Enbridge Gas Distribution Inc.
Interrogatories for Green Energy Coalition

1. Reference: Exhibit L.EGD.GEC.1, Page 17, Line 22 to Page 18 Line 4.

Preamble:
Exhibit L.EGD.GEC.1 Page 17 Line 22 to Page 18 Line 4 states:

"These pipelines have operated at the current pressures throughout their lives, reaching back to the 1960's. The pipeline pressure does not appear to have prompted any actions by Enbridge and has only come into this case as a supplemental justification for facilities that Enbridge wants to build for other reasons. Enbridge has not provided any evidence of an actual problem with these operating pressures."

In the Technical Conference Transcript, Day 1, Page 55 Line 25 to Page 56, Line 21, Mr. Thalassinos, Chief Engineer at EGD, states:

"So this project is absolutely necessary from a safety and reliability perspective. From a reliability perspective, as most recently as last week, we had some flooding on the Don Valley, on the Don River, which exposed a 50-metre section of our NPS 30 pipe, and we immediately downgraded that pressure down to 300 pounds to ensure that we're in a safe situation while we're assessing the risk. If this situation had occurred today or even this past winter, let alone 2015, we would be in a situation of losing tens of thousands of customers today. So, the issue of reliability is not a theoretical construct.

As recently as last week, in the evidence [Exhibit A, Tab 3, Schedule 3, Paragraph 26 and Interrogatory Response A1.EGD.BOMA.12(c)] we've seen that we lowered the pressures on the Collingwood and Cornwall lines to 80% of their design pressures through the winter. And we regularly run internal inspection tools, which often, or sometimes, find issues that we need to take immediate action on to assess their safety and risk. And sometimes those assessments extend for lengthy periods of time that can extend through the winter.

So I'm not sure how many close calls we need before, from a reliability perspective, we need to have more than a single feed on the NPS 30 now supplying that section of our network."

Request:

a) Does Mr. Chernick believe that it is prudent for Enbridge to rely on a single feed, 40+ year old, high stress pipeline, without the capability to perform a repair during even mild winter conditions, for the supply of gas to downtown Toronto?
    i. If no, what alternatives other than DSM or interruptible load arrangements would Mr. Chernick propose as a solution? Please explain the reasoning in detail.
    ii. If yes, which of the following two alternatives would Mr. Chernick propose that Enbridge choose if forced to deal with an integrity issue requiring immediate attention during the heating season. Please explain the reasoning in detail.
        a) Continue to operate the Don Valley pipeline above 30% SMYS, potentially risking a hazardous pipeline rupture, or;
        b) Lower the pressure in the Don Valley line to below 30% SMYS to mitigate the safety hazard, but causing the potential loss of thousands of customers in downtown Toronto.

2. Reference: Exhibit L.EGD. GEC.1, Page 28, Lines 10 to 12

Preamble:

Exhibit L.EGD.GEC.1, Page 28 Lines 10 to 12 states:

"The capacity of PEC is about 2.5% of Ontario's winter electric peak. In 10 most years, the Ontario electric system would have a higher capacity reserve on 11 the coldest winter day without PEC than on the peak winter day."

IESO evidence dated June 28 2013 Page 3, within the report titled *Resource Adequacy: The Role of Gas-Fired Generators in Ontario's Supply Mix,* states:

"…Of the over 9900 MW of gas-fired generation in Ontario, approximately 2300 MW is situated in the greater Toronto area. In accordance with Ontario Regulation 496/07, all coal-fired generation will be retired by December 31, 2014, … While these shutdowns will not result in energy or capacity shortfalls, there will be more dependence on gas-fired generation to meet Ontario demand.

Further, over the next decade, there are significant projects planned affecting Ontario's nuclear generators. With the expected shutdown and refurbishments of various nuclear generating units, the dependence on gas-fired generation to meet Ontario demand is expected to increase. The Toronto electricity zone's 6*

peak demand for the summer of 2012 was 9344 MW. The installed capacity of generators in this zone is 8954 MW which represents a mix of natural gas and nuclear generators. Natural gas generators account for 2314 MW of the Toronto zone's installed capacity. With the upcoming anticipated nuclear refurbishment projects, there will be significantly increasing dependence on the natural gas-fired generation within the Toronto zone to supply local demand…."

**The Toronto electricity zone is bounded by the municipalities of Oakville to the west, Woodbridge to the north and Pickering to the east, inclusive.*

IESO evidence dated June 28 2013 Page 4, within the report titled *Transmission Security: The Role of Portlands Energy Centre in Electric Reliability for the Downtown Toronto Core,* states:

"…Since PEC achieved commercial operation in 2009, it has played a vital role to secure the supply to downtown Toronto. Based on its location, it is not only needed to meet demand during peak demand days but also to allow maintenance outages of various local transmission elements to proceed…."

