

SEC INTERROGATORY # 12

INTERROGATORY

Ref: SEC.1, Attach 2, p. 3, version attached to Reply Submissions

Question:

With respect to the map of the area served:

- a. Please divide the increased demand of 4,370 m³/h over the ten year planning period between the high pressure area along Steeles, Bayview and Parkview, and the intermediate pressure area in the rest of the polygon.
- b. For each of the main load increases assumed between the first estimate and the second estimate of load, please
 - i. identify where on the map the additional load is expected, and when if that is known, and
 - ii. explain why the load was not included in the original forecast.

RESPONSE

- a) In the 2017 LRP demand is split roughly 11% / 89% between HP and IP networks respectively. Due to the differences in methodology between the 2016 and 2017/18 LRP's it not possible to conclusively determine a direct comparable divide for the 4,370 m³/h figure cited above.
- b) Please see the map located in the response to SEC Interrogatory #1 found at Exhibit I.EGDI.SEC.1, Attachment 2, page 3 as reproduced in a larger format in Enbridge's Reply Submission.
 - i. On this map, each of the small pink coloured polygons are proposed developments that are received by Enbridge from, in this case, the City of Toronto. If the polygon lies beside an orange coloured pipe, the polygon is fed by an IP network. If the polygon lies beside a blue coloured pipe, the polygon is likely fed by the adjacent HP network. Each polygon has its own timing for load addition based on scope and chronology of the project derived from information provided by the project proponent.
 - ii. Please see the response to OEB Staff Interrogatory # 18 found at Exhibit I.EGDI.Staff.18.

SEC INTERROGATORY # 13

INTERROGATORY

Ref: SEC.1. Attach 1, p. 5 of 49

Question:

Please explain why the SAG did not including any representatives of environmental or customer groups, despite the Applicant's knowledge that those groups had a direct interest in geo-targeted DSM, and had experts knowledgeable in the subject.

RESPONSE

Enbridge, with input from ICF, planned to convene a Stakeholder Advisory Group drawn from a wide cross section of North American gas utilities, planners, DSM / CDM professionals and academic communities.

It was anticipated that this external review would bring a fresh, broad and objective perspective to this study and to help ensure the quality of the study across the several specialized fields involved. Individuals identified for the SAG were those who could offer new perspectives and industry experience helpful to move the dialogue forward in a constructive manner recognizing there are no experts in planning for or implementing natural gas IRP. Beyond the SAG, the Company notes that there have been and will be opportunities to discuss the material and receive intervenors' perspectives through DSM regulatory proceedings or other processes. The Stakeholder Advisory Group was struck with best practices in mind and to gain market and industry input into a nascent practice area given, as confirmed by ICF in its study, the very limited information available on targeted natural gas DSM to defer infrastructure.

Enbridge further notes that ICF determined that electricity industry IRP experience is of only limited value as an example to natural gas IRP.

ICF's review of existing DSM programs at North American gas utilities in other jurisdictions found that little to no activity has been undertaken to directly reduce transmission and distribution costs using targeted DSM and Demand Response (DR). In addition, ICF found that the measured data on hourly natural gas consumption necessary to determine the potential impacts of DSM on new facilities requirements is generally unavailable.

ICF also assessed activity in the electric power industry. However, differences in utility cost structure, duration of peak period requirements, and availability of data on DSM impacts lead ICF to the conclusion that geo-targeted DSM programs are likely to be more cost-effective for the electric industry than they are for the natural gas industry, and that

the electric industry experience provides only relatively limited value as an example for the gas industry.¹

¹ Filed: 2018-01-15 EB-2017-0128 Enbridge Submission Appendix D Natural Gas Integrated Resource Planning: Initial Assessment of the Potential to Employ Targeted DSM to Influence Future Natural Gas Infrastructure Investment. Pg 6 of 49

SEC INTERROGATORY # 14

INTERROGATORY

Ref: SEC.1. Attach 1, p. 14 of 49

Question:

Please describe all steps taken by the Applicant to date to determine the impact of DSM programs (whether geo-targeted or otherwise) on peak day or peak hour demand.

RESPONSE

Enbridge completed the IRP Study and is field testing the conclusions to better inform the transition to IRP.

