

# Proposed System Improvements in New England

Northeast Coordinated System Plan  
IPSAC05  
December 14, 2007



# Background: System Planning in New England

- Regional System Plan (RSP)
  - RSP07 is the 7th annual regional system plan
  - RSP07 looks at system needs for 2007–2016
  - Regularly updates on status of transmission projects in the plan
- Objectives
  - Provides opportunities for market solutions
    - e.g. generation, demand-side measures, and merchant transmission
  - Provides a transmission plan as a backstop for reliability
    - Can be modified based on market solutions that develop
  - RSP does not constitute an integrated resource plan



# RSP07 Conclusions

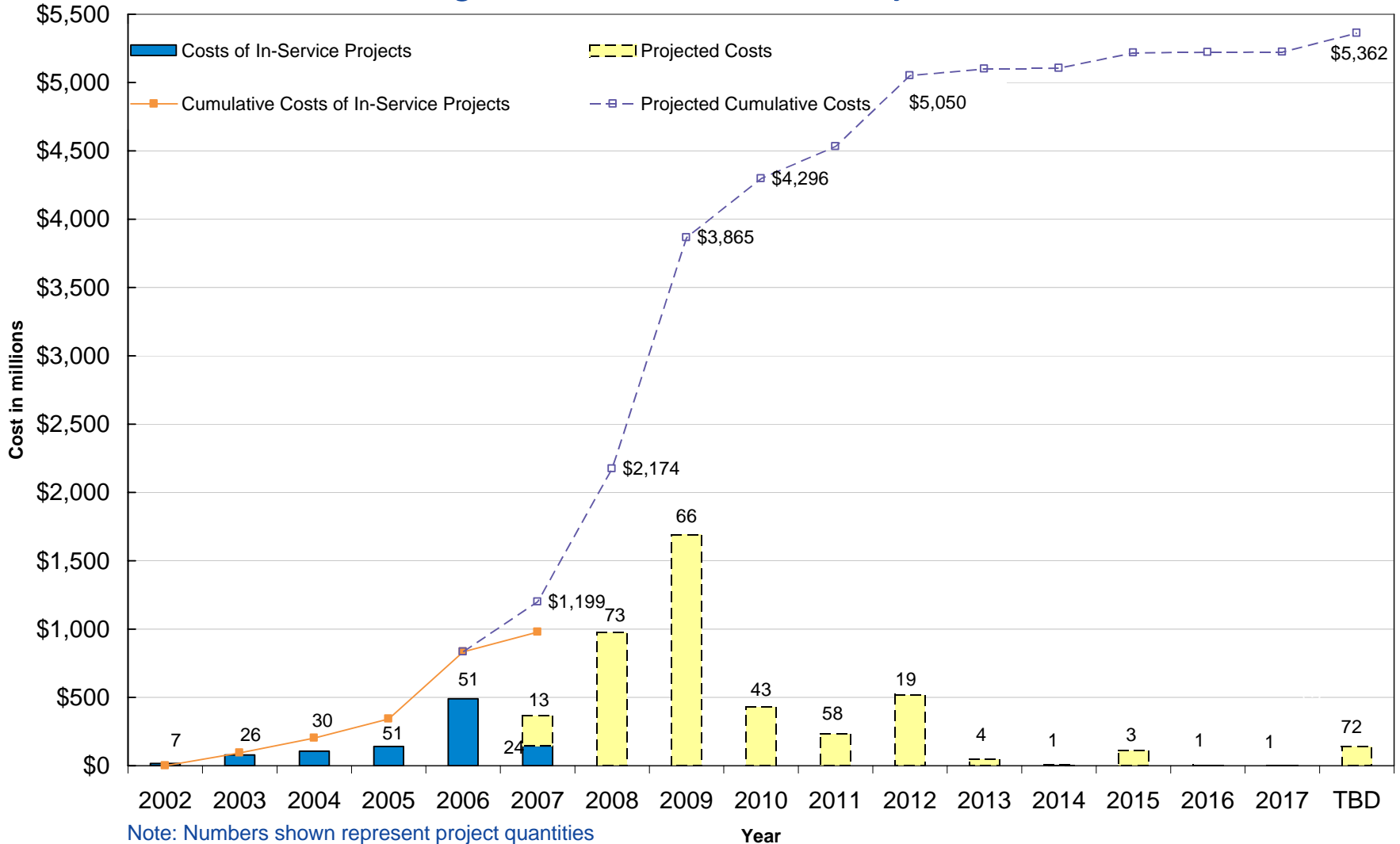
- Resources
  - Systemwide resources are needed by 2010
  - Fast-start and demand response resources are beneficial in major load pockets
- Fuel Supply
  - New England will have continued dependence on natural-gas fired generation
  - Energy prices and air emissions will be strongly influenced by the relative costs of natural gas and oil
  - Progress is being made to address the fuel supply issue
    - Dual fuel and/or firm supply of natural gas
    - Additional supplies of natural gas for New England
- Market signals are in place to procure needed resources

# RSP07 Conclusions (cont.)

- Clean and renewable resources are needed to meet environmental regulations and renewable portfolio standards
  - Wind, Solar, Hydro, Biomass, Nuclear
- Energy Efficiency, Conservation, and Demand Response
  - Help meet capacity needs
  - Improve fuel diversity situation
  - Lower emissions
- Transmission is required throughout New England
  - Build improvements in the Project Listing and continue studies
  - Provide improved cost estimates of projects
- Development of resources can defer the need for transmission upgrades
- Pursuit of additional interregional planning efforts required
- Open stakeholder planning process is important

