

Oversight and Technical Operation

of the voluntary renewable energy market

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Outline

1. Voluntary Market and Compliance Market
2. Green-e Energy
3. Avoiding Double Counting: Verification and Tracking Systems
4. Purchaser Recognition Programs
5. Pricing

Renewable Portfolio Standards

- 29 states and Washington DC with RPS, 5 with RPS goals
- Current RPSs range from 10% to 40%
- Definitions of eligible renewables vary by state
 - States' eligibility rules don't necessarily match Green-e Energy's

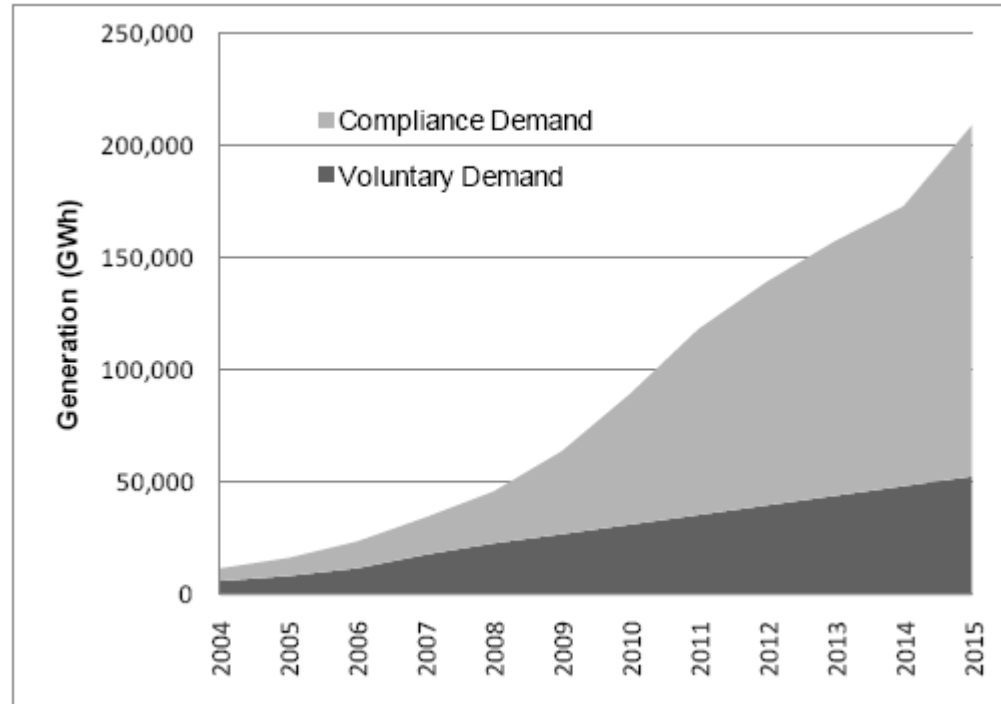


Voluntary and Compliance Market Interaction

- Voluntary market demanded more new renewable energy than the compliance market over each of the last 5 years
- Compliance prices typically higher due to penalties for non-compliance
- Compliance and voluntary markets are complimentary

Total Market Projections

Historic and projected demand for new renewable energy, 2004-2015



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Energy

Consumer Protection and Certification for Voluntary Renewable Energy Purchases

- Established in 1997
- Certification of three RE product types:
 - Renewable Energy Certificates (RECs)
 - Utility green pricing programs
 - Competitive Electricity products
- Covers all 50 states and Canada



Energy

Functions Provided by Green-e Energy

- “Good Housekeeping” seal of approval for renewable energy
- Verification ensures clear ownership, no double counting
- Customer disclosure requirements and marketing language reviews





Energy

Governance

- Independent Governance Board
 - Natural Resources Defense Council
 - Union of Concerned Scientists
 - National Renewable Energy Laboratory
 - Several other environmental and industry leaders
- Standards and policies developed through open stakeholder consultations
- Associate Member of the International Social and Environmental Accreditation and Labeling (ISEAL) Alliance



