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Panel 1 – Drivers Shaping Energy Resources

TRANSMISSION PLANNING FOR THE NEXT GENERATION

Some Implications For Generators in the New England Region of FERC Order 1000

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Powering New England in the New Environment
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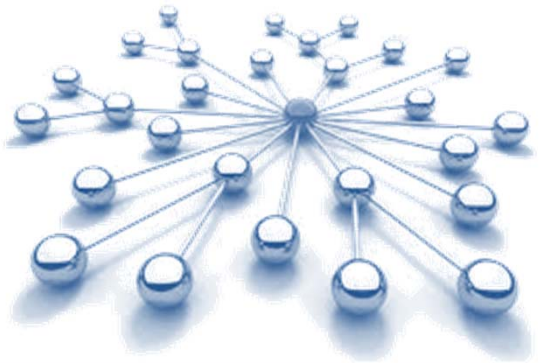
The Transmission and Generation Planning Nexus

- What if Connecticut units ***retire*** rather than ***repower***?
  - Potential need for more transmission to tap external supply
- What if Non-Transmission Alternatives (NTAs) are cheaper?
  - Generation could replace a transmission solution
- What if renewable generation mandates exceed supply?
  - May prompt need for new transmission



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Aging Steam Oil / Gas and Coal Units In CT

Unit Name	Fuel	Capacity (MW)
Montville 5	Oil/Gas	81
Middletown 3	Oil/Gas	236
Middletown 2	Oil/Gas	117
Norwalk Harbor 1	Oil	168
Norwalk Harbor 2	Oil	162
Montville 6	Oil	407
Middletown 4	Oil	400
Bridgeport Harbor 2	Oil	130
New Haven Harbor	Oil/Potential Gas	461
Bridgeport Harbor 3	Coal	372
AES Thames	Coal	181
Total		**2,715**

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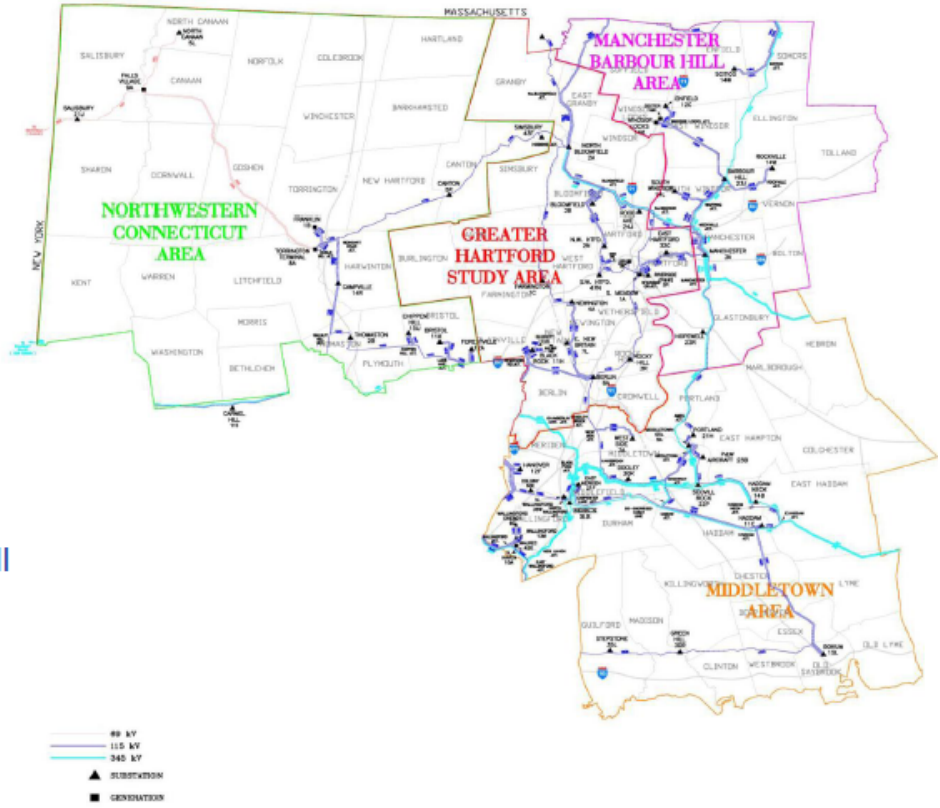
Non-Transmission Alternatives

