



THE BOARD OF DIRECTORS

PATRICIA ADAMS
Chair and President
ANN CAVOUKIAN
Executive Director, PBDI, Ryerson University
ANDREW COYNE
Columnist, National Post
IAN GRAY
President, St. Lawrence Starch Co. Ltd.
BRUCE PARDY
Professor of Law, Queen's University
ANDREW ROMAN
Lawyer

MAX ALLEN
Producer, CBC Radio.
DAVID CAYLEY
Writer and Broadcaster
GLENN FOX
Economist, University of Guelph
CLIFFORD ORWIN
Professor of Political Science, University of Toronto
GAIL REGAN
President, Cara Holdings Inc.
GEORGE TOMKO
Expert-in-Residence in IPSI, University of Toronto

January 12, 2021

Christine E. Long
Registrar
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street
Toronto ON
M4P 1E4

Dear Ms. Long

**RE: EB-2020-0091 Enbridge Gas IRP Application
Energy Probe Interrogatories to Enbridge Gas Inc.**

Attached are the interrogatories of Energy Probe Research Foundation (Energy Probe) to Enbridge Gas Inc. in the EB-2020-0091 proceeding, the application by Enbridge Gas Inc. to the Ontario Energy Board for approval of its Integrated Resource Plan.

Respectfully submitted on behalf of Energy Probe.

Tom Ladanyi
TL Energy Regulatory Consultants Inc.

cc. Patricia Adams (Energy Probe Research Foundation)
Roger Higgin (SPA Inc.)
Michael Parkes (OEB Staff)
Adam Stiers (Enbridge Gas Inc.)

EB-2020-0091 Enbridge Gas IRP Proposal

Energy Probe Interrogatories to Enbridge Gas Inc.

January 12, 2021

EP-EGI-1

Reference: EB-2019-0159, Exhibit A, Tab 13, Pages 2 and 3

Preamble: “Enbridge Gas has included its IRP Proposal with this Application for three reasons:

- i. To be responsive to the direction received from the OEB: (a) in recent leave to construct application decisions where the OEB directed Enbridge Gas to provide sufficient and timely evidence of how traditional Demand Side Management (“DSM”) has been considered as an alternative at the preliminary stage of project development; and (b) in the OEB’s Report of the Board on the DSM Mid-Term Review where the OEB stated that it expects the natural gas utilities to develop more rigorous, robust and comprehensive procedures to ensure conservation and energy efficiency opportunities can be reasonably considered as alternatives to future capital projects.
 - ii. To establish the necessary IRP policy guidance required for Enbridge Gas to be successful in considering IRPAs as non-facility alternatives to future expansion/reinforcement projects effectively and efficiently, including acknowledgement of Advanced Metering Infrastructure (“AMI”) as an IRP enabling element.
 - iii. To demonstrate that IRP is not a viable alternative to avoid or delay the proposed Project, which is required to meet demand that already exists and is forecast in the near future. This underlines the need to clarify the role of IRP, particularly in relation to high-volume transmission and distribution projects where IRPAs do not appear to be cost-effective and/or feasible.”
- a) Please confirm that Enbridge’s reasons for its proposal in EB-2020-0091 are still as stated as reasons (i) (ii) and (iii) in EB-2019-0159. If the answer is no, please explain.
 - b) Please define and describe the AMI that is mentioned in (ii).
 - c) Please provide an explanation of the “acknowledgement” that Enbridge is seeking from the OEB. Specifically, does Enbridge expect the OEB to state in its decision or report that AMI is a necessary component of IRP and that without AMI consideration of IRPAs is not possible.

- d) Please describe the types of projects where IRP is not a “viable alternative” including reasons.

EP-EGI-2

Reference: EB-2019-0159, Exhibit A, Tab 13, Pages 3 and 4, Footnote 3; Exhibit A, Tab 13, page 10

Preamble: “This is underlined by looking at various system demand forecast types and the appropriateness of IRPAs or DSM to reduce such demands, including: design day demand, which influences design of transmission systems (i.e. Dawn Parkway System), drives related transmission system expansion/reinforcement projects and is managed as part of Enbridge Gas’s Transmission System Planning and Gas Supply Planning processes; peak hour demand, which influences design of distribution systems, drives related distribution system expansion/reinforcement projects, is managed as part of Enbridge Gas’s Distribution System Planning processes and is most appropriate for consideration of IRPAs; and average annual demand, which is the metric by which energy savings resulting from traditional DSM is measured under the OEB-approved 2015-2020 DSM Framework.”

- a) Is Enbridge proposing that IRP be limited to the consideration of the impacts of IRPAs on peak hourly demand for distribution and peak daily demand for transmission only to avoid overlap with the DSM Framework or for other reasons? Please discuss.
- b) Please explain how Enbridge currently monitors and measures peak hourly demand, including granularity of data and its record keeping. For example, for a large distribution network such as the City of Toronto, where and how is the peak hourly demand measured.

