

ONTARIO ENERGY BOARD

EB-2014-0182

IN THE MATTER OF The Ontario Energy Board Act, 1998, S.O. 1998, c.15, Schedule B, and in particular, S.90.(1) thereof;

AND IN THE MATTER OF The Ontario Energy Board Act, 1998, S.O. 1998, c.15, Schedule B, and in particular, S. 36 thereof;

AND IN THE MATTER OF an Application by Union Gas Limited for an Order or Orders granting leave to construct natural gas pipelines and ancillary facilities in the Town of Milton and the Town of Oakville.

AND IN THE MATTER OF an Application by Union Gas Limited for an Order or Orders for approval of recovery of the cost consequences of all facilities associated with the development of the proposed Burlington Oakville Project;

FRPO REFERENCE DOCUMENT FOR ORAL HEARING

SEPTEMBER 24, 2015

Assessment of Alternatives

Table 7-4 provides a summary of the 2035 design day delivery requirement for physical and commercial alternatives.

Table 7-4
Summary – Burlington Oakville System Design Day Delivery Requirements (2035)

	Physical Alternatives (TJ/d)	Commercial Alternatives (TJ/d)
NPS 8 Milton Line and NPS 12 Parkway Line Capacity	54	54
New Pipeline Capacity	222	-
Renewable TransCanada Dawn/Parkway to Union CDA Transportation	-	84
New Firm Transportation Services to Union CDA	-	138
Total Burlington Oakville System Design Day Demand	276	276

In assessing costs for each alternative, the following key assumptions were made:

- TransCanada Tolls: Union used the Settlement Tolls (Second Amendment) filed with the National Energy Board by TransCanada on December 20, 2013 to calculate the NPV for commercial alternatives. The Settlement Tolls will go into effect January 1, 2015 on an interim basis. Compliance tolls, based on the National Energy Board's RH-001-2014 Decision, will go into effect April 1, 2015 and are proposed to be fixed through December 31, 2017. Union expects the compliance tolls to be slightly higher than the Settlement Tolls for short haul transportation to the Union CDA. For the purposes of calculating NPV, Union used the Settlement Tolls with no increase or decrease over the full 40 year economic life for commercial alternatives.

UNION GAS LIMITED

Answer to Interrogatory from
Ontario Greenhouse Vegetable Growers ("OGVG")

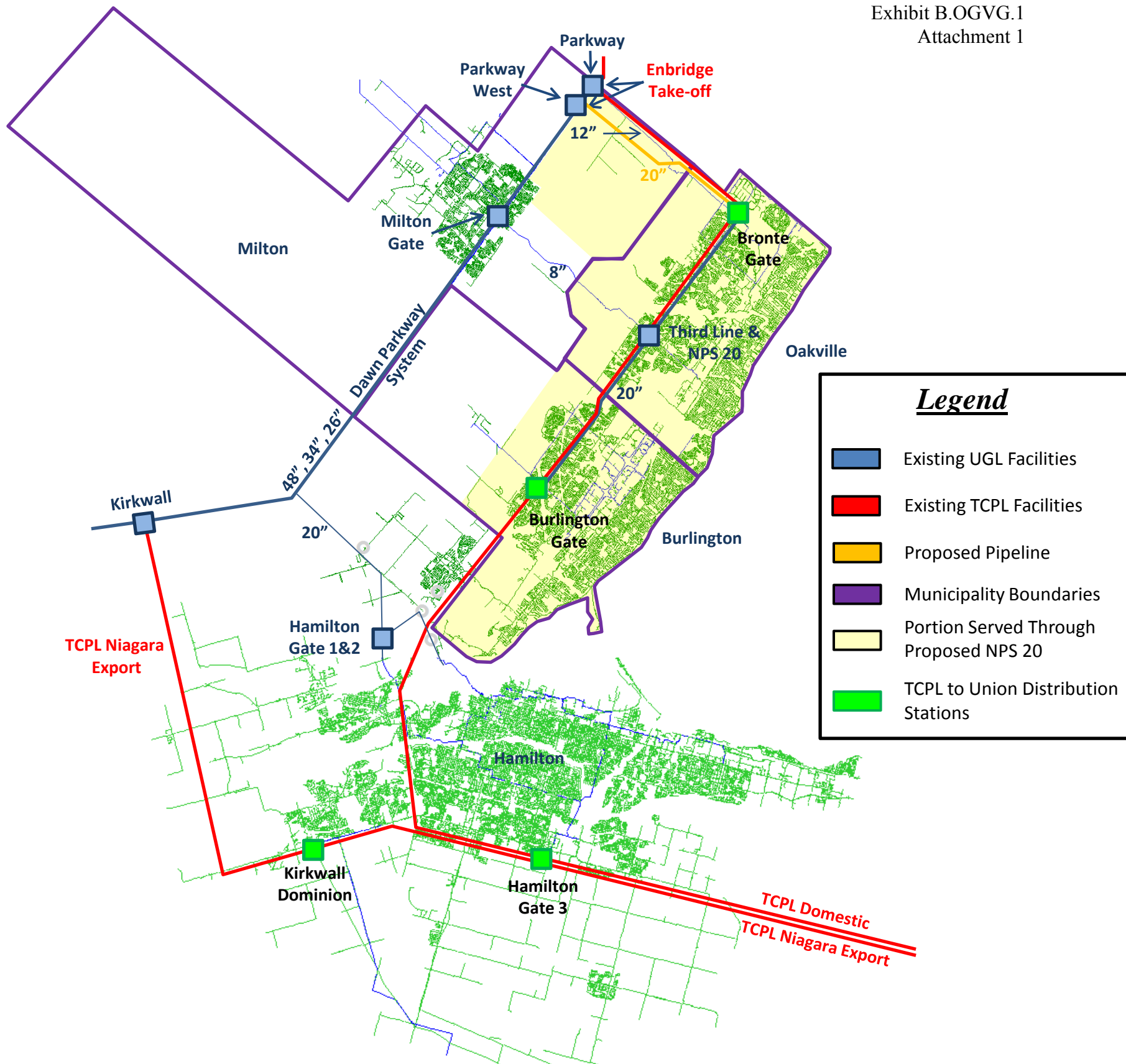
Reference: Exhibit A, Tab 4 & Tab 6

Please combine figures 4-2 and 4-3 on an enlarged figure preferably in colour to show the respective facilities of Union Gas, TCPL and any Enbridge take-offs in the area bounded by Kirkwall, Parkway (including Parkway West), Bronte Gate and Hamilton Gate 3 (for clarity of facilities, the street infrastructure is unnecessary detail i.e., new figure similar to Figure 4-3).

- a) Please add the existing and proposed pipe sizes
- b) Please show the current inter-connections between Union, TCPL and Enbridge at the respective locations with unique labels.
- c) Please ensure labelling of the TCPL delivery area (prior to the Settlement Agreement and subsequent to its implementation)

Response:

- a) and b) Please see Attachment 1.
- c) Please see the response at Exhibit B.BOMA.4 a).





ONTARIO ENERGY BOARD

FILE NO.: EB-2014-0182 Union Gas Limited

VOLUME: Technical Conference

DATE: May 21, 2015

1 gas forecast, a gas pricing forecast, link it up with those
2 approved tolls, and do an analysis as to what the
3 alternatives look like as options. We could buy Dawn
4 delivered service or any number of potential services.

5 MR. QUINN: Okay.

6 MR. SHORTS: We do those every year, and we have been
7 filing those with the -- in the deferral hearings every
8 year.

9 MR. QUINN: So the 2014 filing -- I'm not going to
10 bring up the EBO number -- you have done that contracting
11 analysis and it's been filed as part of your deferral
12 account disposition proceeding?

13 MR. SHORTS: We filed that. Yes, we filed the
14 incremental contracting analysis in that hearing.

15 MR. QUINN: Okay. Well, it is on the record, and we
16 can draw on it later on.

17 I guess my simple question is here: If I look at that
18 chart -- and maybe I should have had it on the record here,
19 but we'll get it for a subsequent date -- the Niagara to
20 Union ECDA, was that assessed as one of the alternatives?
21 In the context of this proceeding --

22 MR. SHORTS: Which chart?

23 MR. QUINN: I'm going to say, when -- the incremental
24 contract analysis that you do annually, was Niagara to
25 Union ECDA -- or Union CDA at least initially, was that
26 assessed as one of the alternatives?

27 MR. SHORTS: I can't recall which one. We tend to do
28 as many alternatives as we hold within the portfolio to

1 show comparisons to the existing capacities we hold, as
2 well as incremental potential solutions, so it could have
3 been in the '14 one we just filed. I'm just not sure.

4 MR. MILLAR: Okay. Would you take it subject to check
5 that you did a Niagara to Kirkwall assessment as part of
6 that analysis?

7 I'm assuming you have -- maybe I should ask the
8 question. Who provides that analysis? Who does that --
9 under which one of you does that analysis occur? Is that
10 you, Mr. Shorts?

11 MR. SHORTS: Well, my group, when -- we already have a
12 Niagara to Kirkwall contract, so we would continue to show
13 that as a comparator, because we actually contract on that
14 path.

15 MR. QUINN: All right. And so you would know that it
16 is one of the more economic paths that you have available
17 to you at this time?

18 MR. SHORTS: It changes from year to year, but it can
19 be, yes.

20 MR. QUINN: In your 2014 analysis would you take it
21 subject to check depending on --

22 MR. KEIZER: Well, I don't -- no. If you've got the
23 information, then you should put it in front of the witness
24 and --

25 MR. QUINN: Okay.

26 MR. KEIZER: -- let the witness have a look at it.

27 MR. QUINN: Could Mr. Gagne pull up that --

28 MR. KEIZER: If I -- not hooked up to the Internet,

1 and so -- well, first of all, I don't understand what the
2 relevance of this is.