SEC INTERROGATORY # 15

INTERROGATORY

Ref: SEC.1. Attach 1, p. 33 of 49

Question:

Please provide all information provided to ICF on the load to be displaced by DSM in the Bathurst Reinforcement area, including all information on the size, sources, timing, and locations of load that needed to be displaced.

RESPONSE

Enbridge provided ICF the number of apartment, commercial, industrial and residential customers in the area of influence, the forecasted peak demand in the area of influence due to those customers, and the aggregate average yearly incremental demand based on forecasted customer additions over the next 10 years. Enbridge also provided the scope, information around the reason for the project, year required, and total estimated cost of the reinforcement at that time. Please see the response to OEB Staff Interrogatory #20 found at Exhibit I.EGDI.STAFF.20 Attachment 1, page 1 for the above noted values.

SEC INTERROGATORY # 16

INTERROGATORY

Ref: SEC.1. Attach 1, p. 33 of 49

Question:

Please provide all information provided to ICF relating to existing DSM programs in the Bathurst Reinforcement area, and the potential for additional DSM activities in that area.

RESPONSE

Enbridge did not provide further information to ICF related to existing DSM programs.

During 2016, ICF completed an OEB CPS study that focused on estimating the achievable potential for natural gas efficiency in Ontario from 2015 to 2030. The study was completed on behalf of the OEB and in consultation stakeholders including the Gas Utilities.

It was this base year (2014) from the OEB CPS that formed the starting point for the IRP Report analysis regarding the potential of DSM to defer infrastructure.

SEC INTERROGATORY # 17

INTERROGATORY

Ref: SEC.1, Attach 2, p. 2

Question:

Please provide the numerical data behind the two graphs on this page. If there is any data in the possession of the Applicant or ICF relating to the cost-effectiveness of the planned DSM aside from its comparison with the cost of the new facilities (for example, using the TRC Plus test), please provide that data as well.

RESPONSE

All of the data points supporting the above noted graphs can be found on the graphs themselves and on page 154 of the full IRP Report as filed at OEB Staff Interrogatory #13 found at Exhibit I.EGDI.STAFF.13 Attachment 1 under the heading "Case Study 1: Geo-Targeted DSM Costs Less than Planned Facility Investments". The way in which cost-effectiveness was analyzed and incorporated into the IRP Report is thoroughly described in the report's methodological explanations. The Company notes that the Board's Conservation Potential Study was leveraged by ICF in their preparation of the IRP Report.

SEC INTERROGATORY # 18

INTERROGATORY

Ref: SEC.1, Attach 2, p. 2

Question:

Please provide similar graphs using the new capital cost, load forecast, and timing, and inserting the expected DSM budget required to displace the new load growth expected. Please provide the numerical data behind those graphs as well. If this analysis has not been done, please explain why. If any analysis has been done, please advise what types of cost-effectiveness analysis have been included.

RESPONSE

Please see the response to OEB Staff Interrogatory # 20 found at Exhibit I.EGDI.STAFF.20 Attachment 1.

SEC INTERROGATORY # 19

INTERROGATORY

Ref: SEC.1, Attach 2, p. 2

Question:

Please provide full copies of the 2016 and 2017/18 Long Range Plans of Enbridge, and provide (if the information is not already contained within the documents) the material changes in methodology between the two plans, and the impacts of those changes.

RESPONSE

Please see the response to OEB Staff Interrogatories #15 and #18 found at Exhibit I.EGDI.STAFF.15 and Exhibit I.EGDI.STAFF.18 respectively for a description of the methodological changes between the 2016 and 2017/2018 Long Range Plans. The Company believes SEC's request to provide both plans in their entirety is outside of the narrow scope provided for in Procedural Order No. 2 issued by the Board in this proceeding.

SEC INTERROGATORY # 20

INTERROGATORY

Ref: SEC.1, Attach 2, p. 2

Question:

Please provide all additional information in the possession of the Applicant that supports the 386% increase in load from the first load forecast to the second, or would otherwise assist the Board in understanding the reasons for that increase.

RESPONSE

Please see the responses to SEC Interrogatory # 1 and OEB Staff Interrogatory # 18 found at Exhibit I.EGDI.SEC.1 Attachment 2, and Exhibit I.EGDI.STAFF.18, as well as paragraphs 11 and 13 of Enbridge's Reply Submission. As noted at these references the refinement of LRP methodologies and expansion of the area which necessitated and benefits from the Project are together responsible for the final forecast submitted in this Application.

