Elson Advocacy

January 12, 2021

BY EMAIL AND RESS

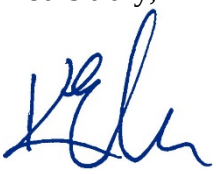
Ms. Christine Long
Board Secretary
Ontario Energy Board
2300 Yonge Street, Suite 2700, P.O. Box 2319
Toronto, Ontario M4P 1E4

Dear Ms. Long:

Re: EB-2020-0091 – Integrated Resource Planning Framework Proceeding

Enclosed please find the interrogatories of Environmental Defence to Enbridge and Board Staff.

Yours truly,



Kent Elson

CC: Parties in the above process

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EB-2020-0091 – Integrated Resource Planning

Interrogatories of Environmental Defence
To Board Staff re Guidehouse Report

1. Reference: EB-2020-0091, Exhibit C, Page 3

Preamble: Enbridge states that it:

> "supports the concept of adding costs and benefits to the Board's E.B.O. 134 guidelines to create a modified E.B.O. 134 or staged Discounted Cash Flow ("DCF") Plus (DCF+) standard for the purposes of assessing IRPAs in Ontario."

Question:

(a) Does Guidehouse believe that the development of a comprehensive Benefit Cost Analysis Handbook should be restricted to "adding costs and benefits to the Board's E.B.O. 134 guidelines to create a modified E.B.O. 134 or staged Discounted Cash Flow ("DCF") Plus (DCF+) standard for the purposes of assessing IRPAs in Ontario"?

2. Reference: Page 1, Recommendation 1

Preamble: Guidehouse recommends preparing Benefit Cost Analysis (BCA) procedures

> The following questions relate to Synapse Energy, *Benefit-Cost Analysis for Distributed Energy Resources*, September 22, 2014 - https://www.synapse-energy.com/sites/default/files/Final%20Report.pdf

Questions:

(a) Does Guidehouse agree that the value of avoided commodity costs must be included in any analysis comparing pipe and non-pipe options, such as energy efficiency?
(b) Does Guidehouse agree that the value of avoided commodity costs is a fundamental factor that must be included in any financial comparison of pipe and non-pipe options?
(c) Does Guidehouse agree that the risk of underutilized or stranded assets may be a materials factor and should be considered and monetized?

3. Reference: Page 1, Recommendation 1

Preamble: Guidehouse recommends preparing Benefit Cost Analysis (BCA) procedures

> The following questions relate to Synapse Energy, *Benefit-Cost Analysis for Distributed Energy Resources*, September 22, 2014 - https://www.synapse-energy.com/sites/default/files/Final%20Report.pdf

Questions:

(a) Please comment on and indicate whether Guidehouse agrees with the following conclusion of the Synapse Report (p. 47):

Distributed energy resources generally result in reduced risk to the electricity system, relative to traditional supply-side resources. DERs can increase the diversity of the portfolio of electricity resources, reduce reliance upon fossil fuels with volatile prices, reduce planning risk by reducing load growth, reduce risks associated with current and future environmental regulations, and reduce risks associated with outages caused by storms and other unexpected events. Distributed energy resources also help to reduce risk through increased optionality and system resiliency. That is, through their distributed and small-scale nature, DER investments offer greater flexibility in helping the system cope with stress and respond to unanticipated changes in the future (relative to large, capital-intensive generation, transmission or distribution upgrades).

(b) Please comment on and indicate whether Guidehouse agrees with the following conclusion of the Synapse Report (p. 36):

DER impacts should not be excluded or ignored on the grounds that they are difficult to quantify or monetize. Approximating hard-to-quantify impacts is preferable to assuming that those costs and benefits do not exist or have no value.

(c) Please comment on and indicate whether Guidehouse agrees with the following conclusion of the Synapse Report (p. 54-55):

We recommend that the DER BCA framework use a societal discount rate. The societal discount rate is best able to reflect the value of short- versus long-term costs and benefits to all utility customers, as well as to society in general. The societal discount rate is best able to reflect the time preference associated with the state's energy policy goals, many of which are related to societal impacts.

