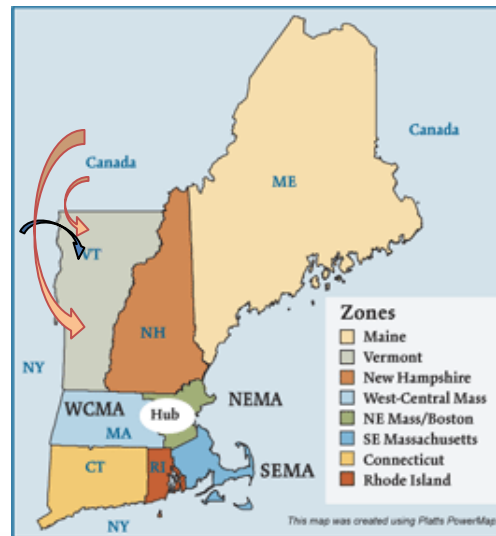


VT Power Import Alternatives

Operating Committee Update

March 2014



Overview of Current Inter-Regional Transmission Facilities

- **Pool Transmission Facility (PTF)** are the transmission facilities owned by PTOs, over which the ISO shall exercise Operating Authority in accordance with the terms set forth in the TOA, rated 69 kV or above required to allow energy from significant power sources to move freely on the New England Transmission System, and include all transmission lines and associated facilities owned by PTOs rated 69 kV and above, except for lines and associated facilities that contribute little or no parallel capability to the PTF (as defined in this OATT). [...]
- **Merchant Transmission Facilities (MTF):** are the transmission facilities owned by MTOs, defined and classified as MTF pursuant to Schedule 18 of the OATT, over which the ISO shall exercise Operating Authority in accordance with the terms set forth in a MTOA or Attachment K to the OATT, rated 69 kV or above and required to allow energy from significant power sources to move freely on the New England Transmission System (Cross Sound Cable)
- **Other Transmission Facility (OTF)** are the transmission facilities owned by Transmission Owners, defined and classified as OTF pursuant to Schedule 20, over which the ISO shall exercise Operating Authority in accordance with the terms set forth in the OTOA, rated 69 kV or above, and required to allow energy from significant power sources to move freely on the New England Transmission System. OTF classification shall be limited to the Phase I/II HVDC-PTF.

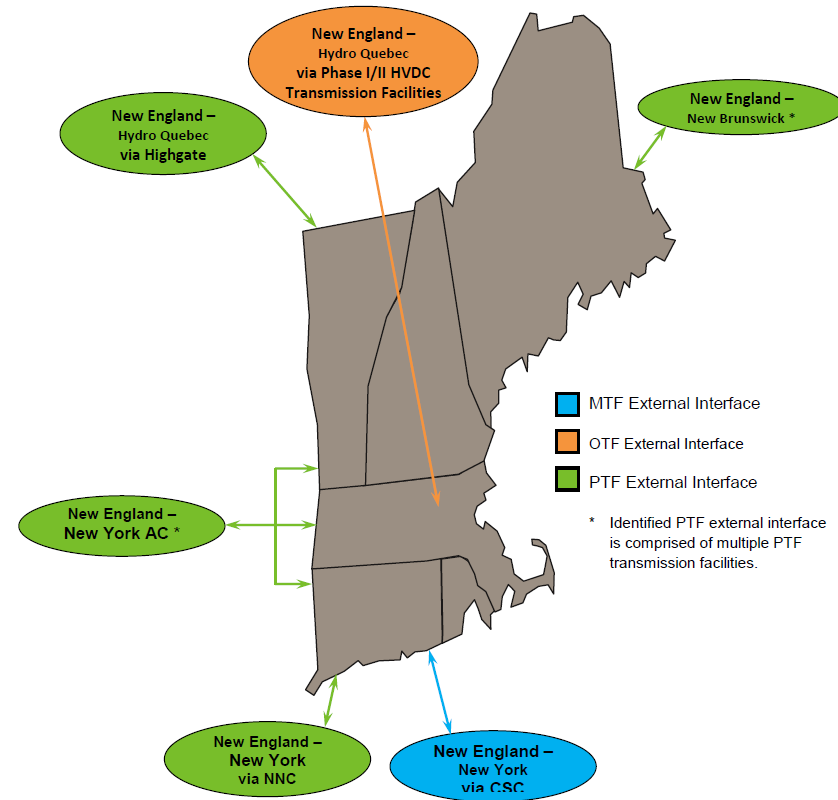


Figure 1. Graphical representation of New England Control Area external interfaces with neighboring BAAs

