

ENBRIDGE GAS DISTRIBUTION INC. RESPONSE TO  
BOMA INTERROGATORY #65

INTERROGATORY

Issue: A Related Issues

Are the proposed facilities needed? Considerations may include but are not limited to demand, reliability, security of supply, flexibility, constraints, operational risk, cost savings and diversity as well as the Board's statutory objectives.

(a) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 1, page 4 of 14

Please provide a table comparing Historic and Forecast Customer Growth of the GTA Project Influence Area to that of Enbridge Gas Distribution (EDG) `s entire service territory. Please also provide the data on use per customer for the same categories and timeframes.

(b) Reference: EB-2012-0451, Exhibit A, Table 3, Schedule 3, Attachment 4, Page 4 of 32.

When was the Third Party Review of the GTA Project initiated? Has EGD obtained Third Party Review(s) of its system before? When and for what reasons. When did EGD first become aware of the fact that Toronto is the only major metropolitan area which receives more than half of its supply through a single gate station?

(c) Reference: EB-2012-0451 Exhibit A, Tab 3, Schedule 4, Attachment 4, Appendix D, Con Edison System Plan

Has EGD reviewed Con Edison`s natural gas DSM programs and results. Has Enbridge conducted any comparisons of its DSM programs and results with those of Con Edison? Please provide any documentation of such reviews or comparisons. If such analyses have not been done, why not?

(d) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 3, Page 6 of 24, paragraph 11.

Witnesses: F. Ahmed  
J. Denomy  
C. Fernandes  
C. Moore  
E. Naczynski  
F. Oliver-Glasford

*“The XHP system has not been reinforced since 1992 for organic growth other than for specific large volume customers.”*

Have any of these large volume customers been lost to the system or has any of their consumption decreased for any reason such as improved efficiency, DSM programs or economic conditions. Please provide the annual consumption data for all large volume customers in the project area before and after any reinforcements since 1992 and the forecasts for the 2015 – 2025 periods.

- (e) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 3, Page 6 of 24, paragraph 11

*“For example, Toronto currently has 15 buildings under construction that are 150 m or greater in height (44 to 70 floors), of which 12 are residential, one is residential-office, one is office, and one is a hotel. In 2015, Toronto will have four times as many tall buildings (greater than 150m) than it had in 1995.”*

Please compare the energy density (energy use per square foot) to 12 existing high-rise residential buildings within the project area. What efforts has EGD undertaken to improve (reduce) the energy density of existing buildings or any of the 15 buildings under construction?

- (f) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 3, Page 7 of 24, paragraph 14

*“Unlike electricity which can be automatically restored, customer outages pose a particular challenge on natural gas systems due to the need for manual restoration of service.”*

How does EGD define “automatic” with respect to restoration of electricity? Please compare durations of major outages for Toronto Hydro with those of Enbridge Gas Distribution over the last decade.

- (g) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 3, Page 8 of 24, paragraph 15

*“Large outages may require support from other utilities through the Canadian Gas Mutual Aid Assistance Agreement.”*

How many times in the past decade has Enbridge called on mutual aid assistance and how many times in the past decade has Enbridge been called to give mutual aid assistance.

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(h) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 4, Page 2 of 9. Paragraph 2

*“The customer additions forecast was developed using information sources and factors as follows:*

- Information from direct contacts with builders, developers, and municipalities regarding on-the-ground realities, such as the ongoing development projects;*
- Housing starts forecasts, as available from reliable third-party data sources;*
- Development projections, sourced from external consultants; and,*
- Economic factors, such as Gross Domestic Product (“GDP”) growth, employment, and mortgage rates. ”*

Please provide all documentation related to any of the four factors listed.

(i) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 4, Page 6 of 9. Paragraph 7

*“Relatively positive economic trends in the forecast period will continue to attract investments in the commercial and industrial sectors in the long term although at a slower pace. ”*

Please provide the data to support this statement, particularly given the slowed industrial growth both in terms of economic activity in the Project Area and natural gas consumptions. How many more industrial facilities are anticipated to close or relocate during the forecast period? How many closures or relocations occurred during the historical period in the submission?

