



Renewable Energy's Future in New England: A Market Analyst's Perspective

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Sustainable Energy Advantage, LLC

Mission: Sustainable Energy

Approach: Sustainable Advantage

***We help build Renewable Energy Businesses, Markets, Policies & Projects...
through Analysis, Strategy & Implementation***

Services

- ***Interdisciplinary consulting & advisory services*** (regional & national)
- ***New England Renewable Energy Market Outlooksm*** (REMO) subscription briefings
- ***New England Eyes & Earssm*** Regulatory, Policy & Legislative Tracking and Analysis Subscription Service

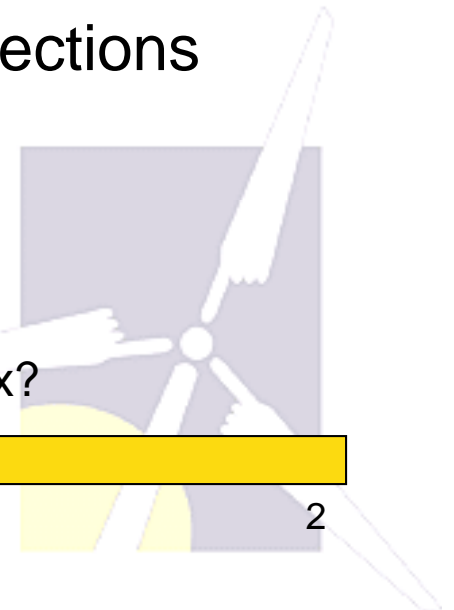
Practice Areas

- ***Power market and public policy analysis, tracking, development & implementation.***
- ***Strategy development.***
- ***Financial analysis & economic feasibility***
- ***Renewable Energy supply & procurement.***
- ***Quantitative analysis and modeling.***
- ***Transaction facilitation, contract development and negotiation support.***
- ***Business infrastructure development.***
- ***Green power product development & pricing***



Market Observations

- RPS markets (mostly) working!
- State of the regional renewable energy/RPS markets → shifted to new phase
- Shifting economics placing pressure on renewables
- New sources of policy uncertainty looming → chilling the marketplace
- New conditions reveal possible market imperfections
- Goals: to shed light... & stimulate dialogue
 - On uncertainties & their impacts... to help to bound them
 - On possible market imperfections... are there things to fix?





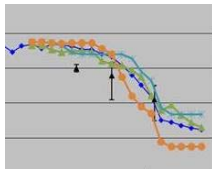
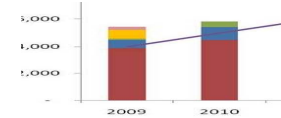
Despite siting challenges, RPS programs (market) working!

- Robust development pipeline → attracted investment

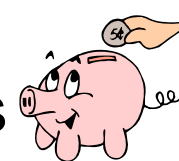


- Substantial competition when buyers shop

- Supply caught up with (now exceeds) demand



- Current REC prices have fallen sharply



– (price signals!)