We also recommend that the societal discount rate chosen for the DER BCA framework be somewhere in the range of zero to three percent real. This range is frequently used for societal discount rates, and is also very close to the current value of risk-free discount rates.

Additional factors, particularly risk, should be considered in choosing, within this range, the exact discount rate for the DER BCA framework. To the extent that risk has been evaluated and accounted for through other methods described in Chapter 5, a discount rate at the high end of the range of societal discount rates should be chosen. If risk has not been adequately evaluated and accounted for through other methods, a discount rate at the low end of the range should be chosen.

4. Reference: Page 1, Recommendation 1

Preamble: Guidehouse recommends preparing Benefit Cost Analysis (BCA) procedures

The following question relates to page 45 of Synapse Energy, *Benefit-Cost Analysis for Distributed Energy Resources*, September 22, 2014 - https://www.synapse-energy.com/sites/default/files/Final%20Report.pdf

Question:

(a) Please comment on whether each of the benefits listed in the following figure should be included in a benefit cost analysis in Ontario's IRP framework. Please separately address each. Please also comment on the appropriate valuation method. Please also summarize the answer in a table similar to the one in this figure.

Table 18. Illustrative Benefit Valuation Options

Party Impacted	Benefits				Valuation Method		
	Benefit Category			Specific Benefits	Monetization	Proxy	Multi-Attribute
Utility Customers	1	Load Reduction & Avoided Energy Costs	a	Avoided energy generation	yes	---	---
			b	Avoided line losses	yes	---	---
			c	Wholesale energy market price suppression	yes	---	---
	2	Demand Reduction & Avoided Capacity Costs	a	Avoided generation capacity costs	yes	---	---
			b	Avoided power plant decommissioning	yes	---	---
			c	Wholesale capacity market price suppression	yes	---	---
			d	Avoided distribution system investment	yes	---	---
			e	Avoided transmission system investment	yes	---	---
	3	Avoided Compliance Costs	a	Avoided renewable energy and energy efficiency portfolio standard costs	yes	---	---
			b	Avoided environmental retrofits to fossil fuel generators	yes	---	---
	4	Avoided Ancillary Services	a	Scheduling, system control and dispatch	yes	---	---
			b	Reactive supply and voltage control	yes	---	---
			c	Regulation and frequency response	yes	---	---
			d	Energy imbalance	yes	---	---
			e	Operating reserve - spinning	yes	---	---
			f	Operating reserve - supplemental	yes	---	---
	5	Utility Operations	a	Financial and accounting	yes	---	---
			b	Customer service	yes	---	---
	6	Market Efficiency	a	Reduction of market power in wholesale electricity markets	---	---	yes
			b	Animation of retail market for DER products and services	---	---	yes
			c	Customer empowerment	---	---	yes
	7	Risk	a	Project risk	---	yes	---
			b	Portfolio risk	---	yes	---
			c	Resiliency	---	yes	---
Participants	8	Participant Non-Energy Benefits	a	Participant's utility savings (time addressing billing, disconnection, etc.)	---	yes	---
			b	Low-income-specific	---	yes	---
			c	Improved operations	---	yes	---
			d	Comfort	---	yes	---
			e	Health and safety	---	yes	---
			f	Tax credits to participant	---	yes	---
			g	Property improvements	---	yes	---
	9	Participant Resource Benefits	a	Other fuels savings	yes	---	---
			b	Water and sewer savings	yes	---	---
Society	10	Public Benefits	a	Economic development	---	---	yes
			b	Tax impacts from public buildings	yes	---	---
	11	Environmental Benefits	a	Avoided air emissions	yes	---	---
			b	Other natural resource impacts	---	---	yes

5. Reference: Page 1, Recommendation 1

Preamble: Guidehouse recommends preparing Benefit Cost Analysis (BCA) procedures

> The following question relates to page 45 of Synapse Energy, *Benefit-Cost Analysis for Distributed Energy Resources*, September 22, 2014 - https://www.synapse-energy.com/sites/default/files/Final%20Report.pdf

Question:

(a) Please provide a table indicating which of the following benefits would be accounted for in the first stage of the Enbridge's proposed approach to benefit cost analysis.