Request:

a) Does GEC agree that PEC may be dispatched based on the operational requirements of the Toronto electricity zone or the Downtown Toronto Core, and not necessarily based on the requirements of Ontario as a whole?
b) If no, please explain.
c) If yes, does GEC agree that PEC may be dispatched even though there is surplus capacity in Ontario outside the Toronto electricity zone?

3. Reference: Exhibit L.EGD.GEC.1, Page 16, Lines 1 to 12.

Preamble:

Exhibit L.EGD.GEC.1, Page 16, Lines 1 to 12 states:

"First, it appears that most or all of the Company's projected purchases of U.S. gas could flow into the GTA even if just Parkway West and Segment A were constructed. Under those circumstances, Enbridge projects that the Parkway stations and Lisgar (where the U.S. gas would be delivered from Union and TCPL) would serve more than 2,040 10^3m^3/hour (Exhibit I.A1.Enbridge.5 BOMA.25 Attachment 2). In contrast, Victoria Square Station would provide 943 103m3/hour without any additional supplies to the Don Valley line (Exhibit 7 I.A1.Enbridge.BOMA.25 Attachment 1). Hence, so long as Enbridge purchases at least 30% of its peak-day supply for the GTA to be delivered from the TCPL

facilities to Victoria Square Station, the portion of the Company's supply that flows from the U.S. can be taken entirely through the Parkway stations and Lisgar, without Segment B."

Exhibit L.EGD.GEC.1, Page 7 Lines 11 to 14 states:

"…the economics of accessing additional supplies of U.S. gas are not likely to be changed very much by plausible load reductions. Hence, I do not discuss those parts of the GTA Project."

Request:

a) Please explain how the referenced 2,040 10^3m^3/hr was calculated as being the sendout from Parkway and Lisgar with only Parkway West and Segment A, given that Exhibit I.A1.Enbridge.5 BOMA.25 Attachment 2 shows the sendouts inclusive of both Segment A and Segment B.
b) For the 30% to be delivered at Victoria Square, please describe the upstream path and transportation requirements that Mr. Chernick expects Enbridge to utilize and comment on the availability of such path.
c) Mr. Chernick suggested to "purchase at least 30% of its peak-day supply for the GTA to be delivered from the TCPL facilities to Victoria Square Station". Please review Exhibit A, Tab 3, Schedule 5 and Exhibit E, Tab 1, Schedule 1. Please confirm that Mr. Chernick agrees that the economics would be less favourable and the customer bill impacts would be higher with this alternative. If Mr. Chernick cannot confirm, please explain why.
d) Please explain whether Mr. Chernick believes it is prudent for the Company to plan for 30% of the supply to come from a supply line that the supplier has stated may not have the currently utilized transport services available, or that the services currently being offered may only be available under different contractual conditions and at higher costs.

4. Reference: Exhibit L.EGD.GEC.1, Page 13 Line 3 to 8.

Preamble:

Exhibit L.EGD.GEC.1, Page 13 Line 3 to 8 states:

"The Board should require that the utilities integrate demand and supply options, including DSM and interruptible and curtailable rates and contracts, along with adding delivery facilities and local peaking supplies, to relieve that constraint. This process would effectively institute a form of local least-cost planning. A similar approach has been successful for dealing with local constraints on the electric system in Vermont and elsewhere."

Request:

a) Please define "successful" in terms of load reductions achieved, investment amounts, and time period from initiation of the plan to delivered load reductions.
b) Please provide examples for a local distribution company in the natural gas industry that achieved similar results.
c) Specifically compare the actual results in the examples to the forecast of Enerlife Consulting for both timing and load reductions achieved.
d) Please explain the difference between the electric industry and natural gas industry in regards to their abilities to track and monitor peak hour load.

5. Reference: Exhibit L.EGD.GEC.2, Page 1, paragraph 4.

Preamble:
Exhibit L.EGD.GEC.2 GEC, Page 1, paragraph 4 states:

"*Mr. Neme is also intimately familiar with Enbridge's current and past DSM efforts from serving on the current Ontario Technical Evaluation Committee (TEC), serving on all but one of Enbridge's annual DSM Audit Committees since they were first formed in 2000 (including the current audit committee charged with reviewing the Company's 2012 DSM savings), and having played a lead role in negotiating the settlement agreement between Enbridge Gas and stakeholder groups on Enbridge's 2012-2014 DSM plan.*"

Request:

a) In the past decade, has GEC or any of its member groups made previous representations to the Company and/or the Ontario Energy Board regarding the use of DSM to defer or avoid capital investment to meet distribution system requirements?
b) In the past decade, has GEC or any of its member groups participated in OEB consultations and/or Generic Proceedings regarding the DSM framework, objectives of DSM and DSM Guidelines?
c) In the past decade, did GEC or any of its member groups raise the issue of integrated resource planning on any of those occasions?