3 MR. QUINN: The relevance --

4 MR. KEIZER: We are talking about another deferral
5 account proceeding and some other assessment, if it's --
6 and so if the information isn't available to be able to put
7 to the witness here for purposes of clarifying an
8 interrogatory or evidence in this proceeding -- it's not
9 supposed to be cross-examination, it's supposed to be
10 clarifying the evidence that's currently before you in this
11 proceeding.

12 MR. QUINN: Well, I think, with due respect, Mr.
13 Keizer, our challenge is, we don't see all the evidence
14 we'd like to see, so we are trying to understand the
15 assessments that go on. This is an annual assessment -- am
16 I correct, Mr. Shorts, it is an annual assessment
17 undertaken by your staff to look at the best contracting
18 paths to serve your customers' needs?

19 MR. SHORTS: It would be a contracting path. It's a
20 -- we undertake it each year, and it is really there to
21 help us to find whether or not we would contract for
22 incremental capacity or whether or not we would continue to
23 find another solution, for example buying at Dawn,
24 delivered service, et cetera, but it would be -- it
25 wouldn't necessarily always happen every year. If there
26 was no call for it, we wouldn't actually have to -- if we
27 weren't going out and contracting for any incremental
28 capacity -- and we are not talking about incremental

Technical Description

Parkway Belt Meter Station –Flow Reversal, Meter Run Expansion, Pipe Replacement, and Control Valve Installation

Station Description

Pipeline Design Specifications	CSA Z662-11
Description of Analysis System	No new analysis systems will be added to the existing station during this project.
Minimum and Maximum station flows and associated inlet and outlet pressures used for meter station design	<p>The station currently operates as a high pressure system. Subsequent to the Project's completion the station would be operated as two different systems (high pressure versus low pressure) to separate gas delivery and receipt points between customers. The licensed operating pressure for the station will not change.</p> <ul style="list-style-type: none"> The low pressure system minimum capacity will be approximately $200 \times 10^3 \text{ m}^3/\text{d}$ and the maximum capacity will be approximately $6.5 \times 10^6 \text{ m}^3/\text{d}$. The station operating pressure will range between approximately 3,450 kPa and a maximum operating pressure of 6,450 kPa. The high pressure system capacity and operating pressures will remain the same. <p>The outlet pressure will be equal to the inlet pressure, less a small piping loss.</p>
Meter type and number	No new meters will be installed at this station.
Meter Run Wall Thickness and Grade	No new meters will be installed at this station.
Method used for regulating/metering	<p>TransCanada will continue to measure temperature and pressure at the meter location. The data from the temperature and pressure transmitters will be sent to a local flow computer which will calculate the gas volume and energy content using industry standard calculations (AGA Reports). All gas metering equipment will be Measurement Canada approved. TransCanada meters are calibrated at a federally accredited flow laboratory.</p> <p>The station currently connects with two pipelines (Union Gas and Enbridge Gas) at a common pressure (high pressure).</p> <p>TransCanada would operate the system that connects to the Enbridge Gas pipeline at low pressure, while the system that connects to the Union Gas pipeline will remain at high pressure.</p> <p>To divide the high and low pressure systems, the two existing meter runs that feed the Enbridge Gas pipeline will be extended and connected to a new underground meter run header. This new meter run header will connect to the new low pressure system. A meter run header isolation valve will also be installed.</p> <p>One skid mounted pressure control valve and associated yard piping will be installed at the site to ensure the low pressure and high pressure systems are isolated from each other. If necessary to meet customer requirements, the control valve will allow for gas to flow from the high pressure system to the low pressure system. Two isolation valves will be installed on either side of the control valve to accommodate maintenance requirements.</p>

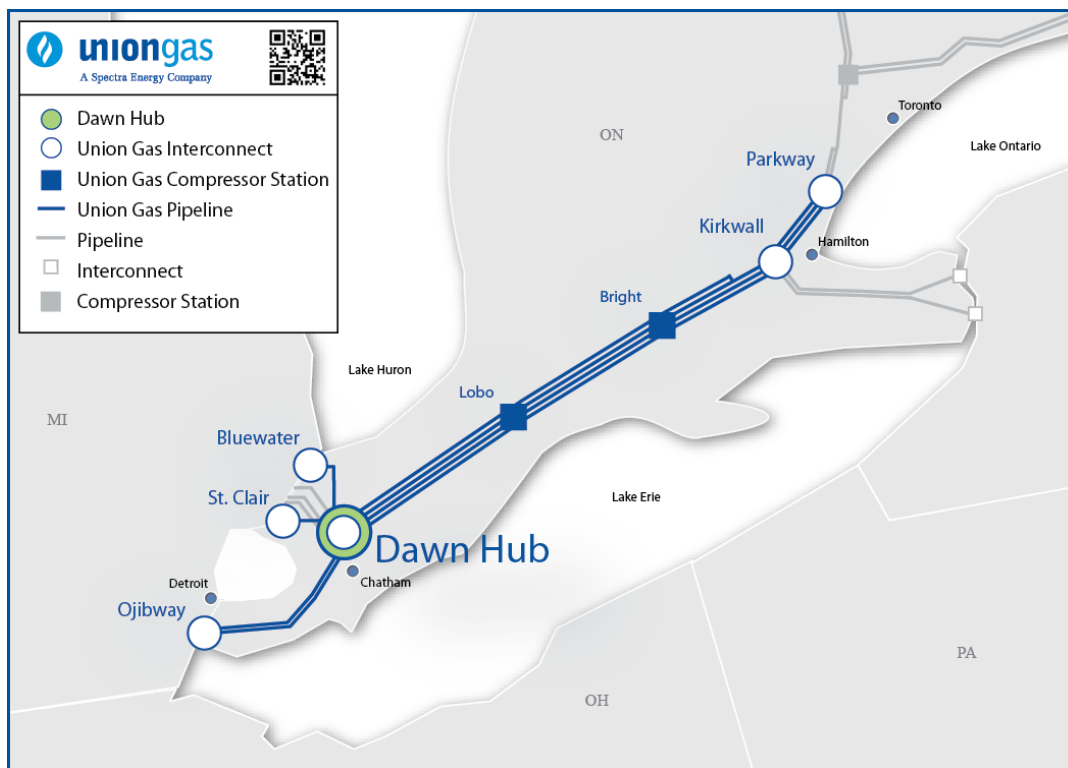
Station Description (cont'd)

	<p>A portion of the yard piping in the high pressure system, connected with the NPS 30 crossing under Highway 407, will be replaced and upsized from NPS 24 to NPS 30. This is to ensure that gas deliveries and receipts along the high pressure system are not affected by the changes in station operation.</p> <p>Associated instrumentation, automation and pipeline appurtenances will be installed to separate and switch the station operational mode (high pressure versus low pressure) as needed.</p>
Schematic showing tanks, buildings, major piping and valves with connections to existing pipelines	Please refer to Attachment 04F (Parkway Belt Meter Station Preliminary Plot Plan and Piping and Instrumentation Diagrams) and Attachment 08 (Preliminary Survey Plans).
<p>Note: Material grade will meet or exceed minimum requirements. Other CSA Z662-11 compliant or higher grades of steel may be used depending on material availability and in accordance with specification TES-MATL-MD1. For more information see Attachment 03 (Preliminary Standards and Specifications List). All values, including but not limited to pressure, length, grade, coating, and wall thickness are based on preliminary design and might be subject to change. Drawings in Attachment 04A-04F are based on preliminary design and some variances with the technical description provided may be encountered.</p>	

1 Dawn Parkway System

2 In Union South, Union operates the Dawn Parkway System which includes an integrated
 3 network of natural gas transmission pipelines and compressors. The Dawn Parkway System
 4 transports natural gas between the Dawn Compressor Station (“Dawn”), near Sarnia at the west
 5 end of Union South, and the Parkway Compressor Station (“Parkway”), located in Mississauga
 6 at the east end of Union South. Union operates two additional compressor stations on the Dawn
 7 Parkway System: i) the Lobo Compressor Station (“Lobo”) located near London; and ii) the
 8 Bright Compressor Station (“Bright”) located between Woodstock and Kitchener. A map of
 9 Union’s Dawn Parkway System is provided in Figure 2.

10 **Figure 2**
 11 **The Dawn Parkway System**
 12



UNION GAS LIMITED

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario ("FRPO")

Reference: page 7, lines 11 to 13.

Preamble: FRPO would like to explore Union's understanding of the Alternative Proposal and its impact on gas supply.

- a) Please confirm that the Alternative Proposal does not force Union to contract for the entire 276 TJ/d at Niagara.
- b) Please confirm that Union need only contract for the incremental amount needed at the outset to meet peak day needs.
- c) Please provide the incremental capacity needed in 2017 for the Burlington Oakville system over and above what is currently fed from the existing NPS 8 and NPS 12 lines and existing TCPL Dawn to CDA contract.
- d) Has Union provided notice of non-renewal to TCPL on the Dawn to CDA contract?
- e) Please confirm that under the Alternative Proposal of using transportation contracting, Union can decide how best to phase in new supplies from Niagara based on its supply and demand.

Response:

- a) The Alternative Proposal does not force Union to contract for the entire 276 TJ/d at Niagara. However, Union believes the intent of the evidence of Ms. Aggie Cheung is for Union to contract for the entire 276 TJ/d at Niagara. For instance, at paragraph 14 Ms. Cheung's evidence states that "Union could serve 100% of the demand (of the Burlington Oakville System) through the TransCanada system." At paragraph 21, Ms. Cheung's evidence states "Under the Alternative (Proposal) described above, Union would source up to a total of 276 TJ/d from Niagara to the Burlington Oakville area by 2035."