Table 18. Illustrative Benefit Valuation Options

Party Impacted	Benefits				Valuation Method		
	Benefit Category			Specific Benefits	Monetization	Proxy	Multi-Attribute
Utility Customers	1	Load Reduction & Avoided Energy Costs	a	Avoided energy generation	yes	---	---
			b	Avoided line losses	yes	---	---
			c	Wholesale energy market price suppression	yes	---	---
	2	Demand Reduction & Avoided Capacity Costs	a	Avoided generation capacity costs	yes	---	---
			b	Avoided power plant decommissioning	yes	---	---
			c	Wholesale capacity market price suppression	yes	---	---
			d	Avoided distribution system investment	yes	---	---
			e	Avoided transmission system investment	yes	---	---
	3	Avoided Compliance Costs	a	Avoided renewable energy and energy efficiency portfolio standard costs	yes	---	---
			b	Avoided environmental retrofits to fossil fuel generators	yes	---	---
	4	Avoided Ancillary Services	a	Scheduling, system control and dispatch	yes	---	---
			b	Reactive supply and voltage control	yes	---	---
			c	Regulation and frequency response	yes	---	---
			d	Energy imbalance	yes	---	---
			e	Operating reserve - spinning	yes	---	---
			f	Operating reserve - supplemental	yes	---	---
	5	Utility Operations	a	Financial and accounting	yes	---	---
			b	Customer service	yes	---	---
	6	Market Efficiency	a	Reduction of market power in wholesale electricity markets	---	---	yes
			b	Animation of retail market for DER products and services	---	---	yes
			c	Customer empowerment	---	---	yes
	7	Risk	a	Project risk	---	yes	---
			b	Portfolio risk	---	yes	---
			c	Resiliency	---	yes	---
Participants	8	Participant Non-Energy Benefits	a	Participant's utility savings (time addressing billing, disconnection, etc.)	---	yes	---
			b	Low-income-specific	---	yes	---
			c	Improved operations	---	yes	---
			d	Comfort	---	yes	---
			e	Health and safety	---	yes	---
			f	Tax credits to participant	---	yes	---
			g	Property improvements	---	yes	---
	9	Participant Resource Benefits	a	Other fuels savings	yes	---	---
			b	Water and sewer savings	yes	---	---
Society	10	Public Benefits	a	Economic development	---	---	yes
			b	Tax impacts from public buildings	yes	---	---
	11	Environmental Benefits	a	Avoided air emissions	yes	---	---
			b	Other natural resource impacts	---	---	yes

6. Reference: Page 38

Preamble: Guidehouse describes Enbridge's proposal as follows:

> The first stage is the identification of potential IRPAs and the testing of the reliability of the IRPA. The facility need and the potential for an IRPA to meet it will be analyzed based on input from the 2019 Integrated Ontario Electricity and Natural Gas Achievable Potential Study and other sets of data.

Questions:

(a) Please comment on how the recent announcement of a carbon price increasing to $150/tonne in 2030 would directionally impact the quantity of cost-effective natural gas DSM found by the potential study prepared by Guidehouse (formerly Navigant)?
(b) Please estimate the tonnes of CO2e savings in 2030 for all achievable cost-effective DSM with the updated assumption from the recent carbon price announcement. Alternatively, please estimate the % impact on the gas savings from all achievable cost-effective DSM up to 2030. Please do so on a best efforts basis (e.g. based on the sensitivity analysis in the potential study).

