs during the construction period
- \$20 million/yr in tax revenue to areas where line is buried along right of ways
- \$650 million/yr electricity savings for NY consumers through access to low cost hydropower

■ Ancillary Benefits

- “Blackstart” capability

+ Federal Outlook

■ Congress

- Production Tax Credit
- Investment Tax Credit

■ EPA

- Air regulations - CSAPR, MATS
- EE/RE in State Implementation Plans
- Renewable Fuel Standard

■ DOE

- 1705 Loan Guarantee Program
- Power Marketing Authorities

■ FERC

- Order 1000

■ Department of Defense

- Navy, Army, Air Force

■ U.S. Department of Agriculture

- Loan Guarantees, Biomass Crop Assistance Program, etc.

+ Infrastructure: Natural Gas

- Natural gas is cheap

- \$2.96/MMBtu (Henry Hub price, September 12, 2012)

- System optimization

- Economic benefits

- Portfolio diversification

- Pressure on renewables

Natural gas spot prices (Henry Hub)





Joint NASEO- ASERTTI Renewable Energy Committee

- Support the development of project and program implementation strategies to accelerate commercialization
- Identify issues and strategies to enhance the capabilities and success of existing efforts among states, DOE and the national labs
- Identify and share demonstrable program and project case studies
- Provide technical support to reduce gaps and barriers among basic and applied research



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Questions?
Thank you!

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