GEC Response to Board Staff Interrogatory #1

Question:

Ref: Exhibit L.GEC1 Section III, Sub-section 1, Page 9

Pre-amble:

The report states the following:

"The average proposed spending levels over the 2016-2020 period are within 2% of the annual spending levels suggested in the Board's DSM framework (i.e. $75 million per year for Enbridge and $60 million per year for Union, excluding shareholder incentives). In Enbridge's case, spending roughly 2½ times more in 2020 than in 2014 is forecast to produce an 81% increase in incremental annual savings and a 64% increase in lifetime savings. In Union's case, a near doubling of spending from 2014 to 2020 is forecast to result in a 40% to 50% *reduction* in both incremental annual savings and lifetime savings. The net impact for the province as a whole is a net reduction in both incremental annual savings (a little more than 10% less in 2020 than in 2014) and lifetime energy savings (nearly 20% less from the 2020 spending than was achieved in 2014)."

Question:

Please file a live version (in a Microsoft Excel file) of the calculations used to derive these results.

Response:

See attached Excel file.

Witness: Chris Neme

GEC Response to Board Staff Interrogatory #2

Question:

Ref: L.GEC.1 Section III, Sub-section 2, Page 9

Pre-amble:

The report states the following:

"The incremental annual savings forecast by Ontario's utilities equates to approximately 0.6% (Union) to 0.7% (Enbridge) of annual sales to customers other than electric generators over the 2016-2020 period."

Question:

Please file a live version (in a Microsoft Excel file) of the calculations used to derive these results.

Response:

See Excel file attachment provided in response to M.GEC.STAFF.1.

Witness: Chris Neme

GEC Response to Board Staff Interrogatory #3

Question:

Ref: L.GEC.1 Section III, Sub-section 2, Figure 1, Page 10

Question:

Based on the graph of annual savings for several jurisdictions as a percent of 2012 residential, commercial and industrial sales as shown in Figure 1, please provide a table with the following information by jurisdiction:

- Total DSM budgets spent to achieve the savings shown.
- Breakdown of the budget allocations by sector.
- Breakdown of the annual savings achieved by sector.
- Indication of whether customers similar to Union's large volume customers participated in DSM programs, and what types of large volume DSM programs were offered.

Response:

Please see M.GEC.UNION.1.

Witness: Chris Neme

GEC Response to Board Staff Interrogatory #4

Question:

Ref: L.GEC.1 Section IV, Sub-section 1, Page 15

Pre-amble:

The report states the following:

"The top 8 states in 2013 […] spent an average of $91 CDN per residential customer" and concluded that it "is more than double what both Enbridge ($35) and Union ($41) are forecasting they spend per residential customer (in 2015 dollars) over the 2016-2020 period."

Questions:

a) Please show the calculation (or file the reference source) for the $35 and $41 spent per residential customer for Enbridge and Union, respectively.

b) Based on the calculation (or reference) provided in response to IR 4(a) above, please provide GEC's calculations of the utilities' annual DSM spend per residential customer from 2016 to 2020.

Response:

a) See Excel file provided in response to M.GEC.STAFF.1.
b) To be clear, the $35 and $41 referenced values are average annual values over the 2016 to 2020 period, based on the utilities' filed plans. They are computed as total DSM spending across all customer classes divided by the number of residential customers (i.e. the comparison metric ACEEE uses for gas DSM spending in its state efficiency scorecard reports). Values for each year from 2016 through 2020 can be found in the Excel file provided in response to M.GEC.STAFF.1.

Witness: Chris Neme

GEC Response to Board Staff Interrogatory #5

Question:

Ref: L.GEC.1 Section V, Sub-section 2, Page 22

Pre-amble:

The report states that "free ridership typically declines as financial incentives for efficiency measures […] increase."

Question:

Please provide evidence supporting this claim.

Response:

This is a common understanding among DSM design professionals. The more a program relies on financial incentives to drive demand (e.g. it is particularly important for mass market rebate programs), the more pronounced this effect is likely to be. Consider the consumers who would have purchased an efficient product in the absence of a DSM program. The portion of those consumers who will take a rebate is not likely to change a lot as the rebate increases in value because they are buying the product anyway. Assuming all else is held constant – and that is an important assumption, because other efficiency program strategies (e.g. technical support, marketing, etc.) can often be just as important or more important (depending on the market) than incentives – what changes when an incentive is increased is the number of non-free riders who will be persuaded to purchase the measure. If the absolute number of free riders stays constant (or doesn't grow much) and the absolute number of participants increases (or increases at a higher rate), the free rider rate goes down.

Witness: Chris Neme

GEC Response to Board Staff Interrogatory #6

Question:

Ref: L.GEC.1 Section X, Recommendation 6, Page 46

Pre-amble:

The report recommends that "2017 budgets be 30-40% higher than those in 2016 as a manageable ramp-up."

Questions:

a) Using GEC's recommended increased 2017 budgets for Enbridge and Union, please provide GEC's corresponding proposed budget allocation by sector.

b) Please calculate the bill impacts for the average residential customer based on GEC's proposed budgets for Enbridge and Union, inclusive of shareholder incentives. Please file this analysis in the form of a live Microsoft Excel file.