7. Reference: Exhibit M2.GEC-ED

Questions:

(a) Please comment on the proposed goals of IRP as set out in Mr. Neme's evidence starting on page 4. Please indicate whether Ms. Simon believes these are appropriate, and if not, why not.
(b) Please comment on the recommendation by Mr. Neme at p. 5 that "The IRP framework should require utilities to prepare and publish an annual T&D needs summary based on a rolling 10-year forecast of needs, the drivers behind those needs, whether the needs may be candidates for non-pipe solutions (and why or why not), and the status of consideration of non-pipe solutions for each identified need (see Figure 3 below for an example of this information)." Does Ms. Simon agree that this would be appropriate? If not, why not?
(c) Please comment on the recommendation by Mr. Neme at p. 5 that "there needs to be a mechanism that stakeholders and the Board can utilize to trigger formal Board review of both forecast needs and proper consideration of alternatives before potentially viable alternatives are precluded due to concerns about inadequate lead times (i.e. to preclude the potential for leave to construct applications to be filed and resolved too late to reasonably consider cost-effective alternatives)." Does Ms. Simon agree that this would be appropriate? If not, why not?
(d) Please comment on the recommendation by Mr. Neme at p. 6 that "Any criteria for screening out consideration of non-pipe solutions must be very carefully designed to ensure that they would not rule out potentially viable projects. That means erring on the side of greater latitude when there is uncertainty (e.g. about the size of load reduction that could be achieved), as what is possible in one location may be very different from the "average", particularly when multiple IRPA options are considered together." Does Ms. Simon agree that this would be appropriate? If not, why not?
(e) Please comment on the recommendation by Mr. Neme at p. 6 that "There are a range of measures that can be part of non-pipe solutions. That includes energy efficiency; demand response; electrification of gas end-uses with air source heat pumps, ground source heat pumps and other technologies; and localized injection of compressed gas. The Gas IRP framework should require that all such measures be considered – individually and in combination with each other – with the least cost mix of such measures selected for investment." Does Ms. Simon agree that this would be appropriate? If not, why not?

(f) Please comment on the recommendation by Mr. Neme at p. 7 that "Absent a government mandate that expressly excludes consideration of alternatives (either individually or under conditions that may apply to specific communities or categories of communities), gas line extensions should not be excluded from consideration. There may be cases where policy goals such as access to low-cost energy could be achieved more cost effectively and with less risk than through gas service expansion." Does Ms. Simon agree that this would be appropriate?

(g) Please comment on each of the six recommendations made by Mr. Neme at p. 8 of his report relating to benefit-cost analysis. Does Ms. Simon agree that these would be appropriate?

EB-2020-0091 – Integrated Resource Planning

Interrogatories of Environmental Defence
To Enbridge

Issue 2 - Process

Interrogatory 1-ED-1

Reference: EB-2020-0091, Exhibit C, Page 7

Preamble:

> "Enbridge Gas also generally agrees that a ten-year time horizon for forecasting in-franchise system needs is appropriate to ensure adequate planning, deployment and adjustments (as needed) can be undertaken."

Questions:

(a) Is Enbridge agreeing that is would publish rolling ten-year forecasting of in-franchise system needs? Is it agreeing to do so annually? If not, how often is it proposing to do so?
(b) Where is Enbridge proposing to publish its ten-year needs forecast?
(c) Would Enbridge agree to include specific details, such as maps of each area where the need arises and the magnitude of the need?

Issue 6 – Screening Criteria, Comparison Methodology & Scope

Interrogatory 6-ED-2

Reference: EB-2020-0091, Exhibit C, Page 8

Question:

(a) Is Enbridge opposed to using a version of the ConEd BCA test that is adapted to the Ontario context? If yes, please explain why.

Interrogatory 6-ED-3

Reference: EB-2020-0091, Exhibit B, Page 31

Preamble:

> The following question relates to page 45 of Synapse Energy, *Benefit-Cost Analysis for Distributed Energy Resources*, September 22, 2014 - https://www.synapse-energy.com/sites/default/files/Final%20Report.pdf

Question:

(a) Please provide a table indicating which of the following benefits would be accounted for in Enbridge's proposed approach to benefit cost analysis. Please also include a column indicating the way in which the benefit would be accounted for.