Transmission Development Process

Key Governing ISO-NE Definitions:

- **Reliability Transmission Upgrade:** means those additions and upgrades not required by the interconnection of a generator that are nonetheless necessary to ensure the continued reliability of the New England Transmission System, taking into account load growth and known resource changes, and include those upgrades necessary to provide acceptable stability response, short circuit capability and system voltage levels, and those facilities required to provide adequate thermal capability and local voltage levels that cannot otherwise be achieved with reasonable assumptions for certain amounts of generation being unavailable (due to maintenance or forced outages) for purposes of long-term planning studies. Good Utility Practice, applicable reliability principles, guidelines, criteria, rules, procedures and standards of ERO and NPCC and any of their successors, applicable publicly available local reliability criteria, and the ISO System Rules, as they may be amended from time to time, will be used to define the system facilities required to maintain reliability in evaluating proposed Reliability Transmission Upgrades. A Reliability Transmission Upgrade may provide market efficiency benefits as well as reliability benefits to the New England Transmission System.
- **Elective Transmission Upgrade:** is a Transmission Upgrade that is participant-funded (i.e., voluntarily funded by an entity or entities that have agreed to pay for all of the costs of such Transmission Upgrade).
- **Market Efficiency Transmission Upgrade:** is defined as those additions and upgrades that are not related to the interconnection of a generator, and, in the ISO's determination, are designed to reduce bulk power system costs to load system-wide, where the net present value of the reduction in bulk power system costs to load system-wide exceeds the net present value of the cost of the transmission addition or upgrade. For purposes of this definition, the term "bulk power system costs to load system-wide" includes, but is not limited to, the costs of energy, capacity, reserves, losses and impacts on bilateral prices for electricity.

Potential merchant transmission projects:

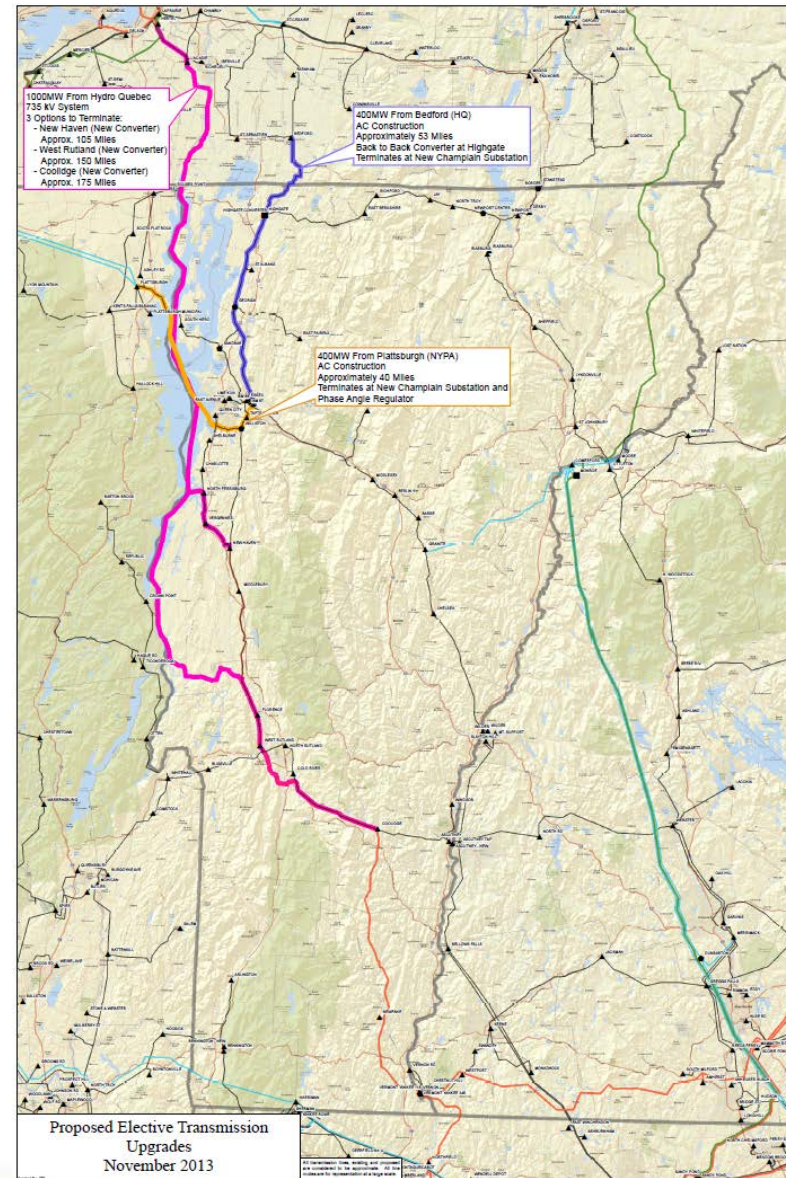
Strong interest in Vermont due to...

