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Enbridge Gas Inc.
50 Keil Drive
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Canada

January 27, 2022

VIA EMAIL and RESS

Nancy Marconi
Acting Registrar
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Nancy Marconi:

Re: Enbridge Gas Inc. (Enbridge Gas)
Ontario Energy Board (OEB) File: EB-2020-0293
St. Laurent Ottawa North Replacement Project – Responding Evidence

Consistent with the OEB's Procedural Order No. 5, enclosed please find the responding evidence of Enbridge Gas in the above noted proceeding.

The above noted submission has been filed electronically through the OEB's RESS.

Please contact the undersigned if you have any questions.

Yours truly,

(Original Signed)

Adam Stiers
Manager, Regulatory Applications - Leave to Construct

Cc: G. Pannu (Legal counsel, Enbridge Gas)
C. Keizer (Torys)
Z. Cronojacki (OEB Staff)
Intervenors (EB-2020-0293)

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.

RESPONDING EVIDENCE

OEB File No. EB-2020-0293

January 27, 2022

Introduction

1. Enbridge Gas Inc. ("Enbridge Gas" or the "Company") is in receipt of and has reviewed the documentary evidence filed by the City of Ottawa ("Ottawa"), Pollution Probe ("PP") and School Energy Coalition ("SEC") (together, the "Sponsors") on January 17, 2022 (the "Evidence"), related to the Company's St. Laurent Ottawa North Replacement Project (the "Project").

2. The Sponsors' Evidence summarizes Ottawa's and Ottawa Community Housing's ("OCH") aspirational plans to reduce greenhouse gas ("GHG") emissions within the City via a wide-variety of both actual and potential programs and policy initiatives, including: (i) electrification of heating (space and water) systems within buildings owned and operated by Ottawa and privately owned residential and commercial buildings throughout the City; and (ii) reconstruction of district energy systems (specifically, the Cliff Street heating and cooling plant). The Sponsors claim that their plans may result in total annual natural gas reductions of up to 12,086 10^3 m^3 in the area served by the Project by 2050.[1]

3. In accordance with Procedural Order No. 5 dated January 13, 2022, the following is Enbridge Gas's responding evidence.[2]

Natural Gas Demand Reductions

4. In response to interrogatories in the current proceeding, Enbridge Gas established the current peak design day demand of the St. Laurent pipeline system, the projected maximum capacity of the proposed replacement Project, and the demand reduction required to reduce the proposed NPS 16 portion of the Project to NPS 12 (one pipeline size):[3]

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[1] Evidence, pp. 7-8
[2] While Enbridge Gas does not comment upon the validity of each specific statement raised by the Sponsors or upon the minutia of Ottawa's Energy Evolution Plan, this should not be interpreted as agreement with the same.
[3] Exhibit I.ED.13 [emphasis added]

> Based on Enbridge Gas's design day modeling for the pipelines proposed to be replaced by the Project, peak design day demand is 139,800 m^3/h. Current capacity of the pipelines proposed to be replaced by the Project is 157,900 m^3/h. Future capacity of the proposed pipelines is projected to be 155,300 m^3/h. Enbridge Gas models capacities of the St. Laurent pipeline system as a whole for the purposes of determining peak design demand…
>
> …Using the best-case scenario of removing load from the end of the network/system, a reduction 32,500 m^3/h is required to downsize the NPS 16 portion to NPS 12.

5. The Sponsor's evidence is incongruent with the basic principles of natural gas system design in that it relies upon 2019 annual natural gas demand volumes to support its conclusions, whereas Enbridge Gas's pipeline systems are designed to serve the current peak design day demands of existing natural gas consumers. Also absent from the Sponsors' Evidence is confirmation that the facilities cited will not rely on natural gas for any backup or resiliency function in the future (e.g., during periods of peak design conditions such as extreme weather events or electrical system outage). If for any such reason the facilities cited in the Evidence remain actively connected to the St. Laurent pipeline system, then Ottawa's plans to reduce or eliminate associated natural gas demands would have no impact upon natural gas pipeline system design.

6. The Evidence provides limited detail regarding potential future annual natural gas demand reductions associated with specific buildings, including: the Cliff Street heating and cooling plant, OC Transpo facilities, and a number of smaller facilities managed by Ottawa and OCH.[4] Accordingly, and where possible, Enbridge Gas has cross-referenced the buildings cited in Evidence against its own records of actual peak design day demands associated with

[4] Evidence, pp. 4, 182-183, 213 & 215

the St. Laurent pipeline system to produce the Potential Peak Design Day Demand Reductions set out in Table 1 below. Importantly, while completing its comparison the Company discovered that one of the most significant sources of demand reductions claimed by Ottawa (nearly 50%), the OC Transpo bus garage facilities, are not served via the St. Laurent pipeline system and thus will have no impact on the need for the Project. The Company suspects that more of the buildings cited by Ottawa are similarly located outside of the area of benefit of the Project, but in the absence of detailed addresses it was unable to verify this.