Response:

a) Mr. Neme has not developed a specific proposal for how the additional budget in 2017 should be spent. That would require significant effort to optimize. That is why Mr. Neme suggested that the Board should instruct the utilities to file supplemental plans for 2017. That said, in general, Mr. Neme would expect the increase would not be equal across program types or sectors. Rather, the increase should be disproportionately higher for resource acquisition programs and probably disproportionately higher for C&I market segments where savings yields are typically higher.

b) Since Mr. Neme has not developed a detailed proposal for how to allocate additional funds, this analysis cannot be conducted.

Witness: Chris Neme

GEC Response to Board Staff Interrogatory #7

Question:

Ref: L.GEC.1 Section X, Recommendation 7, Page 46

Pre-amble:

The report states the following:

For the mid-term review, […] "[t]he Board should articulate that its default expectation is that the utilities proposed savings levels will be at least as high as the top several gas DSM jurisdictions in North America. Deviations from that expectation will need to be justified through demonstration that the savings levels are not cost-effective, cannot be achieved, and/or produce undue rate impacts (after consideration of the rate mitigating factors discussed above)."

Questions:

a) Please clarify the range of budgets proposed for Ontario's gas utilities as the default scenario, and indicate the top gas DSM jurisdictions in North America as referred to in this recommendation.

b) Please use the range of budgets from the top gas DSM jurisdictions as reference budgets for Enbridge and Union, and estimate the range of annual bill impacts for Enbridge's and Union's residential customers.

Response:

a) To be clear, Mr. Neme did not propose specific default budgets. Rather, he proposed default savings levels. Mr. Neme did offer a very preliminary and high level estimate that achieving those levels of savings may require Enbridge to increase its annual budget to on the order of $150 to $200 million and Union may have to increase its average annual budget to on the order of $125 to $150 million (testimony p. 28).

   The top jurisdictions should be read as the top several cold climate states or provinces at the time that the utilities are developing their next set of plans. Note that, to the extent that levels of effort among individual utilities within a jurisdiction vary considerably, it may be necessary to focus only on the better performing utilities in a jurisdiction when doing this kind of benchmarking. Right now, I believe the four leading jurisdictions are Massachusetts, Vermont, Rhode Island and Minnesota. However, that could be different a year or two from now.

Witness: Chris Neme

b) As Mr. Neme suggests in his testimony, bill impacts are a function not only of DSM spending but also the portion of DSM benefits that put downward pressure on rates. The value of those benefits will vary from jurisdiction to jurisdiction. Also, to specifically estimate impacts on bills for residential customers requires assumptions about how much DSM spending would be allocated to the residential sector. Mr. Neme has not performed that analysis.

GEC Response to Board Staff Interrogatory #8

Question:

Ref: Exhibit L.GEC.2

Please clearly state how your recommendations and findings in GEC's Evidence (2) have been incorporated into GEC's Evidence (1), and in particular, how these findings have been used to derive the results shown in Table 3 of GEC Evidence (1).

Response:

Please see Excel file provided in response to M.GEC.EP.12(d) (as well as footnotes to Table 3).

Witness: Chris Neme

GEC Response to Board Staff Interrogatory #9

Question:

Ref: L.GEC.2 Section III, Pages 12-14, Figures 1 and 2

Questions:

a) Please compare the AEO 2012 and 2014 results from Figures 1 and 2, and explain the differences. Provide rationale for using only the 2014 estimates to calculate price suppression effects.
b) Please describe how the methodology used to estimate the price suppression effects has appropriately accounted for the effect of DSM in Ontario. In doing so, please state any assumptions used in the methodology.
c) Please confirm whether this methodology is consistent with other jurisdictions.

Response:

a) See M.GEC.EGDI.12(a). The 2014 analysis is more recent and more conservative (in terms of producing lower estimates of the effect of load on price). Using the 2012 AEO results would produce much higher price-suppression benefits per m^3 saved.

b) A reduction in load anywhere on the interconnected North American gas system would have the same effect on supply prices. A reduction in load in Ontario would have very nearly the same effect as a reduction in Ohio, New York or California. Hence, the AEO results can reasonably be converted to Canadian dollars of price savings to Ontario customers per m^3 of DSM savings in Ontario (or anywhere else in North America). The computation of the price-suppression effect thus has three steps:

   1) How much does a change in gas demand change prices? Mr. Chernick estimates that this ratio is \$0.00027/m^3 per $10^9 m^3$ saved, from Figure 2 (page 13).
   2) How much does the price change from saving one m^3 reduce the bill for Ontario's entire gas consumption? Mr. Chernick estimates that benefit to be 0.76¢ in reduced gas bills per m^3 conserved, from the ratio in step (1) times Ontario gas consumption (page 14).
   3) How much is Ontario's gas bill reduced by the price change resulting from Ontario's DSM portfolios? Mr. Neme estimates the present values of the price-reduction benefit of each gas company's DSM annual program to be about \$6.2 million, from the 0.76¢ from step (2) times the average annual savings in the utility plans and a present-value factor.

Witness: Paul Chernick

Note that the Ontario's total gas consumption is an input to the second step, and the magnitude of the Ontario gas DSM savings is an input to the third step in the computation.

c) This gas-supply DRIPE methodology has been used by the New England jurisdictions that rely on the 2013 Avoided Energy Supply Component report.