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February 8, 2022

Nancy Marconi
Acting Registrar
Ontario Energy Board
2300 Yonge Street, P.O. Box 2319
Toronto ON
M4P 1E4

Dear Ms. Marconi,

**RE: EB-2020-0293 Enbridge Gas St. Laurent Ottawa North Replacement Project
Energy Probe Interrogatories to the Sponsors**

Attached are the interrogatories of Energy Probe Research Foundation (Energy Probe) in the EB-2020-0293 proceeding to the the Sponsors (School Energy Coalition, the City of Ottawa, and Pollution Probe) on the evidence of the Sponsors filed January 17, 2022.

Respectfully submitted on behalf of Energy Probe.

Tom Ladanyi
TL Energy Regulatory Consultants Inc.

cc. Patricia Adams (Energy Probe)
Michael Brophy (Pollution Probe consultant)
Zora Crnojacki (OEB Staff)
Roger Higgin (Sustainable Planning Associates Inc.)
Jay Shepherd (SEC counsel)
James Sidlofsky (OEB Staff)
Adam Stiers (Enbridge Gas Inc.)
Intervenors of Record

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ONTARIO ENERGY BOARD

IN THE MATTER OF the Ontario Energy Board Act, 1998,
S.O. 1998, c. 15, (Schedule B) (the “Act”);

AND IN THE MATTER OF an Application by Enbridge
Gas Inc. for an order granting leave to construct in the City
of Ottawa, under section 90 of the Act.

AND IN THE MATTER OF an Application by Enbridge
Gas Inc. for an order approving the forms of Working Area
Agreement and Transfer of Easement agreement, under
section 97 of the Act.

Enbridge Gas Inc. Leave to Construct Application: St. Laurent North Ottawa

**Energy Probe Research Foundation Interrogatories
to the Sponsors (City of Ottawa, Pollution Probe, and School Energy Coalition)**

February 8, 2022

Sponsors-1.1-Energy Probe-1

Reference: Sponsors' Evidence, page 3 and OEB Section 90 Issues List

Preamble: Energy Probe would like to understand the purpose of the Sponsors' evidence and its relevance to the issues in this proceeding.

- a) Are the Sponsors' aware of the Issues List for Leave to Construct applications under section 90 of the OEB Act? If the answer is yes, please identify the issue or issues that the Sponsors' evidence deals with. If the answer is no, please explain why not.
- b) What are the Sponsors asking the OEB to decide in this case? Please provide reference to the specific approvals requested by Enbridge in its Leave to Construct application under sections 90 and 97.
- c) What is the position of the Sponsors on the use of natural gas by residents of the City of Ottawa? Specifically, do the Sponsors believe that Ottawa residents should be prohibited from using natural gas by some future date? If the answer is yes, what is that date. If the answer is no, please provide the annual volume of natural gas that Sponsors believe residents of Ottawa should be allowed to use for the foreseeable future.

Sponsors-1.1-Energy Probe-2

Reference: Sponsors Evidence, page 4

Preamble: *"It aims to reduce corporate city of Ottawa emissions to zero by 2040 and community wide emissions – that is, emissions from all entities within the City of Ottawa - to zero by 2050. Translating those GHG reduction targets to natural gas usage reductions means that, by 2050, renewable natural gas is expected to provide approximately 12% of the city's energy requirements, versus the 50% which is provided by fossil derived natural gas currently."*

- a) Please explain what is meant by the term "all entities within the City of Ottawa".
- b) Please explain what in Sponsors' understanding is "renewable natural gas", how and where will it be produced and delivered to customers. Please explain if the existing system of distribution pipelines in the City of Ottawa owned by Enbridge Gas will be used.
- c) Is renewable natural gas pure hydrogen? If the answer is yes, will it be necessary to convert appliances and equipment that currently burn natural gas to enable them to burn pure hydrogen? If the answer is no, please explain why not.

Sponsors-1.1-Energy Probe-3

Preamble: *"Most prominent in these changes is the Cliff St heating and cooling plant, which is located in the St. Laurent area. At this location, conversion of the heating systems from steam to hot water is projected to reduce GHG emissions by 87% by 2025, with almost all of this reduction coming from reductions in natural gas use."*

- a) What is the current peak energy output of the Cliff St. heating and cooling plant?
- b) Will the peak energy output be the same after conversion? Please explain your answer.
- c) Will natural gas be used by the Cliff St heating and cooling plant after conversion from steam to hot water? If the answer is no, please explain what source of energy will be used to heat the water. If the answer is yes, what annual volume of natural gas will be used after conversion?

