

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #1**

**Reference:** TransCanada Supplemental Evidence Page 1, Lines 30-31 and Page 2, Lines 21- 25

**Request:** a) Please confirm that Union was not a party to any of the discussions regarding the Memorandum of Understanding (MOU) and was not informed of its content prior to its filing in this proceeding. If not confirmed, please produce all communications with Union in which TransCanada advised Union of the details of the MOU, specifically including all communications where Union was advised of Section 2.7 and Schedule D of the MOU.

**Response:**

Not confirmed. Union agreed, at a meeting with TransCanada and Enbridge, that TransCanada would replace Union as a joint owner in a revised Enbridge Segment A pipeline, and that TransCanada would construct facilities downstream of Albion.

At a subsequent meeting between TransCanada and Union, TransCanada informed Union that TransCanada would be entering into a TBO Agreement with Enbridge on the Segment A pipeline, and that the TBO arrangement was designed to mimic joint ownership of the pipeline. Union was informed that this arrangement was chosen to preserve the desired November 1, 2015 in-service date for the project and because the Segment A pipeline would be OEB regulated while the TransCanada Mainline is NEB regulated. Union did not raise any concerns with the TBO arrangement during this meeting. Union was also aware that TransCanada would hold all of the transportation capacity on the Segment A pipeline in order to provide transportation service to its shippers.

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #2**

**Reference:** TransCanada Supplemental Evidence Page 2, Lines 11-20

**Request:** a) Given that TransCanada has stated that the Transportation by Others (TBO) as reflected in the MOU is a contracted service from Enbridge, does TransCanada believe that the MOU complied with the Ontario Energy Board's Storage and Transmission Access Rule (STAR)? If so, on what basis and in reference to which provisions of STAR.

**Response:**

This is a question of law on which TransCanada made submissions during the Union / Gaz Métro motion to stay the Enbridge application for Segment A. It will be addressed by TransCanada in argument.

In summary TransCanada believes that the MOU complies with the OEB's STAR and/or is entitled to an exemption from it.

Under the MOU, TransCanada would effectively own a portion of Segment A. The MOU required TransCanada to pay 50% or 60% of the cost of Segment A, depending on whether Segment A was to be an NPS 36 or NPS 42 pipeline (the parties ultimately agreed on an NPS 36 pipeline). Enbridge's contribution to the cost of Segment A is required to be a capital expenditure. TransCanada's contribution to the cost of Segment A was to be either a capital expenditure or a transportation contract that would contribute, in tolls, the equivalent of the 50% capital contribution. Based on the concern that there could be delays in regulatory approval associated with joint ownership as each of the parties was under different regulatory jurisdiction, TransCanada elected to make its contributions via the transportation contract option. The transportation contract option mimics and creates effective 50% ownership in Segment A. TransCanada elected to make its contribution via the transportation contract option.

Unlike a shipper, TransCanada is not entitled to a specific quantity of transportation capacity. Rather, as with a joint-owner, TransCanada is entitled to whatever transportation capacity is remaining after Enbridge uses up to 800,000 GJ/d for its distribution purposes. TransCanada will offer that transportation capacity to its shippers in an open access, non-discriminatory way under the regulation of the NEB.

If TransCanada had elected the capital contribution option in the MOU, there would never have been discussion of the STAR. There is no reason for the invocation of the STAR when TransCanada has elected the exact equivalent of a capital contribution, but payable over time. The distinction on which the Union / Gaz Métro motion was premised is entirely specious, a matter of form over substance.

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #3**

**Reference:** TransCanada Supplemental Evidence Page 2, Lines 21-25

**Request:**

- a) At the time the MOU was executed what contracts did TransCanada have in place to support the 1.2 PJ/d of volume on Segment A that it contracted from Enbridge under the MOU?
- b) Please confirm, under the MOU, if TransCanada were not able to contract with shippers for the full capacity of the TBO option, the costs would be borne by TransCanada's existing shippers.
- c) Was the TBO position taken under the MOU discussed with or communicated to TransCanada's shippers, including through such means as the Tolls Task Force? Were the TBO position and the terms of the MOU ever discussed with Eastern shippers, other than Enbridge, prior to executing the MOU?

**Response:**

- a) TransCanada has not contracted for a quantity of transportation capacity on Segment A, but rather is entitled to such capacity as is remaining after Enbridge uses up to 800,000 GJ/d for its distribution purposes. TransCanada does not associate specific contracts with TBO capacity, but rather uses TBO contracts to meet its aggregate requirements on its integrated system.
- b) Confirmed, as with facilities owned by TransCanada, which the MOU effectively constitutes, the costs of the TBO on Segment A will be borne by TransCanada's shippers, subject to NEB review as to prudence and to the disposition of the TSA.
- c) It is not TransCanada's practice to seek Tolls Task Force (TTF) approval for its TBO arrangements (such as those it holds on the Union Gas system) in advance of those arrangements coming into effect.

