

May 13, 2013

BY COURIER (2 COPIES) AND EMAIL

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
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Dear Ms. Walli:

**Re: Environmental Defence Preliminary Interrogatories to Enbridge
EB-2012-0451 – Enbridge Gas Distribution Inc. (“Enbridge”)
GTA Pipeline Leave to Construct; EB-2012-0433, EB-2013-0074
Union Gas Ltd. (“Union”) – Parkway West and Brantford-Kirkwall
Parkway D Projects**

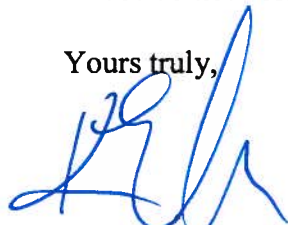
Pursuant to *Procedural Order No. 2*, enclosed please find a preliminary set of interrogatories from Environmental Defence to Enbridge. These interrogatories are being provided further to part 8 of the Board’s order in *Procedural Order No. 2*, which states that:

8. The Board requires that Union Gas Limited and Enbridge Gas Distribution Inc. use reasonable efforts to provide responses to interrogatories received in advance of the deadline within 17 days.

Responses to the attached interrogatories will assist in the preparation of Environmental Defence’s evidence in this matter with the exception of questions 16, 21 to 23, and 27 to 32, which are not required for the preparation of evidence.

Please do not hesitate to contact me if anything further is required.

Yours truly,



Kent Elson

cc: Applicant and Intervenors

EB-2012-0451

Enbridge Gas Distribution Inc. (“Enbridge”) – GTA Pipeline Project

EB-2012-0433, EB-2013-0074

Union Gas Ltd. (“Union”) – Parkway West and Brantford-Kirkwall Parkway D Projects

Environmental Defence Interrogatories for Enbridge

Filed: May 13, 2013

Issue A4: “What are the alternatives to the proposed facilities? Are any alternatives to the proposed facilities preferable to the proposed facilities?”

Interrogatory No. A4-ED-1 Reference: Ex. A, Tab 3, Schedule 4, page 4, Table 1

Please provide Enbridge’s definitions of “residential” and “apartment” customers.

Interrogatory No. A4-ED-2 Reference: Ex. A, Tab 3, Schedule 4, page 4, Table 1

Please provide for each year from 2000 to 2014 inclusive Enbridge’s **incremental** number of residential, commercial, apartment and industrial customers in the GTA Project Influence Area.

Interrogatory No. A4-ED-3 Reference: Ex. A, Tab 3, Schedule 4, page 4, Table 1

Please provide for each year from 2000 to 2025 inclusive the actual/forecast average: a) peak hour (GJ/hour), b) peak day (GJ/day) and c) annual demands (GJ/year) of Enbridge’s **incremental**: i) residential, ii) commercial, iii) apartment and iv) industrial customers in the GTA Project Influence Area. Please also provide the aggregate peak hour, peak day and annual demands of each of these customer classes and all of Enbridge’s GTA Project Influence Area customers for each year from 2000 to 2025 inclusive.

Interrogatory No. A4-ED-4 Reference: Ex. A, Tab 3, Schedule 4, page 4, Table 1

Please provide for each year from 2000 to 2025 inclusive Enbridge’s actual/forecast total number of residential, commercial, apartment and industrial customers in the GTA Project Influence Area.

Interrogatory No. A4-ED-5 Reference: Ex. A, Tab 3, Schedule 4, page 4, Table 1

Please provide for each year from 2000 to 2025 inclusive the actual/forecast *total peak hour* demands (TJ/hour) and average peak hour demands (GJ/hour) of Enbridge’s: a) residential; b)

commercial; c) apartment; and d) industrial customers in the GTA Project Influence Area. Please also provide the total peak hour demands for all of these customers for each year from 2000 to 2025 inclusive. Please also provide a further breakdown of the commercial customers by subsets such as offices, retail, hospitals, schools, etc.