Further, at paragraphs 24 and 27, Ms. Cheung's evidence suggests that Union could contract for an initial 200 TJ/d of transportation capacity from Niagara on TransCanada (which would meet the current market demands) and increase transportation capacity over time as growth in the Burlington Oakville System market occurs or as gas supply displacement opportunities arise.

Finally, it appears that there is no consideration for use of Union's existing facilities serving the Burlington Oakville System from the Dawn Parkway System to meet design day demand as Ms. Cheung's evidence states at paragraph 17 that "In addition, the existing 8" and 12" lines provide additional system integrity during upset conditions." If those existing pipelines were intended to meet Burlington Oakville System design day demands in the Alternative Proposal then they would not provide "additional" system integrity but would already be in use to their full capacity of 54 TJ/d.

- b) Gas supply requirements are purchased on an average day basis and not a peak day basis for Union South. Union uses its Dawn storage assets to balance average loads versus summer lows by injecting into storage and versus winter peaks by withdrawing from storage. In addition, Union structures its gas supply portfolio for Union South to meet aggregate Union South demand. As discussed extensively in Exhibit C, the Alternative Proposal, when operationalized to use Dawn storage assets (and, as a result, Dawn Parkway System assets), is less economic than the proposed Burlington Oakville Pipeline.

As discussed in part a) above, Ms. Cheung's evidence states that "Union could serve 100% of the demand (of the Burlington Oakville System) through the TransCanada system." This would indicate that the Alternative Proposal not only contemplates contracting for the incremental amount needed at the outset to meet peak day needs but the amount needed to meet all peak day needs at the outset.

The Alternative Proposal would also not allow Union to realize any of the benefits that the proposed Burlington Oakville project provides.

c)

Capacity	TJ/d
2017/2018 Design Day Demand	210
Existing NPS 8 and NPS 12	54
Existing TransCanada Dawn to Union CDA Contracts	68
2017/2018 Incremental Capacity Required	88

d) Please see the response at Exhibit B.APPrO.1.

e) Please see part a) above.

UNION GAS LIMITED

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario ("FRPO")

Reference: page 10, lines 5 to 9.

Preamble: Since 2012, flow has primarily reversed from the United States to bring Marcellus production through Niagara into Canada. Despite its proximity to the Marcellus region, **Niagara is not a liquid point**. Liquidity at Niagara is low due to its limited pipeline connectivity, distance from storage, limited number of counterparties who buy and sell at that point and limited price discovery. Even with TransCanada transportation contracts expected to exceed 1 PJ/d from Niagara to points in Ontario and Quebec, Niagara remains a trans-shipment point and is not expected to develop into a liquid trading point

- a) Please provide a full listing of firm and interruptible contracts Union has on pipelines upstream of Dawn to transport gas into the Dawn hub.
- b) Please explain why Union will not consider contracting on pipelines upstream of Niagara and/or Douglastown.
- c) Please provide the number of pipelines that converge at Kensington, Ohio, the receipt point for Union's proposed Nexus contract.
- d) Please provide the proximity of Kensington to Dawn relative to Niagara to Dawn.

Response:

- a) Union provides a summary of upstream transportation contracts in its annual Gas Supply Plan Memorandum. Please see Attachment 1 for Appendix C and Appendix D from the Gas Supply Plan Memorandum filed in EB-2015-0010.
- b) The information requested is not relevant to EB-2014-0182. Contracting natural gas supply upstream of Niagara or Chippawa (Douglastown) is not relevant to meeting the design day demands of the Burlington Oakville System and is not even relevant to the Alternative Proposal which is focused on sourcing supply at Niagara. Union has provided its evaluation of the Alternative Proposal (including sourcing supply at Niagara) in Exhibit C.

- c) The information requested is not relevant to EB-2014-0182. The proposed Burlington Oakville Pipeline is independent of Union's proposed NEXUS contract. The number of pipelines that converge at Kensington, Ohio and the proximity of Kensington to Dawn relative to the proximity of Niagara to Dawn are not relevant to meeting the design day demands of the Burlington Oakville System over the long term and are not relevant to any commercial alternatives evaluated by Union.
- d) The information requested is not relevant to EB-2014-0182. Please see the response to part c) above.

UNION GAS LIMITED

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario ("FRPO")

Reference: page 30, lines 14 to 19.

Preamble: FRPO requires clarification of Union's understanding of TransCanada's flow schematics.

- a) Please confirm that the referenced Figure 3-2 System Schematics in TransCanada's Greater Golden Horseshoe Project shows a flow of $7615 \text{ } 10^3 \text{ m}^3/\text{d}$ or approximately 287 TJ/d at MLV 209 and a flow of $5309 \text{ } 10^3 \text{ m}^3/\text{d}$ at MLV 207.
- b) Is Union aware that MLV 209 is located near Ancaster and MLV 207 is located near Burlington? If not aware, please consult TransCanada and provide confirmation.
- c) Is Union aware that the difference in flow between MLV 207 and MLV 209 represents deliveries from TransCanada to Union's ECDA? If not aware, please consult TransCanada and provide confirmation.

Response:

- a) Confirmed. The flow at MLV 207 is equivalent to 200 TJ/d.
- b) Yes.
- c) Union cannot confirm that the difference in flow between TransCanada's MLV 209 near Ancaster and MLV 207 near Burlington represents deliveries from TransCanada to the Union ECDA (Burlington Gate Station and Bronte Gate Station). Union notes that its transportation capacity on TransCanada to the Union CDA originates from Dawn and Parkway which does not flow through MLV 209 to the Burlington Gate Station and Bronte Gate Station delivery points. Supply to the Burlington Gate Station and Bronte Gate Station delivery points from Parkway and Dawn has historically flowed from Parkway towards these delivery points.

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, Schedule B;

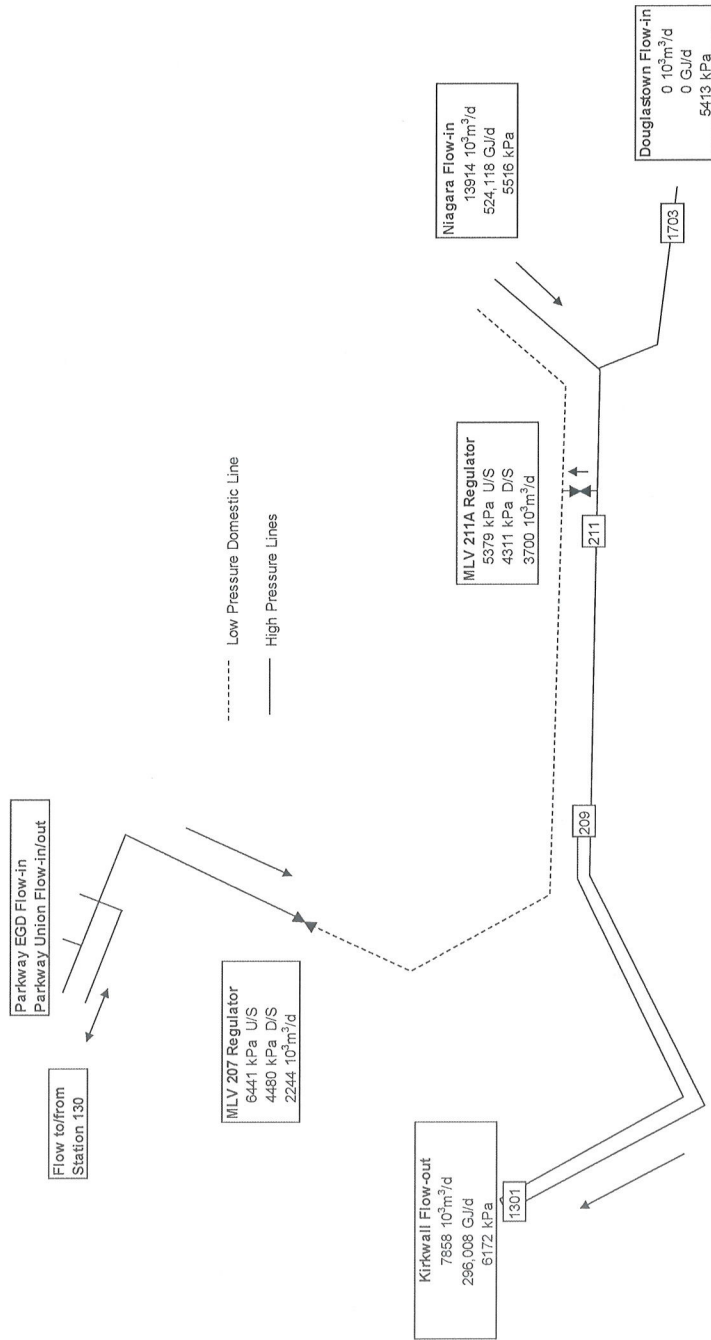
AND IN THE MATTER OF an Application by Union Gas Limited for leave to construct a natural gas pipeline and ancillary facilities in the Town of Milton and the Town of Oakville and for approval to recover the cost consequences of the development of the proposed Burlington Oakville Project.