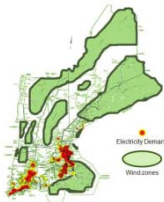
- LSEs have been banking surpluses



- Long-term contact RFPs help financing

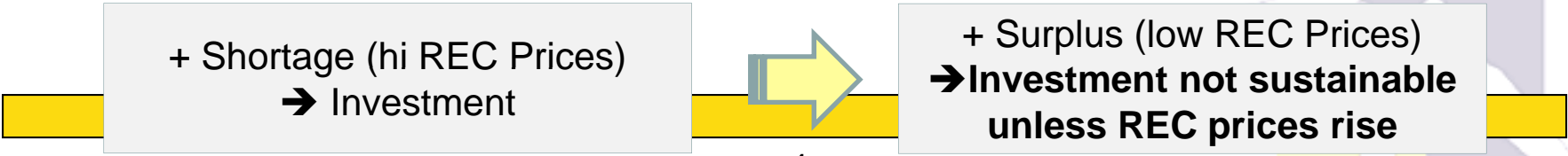
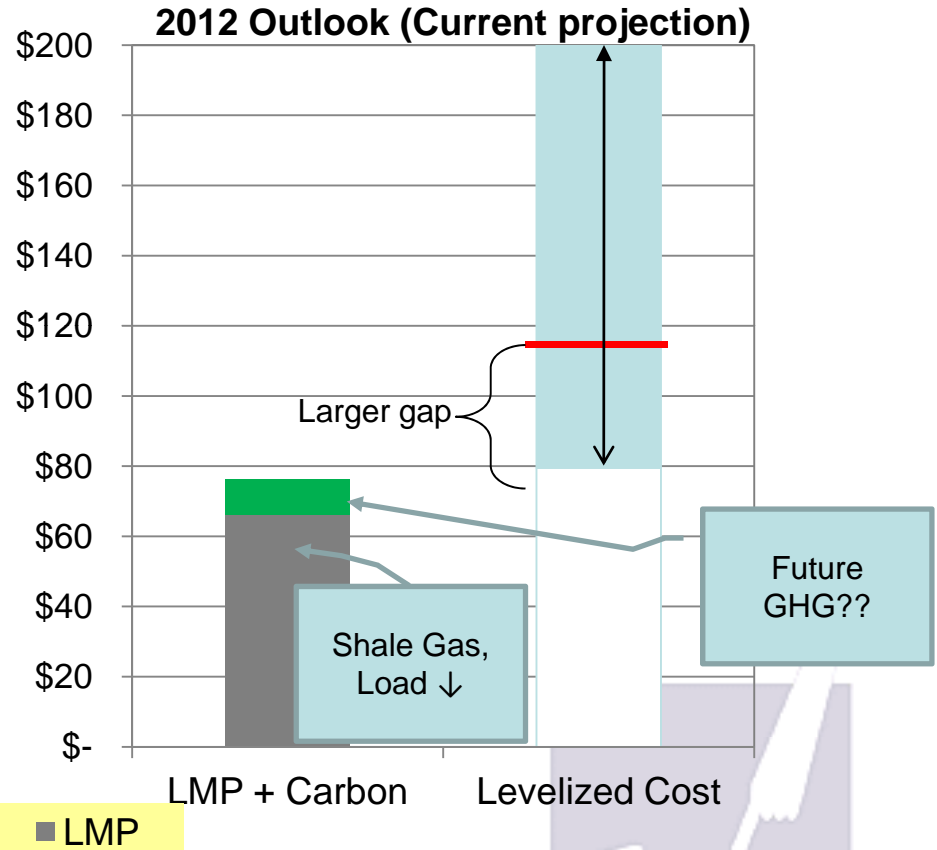
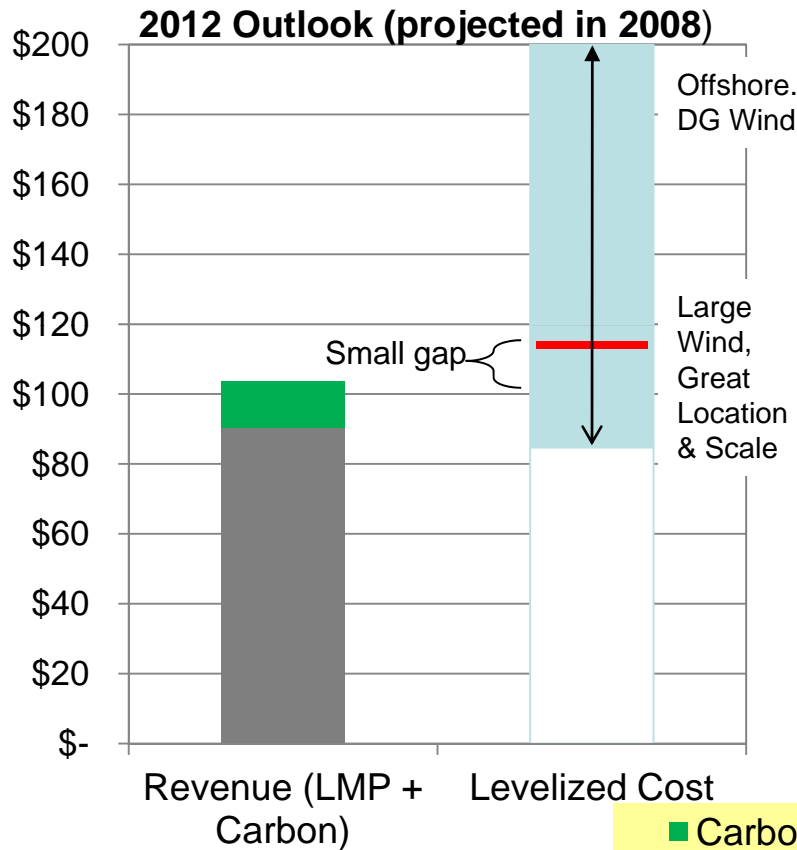
- ISO: focus on carbon-neutral supply, wind integration picture (NEWIS) 'better than expected'

- NESCOE: considering regional solutions





But... Shifting Economics Placing Increasing Price Pressure on RE





Political (reg/leg) Uncertainties

- ✓ How will policy influence where RE gets built?
- ✓ Talk of large hydro as 'eligible' + New ties to QB &/or NB
- ✓ RE-related transmission planning process/decisions
- Talk of cutting RPS targets (CT IRP)
- MA biomass eligibility (wide range of outcomes)
- Eligibility 'Loopholes' (ME)
- The future of Fed incentives – carbon, PTC
- Cape Wind approval?