SEC INTERROGATORY # 21

INTERROGATORY

Ref: SEC.1, Attach 2, p. 3, SEC.7

Question:

With respect to the commercial and apartment load growth in each of the old forecast and the new forecast:

- a. Please identify on the map where the “additional data points” would be developed;
- b. If the additional data points cannot be located on the map, please reconcile the built-up area served by the project with the high load growth forecast, and show that there is developable land in the area to accommodate the forecast attachments, and
- c. Please provide a table, in the same format as SEC.3, showing the annual attachments expected by year in the forecast over the period 2020-2029.

RESPONSE

- a) Please see the response to SEC Interrogatory # 12 found at Exhibit I.EGDI.SEC.12 b).
- b) Not applicable; please see part a).
- c) Please see Exhibit B, Tab 1, Schedule 1, page 1, table 1 of Enbridge’s pre-filed evidence.

SEC INTERROGATORY # 22

INTERROGATORY

Ref: SEC.1. Attach 2, p. 3

Question:

Please confirm that the area served by this project does not include residential or other development in the Downsview Park development plan. If it does include any part of that development area, please provide details.

RESPONSE

Confirmed.

SEC INTERROGATORY # 23

INTERROGATORY

Ref: SEC.1. Attach 2, p. 4

Question:

Please explain why ICF was not asked to review their DSM conclusions relative to the Bathurst Reinforcement in light of the new information in the hands of the Applicant as to load and cost. Please provide copies of all communications between the Applicant and ICF related to the new information and its impact on their conclusion.

RESPONSE

Please see the response to OEB Staff Interrogatory #20 found at Exhibit I.EGDI.STAFF.20 Attachment 1 for a revised analysis completed by ICF using updated information relative to the Project. Please find as Attachment 1 to this interrogatory response an email communicating revised information regarding the Project to ICF.

From: Jeffrey Mazzei
Sent: Friday, November 23, 2018 2:24 PM
To: Fiona Oliver-Glasford
Subject: Fwd: Revised Bathurst LTC information

Begin forwarded message:

From: Jeffrey Mazzei <Jeffrey.Mazzei@enbridge.com>
Date: November 20, 2018 at 3:22:20 PM EST
To: "Dikeos, John (John.Dikeos@icf.com)" <John.Dikeos@icf.com>, "Sloan, Michael (Michael.Sloan@icf.com)" <Michael.Sloan@icf.com>
Cc: Suzette Mills <Suzette.Mills@enbridge.com>, Kent Todd <Kent.Todd@enbridge.com>, Neerajah Raviraj <neerajah.raviraj@enbridge.com>, Fiona Oliver-Glasford <Fiona.OliverGlasford@enbridge.com>, Cody Wood <Cody.Wood@enbridge.com>
Subject: Revised Bathurst LTC information

John and Mike,

Please see below for the numbers that apply to the new control volume for the Bathurst LTC.

Let me know if you have any questions. Thank you for your help.

	Ave m3/h/cust*	cust count**	m3/h
Apartment	123.3	267	32,921
Commercial	14.1	1950	27,495
Industrial	397	11	4,367
Residential	1.3	34184	44,439

total m3/h***	109,222	m3/h
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LTC growth (over 10 yrs)****	590	m3/h/y
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*=average peak demand at design day for that demand group as of 2018 CMM
 **=count of customers in that demand group in affected area as of 2018 CMM
 ***=total peak hr demand in new control volume
 ****=10 year flow increase/10 = yearly demand growth in affected area

Jeff Mazzei, LL.M., P.Eng., CMVP

Long Range Planning Specialist
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SEC INTERROGATORY # 24

INTERROGATORY

Ref: SEC.1. Attach 2, p. 4, Reply submissions, para. 29

Question:

Please provide all analyses, studies, or other work done to support the conclusion that the “project [is] likely not possible to be affected by DSM”.

