Atlantic Link: An Update

June 6, 2017
• Publicly traded (TSX: EMA); approximately CDN$29 billion in assets

• Constructing the 500 MW Maritime Link – a 170-kilometre subsea HVdc cable between Newfoundland and Nova Scotia to deliver energy from the Muskrat Falls hydro project (Maritime Link is on time, on budget)

• Owns and operates Brunswick Pipeline, connecting Canaport to Maritimes & Northeast pipeline, as well as Bayside natural gas generating station

• Emera Energy has an active trading/marketing presence in eastern Canada and the northeastern U.S.

• Emera Maine serves electricity customers in northern Maine (headquarters is in Bangor)

• Emera worked with NB Power to build Northeast Reliability Interconnect (NRI), a 135-kilometre AC transmission line connecting New Brunswick and Maine. Required a Presidential Permit in the United States; in-service late 2007

• NB Power and Emera are actively engaged in collaborative work on regional dispatch of generation and cost-efficiency opportunities

• Emera recently announced a $6.2 million investment in the Centre for Smart Grid Technologies at UNB
Where Emera Operates

- 2.5 million customers
- 7,400 employees
Emera Strategy

Market Opportunity
Meet the demand for cleaner, affordable energy.

Emera Strategy
Leverage the unique linkages and adjacencies of Emera's assets, capabilities and relationships to create growth and development opportunities.

Strategic Focus
Renewables | Utilities | Transmission | Gas Generation & Transportation

Strategic Initiatives
- 'Greening' of Generation
- 'Fuels to Assets' Projects
- Maritime Link & Labrador Island Link
- New England Transmission
- Creating the Grid of the Future
- Focus on Customer Solutions

Dividend Target: 8% CAGR through 2020
75-85% Regulated Earnings Target
Strategy in Atlantic Canada

Vision
Cleaner Electricity Used for More Purposes
- more renewable generation
- better regional transmission connections
- electrification of home heating and transportation

Results
Permanent, economy-wide emissions reductions
- aligned with Canada’s COP21 commitments

Regional Sharing and Optimization of Cleaner Electricity
- between neighbouring provinces and states in northeastern North America

Collaboration and Innovation that creates clean energy jobs
- and helps make Atlantic Canada competitive with neighbouring jurisdictions
Opportunity in New England

- **Stronger transmission connections** between eastern Canada and the northeastern U.S. (New England and New York)
  - Would increase use of Canadian hydro (NL, QC)
  - Provides a large market for wind energy from the Maritimes, NL and QC, tidal energy from the Maritimes

- Build a strong **U.S. market for non-emitting Canadian generation**
  - State legislation requiring significant GHG emissions reductions
  - Fossil fuel and nuclear plant retirements
  - Challenging to build all of the necessary infrastructure alone: exports help pay for new clean energy infrastructure (generation and transmission)

- **“Gas by wire” from New England** could enable transition in Atlantic Canada to a non-emitting electricity sector
  - New transmission infrastructure could enable medium-term access to New England natural gas-fired generation
On March 31, 2017 a Request for Proposals for long-term contracts to purchase of 9.45 TWh (approximately 1,200 MW) of hydropower and onshore wind, and associated transmission, was issued by electric distribution companies in Massachusetts. Proposals are due July 27. (https://macleanenergy.com/)

The procurement was enabled by H.4568, An Act to Promote Energy Diversity, which was signed by Governor Baker in August 2016. H.4568 also authorized a significant, separate procurement of up to 1,600 MW of offshore wind to be developed in three U.S. federal lease areas off the coast of Massachusetts. An RFP for at least 400 MW of offshore wind was recently issued.

Both procurements are intended to diversify the Commonwealth’s energy mix and to help reduce greenhouse gas emissions, contributing to GHG reduction targets established under the Massachusetts Global Warming Solutions Act (2008). The Act requires economy-wide GHG reductions of 80% by 2050, against a baseline of 1990 emissions levels.

Similar GHG laws in CT & RI. Other New England states could buy energy via proposals made to Massachusetts.

Emera launched an Open Solicitation for energy to bid into the Massachusetts procurement on January 11, 2017. Commercial discussions with energy suppliers are under way.

Power Advisory LLC was engaged as independent administrator to ensure the fairness and transparency of activities related to the Atlantic Link energy solicitation.

Emera was seeking approximately 1,000 MW of wind energy plus hydro. Wind could be supplied from New Brunswick, Nova Scotia, Prince Edward Island or Maine.

Emera intends to be the energy aggregator, and will rely on IPPs for energy

Atlantic Link is one of several projects responding to the Massachusetts Clean Energy RFP.
Proposed Transmission Projects

**Projects and Concept Proposals**

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<td>M</td>
<td>Maine Power Express - Loring Holdings, National Resources Energy / TDI</td>
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Sources: ISO-New England & public information
Atlantic Link – Project Overview

• Atlantic Link is a 900-1,000 megawatt, high voltage direct current (HVdc) transmission line delivering clean energy from Atlantic Canada to Massachusetts, providing the state with long-term access to renewable energy at stable prices.

• Atlantic Link is 100% owned by Emera. NB Power has an option to participate as a minority equity investor.

• Almost all of the proposed route is underwater. Submarine routing means fewer splices on the HVdc cable, simplified construction, greater reliability, lower cost.

