



# Building New Transmission To Meet Reliability, Environmental & Economic Goals

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**Northeast  
Utilities System**

**Energy / Growth / Leadership**

- About New England and Northeast Utilities
- New England's Early Focus On Reliability Needs
- Growing Environmental and Economic Challenges
- Environmental Mandates
- New England's Evolving Transmission Cost Allocation Process

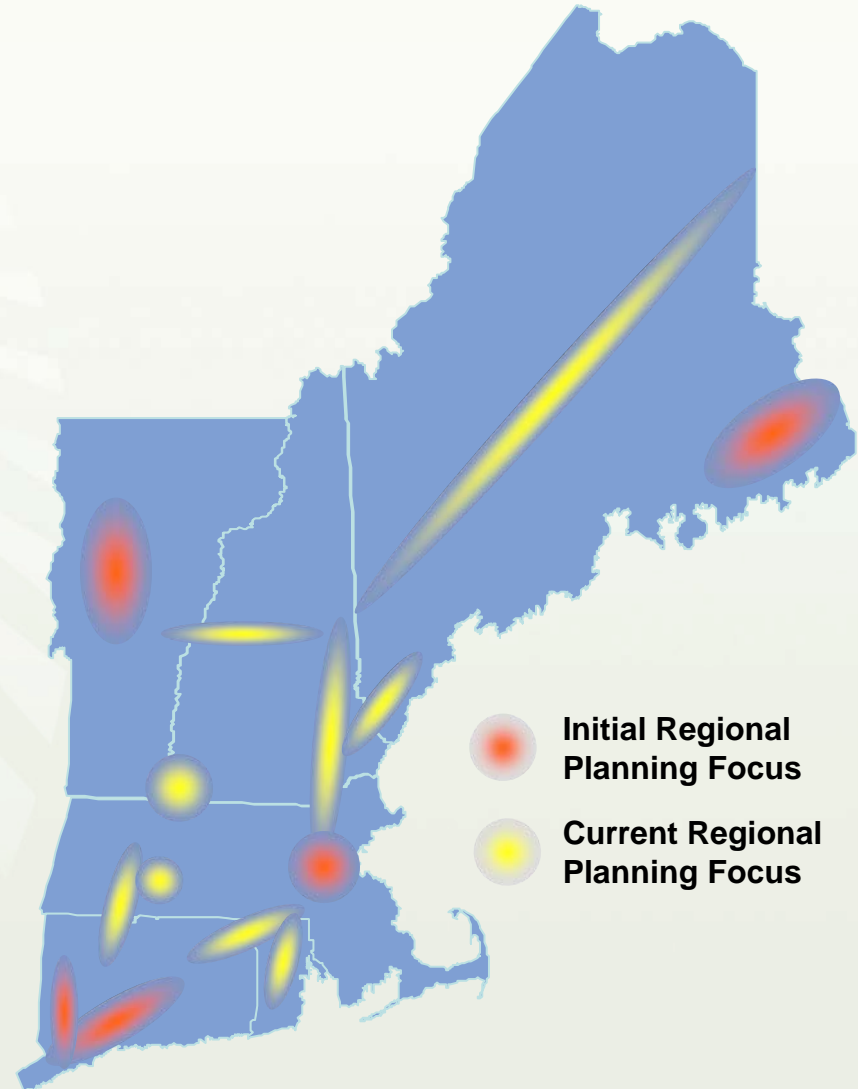


## Initial Regional Planning Focus

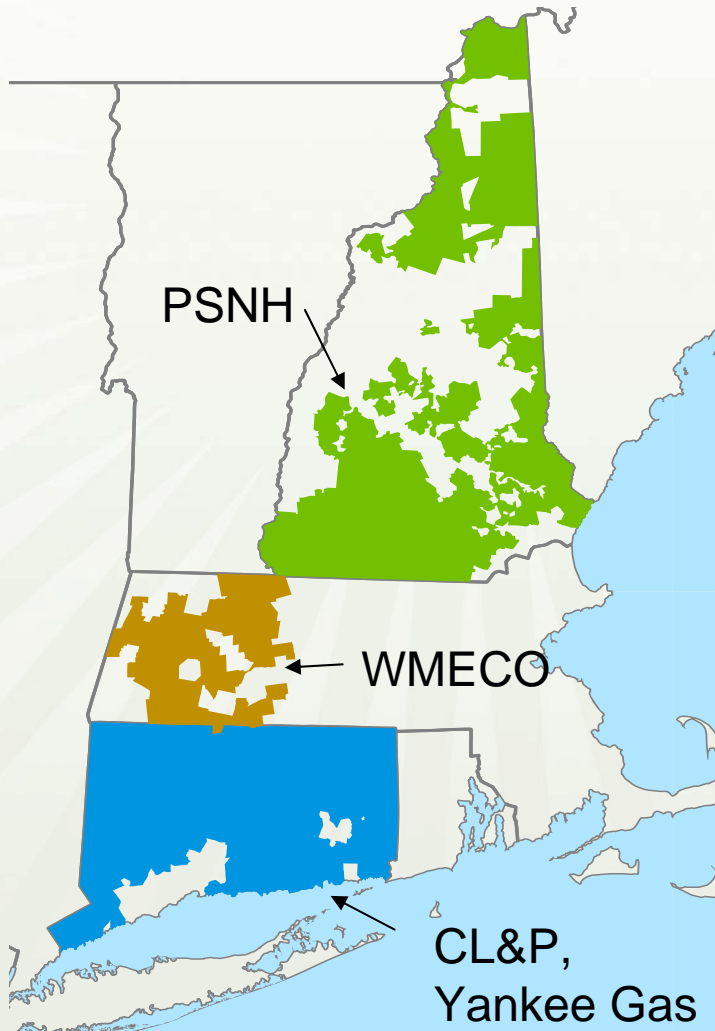
- Northeast Reliability Interconnect Project  
New Brunswick to Maine
- Northwest Vermont Reliability Project  
Vermont
- NSTAR 345-kV Transmission Reliability  
Boston, Massachusetts
- SWCT Reliability Project  
Connecticut, Bethel to Norwalk and  
Middletown to Norwalk

## Current Regional Planning Focus

- Significant needs identified
- Longer term scenario planning  
has begun
- Affects all New England states



# About Northeast Utilities



- 2.1 million electric and gas distribution customers in Connecticut, Massachusetts, and New Hampshire
- 4th largest transmission company in the 11 Northeastern States (based on miles)