EP-EGI-3

Reference: EB-2019-0159, Exhibit A, Tab 13, Page 10

Preamble: “IRP is a detailed process of reviewing supply and demand-side alternatives to address forecasted facility requirements. If this process was undertaken with every forecasted facility project, it would be extremely time intensive.”

Please describe the steps involved in a typical IRP process with time estimates for each step.

EP-EGI-4

Reference: EB-2019-0159, Exhibit A, Tab 13, Page 11, Table 13-1

Please explain the reason for selecting 1.4% as the maximum annual load growth. The table implies that if load growth greater than 1.4%, IRP should not be considered.

EP-EGI-5

Reference: EB-2019-0159, Exhibit A, Tab 13, Page 15

Preamble: “Enbridge Gas proposes that the costs associated with planning, implementing, administering, measuring and verifying IRPAs within an approved IRP be treated in a similar manner to the capital costs that they enable the utility and ratepayers to avoid.”

- a) If the IRPA consists of conversion of a subdivision from gas space and water heating to electric space and water heating, is Enbridge proposing to include in its rate base the replacement electric furnaces and water heaters on customers’ premises? If the answer is yes, would Enbridge also include in its OEB regulated revenue requirement the operation and maintenance of electrical equipment on customers’ premises?
- b) If the IRPA consists of conversion of a subdivision from gas space and water heating to geothermal energy is Enbridge proposing to include in its rate base the cost of drilling for and the installation of underground piping, the installation of electric motor driven pumps, space and water heating equipment and associated controls on customer’s premises? If the answer is yes, would Enbridge also include in its OEB regulated revenue requirement the operation and maintenance of electrical equipment on customers’ premises?
- c) Considering that electrical and geothermal space and water heating is currently supplied by the competitive market, is Enbridge proposing to enter this as an OEB regulated utility? If the answer is yes, how does Enbridge propose to deal with issues of unfair competition?

EP-EGI-6

Reference: EB-2019-0159, Exhibit A, Tab 13, Page 16

Preamble: “The implementation, measurement and verification of IRPAs will require Enbridge Gas to invest ratepayer funds on IRPAs in advance of the typical timing of expenditure on proven facility alternatives, exposing ratepayers to the risk of higher rate impacts should IRPAs not effectively reduce forecasted demand growth, forcing Enbridge Gas to apply for leave to construct facility expansion/reinforcement projects even though ratepayers have already paid for an IRPA. In that instance, ratepayers would bear the costs of both the IRPA and the facility expansion/reinforcement project required to ensure future demand growth is served.”

- a) Is Enbridge proposing that ratepayers bear 100% of the risk of IRPAs? If the answer is yes, please explain what incentive would Enbridge have to ensure that IRPAs are built on schedule and or budget and that they provide the necessary service to customers.
- b) Do ratepayers bear 100% of the risk of pipeline and gas main projects? If the answer is no, please describe the risks that shareholders bear.

EP-EGI-7

Reference: EB-2019-0159, Exhibit A, Tab 13, Page 22

Preamble: “If large numbers of customers switch to either electric air source heat pumps or electric heat pumps, additional stresses may be realized on the electrical grid. Furthermore, incremental electrical requirement on the grid will very likely increase the marginal electricity produced from the central gas power plants, thereby shifting the residential gas load to the central power plant.”

Is Enbridge proposing to invest money in the construction or upgrading of the electricity distribution, transmission and generation facilities as part of IRPAs? If the answer is yes, is Enbridge proposing to such investments in its OEB regulated rate base.

EP-EGI-8

Reference: EB-2020-0091 Exhibit B, Page 14

Preamble: “Need Identification – When Enbridge Gas determines that its current facilities cannot balance the peak demand forecast with existing system facilities that can deliver the forecasted volumes safely and reliably, a system need is identified.”

- a) How frequently Does Enbridge Gas analyze its entire distribution system to identify needs?
- b) How far into the future are needs identified?
- c) Does Enbridge Gas produce a priority list of projects based on the Needs Identification process?

EP-EGI-9

Reference: EB-2020-0091 Exhibit B, Pages 21 and 24

Preamble: “The efficiency of NGASHPs make them an ideal IRPA candidate. NGASHPs operate at a greater efficiency than traditional natural gas furnaces due to their mode of operation. The efficiency of NGASHPs decreases as ambient temperatures fall, however, their efficiency should never fall below 100%.”

“Similar to NGASHPs, as the ambient temperature falls, the efficiency of EASHPs also decreases, thus increasing electrical consumption. An EASHP’s typical minimum efficiency is 100%.”

- a) The quoted texts imply that the efficiency of NGASHPs and EASHPs is at times greater than 100%. Please explain how a heat pump or any machine can have an efficiency greater than 100%.

- b) Please confirm NGASHPs use natural gas only medium for heat transfer and as a fuel while EASHPs do not use any natural gas.
- c) Is Enbridge proposing to install, own and operate NGASHPs and EASHPs on customer's premises?