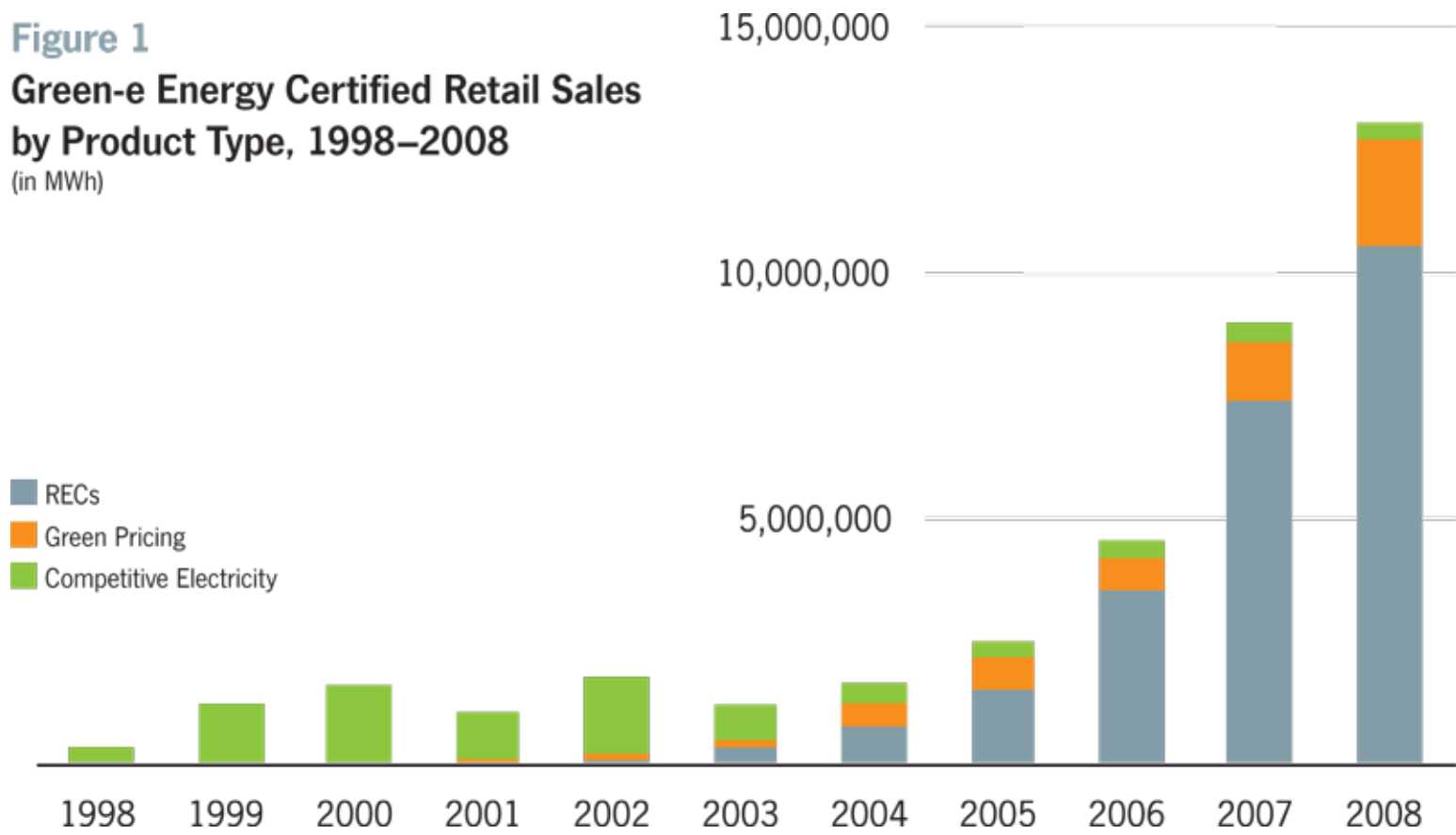
Energy

Marketshare

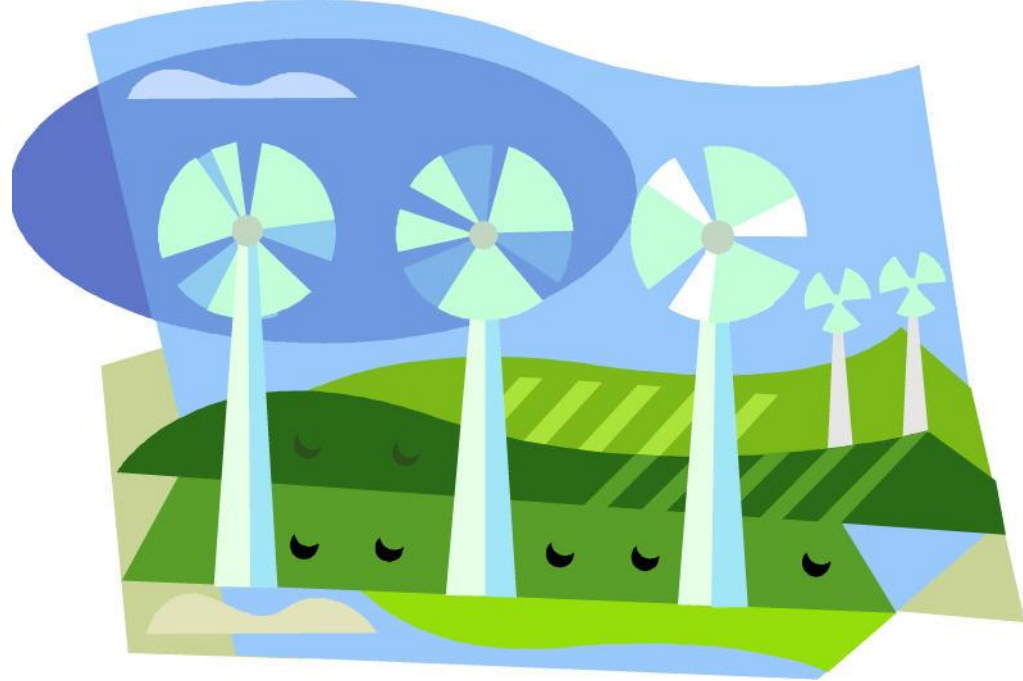
- In 2008 Green-e Energy certified:
 - Over 13 million MWh of voluntary retail transactions
 - 54% of all voluntary retail RE sales
- Over 275 marketers, utilities and ESPs
- Referenced in LEED renewable energy standard

Green-e Historic Growth

Figure 1
Green-e Energy Certified Retail Sales
by Product Type, 1998–2008
(in MWh)



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What is Double Counting / Claiming / Selling?

More than one renewable energy claim for a single MWh

- The generator sells RECs but makes RE claims regarding the underlying electricity
- A utility counts the same renewable MWh toward both their RPS obligation and to a customer in their green pricing program
- A REC seller has bought a REC and contractually sells that REC to more than one buyer

