

The Green Line Project



**Presentation to the ISO-NE Planning Advisory
Committee**

New England Independent Transmission Company, LLC

December 18, 2007

The Green Line Project

- 500 kV DC transmission system with transfer capability of 660 MW or more
- ~ 140 miles submarine Cable (1 foot in diameter)
- Interconnected to Maine Yankee Substation in Maine, K Street Substation in Boston at 345 kV
- Potential to increase size and connect to other points on the grid in southern New England
- Delivers locational capacity to NEMA market.

Green Line Project Proposal

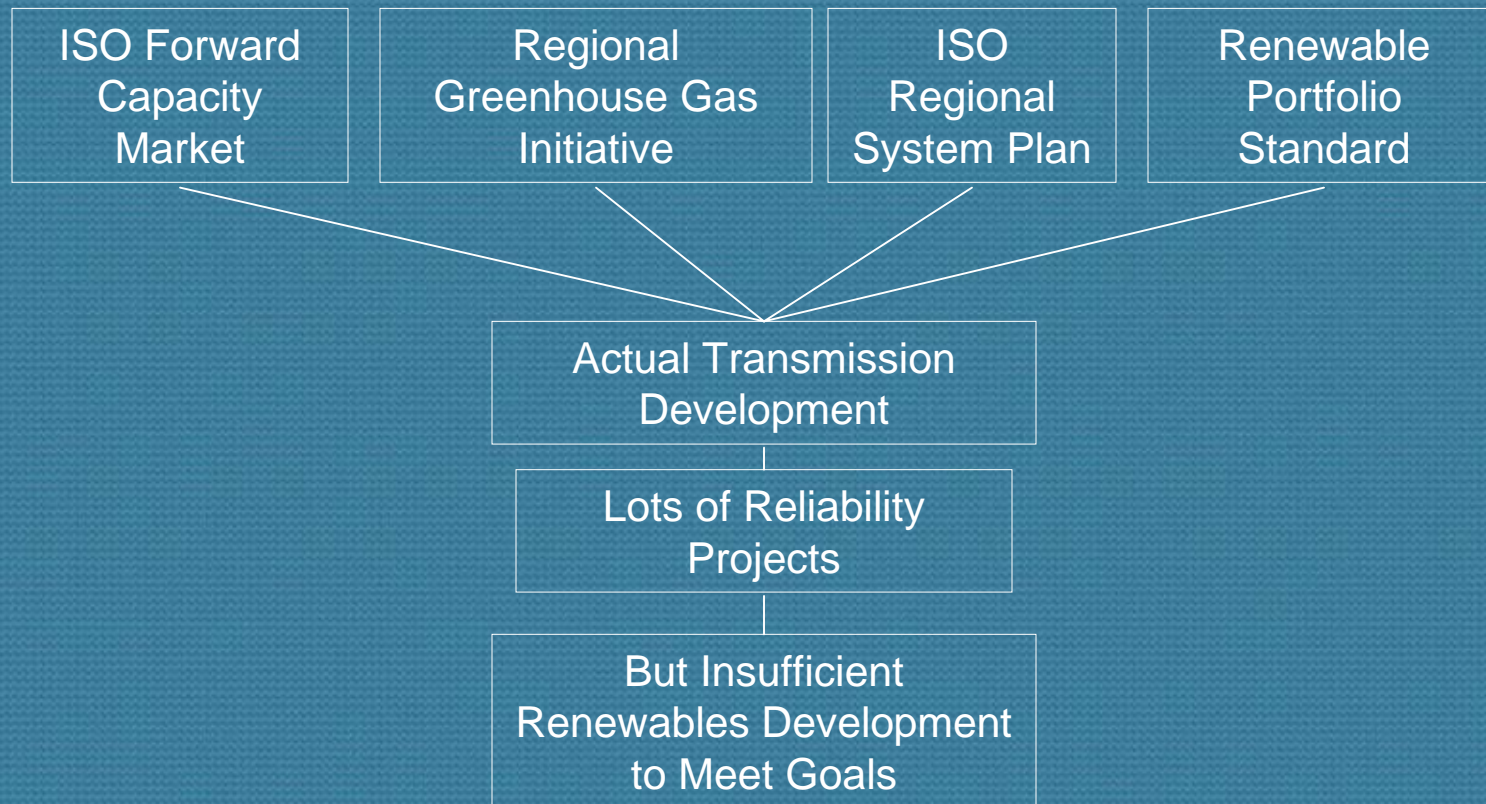
- Proposed by New England Independent Transmission Company, LLC
 - Principals are the main developers behind the Neptune and Hudson Projects
 - Neptune Project: \$600+ million, independent HVDC transmission system linking New Jersey and Long Island
 - From New Jersey to Long Island: 70 miles, of which 50 are underwater
 - Project completed on time, and on budget, in June 2007
 - Hudson Project: from New Jersey to West 49th St in Manhattan. Selected by NYPA and under development
- NEITC recognized by FERC as independent and capable of developing project in ISO-NE (Feb 2007 Order, EL07-21-000)
 - Green Line concept outlined to ISO-NE on December 5, 2006
 - NEITC is active NEPOOL participant as a provisional member of Transmission Sector
 - NEITC has provided project overviews to State and Federal Regulators, NEPOOL Participants, Transmission, and Reliability Committees, the ISO, NECPUC and many New England stakeholders

Why The Green Line Project?