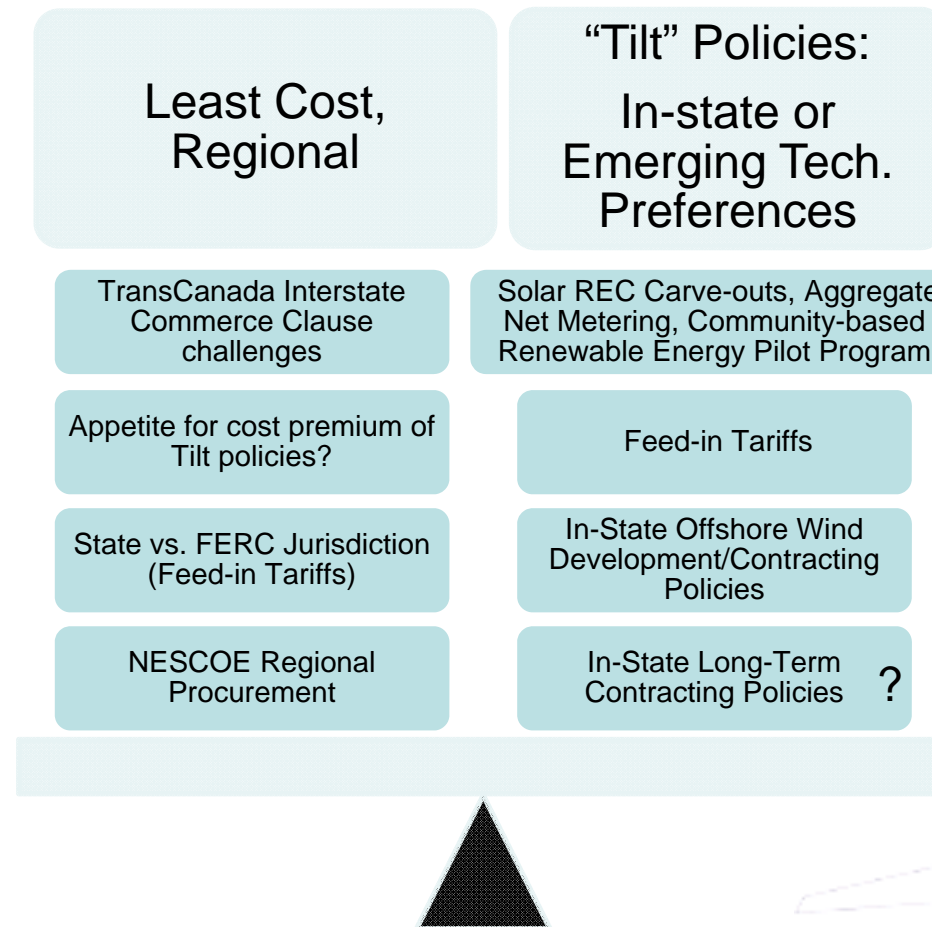
Potential for more balkanization of market.

Potential for significant pending changes.

Large binary unknowns drive buyers who have discretion to the sideline.



What will get built, where?





Large Hydro as Eligible?

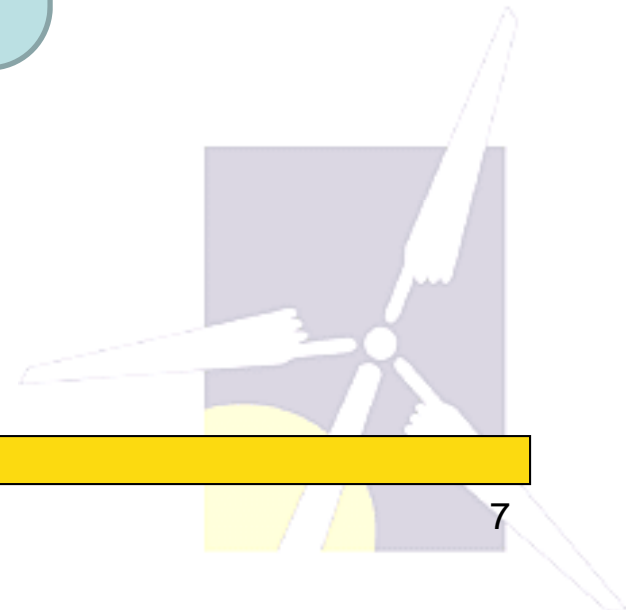
Many possible futures: Details matter... a lot!