Table 18. Illustrative Benefit Valuation Options

Party Impacted	Benefits				Valuation Method		
	Benefit Category			Specific Benefits	Monetization	Proxy	Multi-Attribute
Utility Customers	1	Load Reduction & Avoided Energy Costs	a	Avoided energy generation	yes	---	---
			b	Avoided line losses	yes	---	---
			c	Wholesale energy market price suppression	yes	---	---
	2	Demand Reduction & Avoided Capacity Costs	a	Avoided generation capacity costs	yes	---	---
			b	Avoided power plant decommissioning	yes	---	---
			c	Wholesale capacity market price suppression	yes	---	---
			d	Avoided distribution system investment	yes	---	---
			e	Avoided transmission system investment	yes	---	---
	3	Avoided Compliance Costs	a	Avoided renewable energy and energy efficiency portfolio standard costs	yes	---	---
			b	Avoided environmental retrofits to fossil fuel generators	yes	---	---
	4	Avoided Ancillary Services	a	Scheduling, system control and dispatch	yes	---	---
			b	Reactive supply and voltage control	yes	---	---
			c	Regulation and frequency response	yes	---	---
			d	Energy imbalance	yes	---	---
			e	Operating reserve - spinning	yes	---	---
			f	Operating reserve - supplemental	yes	---	---
	5	Utility Operations	a	Financial and accounting	yes	---	---
			b	Customer service	yes	---	---
	6	Market Efficiency	a	Reduction of market power in wholesale electricity markets	---	---	yes
			b	Animation of retail market for DER products and services	---	---	yes
			c	Customer empowerment	---	---	yes
	7	Risk	a	Project risk	---	yes	---
			b	Portfolio risk	---	yes	---
			c	Resiliency	---	yes	---
Participants	8	Participant Non-Energy Benefits	a	Participant's utility savings (time addressing billing, disconnection, etc.)	---	yes	---
			b	Low-income-specific	---	yes	---
			c	Improved operations	---	yes	---
			d	Comfort	---	yes	---
			e	Health and safety	---	yes	---
			f	Tax credits to participant	---	yes	---
			g	Property improvements	---	yes	---
	9	Participant Resource Benefits	a	Other fuels savings	yes	---	---
			b	Water and sewer savings	yes	---	---
Society	10	Public Benefits	a	Economic development	---	---	yes
			b	Tax impacts from public buildings	yes	---	---
	11	Environmental Benefits	a	Avoided air emissions	yes	---	---
			b	Other natural resource impacts	---	---	yes

Interrogatory 6-ED-4

Reference: EB-2020-0091, Exhibit B, Page 31

Questions:

(a) Enbridge states that: “A project will be deemed economically feasible if the resulting Net Present Value (“NPV”) of the DCF is zero or greater.” Would the NPV calculations include the avoided commodity costs arising from the IRPA (e.g. forecast gas savings)?
(b) Enbridge states that: “A project will be deemed economically feasible if the resulting Net Present Value (“NPV”) of the DCF is zero or greater.” Wouldn’t the NPV for the non-pipe solution simply need to be higher than the NPV of the pipe-based solution?
(c) Enbridge states: “If an IRPA can meet the demands of the future system capacity, **is more cost-effective than facility alternatives** and meets the other important Guiding Principles, then Enbridge Gas will include the IRPA in the AMP as a future potential project.” Please list all of the elements that would be included in this cost-effectiveness comparison. Would this include avoided commodity costs?
(d) Please confirm that in EB-2019-0188, Exhibit I.ED.9(d), Enbridge indicated that the annual cost of heating with a heat pump would be lower than the cost of natural gas heating if the surcharge was considered. Please also provide the cost difference and underlying calculations.

