



**VELCO** VERMONT'S TRANSMISSION RELIABILITY RESOURCE

# New England's Infrastructure Initiative

presentation to the

Vermont System Planning Committee

April 30, 2014

MOVING **POWER.** MOVING **FORWARD.**

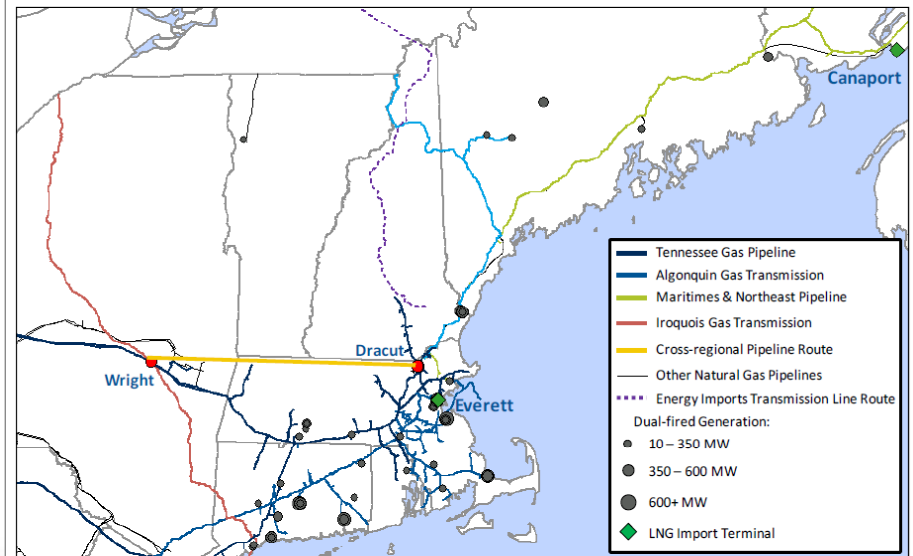


# Regional infrastructure development initiative

- NE states, NESCOE and ISO-NE are pursuing a two-part regional infrastructure initiative intended to address:
  - System **reliability** issues due to lack of generation when it's most needed in winter
  - **Retirements** of 4,000MW of generation in next five years, which will exacerbate problems
  - Electricity **price spikes** tied to use of oil/coal-fired generation resulting from gas-fired generation deficiency
  - Statutory RPS/GHG **requirements**, primarily those of CT and MA
- **Stakeholders engaged in initiative include:**
  - States' regulators and governor's staffs
  - NESCOE with assistance of Black & Veatch
  - ISO-NE
- **NESCOE request of ISO-NE:**
  - Provide technical planning and related support to secure 1,200MW to 3,600MW of new hydro/wind power, and 1,000 mmcf/day above 2013 levels of additional firm natural gas pipeline capacity
  - Provide regulatory assistance to develop and file any changes needed to ensure that an "appropriate" allocation of costs amongst New England states

## Proposed Cross-Regional Gas Pipeline

Early estimate from B&V Gas report indicated a \$1.2B investment which appears to be very low for a greenfield pipeline project.

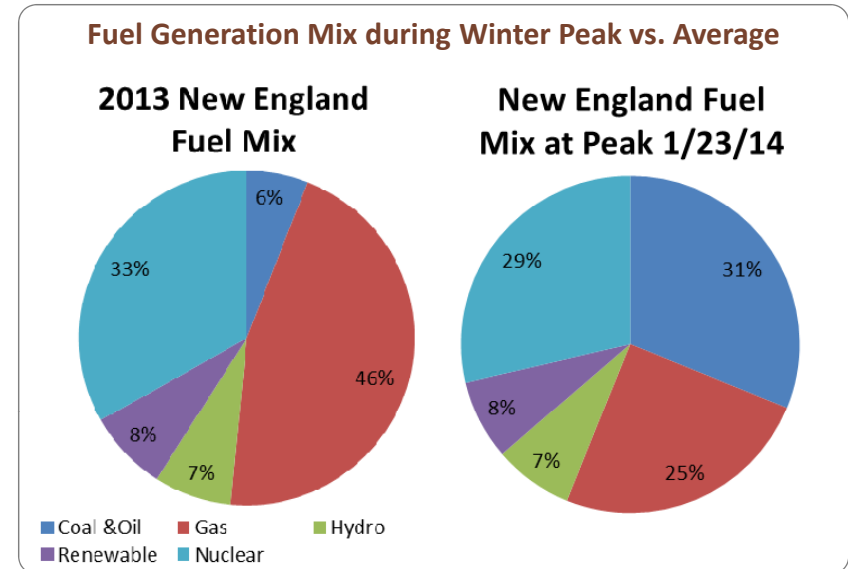


Proposed Pipeline Capacity Expansion Project (Yellow)

# Regional infrastructure development initiative

- **ISO-NE's Position:**

- Colder 2013/2014 winter weather created market electricity spikes due to deficiency in natural gas pipeline supply deliverability – \$1.1B in unexpected incremental energy costs in January 2014.
- Winter reliability program was key *“in keeping the lights on”* during coldest days of January when generation shifted from gas to oil and coal.
- ISO-NE has reiterated reliability risks associated with anticipated generation plant retirements in region (4,100MW, including 660MW in Vermont), *“The region is in a precarious position for the next several winters as major non-gas resources retire and proposed market enhancements and energy infrastructure improvements are years away.”*
- In light of this winter's operating conditions, ISO-NE may continue its winter reliability program and believes regional infrastructure initiative is best alternative to resolve reliability issues related to fuel supply and generation deficiency.