Interrogatory No. A4-ED-6 Reference: Ex. A, Tab 3, Schedule 4, page 4, Table 1

Please provide for each year from 2000 to 2025 inclusive the actual/forecast hourly demands (TJ/hour) for all customers in the GTA Project Influence Area for the 10 days of each year containing the highest peak hourly demand. Please also provide (a) a breakdown by residential, commercial, apartment and industrial customers, and (b) a further breakdown of the commercial customers by subsets such as offices, retail, hospitals, schools, etc. Please provide the data in an electronic spreadsheet.

Interrogatory No. A4-ED-7 Reference: Ex. A, Tab 3, Schedule 4, page 4, Table 1

Please provide for each year from 2000 to 2025 inclusive the actual/forecast *total peak day* demands (TJ/day) and average peak day demands (GJ/day) of Enbridge's: a) residential; b) commercial; c) apartment; and d) industrial customers in the GTA Project Influence Area. Please also provide the total peak day demands for all of these customers for each year from 2000 to 2025 inclusive.

Interrogatory No. A4-ED-8 Reference: Ex. A, Tab 3, Schedule 4, page 4, Table 1

Please provide for each year from 2000 to 2025 inclusive the actual/forecast *total annual* demands (TJ/year) and average annual demands (GJ/year) of Enbridge's: a) residential; b) commercial; c) apartment; and d) industrial customers in the GTA Project Influence Area. Please also provide the total annual demands for all of these customers for each year from 2000 to 2025 inclusive.

Interrogatory No. A4-ED-9 Reference: Ex. A, Tab 3, Schedule 4, pages 8 & 9

Enbridge states that the "total forecast peak day demand, shown in Table 3, is the incremental load growth plus the load required by the existing customer base."

- a) Does Enbridge's forecast assume that the demand from existing buildings will increase, decrease, or remain constant? Please explain why.
- b) For each year from 2014 to 2025, please provide the forecast *total peak hour* demands (TJ/hour) and average peak hour demands (GJ/hour) from: a) the above-described incremental load growth from new customers, and b) Enbridge's existing customer base

in the GTA Project Influence Area. Please also break out your results by residential, commercial, apartment and industrial customers.

- c) Please also provide the requested data in a table covering only the period from 2015 to 2025. This will assist in comparing the data with Enbridge's load forecast at Exhibit A, Tab 3, Schedule 4, which covers only the 2015 to 2025 period.

Interrogatory No. A4-ED-10 Reference: Ex. A, Tab 3, Schedule 5, page 9

Please provide an electronic spreadsheet with the *hourly* demands (TJ/hour) in the GTA Project Influence Area for each hour in 2010, 2011, and 2012. Please provide the data in a single row or column for each year for graphing purposes. Please provide similar forecast data for 2013, 2014, 2015 and 2016.

Interrogatory No. A4-ED-11 Reference: Ex. A, Tab 3, Schedule 5, page 9

Please provide an electronic spreadsheet with the *daily* demands (TJ/day) in the GTA Project Influence Area for each day in 2010, 2011, and 2012. Please provide the data in a single row or column for each year for graphing purposes. Please provide similar forecast data for 2013, 2014, 2015 and 2016.

Interrogatory No. A4-ED-12 Reference: Ex. A, Tab 3, Schedule 4, page 1

Please fully describe the methodology and assumptions for Enbridge's annual residential, commercial, apartment and industrial customer load growth forecasts from 2013 to 2025 inclusive in the GTA Project Influence Area. Please provide all written analyses and spreadsheets justifying the forecast.

Interrogatory No. A4-ED-13 Reference: Ex. A, Tab 3, Schedule 4, pages 7 & 8

- a) Please provide the peak hourly consumption data, by municipality and customer type, that was used to forecast to future demand.
- b) Please provide the temperature information and the regression analysis that was used to determine peak hourly gas consumption at 41 DD.
- c) Please provide the reduction factor that was used to account for efficiency gains through DSM and customer losses through building demolition. Please provide a breakout of these two components of the reduction factor and fully explain how they were calculated.
- d) Does the DSM reduction factor just include DSM reductions due to Enbridge's DSM programs? Or does it also include DSM reductions due to other factors such as changes to building codes, the BOMA BEST Program, REALpac 20 By 15 Energy Benchmarking

Program etc.? If not, please estimate the impact of all the other DSM programs and policies on the total annual demand and peak hourly demand for natural gas in the GTA Project Influence Area for each year between 2013 and 2025 inclusive. Please also explain how and to what extent, if any, the reductions from other DSM programs and policies are accounted for in Enbridge's forecast.