Avoiding Double Counting

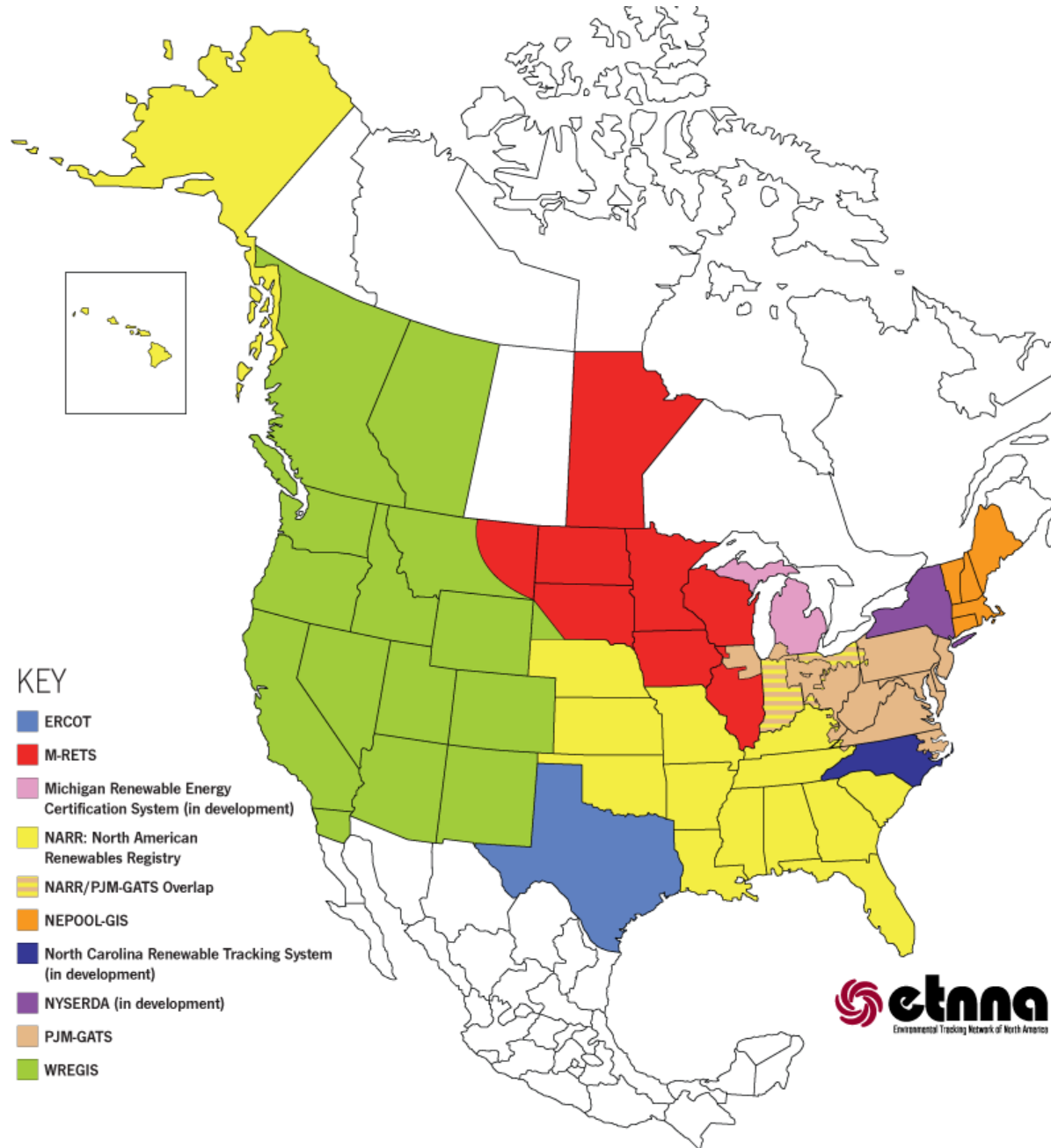
- Third-party certification
- Tracking Systems



Tracking Systems

- Developed for RPS purposes
- “Bank account” for RECs
- Meter data recorded in generator’s account
- Each MWh has a unique ID number, avoiding double claims
- Can be transferred many times and only “retired” (claimed) once

Current Certificate Tracking Systems



Tracking Systems and Certification



- Compliment voluntary certification programs
- Offer streamlined verification
- Do not inherently certify MWh against any particular standard
- Not required for Green-e Energy verification currently, but preferred

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Marketplace

Verification and Logo Use for Renewable Energy Purchasers

- Allows use of Green-e logo to promote purchase
 - Minimum purchase or generation requirements
 - Fee to use trademarked logo
 - Verification of purchases and percent of use claims
- Logo can be used on consumer goods manufactured with 100% renewable energy





Marketplace

2008 Marketplace Summary

- 66 participants
- 2.9 million MWh
- 23% of total retail Green-e Energy Certified sales by MWh
- Intel and Pepsi both purchasing over 1 million MWh annually
- 85% purchased RECs, 10% Green Power Program, 5% onsite.
- Over 300 certified consumer products utilize logo on packaging





Marketplace



AVEDA™



true.