Who?

*VT; CT; MA; Transmission
Proponents; Lg. Hydro Owners*

Why?

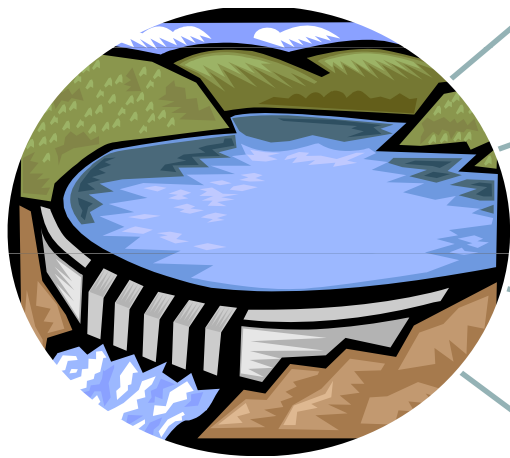
Range of differing objectives





Large Hydro as Eligible?

Many possible futures: Details matter... a lot!



Vintage
Existing vs. New/Incremental?
Refurbishment?

Imports:
over existing ties, or new ties?

Eligibility?
Class I or separate tier?

Targets?
Same, or increased?

Contractual vehicle?
Firm, or seller's choice?

Change the mix, increase RE, compete with & displace in-region generation, reduce compliance costs?

Or
Repaint what is happening anyway as RPS-eligible, double count (NY?), no incremental benefit (yet ratepayers pay anyway), and displace in-region generation

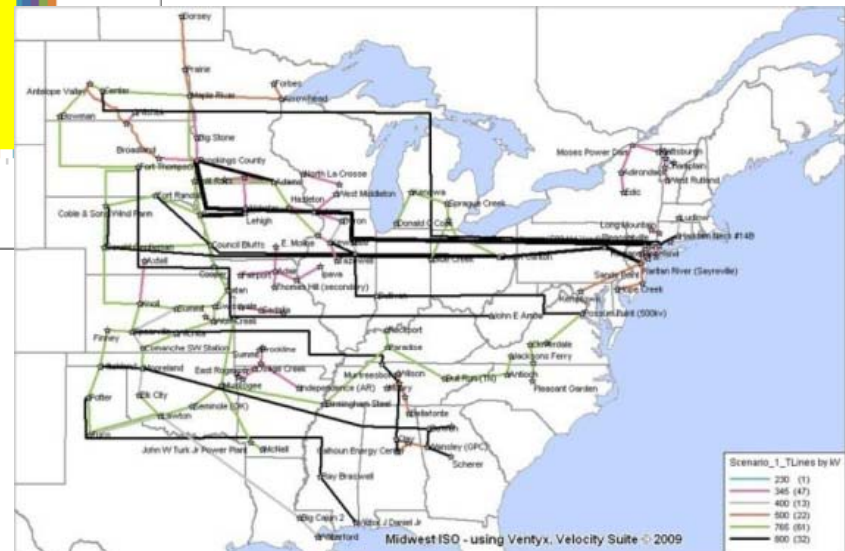
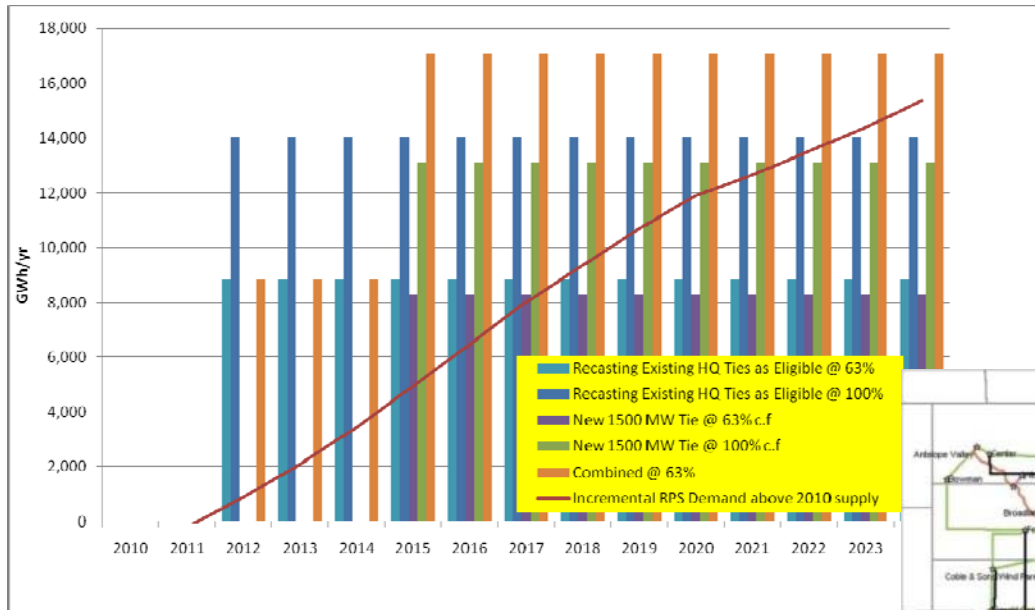
Reduce costs & displace in-region gen, or speed decarbonization of supply mix? Windfalls?