Next MRA Study: the Greater Hartford and Central Connecticut Area

The Greater Hartford and Central Connecticut (GHCC) area is comprised of the following four sub-areas:

1. Greater Hartford
2. Northwest Connecticut
3. Middletown
4. Manchester / Barbour Hill



Source: ISO-NE December 14, 2011 PAC Presentation

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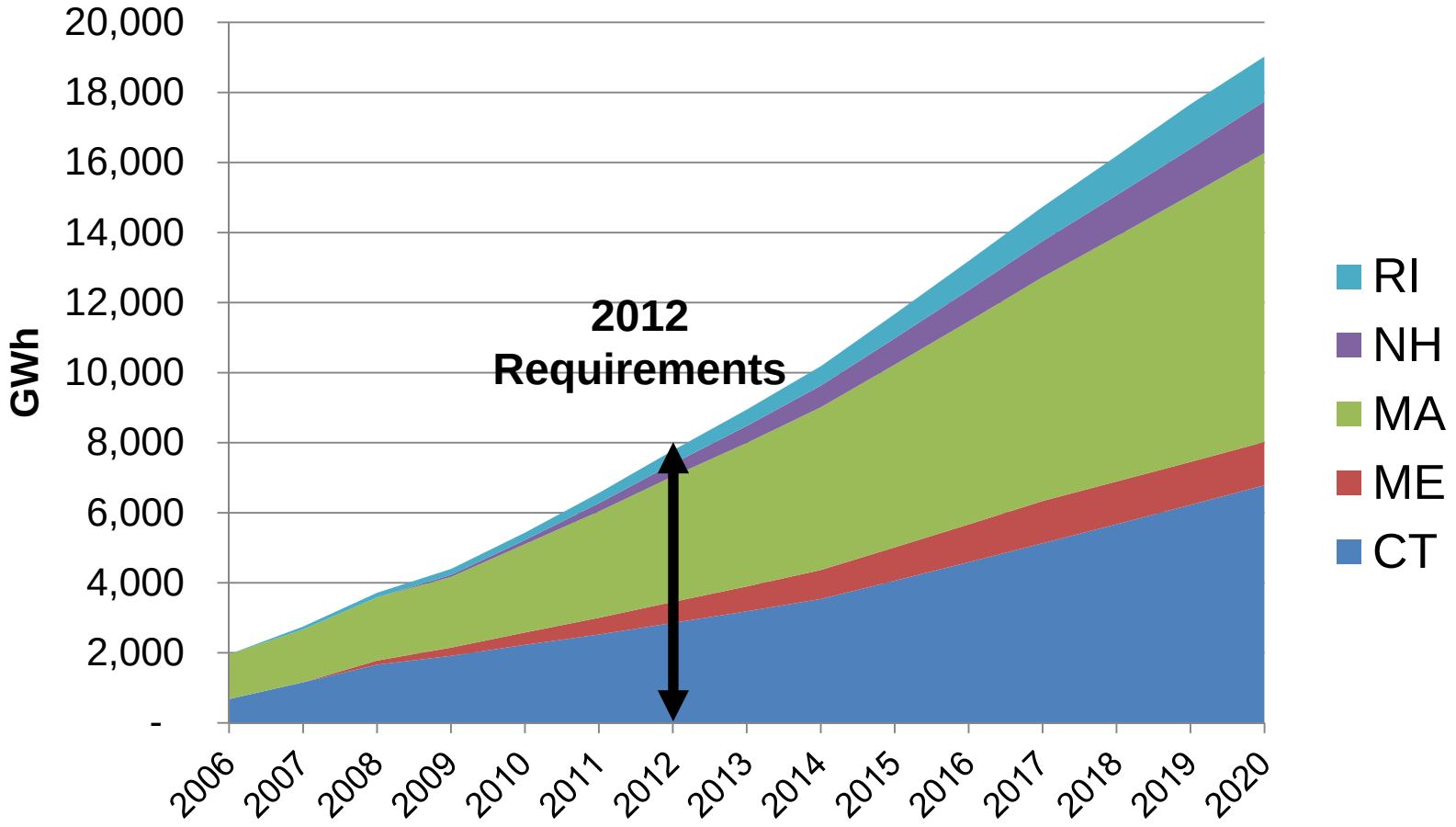
Renewable Portfolio Standards are Rising