(j) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 4, Page 8 of 9.  
Paragraph 10

*“The total forecast peak day demand, shown in Table 3, is the incremental load growth plus the load required by the existing customer base.”*

Please characterize *“the load required by the existing customer base”*. Is this load assumed to be fixed with incremental load growth added to the fixed amount? How are long term impacts of past DSM programs factored in and how are the plethora of non-Enbridge conservation programs such as the Race to Reduce, BOMA Best, TRCA’s Sustainable Schools, Greener Healthcare and the Town Hall Challenge factored into expectations of existing load. How are such programs plus new construction programs and standards such as LEED, Toronto Green Standard and improvements in the Ontario Building Code energy elements factored into the forecast period?

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- (k) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 5, Page 1 of 26  
Paragraph 2

*“The XHP distribution system serving this Influence Area has not had a major expansion and enhancement since 1992.”*

Why? Had Enbridge developed any plans to do so between 1992 and 2011? If so, what were the reasons they were not pursued?

- (l) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 5, Page 3 of 26

*Figure 1: Natural Gas Demand – Central Weather Zone*

Please provide a weather normalized version of this chart.

- (m) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 5, Page 7 of 26,  
Paragraph 15

*On average peak day demand for the Central Weather Zone has increased by 1.2% per year since 1997. The comparable figure for the GTA Project Influence Area is 1.5% per year since 1999.*

In 2009, the Minister of Energy provided a directive to the Board, which included among other things, the following:

*Pursuant to section 27.1 of the Ontario Energy Board Act, 1998, and in addition to a previous directive issued thereunder on August 10, 2006 by Order in Council No. 153712006, in respect of the Enbridge Undertakings and the Union Undertakings, I hereby direct the Ontario Energy Board to dispense, under section 6.1 of the Enbridge Undertakings, with future compliance by Enbridge Gas Distribution Inc. with section 2.1 ("Restriction on Business Activities") of the Enbridge Undertakings, and under section 6.1 of the Union Undertakings, with future compliance by Union Gas Limited with section 2.1 ("Restriction on Business Activities") of the Union Undertakings, in respect of the ownership and operation by Enbridge Gas Distribution, Inc. and Union Gas Limited, of: (a) renewable energy electricity generation facilities each of which does not exceed 10 megawatts or such other capacity as may be prescribed, from time to time, by regulation made under clause 71(3)(a) of the Ontario Energy Board Act, 1998 and which meet the criteria prescribed by such regulation; (b) generation facilities that use technology that produces power and thermal energy from a single source which meet the criteria prescribed, from time to time, by regulation made under clause 71(3)(b) of the Ontario Energy Board Act, 1998; (c) energy storage facilities which meet the criteria prescribed, from time to time, by regulation made under clause 71(3)(c) of the Ontario Energy Board Act, 1998; or (d) assets required in respect of the provision of services by Enbridge Gas Distribution Inc. and Union Gas Limited that would assist the Government of Ontario in achieving its goals in energy conservation and includes assets related to solar-thermal water and Ground-source heat pumps; (e) for greater certainty, the use of the word "facilities" in paragraphs (b) and (c) above shall be*

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*interpreted to include stationary fuel-cell facilities each of which does not exceed 10 Megawatts in capacity.*

Has EDG completed an analysis of deploying the technologies listed in the Minister's directive to address the increase in the peak demand and/or declining load factors. Had the Board allowed EGD to include these investments in its rate base, would EGD have pursued such alternatives? Could such investments have obviated the need for the GTA Project?

Had the Board not constrained EGD's current and future DSM budgets, would EGD have developed a more aggressive DSM Plan to address all or some of the supply constraints addressed by the GTA project?

(n) Reference: EB-2012-0451, Exhibit A, Tab 3, Schedule 5, Page 18 of 26, Paragraph 37

*In light of these expectations and uncertainties the Company believes it is prudent to act now in order to provide additional supply diversity for its gas supply portfolio. Approval of the GTA Project facilities will provide a means through which the aforementioned risks and concerns related to upstream supplies can be mitigated and provide economic benefits to ratepayers.*

Please define the term ``supply diversity`` and provide an analysis of how this impacts reliability in contrast to ``delivery diversity``.

(o) 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. Please compare the costs and benefits associated with the two alternatives.

## RESPONSE

a) Please see Table 1 comparing Historic and Forecast Customer Growth of the GTA Project Influence Area to that of the Enbridge Gas Distribution entire service territory.