Sponsors-1.1-Energy Probe-4

References: Sponsors Evidence, pages 4 and 5

- a) What was the total number of residential and commercial buildings in the City of Ottawa as of January 1, 2020? Please give the number of each category.
- b) What was the number of residential and commercial buildings in the City of Ottawa that used natural gas for space heating and for water heating respectively as of January 1, 2020?
- c) How many residential and commercial buildings were converted from natural gas for space and water heating to other sources of energy for space and water heating between the following:
 - i. January 1, 2020, and December 31, 2020, and
 - ii. January 1, 2021, and December 31, 2021?
- d) Of the buildings identified in response to question c, how many were converted from natural gas to heat pumps during 2020 and during 2021 respectively?
- e) What are the “non emitting resources” for water heating how many buildings were converted to these resources for water heating during 2020 and 2021 respectively?
- f) Did any buildings that were converted from natural gas to other forms of energy for space and water heating retain natural gas as backup or for other uses such as cooking?
- a) What is the total number of schools in the City of Ottawa? Of that number how many used natural gas for space and water heating as of January 1, 2020?
- b) Have any schools converted from natural gas to electricity during 2020 or 2021. If the answer is no, please explain why not. If the answer is yes, please provide the names of the schools that have converted and indicate if they have had their gas connection removed. Also please identify the energy source that has replaced natural gas.

Sponsors-1.1-Energy Probe-5

Reference: Sponsors Evidence, page 6

Preamble: *“In long run the City of Ottawa has identified and adopted 39 GHG reduction programs in order to achieve the 100% reduction objective. Among the top five actions include retrofitting residential buildings, which includes retrofitting pre- and post-1980 homes, low rise residential and apartment building heat pumps buildings, and retrofitting commercial buildings, which includes retrofitting commercial, office, residential buildings and commercial building heat pumps.”*

- a) Please specify the time period referred to “in the long run”.
- b) Please explain what is meant by the 100% reduction objective.
- c) Apart from age, what is the difference between pre- and post-1980 homes?
- d) How many commercial buildings now have heat pumps and why do they need to be retrofitted?

Sponsors-1.1-Energy Probe-6

Reference: Sponsors Evidence, page 8

Preamble: *“Within the area serviced by the St. Laurent Pipeline, OCH operates 78 buildings consisting of 5,974 units. The total current consumption of natural gas by these units is 7,924,281, and OCH expects to reduce that to zero by 2040 through aggressive implementation of its current plan.”*

- a) How many of the 78 buildings have been converted from natural gas for space and water heating to another source of energy for space and water heating? If the answer is none, please explain the reasons. If the answer is some, please provide the number of buildings and describe the energy sources and the cost of energy compared to natural gas.
- b) Will the buildings that are converted to other sources of energy retain natural gas as backup or will they be completely disconnected from the gas distribution system?
- c) What are the units of the 7,924,281 number?
- d) Please describe what is meant by “aggressive implementation”.

Sponsors-1.1-Energy Probe -7

Reference: Sponsors Evidence, page 8, “Natural Gas Usage Projections” graph

- a) What are the units of natural gas usage shown in the graph? If they are not in units of volume, please convert them to volume units such as m³.

- b) Does the graph represent annual total natural gas consumption of all buildings in the city of Ottawa? If the answer is no, please explain.
- c) What is the source of information presented in the graph?
- d) What volume reduction in natural gas usage was achieved during 2020 and during 2021 on a weather and COVID normalized basis?
- e) Please describe the weather and COVID normalization methodology used by the City of Ottawa in its analysis of energy use?
- f) Please file a graph of Electricity Usage Projections of the City of Ottawa over the same period.

Sponsors-1.1-Energy Probe-8

Reference: Sponsors Evidence, page 9

Preamble: *“There are places where we don’t know what the specific solution will be, or we know the possible solutions but not how to finance the cost. On the other hand, it is the City’s plan to get there anyway, and over the past decade we have demonstrated that we can meet and exceed the goals we have set, despite the challenges.”*

- a) How many residential and commercial buildings are expected to convert from natural gas to electric space and water heating during the City’s plan forecast period per year and in total?
- b) Why should the OEB have confidence in the City’s plan if the possible solutions and financing are not known?
- c) Please confirm that the City of Ottawa is proceeding with its plan no matter what the cost to City’s taxpayers and energy users? If the answer is yes, please describe how the city has informed its residents that it is proceeding with a “cost is no object plan”. If the answer is no, please provide the upper limit on the cost of the plan that would cause the City of Ottawa to abandon it.

