Filed: 2013-06-07
EB-2012-0451/EB-2012-0433/EB-2013-0074
Exhibit I.A1.UGL.FRPO.22

UNION GAS LIMITED

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

Ref: EB-2013-0074 Schedule B, paragraph 6

Preamble: Union's evidence states: "By building the Project, Union is pro-actively addressing the impacts of future turn back. Union will be better positioned to re-purpose or re-sell turn back capacity provided market opportunities exist. The ability to re-purpose or re-sell turn back capacity would help mitigate future rate risk for Union's customers"

Please provide schematic diagrams showing the before and after impact of the Brantford to Kirkwall loop providing:

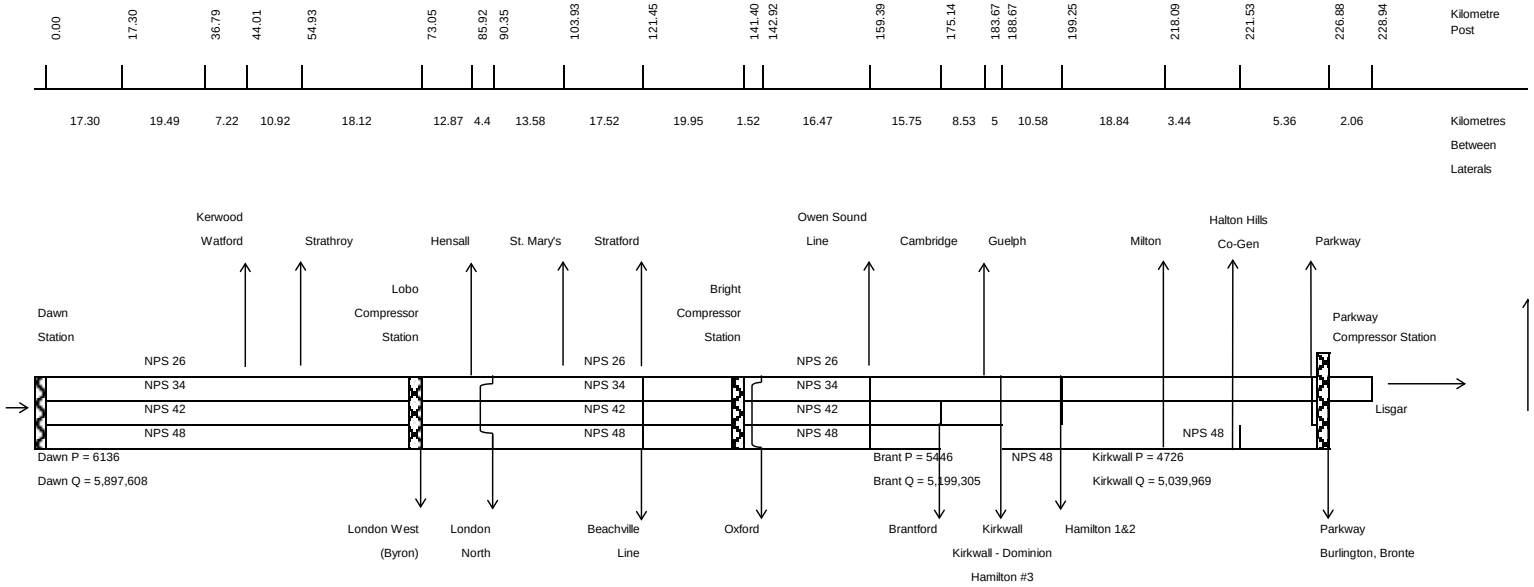
a) Design day pressures and throughputs at key nodes in the system:

   i. Dawn
   ii. Lobo
   iii. Bright
   iv. Brantford
   v. Kirkwall
   vi. Parkway

Response:

a) Please see Attachments 1 and 2.

DAWN to PARKWAY SYSTEM



Design Day Demands

	Southern Ontario	(GJ/d)
	Forest, Watford	6943
	Strathroy	7716
	London West	110641
U	Hensall	28569
N	London North	95825
I	St. Mary's	6384
O	Stratford	35714
N	Beachville	51808
	Oxford Line	42634
M	Owen Sound Line	233987
A	Cambridge	69021
R	Brantford	97294
K	Kirkwall - Dominion	81571
E	Guelph	80392
T	Hamilton 3	59699
S	Hamilton 1&2	254837
	Milton	71134
	Halton Hills	139754
	Parkway (Greenbelt)	35050
	Burlington, Bronte	137951
	Total Southern Ontario	1,646,924
	North and Eastern Ontario	332,744
	Kirkwall	354,023
	Parkway TCPL	3,581,727
M	Parkway Cons/Lisgar	1,238,085
1	**Total M12**	5,173,835
2	**Total Design Day Demands**	**7,153,503**

