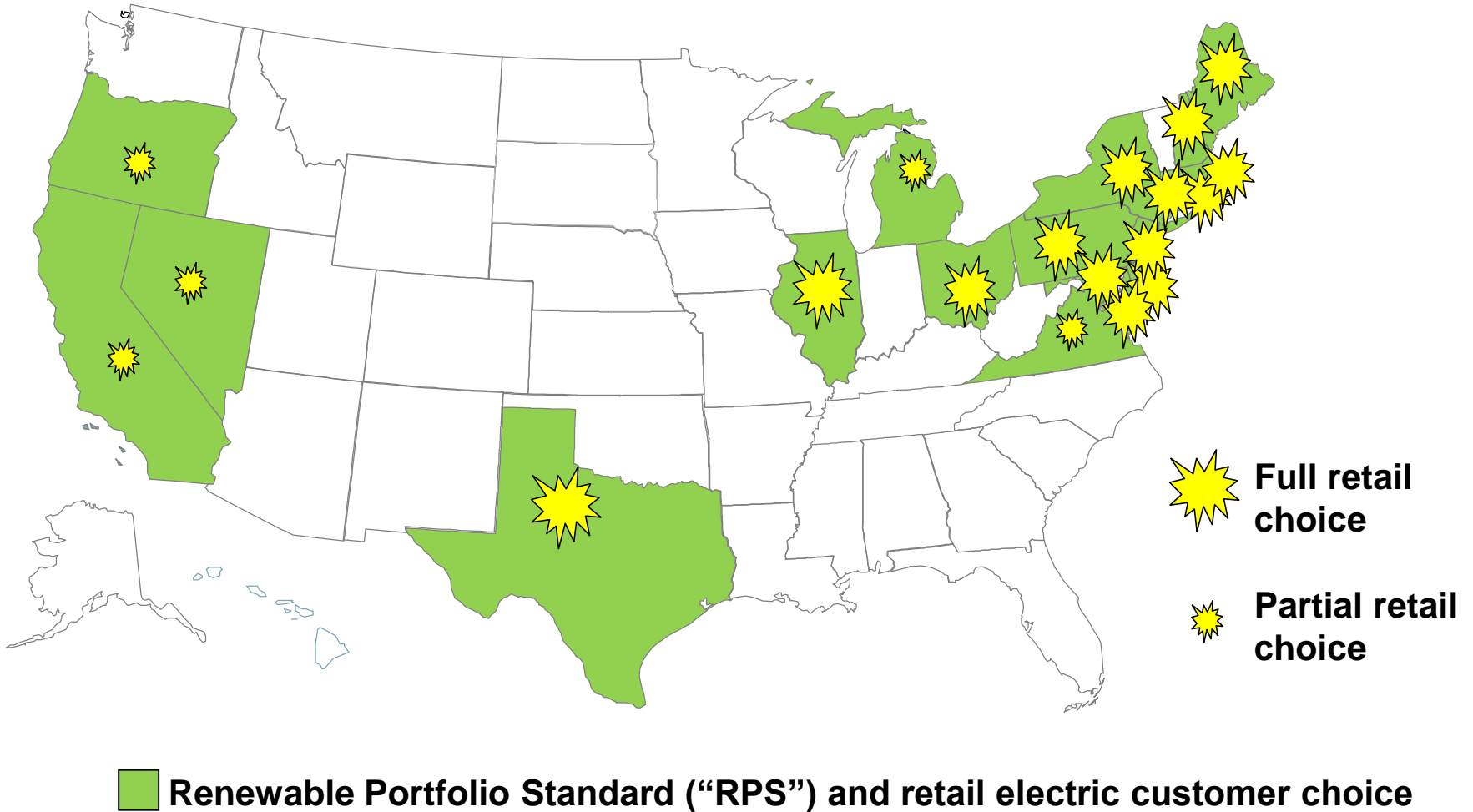


Electric customer choice & renewable energy: Insights from other states

Susan Tierney

**Presentation to the Nevada Committee on Energy Choice
November 7, 2017**

States with Full/Partial Retail Customer Choice and RPS



Core concepts in retail choice states with RPS

- What's the role of the utility in the electric system and market for renewables (“RE”)?
- Who holds the RPS obligation?
- Who purchases/procures RE and renewable energy credits (“RECs”) to comply with RPS requirements?
- What are different methods for procuring RE/RECs in these states?
- Are there examples where RPS requirements changed after choice was initiated?
- What other policies (beyond RPS) have these states adopted to support development of renewable resources?