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #4**

**Reference:** TransCanada Supplemental Evidence Page 4, Lines 1-7

- Request:**
- a) Please confirm that the May 2012 New Capacity Open Season (NCOS) was held in advance of the finalization of the throughput forecast used in RH-003-2011 in June 2012.
  - b) Please confirm that TransCanada did not include the results of the May 2012 NCOS and the subsequent expectation of turnback of equivalent or near-equivalent long haul volumes, in the throughput forecast that was provided by TransCanada and used by the National Energy Board to set rates in RH-003-2011.
  - c) If TransCanada did not include those May 2012 NCOS volumes, please explain why they were excluded.

**Response:**

- a) Confirmed.
- b) Confirmed. In accordance with standard practice, the results of the May 2012 NCOS were not included in the June 2012 throughput forecast, as TransCanada did not have executed contracts for those volumes at the time. TransCanada subsequently held a turn back open season in February of 2013 but did not receive confirmation that Union Gas or Gaz Metro (or any other shipper) would be turning back capacity.
- c) Please refer to the response to (b).

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #5**

**Reference:** TransCanada Supplemental Evidence Page 4, Lines 22-28

**Request:** a) What capacity does TransCanada have available for contracting today between Parkway and Maple?

**Response:**

a) TransCanada is fully contracted out of Parkway.

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #6**

**Reference:** TransCanada Supplemental Evidence Page 4 Line 25

**Request:** a) Please list what facilities are included in the approximately \$310 million in costs for TransCanada to build a new pipeline from Albion to Maple area, specifically identifying size and length of pipe, station facilities, compressor facilities and land, etc.

**Response:**

The Facilities included in the \$310 million of costs are 13 km NPS 36 Kings North Project, 13 km NPS 42 Vaughan Loop, and a compressor unit addition at Station 130 (Maple).

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #7**

**Reference:** TransCanada Supplemental Evidence Page 4

**Request:**

- a) Please provide the historic level of decontracting of longhaul capacity originating from Empress starting January 1, 2000 to present, split in the following categories:
  - i) End-use customers
  - ii) Local Distribution Companies
  - iii) Energy Marketers and Brokers

**Response:**

a) As TransCanada is unable to organize the information into each category requested, TransCanada has provided a table showing overall contract levels as of Nov 1 each year for FT contracts with an Empress receipt point. Note: Excludes deliveries to Emerson 1 and Emerson 2. In addition, TransCanada shows the same contract information but only for LDCs (Enbridge, Union, Gaz Métro and CentraGas Manitoba)

	Quantity in GJ/Day	
	Total FT Contracts	LDC Contracts
Nov-00	4,952,784	2,275,784
Nov-01	4,840,217	2,172,883
Nov-02	4,475,497	2,119,560
Nov-03	3,849,259	1,421,404
Nov-04	4,032,488	1,371,036
Nov-05	4,858,860	1,381,936
Nov-06	4,387,381	1,401,586
Nov-07	3,398,315	1,281,923
Nov-08	2,821,356	1,224,679
Nov-09	2,375,647	1,190,023
Nov-10	1,594,673	963,852
Nov-11	1,371,329	910,266
Nov-12	1,186,841	797,447
Nov-13	1,199,489	834,417

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #8**

**Reference:** TransCanada Supplemental Evidence Page 4, Lines 30-35

**Request:** a) Please detail the calculation of the \$960 million and explain the allocation of costs to the remaining TransCanada service holders.

**Response:**

a) Please refer to the response to SEC 11.

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #9**

**Reference:** TransCanada Supplemental Evidence Page 5 and Page 6, Table 4.1

**Request:**

- a) Please recreate Page 6, Table 4.1 using the following assumptions:
  - i. inlet pressure is set to 6450 kPa
  - ii. outlet pressure is set to 4620 kPa
  - iii. velocity in the pipeline does not exceed 24.4 meters per second

**Response:**

a) Please refer to the table below. TransCanada would like to note that Enbridge's distribution pressure at Albion is 3344 kPa. Delivering gas at 4620 kPa is above Enbridge's requirements and forces them to regulate the pressure down further. Therefore delivery at this pressure is over designing the system. Please refer to the response to EGD 1a for design assumptions.

