State Renewable Energy Policy Update

Ryan Wiser
Lawrence Berkeley National Laboratory
RHWiser@lbl.gov

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Presentation Overview

- Renewables Portfolio Standards
- System Benefits Charges
- Portfolio Management, IRP, and Set Asides
- Tax Incentives

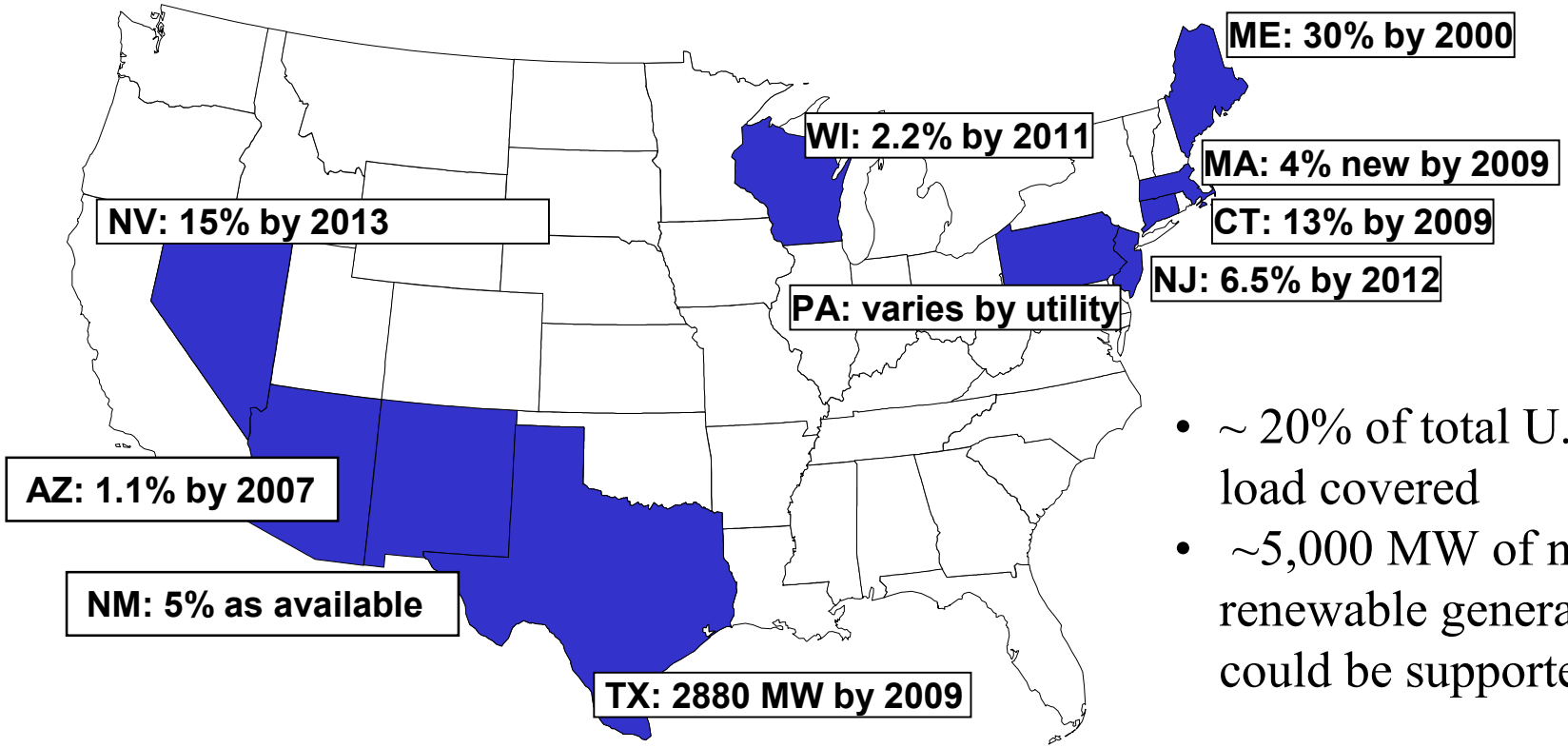
Renewables Portfolio Standard

WHAT IS IT???