System Capacity

	(GJ/d)
Total System Capacity	**6,832,262**
(Including Firm Service Receipts of 638,626 GJ/d)	
Total Requirements	**7,153,503**
Total (Shortfall) Surplus	**-321,241**
Union Markets	
M12 Transportation	
Kirkwall	
Lisgar, Parkway	-321,241

WINTER DESIGN DAY
DAWN-PARKWAY SYSTEM
WINTER 2015/16
without Brantford to Kirkwall

Compressor Stations Operating Conditions at Peak Hour

STATION	LOBO	BRIGHT	PARKWAY
Power Available (MW)	36.8	91.9	87.9
Power Required (MW)	36.8	91.9	75.2
Pressure			
Suction (kPa)	4,477	3,806	3,511
Discharge (kPa)	5,252	5,922	6,453
Compression Ratio	1.17	1.56	1.84
Flow (GJ/d)	5,948,940	5,815,267	3,091,417
Daily Fuel (GJ/d)	11,513	23,421	15,821

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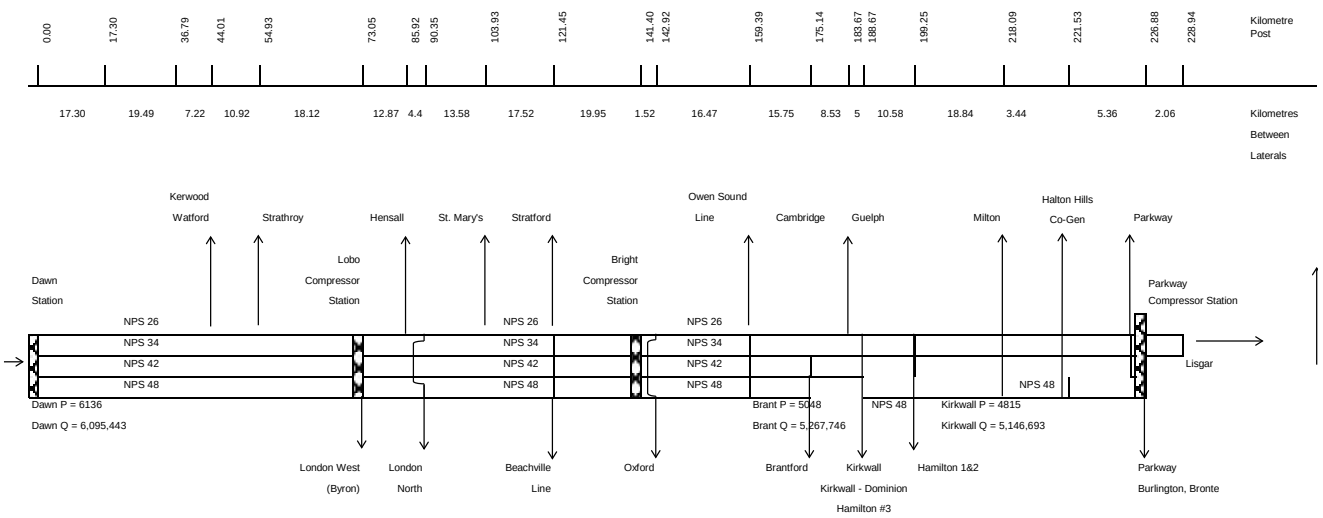
EB-2012-0451/EB-2012-0433/EB-2013-0074
Exhibit I.A1.UGL.FRPO.22
Attachment 2

DAWN to PARKWAY SYSTEM



Design Day Demands

	Southern Ontario	(GJ/d)
	Forest, Watford	6943
	Strathroy	7716
	London West	110641
U	Hensall	28569
N	London North	95825
I	St. Mary's	6384
O	Stratford	35714
N	Beachville	51808
	Oxford Line	42634
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	Parkway (Greenbelt)	35050
	Burlington, Bronte	137951
	Total Southern Ontario	1,646,924
	North and Eastern Ontario	332,744
	Kirkwall	354,023
	Parkway TCPL	3,581,727
M	Parkway Cons/Lisgar	1,238,085
1	**Total M12**	5,173,835
2	**Total Design Day Demands**	**7,153,503**