Interrogatory No. A4-ED-14 Reference: Ex. A, Tab 3, Schedule 4, page 8

- a) For each year from 2014 to 2025 inclusive, please state the forecast impact of DSM on peak hourly demand and total annual demand in the GTA Project Influence Area, both yearly and cumulative, based on the "reduction factor" used by Enbridge in its forecast. For each year, please also estimate Enbridge's DSM budget needed to achieve the DSM reductions assumed in the forecast.
- b) Please state the amount of DSM, in addition to that assumed in Enbridge's forecast, that would be needed to meet Enbridge's customers' needs in the GTA Project Influence Area in each year from 2014 to 2025 inclusive (i.e. to ensure that minimum system requirements with respect to capacity and pressure are met) without the proposed new Enbridge pipelines.
- c) Has Enbridge estimated the potential for incremental DSM in addition to the amount assumed in its forecast? If yes, please state this potential for each year from 2014 to 2025 inclusive. Please also provide all the reports, studies and analyses that support these estimates and state when this research was commenced and was completed.
- d) For each of the above, please also provide the requested data in a table or tables covering only the period from 2015 to 2025. This will assist in comparing the data with Enbridge's load forecast at Exhibit A, Tab 3, Schedule 4, which covers only the 2015 to 2025 period.

Interrogatory No. A4-ED-15 Reference: Ex. A, Tab 3, Schedule 4, page 8

Please provide the following information with respect to Enbridge's actual/forecast number of power plant customers in the GTA Project Influence Area for each year from 2000 to 2025 inclusive:

- a) Number of power plants;
- b) Peak hour demands (TJ/hour);
- c) Peak day demands (TJ/day); and
- d) Annual demands (TJ/year).

Interrogatory No. A4-ED-16 Reference: Ex A, Tab 3, Schedule 4

The Government of Ontario is planning to reduce the province's greenhouse gas emissions, relative to 1990 levels, by: a) 6% by 2014; b) 15% by 2020; and c) 80% by 2050.

Does Enbridge have an analysis to show that the projected increase in natural gas consumption in the GTA Project Influence Area is consistent with a politically feasible and cost-effective strategy to achieve Ontario's greenhouse gas emission reduction goals? If yes, please provide.

Interrogatory No. A4-ED-17 Reference: Ex A, Tab 3, Schedule 8, page 1

Please state the peak hour (TJ/hour) or peak day (TJ/day) demand in the GTA Project Influence Area that would cause the pressure at Station B in the 2015/2016 heating season to drop below minimum system requirements.

Interrogatory No. A4-ED-18 Reference: Ex A, Tab 3, Schedule 7, page 3

Please explain why Enbridge believes that “[c]onservation efforts... cannot be expected to replace the capacity within the system due to the lowering of pressures on large diameter, higher pressure lines.”

Interrogatory No. A4-ED-19 Reference: Ex A, Tab 3, Schedule 7, pages 15 & 16

In its analysis of alternatives, Enbridge states as follows:

As mentioned in Exhibit A, Tab 3, Schedule 2, the need for the pipeline NPS 36 XHP segment from Keele/CNR Station to the NPS 30 Don Valley line was originally identified as Parkway Phase 3. This project was initially planned in the early 1990's, then revisited in the early 2000's, but postponed until now since the additional west to east gas transportation volumes could be delivered by TransCanada under short haul contracts.

- a) When did Enbridge start to analyse the potential for incremental DSM programs and budgets to defer the need for some or all of the proposed GTA Pipeline Project? Please provide copies of the written materials prepared by Enbridge in this regard corresponding to this start date.
- b) Please state the dates (if any) when Enbridge consulted with the DSM Consultative regarding the potential for incremental DSM programs and budgets to avoid or defer the need for some or all of the proposed GTA Pipeline Project? Please provide copies of the written materials that were provided to the DSM Consultative participants on this matter.