- Significant Transmission Investments
  - Over 100 circuit miles of new 345 kV lines in Southwest CT
  - 190 circuit miles of new 345 kV lines in planning and siting
  - Numerous 115 kV and substation projects recently completed and underway

### **Identification of Needs**



Independent regional planning defines needs with stakeholder input throughout the process

### **Siting Approvals**



State approvals have been received for major projects; new projects require growing multi-state coordination

### **Cost-Recovery and Cost Allocation**



Regional formula tariff with stakeholder input addressing local and regional cost allocation

### **Adequate Financial Returns**



FERC's New England order provides for a ROE with incentives which is getting transmission built

# New England is at a Significant Crossroads



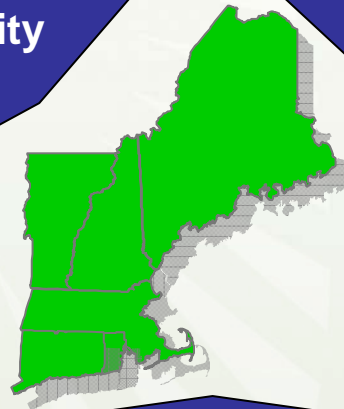
- Resource Adequacy
- Fuel Diversity
- Grid Reliability
- System Operability

**System  
Reliability**

**Continuing  
Rate  
Pressure**



- Record high electric prices
- Significant infrastructure investment on horizon
- Regulator and customer frustration