Total MW Retiring in New England*	
Connecticut	528 MW
Maine	159 MW
Massachusetts	2,682 MW
New Hampshire	56 MW
Rhode Island	64 MW
Vermont	666 MW
<b>Total</b>	<b>4,155 MW</b>

\*Megawatts based on relevant Forward Capacity Auction (FCA) summer qualified capacity (NOTE: total includes full and partial generator and demand response Non-Price Retirement (NPR) requests for Capacity Commitment Period (CCP) 2013-2014 through CCP 2017-2018)

Source: Status of Non-Price Retirement Requests; December 20, 2013

# Regional transmission development activities

- **Available hydro resources:**

- Based on Black and Veatch's report, approximately 2,000MW of new resources will be available by 2022 on Hydro Quebec's System. It is unlikely that these resources will be sufficient to support all proposed projects

- **Multiple transmission projects proposed by independent developers in New England:**

- **Grand Isle Intertie (GII)** in NY & NE (400MW from NY to Essex, Anbaric)
- **New England Clean Power Link (NECPL)** (1,000MW from HQ to Coolidge, Blackstone)
- **Green Line Project** (1,000MW from Maine to Greater Boston, Anbaric/Cianbro/Powerbridge)

- **New England TO/HQ engaged in development of transmission projects:**

- **Northeast Energy Link (NEL)** (1,100MW from Canada/Maine to South NE, NGrid/Emera)
- **Northern Pass (NPT)** (1,200MW from HQ to Deerfield, Northeast Utilities)
- **Highgate Expansion** (425MW from HQ to Essex, Hydro Quebec)



Note: HQ Hydro Resource



# Potential elective transmission projects

## 1. Anbaric: Grand Isle Intertie (230kV AC)

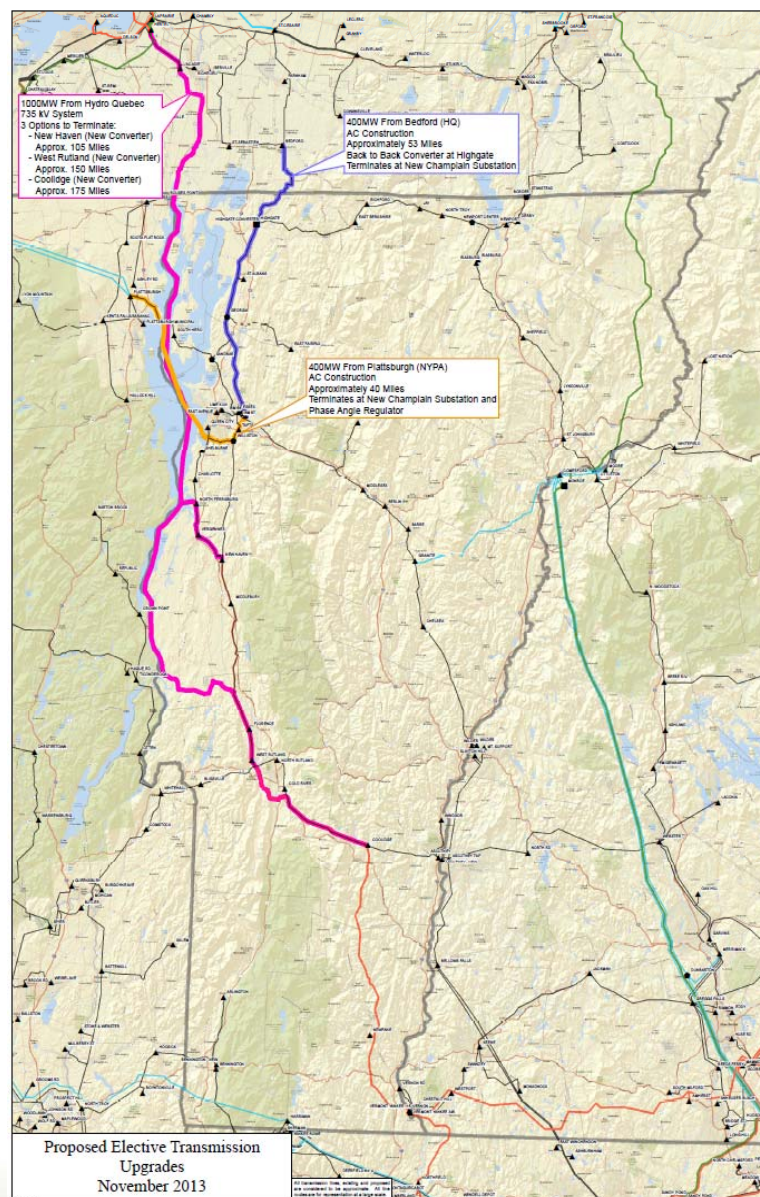
- 400 MW capacity
- 230 KV phase angle regulator-controlled tie at a new Champlain Substation site
- Plattsburgh Substation upgrade
- Submarine cables (Lake Champlain)/underground or overhead 230kV
- Target in-service date: 6/2017