Witnesses: F. Ahmed  
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**Table 1: Historic and Forecast Customer Growth - Enbridge Entire Franchise vs. GTA Project Influence Area**

Year	Residential		Commercial		Apartment		Industrial		Total	
	Franchise	GTA	Franchise	GTA	Franchise	GTA	Franchise	GTA	Franchise	GTA
2006	43,243	16,429	4,282	1,963	61	43	36	7	47,622	18,442
2007	39,908	17,028	2,993	1,496	10	3	9	2	42,920	18,529
2008	38,042	13,764	2,976	1,403	28	22	6	0	41,052	15,189
2009	29,495	9,921	2,520	1,198	68	36	6	5	32,089	11,160
2010	34,361	11,468	2,439	1,177	98	75	4	0	36,902	12,720
2011	33,299	9,263	2,315	917	35	26	8	4	35,657	10,210
2012	33,559	10,792	2,357	1,020	41	28	14	7	35,971	11,847
2013	36,025	12,102	2,504	1,156	40	74	10	1	38,579	13,333
2014	36,043	11,669	2,532	1,199	112	69	38	3	38,725	12,940
2015	36,885	12,277	2,706	1,291	123	71	38	3	39,752	13,642
2016	37,591	12,607	2,787	1,327	124	71	38	3	40,540	14,008
2017	38,155	13,034	2,702	1,250	122	69	34	2	41,014	14,355
2018	38,390	13,148	2,688	1,253	123	69	34	2	41,236	14,472
2019	38,643	13,331	2,681	1,250	124	68	35	2	41,483	14,651
2020	38,933	13,535	2,670	1,261	122	67	35	2	41,760	14,865
2021	39,050	13,748	2,675	1,269	123	67	35	2	41,882	15,086
2022	39,050	13,748	2,675	1,269	123	67	35	2	41,882	15,086
2023	39,050	13,748	2,675	1,269	123	67	35	2	41,882	15,086
2024	39,050	13,748	2,675	1,269	123	67	35	2	41,882	15,086
2025	39,050	13,748	2,675	1,269	123	67	35	2	41,882	15,086

Normalized average uses by customer type are shown for the historical period from 2004 to 2012 using Board-approved 2013 degree days. Please note that average uses may differ from those shown in other ongoing proceedings due to the difference in budget degree days used to normalize data for comparability.

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	<u>Average Uses for Rate 1 and Rate 6 Customers only</u>			
	Residential	Commercial	Apartment	Industrial
2004	2,889	17,611	84,719	52,838
2005	2,815	17,200	81,085	53,657
2006	2,776	17,362	88,822	56,659
2007	2,769	17,831	103,512	61,632
2008	2,737	18,614	128,289	76,114
2009	2,694	19,133	145,642	89,273
2010	2,657	19,818	164,942	108,449
2011	2,618	20,261	154,154	109,505
2012	2,601	20,240	151,332	107,958

- b) The 3rd party review of the project was initiated in the 3rd quarter of 2012. Enbridge has not had a review of this nature previously. Upon receiving the report, Enbridge was made aware that it was the only major metropolitan area of those reviewed that receives more than half of its supply through a single gate station.
- c) Enbridge has not conducted a comparison of its DSM programs and results with those of Con Edison. However, Enbridge keeps abreast of developments in DSM programming in other jurisdictions through a variety of means including membership in ESource, participation in DSM related conferences, and involvement in the CGA's DSM Task Force.

Enbridge developed the 2012 – 2014 DSM programs, targets, and budgets, under the framework of EB-2008-0346 DSM Guidelines for Natural Gas Utilities, and in consultation with Enbridge's DSM Consultative members. This approach ensures that the DSM Programs offered by Enbridge meet the needs of the customers in Enbridge's franchise area and follows the DSM Guidelines objectives for portfolio design:

- "Maximization of cost effective natural gas savings,
- Prevention of Lost Opportunities, and
- Pursuit of deep energy savings."<sup>1</sup>

<sup>1</sup> "Demand Side Management Guidelines for Natural Gas Utilities", EB-2008-0346, Ontario Energy Board, June 30, 2011, p. 4.