**EVIDENCE OF AGNES SIU CHEUNG
ON BEHALF OF
ONTARIO GREENHOUSE VEGETABLE GROWERS (“OGVG”) AND
CANADIAN MANUFACTURERS & EXPORTERS (“CME”)**

June 29, 2015

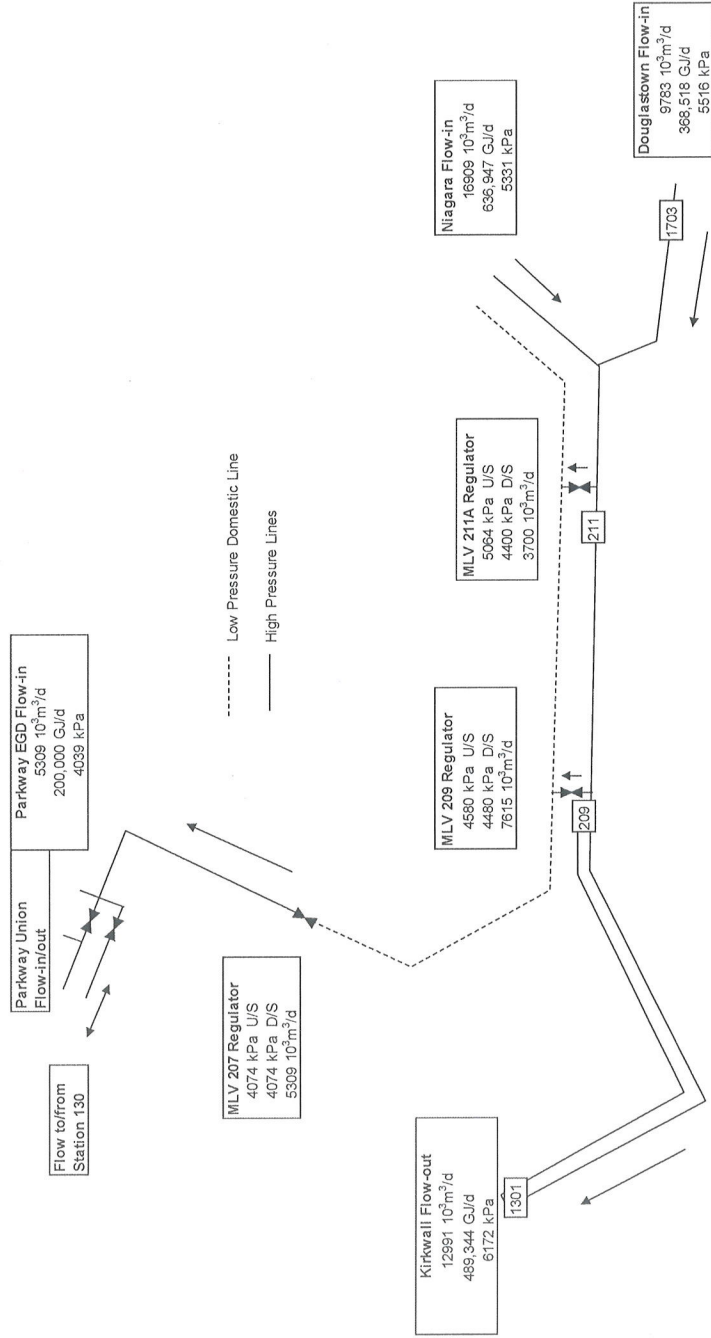
ATTACHMENT 5

System Schematics



TransCanada <small>In business to deliver</small>	
Niagara Kirkwall Flow Schematic	
System Capability	
Peak Summer Day with Current Facilities	
Operating Year: 2015/16	
2015-01-23	Page 1/1

Figure 3-1: Flow Schematic with Current Facilities




 TransCanada <i>In business to deliver</i>	
Niagara Kirkwall Flow Schematic System Capability Peak Summer Day with Proposed Facilities Operating Year: 2015/16	
2015-01-23	Page 1/1

Figure 3-2: Flow Schematic with Proposed Facilities

UNION GAS LIMITEDAnswer to Interrogatory from
Board Staff

Reference: Union's Reply Evidence, Exhibit C/ page 4/ line 6-7

Preamble: Union indicated that the Alternative Proposal, including up to 77 % of the upstream supply portfolio at a single point, would require the reinstatement of vertical slice.

Would Union, if successful in contracting for NEXUS pipeline capacity, need to reinstate the vertical slice. Please explain.

Response:

No. Union holds a diverse upstream pipeline portfolio for Union South sales service customers, with no individual pipeline or supply basin dominant in the portfolio. As a result, Union was able to suspend the Vertical Slice¹ program in Union South. Union is proposing a NEXUS commitment that represents approximately 30% of the Union South supply portfolio (pages 31-32 of EB-2015-0166). Therefore the NEXUS commitment is about the same level as supply received from Chicago today (31%) and would not be dominant in the gas supply portfolio.

With respect to Niagara, the Alternative Proposal is suggesting that 77% of the gas supply portfolio would be concentrated at one supply point with corresponding long term transportation commitments. The result of the Alternative Proposal would be insufficient flexibility in Union's gas supply portfolio to facilitate service switching between sales service and bundled direct purchase unless customers were allocated a portion of the underlying transportation portfolio. Also, as discussed at Exhibit C, page 4, lines 8-10, Union does not believe it is equitable to require only sales service customers to purchase supplies and hold Niagara to Union CDA transportation capacity to support the distribution needs for all customers (sales service, unbundled, bundled direct purchase, and T-service) for the foreseeable future. This inequity arises because sales service customers would be obligated to purchase gas at an illiquid point (Niagara) while direct purchase customers receive the benefit of purchasing supplies at a liquid point (Dawn) and at the same time avoiding the costs of meeting peak day demands in the Burlington Oakville area.

¹ Union received approval to implement the Vertical Slice methodology effective November 1, 2001 (RP-1999-0017). The methodology was used to allocate Union's upstream transportation contracts to facilitate new incremental direct purchase for its Southern Operations area. The Vertical Slice was based on the assets in Union's upstream transportation portfolio as projected for November 1 of each year. It applied a proportionate allocation, based on the customer's Daily Contract Quantity ("DCQ"), of the transportation, exchanges and other transport used to service existing system customers moving to direct purchase. In EB-2014-0145, the Board approved Union's request to suspend the use of the Vertical Slice methodology.

Further, Union does not believe long term distribution system reinforcement requirements should be managed through gas supply portfolio solutions. In order to address the inequity described above, a Vertical Slice and/or a change in delivery obligation would be appropriate to ensure an equitable distribution of costs and obligations to all customers and that Union would have sufficient flexibility to manage the portfolio in a manner consistent with the Gas Supply Planning Principles.

In addition, the Alternative Proposal is completely inconsistent with the Board-approved Parkway Delivery Obligation agreement which allows customers currently obligated to deliver gas at an illiquid point (Parkway) to deliver their supply to the liquid Dawn Hub.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Union's Reply Evidence, Exhibit C/page 16/ lines 3-6

Preamble: Union states that the Alternative Proposal will result in a drastic decrease in the diversity of contract terms (will require 15 year contracts).

Is it Union's view that contacting for any new pipeline capacity that requires a 15 year contract term would drastically decrease its diversity of the contract terms?

Response:

No. This statement is specific to a 15-year commitment for transportation from Niagara.

The Alternative Proposal would require 77% of the Union South sales service portfolio (276 TJ/d) to be contracted on a long term basis at a trading point far less liquid than the Dawn hub. As discussed at Exhibit C, pages 9-13, Niagara is not a liquid point and is not expected to develop into a liquid trading point. Niagara is a trans-shipment point between pipeline systems.

This dramatic shift in supply portfolio is problematic and does not align with Union's Gas Supply Planning Principles. Compared to Dawn which has access to multiple pipelines, multiple supply basins and significant storage, moving 77% of the Union South sales service gas supply to Niagara would dramatically reduce diversity and flexibility. This would also limit (or perhaps eliminate) Union's ability to support new infrastructure projects that would encourage new supply to Ontario from growing neighbouring production basins for the next 15 years.

Long term transportation contracting in Union's gas supply portfolio is not problematic if it meets Union's Gas Supply Planning Principles. Union is comfortable holding transportation contracts with a range of durations but typically long term contracts are reserved for supporting new infrastructure builds. Once the proposed Burlington Oakville Pipeline is built, supply will be delivered as part of the aggregated Union South portfolio. The Union South gas supply portfolio does evolve over time. Every time Union makes a gas supply purchasing decision it evaluates all possible sources of supply, including Niagara and Dawn. Buying additional supply at Niagara for the Union South gas supply portfolio will be evaluated in the future, however, that purchase decision is independent of building the proposed reinforcement pipeline into the Burlington Oakville System. The gas supply costs for sales service customers on the Burlington Oakville System reflect the average of the aggregate Union South gas supply portfolio and are not tied to a single purchase point – at Dawn or Niagara.

In addition, the Alternative Proposal is completely inconsistent with the Board-approved Parkway Delivery Obligation agreement which allows customers currently obligated to deliver gas at an illiquid point (Parkway) to deliver their supply to the liquid Dawn Hub.

UNION GAS LIMITED

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario ("FRPO")

Reference: page 9, lines 16 and 17.

Preamble: FRPO would like to understand how the Alternative Proposal would decrease the diversity and security of Union's upstream transportation and supply portfolio.

- a) Please confirm that the current Union South supply portfolio includes (i) 21 TJ/d from TransCanada at Niagara and (ii) 67 TJ/d from TransCanada at Empress.
- b) Please confirm that with the construction of the proposed Burlington Oakville Pipeline, the Union South supply portfolio will include (i) 21 TJ/d from TransCanada at Niagara and (ii) 0 TJ/d from TransCanada at Empress. If not confirmed, please provide the correct figures.
- c) Please confirm that the Alternative Proposal envisages increased amounts from TransCanada at Niagara.

Response:

- a) Confirmed. Union currently contracts for 21 TJ/d of TransCanada Niagara to Kirkwall transportation capacity for Union South sales service customers, which provides access to supply available at Niagara. Union also currently contracts for 67 TJ/d of TransCanada transportation capacity from Empress of which approximately 50 TJ/d is for Union South sales service customers and 17 TJ/d is for supply to bundled direct purchase customers.
- b) Following the construction of the proposed Burlington Oakville Pipeline, the Union South portfolio is expected to include 21 TJ/d of TransCanada transportation capacity from Niagara to Kirkwall and 11 TJ/d of TransCanada transportation capacity from Empress to the Union ECDA.
- c) Confirmed. Please see the response at Exhibit D.FRPO.3 part a).