Interrogatory 6-ED-5

Reference: Reference: EB-2020-0091, Exhibit B, Page 31

Preamble: In EB-2016-0186 (Panhandle Reinforcement Project), Union Gas stated as follows:

> "Union is proposing the Project at a time of uncertainty resulting from the Ontario Cap and Trade program and the recent issuance of the Ontario government’s 5-year (2016-2020) Climate Change Action Plan (“CCAP”). In response to this risk, Union has calculated the revenue requirement and resulting rate impacts of the Project based on a 20-year estimated useful life of the assets rather than the weighted average useful life of approximately 50 years based on Board-approved depreciation rates. Union submits depreciating the asset over a 20-year term better aligns the cost with the timing of reported restrictions and potential elimination of natural gas heating in homes and businesses as noted in the CCAP."[1]

Questions:

(a) Please describe and quantify how the above-referenced assumptions proposed in EB-2016-0186 would impact the NPV, PI, and other financial figures for pipe-based options in comparison to non-pipe options.

[1] https://www.uniongas.com/-/media/about-us/regulatory/rate-cases/eb-2016-0186-panhandle-reinforcement/UNION_APPL_PanhandleReinforcement_20160610.pdf

(b) Please provide all references to Board rules and directions on the appropriate and/or allowable depreciation period to be used in relation to gas infrastructure.
(c) What depreciation period does Enbridge currently use for its gas infrastructure projects? If different periods are used or have been used over the past decade, please explain this and describe the driver for this.

Interrogatory 6-ED-6

Reference:

Preamble: In the issues list decision, with respect to issue 6, the OEB held that "[t]he question of whether non-gas alternatives, including electricity, should be eligible as IRPAs, is included within the scope of this issue."

> This question explores the appropriateness and cost-effectiveness of electric heat pumps as an IRPA using North Bay as an example.

Questions:

(a) In EB-2019-0188, Exhibit I.ED.9(d), Enbridge indicated that the annual cost of heating with a heat pump would be lower than the cost of natural gas heating if the surcharge was considered. Please provide the underlying calculations. Please file a live version of the "Residential Natural Gas Conversion Savings Estimate" excel document (I.ED.7 in EB-2019-0188) with the variables that produced the result in I.ED.9(d).
(b) Please comment on the applicability of this to other areas where a surcharge would be charged.
(c) Please update the analysis (i.e. input updated variables into the savings estimate tool) based on the latest carbon pricing information from the federal government (i.e. increases to $150/t CO2e in 2030). Please indicate the difference in cost between heat pumps and gas heating. Please file a live copy of the savings tool with these updated variables inputted into it.

Interrogatory 6-ED-7

Reference: Exhibit B, pp. 23-24

Preamble:

> "Non-gas alternatives primarily include electrically powered geothermal heat pump systems and electric air source heat pumps ("EASHP"). …Enbridge Gas notes that it could offer these alternatives if authorized by the OEB, to reduce peak period demand in targeted areas. … Both electric GSHPs and EASHPs provide a solution that could be deployed to mitigate the need to build new infrastructure or to reduce the amount of new infrastructure required."

Questions:

(a) What is the annual average coefficient of performance (i.e. efficiency) in a climate similar to Ontario's for the most efficient electric cold climate heat pump on the market? Please provide underlying information sources and studies. If Enbridge does not know which is the most efficient, please provide alternative information.
(b) Please provide all studies in Enbridge's possession on the cost-effectiveness and energy efficiency of electric heat pumps, including cold climate electric heat pumps.
(c) Please comment on the conclusions made here: https://rmi.org/heat-pumps-a-practical-solution-for-cold-climates/.
(d) Please compare the annual operating costs for space heating, water heating, and cooling for (i) a gas furnace, gas water heater, and electric air conditioner and (ii) all services provided by a cold climate air-source heat pump. Please provide the comparison over the next 10 years, including the federal governments increasing carbon price to $150 in 2030. Please make and state assumptions as necessary. Please cite all sources.
(e) How many tonnes of CO2e is produced by the average residential customer through consumption of natural gas?
(f) How many tonnes of CO2e is produced by the average residential customer with gas space and water hearing through consumption of natural gas?
(g) With respect to the OEB's July 20, 2017 MACC Report, please provide a copy of Table 30 and Table 31 (pages A-4 and A-5) that is based on the latest cold climate heat pumps.

