How Effective is the New England REC Market as a Means to Reduce GHG Emissions?

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RPS 101 Primer:
What is a Renewable Portfolio Standard (RPS)?
What is a Renewable Energy Certificate (REC)?

- An RPS is a state requirement imposed on sellers of electricity to purchase a certain annual amount of renewable energy within their supply portfolio.
  - The purchases come in the form of RECs (defined below)
  - The seller must purchase RECs equal to a specified percentage of their sales volume

- A REC is a certificate representing 1 megawatt-hour of electricity produced by a renewable generating unit

- All six states in New England have some form of RPS, but they have different definitions of eligible renewable generation and different annual purchase requirements

- The premise is that a seller is credited with having purchased renewable energy, measured by the number of RECs purchased in a given year

Original Purpose of Renewable Portfolio Standards

- In early 2000s, a widely-supported policy objective emerged to incentivize the addition of renewable power to the grid

- But renewable generation could not be financed or survive in the energy market on energy revenues alone

- A market mechanism was selected to produce a legislatively-created market for RECs
  - Concept: A new revenue-generating market product that provides revenue for renewable generation to be built
  - Assumption: Additional REC revenue will be enough to drive investment and finance renewable generation through market forces

Then came the 2008 Financial Crisis – Turning Financing Markets Upside Down

- Uh oh! Large-scale renewable generation could no longer be financed unless there were long-term commitments to support the financing
  - Massachusetts and Rhode Island launched long-term contracting programs (LTCs) for renewable resources
  - Other jurisdictions followed
- Mechanisms like virtual net metering also used as a means to create developer/customer contracts that support financing when combined with REC revenue
- But RPS alone was not driving new investments

What Drives Financing of New Renewable Projects?

- Long-term contracts, carve-outs, net metering, and innovative power purchase (PPA) agreements with "off-taker" end users, now driving investments

- Point of Logic: It is not consistent to maintain that:
  - an increase in the RPS alone will result in many more new renewable generation projects – while at the same time saying that projects cannot be financed without long-term commitments

  - maybe a combination helps, but RPS alone will not advance the objectives very far

- Yet, proposals have surfaced to increase the RPS for the stated purpose of reducing GHG emissions
- But would it ????

Complication: The RPS is Not a Uniform Regional Market

- The "regional REC market" is not a true "regional" market; lack of uniformity in eligibility and price caps
- Examples:
  - Maine has liberal biomass rules to meet RPS
  - Massachusetts restricts biomass eligibility and has a large local solar carve out
  - Connecticut has different solar program with bidding and biomass still eligible
  - Vermont uses large-scale hydro to meet RPS (large-scale hydro is not generally eligible for RECs in other states)
- Alternative Compliance Payments (ACP) (the price cap) for non-solar Class I:
  - Massachusetts and Rhode Island: $67 (escalating each year),
  - Connecticut: fixed at $55, and
  - NH: around $56 (escalating)

Differences Can Skew Market Results

- Older vintage projects drawn first to the state where prices tend to be higher

- Example: When the RPS obligation increases in Massachusetts, more older-vintage projects have the economic incentive to sell RECs to Massachusetts at higher prices than elsewhere

- The 2015 spot market price in New England hovered around $55. (No coincidence that it was near the CT/NH price cap or “ACP”).

And Not a Very Transparent Market

- Very difficult to assess how the market is functioning to achieve emissions reductions across all the New England states
  - Significant reporting lag among most of the New England states
- Massachusetts and Rhode Island produce the most complete annual reports
- But still lag because the market for a calendar year does not settle until many months later
  - Most recent data for Massachusetts and Rhode Island is for 2014
  - Most recent reports for all of New England were from 2013