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- d) The large volume customer referred to in Exhibit A, Tab 3, Schedule 3, Page 6, paragraph 11 is Portlands Energy Centre. This reinforcement was completed in 2008. PEC is still a customer and they have a 20 year Gas Delivery Agreement.
  - e) Enbridge does not collect information on the square footage of existing buildings from DSM participants in its programs. Enbridge offers programs for both existing buildings and new construction on an ongoing basis. The 15 buildings currently under construction were eligible to participate in the Enbridge new construction program at the time they were designed. Existing buildings are eligible to participate at any time. Enbridge reaches out to commercial customers through a variety of means including direct contact, contact via stakeholders, and promotion through print media, tradeshow, events, and conferences.
  - f) The reference was intended to indicate that electric systems can remotely restore service after an outage to larger areas of their systems without multiple site visits to each and every customer location. As explained in the reference (Exhibit A, Tab 3, Schedule 3, paragraph 4), gas systems require two site visits to each customer meter set. The first to lock the meter and the second, once normal distribution system pressures are established, to unlock the meter and inspect the gas equipment at the site to ensure safety. The intention was to demonstrate the large difference in the level of effort and timelines required to respond to an outage between the two types of systems. In this instance, please replace 'automatic' with 'remote' if you prefer. Enbridge does not track electrical outages and is unable to make a comparison.
  - g) Enbridge has not requested mutual aid assistance in the past decade. Enbridge has been called upon to provide mutual aid assistance once in the past decade. This event was the Hurricane Sandy event as described in Exhibit A, Tab 3, Schedule 3, Paragraph 15.
  - h) Information from direct contacts with builders, developers, and municipalities is an ongoing communication to keep abreast with the ground realities and use to
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validate economics forecast and projections developed by external consultants. No formal documentation is available for this source of information.

Please see the response to GEC Interrogatory #13 at Exhibit I.A1.EGD.GEC.13 for documentation on housing start forecasts, development projects from an external consultant (Hemson), and economic factors such as GDP, employment, and mortgage rates.

- i) Ontario GDP, manufacturing, and export growth declined in 2008 and 2009, and although positive, recent growth has been relatively weak as the global economy, particularly the U.S., struggles to gain economic momentum. Current consensus supports the view that uncertainty will gradually diminish as US GDP sustains a more moderate pace of growth that will buoy exports and Ontario's economy. Manufacturing capacity utilization rates have similarly been on the increase, leading to the expectation of a ramp up in business investment.