Table 1: Peak Design Day Demand Reduction[5]

Customer Group	Peak Design Day Demand (m^3/h)
Cliff Street Heating	7,565
City of Ottawa Sites	667
OCHC Sites	1,797
Total	**10,029**

7. Based on the results set out in Table 1 and the Evidence presented by the Sponsors, the total potential peak design day demand reductions possible for the St. Laurent pipeline system by 2050 is 10,029 m^3/h. These potential demand reductions represent approximately 1/3rd (~31%) of the reductions required to downsize the proposed Project by a single pipeline size, let alone to eliminate the need for the St. Laurent pipeline system entirely (these demand reductions represent ~6% of the total capacity of the proposed

[5] Conservatively, the peak design day demand impacts in Table 1 were calculated using the assumption that demand reduction is 100% effective immediately, with no use of methane (including natural gas or renewable natural gas). The calculation also assumes that the demand reduction is located in the most optimal part of the St. Laurent pipeline system. Table 1 excludes peak design day demand for buildings cited in the Evidence where the Company was not able to confirm their address and location relative to the St. Laurent pipeline system. The volumes associated with these excluded buildings would not materially change the Company's conclusions regarding peak design day demand or the design of the Project.

replacement pipeline(s)). A more significant and immediate peak design day demand reduction would be required in the area served by the St. Laurent pipeline system in order to directly impact Project design.

Feasibility of Electrification

8. As the Sponsors are opposed to the replacement Project which is required to ensure that the Company can safely and reliably meet the peak design day demands of existing customers served via the St. Laurent pipeline system, it is essential that the OEB also consider the scale of investment into construction of new electricity infrastructure that would be required to eliminate the same. The equivalent amount of energy from electricity required to replace the energy provided by the proposed Project over the course of 1 hour is approximately 1.64 GW.[6] In comparison:
    - Peak electricity system demand for the City of Ottawa from 2013 to 2025, set out in Hydro Ottawa's Load Forecast included as part of its 2021 Rates application to the OEB, ranged from 1.30 – 1.49 GW;[7] and
    - Ontario Power Generation's ("OPG") Pickering Nuclear Generating Station has a peak generation capacity of 3.1 GW.[8]

    In other words, electricity generation, transmission and/or distribution infrastructure amounting to up to double the current peak demands for the City of Ottawa (served via Hydro Ottawa) or more than half of the generation capacity of the Pickering Nuclear Generating Station would need to be built and placed into service in order to eliminate the St. Laurent pipeline system.

[6] (155,300 m^3/h × 1h × 37.98 MJ/m^3) ÷ 3,600 MJ/MWh = 1,638.415 MW -or- 1.64 GW
[7] https://hydroottawa.com/sites/default/files/2020-02/Exhibit%203%20-%20OPERATING%20REVENUE.pdf
[8] https://www.opg.com/powering-ontario/our-generation/nuclear/pickering-nuclear-generation-station/

9. As far as Enbridge Gas is aware, there are no such specific plans to expand electricity infrastructure in the region at this scale or within the timelines set out in the Sponsor's Evidence.[9]

Conclusion

10. While Enbridge Gas is committed to partnering with Ottawa and other municipalities across the province to achieve the various targets and goals set out within their respective energy transition plans (e.g., to reduce GHG emissions, and increase energy efficiency and reliance upon renewable energy sources), the Company remains obligated as the supplier of last resort to safely and reliably meet the peak design day demands of its existing customers.

11. While much is made in the Evidence of potential annual natural gas demand reductions, Enbridge Gas does not design its system based on forecasted annual demands. Further, when assessed on the basis of potential aggregate impact to peak design day demands the potential reductions contemplated in the Sponsors' Evidence do not justify a reduction in Project scope by even a single pipeline size. Finally, the potential demand reductions cited, if realized:
    (i) will in no way alter the operation of the St. Laurent pipeline system;
    (ii) do nothing to enhance or make the repair option considered by the Company more feasible;
    (iii) do not change the Company's conclusion that reactively repairing leaks/failures exposes ratepayers and the general public to an unacceptable level of risk;[10] and
    (iv) in no way mitigate the increasing probability of critical system failure or the severity of consequences, including risks to public health and

[9] Based on the Company's understanding of the IESO's long-term plans and Annual Planning Outlook.
[10] Exhibit I.STAFF.5 a)

safety, resulting from the ongoing deterioration of the St. Laurent pipeline system.

12. Absent an order of the OEB for leave to construct the proposed replacement Project, the Company expects the existing St. Laurent pipeline system to continue to deteriorate making the likelihood of a critical failure increasingly probable.[11] As the proposed Project is driven by the need to address the condition and integrity of the existing St. Laurent pipeline system, the Company maintains that the current Application (similar to Phases 1 and 2 of the 4-Phase Project) should be approved by the OEB without delay.

[11] As stated in the Company's Updated Application (Exhibit B, Tab 1, Schedule 1, pp. 7-12), in the event of such failure under design conditions, the Company has indicated that gas supply to approximately 62,200 customers would be interrupted. Note that this is the number of customer gas meters that would be impacted not the number of gas users. The number of gas users would be greater.