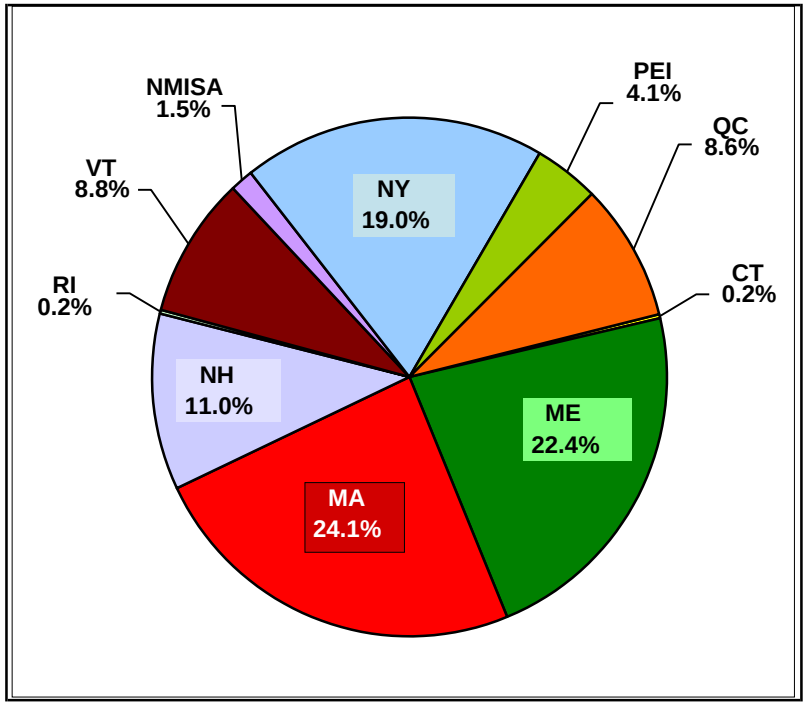
Comparative Results from 2013 (Class I)

- Massachusetts had surplus of eligible Class I RECs available
- Rhode Island had more than enough supply and would have met all targets except for the bankruptcy of one obligated retail seller
- Connecticut and NH appeared to have a deficiency
- Maine met obligations with over 90% biomass, much of which was not eligible elsewhere
- Vermont had no RPS program in 2013, but supplied RECs from a long-term contracting program that unbundled the RECs for sale elsewhere
- **Question: Was this really a "regional" market?**

Massachusetts: 2014 RPS Class I Compliance

Source: MA DOER http://www.mass.gov/eea/docs/doer/rps-aps/rps-aps-2014-annual-compliance-report.pdf