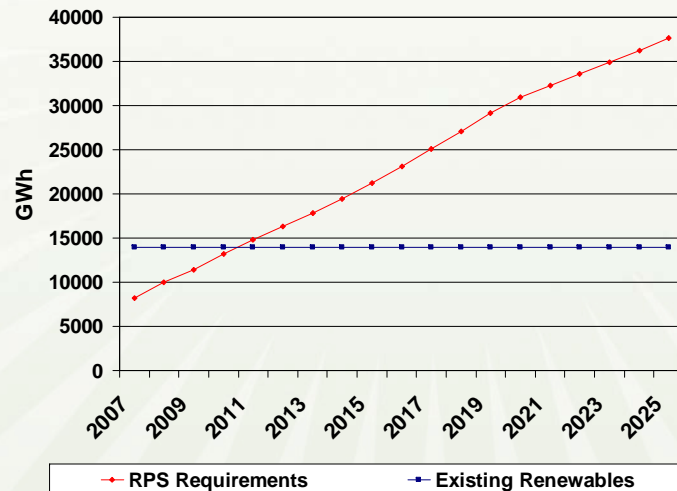


**Increasing  
Environmental  
Pressure**



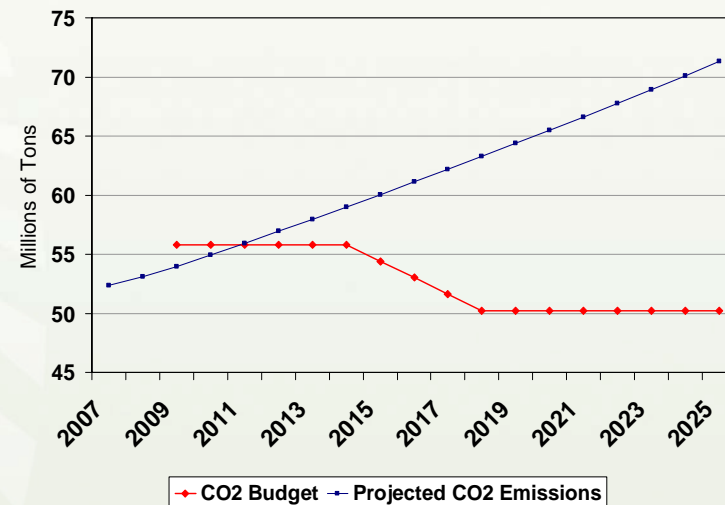
- Growing consensus on climate change with policy action
  - Federal GHG legislation likely in next 2 years
  - RGGI already here in Northeast
- Renewable Portfolio Standards
- Aggressive demand side / energy efficiency aspirations

## Renewable Portfolio Standards



- Compliance gap is 24 million MWh by 2025
- Equivalent to 3,000 MW biomass (80%), 7,900 MW wind (30%), or 19,700 MW solar (12%)
- Opportunities to develop scale projects in ME (wind) and NH (wind, biomass), but not sufficient to meet requirements

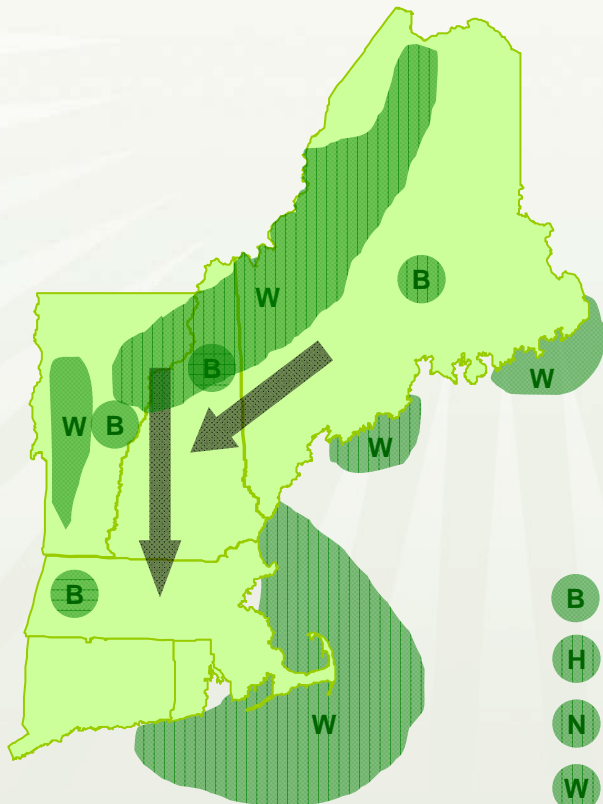
## Regional Greenhouse Gas Initiative CO<sub>2</sub> Emissions



- Compliance gap is 21 million tons CO<sub>2</sub> by 2025
- Equivalent to 38 million MWh or 5,400 MW of emitting baseload generation
- New England has 2,800 MW of coal