		<b>Peak Winter Capacity</b>
<b>Pressure (kPa)</b>	Inlet	6450
	Outlet	4620
<b>Capacity (TJ/d)</b>	NPS 24	780
	NPS 30	1391
	NPS 36	2254
	NPS 42	3282

Note: The NPS 42 capacity shown is reduced due to the specified velocity constraint.

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #10**

**Reference:** TransCanada Supplemental Evidence Page 7, NIT-Dawn Spot Price Differential

- Request:**
- a) Please explain the basis on which TransCanada has used the NIT-Dawn spot price differential as a proxy for the Empress-Dawn price differential.
  - b) Based on the graph, please provide the average daily Empress-Dawn differential for the periods between:
    - i) January 1, 2004 to December 31, 2008
    - ii) January 1, 2009 to June 30, 2013
    - iii) July 1, 2013 to August 15, 2013
  - c) Is the \$1.50 Empress to Dawn price differential based on a long term forecast?
  - d) If not, why not? What is TransCanada's long-term forecast?
  - e) What is the forecast Empress-Dawn price differential for Winter 2013/2014? How has this forward spread changed over time?
  - f) Recently TransCanada has increased their level of longhaul contracting by shippers by approximately 1 PJ/d. What would be the impact on the Empress to Dawn price differential if TransCanada was able to contract another 0.5 PJ/d of firm longhaul contracts?

**Response:**

- a) At the time of the filing (August 16, 2013) of the referenced Supplemental Evidence, TransCanada had the daily NIT – Dawn price spread data readily available; the Empress – Dawn price data were not readily available. However, at the time TransCanada was of the view that the two price streams were sufficiently similar such that the more readily available and more liquid NIT – Dawn spread was adequate. In preparation of this response, TransCanada observes that during the historic period 2004 – 2012 (the period reported in the figure in the referenced Supplemental Evidence) that the NIT to Empress price spread has averaged 4 cents (CAD\$/GJ). Please refer to the response to EGD 4. As such, TransCanada continues to be of the view that the NIT – Dawn spread (which has varied in monthly averages of approximately \$0.25/GJ to over \$2.50/GJ during this period) is appropriate for the purposes of this evidence.
- b) Based on the reference graph (which presents the NIT – Dawn price spread, not the Empress – Dawn price spread), the average price differentials for the periods requested are:

- i) January 1, 2004 – December 31, 2008: \$1.33 CAD/GJ.
  - ii) January 1, 2009 – June 30, 2013: \$0.74 CAD/GJ.
  - iii) July 1, 2013 – August 15, 2013: \$1.40 CAD/GJ.
- c) and d)

The \$1.50/GJ price difference is the approximate level recently observed; it is not a forecast. However given this recent reality and the fact that the \$1.50/GJ price is within the range of historical norm, TransCanada is of the view that it is reasonable to evaluate the net impact of the GTA project over a range of price spread levels including the NIT – Dawn spread of \$1.50/GJ. For TransCanada's long-term gas price forecast please see the response to Enbridge 4.

- e) TransCanada's forecast NIT – Dawn spread for the winter 2013/2014 is \$0.64/GJ. The forward market price spread between NIT and Dawn as of Aug 21, 2013 is \$0.77/GJ (source: NGX). This forward spread is volatile and just like the daily prices shown in the figure on page 7 of TransCanada's Supplemental Evidence, can increase or decrease on a daily basis.
- f) TransCanada is unable to quantify how the NIT – Dawn price spread may change as a result of the hypothetical 0.5 PJ/d of additional firm long haul contracts. However, as part of this application, the eastern LDCs are seeking to ultimately reduce their long haul contracts.

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #11**

**Reference:** TransCanada Supplemental Evidence Page 8

**Request:** a) Please provide the detailed calculations underpinning the TSA impact in tables 4.3, 4.4 and 4.5.

**Response:**

For Table 4.3, the “Forecast Savings” for each of Gaz Métro, Enbridge and Union was provided by each of those parties in the following references: GMI response to TCPL IR 1 page 9 of 17; EB-2012-0451 Exhibit A, Tab 3, Schedule 9 Attachment 1, Table A5; and EB-2013-0074 Exhibit I.A1.UGL.Staff.1 pg 10 of 16 respectively.

For Table 4.3, 4.4 and 4.5, the “TSA Impact” calculation (same in all tables) for each of Gaz Métro, Enbridge and Union for a total of \$401 million can be found in response to SEC 11(a).

For Table 4.4, please refer to Union 11 Attachment 1 for the “Forecast Savings” calculation for each of Gaz Métro, Enbridge and Union.

For Table 4.5, please refer to Union 11 Attachment 2 for the “Forecast Savings” calculation for each of Gaz Métro, Enbridge and Union.