Interrogatory No. A4-ED-20 Reference: Ex. A, Tab 3, Schedule 7, pages 1-3

Has Enbridge analysed the potential for incremental DSM measures, programs and budgets to defer the need for all or part of the proposed GTA Pipeline Project? If yes, please provide copies of all of these analyses and studies.

Interrogatory No. A4-ED-21 Reference: Ex. A, Tab 3, Schedule 8, page 1

- a) Please state the forecast dollar impact of the GTA Pipeline Project on Enbridge's revenue requirement in: a) 2016; b) 2017; and c) 2018.
- b) Please state the forecast percentage increase in Enbridge's distribution rates in: a) 2016; b) 2017; and c) 2018 due to the GTA Pipeline Project. Please also provide the forecast percentage rate increases in each of these three years for each of Enbridge's customer classes (e.g., residential, small commercial, large commercial, small industrial, large industrial).

Interrogatory No. A4-ED-22 Reference: Ex. A, Tab 3, Schedule 3, page 11

What is the probability of an outage of approximately 270,000 residential customers plus PEC at a 35 DD due to the loss of the Parkway Gate Station? Please provide Enbridge's studies to support its estimate.

Interrogatory No. A4-ED-23 Reference: Ex. A, Tab 3, Schedule 3, page 11

According to the Northeast Power Coordinating Council, the probability (or risk) of disconnecting firm load from our electricity system due to resource deficiencies shall be, on average, not more than one day in ten years. [Independent Electricity System Operator, *Ontario Reserve Margin Requirements: 2013-2017*, page 2]

What is the probability of disconnecting firm load from Enbridge's gas distribution system due to resource deficiencies in the GTA Project Influence Area?

Interrogatory No. A4-ED-24 Reference: Ex. A, Tab 3, Schedule 4, page 1 & 2

Enbridge's growth forecast relates to the "GTA Project Influence Area." This is described by Enbridge as "the areas of the Enbridge distribution network where growth had a direct impact on the pressures at the current point of minimum system pressure, located at Station B."

- a) Please provide a map indicating the detailed boundary of the GTA Project Influence Area.

- b) Please describe the boundary of the GTA Project Influence Area using street names and intersections.
- c) Assuming that the load growth to be addressed by the proposed facilities were to be instead addressed by targeted DSM (and assuming that this is possible), could that DSM be implemented in any of the 152 smaller geographic areas inside the larger GTA Project Influence Area? For example, would targeted DSM need to be predominantly located in an area nearby to station B or in areas served by proposed segment B?
- d) If targeted DSM would need to be located in a sub-area inside the larger GTA Project Influence Area, please:
 - i) Provide a map and detailed written description of that DSM sub-area,
 - ii) Explain why the project can be justified based on all growth within the GTA Project Influence Area but demand reductions in this same area could not address load growth issues, and
 - iii) Provide an additional set answers to Environmental Defence's interrogatory numbers 2-15, 17, 25, and 26 based on this DSM sub-area (i.e. with necessary modifications to provide responses with respect to this sub-area rather than the entire GTA Pipeline Project Influence Area.

Interrogatory No. A4-ED-25 Reference: Ex A, Tab 3, Schedule 4 and 7

Please fill in Tables 1 to 5 appearing below. Please use the same figures as were used to create Enbridge's forecast appearing at Exhibit A, Tab 3, Schedule 4 (e.g. re forecast DSM impacts). For tables 1 to 3, please base the demand/supply balance on the forecast of actual demand, net of the forecast DSM. The tables are entitled as follows:

- a) Table 1: GTA Project Influence Area Peak Hour Demand/Supply Balance: 2000 to 2025
- b) Table 2: GTA Project Influence Area Peak Day Demand/Supply Balance: 2000 to 2025
- c) Table 3: GTA Project Influence Area Annual Demand/Supply Balance: 2000 to 2025
- d) Table 4: Impact of Enbridge's Year 2000 to Year 2025 DSM Programs on Demand for Natural Gas in GTA Influence Project Area
- e) Table 5: Impact of Enbridge's Year 2000 to Year 2025 DSM Programs on Demand for Natural Gas in Ontario