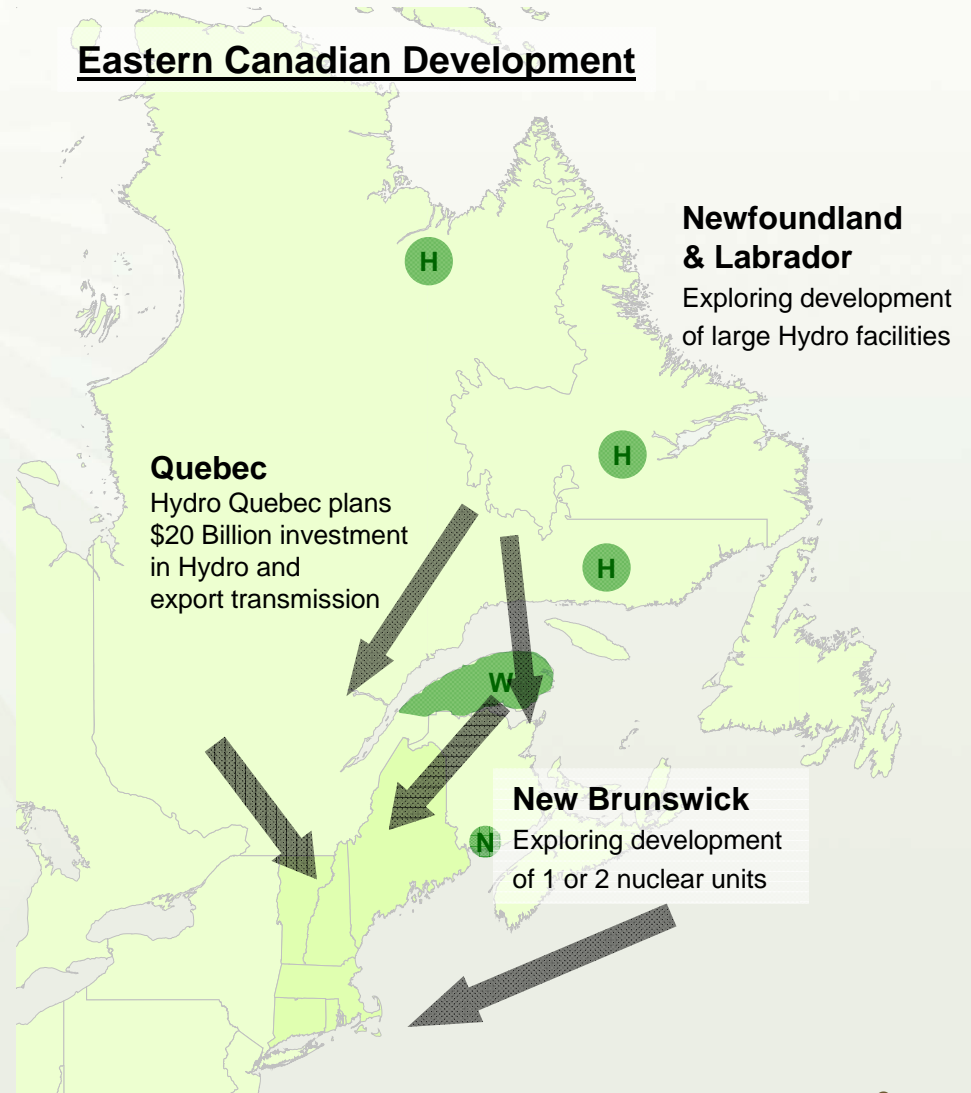
# Northern New England and Eastern Canada Will Become Valuable Sources to Meet New England's Needs

## New England's Most Attractive Renewable Energy Locations



- B** Biomass
- H** Hydro
- N** Nuclear
- W** Wind
- ➔** General Movement Of Power