RESPONSE

Please see the response to SEC Interrogatory # 1, found at Exhibit I.EGDI.SEC.1 Attachments 1 and 2, as well as the discussion of this throughout Enbridge’s Reply Submission. Taken together, the above noted evidence, as emphasized in paragraphs 29 and 30 of Enbridge’s Reply Submission, clearly demonstrate that the Project could not cost-effectively be deferred or delayed by way of geo-targeted DSM.

SEC INTERROGATORY # 25

INTERROGATORY

Ref: SEC.6, SEC.8

Question:

Please provide a copy of any order, formal determination, letter, or other communication from the City of Toronto restricting the Applicant's ability to carry out the Bathurst Reinforcement Project to within the period April 2019 to December 2019, or prohibiting the work on the project after December 2019.

RESPONSE

Please find attached to this interrogatory response an email communication from the City of Toronto regarding timing restrictions for completion of the Project due to other utility works. The email communication provided is supplementary to verbal communications between Enbridge and the City of Toronto in which Enbridge was informed that after utility works scheduled for the spring of 2020 were completed a multi-year moratorium on further work along Bathurst Street would be put in place.

From: Doodnauth Sharma [<mailto:Doodnauth.Sharma@toronto.ca>]
Sent: Wednesday, February 21, 2018 8:33 AM
To: Tracy Witney
Cc: Jaclyn Mui
Subject: [External] Re: Bathurst Reinforcement

Hi Tracy,

As previously mentioned, there is watermain work on Dufferin that will start in 2018 and finish in 2019, Enbridge work cannot start on Bathurst until all the lane restrictions on Dufferin are removed. At the moment Dufferin is scheduled to be completed in June 2019 but if the major underground works are completed earlier then Enbridge can start earlier. You will need to coordinate in year with the project leader, see T.O. INview. Enbridge currently has a June 2019 to December 2019 window to complete its work. In year coordination will be required if you will need to start earlier and finish later than 2019. If the watermain project will happen during the winter 2019, then they may finish earlier. Also, if no project is being done in the winter of 2020, Enbridge will be allowed to work in the winter to finish up its work. At the moment, Yonge Street will be under construction so it will be preferred if Enbridge can finish its major lane restriction works on Bathurst in 2019.

Thank you.

Doodnauth Sharma, M.Eng., P.Eng., PMP
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E: doodnauth.sharma@toronto.ca
<https://map.toronto.ca/toinview/>

SEC INTERROGATORY # 26

INTERROGATORY

Ref: SEC.11

Question:

Please confirm that the Applicant has not developed any scenarios to test how much it would cost to displace this project with geo-targeted DSM, nor what types of DSM programs would be required to achieve that result.

RESPONSE

Please see the response to OEB Staff Interrogatory # 20 found at Exhibit I.EGDI.STAFF.20 Attachment 1.

SEC INTERROGATORY # 27

INTERROGATORY

Ref: Reply submissions, para. 14

Question:

With respect to the issue of “low inlet pressures, please provide:

- a. Details of the inlet pressures for “this network” assumed in the information provided to ICF, and today;
- b. Details of the additional investigations or information that caused the change in inlet pressures assumptions;
- c. A table comparing inlet pressures for this network with the inlet pressures for each similar network in the City of Toronto;
- d. Confirmation that, when the initial analysis was done and provided to ICF, the statement “if the primary source feeding this network were to fail during the heating season, there is a risk of losing approximately 3100 existing commercial and residential customers” was not true at that time. If confirmed, please explain how that is possible;
- e. Confirmation that adding a redundant source to any network will, generally speaking, increase reliability. Please explain how this addition of redundancy is different from others.

RESPONSE

- a) ICF was not provided network details such as low inlet pressures at any time. Please see the response to OEB Staff Interrogatory #16 found at Exhibit I.EGDI.STAFF.16.
- b) Inlet pressure assumptions have not changed throughout the course of project development.
- c) Please see OEB Staff Interrogatory #16 found at Exhibit I.EGDI.STAFF.16. Beyond this response, Enbridge is of the view that this request is outside the scope of the 2 issues raised by the Board in Procedural Order No. 2. In addition, it is unclear what constitutes a similar network for the purposes of this response given that areas in the City have developed and are served by facilities that have been constructed in response to historic unique growth patterns that are not directly comparable and which now face different future growth forecasts. These realities make any attempted comparison of little value.