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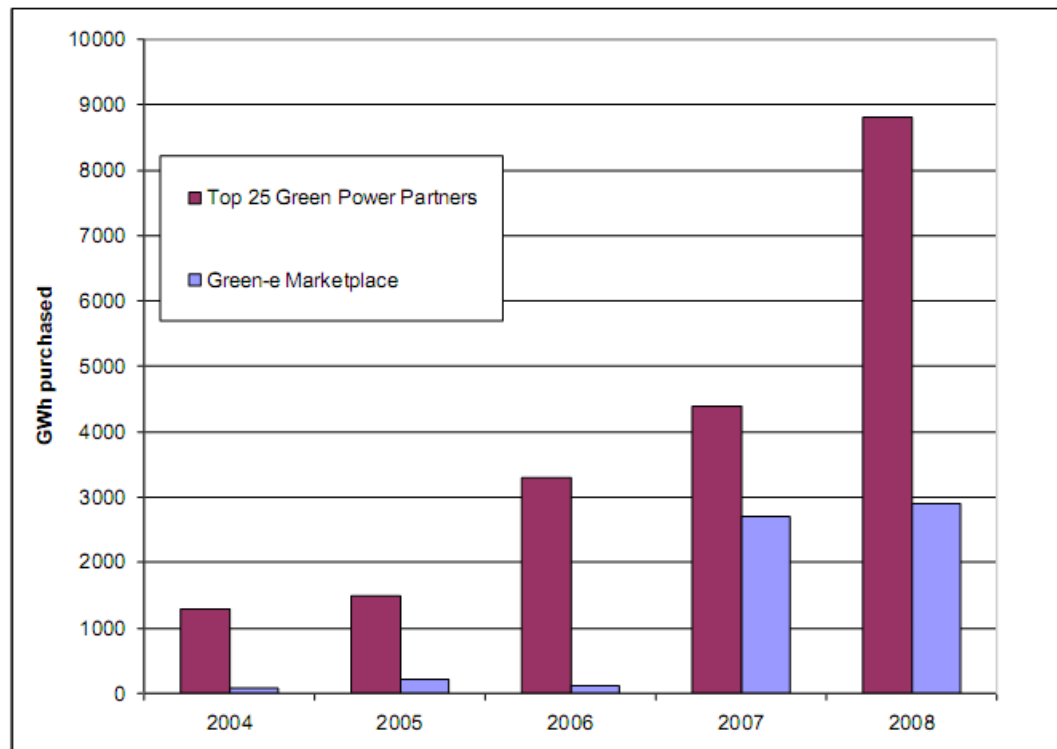


Increasing Green Power Use among Leading US Organizations

- EPA Green Power Partnership
 - In 2008, the top 25 purchasers accounted for 8.8 million MWh
 - Collectively the partnership accounts for 16 million MWh annually
- Over 1,200 participants
 - Largest purchasers include Intel, Pepsi, Whole Foods, Kohl's Department Stores
 - Over 500 purchasing for 100% of use