Sponsors-1.1-Energy Probe – 9

Reference: Section 2.1.4 “Energy Security and Resiliency, page 107

Preamble: *“Managing the uninterrupted availability of energy sources at an affordable price is fundamental to ensuring sustainable development, as well as protecting the well-being of residents and the bottom line for businesses.”*

- a) Please explain how the City of Ottawa is managing the uninterrupted availability of energy sources at an affordable price.

- b) Do the energy sources include natural gas? If the answer is no, please explain why not. If the answer is yes, please explain how the City of Ottawa is ensuring uninterrupted availability of natural gas at an affordable price.

Sponsors-1.1-Energy Probe-10

Reference: Section 2.1.4 “Energy Security and Resiliency, page 107,

Preamble: “*By diversifying local renewable energy sources, Ottawa decreases its reliance on the unpredictability of energy supply from outside the city boundary while boosting local economic growth.*”

- a) Please explain the concern of the City of Ottawa regarding the unpredictability of energy supply from outside the city boundary.
- b) Would construction of the St. Laurent Ottawa North Replacement Project increase or decrease unpredictability of energy supply?

Sponsors-1.1-Energy Probe-11

Reference: Section 4.5.4 “Achieving 100% Scenario”, pages 135-136

Preamble: “*The model projects that making the local electricity supply zero emission could contribute roughly 8.5% of total GHG emission reductions required to achieve the 100% scenario. To realize this target, electricity would need to become the dominant energy source, supplying 88% of the total energy required in Ottawa. As a result, the electricity supply will need to increase by 127% and the local electricity supply will need to become entirely emission free, even with significant increases in electricity use for the electrification of transportation and heating. This kind of energy transition is only possible if conservation and efficiency in the building and transportation sectors greatly reduces energy demand in concert with a move to electrification. As electricity demand is expected to increase over the next 30 years, discussions with Ottawa’s local distribution companies, the Independent Electricity System Operator and the Ontario Energy Board, are already underway. Proactive demand forecasting and frameworks to allow more distributed energy resources are being explored. The model indicates that the minimum results required to meet the 100% scenario under the electricity sector are:*

- *Solar photovoltaic (PV) reaches 1,060 MW by 2050 (approximately 36 km² of solar PV mostly on rooftops)*
 - *Wind generation reaches 3,218 MW by 2050 (approximately 710 large scale turbines)*
 - *310 MW of local energy storage by 2030 and 612 MW by 2050 (122 large shipping containers of lithium batteries) approximately.*”
- a) Please list the current energy sources used in the City of Ottawa giving percentage of each source and the explanation how the percentages were derived.

- b) Has the City consulted with Enbridge Gas regarding City's plan? If the answer is no, please explain why not. If the answer is yes, please file copies of all communications between the City and Enbridge Gas regarding the plan.
- c) Has the City consulted with Hydro Ottawa regarding the need for the 127% increase in electricity load that will be needed to meet City's plan? If the answer is no, please explain why not. If the answer is yes, please file copies of all communications between the City and Hydro Ottawa regarding the plan.
- d) Please explain why there is no mention of the City's plan in Hydro Ottawa's 2021-2025 Load Forecast, or in its Long-Term Electric Energy and Demand Forecast, or in its Distribution System Plan 2021-2025 presented by Hydro Ottawa to the OEB in the EB-2019-0261 proceeding for approval of its 2021-2025 rates.
- e) When did the meeting (either in person or on-line) with the Ontario Energy Board take place? Please provide the date, the names and titles of persons who were at the meeting, and copies of all documents, presentations, and e-mails related to the meeting.
- f) Of the total number of buildings in the City of Ottawa how many would need to have rooftop solar panels?
- g) Apart from rooftops where else would the solar panels need to be in the City of Ottawa?
- h) Please describe a "large scale wind turbine" giving its height, blade diameter and land requirement.
- i) Where in the City of Ottawa would the 710 large scale wind turbines be located?
- j) Have the residents of the City of Ottawa been informed of the plan to build 710 large scale wind turbines in their city? If the answer is yes, please file copies of all such communications. If the answer is no, please explain why not.
- k) Where in the City of Ottawa would the 122 shipping containers of lithium batteries be located?
- l) Have the residents of the City of Ottawa been informed of the plan to locate 122 shipping containers in the city? If the answer is yes, please file copies of all such communications. If the answer is no, please explain why not.
- m) In case of a power outage, for how many hours would 312 MW of storage and 612 MW of storage be able to supply electricity needs of the residents of the City of Ottawa? Please file calculation on which your answer is based.