# October 2007 Changes, *Cont.*

## Investment of New England Transmission Projects



Note: Numbers shown represent project quantities

# Major Transmission Projects and Studies

**This graphic has been redacted for security reasons. Please contact ISO New England Customer Service at 413.540.4220 to request access to this information.**

# Status of Major Transmission Projects

## Northeast Reliability Interconnect Project

- Final Design (I.3.9) Approval – March 2003
- Transmission Cost Allocation (TCA) Approval – Reliability Committee (RC) recommended approval of revised TCA application on July 10, 2007 for additional \$34.1M. ISO Determination Letter issued September 28, 2007
- Siting approved for Canadian section of line
- Maine Public Utilities Commission (PUC) Siting approval – July 2005
- Maine Department of Environmental Protection (DEP) Permit received October 2005
- Department of Energy (DOE) Presidential Permit approved and received in December 2005
- Army Corps of Engineers Clean Water Act Permit received January 2006
- Right-Of-Way complete. Line construction over 90% complete
- Orrington Substation work 90% complete. Series capacitor 97% complete
- Completion of work on Canadian section of the line on target
- Estimated in-service date – December 2007

# Status of Major Transmission Projects, *Cont.*

## Northwest Vermont Reliability Project

- I.3.9 Approval – January 2003
- TCA Approval – Vermont Electric Power Company to develop amended TCA application expected Spring 2008
- Vermont Supreme Court upholds Vermont Public Service Board's (VT PSB) approval of project
- Blissville Substation 115 kV Phase Angle Regulator (PAR) placed in-service December 2006
- West Rutland – New Haven 345 kV line placed in-service January 2007
- First Granite autotransformer received May 2007.
- Second Granite autotransformer expected September 2007. Two PARs expected in early fall 2007
- Permits for Vergennes and Queen City 115 kV substations received and construction has begun
- VT PSB approved New Haven – Queen City 115 kV final line design and landscape plans on June 25, 2007
- Estimated in-service date – December 2008 (for remainder of project)

# Status of Major Transmission Projects, *Cont.*

## NSTAR 345 kV Transmission Reliability Project

- I.3.9 Approval – February 2005
- TCA Approval – RC recommended approval of revised TCA application on May 30, 2007 for additional \$57.5M due to increases in labor and materials associated with Stage 1. ISO Determination Letter **expected November 2007**
- Energy Facilities Siting Board (EFSB) and Massachusetts Department of Telecommunications and Energy (MA DTE) approval received on December 23, 2004
- Pipe installation complete
- Substation equipment installation completed
- Stoughton Substation energized May 6, 2006
- Stoughton – Hyde Park (3164) 345 kV cable fully operational November 2006
- Stoughton – K Street (3162) 345 kV cable fully operational April 2007
- Estimated in-service date – October 2008 (Stage 2)

# Status of Major Transmission Projects, *Cont.*

## Lower SEMA (Southeastern Massachusetts) Upgrades

- I.3.9 Approval - August 2007
- TCA Approval - TBD
- Long-Term needs analysis underway
- Estimated in-service date – October 2008 (Short-Term) / 2010 (Long-Term)

# Status of Major Transmission Projects, *Cont.*

## Merrimack Valley / North Shore Reliability Project

- I.3.9 Approval – TBD
- TCA Approval – TBD
- Project involves multiple steps over a ten year horizon
- 2007 – 115 kV line reconductoring (Level 1 Proposed Plan Application)
- 2008 – new 345 kV Wakefield Junction Substation, circuit breaker additions at Sandy Pond 345 kV Substation, and capacitor bank addition at Revere Substation
- 2009, 2010, 2017 – 115 kV line replacement and reconductoring
- Task Force recommendations for approval have been received
- Estimated in-service date – 2007 through 2017

# Status of Major Transmission Projects, *Cont.*

## Southwest Connecticut Reliability Project

Phase I: Bethel (Plumtree Substation) – Norwalk (Norwalk Substation)

- I.3.9 Approval – February 2004
- TCA Approval – ISO Final Determination Letter issued September 2006, which finds \$117.4 million of the total estimated cost constitutes Localized Costs
- Placed in-service – October 2006

Phase II: Middletown (Scovill / Beseck Substations) - Norwalk

- I.3.9 Approval – January 2006
- TCA Approval – application expected 4<sup>th</sup> Quarter
- Siting approved April 2005
- Construction is in progress (35% Complete)
- Estimated in-service date – December 2009

# Status of Major Transmission Projects, *Cont.*

## New England East – West Solution (NEEWS)

- Comprised of the Interstate, Greater Springfield, Rhode Island, and Central Connecticut Reliability Projects
- I.3.9 Approval – expected winter 2007/2008
- TCA Approval – initial applications expected spring 2008
- Transmission Owners Presentation of preferred alternatives expected at the Oct/Nov PAC
- Tentative start for siting processes is 2008
- Estimated in-service date – 2011 - 2013

# Status of Major Transmission Projects, *Cont.*

## Springfield Area

- I.3.9 Approval – expected winter 2007/2008
- TCA Approval – expected spring 2008
- Estimated in-service date – 2010 - 2013

## Greater Rhode Island Transmission Reinforcements

- I.3.9 Approval – expected winter 2007/2008
- TCA Approval – expected spring 2008
- Transmission Task Force recommendation for approval received in July 2007
- Estimated in-service date – 2008 - 2012

# Want More Information?

- Register with the ISO-NE Planning Advisory Committee (PAC) by contacting ISO's Customer Service Department
  - By phone: 413-540-4220
  - or
  - Email: [custserv@iso-ne.com](mailto:custserv@iso-ne.com)
- Next PAC meeting is scheduled for December 18, 2007
  - Background on ISO-NE Tariff and Planning Process
  - HVdc Technology
  - Renewable Development in Canada
  - Transmission Developer Proposals