- d) Not confirmed. As noted in the response to SEC Interrogatory #1 found at Exhibit I.EGDI.SEC.1 Attachment 2, page 4, “System flexibility needs are also a driver for the project, but [were] not included or valued in the ICF analysis which was strictly on a \$ per m³/h of incremental capacity basis...”
- e) Confirmed. Consistent with Enbridge’s past and present approach to the safe and reliable operation of its distribution system, the Company finds additional redundancy warranted given that “...the primary source feeding this network is having low inlet pressures”, as noted on page 1 of Exhibit B, Tab 1, Schedule 1.

SEC INTERROGATORY # 28

INTERROGATORY

Ref: Reply submissions, para. 30-36

Question:

Please confirm that, as a result of the outstanding policy issues yet to be addressed by the Board, the Applicant believes that it would not be appropriate for the Applicant to use geo-targeted DSM to defer or displace facilities projects at this time.

RESPONSE

Natural gas Integrated Resource Planning (IRP) involves many complicated processes and barriers. Enbridge is committed to continuing to take steps to study and evolve natural gas IRP. ICF's conclusions from the IRP Report find that "Integrating the potential for DSM to reduce infrastructure requirements into the facilities planning process will require significant changes in policy, as well as changes in the utility planning process."¹

Although in the case of the Bathurst LTC it is evident from the high level analysis, and further confirmed by ICF in the response to OEB Staff Interrogatory #20 found at Exhibit I.EGDI.STAFF.20 Attachment 1, that geo-targeted DSM was not a viable solution, it is possible there could be other opportunities relating to future LTC projects. As a practical matter, Enbridge is looking to the Board for direction regarding the barriers and policy issues identified in the IRP Report prior to conducting more detailed analytical work which is anticipated to be resource intensive. This evolutionary approach to IRP is consistent with the final recommendations of ICF.

The Company wishes to highlight the significant gap remaining between the conceptual possibility of deferring or avoiding infrastructure investments through DSM, as explored thoroughly in the IRP Report, and technically implementing such alternatives in a prudent and cost-effective manner. Even had DSM conceptually proven to be a cost-effective alternative to the Project, which it has not, the Company would need to: (1) undertake a geographically specific conservation potential study; (2) based on this study, design DSM programs specific to the area in question; (3) apply to the Board to

¹ Filed: 2018-01-15 EB-2017-0128 Enbridge Submission Appendix D, Natural Gas Integrated Resource Planning: Initial Assessment of the Potential to Employ Targeted DSM to Influence Future Natural Gas Infrastructure Investment Page 46 of 49

receive approval for the necessary funding over and above currently approved DSM budgets; (4) successfully market the geo-tailored programs to customers; (5) monitor and oversee the implementation of energy efficiency measures; and, (6) conduct a robust evaluation and measurement program for a significant enough period of time to confirm the sufficiency of savings achieved and their impact on peak load. It is for this reason that ICF notes in the IRP Report that DSM must start implementation (not planning) 3 years ahead of the expected date for a facility investment project.² In Enbridge's view, even 3 years may be an underestimate of the time required to successfully roll out geo-targeted programs and have the necessary number of efficiency measures in place to achieve a material impact.

The status of natural gas IRP in Ontario, indeed in North America, is perhaps best stated by Enbridge's independent expert in their IRP Report:

The use of DSM to reduce investments in natural gas facilities remains relative untried and untested. While ICF has identified areas where there is potential to use DSM to avoid infrastructure investments, there remains significant uncertainty in both the potential and the cost of achieving that potential. There is little to no actual measured data on DSM program impacts on peak period demand for natural gas, and there are no significant real world examples that ICF can point at to indicate that DSM can be used effectively for this purpose.

As a result, there is currently a fundamental disconnect between the limited risk acceptable to the Utilities in the facilities planning process and the lack of information on the ability of DSM to reliability reduce peak period demand that will need to be addressed before the Utilities would be able to rely on DSM to reduce infrastructure investment...³

In order to bridge the gap between the conceptual and the technically practical, the Company recommends the initiation of a standalone consultation regarding IRP.

² Exhibit I.EGDI.SEC.1, Attachment 1, page 33

³ Exhibit I.EGDI.SEC.1, Attachment 1, page 47