UNION GAS LIMITED

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario ("FRPO")

Reference: page 6, lines 12 to 18; page 16, lines 8 and 9, page 17, Figure 3-2.

Preamble: Union describes the design day and average day requirements of the Union South system.

- a) Please provide the Union South Winter 2015/16 Design Day Demand and Resources balance and the Union South 2015/16 Average Day Demand and Resources balance in a format similar to Figure 7 included in Attachment 3 to Ms. Cheung's Evidence.
- b) Please confirm that Union meets its aggregate Union South demand with its aggregate supply. If not confirmed, please reproduce the demand and resources balances in (a) showing how the supplies are allocated to meet the demands.
- c) Please provide the numerical data in TJ/d that generated Figure 3-2 on page 17.
- d) Please explain and reconcile the data in (c) against those in (a).

Response:

- a) Please see the tables below.

Winter 2015/2016 Design Day
Union South Design Day Demand and Resources (TJ/day)

Demand

Union South*	2,900
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Supply

Storage at Dawn	1,483
Non-obligated (e.g. Power Plants)	210
TCPL Empress to Union CDA	67
Trunkline	21
Panhandle	39
Market Based Transportation	21
TCPL Niagara	21
Ontario Parkway	334
Vector	111
MichCon	74
Ontario Dawn	467
Customer Supplied Fuel	52
Total Supply	2,900

* includes Sales Service, Bundled Direct Purchase, T-service, Unbundled

**2015/2016 Average Day
Union South Average Day Demand and Resources (TJ/d)
for the period November 1, 2015 to October 31, 2016**

Demand

Union South (1)	<u>366</u>
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Supply

TCPL Empress to Union CDA	50
Trunkline	21
Panhandle	39
Market Based Transportation	21
TCPL Niagara	21
Alliance/Vector (2)	6
Vector	111
MichCon (3)	69
Uncommitted (Dawn Spot)	<u>28</u>
Total Supply	<u>366</u>

Notes:

- (1) Includes Sales Service only.
- (2) Includes November 2015 supply only due to contract expiry.
- (3) Includes 10.5 TJ/d contract for 12 months and 63.3 TJ/d contract for 11 months.

b) Confirmed.

c)

January 2015 South Portfolio (TJ/d)

<u>Basin - Pipe</u>	<u>System Capacity</u>	
Chicago - Vector	112	31%
WCSB - Alliance/Vector	74	21%
WCSB - TCPL	52	15%
Mid-Continent - PEPL	39	11%
Niagara - TCPL	21	6%
Gulf of Mexico - TGC/PEPL	21	6%
Local Production	2	1%
Michigan - Michcon	11	3%
Dawn/Other	27	8%
Total	359	100%

d)

Comparison Table (TJ/d)

<u>Basin - Pipe</u>	Part C	Part A	<u>Variance</u>	
	January 2015 <u>System Capacity</u>	Average Day Supply <u>Nov 15-Oct 16</u>		
Chicago - Vector	112	111	1	
WCSB - Alliance/Vector	74	6	68	(1)
WCSB - TCPL	52	50	2	
Mid-Continent - PEPL	39	39		
Niagara - TCPL	21	21		
Gulf of Mexico - TGC/PEPL	21	21		
Local Production	2	1		
Michigan - Michcon	11	69	(58)	(2)
Dawn/Other	27	27	1	
Market Based Transportation	0	21	(21)	(3)
	359	366	(8)	

Notes:

- (1) Alliance Contract expires November 30, 2015.
 (2) Includes new DTE MichCon contract for 63.3 TJ/d effective December 1, 2015.
 (3) Includes new Market Based Transportation contract for 21.1 TJ/d effective November 1, 2015.

1 number of changes that were the result of ongoing negotiation and the MFN clause within the
2 PA. The NEXUS project scope no longer included Phase 1 as described above, and the
3 transportation path for Union would stop at the St. Clair river crossing. As the negotiated rate
4 was now included in the rate agreement, Union was able to perform the landed cost analysis to
5 validate that NEXUS was still competitive with existing pipeline paths in Union's portfolio. To
6 allow for easy comparison between NEXUS and other existing transportation paths in Union's
7 portfolio, the currently posted St. Clair to Dawn C1 toll of \$0.035 GJ/d was added to the
8 negotiated NEXUS rate. The analysis also showed that it was almost identical to the Rover
9 pipeline project that was announced in 2014. A summary of this landed cost analysis is provided
10 in Figure 5-5. For the detailed landed cost analysis, please see Schedule 5.

Figure 5-5
Summary of January 2015 Landed Cost Analysis

Rank	Path	Landed Cost (\$CDN/GJ)
1	TCPL Niagara to Kirkwall	\$8.10
2	Rover	\$8.36
3	NEXUS / St. Clair	\$8.38
4	NEXUS/St. Clair (Increase Upper end of toll by 15%)	\$8.49
5	Vector (2014 - 2017)	\$8.54
6	Dawn	\$8.56
7	Michcon (2014-2015)	\$8.62
8	Vector (2012 - 2016)	\$8.72
9	Trunkline / Panhandle	\$8.87
10	Panhandle (2012-2017)	\$8.91
11	Alliance / Vector	\$9.00
12	Panhandle (2014-2015)	\$9.02
13	Panhandle (2010-2017)	\$9.02
14	TCPL Empress to Dawn	\$9.67
15	TCPL Empress to Union CDA	\$9.83

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Schedule 5

How would changes in the foreign exchange rate affect the difference between the prices shown in Schedule 5? If there is a difference, please provide a schedule showing the prices based on the current exchange rate.

Response:

Please see Attachment 1 for updated landed cost schedules at the current foreign exchange rate. For reference please also see the response at Exhibit B.T3.Union.Staff.18 for schedules reflecting the 1.4 exchange rate.

Since all ICF gas price forecasts are provided in \$US/mmBtu, a change to the foreign exchange rate assumption only impacts Canadian pipeline tolls and the final conversion of each path to \$CDN/GJ in Column K. The relative ranking of all pipeline paths remain the same.

Recalculated Landed Cost Analysis - Current Foreign Exchange Rate of 1.3133

Nov 2017 to Oct 2032 Transportation Contracting Analysis

	Route (A)	Point of Supply (B)	Basis Differential \$US/mmBtu (C)	Supply Cost \$US/mmBtu (D) = Nymex + C	Unitized Demand Charge \$US/mmBtu(1)(7)	Commodity Charge \$US/mmBtu (1)	Fuel Charge \$US/mmBtu (1)	100% LF Transportation Inclusive of Fuel \$US/mmBtu (I) = E + F + G	Landed Cost \$US/mmBtu (J) = D + I	Landed Cost \$Cdn/G (K)	Point of Delivery (L)	Comment
(6)	TCPL Niagara to Kirkwall	Niagara	-0.449	7.0511	0.1798	0.0000	0.0103	0.1902	\$7.24	\$9.01	Kirkwall	
(3)	Rover**	Southwest PA	-0.954	6.5455	0.8000	0.0000	0.1577	0.9577	\$7.50	\$9.34	Dawn	
*	NEXUS / St. Clair	Southwest PA	-0.954	6.5455	0.7997	0.0000	0.1728	0.9725	\$7.52	\$9.36	Dawn	Includes St. Clair to Dawn costs
(5)	NEXUS/St. Clair (Increase Upper end of toll by 15%)	Southwest PA	-0.954	6.5455	0.8952	0.0000	0.1728	1.0680	\$7.61	\$9.48	Dawn	Toll is \$ 0.77+ \$ 0.635*15%. Includes St. Clair to Dawn costs
(6)	Vector (2014 - 2017)	Chicago	-0.103	7.3972	0.1883	0.0017	0.0732	0.2633	\$7.66	\$9.54	Dawn	
(2)	Dawn	Dawn	0.177	7.6769	0.0000	0.0000	0.0000	0.0000	\$7.68	\$9.56	Dawn	
(6)	Michcon (2014-2015)	Michcon Generic	0.023	7.5229	0.0630	0.0000	0.1398	0.2029	\$7.73	\$9.62	Dawn	Includes St. Clair to Dawn costs
(6)	Vector (2012 - 2016)	Chicago	-0.103	7.3972	0.2500	0.0990	0.0732	0.4222	\$7.82	\$9.73	Dawn	
(6)	Trunkline / Panhandle	Trunkline Field Zone 1A	-0.092	7.4075	0.2212	0.0268	0.2995	0.5475	\$7.95	\$9.90	Dawn	Includes Ojibway to Dawn costs
(6)	Panhandle (2012-2017)	Panhandle Field Zone	-0.377	7.1230	0.3492	0.0439	0.4687	0.8617	\$7.98	\$9.94	Dawn	Includes Ojibway to Dawn costs
(6)	Alliance / Vector	CREC	-1.067	6.4335	1.5608	-0.3405	0.3593	1.5795	\$8.01	\$9.97	Dawn	
(6)	Panhandle (2014-2015)	Panhandle Field Zone	-0.377	7.1230	0.4547	0.0439	0.4687	0.9672	\$8.09	\$10.07	Dawn	Includes Ojibway to Dawn costs
(6)	Panhandle (2010-2017)	Panhandle Field Zone	-0.377	7.1230	0.4547	0.0439	0.4687	0.9672	\$8.09	\$10.07	Dawn	Includes Ojibway to Dawn costs
(2)	TCPL Empress to Dawn	Empress	-0.722	6.7782	1.4550	0.0000	0.2745	1.7296	\$8.51	\$10.59	Dawn	
(6)	TCPL Empress to Union CDA	Empress	-0.722	6.7782	1.5790	0.0000	0.2793	1.8583	\$8.64	\$10.75	Union CDA	

(1) Unitized Demand Charges, Commodity Charges and Fuel Charges per Maximum Applicable Tariff and include capacity required to flow fuel for downstream pipeline segments
(2) For Reference Only
(3) Toll Estimates used in lieu of official toll for portion of path
(5) Sensitivity Analysis
(6) Existing Union Contract
* indicates path referenced in evidence for this analysis
** The analysis is based on an indicative rate for Rover of \$0.80 USD/mmbtu. The analysis does not contemplate potential toll increases arising from factors such as capital cost overruns or pipeline undersubscription.