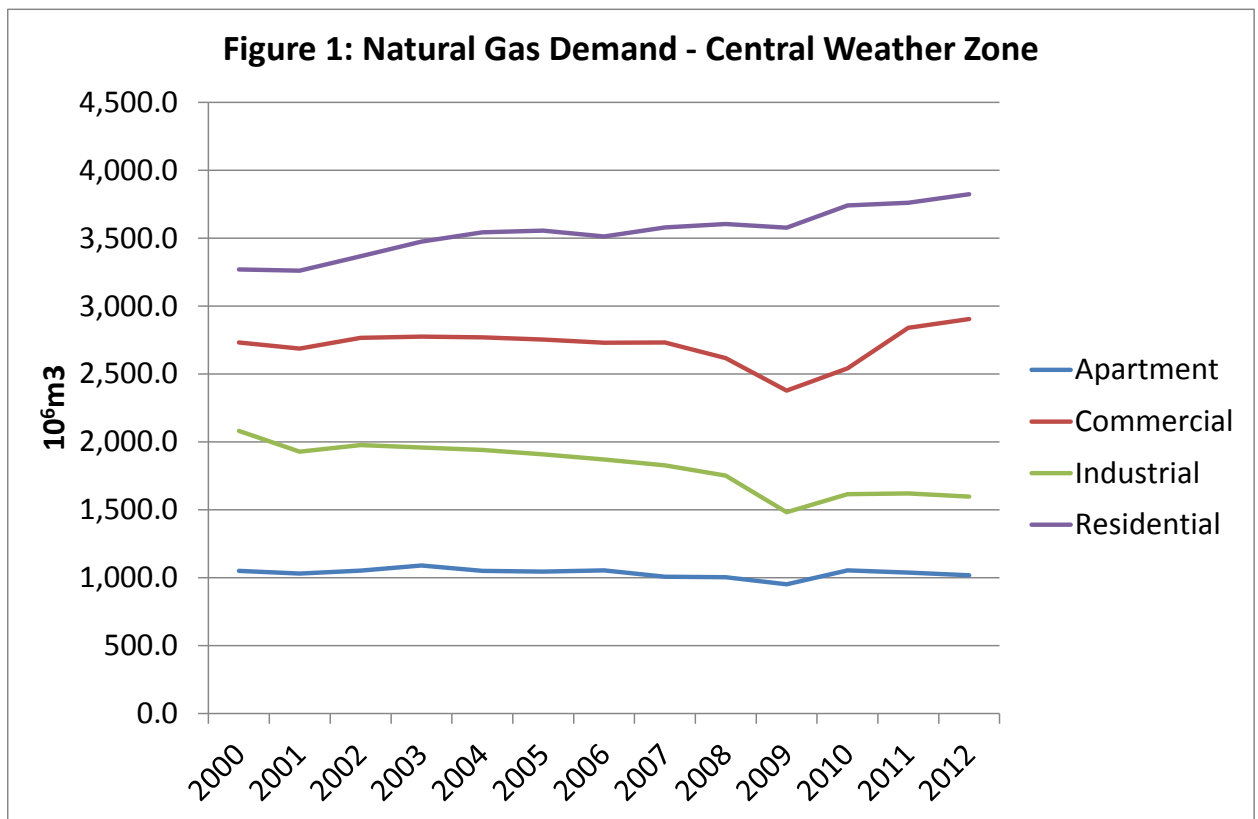
	Ontario	Canada	US	Ontario Manufacturing	Canada
	GDP Growth	GDP Growth	GDP Growth	GDP Growth	Export Growth
2007	2.0%	2.1%	1.9%	-4.2%	
2008	-0.7%	1.0%	-0.3%	-8.9%	-4.4%
2009	-3.8%	-3.1%	-3.5%	-15.7%	-13.0%
2010	3.0%	3.2%	2.8%	6.5%	6.0%
2011	3.2%	2.4%	1.8%	2.4%	4.7%
2012	1.8%	1.8%	2.2%	3.2%	1.7%
2013F	1.6%	1.6%	2.0%	3.8%	2.3%
2014F	1.5%	2.5%	3.0%	3.2%	5.5%
2015F	2.4%	2.6%	3.1%	2.5%	4.2%
2016F	2.4%	2.2%	3.1%	2.2%	4.0%

Although the number of industrial customers has declined, as has total volumetric consumption in this sector, average US consumption is expected to remain fairly stable in the medium term.

The Company cannot estimate future plant closures or relocations until informed by a customer. It is estimated that there have been 43 plant closures or relocations from the GTA area over the period from 2002 to 2012.

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- j) Please refer to the response to Environmental Defence Interrogatory #13  
I.A4.EGD.ED.13
- k) Please refer to Exhibit A, Tab 3, Schedule 1
- l) Please see below for the requested chart. System wide normalization can only be performed back to the year 2000. Volumes have been normalized to 2013 budget degree days.



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m) Enbridge has not completed an analysis of deploying the technologies listed in the Minister's directive to address the increase in the peak demand and/or declining load factors. The technologies listed in the directive, specifically Fuel Cells and Combined Heat and Power ("CHP") facilities, would allow for efficient generation of electricity from natural gas in a distributed manner. Had the Board allowed EGD to include these investments in its rate base, the Company may have pursued further analysis of these opportunities but it is impossible to say whether the analysis would have led to projects. Without completing this analysis, the Company is not in a position to comment on whether such investments would have obviated the need for the GTA project. Although it is important to note that the forecast does not include any loads associated with electrical generation – either from traditional power plans, distributed generation from fuel cells, nor CHP – which may, in fact, increase load forecasts.

The Enbridge 2013-2014 DSM Plan Update, including the budget, was developed from the ground up. It reflects market conditions, extensive consultation with stakeholders, and the DSM Guidelines for portfolio objectives as referenced in (c) above. As such, Enbridge does not feel its budget was constrained by the Board.

- n) Supply diversity refers to the number of sources and paths that the Company may utilize to bring gas supply to the city gate station(s). Enbridge cannot provide an analysis in contrast to "delivery diversity" as it is uncertain of the term nor how it relates to Enbridge or the GTA project. Enbridge is unaware of any consumers that would have "delivery diversity".
- o) Please see the responses to Environmental Defence Interrogatories #14 and 20 at Exhibit I.A4.EGD.ED.14 and I.A4.EGD.ED.20, respectively.

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