2014 Compliance by Generator Location



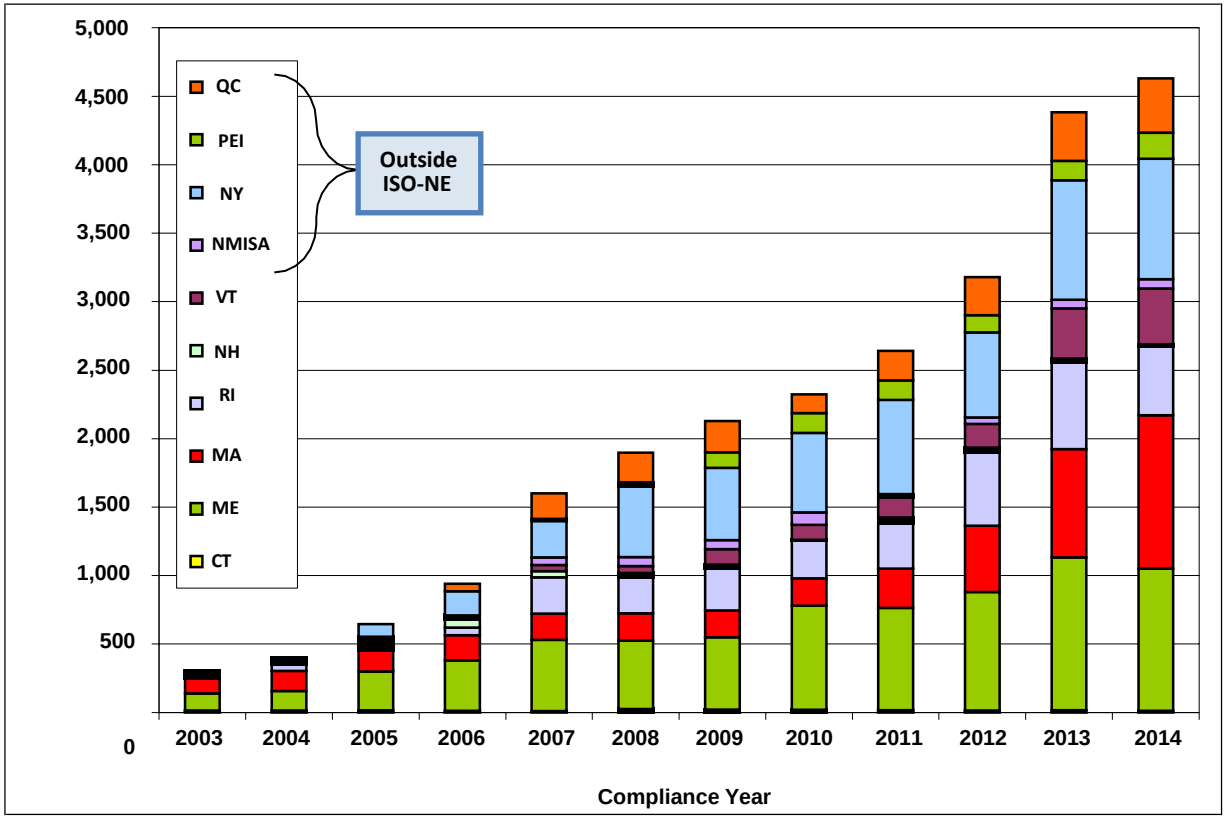
-- Massachusetts acquired 76% of RECs out-of-state

-- Of the 24% in-state, HALF of that was solar PV (SRECs)

-- New York share largely from older projects whose long-term contracts from NYSERDA programs ended

Massachusetts: 2014 RPS Class I Compliance

Source: MA DOER http://www.mass.gov/eea/docs/doer/rps-aps/rps-aps-2014-annual-compliance-report.pdf



Policy Questions

- **MAJOR POLICY ASSUMPTION behind a proposal to increase the RPS**: Buying a REC means the buyer is reducing emissions. But is that a valid assumption?

- Will an increase in the annual obligation to purchase RECs actually achieve new emissions reductions?

- Or would it just cause a re-shuffling of who gets credit for existing renewable energy already on the grid?

We still need an RPS to provide additional revenue to the existing renewable fleet!

- IMPORTANT NOTE: Not suggesting the elimination or halting of the RPS program in any state

- We need to continue an RPS with a trajectory that can be relied upon by the market

- It is critical to support existing resources, keeping those entities financially healthy, and maintaining the production of emissions-free energy already on the grid
- **But . . . .**

Need for a Comprehensive RPS/Incremental Emissions Impact Study

- A neutral market study is needed to assesses the extent to which incremental emissions reductions actually link to RPS increases
  - And it needs to be truly "neutral" – lots of competing interests at stake
- Otherwise, consumers may be paying more for RECs with new RPS increases, but not achieving the emissions reductions assumed from the new obligations
  - A given state could be tallying the RECs and assume new emissions reductions have been achieved
  - but it could be illusory from an incremental emissions reduction perspective

Without a Study, Reasons to be concerned . . . .

- It is important to ask the question whether simply increasing the RPS annual obligation is really incentivizing new renewables

- Knowing the regional market and emissions effects would allow policy-makers to make appropriate adjustments to the mechanism or implement new ones

- But, absent a credible study, there are reasons to be concerned, if our primary goal is to actually reduce GHG emissions. . . .