The “Net Impact” calculation in each of Table 4.3, 4.4 and 4.5 is the sum of the “Forecast Savings” and the “TSA Impact” of the respective tables.

**Transportation Impact for Union from Switching from Long Haul to Short Haul**

		GJ/d	Current FT Toll (\$/GJ/month) effective July 1, 2013	Annual Toll Charge
Empress	Union EDA	57,831	50.201	34,837,936
Empress	Union NDA	10,000	40.057	4,806,810
<b>Long Haul Total</b>				<b>39,644,746</b>
Parkway	Union EDA	57,831	7.618	5,286,630
Parkway	Union NDA	10,000	10.889	1,306,704
<b>Short Haul Total</b>				<b>6,593,334</b>
<b>Union's Savings from toll difference</b>				<b>(33,051,412)</b>

Empress Gas Price:	6.11	US\$/MMbtu (as provided in Union evidence)
Dawn Gas Price:	7.09	US\$/MMbtu (as provided in Union evidence)
Empress versus Dawn gas price differential:	0.98	US\$/MMbtu (as provided in Union evidence)
Exchange rate:	0.987	Cnd\$/US\$ (as provided in Union evidence)
Mmbtu to GJ conversion factor:	1.0551	GJ/Mmbtu (as provided in Union evidence)
<b>Empress Gas Price</b>	<b>5.716</b>	<b>Cnd\$/GJ</b>
<b>Dawn Gas Price:</b>	<b>6.633</b>	<b>Cnd\$/GJ</b>
<b>Empress versus Dawn gas price differential:</b>	<b>0.917</b>	<b>Cnd\$/GJ</b>

<b>Union's Annual Gas Supply Cost Increase:</b>	<b>22,698,063</b>	<b>Cnd\$</b>
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Union's M12 rate from Dawn to Parkway (1) **0.091** \$/GJ

<b>Additional transport cost to Union from Dawn to Parkway</b>	<b>2,253,007</b>	<b>Cnd\$</b>
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(1) M12 rate as provided in Union's Evidence in Schedule 10-6

<b>Union's Net Position - excluding fuel (- is savings / + is cost)</b>	<b>(8,100,342)</b>	<b>Cnd\$</b>
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**Fuel differences:**

		GJ/d	Annual GJs	Fuel Ratio % (2)	Gas Price (Cnd\$/GJ)	Annual Fuel Charge
Empress	Union EDA	57,831	21,108,315	2.07%	5.716	2,493,486
Empress	Union NDA	10,000	3,650,000	1.58%	5.716	330,330
<b>Long Haul Total</b>			<b>24,758,315</b>			<b>2,823,816</b>
Dawn	Union EDA	57,831	21,108,315	0.96%	6.633	1,343,225
Dawn	Union NDA	10,000	3,650,000	1.11%	6.633	269,590
<b>Short Haul Total</b>			<b>24,758,315</b>			<b>1,612,815</b>
<b>Union's Savings from fuel difference</b>						<b>(1,211,001)</b>

(2) TCPL 2012 Actual Annual Average fuel ratios. The fuel ratio from Dawn is the sum of Union's Dawn to Parkway fuel ratio + Mainline's Parkway to market fuel ratio

<b>Union's Net Position - including fuel (- is savings / + is cost)</b>	<b>(9,311,343)</b>	<b>Cnd\$</b>
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**Transportation Impact for Gaz Metro from Switching from Long Haul to Short Haul**

		GJ/d	Current FT Toll (\$/GJ/month) effective July 1, 2013	Annual Toll Charge
Empress	GMI EDA	232,048	52.601	146,472,457
Empress	GMI NDA	15,327	40.883	7,519,275
<b>Long Haul Total</b>				<b>153,991,732</b>
Parkway	GMI EDA	232,048	12.528	34,885,447
Parkway	GMI NDA	15,327	10.387	1,910,384
<b>Short Haul Total</b>				<b>36,795,830</b>
<b>GMI's Savings from toll difference</b>				<b>(117,195,901)</b>

Empress Gas Price:	6.11	US\$/MMbtu (as provided in Union evidence)
Dawn Gas Price:	7.09	US\$/MMbtu (as provided in Union evidence)
Empress versus Dawn gas price differential:	0.98	US\$/MMbtu (as provided in Union evidence)
Exchange rate:	0.987	Cnd\$/US\$ (as provided in Union evidence)
Mmbtu to GJ conversion factor:	1.0551	GJ/Mmbtu (as provided in Union evidence)
<b>Empress Gas Price</b>	<b>5.716</b>	<b>Cnd\$/GJ</b>
<b>Dawn Gas Price:</b>	<b>6.633</b>	<b>Cnd\$/GJ</b>
<b>Empress versus Dawn gas price differential:</b>	<b>0.917</b>	<b>Cnd\$/GJ</b>