Assumptions used in Developing Transportation Contracting Analysis:

	Point of Supply Col (B) above	Nov 2017 - Oct 2018	Nov 2018 - Oct 2019	Nov 2019 - Oct 2020	Nov 2020 - Oct 2021	Nov 2021 - Oct 2022	Nov 2022 - Oct 2023	Nov 2023 - Oct 2024	Nov 2024 - Oct 2025	Nov 2025 - Oct 2026	Nov 2026 - Oct 2027	Nov 2027 - Oct 2028	Nov 2028 - Oct 2029	Nov 2029 - Oct 2030	Nov 2030 - Oct 2031	Nov 2031 - Oct 2032	Average Annual Gas Supply Cost \$US/mmBtu Col (D) above	Fuel Ratio Forecasts Col (G) above
Annual Gas Supply & Fuel Ratio Forecasts																		
Henry Hub (NYMEX)	Henry Hub	\$4.62	\$5.43	\$6.12	\$6.59	\$6.81	\$6.89	\$7.06	\$7.23	\$7.56	\$8.03	\$8.44	\$8.90	\$9.26	\$9.62	\$9.96	\$7.50	
TCPL Niagara to Kirkwall	Niagara	\$4.62	\$5.35	\$5.96	\$6.37	\$6.54	\$6.59	\$6.71	\$6.78	\$7.00	\$7.33	\$7.71	\$8.13	\$8.56	\$8.86	\$9.26	\$7.05	0.15%
Rover	Southwest PA	\$4.09	\$4.88	\$5.50	\$5.89	\$6.06	\$6.12	\$6.25	\$6.32	\$6.53	\$6.85	\$7.19	\$7.58	\$7.98	\$8.28	\$8.66	\$6.55	2.41%
NEXUS / St. Clair	Southwest PA	\$4.09	\$4.88	\$5.50	\$5.89	\$6.06	\$6.12	\$6.25	\$6.32	\$6.53	\$6.85	\$7.19	\$7.58	\$7.98	\$8.28	\$8.66	\$6.55	2.64%
NEXUS/St. Clair (Increase Upper end of toll by 15%)	Southwest PA	\$4.09	\$4.88	\$5.50	\$5.89	\$6.06	\$6.12	\$6.25	\$6.32	\$6.53	\$6.85	\$7.19	\$7.58	\$7.98	\$8.28	\$8.66	\$6.55	2.64%
Vector (2014 - 2017)	Chicago	\$4.63	\$5.41	\$6.07	\$6.52	\$6.73	\$6.81	\$6.97	\$7.14	\$7.46	\$7.91	\$8.31	\$8.75	\$9.09	\$9.42	\$9.73	\$7.40	0.99%
Dawn	Dawn	\$4.82	\$5.62	\$6.29	\$6.76	\$6.98	\$7.07	\$7.24	\$7.42	\$7.75	\$8.21	\$8.63	\$9.08	\$9.43	\$9.77	\$10.09	\$7.68	0.00%
Michcon (2014-2015)	Michcon Generic	\$4.70	\$5.49	\$6.16	\$6.62	\$6.84	\$6.92	\$7.09	\$7.26	\$7.59	\$8.05	\$8.46	\$8.91	\$9.25	\$9.59	\$9.90	\$7.52	1.86%
Vector (2012 - 2016)	Chicago	\$4.63	\$5.41	\$6.07	\$6.52	\$6.73	\$6.81	\$6.97	\$7.14	\$7.46	\$7.91	\$8.31	\$8.75	\$9.09	\$9.42	\$9.73	\$7.40	0.99%
Trunkline / Panhandle	Trunkline Field Zone 1A	\$4.56	\$5.37	\$6.05	\$6.51	\$6.72	\$6.80	\$6.97	\$7.14	\$7.46	\$7.93	\$8.33	\$8.79	\$9.14	\$9.49	\$9.83	\$7.41	4.04%
Panhandle (2012-2017)	Panhandle Field Zone	\$4.42	\$5.20	\$5.84	\$6.29	\$6.48	\$6.56	\$6.71	\$6.88	\$7.19	\$7.63	\$8.02	\$8.44	\$8.76	\$9.07	\$9.36	\$7.12	6.58%
Alliance / Vector	CREC	\$3.69	\$4.44	\$5.08	\$5.54	\$5.77	\$5.87	\$6.04	\$6.23	\$6.55	\$6.99	\$7.36	\$7.78	\$8.09	\$8.39	\$8.67	\$6.43	5.58%
Panhandle (2014-2015)	Panhandle Field Zone	\$4.42	\$5.20	\$5.84	\$6.29	\$6.48	\$6.56	\$6.71	\$6.88	\$7.19	\$7.63	\$8.02	\$8.44	\$8.76	\$9.07	\$9.36	\$7.12	6.58%
Panhandle (2010-2017)	Panhandle Field Zone	\$4.42	\$5.20	\$5.84	\$6.29	\$6.48	\$6.56	\$6.71	\$6.88	\$7.19	\$7.63	\$8.02	\$8.44	\$8.76	\$9.07	\$9.36	\$7.12	6.58%
TCPL Empress to Dawn	Empress	\$4.03	\$4.78	\$5.42	\$5.87	\$6.09	\$6.18	\$6.36	\$6.55	\$6.88	\$7.33	\$7.72	\$8.15	\$8.47	\$8.78	\$9.07	\$6.78	4.05%
TCPL Empress to Union CDA	Empress	\$4.03	\$4.78	\$5.42	\$5.87	\$6.09	\$6.18	\$6.36	\$6.55	\$6.88	\$7.33	\$7.72	\$8.15	\$8.47	\$8.78	\$9.07	\$6.78	4.12%

Sources for Assumptions:

Gas Supply Prices (Col D):
Fuel Ratios (Col G):
Transportation Tolls (Cols E & F):
Foreign Exchange (Col K)
Energy Conversions (Col K)
Union's Analysis Completed:

ICF Base Case Jan 2015
Average ratio over the previous 12 months or Pipeline Forecast
Union Tolls in Effect Jan 2015
\$1 US = 1.3133 CDN
1 dth = 1 mmBtu = 1.055056
Updated August 2015 to change FX rate for Exhibit B.T1.Union.LPMA.7

Updated August 7, 2015 Bank of Canada Closing

* indicates path referenced in evidence for this analysis

1 load and seasonal loads. We were having trouble getting
2 that. And so the combination of those two things led us to
3 say, you know, this contract, at 150, is too much for us.
4 We've got to step away from it. And so then what we did --
5 you know, we liked Nexus. We thought it was a good
6 opportunity, but it was just too much at 150.

7 So then we went back and renegotiated with Nexus and
8 got more favourable terms. You know, we reduced the
9 volume. We spent some time, and Sussex did some work for
10 us to help us more clearly understand the supply there. We
11 negotiated to connect into Vector and use our own transport
12 rather than a full path on Nexus and ultimately came to an
13 agreement that we thought was the best agreement for
14 ratepayers.

15 MR. SCHUCH: Thank you. That is very helpful, and,
16 thank you, John, for your indulgence.

17 MR. WOLNIK: Yes, you bet.

18 MR. DE ROSE: John --

19 MR. WOLNIK: Yes, sir,

20 MR. QUINN: Sorry, it's Dwayne. I had a few more
21 minutes before we started our meeting so I was listening
22 in. Jamie -- do you mind, John, if I just ask one
23 question?

24 MR. WOLNIK: Yes. No, go ahead.

25 MR. QUINN: Jamie, you've talked about these
26 challenges at Niagara, and I understand from experience
27 that I've had that there are limited suppliers at Niagara.
28 Yet you have been contracting -- or have you been

1 contracting, or do you have any contracts currently in
2 place, at Niagara?

3 MR. LEBLANC: Yes. We ultimately -- you know, the
4 list was short and it got shorter as we sort of got to the
5 fine strokes of getting supply.

6 It's actually why we also changed our -- renegotiated
7 to change our contract with TransCanada, to allow the
8 option of Chippewa or Niagara. And between those two
9 points, we've been able to -- we haven't completely
10 finished our contracting but we have contracted for a fair
11 at of it and we believe we will be able to contract for the
12 whole 200,000.

13 But it was not an easy task. What we found was most
14 of that -- we talked yesterday about 1.4 PJs. Most of that
15 gas that is coming to the border also has transportation
16 beyond the border.

17 So buying at Nexus -- or at Niagara, sorry, has been a
18 challenge for us.

19 You know, there just aren't that many suppliers and
20 folks, rightly so, wanted to contract on to a more liquid
21 point like Dawn.

22 And so there have been challenges, certainly, getting
23 the volume -- you know, 200,000 a day is not a small amount
24 of gas, and there certainly have been challenges to get
25 that gas and we've had to go with --

26 MR. QUINN: But you've broken that up. The 200,000,
27 you didn't go in one fell swoop. You broke that into
28 multiple contracts, I presume?

1 MR. LEBLANC: That's correct. We signed three --

2 MR. QUINN: Okay. In that process -- sorry to cut you
3 off, Jamie. I only have limited time. I am on John's
4 clock, now.

5 But I just wanted to ask: Are you able to provide any
6 information from those suppliers about indicative pricing
7 going forward at Niagara versus Dawn, Henry Hub, or AECO?
8 Did you receive any of that information in dealing with
9 your suppliers?

