



Current Issues With RECs

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Matt Clouse, US EPA Green Power Partnership



Overview of Compliance Markets

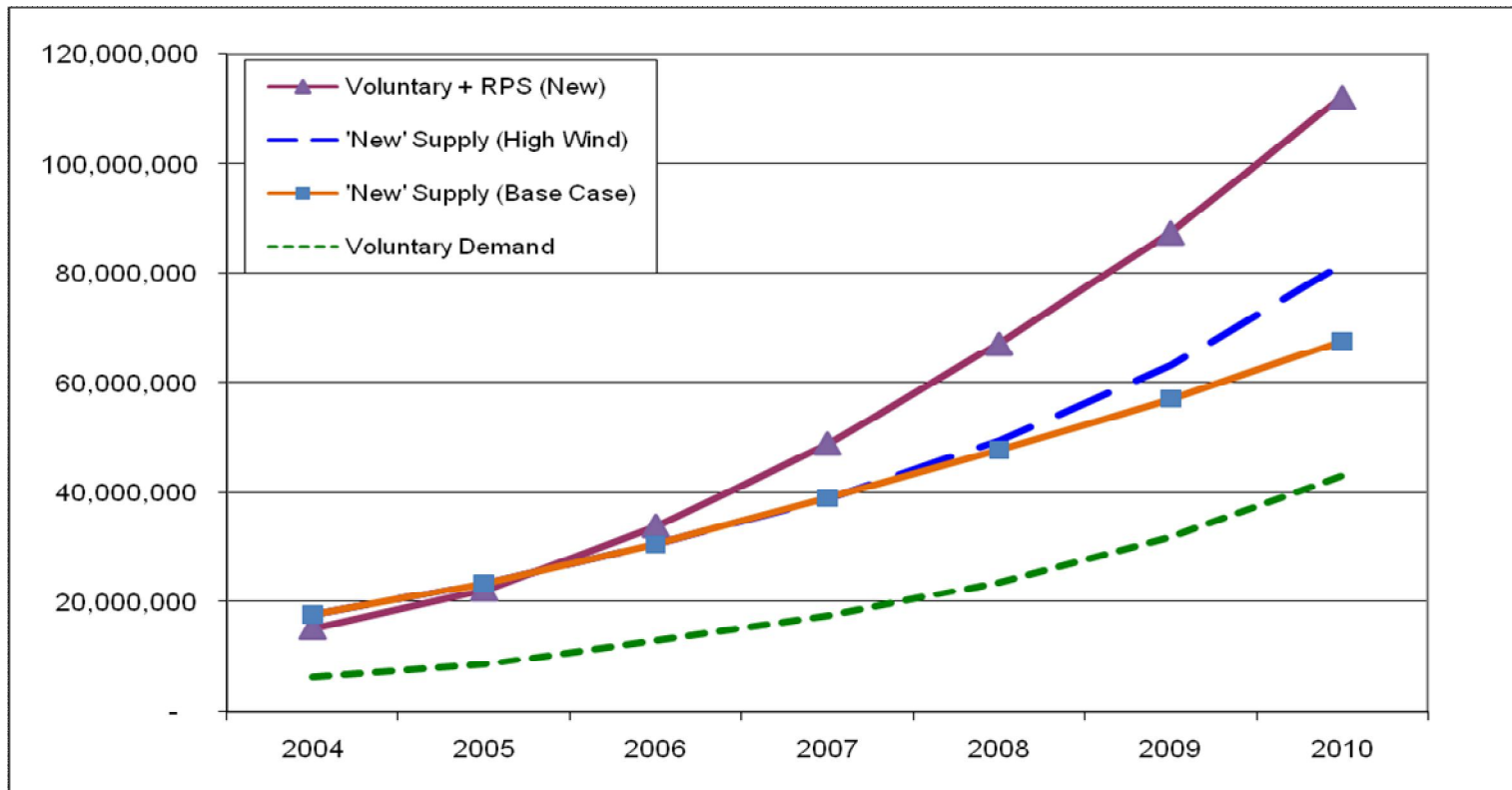
- 26 states and DC have adopted RPS
 - Almost all rely on RECs for compliance
- 2007 RPS compliance supported 69 million MWh (UCS 2008)
- REC compliance prices vary by market (EvoMarkets 7/2008)
 - MA New \$45
 - CT Class I \$25
 - NJ Class I \$17.50
 - DE New \$13.75
 - TX \$4
 - MD Tier I \$1