<b>GMI's Annual Gas Supply Cost Increase:</b>	<b>82,778,278</b>	<b>Cnd\$</b>
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Union's M12 rate from Dawn to Parkway (1) **0.091** \$/GJ

<b>Additional transport cost to GMI from Dawn to Parkway</b>	<b>8,216,561</b>	<b>Cnd\$</b>
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(1) M12 rate as provided in Union's Evidence in Schedule 10-6

<b>GMI's Net Position excluding fuel (- is savings / + is cost)</b>	<b>(26,201,063)</b>	<b>Cnd\$</b>
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**Fuel differences:**

		GJ/d	Annual GJs	Fuel Ratio % (2)	Gas Price (Cnd\$/GJ)	Annual Fuel Charge
Empress	GMI EDA	232,048	84,697,520	2.07%	5.716	10,005,159
Empress	GMI NDA	15,327	5,594,355	1.65%	5.716	528,148
<b>Long Haul Total</b>			<b>90,291,875</b>			<b>10,533,306</b>
Dawn	GMI EDA	232,048	84,697,520	1.18%	6.633	6,606,884
Dawn	GMI NDA	15,327	5,594,355	1.08%	6.633	400,523
<b>Short Haul Total</b>			<b>90,291,875</b>			<b>7,007,406</b>
<b>GMI's Savings from fuel difference</b>						<b>(3,525,900)</b>

(2) TCPL 2012 Actual Annual Average fuel ratios. The fuel ratio from Dawn is the sum of Union's Dawn to Parkway fuel ratio + Mainline's Parkway to market fuel ratio

<b>GMI's Net Position - including fuel (- is savings / + is cost)</b>	<b>(29,726,962)</b>	<b>Cnd\$</b>
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**Transportation Impact for Enbridge from Switching from Long Haul to Short Haul**

		GJ/d	Current FT Toll (\$/GJ/month) effective July 1, 2013	Annual Toll Charge
Empress	EGD CDA - FT	294,494	47.628	168,314,029
Empress	EGD CDA - Peaking (10 days only)	105,506	47.628	1,652,069
Empress	EGD CDA - Direct Purchase	157,768	47.628	90,170,148
Dawn	EGD CDA - Direct Purchase	42,232	7.165	3,630,869
<b>Long Haul Total</b>				<b>263,767,115</b>
Niagara	EGD Parkway CDA	200,000	4.664	11,194,608
<b>Short Haul Total</b>				<b>11,194,608</b>
<b>Enbridge's Savings from toll difference</b>				<b>(252,572,507)</b>

Empress Gas Price:	6.11	US\$/MMbtu (as provided in Union evidence)
Dawn Gas Price:	7.09	US\$/MMbtu (as provided in Union evidence)
Niagara Gas Price:	7.13	US\$/MMbtu (Dawn price plus 4¢ as provided in Enbridge evidence)
Empress versus Dawn gas price differential:	0.98	US\$/MMbtu (as provided in Union evidence)
Empress versus Niagara gas price differential:	1.02	US\$/MMbtu
Exchange rate:	0.987	Cnd\$/US\$ (as provided in Union evidence)
Mmbtu to GJ conversion factor:	1.0551	GJ/Mmbtu (as provided in Union evidence)
<b>Empress Gas Price</b>	<b>5.716</b>	<b>Cnd\$/GJ</b>
<b>Dawn Gas Price:</b>	<b>6.633</b>	<b>Cnd\$/GJ</b>
<b>Niagara Gas Price:</b>	<b>6.670</b>	<b>Cnd\$/GJ</b>
<b>Empress versus Dawn gas price differential:</b>	<b>0.917</b>	<b>Cnd\$/GJ</b>
<b>Empress versus Niagara gas price differential:</b>	<b>0.954</b>	<b>Cnd\$/GJ</b>

**Gas Supply Cost Differences:**

		GJ/d	Annual GJs	Gas Price (Cnd\$/GJ)	Annual Supply Cost	
Empress	EGD CDA - FT	294,494	107,490,310	5.716	614,401,358	100% LF
Empress	EGD CDA - Peaking (10 days)	105,506	1,055,060	5.716	6,030,593	10/365 days
Empress	EGD CDA - Direct Purchase	157,768	57,585,320	5.716	329,150,588	100% LF
Dawn	EGD CDA - Direct Purchase	42,232	15,414,680	6.633	102,240,365	100% LF
<b>Long Haul Total</b>					<b>1,051,822,904</b>	
Niagara	EGD Parkway CDA	200,000	73,000,000	6.670	486,915,984	100% LF
Dawn	Parkway	200,000	73,000,000	6.633	484,184,337	100% LF
Dawn	Parkway	200,000	35,545,370	6.633	235,749,354	48.69% LF
<b>Short Haul Total</b>					<b>1,206,849,674</b>	
<b>Enbridge's Annual Gas Supply Cost Increase</b>					<b>155,026,771</b>	