## 2. TDI: New England Clean Power Link (320kV DC)

- 1,000 MW capacity
- 320 kV DC transmission tie
- AC/DC converter connecting to HQ 75kV system
- AC/DC converter connecting to VT 345kV system
- Target in-service date: 12/2018

## 3. Hydro Quebec: Highgate Expansion (Converter)

- 425 MW capacity
- 120/115kV transmission lines
- Back-to-back converter station
- Target in-service date: 06/2018



## Current status – Proposed import projects

---

- **Grand Isle Intertie (Anbaric)**
  - Partially completed the feasibility study
  - Started system impact study with NYISO and ISO-NE
  - Assembling project team and reviewing alternate routes
  - Met with VELCO to discuss access to rights-of-way to conduct surveys/studies
  - Initiating stakeholder outreach
- **New England Clean Power Link (TDI)**
  - Started the ISO-NE interconnection process (system impact study agreement not executed yet)
  - Assembling project team and reviewing preferred routes and corridors
  - Met with VELCO to discuss access to rights-of-way and determine necessary studies
  - Initiating stakeholder outreach
  - Drafting legal agreements to establish VELCO's role in the review of the project
  - Developer intends to submit permit applications in "September 2014"
- **Highgate Expansion (HQ)**
  - No ISO-NE interconnection study yet requested
  - HQ production request of Transenergie is for "point-to-point service" to the US/Canada border
  - Submitted inquiry to VELCO regarding project development, rights-of-way, etc.
  - Discussed system limitation in Quebec's system

# Current status – regional infrastructure initiative

---

- **New England regulators:**
  - States' technical/policy staffs convening teleconferences every week and in-person meetings every two or three weeks seeking agreement on how to solicit and pay for proposals to build electric and gas transmission
  - In addition to ensuring reliability and eliminating price spikes, some states driven by opportunity to expand gas service
  - The only cost/benefit metric criteria being utilized is LMP suppression, and project cost allocation continues to serve as the largest obstacle to agreement
  - Current timeline is tied to passage of legislation in MA and NEPOOL agreement process with an RFP issued in July 2014 timeframe
- **Vermont regulators:**
  - Conditions of support for regional initiative: benefits must exceed costs (LMP suppression); region-wide NTA requirement for reliability projects; better project cost discipline
  - Counting on VELCO/DUs to ascertain proposed project system impacts and costs
  - Counting on VELCO/Dus to negotiate and secure majority of value for Vermont out of any successful project
- **FERC's reaction:**
  - Reportedly reacted negatively to concept of including natural gas infrastructure development costs in RNS rates
  - Reportedly less concerned with contemplated cost recovery for transmission projects consistent with Order 1000

# VELCO's role as Vermont's transmission operator

---

- **VELCO's responsibilities as interconnecting utility**

- Participate in interconnection studies as part of ISO-NE review process to ensure no adverse impact on system reliability or operability, which studies currently include GII, NPT, and NECPL for a total of 2,600MW
- Perform other interconnection services pursuant to ISO-NE Three-Party Interconnection Agreement, including making system improvements required to support new interconnection (paid for by developer)
- Developer is responsible for capital investment as well as on-going maintenance of system upgrades/reinforcements identified in studies (operating and maintenance expense billed back to developer)
- System studies are critical to adequately address future operation/maintenance needs and anticipate future system restrictions and limitations

- **VELCO's responsibility as VT's transmission resource**

- Assess the impact of proposed projects on current and future use of VELCO's rights-of-way and ensure appropriate compensation for co-located infrastructure
- Review transmission cost impact to protect VT's ratepayers
- Assist the Vermont PSD and PSB in evaluating transmission alternatives
- Evaluate the technical and economic merit of projects to be included in regional transmission service rates



# Current status/next steps

---

- **Work underway**

- Continuing interaction with developers regarding physical access, environmental data, and easement conditions on VELCO rights-of-way
- Initial value components of potential partnership structure identified, e.g. equity investment, O&M payments, etc.
- Active participation in ISO-NE interconnection process
- Developing Vermont value proposition with DU owners, VELCO Board and Public Service Department

- **Next steps**

- **Understand options** – gain a clearer understanding of VELCO’s legal rights and responsibilities associated with these projects
- **Finish ROW valuation** – complete development of right-of-way valuation methodology
- **Secure value** – seek to achieve a consensus on a Vermont value proposition and submit draft project(s) partnership proposal to VELCO Board for consideration as early as June 2014