Growth of Recognition Programs

Figure 6.1: Growth of Green Power Partners and Green-e Marketplace³⁶

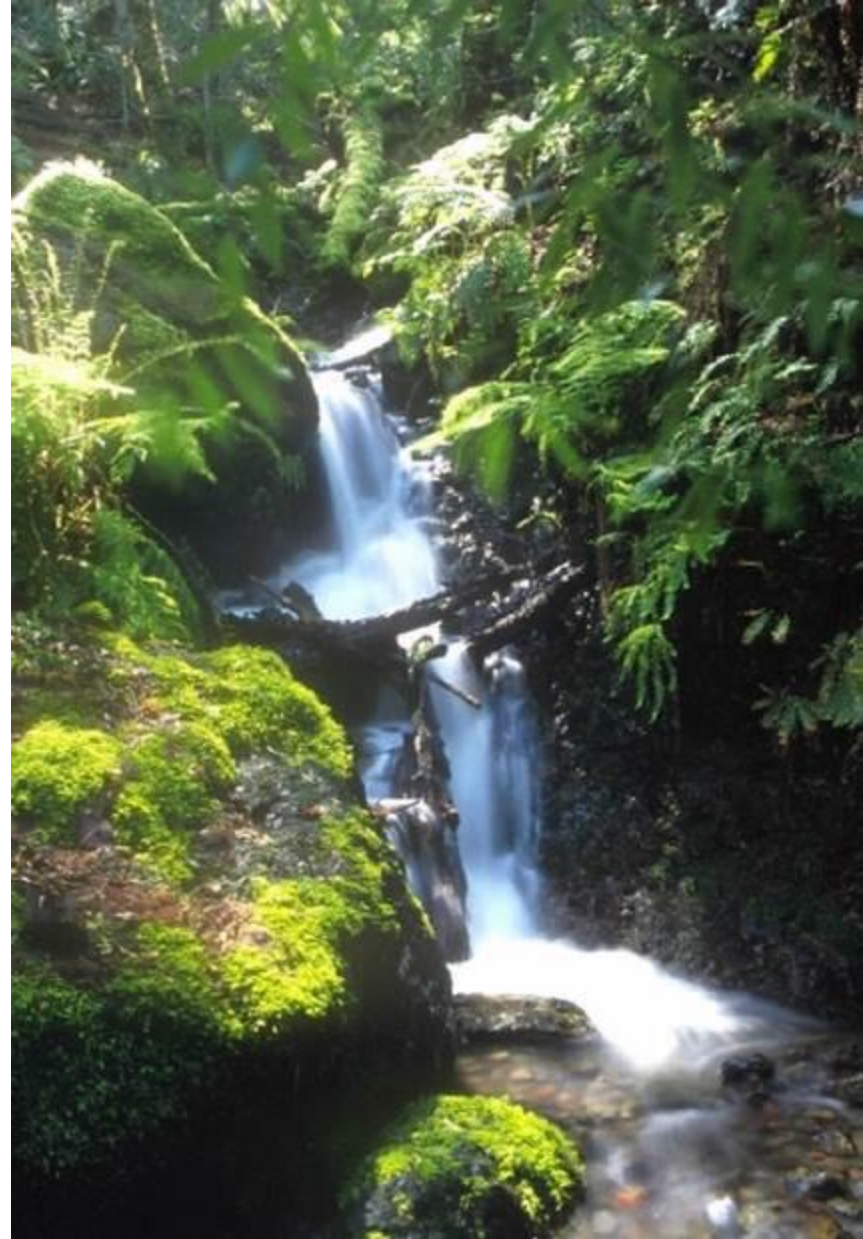


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Pricing

- Pricing varies
 - Wholesale/Retail
 - Compliance/ Voluntary
 - Vintage
 - Location of generation
 - Resource type



ricing Variables

Voluntary REC Offers

PRODUCTION	GENERATION	REGION	TERM	VOLUME	BID	OFFER
New TRC	Wind	National	2008	50,000	\$3.00	\$4.25
New TRC	Wind	WECC	2008	50,000	\$7.00	\$9.00
New TRC	ANY TECH	National	2008	25,000	\$3.00	\$4.00
New TRC	Wind	California	2008	50,000	\$8.00	\$12.00
New TRC	LFG	National	2008	25,000	\$3.00	\$4.00
New TRC	Solar	National	2008	5,000	\$5.00	\$10.00