10 MR. LEBLANC: When you say "going forward," I have
11 pricing -- so, we have negotiated basically two-year but
12 really 22-month contracts with them. So I certainly have
13 indication of pricing for the next couple of years, but not
14 beyond that, no.

15 MR. QUINN: Okay. Can you provide the average price
16 relative -- assuming a lot of it (sic) is on index, what
17 the pricing is moving forward as an undertaking?

18 MR. LEBLANC: So I can actually provide that directly.
19 For the contracts that we have signed to date, the average
20 pricing is Dawn minus 46 cents Canadian per gJ.

21 MR. QUINN: Minus 46 relative to where?

22 MR. LEBLANC: Dawn.

23 MR. QUINN: To Dawn. So 46 cents left from Dawn.

24 Okay, thank you very much. Those are my questions.

25 Thanks, John.

26 MR. WOLNIK: Yes, you're welcome.

27 I had one general question for Nexus, maybe just
28 before we move on. And Union, in their contracting with

UNION GAS LIMITED

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario ("FRPO")

Reference: page 24, lines 12 to page 25 line 2

- a) Please provide the average day and summer day volumes for the entire CDA (all of the Union territory that can be fed by TCPL from Niagara (e.g. Hamilton #3, Nanticoke, etc.)
- b) Please confirm the existence of excess capacity from Kirkwall to Dawn during the summer period.
- c) Please confirm that the capacity of the Dawn-Kirkwall that is not recovered from ex-franchise customers is recovered in rates for in-franchise customers.

Response:

- a) In Winter 2014/15 the Burlington Oakville System, Hamilton Gate #3 Station and Kirkwall/Dominion Gate Station design day demand is 359 TJ/d which includes 54 TJ/d of design day demand provided to the Burlington Oakville System through the NPS 8 Milton Line and NPS 12 Parkway Line. Using the 34% load factor noted at Exhibit D.FRPO.10, Attachment 2, the average day demand is 122 TJ/d. Using the 10% load factor noted at Exhibit D.FRPO.10, Attachment 2, the summer day demand is 36 TJ/d.
- b) Confirmed. Please see the response at Exhibit D.FRPO 8 a) and b). However, the amount of Kirkwall to Dawn transportation capacity available at any given time will be limited by the ability of TransCanada capacity to move gas into the Dawn Parkway System at Kirkwall, the capacity of Union's Kirkwall Custody Transfer Station and the capacity of the Dawn Parkway System assets.
- c) Confirmed. The costs associated with Dawn-Kirkwall capacity are recovered from both in-franchise and ex-franchise customers in proportion to their Dawn-Parkway distance weighted design day demands.

UNION GAS LIMITED

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario ("FRPO")

References:

- 1) Union Reply Evidence, page 6, lines 12 to 18.
- 2) Exhibit A, Tab 3, page 2 of 5, lines 9 to 11.
- 3) EB-2014-0261 (Union's 2016 Dawn Parkway Project), Exhibit A, Tab 8, Schedule 1.
- 4) EB-2015-0200 (Union's 2017 Dawn Parkway Expansion Project), Exhibit A, Tab 8, Schedules 1 and 2.

Preamble: In Reference 1, Union describes the average day demand requirement. In Reference 2, the design day demand for the Burlington Oakville is described as 198 TJ/d in 2014/15 growing to 276 TJ/d in 2035/36. In Reference 3, the design day demand for Burlington, Bronte is listed at 145,734 GJ/d in 2015/16. In Reference 4, the design day demand for Burlington, Bronte is listed at 146,143 GJ/d in 2016/17 and 2017/18.

- a) Please explain why the design day demand provided in this application for 2014/15 is higher than the design day demands provided in Union's 2016 and 2017 Dawn Parkway construction projects.
- b) Please provide a numerical reconciliation of the explanation in (a) above.
- c) Please provide the average day requirements that correspond to the design day requirements provided in References 3 and 4.

Response:

- a) The entire Burlington Oakville System design day demand is 198 TJ/d in Winter 2014/15 and includes 54 TJ/d flowing on the NPS 8 Milton Line and the NPS 12 Parkway Line as stated in Exhibit A, Tab 6, p. 7, lines 1-12. The 145,734 GJ/d and 146,143 GJ/d are the design day demands through the Burlington and Bronte Gate Stations in Winter 2015/16 and Winter 2016/17 (and 2017/18), respectively. The EB-2014-0261 and EB-2015-0200 applications assumed that the proposed Burlington Oakville Pipeline was constructed (in service November 1, 2016) and gas would be delivered to the existing NPS 20 Oakville Burlington Line, including the Bronte and Burlington Gate Stations. Union did not assume that this portion of the design day demand would be delivered through the TransCanada system.
- b) The total Burlington Oakville System design day demand in Winter 2014/2015 is 198 TJ/d. Subtracting 54 TJ/d for the NPS 8 Milton Line and NPS 12 Parkway Line capacity leaves 144

TJ/d to be fed from the Burlington and Bronte Gate Stations in Winter 2014/15. There is some market growth reflected in increased design day demand for Winter 2015/16 and Winter 2016/17 (Reference 3 and 4 as cited in the preamble above) that would be delivered through the Burlington and Bronte Gate Stations. The EB-2014-0261 and EB-2015-0200 applications assumed that the proposed Burlington Oakville Pipeline was constructed (in service November 1, 2016) and gas would be delivered to the existing NPS 20 Oakville Burlington Line, including the Bronte and Burlington Gate Stations. Union did not assume that this portion of the design day demand would be delivered through the TransCanada system.

- c) Using the 34% load factor noted at Exhibit D.FRPO.10, Attachment 2, the average day demand that corresponds with the 145,734 GJ/d design day demand in Winter 2015/2016 delivered through the Burlington and Bronte Gate Stations (EB-2014-0182) is 49 TJ/d. The average day demand that corresponds with the 146,143 GJ/d design day demand in Winter 2016/2017 (and Winter 2017/2018) delivered through the Burlington and Bronte Gate Stations (EB-2015-0200) is 50 TJ/d. These values are not reflective of the Burlington Oakville System design day demand or average day demand as they exclude the gas delivered through the NPS 8 Milton Line and NPS 12 Parkway Line. The EB-2014-0261 and EB-2015-0200 applications assumed that the proposed Burlington Oakville Pipeline was constructed (in service November 1, 2016) and gas would be delivered to the existing NPS 20 Oakville Burlington Line, including the Bronte and Burlington Gate Stations. Union did not assume that this portion of the design day demand would be delivered through the TransCanada system.

UNION GAS LIMITED

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario ("FRPO")

Reference: page 24, Figure 5-2.

Preamble: FRPO requires clarification.

- a) Assuming Union contracts for 276 TJ/d from Niagara to CDA, please confirm that Union can transport the difference between the contract quantity and average day demand from Kirkwall to Dawn without constructing new facilities. If not confirmed, please provide a cost estimate for the additional facilities required.
 - b) Assuming Union contracts for 276 TJ/d from Niagara to CDA, please confirm that Union can transport the difference between the contract quantity and minimum summer demand from Kirkwall to Dawn without construction new facilities. If not confirmed, please provide a cost estimate for the additional facilities required.
 - c) Did Union include those costs in its evaluation of alternatives?
-

Response:

- a) The difference between the 276 TJ/d and the average day demand of 94 TJ/d identified by Union in Exhibit C at page 24, is 182 TJ/d. Union currently has 182 TJ/d of existing Kirkwall to Dawn capacity without the need for constructing new facilities.
- b) Union would require Kirkwall to Dawn capacity equivalent to the difference between 276 TJ/d and the minimum summer demand of 28 TJ/d, or 248 TJ/d. Union currently has 248 TJ/d of existing Kirkwall to Dawn capacity without the need for constructing new facilities.
- c) The costs that Union included in its evaluation of the Alternative Proposal are shown in Exhibit C, Figure 5-3, p. 26. Please see the response at Exhibit D.FRPO.10.

Transportation requirements and costs to meet 2017/18 demand of 210TJ

	Rates	Ex. D.FRPO.10		Ex. D.FRPO.4(b)	
	<u>\$/GJ</u>	<u>Volume, TJ</u>	<u>Cost, \$MM</u>	<u>Volume, TJ</u>	<u>Cost, \$MM</u>
TransCanada:					
Dawn to CDA	0.3302	0	0.00	0	0.00
Empress to ECDA	1.9388	0	0.00	11	7.78
Niagara to Kirkwall	0.2282	0	0.00	21	1.75
Niagara to CDA	0.2231	0	0.00	0	0.00
Kirkwall to CDA	0.1707	135	8.41	135	8.41
Total to Burlington Oakville		0	8.41	32	17.94
Union Gas:					
Dawn to Parkway (In franchise)	0.0856	210	6.56	178	5.56
Total to Burlington Oakville		210	6.56	178	5.56
Burlington Oakville Project		156	8.28	124	8.28
Total Burlington Oakville Demand		210	23.26	210	31.79

Notes:

1. Ex. D.FRPO.10 case represents volume levels and costs that Union used in its cost comparison with updated TC tolls, extracted from Ex. D.FRPO.10 Attachment 1.
2. Ex. D.FRPO.4(b) case represents volume levels and costs including Union's FT commitments on TCPL as provided in its response to FRPO 4(b).
3. Burlington Oakville Demand extracted from Ex. D.FRPO.10 Attachment 1, Line 17.

June 19, 2015

BY COURIER & RESS

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
Toronto, Ontario
M4P 1E4

RE: EB-2014-0182 – Union Gas Limited (“Union”) – Burlington Oakville Pipeline Project – Responses to CME and OGVG Questions

Dear Ms. Walli,

In accordance with Procedural Order No. 4, attached are the responses to the questions posed by CME and OGVG, together with a confirmation by TransCanada as to the correctness of the responses.

