**Quebec Forum: A New Energy Policy for Quebec**

**Electricity and Renewable Energy Panel**

**Shawinigan, Quebec March 30, 2015**

**Remarks: Dr. Jonathan Raab, Raab Associates, Ltd.**

**www.RaabAssociates.org**

1. **Introductory Remarks**—Focus primarily on issues related to exporting power to the U.S.
2. **HQ and Exports to VT**—
   1. Consultant to VT PSP in early 1990’s—Original export contract from HQ to VT was very controversial and contentious in Vermont.
   2. 2007 we were retained by VT Governor to find out what Citizen’s preferences were for VT’s Energy Future [driven by expiring HQ contract and VT Yankee (nuclear) relicensing]. We held regional interactive workshops across Vermont attended by over 800 people, and found:
      1. Highest priority resources were energy efficiency and wind followed by hydro and solar;
      2. 80% of participants strongly and/or somewhat agreed with the statement “VT should continue to purchase electricity from HQ” and only 10% strongly or somewhat disagreed. Soon after the VT utilities renegotiated and extended their HQ contract.
      3. We also asked whether Vermonters were willing to pay extra to get power exclusively from Quebec’s wind resources—59% said yes and 32% said no.
3. **Today--Tide Could Be Turning throughout NE on more HQ power**
   1. Recently completed facilitation of a stakeholder process and modeling exercise, ostensibly to look at whether MA could avoid additional gas infrastructure by various means. One of the key findings was that it would be extremely difficult to meet the state’s GHG targets w/o additional Canadian imports
   2. Just as that study was being released, MA utilities canceled their contracts to purchase the output from Cape Wind (400 MW off-shore wind) effectively sinking the project. This makes Canadian resource even more important to meeting NE states GHG goals.
   3. Environmental stakeholder organizations’ focus in New England is turning its attention more on minimizing new gas infrastructure, than fighting transmission infrastructure.
   4. Likely even greater receptivity to HQ exports among states post election than previously (e.g., recent draft MA/CT/RI joint RFP for renewable energy including hydro).
   5. But while states uniformly see Hydro from Quebec as potential lower cost and low carbon resource, not all on same page whether or not and how to treat hydro imparts as a qualifying renewable energy resource for state’s RPS programs.
   6. Also, price is a double-edge sword—HQ export prices need to be low enough to stabilize or reduce electricity rates in New England--to be attractive to consumers, but not so low as to undermine competitiveness of New England’s wholesale markets.
   7. HQ and its American partners may want to act quickly to procure additional long-term contracts with New England (and build the necessary transmission), as the value of exports could be undermined if significant new gas pipelines are built into NE specifically to shore up the gas-fired power generation sector
4. **Firming HQ exports** year round increases its export value
   1. Given Quebec has additional potential resource availability during the summer, this is a good export match to meet NE’s summer peaks
   2. Challenge is in the winter when Quebec experiences its peak from electric space heating, and NE is challenged in meeting its own winter peaks because of the sharp increase of gas-generation, without a similar increase of gas supply to the region.
   3. This leads to a range of actions that Quebec could take to free up capacity during its peak periods, both to reduce its own costs and to take advantage of very valuable export opportunities.
   4. Demand Response, EE, high efficiency electric heat pumps, TVR (AMI), solar PV, storage (including batteries and electric thermal storage)—are all potential ways to reduce peak usage in Quebec and liberate valuable energy for export
5. If Quebec continues aggressively developing **wind resources**, and exports a just wind product or wind firmed up by hydro product—that would likely be an even more attractive renewable export product—that should garner a significant price premium over hydro alone or system power.
6. Last year, a leading environmental organization in New England, ENE now Acadia Center, put out vision for how NE states could **reduce carbon by 80% by 2050** across all sectors that has received a lot of attention in the region. It called for continued aggressive energy efficiency, modernizing the electric grid, and electrifying the home heating sector (with high efficiency electric heat pumps) and the transportation sector (with electric vehicles)—all backed up by an increasing percentage of renewable energy generation.
   1. It seems that Quebec with its plentiful and relatively low-cost supply of low-carbon resources is well-positioned to accomplish a vision such as this well ahead of New England, if it has the will and desire to do so.
   2. Of course if Quebec electrifies its entire transportation and heating sectors to achieve substantial GHG and cost savings, it would likely increase its electricity usage—and hence reduce the amount of electricity it has to export.
      1. But perhaps instead Quebec could potentially become a major exporter of increasingly valuable carbon credits instead (of electricity exports)!