- With the Green Line Project, New England States can:
 - Close the gap in meeting their RPS and RGGI objectives,
 - Diversify generation portfolio from over-dependence on natural gas,
 - Meet load growth in Boston.
- With the Green Line Project, ISO-NE creates a new, permittable, offshore transmission corridor that enhances reliability in both Northern and Southern New England.
- With the Green Line Project, more economical, renewable and low-carbon Canadian energy exports – currently pent-up by transmission constraints -- can flow into New England.
- The Green Line Project is a permittable, buildable, economic, and reliable addition to New England's infrastructure.

The Green Line Project Drivers

The Current Drivers Influencing the Power Market and Broader Environmental Objectives

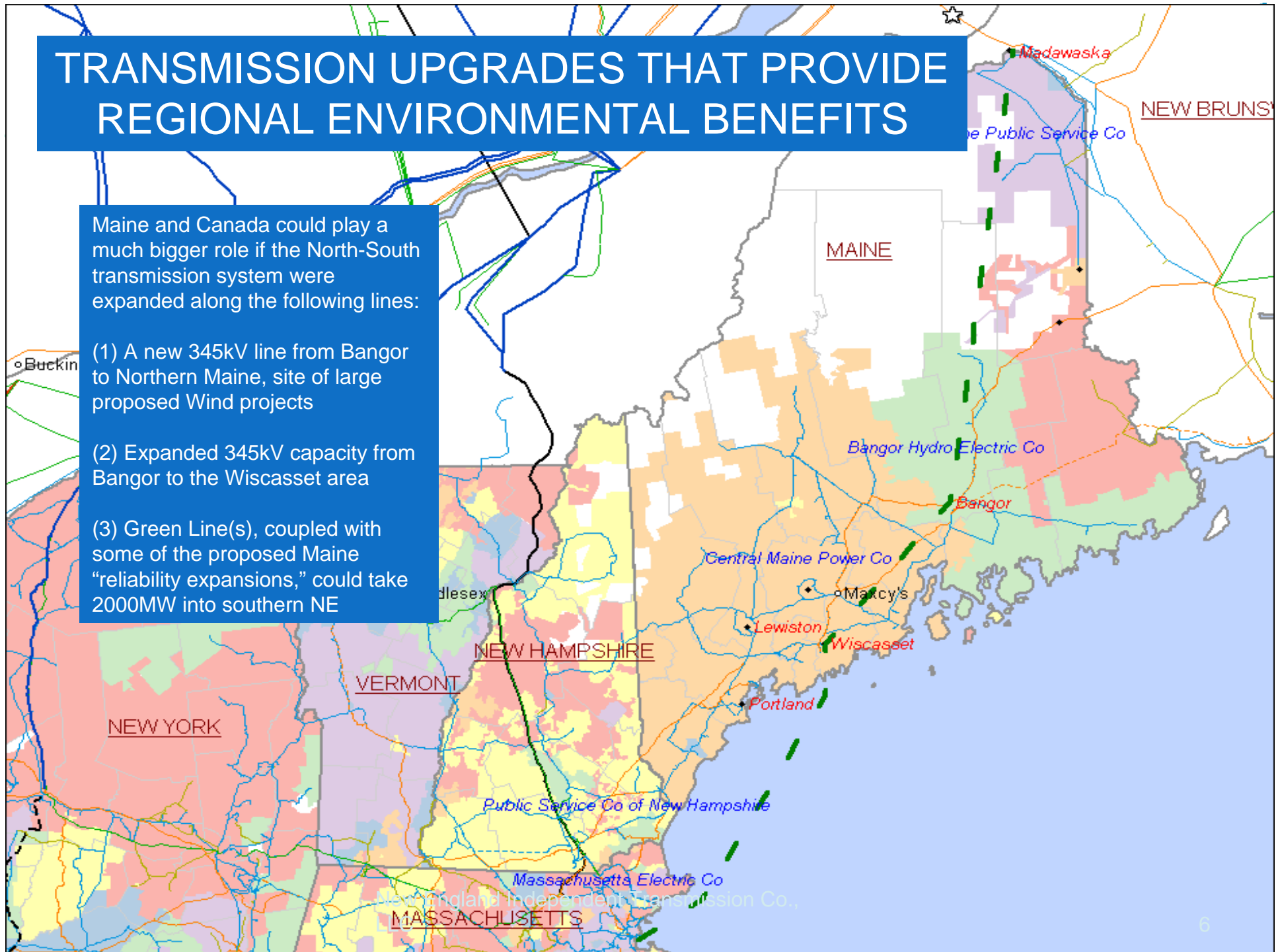


Only with additional transmission to Maine and Canada can New England meet environmental objectives

