New England and Quebec – A Growing Energy Partnership December 7, 2011







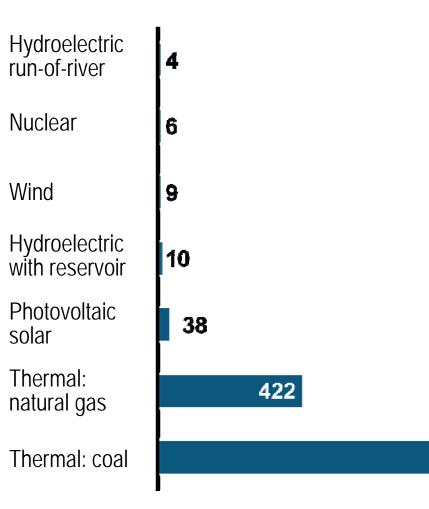




Why Canadian HydroPower is an attractive resource option

957

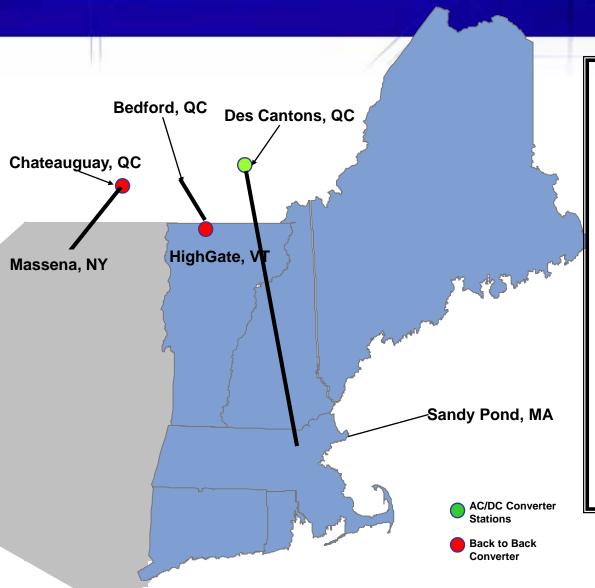
Lifetime GHG emissions (g CO₂e/kwh)



Other Characteristics

- > Quebec and Northeast Markets have complementary load characteristics
 - Northeast Markets peak in summer
 - Quebec market peaks in winter (electric heating)
- > Reservoir-based hydro also effectively provides storage services and is dispatchable, unlike other low/noemission resources which are intermittent (e.g., wind or solar)
- Systems require a AC-DC-AC transformation to link systems and ensure frequency stability

Existing HQ Interconnections with the NorthEast



Three Major Interconnections

High Gate (Quebec - Vermont)

- 225 MW
- Major supplier of Vermont's energy needs through a long term energy contract

Phase I/II (Quebec – Massachusetts)

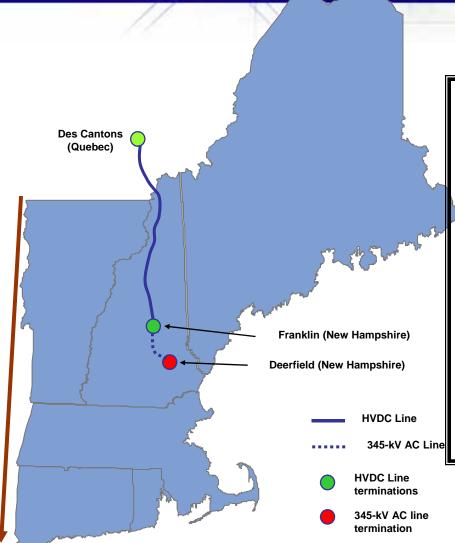
- 2000 MW potential (1200 MW firm)
- Spot and short term contracts with New England markets
- New York (Upstate Interconnection)
 - 1500 MW
 - Spot and short term contracts with New York markets

Two Developing Projects The Northern Pass and Champlain-Hudson Power Express

CHPE

- 1000 MW interconnection
 - HVDC to NYC
 - Under water / ground cable
- Merchant business model, contracts under development
- Project in service date 2016

New York City



The Northern Pass

- 1200 MW interconnection
 - HVDC to Franklin, NH
 - AC Radial to Deerfield
- 7-10 GWh of energy transfer capability
- Unique business model approved by FERC, Transmission Agreement approved by FERC
- Final route selection and siting in 2012/2013

Northern Pass -- An Innovative Win-Win Business Model

- The transmission line will be participant funded
 - NU and NSTAR provide the capital
 - HQ will fund all revenue requirements in exchange for firm transmission rights, per FERC Orders (5/22/09 and 12/31/09)
 - New England customers will bear NO cost for transmission
- HydroQuebec will assume market risk for power sales
 - HQ Parent guarantying revenue requirements (fixed price PPA not required for credit security)
 - Long Term Fixed Price Power Purchase Agreements NOT REQUIRED
 - This alleviates the major objections to the business model raised by generators and marketers
- This is a win win model for Quebec and New England
 - HQ preserves all the market upside associated with energy price volatility
 - New England gets clean, renewable power without a significant market premium

Northern Pass Benefits are Significant

Additional 1,200 MW of generation bids into New England wholesale markets.





\$180-\$315m savings/yr*

1,200 MW of New England energy that doesn't come from fossil fuels.

Incremental generation supplied to N.E.	7000 Gwh	10,000 GWH
Natural gas conserved	36 BCF	52 BCF
CO ₂ emissions avoided**	3.4 MM tons	4.8 MM tons
(percent of N.E. RGGI emissions)	(6.1%)	(8.7%)
Equivalent car emissions	600,000	800,000
Homes supplied with clean electricity	840,000	1,200,000
Homes heatable with displaced natural gas	450,000	650,000

^{*} Based on CRA's detailed dispatch modeling using GE MAPs

^{**} Using ISO-NE's marginal emissions rate for 2008 (most recent available) of 964 lbs CO2 equivalent per MWh