Yours truly,

[original signed by]

Vanessa Innis
Manager, Regulatory Initiatives

Encl.

cc: Zora Crnojacki, Board staff
Mark Kitchen, Union Gas
Charles Keizer, Torys
All Intervenors (EB-2014-0182)

Questions for TCPL:**1) If Union seeks a new FT contract from Niagara to ECDA totalling 276 TJ/day:**

a) Please confirm that TCPL will not need to build any new pipeline or compression facilities between Niagara and ECDA to provide the new FT service

Response: Confirmed. The Settlement Agreement recognized that 200 TJ/d of transportation capacity would be offered to the market on the path from Niagara to Enbridge Parkway CDA using TransCanada's Domestic Line. Enbridge successfully bid on this capacity in TransCanada's 2015 new capacity open season. The facilities required to provide this service were the subject of the recently approved Greater Golden Horseshoe Project and included modifications to facilities between Niagara/Chippawa and Parkway on TransCanada's Domestic Line. No further capacity is available on this path from TransCanada using the Domestic Line without facility expansion. Any additional capacity required on this path would flow from Niagara to Kirkwall to Parkway to Union ECDA.

b) Please provide a high level cost estimate for modifications required to provide the new FT service.

Response: With the work that is currently being done by Union and TCPL at the new Parkway West site, no additional cost would be incurred to flow 276 Tj/day on the Niagara to Kirkwall to Parkway to Union ECDA path.

c) If the estimated costs are significant, how much of the 276 TJ/day could be provided without any significant costs?

Response: There is no expected capital cost (see b) to flow additional volumes on the Niagara to Kirkwall to Parkway to Union ECDA path. TransCanada's toll is the same from Niagara/Chippawa to Union ECDA whether using: i) the TransCanada Domestic Line from Niagara/Chippawa to Union ECDA; or ii) using the path from Niagara/Chippawa to Kirkwall on TransCanada, Kirkwall to Parkway on Union's Dawn Parkway System and then Parkway to Union ECDA on TransCanada.

2) Will TCPL be able to provide the new FT contract beginning November 1, 2016?

Response: Provided Union can provide the incremental Kirkwall to Parkway capacity, TCPL can provide the service effective Nov 1, 2016 on the Niagara/Kirkwall/Parkway/ECDA path. Union will be using the Kirkwall to Parkway path (as part of the Dawn to Parkway path) as described in Union's application. To the extent that Union does not build the Burlington to Oakville pipeline, capacity would be available on Nov 1, 2016 for others.

3) If TCPL is unable to provide the new FT contract beginning November 1, 2016:

a) Please provide the earliest date the new FT contract can begin

Response: See response to 2) above.

b) Please confirm that a temporary bridging mechanism can be discussed between TCPL and Union for the period between November 1, 2016 and the earliest date the new FT contract can begin.

Response: See response to 2) above.

4) Please provide the MAOP of the Domestic Line between MLV 209 and MLV 207.

Response: The MOP of the Domestic Line between MLV 209 and MLV 207 is 4480 kPag (650 psig).



June 18, 2015

TransCanada Corporation
450 – 1st Street SW
Calgary, Alberta, Canada T2P 5H1

tel 403.920.5574
fax 403.920.2384
email dave_schultz@transcanada.com
web www.transcanada.com

Dave Schultz
Vice-President, Commercial East
Canadian Natural Gas Pipelines

Mark Isherwood
VP Business Development
and Storage Transportation
Union Gas Limited
PO Box 2001
50 Kell Drive North
Chatham, ON, N7M 5M1

Dear Mark,

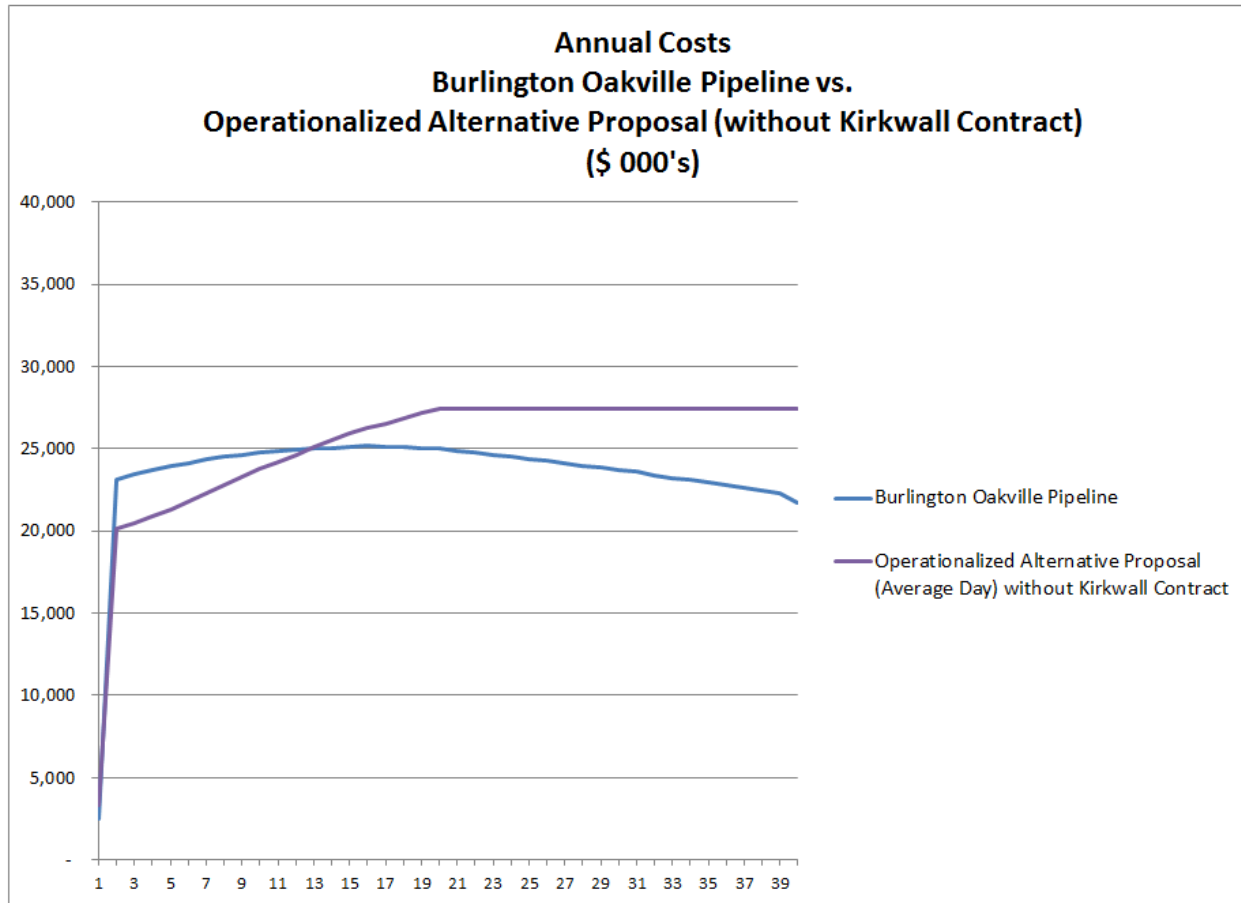
TransCanada has reviewed the Union responses to the questions identified in the June 17th 2015, Ontario Energy Board Procedural Order No. 4 (EB-2014-0182) and can confirm that the responses provided are factually correct.

Yours Truly,

A handwritten signature in dark ink, appearing to read 'Dave Schultz', is written over a light blue horizontal line.

Dave Schultz
Vice-President, Commercial East
Canadian Natural Gas Pipelines
TransCanada Corporation

Figure 5-5



Although the annual cost of the proposed Burlington Oakville Pipeline is higher than the Alternative Proposal in 2016, the annual cost of the proposed Burlington Oakville Pipeline becomes less starting in 2029 as the revenue requirement of the pipeline continues to decrease and the amount of transportation services increase with design day growth. The difference between the annual cost of the proposed Burlington Oakville Pipeline and the operationalized Alternative Proposal (without the Kirkwall Contract) continues to grow to 2035.

UNION GAS LIMITED

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario ("FRPO")

Reference: page 29, Figure 5-5

- a) Please provide all of the assumptions and costs that went into this depiction of the comparative assessment.
- b) Using the data from the May 2015 Transportation Contracting Analysis (from EB-2015-0166), please provide the respective annual costs for gas supply of 150 TJ/day sourced at Niagara vs. via Nexus
 - i) for the first five years starting in 2017
 - ii) the average annual cost over the 20 years starting in 2017

Response:

- a) Please see Attachments 1, 2 and 3.

Attachment 1 – Burlington Oakville Pipeline Annual Revenue Requirements
 Attachment 2 – Calculation of Costs (Burlington Oakville Pipeline) – Alternative Proposal Adjusted for Operations
 Attachment 3 – Comparison of Proposed Project (Build) vs. Alternative Proposal

The TransCanada tolls used are the Settlement tolls effective January 1, 2015. This is the same data used by Ms. Aggie Cheung for the Alternative Proposal.

Noted below are the line numbers of Attachment 3 that the charts were created from.

	Data for Figure 5-4	Data for Figure 5-5
Union Build	Line 4	Line 13
Alternative Proposal	Line 11	Line 17

- b) The information requested is not relevant to EB-2014-0182. The proposed Burlington Oakville Pipeline is independent of Union's proposed NEXUS contract and the May 2015 Transportation Contracting Analysis (EB-2015-0166). The annual costs for gas supply at Niagara versus NEXUS is not relevant to meeting the design day demands of the Burlington Oakville System and are not relevant to any commercial alternatives evaluated by Union.

[illegible]