Common elements of these approaches

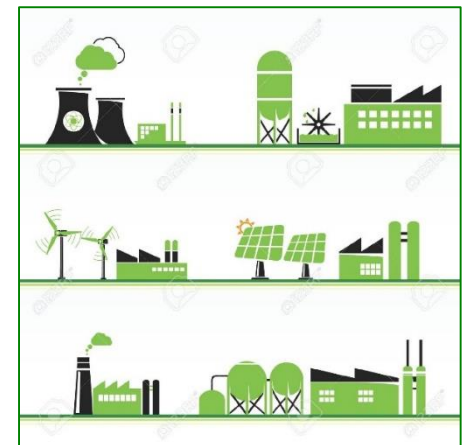


The utility

- Provides wires service
- Provides basic service for customers that don't choose another supplier (except in TX)
- May or may not own any power plants

Customers choose power supplier

- All customers (or customers eligible to choose)
- Suppliers are registered by state



Common elements of these approaches

Load-serving entities (LSEs)

- Utilities provide basic service for customers that don't choose another supplier (except in TX)
- Competitive power suppliers for customers that have exercised choice

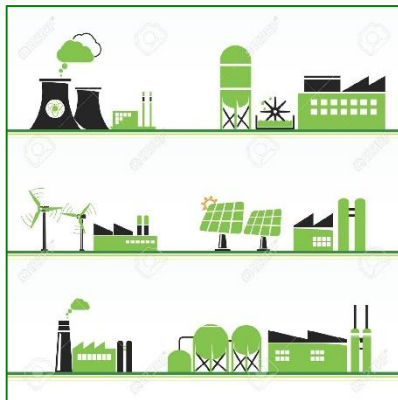


LSEs are typically responsible for compliance with RPS



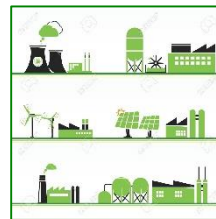
Three core approaches to RE/REC procurement

Each LSE arranges its own RE/RECs



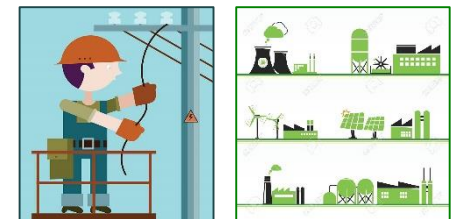
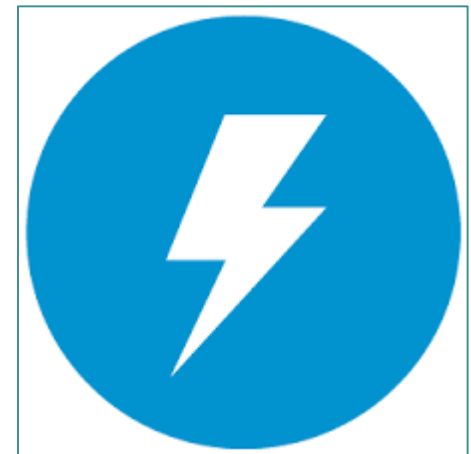
“Decentralized”

Utility also has major role in contracting for RE/RECs



“Hybrid”

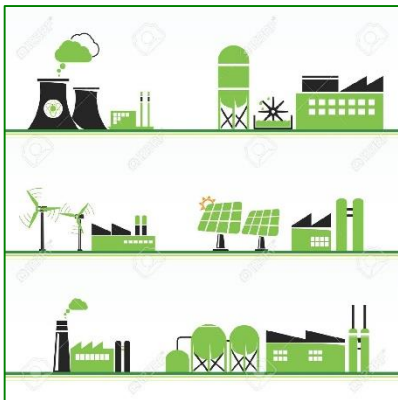
Power agency has major role in contracting for RE/RECs



“Centralized”

“Decentralized” approaches to RE/REC procurement

Every LSE arranges its own RE/RECs

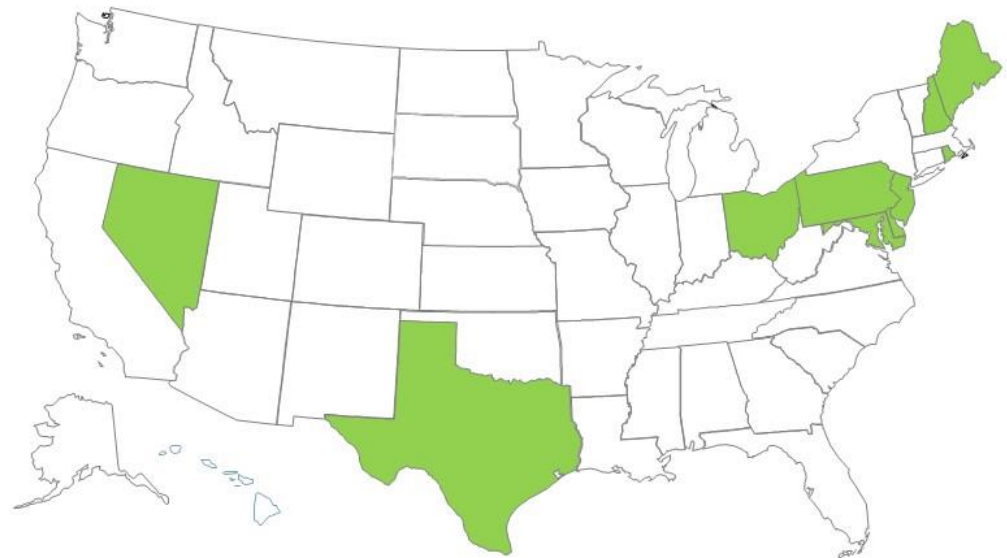


“Decentralized”

Structure:

States with partial or full customer choice, where LSEs hold RPS obligation and without special utility role in procuring renewables or low-carbon supply:

- DC
- DE
- MD
- ME
- NH
- NJ
- NV
- OH
- PA
- RI
- TX



“Decentralized” approaches to RE/REC procurement

Every LSE arranges its own RE/RECs



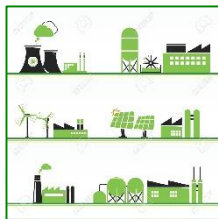
RE/REC Procurement methodologies:

- Competitive suppliers arrange for RE/RECs through contracts, ownership, spot purchases
- Utility providing basic retail service requires suppliers to include RECs as part of supply offers/obligations

“Decentralized”

“Hybrid” approaches to RE/REC procurement

Utility also has major role in contracting for RE/RECs



Structure:

States with partial or full customer choice; LSEs hold RPS obligation; and the investor-owned utilities also play a key role in contracting for RE/RECs

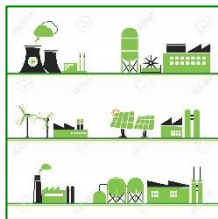
- CA
- CT
- MA



“Hybrid”

“Hybrid” approaches to RE/REC procurement

Utility also has major role in contracting for RE/RECs



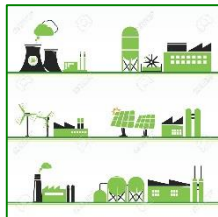
Procurement methodologies

- RFPs and competitive solicitations for renewables, with the opportunity to sign short-term and long-term power purchase agreements
- Solicitations for different types of RE and zero-carbon resources (short-term, medium-term, and long-term contracts)

“Hybrid”

Centralized approaches to RE/REC procurement

Power agency has major role in contracting for RE/RECs

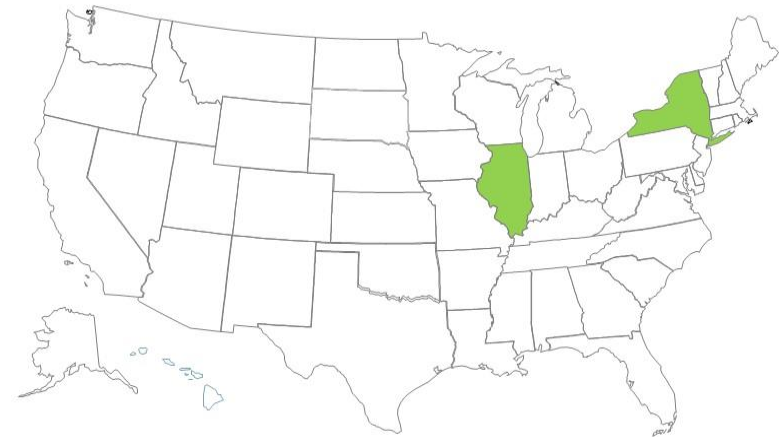


“Centralized”

Structure:

States with full customer choice – where LSEs hold RPS obligation and where there is a centralized responsibility for procuring RE/RECs assigned to a state power agency

- NY
- IL



Centralized approaches to RE/REC procurement

Power agency has major role in contracting for RE/RECs



“Centralized”

Procurement approaches:

- NY: (“Clean Energy Standard”)
 - Multiple “Tiers” or types of resources
 - Budget approved by NY PSC
 - NYSERDA issues periodic RFPs and enters into long-term contracts
 - Paid through non-bypassable charge

- IL (Illinois Power Authority & RPS)
 - IPA issues periodic RFPs and enters into long-term contracts for IOUs
 - Paid through energy charges to basic service customers

Other policies in advancing RE in states with retail competition

- **Green tariffs**
- **Net energy metering**
- **Green banks**
- **Compensation for the value of solar (and distributed energy resources)**
- **Long-term contracting**
- **Regional power markets**
- **Transmission investment for RE development**

Trends and impacts of RPS on RE development

New retrospective study from Lawrence Berkeley Nat'l Lab (7-2017)¹

- Most states (including those with choice) have revised RPS policies over time (e.g., increased targets, solar carve-outs)
- States with competition/choice and RPS have tended to see RE development matched with RPS targets (except Texas has much more)
- Most states with choice meet their RPS targets with RE (not alternative compliance payments)

1. Galen Barbose, *U.S. Renewables Portfolio Standards: 2017 Annual Status Report*, 2017. LBNL-2001031.

Trends and impacts of RPS on RE development

Prospective study of RPS performance from LBNL (2016)²

- RPS drives deeper development of RE (relative to no RPS scenario)
- Non-monetized benefits include reduced air pollution, lower water withdrawals, increased jobs, lower natural gas prices
- ~1% impact on electricity prices

² Mai, Trieu, Ryan H Wisser, Galen L Barbose, Lori Bird, Jenny Heeter, David Keyser, Venkat Krishnan, Jordan Macknick, and Dev Millstein. [*A Prospective Analysis of the Costs, Benefits, and Impacts of U.S. Renewable Portfolio Standards*](#). 2016. LBNL-1006962.

Thanks, and good luck!

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