Interrogatory 6-ED-8

Reference: Exhibit B, pp. 23-24

Preamble:

> "Non-gas alternatives primarily include electrically powered geothermal heat pump systems and electric air source heat pumps ("EASHP"). …Enbridge Gas notes that it could offer these alternatives if authorized by the OEB, to reduce peak period demand in targeted areas. … Both electric GSHPs and EASHPs provide a solution that could be deployed to mitigate the need to build new infrastructure or to reduce the amount of new infrastructure required."

Questions:

(a) What is the annual average coefficient of performance (i.e. efficiency) in a climate similar to Ontario's for the most efficient reverse cycle chiller systems? Please provide underlying information sources and studies. If Enbridge does not know which is the most efficient, please provide alternative information.
(b) Please provide all studies in Enbridge's possession on the cost-effectiveness and energy efficiency of reverse cycle chillers.
(c) Please comment on the conclusions made here: https://rmi.org/heat-pumps-a-practical-solution-for-cold-climates/.

(d) Please compare the annual operating costs for space heating, water heating, and cooling for (i) a gas furnace, gas water heater, and electric air conditioner and (ii) all services provided by a reserve cycle chiller. Please provide the comparison over the next 10 years, including the federal governments increasing carbon price to $150 in 2030. Please make and state assumptions as necessary. Please cite all sources.

Interrogatory 6-ED-9

Reference: Exhibit C, Page 19

Question:

(a) Please provide a table for each of the last three years for which data is available listing the Mt CO2e produced by Ontario (i) in total and (ii) arising from the combustion of natural gas. Please show all calculations and conversion rates. Please cite all sources.

Interrogatory 6-ED-10

Reference: Exhibit A, p. 13

Preamble:

> "Enbridge Gas proposes a two-stage process for analyzing IRPs/IRPAs. The first stage is a high-level review for reasonability that compares the cost of the facility expansion/reinforcement project with the cost of IRPAs that could reduce peak period demand sufficiently to defer or avoid the facility project."

Question:

(a) Is it still Enbridge's proposal that "The first stage is a high-level review for reasonability that compares the cost of the facility expansion/reinforcement project with the cost of IRPAs that could reduce peak period demand sufficiently to defer or avoid the facility project"? If yes, please explain why it would be reasonable to screen out IRPAs without ever considering the value of the avoided commodity costs.

Interrogatory 6-ED-11

Reference: Exhibit A, p. 13

Preamble:

> The IRP study findings estimate that only 14-17% of reinforcements in the sample (which only included distribution reinforcements) could feasibly be replaced by an IRPA.

Question:

(a) Please redo this analysis and include the value of avoided commodity costs with respect to the IRPAs.

Interrogatory 6-ED-12

Reference: Exhibit A

Question:

Please comment on each of the following strengths of gas IRP in comparison to electric IRP and indicate whether Enbridge agrees with the statement:

(a) DER in the gas sector provide diversification away from fossil fuels and mitigates risks associated with future environmental regulation;

(b) Natural gas energy efficiency programs have historically been more cost-effective than electricity sector energy efficiency programs;[2]

(c) Natural gas energy efficiency programs are underfunded in comparison electricity sector programs;[3]

(d) The natural gas sector produces far more greenhouse gasses than the electricity sector;[4]

(e) Natural gas DERs provide additional benefits to Ontario's economy because they replace spending on out-of-provide gas with spending on Ontario-based energy contractors and made-in-Ontario energy;

(f) Avoided cost calculations in the gas sector are not complicated by the surplus baseload issues in the electricity sector; and

(g) There are fewer natural gas utilities, creating economies of scale.

[2] EB-2015-0049: Exhibit K6.2; Transcript Vol. 6, p. 124, lns. 7-18.
[3] EB-2015-0049: Exhibit K6.2.
[4] EB-2015-0049: Exhibit K6.2.; Exhibit M.GEC.EP.3, p. 1; Exhibit M.GEC.ED.12, attachment 1 p. 17; Transcript Vol. 6, p. 123, lns. 3-8; Transcript Vol. 4, p. 16, lns. 8-12.