- Requirement on retail suppliers…
- to supply a minimum percentage of retail load…
- with eligible renewable energy.

Sometimes accompanied with a tradable REC program to ease compliance

State Renewables Portfolio Standards



- ~ 20% of total U.S. load covered
- ~5,000 MW of new renewable generation could be supported

- Purchase obligations (but not RPS) also imposed in Minnesota and Iowa
- Renewable energy "goals" established in Illinois, Minnesota, and Hawaii

State RPS Policies Differ

- Standard levels
- Resource eligibility
- Treatment of existing plants
- Tiers and bands
- Start and end dates
- Application of standards
- Enforcement/penalties
- Renewable energy credit (REC) trading
- Implementation status

The Most Important Lesson Learned to Date

An RPS Can Be A…

Elegant, cost effective, flexible policy to meet RE targets	?	**Poorly designed, ineffective, or costly way to meet RE targets**

The legislative and regulatory design details matter!!!

RPS Successes: The Texas Wind Rush and More

- Texas
  - 2000 MW RPS by 2009 propelled state to one of the largest wind market in US
  - 900 MW of wind installed in 2001, easily exceeding 400 MW target in 2002
  - Project costs at or below 3 cents/kWh
- Other States
  - RPS policies in Nevada, Wisconsin, and New Jersey are also now having a beneficial impact on wind development in those states and regions

RPS Success Factors

- Strong political support and regulatory commitment
- Predictable long-term RE targets ensure new supply and economies of scale
- Purchase requirement applies to nearly all suppliers
- Credible and automatic enforcement
- Well designed renewable energy credit system for tracking compliance

Things to Avoid

- Inadequate Enforcement
  - May result in non-compliance, investment risk increases
  - *Example:* many RPS policies vague on level and stringency of penalties
- Overly-Broad Renewable Definitions
  - RPS will not protect or increase renewable energy supply
  - *Example:* Maine RPS eligibility rules result in no new RE development
- RPS Not Imposed Equally
  - Limits impact of RPS, creates competitive supplier entry barriers, and creates political vulnerability
  - *Example:* CT exempts standard offer service