TRANSMISSION UPGRADES THAT PROVIDE REGIONAL ENVIRONMENTAL BENEFITS

Maine and Canada could play a much bigger role if the North-South transmission system were expanded along the following lines:

- (1) A new 345kV line from Bangor to Northern Maine, site of large proposed Wind projects
- (2) Expanded 345kV capacity from Bangor to the Wiscasset area
- (3) Green Line(s), coupled with some of the proposed Maine "reliability expansions," could take 2000MW into southern NE



Green Line Project Reliability Benefits

- Adds damping to oscillations on the AC system.
 - Damping of the Maine to lower New England mode has been noted as a concern under certain contingencies and transfer levels.
- Can supply energy to the Boston area without an increase in short circuit levels
 - Compared with the increase that would be due to AC transmission additions or a power plant of similar size.
- Can provide substantial voltage control and reactive power supply, if desired for reliability purposes.
- Can be equipped with temporary overload capability, which could be used to improve stability given northern generation changes required under certain contingencies.
- Is bi-directional: its power can flow from NEMA to Maine, which would have been very helpful in the recent OP4 in Maine
- Allows greater control of energy flow on New England system.
- Can add to AC system flexibility and the feasibility of other AC system interconnections.

Cost Recovery

- NEITC proposes the Green Line Project as a pool transmission facility that would recover its costs through the Regional Network Service rate.
 - ISO and other market participants to determine appropriate cost recovery methods
- Needs assessments performed by ISO-NE through the PAC will determine how the Green Line Project can address economic and reliability problems.
- ISO-NE's new Attachment K provides a mechanism for conducting Economic Needs Assessments.
- NEITC is proposing the Green Line Project as a Project to be evaluated this year as part of RSP 08.

The Green Line Project Route

- The Green Line Project will be installed in the Gulf of Maine between Wiscasset, Maine and Boston, Massachusetts.
 - ❑ Cable length and installation depths are well within the parameters of other submarine cables installed around the world.
 - ❑ NEITC has selected suitable converter station sites in both Wiscasset and Boston.
 - ❑ Bathymetric data, navigational constraints, bottom and other offshore conditions in the Gulf of Maine indicate that multiple alternative routes exist to minimize environmental impacts.

Environmental Impacts

- The Green Line Project will be installed using well-known, low impact technology:
 - ❑ Minimal and short-lived environmental impacts, especially in comparison to terrestrial alternatives.
- Environmental impacts of submarine cable itself are limited to construction impacts (from the 1-foot diameter cable bundle).
- Environmental permits at the Federal, State, and local levels will be required, including:
 - ❑ Federal NEPA compliance through USACE or MMS
 - ❑ ME comprehensive development permit, land lease permits, and MPUC approval
 - ❑ MA MEPA and Energy Facilities Siting Board
 - ❑ Wiscasset zoning compliance
 - ❑ City of Boston permitting reviews

The Green Line Project Team

- The Green Line Project team:
 - ❑ Principals: Ed Stern and Ed Krapels
 - ❑ Suppliers: Siemens and Prysmian
 - ❑ Investors: Starwood Infrastructure Fund, Energy Investors Funds, Catamount Companies
 - ❑ Environmental consultants: ESS
 - ❑ Counsel -- Corporate: Skadden Arps; Regulatory: Pillsbury Winthrop Shaw Pittman; Mass: Keegan Werlin; Maine: Curtis Thaxter.
 - ❑ Finance: Wachovia
 - ❑ Accountants: Price Waterhouse
- The Green Line Project team has shown it can deliver a major transmission project at a predictable cost on a predictable schedule
 - ❑ NEITC has proven expertise to develop subsea HVDC projects

Conclusions

The Green Line is the right Project in the right place at the right time:

- It enhances the reliability and efficiency of the New England grid;
- It uniquely facilitates achieving the renewable and low-carbon energy needs of all of New England;
- It enables much-needed generation portfolio diversity;
- It is a practical approach to creation of a new transmission corridor that can be built on a predictable time frame and budget;
- NEITC has the relevant experience and track record to develop, finance, and build the Green Line Project.
- NEITC has been and will continue to work with all interested market participants to develop this key component of a comprehensive New England solution.