- **Supply, demand and geography**—Vermont’s geographic location places the state between significant renewable power supplies to the north and west, and significant demand to the south and east.
- **Policy/retirements driving interest**—Existing renewable power supply mandates in each of the New England states create a collective regional need for over 8000 gigawatt hours of electricity deemed renewable. Generation need is also driven by 6000 MW of scheduled coal/oil power plant retirements.
- **Efforts are underway to solicit project bids** – Through NESCOE, The New England states have agreed that one or more requests for proposals will be issued to advance the development of transmission infrastructure that would enable delivery of at least 1200 MW and as much as 3600 MW of clean energy into the New England electric system from no and/or low carbon emissions resources.
 - *The States agree that the costs of transmission infrastructure would be recovered through the ISO-NE tariff to ensure that the benefits and costs of transmission investments are shared appropriately among the New England States.*
- **Vermont as transmission lynchpin**—There is a strong and growing interest in building transmission in Vermont. Three proposals impacting VELCO’s system and totaling almost 2000 MW are at various stages of development and more proposals are likely.

Active Projects Under Development

Current Proposed Elective Transmission Upgrades (ETU)

1. NY-VT: **Grand Isle Intertie** (230kV AC - QP314)
 - **400 MW** Capacity
 - 230 KV Phase Angle Regulator-controlled Tie at a new Champlain Substation Site
 - Plattsburgh Substation upgrade
 - Submarine Cables (Lake Champlain) / underground or OH 230kV
 - Target In Service Date: **6/2017**
2. HQ-VT: **New England Clean Power Link** (320kV DC - QP425)
 - **1,000 MW** Capacity
 - 320kV DC Transmission Tie
 - AC/DC Converter connecting to HQ 735kV System
 - AC/DC Converter connecting to VT 345kV System
 - Target In Service Date: **12/2018**
3. HQ-VT: **Highgate Expansion** (BTB Converter - TBD)
 - **425 MW** Capacity
 - 120/115kV Transmission Lines
 - Back to Back Converter Station
 - Target In Service Date: **06/2018**



Current State of the proposed Projects

- **Grand Isle Intertie:**

- ISO New England Interconnection Request: Queue Position 314 (*transferred from Champlain Wind Link*)
- Partially completed the feasibility study (although the system has significantly changed since the studies were conducted)
- Started the system impact study with NYISO and ISO-NE
- Currently reviewing alternate routes and corridors, with a submarine/underground route preferred
- Seeking to review VELCO Right of Ways to conduct environmental studies
- Affected Transmission Owner / ISO: VELCO, ISO-NE, NYISO, NU

- **New England Clean Power Link:**

- ISO New England Interconnection Request: Queue Position 425
- Started the ISO-NE Interconnection Process
- Seeking to review VELCO Right of Ways to conduct environmental studies
- Received negotiated rate authority from FERC
- Affected Transmission Owner / ISO: VELCO, CMP, HQT, PSNH, NYISO, NGrid, ISO-NE

- **Highgate Expansion:**

- ISO New England Interconnection Request: N/A
- No New England studies have started yet
- HQ Production Request of “Point to Point Service” to the US/Canada Border

Next Steps

- **Review and Evaluate the proposed projects Local and Regional Transmission Network impacts:**
 - Review VELCO's transmission impact (Right of Way and facilities)
 - Conduct abbreviated VELCO system impact/potential ancillary upgrade review
 - Review design standards and Interconnection requirements
- **Review Operational and Maintenance Impact:**
 - Assess long term impact on the operation and maintenance of VELCO's transmission system
 - Review system performance requirements
- **Review VELCO's Role and Participation:**
 - ISO-NE regional system impact studies will identify transmission upgrades to the existing system which will be required as part of the interconnection. VELCO will be responsible to conduct these upgrades at the expense of the transmission developers
 - Participate in DU/PSD discussions and project evaluations to determine possible impacts/benefits of each project
 - Obtaining a clearer understanding of VELCO's legal rights and responsibilities associated with the proposed projects, as well as opportunities; will present possible options for VELCO involvement to the Board of Directors at the April 2014 meeting