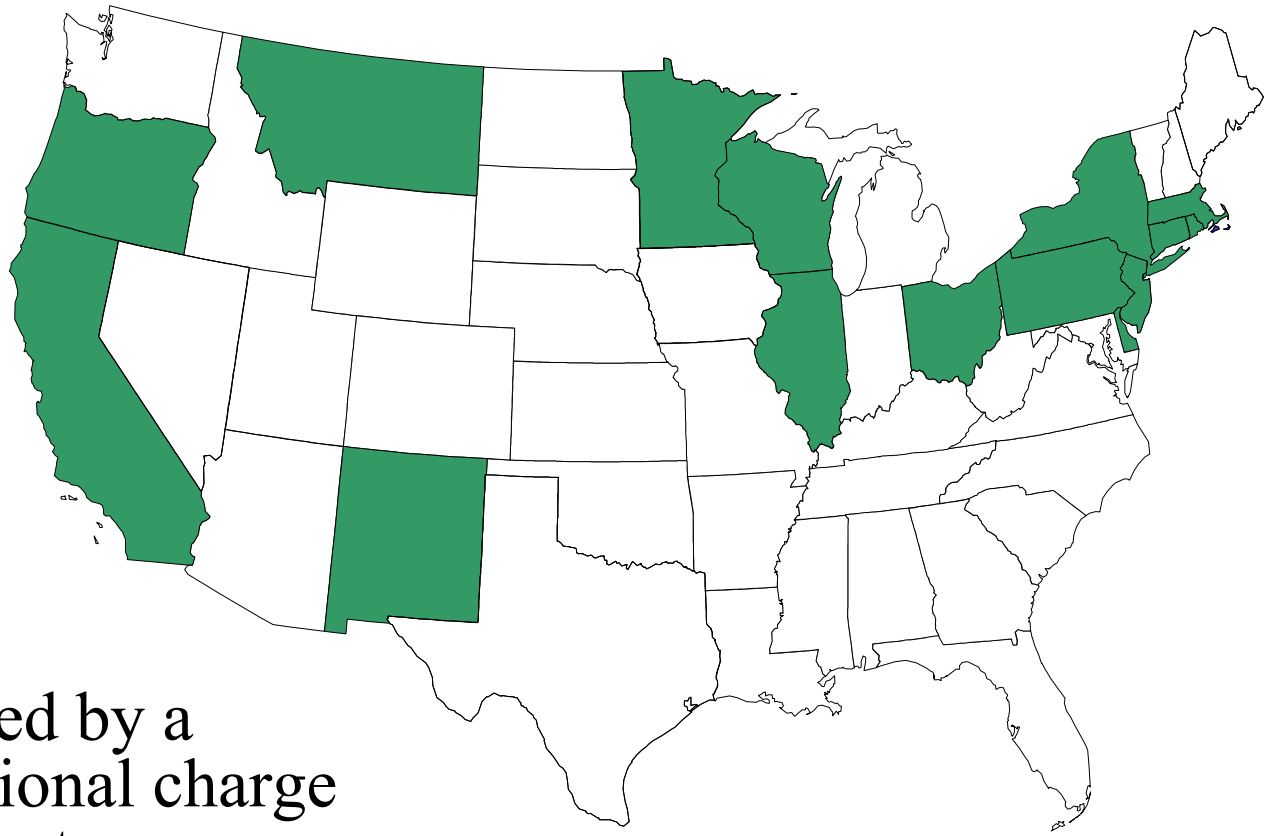
Things to Avoid

- Unclear Standard or End Date
  - Makes financing difficult, raises costs, creates paralysis
  - *Example:* CT and ME end date of standards unclear
- No Tradability of RECs
  - Many states have not yet made RPS compliance tradable
  - Tradable RECs not essential, but improves liquidity, reduces compliance costs, eases verification and tracking
- Special Issues for Regulated Markets
  - Must consider cost recovery for regulated utilities and appropriate standards for long-term contracting

Recent Action

- National RPS included in Senate energy package
- State RPS policies continue to be considered in a large number of states, examples:
  - California
  - Colorado
  - New Mexico
  - Etc…

State Renewable Energy Funds



Often funded by a small additional charge on electric rates

Funding Levels are Substantial

State	Annual Funding ($ million)	Funding Duration
CA	$135	1998 – 2012
CT	$15 → $30	2000 – indefinite
DE	$1 (maximum)	10/1999 – indefinite
IL	$5	1998 – 2007
MA	$30 → $20	1998 – indefinite
MN	$9	2000 – indefinite
MT	$2	1999 – July 2003
NJ	$30	2001 – 2008
NM	$4	2007 – indefinite
NY	$6 → $14	7/1998 – 6/2006
OH	$15 → $5 (portion of)	2001-2010
OR	$8.6	10/2001 – 9/2010
PA	$10.8 (portion of)	1999 – indefinite
RI	$2	1997 – 2003
WI	$1 → $4.8	4/1999 – indefinite

Cumulative funding of $3.5 billion through 2012

State Support for Wind Power

- Grants and production incentives for large projects
- Grants to customer-sited, small wind power projects
- Incentives to stimulate green power demand
- Customer education
- Resource and transmission studies

Incentives for Large Projects

- **Total Obligated Funds:** $265 million from 8 states
- **Funding Types:** Various forms of grants and production incentives (PA has also used loans)
- **Total Capacity:** 1,500 MW RE capacity potential – over 1,100 MW of wind power
- **Incentive Levels:** 0.26 –7.3 cents/kWh on equivalent 5-year production incentive basis for wind projects