CONTACT

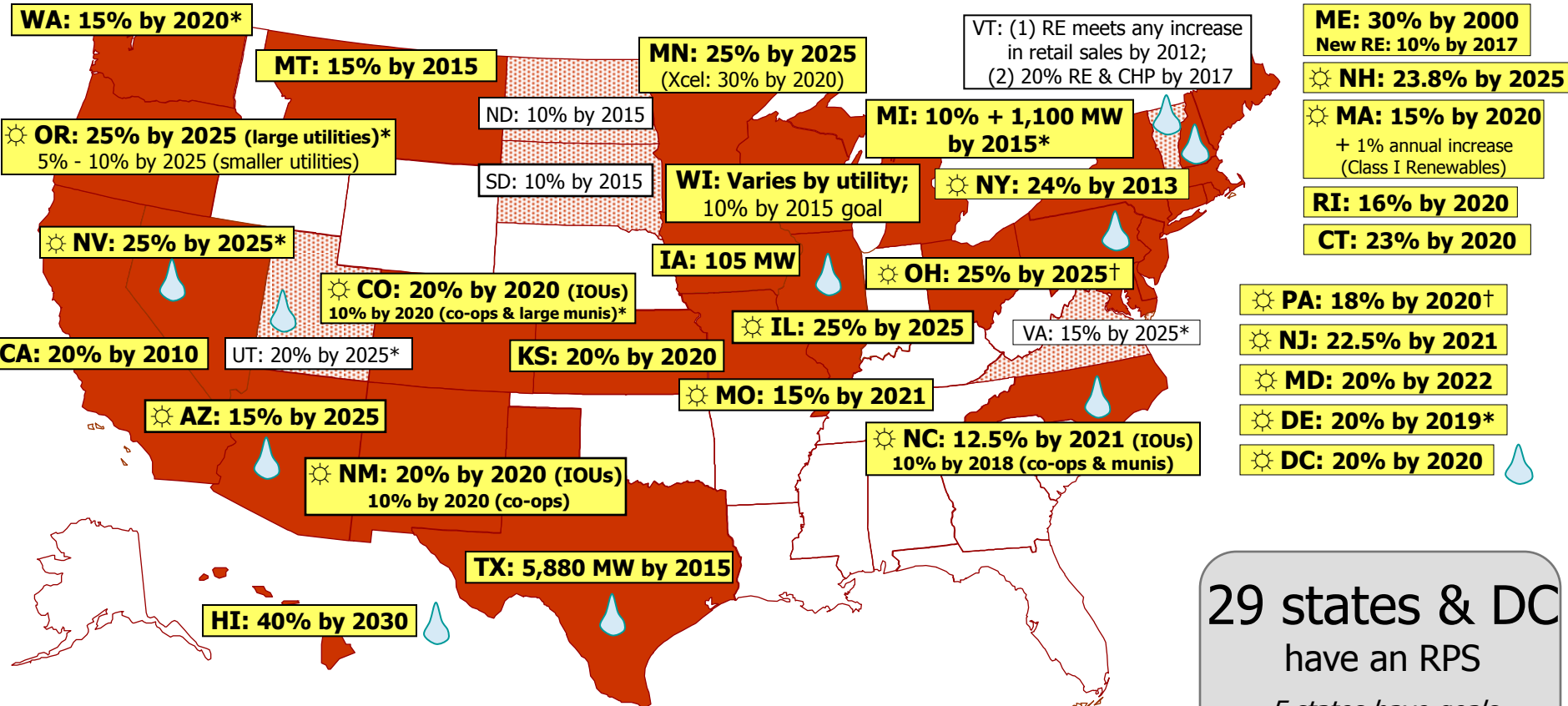
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Resources







- EPA.gov/greenpower
 - Buying green power:
www.epa.gov/greenpower/buygp/index.htm
- EvoMarkets.com
- Database of State Incentives for Renewable Energy
 - DSIREusa.org
- Green-e.org
- Green Power Network
 - <http://apps3.eere.energy.gov/greenpower/>

Renewable Portfolio Standards

www.dsireusa.org / 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