



# An Overview of the Renewable Energy Certificate Market

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# Transactions 101



# Transactions 101: How do RECs trade?

**One REC represents the attributes associated with one megawatt hour (MWh) of energy from a renewable source**

**RECs are assigned a “vintage” based on the year in which they were generated**

**RECs are quoted by resource type and/or the market eligibility**

## **Examples:**

“5,000 vintage RY 2009 New Jersey Class 1 RECs”

“10,000 vintage 2009 Massachusetts-eligible RECs”

“30,000 Q4 2008 Nationwide Green-E Landfill RECs”

# Voluntary Market: Basics

- Driven by environmental disclosure, consumer demand, corporate commitments, carbon claims
- Voluntary market pricing has increased markedly in the past year → although prices are very low compared to the compliance markets and are expected to remain so
- Voluntary buyers - generally less concerned about geographic location, but often have a preference for a specific resource type – usually wind
- In 2007, total sales in the voluntary markets (Green-e sales as well as utility green pricing programs) were approximately 13.3 million MWh
  - Roughly 1370 MW of around-the-clock generation

# Voluntary Market: Pricing

price discretion based on  
resource type:

Solar: \$2 - \$12



Biomass/Low-impact Hydro: \$1 - \$6

Wind: \$1- \$18



Landfill Gas: \$1 - \$6



Geothermal: \$1-\$10



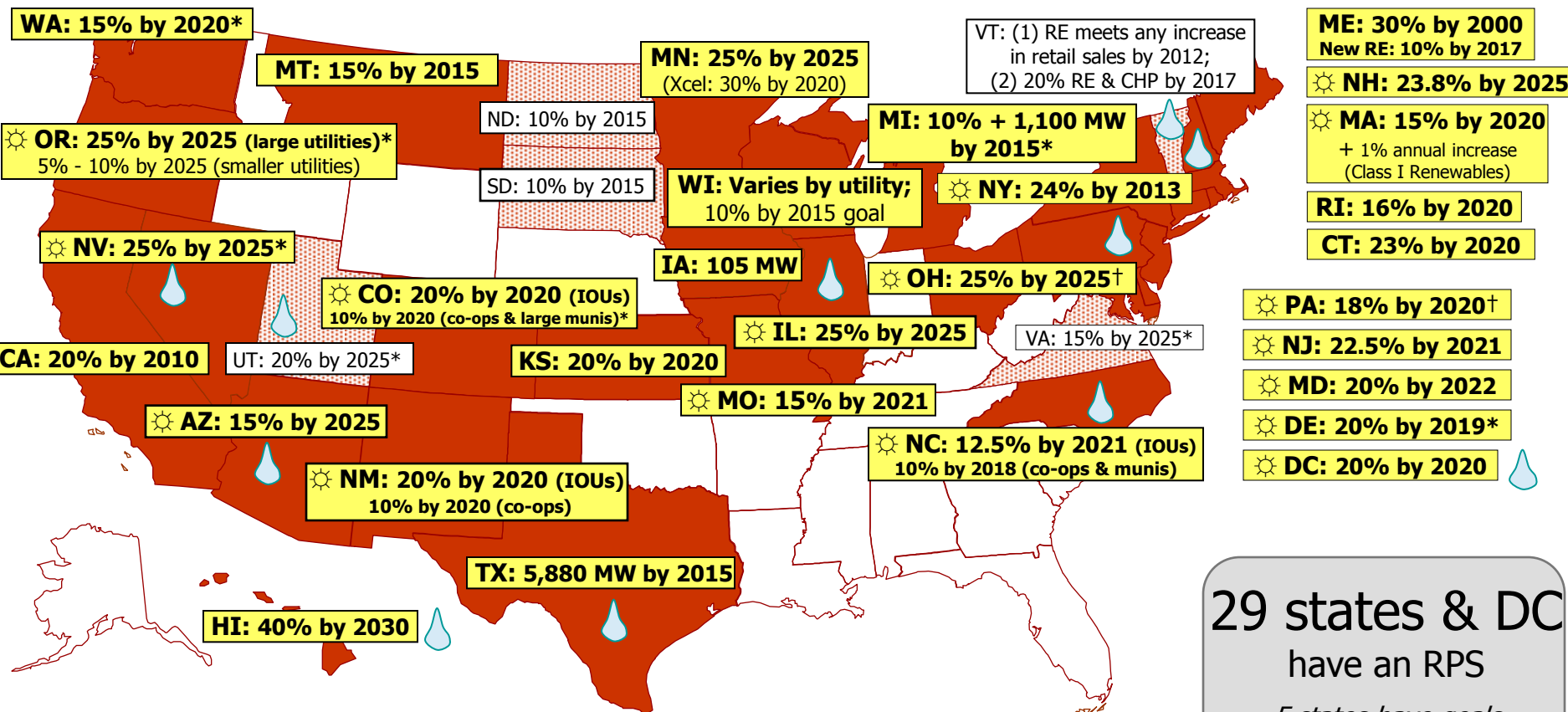
# Compliance Markets: Pricing

- RPSs vary, so do the markets they create...
- The impact of an RPS is a function of supply (eligible resources) and demand (percentage requirements), enforced by penalties...
  - Maine Class II: 30% requirement, but 50% of supply qualifies → price ~\$0.20
  - Massachusetts: 4.0% requirement ('09), but limited resources qualify, and \$60.92 “alternative compliance payment” → prices \$30+







# Compliance Markets

- Created by Renewable Portfolio Standards (RPS)
- The most salient feature of the compliance markets is that they differ considerably from state to state: prices differ. Therefore, some states are more attractive than others to renewable energy developers.
- Compliance buyers are generally indifferent to the type of resource that created the REC (insofar as it qualifies), but they are limited to a specific geographic region from which the REC can be sourced
- Approximate total volumes required in the compliance markets in 2008 were as follows:
  - Texas: 6.7 million MWh
  - Massachusetts: 1.9 million MWh
  - Connecticut: 1.7 million MWh
  - New Jersey: 2.9 million MWh (RY 2009)

# Renewable Portfolio Standards – September 2009



**29 states & DC**  
have an RPS  
*5 states have goals*

-  State renewable portfolio standard
-  State renewable portfolio goal
-  Solar water heating eligible
-  Minimum solar or customer-sited requirement
-  Extra credit for solar or customer-sited renewables
-  Includes separate tier of non-renewable alternative resources