Incentives for Large Projects

State	Incentive Type	Level of Funding ($ million)	Capacity Supported (MW (resource))	Normalized ¢/kWh over 5 Yrs
CA	5-yr production incentive	$162	530 (assorted)	1.13
		$40	471 (assorted)	0.58
		$40	300 (assorted)	0.72
IL††	Up-front grant	$0.55	3 (landfill gas)	0.61
		$1	3 (hydro)	2.01
		$0.352	1.2 (hydro)	1.77
		$0.55	15 (landfill gas)	0.12
MA	Forgivable loan	$0.076	27 (wind)	unclear
	Forgivable loan	$0.150	4-6 (landfill gas)	
	Up-front grant	$0.128	5-10 (PV)	
MN	Up-front grant	$1.3	1.7 (biogas)	2.56
		$5.1	3.2 (hydro)	8.56
		$1.65	6.3 (wind)	2.26
MT	3-yr production incentive	$1.5	3 (wind)	3.56
NY	Up-front grant	$7	41.55 (wind)	1.77
		$4	6.6 (wind)	7.30
PA	Front-loaded production incentive	$6	67 (wind)	0.90
RI	Forgivable loan	$0.15	12.5 (wind)	unclear

Lessons Learned

- Clean energy funds can provide critical support for wind, but…
- Size and political stability of funds may limit effectiveness over long term, especially for large projects
- Some states, especially in New England, have not placed much emphasis on wind power project development yet (CT and MA)
- When large wind has been supported, issues still open to resolution include:
  - Some projects to which funds are obligated will not be developed due to speculative bidding and lack of PPAs
  - Lack of clarity on when and how the federal PTC is reduced by state incentives creates uncertainty
  - State SBC funds not always located in states with good wind resources; hesitancy among some funds to look outside of their borders for projects

Portfolio Management, IRP, and Set Asides

- New policies such as RPS and SBC can be used, but are not essential, in still-regulated markets
- Some states have been successful through various forms of portfolio management and set asides
  - Minnesota wind power mandate – 425 MW wind so far
  - Iowa wind power mandate – 250 MW wind
  - Montana – 150 MW wind in development for default service
  - Colorado – 162 MW project ordered on economics alone
  - California's new structure – CPA/DWR have and may continue to enter into LOIs and contracts with wind
  - Oregon and Washington – BPA considering large number (1000 MW) of incremental wind additions; PacifiCorp Stateline project

Lessons Learned

- At the least, wind should be looked at as a potentially cost-effective resource option in light of fuel price volatility and future environmental regulations
  - CA CPA: Hundreds of MW of wind LOIs at $45/MWh for 10-year contract terms
  - Montana: 150 MW wind bid reportedly priced at 3 cents/kWh
  - Texas and NW: wind projects come in at well below 4 cents/kWh, and sometimes below 3 cents/kWh
- Legislative direction often required to push PUCs and utilities into making these investments

Tax Incentives

- Production or investment tax incentives
  - PTC: Increasing experience at the state level (OK, NM, MD)
  - ITC: A number of states use ITCs for smaller projects
- Sales tax reduction
  - Several states exempt or reduce sales tax for small or large projects
- Property tax reduction
  - Several states exempt or reduce property tax for small or large projects
- Key issue: double dipping
  - Whether these state incentives will trigger the federal PTC double dipping provisions remains unclear; guidance from the IRS is essential
  - If double dipping is triggered, value of state tax incentives is often reduced by ~40%

Conclusion

- The basket of possible policy options is large
- Multiple approaches may be necessary to simultaneously spur large scale development and small system installation
- RPS, SBC, and portfolio management/IRP options are most effective at the state level
- Other approaches (including state tax incentives) unlikely to spur substantial development alone