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Wind Resource Potential in New England

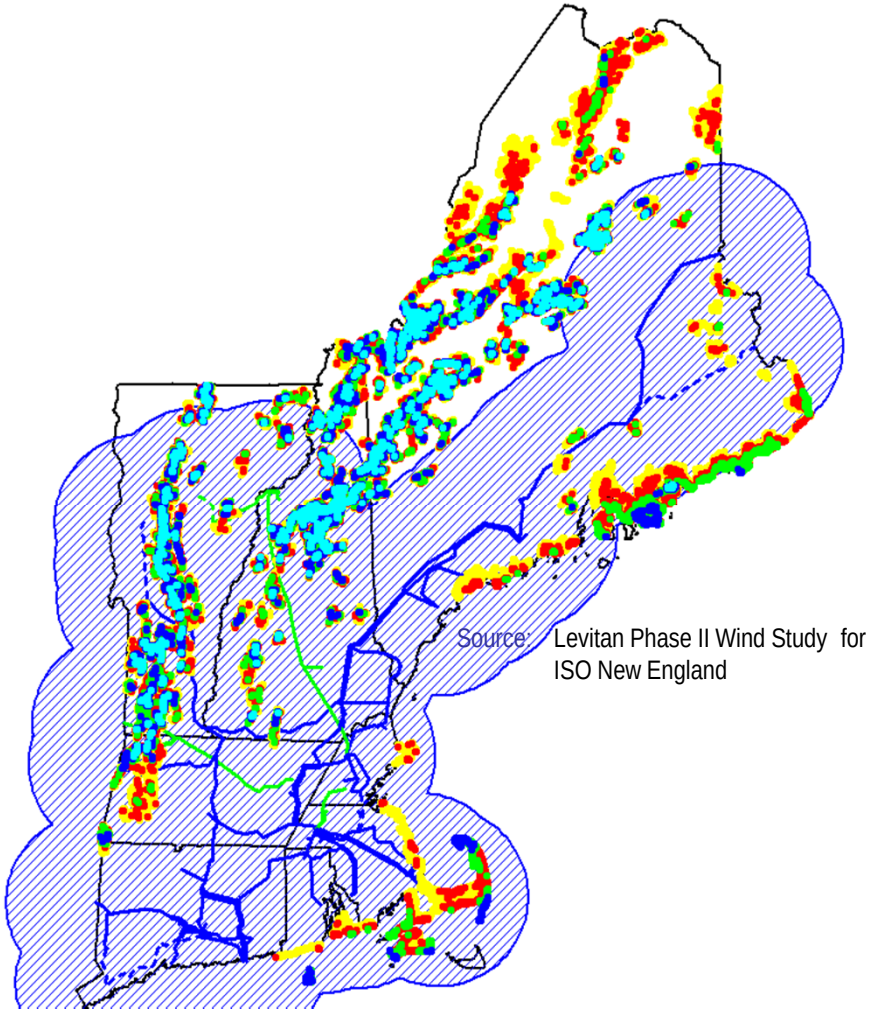
Legend

Class 7: >8.8 (m/s)
Class 6: 8-8.8 (m/s)
Class 5: 7.5-8 (m/s)
Class 4: 7-7.5 (m/s)
Class 3: 6.4-7 (m/s)