Union's M12 rate from Dawn to Parkway (1) **0.091** \$/GJ

<b>Additional transport cost to EGD for Union M12 Dawn to Parkway @ 400,000 GJ/d</b>	<b>13,286,000</b>	<b>Cnd\$</b>
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(1) M12 rate as provided in Union's Evidence in Schedule 10-6

<b>Enbridge's Net Position excluding fuel (- is savings / + is cost)</b>	<b>(84,259,736)</b>	<b>Cnd\$</b>
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**Fuel differences:**

		GJ/d	Annual GJs	Fuel Ratio % (2)	Gas Price (Cnd\$/GJ)	Annual Fuel Charge	
Empress	EGD CDA - FT	294,494	107,490,310	2.07%	5.716	12,697,628	100% LF
Empress	EGD CDA - Peaking (10 days)	105,506	1,055,060	2.07%	5.716	124,632	10/365 days
Empress	EGD CDA - Direct Purchase	157,768	57,585,320	2.07%	5.716	6,802,445	100% LF
Dawn	EGD CDA - Direct Purchase	42,232	15,414,680	0.21%	6.633	212,149	100% LF
<b>Long Haul Total</b>						<b>19,836,855</b>	
Niagara	EGD Parkway CDA	200,000	73,000,000	0.11%	6.670	523,435	100% LF
Dawn	Parkway	200,000	73,000,000	0.71%	6.633	3,455,059	100% LF
Dawn	Parkway	200,000	35,545,370	0.71%	6.633	1,682,268	48.69% LF
<b>Short Haul Total</b>						<b>5,660,762</b>	
<b>Enbridge's Savings from fuel difference</b>						<b>(14,176,093)</b>	

(2) TCPL 2012 Actual Annual Average fuel ratios. The fuel ratio from Dawn to Parkway is Union's M12 Dawn to Parkway Fuel Ratio

<b>Enbridge's Net Position - including fuel (- is savings / + is cost)</b>	<b>(98,435,829)</b>	<b>Cnd\$</b>
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**Transportation Impact for Union from Switching from Long Haul to Short Haul**

		GJ/d	Current FT Toll (\$/GJ/month) effective July 1, 2013	Annual Toll Charge
Empress	Union EDA	57,831	50.201	34,837,936
Empress	Union NDA	10,000	40.057	4,806,810
<b>Long Haul Total</b>				<b>39,644,746</b>
Parkway	Union EDA	57,831	7.618	5,286,630
Parkway	Union NDA	10,000	10.889	1,306,704
<b>Short Haul Total</b>				<b>6,593,334</b>
<b>Union's Savings from toll difference</b>				<b>(33,051,412)</b>

Empress Gas Price	3.000	Cnd\$/GJ
Dawn Gas Price:	4.500	Cnd\$/GJ
Empress versus Dawn gas price differential:	1.500	Cnd\$/GJ

<b>Union's Annual Gas Supply Cost Increase:</b>	<b>37,137,473</b>	<b>Cnd\$</b>
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Union's M12 rate from Dawn to Parkway (1) 0.091 \$/GJ

<b>Additional transport cost to Union from Dawn to Parkway</b>	<b>2,253,007</b>	<b>Cnd\$</b>
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(1) M12 rate as provided in Union's Evidence in Schedule 10-6

<b>Union's Net Position - excluding fuel (- is savings / + is cost)</b>	<b>6,339,068</b>	<b>Cnd\$</b>
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**Fuel differences:**

		GJ/d	Annual GJs	Fuel Ratio % (2)	Gas Price (Cnd\$/GJ)	Annual Fuel Charge
Empress	Union EDA	57,831	21,108,315	2.07%	3.000	1,308,716
Empress	Union NDA	10,000	3,650,000	1.58%	3.000	173,375
<b>Long Haul Total</b>				<b>24,758,315</b>		<b>1,482,091</b>
Dawn	Union EDA	57,831	21,108,315	0.96%	4.500	911,325
Dawn	Union NDA	10,000	3,650,000	1.11%	4.500	182,906
<b>Short Haul Total</b>				<b>24,758,315</b>		<b>1,094,231</b>
<b>Union's Savings from fuel difference</b>						<b>(387,859)</b>