Reduce compliance costs, or big market power problem?

Observation: Already, one market participant is importing large hydro, not yet Class I eligible, MWhs similar to Cape Wind's expected production



The Details Matter... A Lot





Some Possible Market Structure Imperfections Becoming Apparent

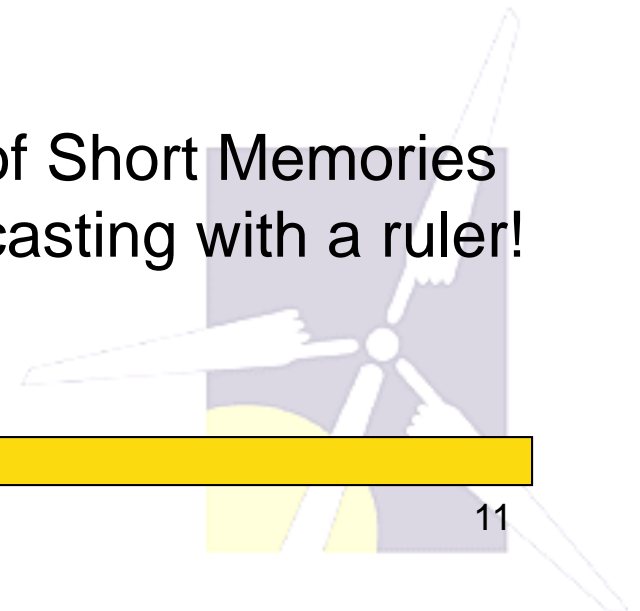
- Inability/disincentives for LSEs to bank excess RPS compliance
 - *Original purpose*: limit generator market power, maintain integrity of disclosure labels.
 - Only LSEs may bank; limited to 30% annual obligation, 2 yr duration
 - Almost 60% of CT RPS load can't bank due to SO/LR procurement approach
 - Low prices would seem attractive for insuring against future needs, but...
 - LSEs banking << surplus available, economics would suggest (risk? limited incentives?)
 - ➔ In 2008, only 38.5% of potential banking, with substantial # of RECs stranded
- 3.5 – 6.5 month GIS lag between generation & minting RECs
 - *Original purpose*: emission data accuracy
 - Sellers v. LSE cash flow, credit imbalance
 - Inability for generators to respond to market price signals
- Intra-year GIS REC banking
 - *Original purpose*: generator backstop
 - Buyers can defer purchases until Q4
 - ➔ Cash flow lag up to 17.5 months
- RPS tier inversion btw new v. existing
 - *Original purpose*: support existing, new RE
 - CT, RI: surplus Class I (new) can be used to meet Class 2 (existing) requirements.
 - MA-2, NH-III & NH-IV, shortages ➔ existing RE earn close to ACP, sheltered from competition from surplus new RE

-- Trading Periods --			
2009 - Q4	2010 - Q1 - Open	2010 - Q2	2010 - Q3
4/15/2010 to 6/16/2010	7/15/2010 to 9/16/2010	10/15/2010 to 12/16/2010	1/15/2011 to 3/16/2011



Parting Thoughts

- Short-term surplus → today, things look good to RPS obligated entities
 - Unlikely to be sustainable
- Circumstances are dynamic
 - Some drivers cannot be controlled. Others can.
- Are we creating an environment ripe to attract further investment?
- What are we trying to accomplish?
- Beware of Short Memories and forecasting with a ruler!





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