40 Miles
230 kV
345 kV

NE Total Wind Resource Potential:
9,433 MW

1 meter per second roughly 2.2 mph



Source: Levitan Phase II Wind Study for ISO New England

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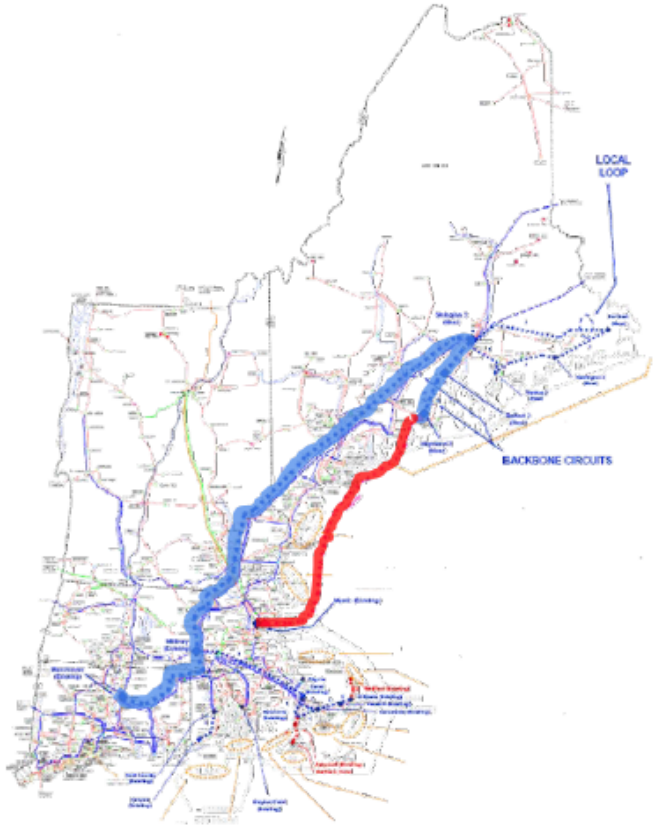
ISO-NE Estimates for Added Transmission for Wind

Transmission for 5,500 MW of Wind

- Potential transmission to connect 4,000 MW of offshore and 1,500 MW of near-shore onshore wind
- New transmission paths
  - New 345 kV line from Maine to Connecticut
  - New HVDC underwater cable from Maine to Boston
- Local loops to collect wind in Maine
- Preliminary cost estimate: $6 billion



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Sweeping Changes in Transmission Planning

- New rules for regional and interregional transmission planning
- New rules for cost allocation
- State and federal "public policy" incorporated into the new transmission planning process
- NTA analysis part of the planning process

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Timeline

- Compliance
  - FERC issues Order No. 1000 July 2011
  - Regional filing due October 2012
  - Interregional filing due April 2013
  - New planning / cost allocation commences after FERC approval 2013 or beyond
  - Stakeholder processes to revise tariffs underway at ISO-NE

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How Does FERC Order 1000 Alter Transmission Planning?

- New "Public Policy" category of transmission projects
- NTAs analysis
- Regional planning and interregional coordination

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Resource Implications

- Will existing generation be more or less likely to retire?
- Will renewable generation see the transmission obstacle removed?
- Will Distributed Generation or Combined Heat and Power now be able to show additional quantifiable benefits and enhance deployment in New England?
- Will Energy Efficiency also be able to quantify more benefits?
- How about Demand Response?

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Defining "Public Policy"

- State and federal laws and regulations
  - Energy and environmental laws and regulations
  - For example, RPS requirements
- Unclear whether state energy policies from commission orders would qualify
- Unclear whether a state Integrated Resource Plan would qualify
- Much depends on how these issues are defined by stakeholders in the compliance process

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Cost Allocation Implications

- Transmission costs allocation "roughly commensurate with benefits"
- If the costs for desired transmission are socialized, will that prompt additional renewable resources in New England?
- Order No. 1000 did not require cost allocation for NTAs
- The question ***"Who pays and for what?"*** will change the answer to the resource solution question

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End of Presentation

Thanks!

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