(2) TCPL 2012 Actual Annual Average fuel ratios. The fuel ratio from Dawn is the sum of Union's Dawn to Parkway fuel ratio + Mainline's Parkway to market fuel ratio

<b>Union's Net Position - including fuel (- is savings / + is cost)</b>	<b>5,951,208</b>	<b>Cnd\$</b>
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**Transportation Impact for Gaz Metro from Switching from Long Haul to Short Haul**

		GJ/d	Current FT Toll (\$/GJ/month) effective July 1, 2013	Annual Toll Charge
Empress	GMI EDA	232,048	52.601	146,472,457
Empress	GMI NDA	15,327	40.883	7,519,275
<b>Long Haul Total</b>				<b>153,991,732</b>
Parkway	GMI EDA	232,048	12.528	34,885,447
Parkway	GMI NDA	15,327	10.387	1,910,384
<b>Short Haul Total</b>				<b>36,795,830</b>
<b>GMI's Savings from toll difference</b>				<b>(117,195,901)</b>

Empress Gas Price	3.000	Cnd\$/GJ
Dawn Gas Price:	4.500	Cnd\$/GJ
Empress versus Dawn gas price differential:	1.500	Cnd\$/GJ

<b>GMI's Annual Gas Supply Cost Increase:</b>	<b>135,437,813</b>	<b>Cnd\$</b>
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Union's M12 rate from Dawn to Parkway (1) 0.091 \$/GJ

<b>Additional transport cost to GMI from Dawn to Parkway</b>	<b>8,216,561</b>	<b>Cnd\$</b>
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(1) M12 rate as provided in Union's Evidence in Schedule 10-6

<b>GMI's Net Postion - excluding fuel (- is savings / + is cost)</b>	<b>26,458,472</b>	<b>Cnd\$</b>
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**Fuel differences:**

		GJ/d	Annual GJs	Fuel Ratio % (2)	Gas Price (Cnd\$/GJ)	Annual Fuel Charge
Empress	GMI EDA	232,048	84,697,520	2.07%	3.000	5,251,246
Empress	GMI NDA	15,327	5,594,355	1.65%	3.000	277,200
<b>Long Haul Total</b>				<b>90,291,875</b>		<b>5,528,447</b>
Dawn	GMI EDA	232,048	84,697,520	1.18%	4.500	4,482,510
Dawn	GMI NDA	15,327	5,594,355	1.08%	4.500	271,739
<b>Short Haul Total</b>				<b>90,291,875</b>		<b>4,754,249</b>
<b>GMI's Savings from fuel difference</b>						<b>(774,197)</b>

(2) TCPL 2012 Actual Annual Average fuel ratios. The fuel ratio from Dawn is the sum of Union's Dawn to Parkway fuel ratio + Mainline's Parkway to market fuel ratio

<b>GMI's Net Postion - including fuel (- is savings / + is cost)</b>	<b>25,684,274</b>	<b>Cnd\$</b>
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**Transportation Impact for Enbridge from Switching from Long Haul to Short Haul**

		GJ/d	Current FT Toll (\$/GJ/month) effective July 1, 2013	Annual Toll Charge
Empress	EGD CDA - FT	294,494	47.628	168,314,029
Empress	EGD CDA - Peaking (10 days only)	105,506	47.628	1,652,069
Empress	EGD CDA - Direct Purchase	157,768	47.628	90,170,148
Dawn	EGD CDA - Direct Purchase	42,232	7.165	3,630,869
<b>Long Haul Total</b>				<b>263,767,115</b>
Niagara	EGD Parkway CDA	200,000	4.664	11,194,608
<b>Short Haul Total</b>				<b>11,194,608</b>
<b>Enbridge's Savings from toll difference</b>				<b>(252,572,507)</b>

Empress Gas Price	3,000	Cnd\$/GJ
Dawn Gas Price:	4,500	Cnd\$/GJ
Niagara Gas Price:	4,540	Cnd\$/GJ (Dawn price plus 4¢ as provided in Enbridge evidence)
Empress versus Dawn gas price differential:	1,500	
Empress versus Niagara gas price differential:	1,540	Cnd\$/GJ