6. Reference: Exhibit L.EGD.GEC.2, Page 2, paragraph 1.

Preamble:
Exhibit L.EGD.GEC.2, Page 2, paragraph 1 states:

"*That includes extensive experience with the integration of DSM into system planning which culminated last year in the publication of a report on North American experience with the use of energy efficiency to defer electric transmission and/or distribution system investments.*"

Request:

a) Please provide the report.
b) Please list / describe any jurisdictions you are aware of that are currently using energy efficiency to defer gas distribution system investments.

7. Reference: Exhibit L.EGD.GEC.2, page 3, parargraph 5.

Preamble:
Exhibit L.EGD.GEC.2, page 3, paragraph 5 states:

"A number of different jurisdictions are now actively assessing whether system reliability needs can be met through geographically targeted DSM."

Request:
Please list the jurisdictions which GEC is aware of which are considering geographically targeted DSM to meet gas system reliability needs.

8. Reference: Exhibit L.EGD.GEC.2, Page 4, paragraph 2.

Preamble:
Exhibit L.EGD.GEC.2, Page 4, paragraph 2 states:

"Unlike some other gas utilities, the Company has never even quantified the peak hour or peak day benefits of its efficiency programs."

Request:

a. Please provide a list of gas utilities which quantify peak hour or peak day benefits of energy efficiency programs.
b. Please provide any available information on those programs.

9. Reference: Exhibit L.EGD.GEC.2, page 5, paragraph 3.

Preamble:
Exhibit L.EGD.GEC.2, page 5, paragraph 3 states:

> *"The same would be true of almost any imaginable expansion of the Company's DSM efforts – particularly if the expansion was specifically designed to defer pipeline investments."*

Request:
Please provide references to programs of other gas utilities which are specifically designed to defer pipeline investments.

10. Reference: Exhibit L.EGD.GEC.2, Page 7, Table 2.

Request:
Please confirm that Enbridge's apartment, commercial and industrial sectors are all achieving very respectable savings, comparable to the leading jurisdictions listed in Table 3, of just under 1% of sales.

11. Reference: Exhibit L.EGD.GEC.2, Page 7, paragraph 1.

Preamble:
Exhibit L.EGD.GEC.2, Page 7, paragraph 1 states:

> *"One of the best indicators of how much additional savings could be acquired is the amount of savings other jurisdictions – particularly leading jurisdictions – are acquiring."*

Request:
Please list the criteria which define "leading jurisdictions".

12. Reference: Exhibit L.EGD.GEC.2, Table 3, Page 8.

Request:
a. Please confirm that the average savings of the leading jurisdictions across the timeframe provided in Table 3 is less than 1% of sales

b. Please confirm that in the leading jurisdictions provided across 6 years only one program achieved 1.5% savings as a percentage of sales and maintained that level of savings for 1 year.
c. For the jurisdictions cited please list the number of years that the utility has offered DSM programs.

13. Reference: Exhibit L.EGD.GEC.2, Page 10, paragraph 2

Preamble:
Exhibit L.EGD.GEC.2, Page 10, paragraph 2 states:

"In summary, experience from leading jurisdictions suggests it is possible to achieve market penetrations of residential thermal envelop retrofits of 1% to 2% per year – an order of magnitude more than Enbridge's planned market penetration rate of roughly 0.1% for its combined efforts to retrofit both low income and non low income homes in 2013."

Request:
a. Please provide the reports cited in footnotes 29 through 33.

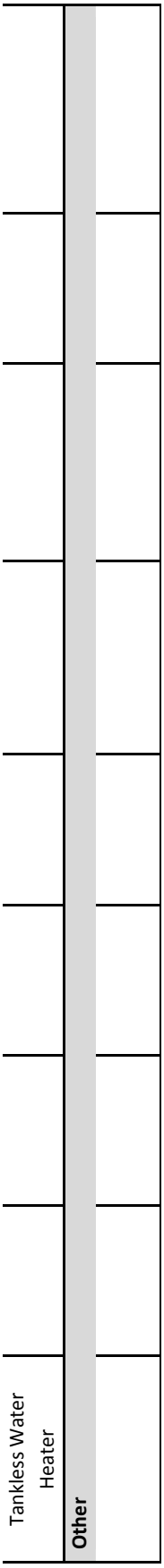
b. Using the attached tables, please provide information on the "leading jurisdictions" referenced.