Overview of Voluntary Markets

- Over 750 utilities, 55 REC marketers & a dozen brokers
- 2007 purchases were 18 million MWh (NREL 2008)
 - Assuming a 35% growth rate, could see 40 million MWh by 2010, representing ~25% of total demand (NREL 2008)
 - ✓ Currently voluntary market is ~20% of total demand
 - Non-residential demand is driving growth
 - ✓ EPA currently has >1000 Partners annually purchasing nearly 16 million MWh
- Voluntary REC prices are typically lower than compliance prices, but it depends on the market
 - Utility green power prices (small purchase) average \$21/MWh (median \$17.8)
 - REC prices (bulk purchase) are about \$8-\$12



Estimated and Projected Supply and Demand for Renewable Electricity



Swezey, B. and J. Aabakken. 2007. A Preliminary Examination of the Supply and Demand Balance for Renewable Electricity. National Renewable Energy Laboratory, October.



REC Fungibility

- Variations in REC market rules have created a complex marketplace
 - Differences on REC definitions, resource eligibility, generator location and energy delivery requirements result in balkanize markets, less competition, and higher prices
- Greater harmonization of state RPS policies could increase fungibility and create larger markets
 - CESA has recently be encouraging harmonization discussion

REC Definitions

- Definitions of included attributes vary state by state
- Biggest issue is whether RECs include derived attributes – specifically emission reductions or credits
 - AZ, CA, CO, NY and WA require that emission reductions and allowances (if available) be retired with REC for RPS compliance
 - DE, NC and PA explicitly do not require the inclusion of emission reduction attributes
 - Most states are silent
- As state carbon markets develop, states may want to clarify one way or the other
 - A standard approach would make RECs more fungible