EP-EGI-10

References: EB-2020-0091 Exhibit B, Page 23

Preamble: "Should this authorization be granted, these assets would need to be included into rate base or else by investing in such alternatives the Company would be contributing to higher rates for existing customers since they would not receive the moderating advantage of new revenues from customer growth to help offset Enbridge Gas's overall costs."

- a) Please explain why the Company would be contributing to higher rates if IRPA assets are not in rate base.
- b) Please discuss owning and operating costs of IRPAs, particularly the maintenance costs of pumps and compressors and their inclusion in the Operation and Maintenance costs of Enbridge Gas.

EP-EGI-11

Reference: EB-2020-0091 Exhibit B, Page 29

Preamble: Given that the Board has approved funding in Enbridge Gas's 2015-2020 DSM Plans (EB-2015-0029/0049) to meet the goals and objectives of the 2015-2020 DSM Framework, Enbridge Gas expects that separate funding and resources would be allocated to meet the differing goals and objectives of an IRP framework for Enbridge Gas.³⁸ This would include covering the cost of implementation, tracking and monitoring the impacts of ETEE and/or other IRPAs.

Please describe and discuss the "separate funding sources" mentioned in the quoted text. Do these separate sources consist of separate groups of ratepayers or non-ratepayer sources?

EP-EGI-12

Reference: EB-2020-0091 Exhibit B, Page 30

Preamble: "If an IRPA, or IRPAs, can reliably meet the forecasted demands driving the constraint/need in place of new facility expansion/reinforcement projects, then Enbridge Gas will evaluate the IRPA on an economic basis compared to new facilities."

Electricity distribution typically has lower reliability than gas distribution. It is possible that non-gas IRPA's that rely on electricity as the alternative could have lower reliability. Would Enbridge consider and evaluate IRPA's that have lower reliability than the current Enbridge Gas distribution system? Please discuss.

EP-EGI-13

Reference: EB-2020-0091 Exhibit B, Page 32

Preamble: "Enbridge Gas will apply to the OEB for approval to recover the costs associated with investment in any IRPA. Enbridge Gas presumes that such an application would, similar to applications for LTC facility alternatives..."

Can an application for approval of an IRPA be filed under the current OEB Act or would the OEB Act need to be changed? Please discuss.

EP-EGI-14

References: EB-2020-0091 Exhibit B, Page 37, paragraph 81; Exhibit C, pages 23 and 24

Considering IRPA's may rely on new technology or new energy delivery systems is it likely that implementation of IRPA's will increase the risk to ratepayers? Please discuss the following risks:

- a) The risk that the IRPA cost is greater than forecast,
- b) The risk that the IRPA reduces reliability of energy delivery to customers, and
- c) The risk that the IRPA does not result in promised energy savings.

EP-EG-15

Reference: EB-2020-0091 Exhibit B, Page 45

Preamble: "Recently more natural gas utilities across North America are considering the implementation of AMI technology. In Canada, FortisBC is expected to file with the British Columbia Utilities Commission to upgrade their natural gas meters as part of the Advanced Gas Meters project. In addition, ConEd, SoCal Gas and PG&E have all initiated or completed the roll out of natural gas AMI technology and networks."

- a) Has FortisBC filed its application dealing with the upgrade of natural gas meters? If the answer is yes, please provide a link to the application.
- b) Please file a description of the initiation and roll-out of natural gas AMI technology and networks for each of the referenced utilities, including whether the roll-out is a pilot program or a mass program, the date of the roll-out, the technology employed, the costs if available, and links to approvals of the roll-out by regulatory commissions.
 - i. ConEd

- ii. SoCal Gas
- iii. PG&E

EP-EGI-16

Reference: Exhibit B, Appendix A, ICF report, Page 8

Preamble: “Although the number of NPS projects in the State are limited (with the exception of the implementation of distributed supply sources including LNG and CNG), the projects that have been implemented have generated useful results and led to ongoing discussions that are helping to lay the groundwork for a more widespread use of such solutions. However, to date, the demand side pilot projects have been too small in scale to lead to deferring or avoiding infrastructure.”

- a) Please provide a list of projects with a description of each project indicating if it is a pilot project or not.
- b) Please describe the useful results including the methods used for monitoring, recording and the evaluation.

EP-EGI-17

Reference: Exhibit B, Appendix A, ICF report, page 21

Preamble: “Gas to electricity conversion is a relatively new trend in NPS. Typically, the electrification that has been seen during this study is through the deployment of air-source and ground-source heat pumps due to the expected environmental benefits associated with the use of renewable power.”

- a) Has any utility in Canada or the US implemented a gas to electricity conversion as an IRPA? If the answer is yes, please identify the utility (or utilities) and describe the extent of the implementation.
- b) Are the expected environmental benefits of air-source and ground-source heat pumps dependent on the use of renewable power? Please discuss including the types of power that can be considered as renewable.

Respectfully submitted on behalf of Energy Probe by its consultant,

Tom Ladanyi
TL Energy Regulatory Consultants Inc.