• The marine portion would be buried under the ocean floor – or where necessary covered for protection. A marine survey to help clarify optimal route options was conducted this spring.

• As currently proposed, the submarine cable will be mostly in United States waters (including exclusive economic zone). The proposed route does not cross Maine or New Hampshire jurisdictional waters.

• The proposed landing site for Atlantic Link is Plymouth, MA near the site of the Pilgrim nuclear generation station which will retire in May 2019.
Atlantic Link proposes a submarine route of about 370 miles from Coleson Cove, NB, to Plymouth, MA. Most of the route is underwater. Atlantic Link will deliver hydro and onshore wind energy to Massachusetts from Atlantic Canada.

900-1,000 MW high voltage direct current (HVdc) submarine transmission line

Maritime Link
110-mile subsea HVdc transmission line (500 MW), now under construction by Emera (in-service 2017)
Atlantic Link – Route Options

The Atlantic Link Cable Route is subject to field work and stakeholder & regulatory consultations.
Atlantic Link – Landfall Configuration

Massachusetts (Plymouth)
- Substation
- Converter Station
- Landfall Cable Pit

49 miles

Canada

325 miles

United States

New Brunswick (Coleson Cove)
- Substation
- Converter Station
- Landfall Cable Pit

Existing NB Power Substation

HVAC

HVDC
Emera NL substation & converter
Atlantic Link – Regulatory

CANADA
- Canadian Environmental Assessment Act approval
- National Energy Board (NEB) permit; approvals by Transport Canada and Fisheries & Ocean Canada
- Environmental approvals from the New Brunswick Department of Environment & Local Government

UNITED STATES (FEDERAL)
- National Environmental Policy Act (NEPA) approval
- Presidential Permit from the U.S. Department of Energy
- Other approvals from the U.S. Army Corps of Engineers, the Environmental Protection Agency, the Bureau of Ocean Energy Management (BOEM), the Fish & Wildlife Service; the National Oceanic and Atmospheric Administration (National Marine Fisheries Service), the U.S. Coast Guard, the Department of Energy and Advisory Council on Historic Preservation

MASSACHUSETTS
- Massachusetts Environmental Policy Act (MEPA)
- Review under Massachusetts Ocean Management Plan
- Coastal Zone Management Act Federal Consistency Review
- Massachusetts Energy Facility Siting Board
- Massachusetts Department of Public Utilities
- Massachusetts Department of Environmental Protection (MassDEP): Chapter 91, Wetlands Protection Act, 401 Water Quality Certificate
- Board of Underwater Archeological Resources
- Massachusetts Historical Commission
- Natural Heritage and Endangered Species Program (NHESP), Division of Marine Fisheries (DMF)
- Land acquisition/easements/related approvals (potentially DCR, MassDOT, MBTA)
- Other approvals from local and municipal regulatory agencies
Atlantic Link - Schedule Overview

- Legislation Approval in Massachusetts
- Emera - Open Solicitation for Energy
- Massachusetts Procurement RFP Issued
- Bid Evaluations and Contract Negotiation
- Field Work and File Permit Applications
- System Impact Studies
- Stakeholder Consultations
- Secure Approvals
- Detailed Design
- Order Major Components
- Fabrication and Construction
- Commercial Operation Date
Atlantic Link – N.B. benefits

- Significant economic activity over a three year-period, related to wind farm development, HVdc converter station construction.
  - Impacts are quantified in an economic impact study by Power Advisory LLC.
  - Local jobs: civil engineering, trucking, excavation, concrete, gravel, electricians, NB Power resources, Port of Saint John activity

- Lower costs for NB Power customers from:
  - Transmission revenue (increased use of NB Power system)
  - Increased sales of energy and capacity to New England
  - Lower-cost energy procurement due to enhanced energy supply options (Energy Loop)

- Could be an opportunity for an expanded Grand Falls hydro facility to be an energy supplier for Atlantic Link

- Positions New Brunswick for lower carbon future: additional renewable generation and more supply options

- Significant ongoing tax revenue from new generation facilities; ongoing land-lease payments related to wind farms

- Investment opportunity for NB Power / New Brunswick
Atlantic Link – Benefits analysis

Atlantic Link forecast to generate 7,752 construction jobs and $1.2 Billion in GDP for New Brunswick

- $4.8 Billion in Investment
- 7,752 FTE (0.8% increase)
- $876 Million in Wages (1.4% increase)
- $1.2 Billion GDP (1.2% increase)

• This slide shows the estimated total benefits in Canadian $ during the construction period (2018-2022). The following slides provide more detail.
• The percent increase is the estimated percent per year for the relevant economic measure (i.e. jobs, wages, GDP) in the peak construction years of 2021 and 2022, where a majority of the investment would occur.
Atlantic Link – Benefits analysis

Ongoing benefits include O&M expenditures, lease payments and property tax revenue

• The preceding slides showed the aggregate benefits over the construction period of the project.
• This slide shows the ongoing annual benefits over the life of the assets produced during the construction period.
• Wind:
  • O&M GDP impact of $42.3 million per year – direct, indirect and induced.
  • $9.6 million per year in direct wages.
  • Lease payments to landowners of about $4.2 million per year.
  • Local property taxes of about $13.5 million per year.
• Transmission:
  • Local property taxes on the converter station and land connection.
Thanks!

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