Residential Program Information

	Enbridge	Questar	Mass Save	Efficiency Maine	Vermont Gas Systems
# residential customers (2012)	1,836,267				
# years gas DSM programs offered in Residential sector	17				
Total residential savings achieved to date	352,410,278m3				
Average annual residential savings over the period	20,730,016 m3				
Previous whole home retrofit programs by other agencies	Federal EcoEnergy program with additional provincial incentive				
Applicable standards re: furnace efficiency	Min AFUE – 90%				
Re: water heater efficiency	Min EF - 0. 67				
Minimum Building Code energy efficiency requirement: (EnerGuide rating or equivalent)	EnerGuide 80				
Current program(s)	Community Energy Retrofit (CER)				
Incentive / participant	Max $1500				
Program restrictions	CER participants must complete 2 deep savings measures and achieve 25% total savings to be eligible for the incentive				

Residential Measures Offered

Measure	Questar		Mass Save		Efficiency Maine		Vermont Gas Systems	
	Offered		Offered		Offered		Offered	
	From:	To:	From:	To:	From:	To:	From:	To:
Space Heating								
HE Furnace								
Programmable Thermostat								
Attic Insulation								
Wall insulation								
Windows								
Reflector Panels								
Water Heating								
HE Water Heater								
Faucet Aerator								
Low-flow Showerhead								
Pipe Insulation								
Drain Water Heat Recovery								
Temperature Turn Down								
Direct Vent Boilers								
Combination Units								


Tankless Water Heater
Other

14. Reference: Exhibit L.EGD.GEC.2, Page 12, Table 5.

Request:

a. Please confirm whether this table lists incremental or total achievable savings.
b. Please provide the sources, assumptions and calculations used to calculate the peak hour savings.

15. Reference: Exhibit L.EGD.GEC.2, Page 11, par 1

Preamble:

Exhibit L.EGD.GEC.2, Page 11, par 1

"For comparison purposes, in its 2008 Update of natural gas efficiency potential in the Enbridge service territory, Marbek projected that after 10 years Enbridge could cost-effectively save 5.0% of its residential load under a $20 million annual DSM budget scenario, 5.7% under a $40 million annual DSM budget scenario and 7.5% under a scenario in which budgets were constrained only by whether the savings targeted were cost-effective."

Request:

a. Please confirm that the Marbek Study residential potential cited is based on the list of measures on page 30 of the Marbek report.
b. Please confirm that only some of the measures would be considered as typical measures in a home retrofit program.
c. Please describe the cost effectiveness test which was used by the Marbek study.
d. Please provide the definition of that cost-effective test and its components as stated in the study report.
e. Does the cost-effective test used include all the utility's DSM program costs?
f. Does it include the cost of incentives provided to program participants?

16. Reference: Exhibit L.EGD.GEC.2, Page 13, par 2

Preamble:

Exhibit L.EGD.GEC.2

"The principal difference between the expanded portfolio and the Company's current portfolio is that the Company would need to achieve much greater market penetrations of the measures it is currently promoting."

Request:

a. If DSM were used to defer capital investment required to meet growth and/or system reliability needs, what level of certainty would be required of the DSM results?
b. Would current practices regarding DSM evaluation and audit need to change? Please explain.
c. Please describe any additional provisions for certainty of DSM results which would be required.

17. Reference: Exhibit L.EGD.GEC.2, Page 13, paragraph 2.

Preamble:

Exhibit L.EGD.GEC.2, Page 13, paragraph 2 states:

"In general, that combination of strategies would lead to greater levels of DSM spending."

Additional Preamble:

Community Energy Retrofit (CER) is a new program introduced in 2012 by Enbridge for the Residential market. It is described in EB-2011-0295 DSM Plan submission to the Board. The 2012 results from the Community Energy Retrofit program show the following:

- Total program cost - $817,000
- Total annual m3 savings – 225,000
- Average incentive cost/m3 - $3.63
- Average TRC – 0.6

Request:

a) Please confirm that GEC was involved in the discussions leading to development of the CER program.
b) Please confirm that the terms of the program require that, in order to be eligible for the incentive, the participants: 1) implement at least 2 major measures, 2) achieve at least a 25% reduction in gas consumption.
c) Using the information from Table 5 on page 12 and the CER results above, please estimate the annual cost of incremental DSM from an accelerated home retrofit program in 2014, 2015, and 2016.

18. Reference: Exhibit L.EGD.GEC.2, Page 14, paragraph 1.

Preamble:
Exhibit L.EGD.GEC.2, Page 14, paragraph 1 states:

"However, given the cost-effectiveness of Enbridge's current DSM portfolio, we would be surprised if the net economic benefits of the significant DSM expansion we have suggested were not at least $1 billion over the next 12 years."

Request:

a) Please clarify which cost-effectiveness test is referred to. Is it the Program Administrator test, the Ratepayer Impact test, or the Total Resource Cost test?
b) Please describe the cost and benefit components evaluated in the test used.
c) Does the test referred to compare the utility's DSM program costs with the deferred cost of capital investment?
d) Based on the cost effectiveness of the CER program shown in #14, please identify the impact on cost effectiveness.