## Eastern Canadian Development

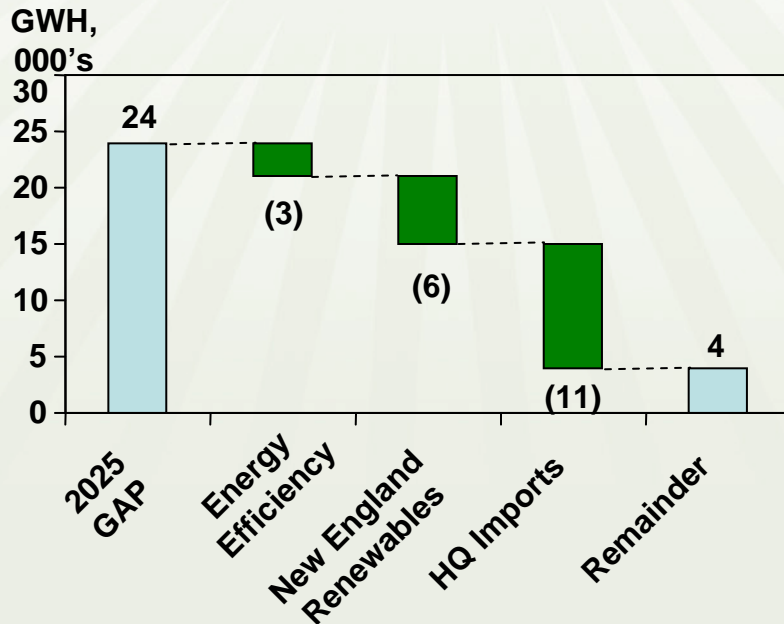


# A Portfolio Approach is the Key for New England's Success

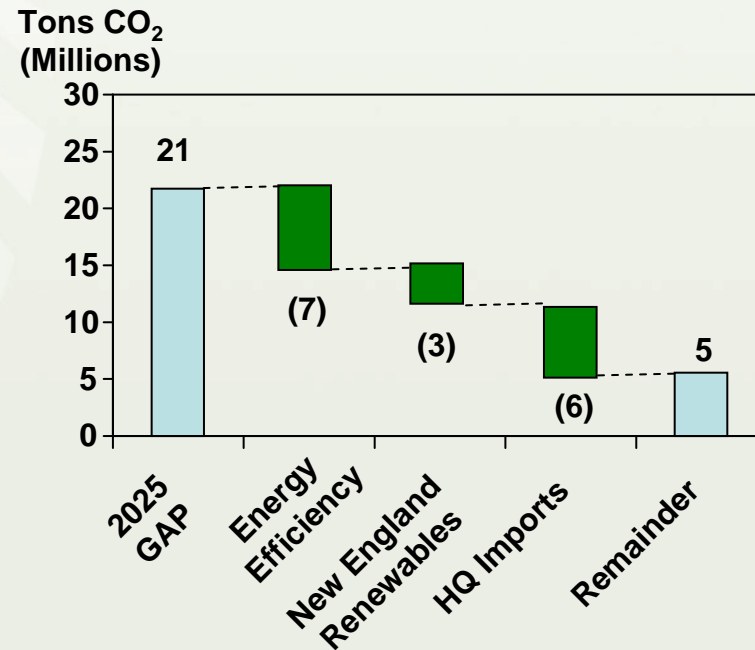
## Key Elements of the Portfolio

- Demand side management and energy efficiency programs at \$5.2 billion through 2025 (\$4.1 billion more than today's levels)
- 2,200 MW of new renewable resources added within New England
- New tie line with Hydro Quebec contributing 10.5 million MWh annually

### RPS Goals



### CO2 Goals



# Status of Transmission Cost Allocation in New England

Project Type	NE Transmission Cost Allocation (TCA)
Reliability	<ul style="list-style-type: none"><li>• Project costs largely regionalized for projects in ISO-NE Regional System Plan</li><li>• Extensive stakeholder involvement process</li></ul>
Economic	<ul style="list-style-type: none"><li>• Regionalized costs for projects that “qualify”</li><li>• Initial economic projects proposed to ISO in 2007 &amp; 2008</li><li>• Stakeholders currently debating analytical framework</li></ul>
Renewable	<ul style="list-style-type: none"><li>• Not directly addressed in current ISO-NE tariff</li><li>• Environmental compliance costs are low &amp; just starting</li><li>• State specific issues are at the forefront of discussions</li></ul>
Inter-Regional	<ul style="list-style-type: none"><li>• Not directly addressed in current ISO-NE tariff</li><li>• Inter-regional projects have large potential benefits to NE</li><li>• Several new projects proposed to ISO in late 2007</li></ul>

- Electricity sector faces many challenges as it simultaneously attempts to address reliability, and environmental mandates, and economic impacts.
- Meeting Renewable Portfolio Standards (RPS) and the Regional Greenhouse Gas Initiative (RGGI) will require a portfolio of options for low-emissions, renewable resources:
  - Energy efficiency and demand-side options
  - New England's renewable power projects
  - Nuclear and clean coal generation (if they can be sited)
  - Import of power from Canada
- NU believes structural changes (including cost allocation) and additional transmission infrastructure are necessary to insure these options are available when needed to meet New England's RGGI and RFP needs. Work should begin now to insure this occurs.