**Gas Supply Cost Differences:**

		GJ/d	Annual GJs	Gas Price (Cnd\$/GJ)	Annual Supply Cost	
Empress	EGD CDA - FT	294,494	107,490,310	3.000	322,470,930	100% LF
Empress	EGD CDA - Peaking (10 days)	105,506	1,055,060	3.000	3,165,180	10/365 days
Empress	EGD CDA - Direct Purchase	157,768	57,585,320	3.000	172,755,960	100% LF
Dawn	EGD CDA - Direct Purchase	42,232	15,414,680	4.500	69,366,060	100% LF
<b>Long Haul Total</b>			<b>181,545,370</b>		<b>567,758,130</b>	
Niagara	EGD Parkway CDA	200,000	73,000,000	4.540	331,420,000	100% LF
Dawn	Parkway	200,000	73,000,000	4.500	328,500,000	100% LF
Dawn	Parkway	200,000	35,545,370	4.500	159,946,650	48.69% LF
<b>Short Haul Total</b>			<b>181,545,370</b>		<b>819,866,650</b>	
<b>Enbridge's Annual Gas Supply Cost Increase</b>					<b>252,108,520</b>	

Union's M12 rate from Dawn to Parkway (1) 0.091 \$/GJ

<b>Additional transport cost to EGD for UnionM12 Dawn to Parkway @ 400,000 GJ/d</b>	<b>13,286,000</b>	<b>Cnd\$</b>
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(1) M12 rate as provided in Union's Evidence in Schedule 10-6

<b>Enbridge's Net Postion excluding fuel (- is savings / + is cost)</b>	<b>12,822,013</b>	<b>Cnd\$</b>
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**Fuel differences:**

		GJ/d	Annual GJs	Fuel Ratio % (2)	Gas Price (Cnd\$/GJ)	Annual Fuel Charge	
Empress	EGD CDA - FT	294,494	107,490,310	2.07%	3.000	6,664,399	100% LF
Empress	EGD CDA - Peaking (10 days)	105,506	1,055,060	2.07%	3.000	65,414	10/365 days
Empress	EGD CDA - Direct Purchase	157,768	57,585,320	2.07%	3.000	3,570,290	100% LF
Dawn	EGD CDA - Direct Purchase	42,232	15,414,680	0.21%	4.500	143,935	100% LF
<b>Long Haul Total</b>			<b>181,545,370</b>			<b>10,444,037</b>	
Niagara	EGD Parkway CDA	200,000	73,000,000	0.11%	4.540	356,277	100% LF
Dawn	Parkway	200,000	73,000,000	0.71%	4.500	2,344,121	100% LF
Dawn	Parkway	200,000	35,545,370	0.71%	4.500	1,141,353	48.69% LF
<b>Short Haul Total</b>			<b>181,545,370</b>			<b>3,841,750</b>	
<b>Enbridge's Savings from fuel difference</b>						<b>(6,602,287)</b>	

(2) TCPL 2012 Actual Annual Average fuel ratios. The fuel ratio from Dawn to Parkway is Union's M12 Dawn to Parkway Fuel Ratio

<b>Enbridge's Net Position - including fuel (- is savings / + is cost)</b>	<b>6,219,726</b>	<b>Cnd\$</b>
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**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #12**

**Reference:** TransCanada Supplemental Evidence Page 12, Figure 7.2

**Request:** a) Please explain what is meant by the term “Plantgate” and where this is located.

**Response:**

Plantgate is the Alberta Natural Gas Reference Price (ARP). The ARP is a monthly weighted average field price of all Alberta gas sales, as determined by the Alberta Department of Energy through a survey of actual sales transactions. The price is used for royalty calculation purposes. It is located at the inlet of connecting natural gas transmission systems such as the NGTL system.

**TransCanada PipeLines Limited Response to  
Union Gas Limited Interrogatory #13**

**Reference:** TransCanada Supplemental Evidence Page 13, Lines 11-14

**Request:**

- a) Please provide the cost of production (per GJ), the 2025 forecast production volume (BCF/d) and the cost of transportation to Empress from the production basin (per GJ/d) for each of the following shales:
  - i) Montney
  - ii) Duvernay
  - iii) Horn River
  - iv) Liard
  - v) Cordova shales.

**Response:**

a) i) Montney

Based on publically available sources, Montney costs range from \$0.20 to \$5.40/mcf. The wide range reflects the variability in drilling locations, number of completion stages and hydrocarbon liquid yields.

ii) Duvernay

Due to the immaturity of the Duvernay, TransCanada expects that cost information will be difficult to obtain at this early stage. However, supply costs as low as \$0.80/mcf have been reported. This low cost obviously reflect high hydrocarbon liquid yields.

iii) Horn River

Please refer to NGTL's response to NEB Information Request 3.1 (b) in proceeding GH-001-2012 where NGTL provides a supply cost assessment for Horn River.

iv) Liard

Liard is in very early stages of development. In the Globe and Mail June 14, 2012, Apache estimates the cost of production from its high-production Liard wells at \$2.57/mcf, including a 12-per-cent return on investment.

v) Cordova

Cordova costs are expected to be similar to Horn River.

Please see response to EGD 5(b) for forecasted production volumes.