Table 1: GTA Project Influence Area Peak Hour Demand/Supply Balance: 2000 to 2025

	2000	2001	2002																		2025	
Peak Hour Demand (TJ/hour)																						
Existing Peak Hour Capacity (TJ/hour)																						
Capacity Surplus/Deficit (TJ/hour)																						
Proposed GTA Project Incremental Capacity (TJ/hour)																						
Capacity Surplus/Deficit with GTA Project in service (TJ/hour)																						

Table 2: GTA Project Influence Area Peak Day Demand/Supply Balance: 2000 to 2025

	2000	2001	2002																			2025
Peak Day Demand (TJ/day)																						
Existing Peak Day Capacity (TJ/day)																						
Capacity Surplus/Deficit (TJ/day)																						
Proposed GTA Project Incremental Capacity (TJ/day)																						
Capacity Surplus/Deficit with GTA Project in																						

service (TJ/day)																																		
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Table 3: GTA Project Influence Area Annual Demand/Supply Balance: 2000 to 2025

	2000	2001	2002																																2025
Annual Demand (TJ/year)																																			
Existing Annual Capacity (TJ/year)																																			
Capacity Surplus/Deficit (TJ/year)																																			
Proposed GTA Project Incremental Capacity (TJ/year)																																			
Capacity Surplus/Deficit with GTA Project in service (TJ/year)																																			

Table 4: Impact of Enbridge’s Year 2000 to Year 2025 DSM Programs on Demand for Natural Gas in GTA Project Influence Area

	Year 2000 DSM Programs	Year 2001 DSM Programs																																	Year 2025 DSM Programs
Peak Hour Demand (TJ/hour)																																			
Peak Day Demand (TJ/day)																																			
Annual																																			

Interrogatory No. A4-ED-27 Reference Ex. A, Tab 3, Schedule 7, pages 1 - 3

Please provide Enbridge's best estimates of the rise in its after-tax net income in each year from 2014 to 2025 (inclusive) if it implemented incremental DSM programs that were sufficient to avoid the need for its proposed new GTA pipelines from a load growth perspective? Please clearly state and show all your assumptions and analyses.

Interrogatory No. A4-ED-28 Reference: Ex. C, Tab 2, Schedule 1, Page 1

Please state Enbridge's incremental cost of connecting its system to Union's proposed Parkway West Gate Station (to achieve increased diversity of supply) assuming DSM has eliminated demand growth and hence the need for increased pipeline capacity to meet the needs of customers in the GTA Project Influence Area.

Interrogatory No. A4-ED-29 Reference Ex. A, Tab 3, Schedule 6

Please provide Enbridge's best estimates of the rise in its after-tax net income in each year from 2014 to 2025 inclusive if the OEB approves its proposed GTA pipeline project. Please clearly state and show all your assumptions and analyses.

Issue A3: "Are the costs of the facilities and rate impacts to customers appropriate?"

Interrogatory No. A3-ED-30 Reference: Ex. A, Tab 3, Schedule 5, pages 13, 18 & 20

Please state the quantities (TJ) of natural gas from the Marcellus and Utica shale basins that were consumed in: a) the GTA Project Influence Area; and b) Enbridge's total Ontario franchise areas in 2012.

Interrogatory No. A3-ED-31 Reference: Ex. A, Tab 3, Schedule 5, pages 13, 18 & 20

Please forecast the quantities (TJ) of natural gas from the Marcellus and Utica shale basins that will be consumed each year in: i) the GTA Project Influence Area; and ii) Enbridge's total Ontario franchise areas from 2015 to 2025 inclusive assuming: a) the GTA pipeline is approved; and b) the GTA pipeline is not approved.

Interrogatory No. A3-ED-32 Reference: Ex. C, Tab 2, Schedule 1

Please state the time period during which Enbridge is proposing to amortize the capital cost of the GTA pipeline for ratemaking purposes.