RECs and Carbon Regulation

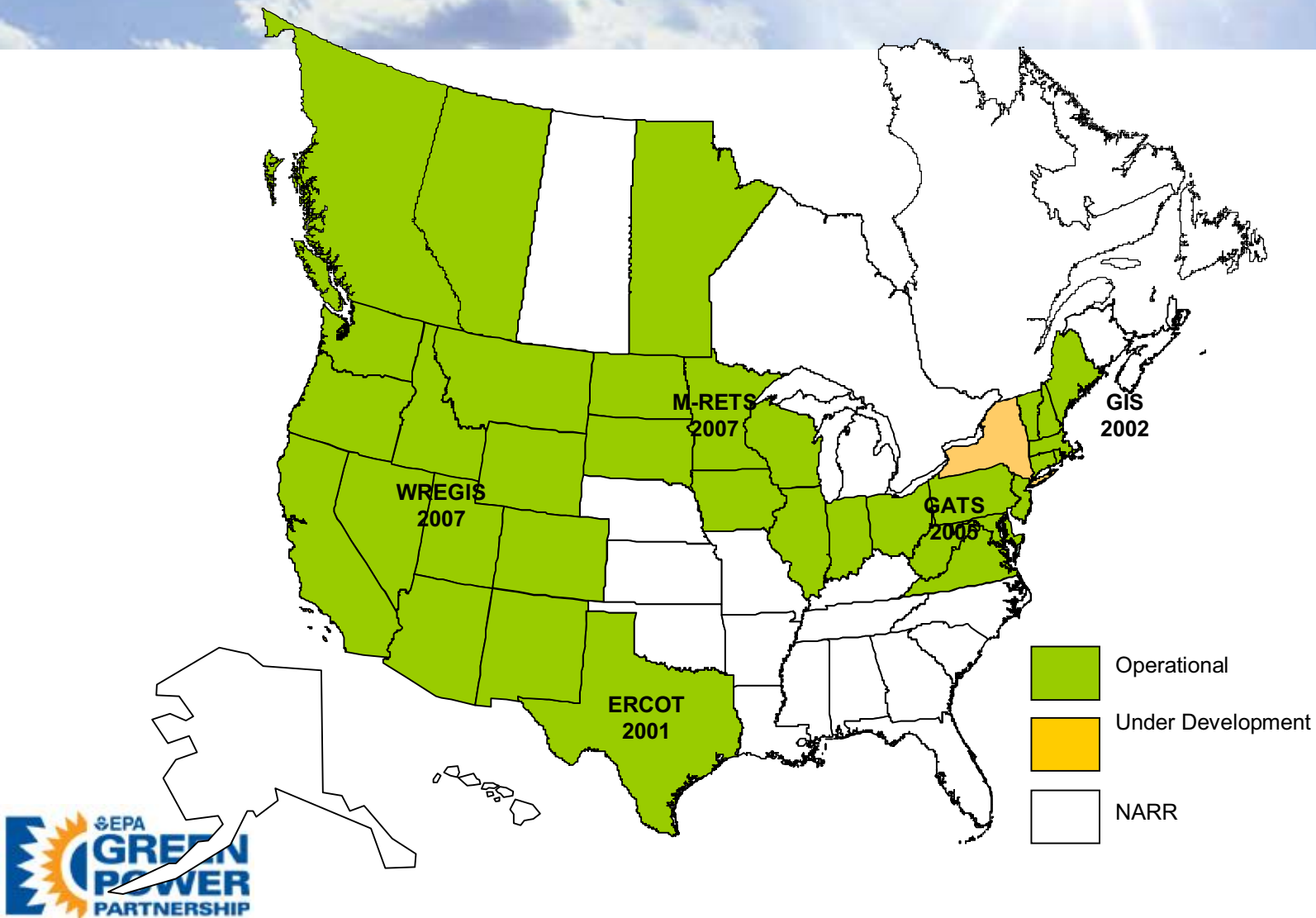
- Cap and trade could affect voluntary market sales
 - Voluntary purchasers currently claim to reduce GHGs
 - If carbon emissions are capped and renewables don't receive allowances, then:
 - ✓ Renewables may displace fossil generation, but
 - ✓ Emissions won't be reduced unless an allowance is retired
- RGGI example
 - Most RGGI states will set-aside and retire allowances based on demonstrated voluntary RECs purchases
 - This supports reduction claims of marketers and purchasers
- What about RECs used for compliance?
 - Do states expect RPS to result in reduced emissions?

RECs as Carbon Offsets

- Offsets are voluntary products, unless carbon policy states ...
- RECs are being marketed as carbon offsets by retailers
 - There are private certification programs that do recognize renewable energy as offsets if certain standards are met
- EPA's Climate Leaders offers guidance on the use of RECs in corporate GHG inventories
 - RECs can be used to reduce indirect emissions from electricity use, but not direct emissions – as an offset would
 - ✓ http://epa.gov/climateleaders/documents/greenpower_guidance.pdf
- Renewables, in general, can offset direct emissions when methane destruction occurs or onsite renewable electricity reduces onsite fossil fuel usage
 - EPA does recognize methane destruction offset products



REC Tracking Systems



Tracking Systems Seams Issues

- Will tracking systems support interregional REC trade?
 - Perhaps more important for voluntary market or if national RPS is adopted
- Environmental Tracking Network of North America (ETNNA) is new non-profit platform for tracking systems and stakeholders to discuss issues of common interest
 - Formerly NAAIB
 - Work with ETNNA on REC issues involving tracking

Contact Information

Matt Clouse, Program Director

- 202-343-9004
- clouse.matt@epa.gov

