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2016 Quebec Deal Analysis

Confidential and Commercially Sensitive

August 2017

ONTARIOPOWER
GENERATION

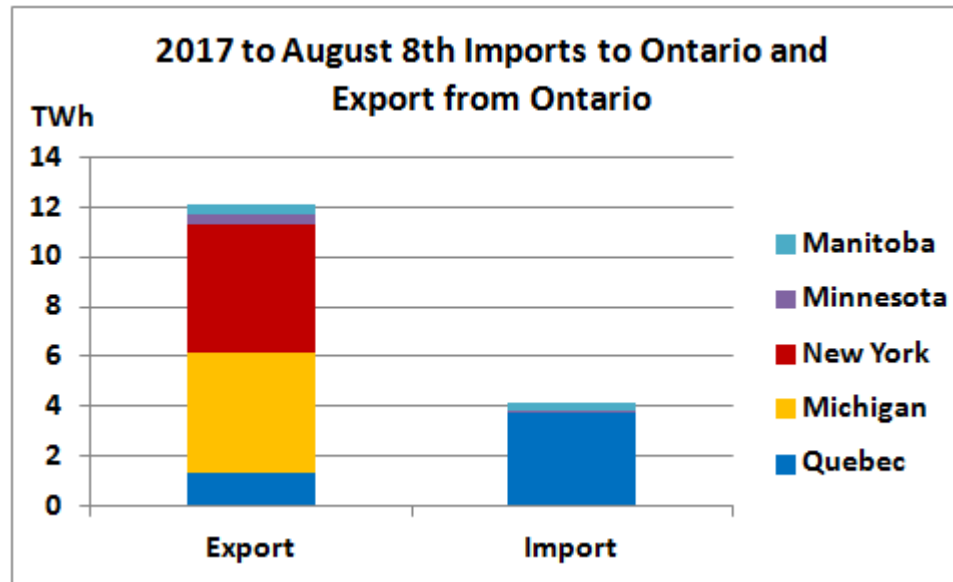


Executive Summary

- Ontario imported 3.7 TWh from Hydro Quebec this year (to August 8, 2017)
- Virtually all of the 3.7 TWh flowed through Ontario and was exported in the same hour
- Therefore it did not reduce domestic natural gas requirement and the consequent CO2 emissions in Ontario
- These HQ imports resulted in
 - 1.2 TWh of Surplus Baseload Generation in Ontario (causing hydro spill, wind/solar curtailment and/or nuclear maneuvering)
 - Increased exports which would have at times prevented Ontario from collecting salvage value for its domestic surplus
- Ontario's current deal with Hydro Quebec cost electricity customers an additional \$80M for energy
 - The average market price of HQ imports was \$22/MWh
 - Based on OPG assumptions about the HQ deal, Ontario paid about \$62/MWh for 2 TWh of this energy, for an additional cost of \$80M via the Global Adjustment
 - Some of the \$80M incremental energy cost will likely recouped through Ontario capacity component of the deal
- In 2016, prior to the current HQ deal taking effect, HQ imports were 7 TWh at the market price of \$18/MWh
 - Only 2%, or 0.13 TWh of these imports remained in Ontario – the rest of the energy (98%) flowed through Ontario and was exported in the same hour



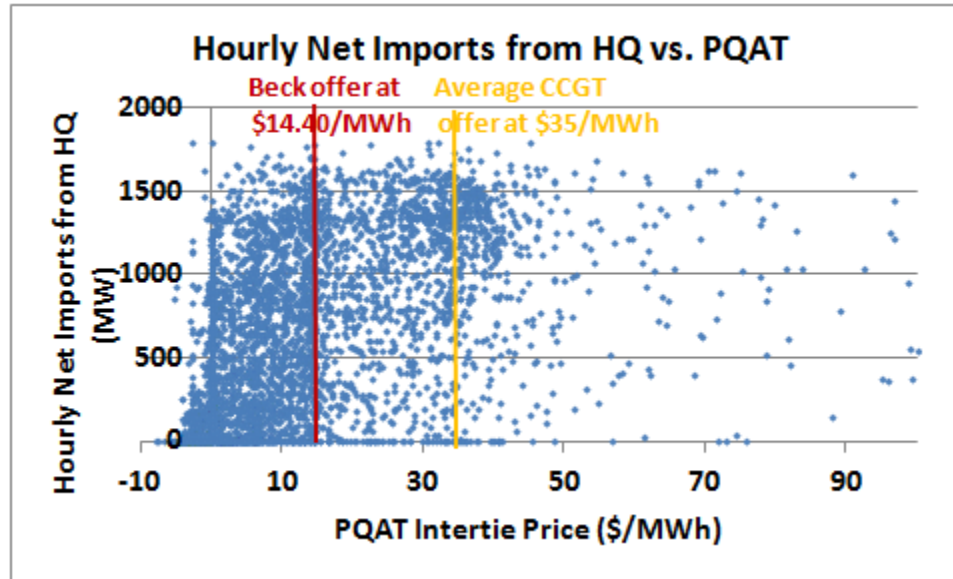
Ontario Imports and Exports



- Up to August 8th in 2017, Ontario exported 12 TWh and imported 4TWh
- Most of the imports were from Quebec and most of the exports were to Michigan and New York



HQ Imports v.s. PQAT



- The scatter plot shows the hourly net imports from HQ vs. the intertie price at the DC tie
- HQ is flowing energy into the IESO market even when Ontario is in a surplus situation and spilling, contributing to SBG
- 72% of hours were at or below the Beck spill price of \$14.40/MWh, indicating that Beck was spilling



Past HQ Import and Export

	Exports (TWh)	Imports (TWh)
2012	1.9	3.9
2013	2.9	4.4
2014	4.2	3.9
2015	3.4	4.9
2016	2.1	7.0

	Exports Rate (\$/MWh)	Imports Rate (\$/MWh)
2012	22	28
2013	27	29
2014	41	41
2015	26	28
2016	12	18

- This table summarizes the historical exports to HQ and imports from HQ to Ontario.
- In 2016, Ontario exported 2.1 TWh to HQ at the market price of \$12/MWh and imported 7 TWh at the market price of \$18/MWh.
- This year is on track to be similar to last year.
- Quebec imports would have flown equally without the HQ deal.