System Capacity

	(GJ/d)
Total System Capacity	**7,029,940**
(Including Firm Service Receipts of 638,626 GJ/d)	
Total Requirements	**7,153,503**
Total (Shortfall) Surplus	**-123,563**
Union Markets	
M12 Transportation	
Kirkwall	
Lisgar, Parkway	-123,563

Compressor Stations Operating Conditions at Peak Hour

STATION	LOBO	BRIGHT	PARKWAY
Power Available (MW)	36.8	91.9	87.9
Power Required (MW)	36.8	91.9	75.0
Pressure			
Suction (kPa)	4,488	3,653	3,513
Discharge (kPa)	5,229	5,616	6,453
Compression Ratio	1.17	1.54	1.84
Flow (GJ/d)	6,077,691	5,783,356	3,290,020
Daily Fuel (GJ/d)	11,513	23,538	17,288

WINTER DESIGN DAY
DAWN-PARKWAY SYSTEM
WINTER 2015/16
Brantford to Kirkwall

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Ref: EB-2013-0074, Section 8 – Proposed Facilities, Page 5 of 10, Figure 8-2

Preamble: Union has noted that it has experienced significant turn back of capacity since 2011.

Figure 8-2

	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016
in-franchise Demand Change	35,632	-33,258	-9,089	-1,711	70,157
ex-franchise Growth	211,548	386,819	0	8,100	657,784
ex-franchise Parkway Turn back	0	0	-75,067	0	-22,000
ex-franchise Kirkwall Turn back	-317,000	-375,188	-186,564	-37,262	-195,532
Total Demand Change	**-69,820**	**-21,627**	**-270,720**	**-30,873**	**510,409**

a) Please discuss the main drivers for the large increase in in-franchise and ex-franchise growth in 2015-16.

b) Please discuss the causes or factors contributing to the significant turn back of capacity for both the ex-franchise Parkway and ex-franchise Kirkwall.

c) Please discuss if Union expects to continue to witness significant turn back capacities in the future.

Response:

a) The large growth in Dawn-Parkway pipeline capacity for in-franchise and ex-franchise customers in 2015-16 is primarily driven by Ontario and Québec LDCs seeking access to the liquidity, affordability and diversity of the Dawn Hub and access to new supply sources such as production from the Marcellus and Utica shale formations. The increase in Dawn-Parkway pipeline capacity demand results in Union, Gaz Métro and Enbridge reducing reliance on

Empress natural gas supply and long-haul pipeline transportation. This gas supply portfolio shift provides customers in Ontario and Québec with significant annual natural gas cost savings, estimated to range between $273 million and $308 million (Please see Exhibit I.A3.UGL.Staff.21).

b) Union has experienced significant turn back of Dawn-Kirkwall transportation capacity as a result of a combination of declining Alberta supply and the emergence of the Marcellus shale gas. U.S. Northeast customers that hold transportation capacity on pipelines downstream of Kirkwall in the U.S. have been able to access Marcellus and other supply on those pipelines at a lower landed cost than natural gas sourced from Empress. Overall this has resulted in turn back of Dawn-Kirkwall capacity of nearly 1.0 Bcf/d since 2011.

   To date, Union has not experienced significant turn back of capacity for ex-franchise Dawn-Parkway transportation capacity. In fact, as discussed above in response to part a) and as provided in EB-2013-0074, Section 7, demand for Dawn-Parkway transportation starting November 1, 2015 has increased. Union believes that there will be further demand for Dawn-Parkway System capacity in the future (Please see Exhibit I.A4.UGL.APPRO.11).

c) In EB-2011-0210, Union provided an analysis of the Dawn-Parkway System capacity at risk of turn back (Exhibit J.D-14-16-8, Attachment 2). This analysis has been updated in Table 1 below. Union does not control the timing and quantity of turn back as shippers assess their own capacity within the context of their own gas supply portfolios.

   Table 2 identifies turn back that Union included in the Dawn-Parkway System modeling for the proposed projects (EB-2013-0074). The quantities identified in Table 2 are a subset of those included in Table 1. For Dawn-Kirkwall, Union is forecasting that all at risk quantities in Table 1 will be either turned back through reverse open season or at contract term expiry (Please see Exhibit I.A4.UGL.Energy Probe.21 a). For Dawn-Parkway, Union is forecasting turn back identified through reverse open season plus approximately 120 TJ/d of capacity from other shippers. Union does not forecast that the U.S. Northeast utilities will turn back Dawn-Parkway capacity before October 31, 2020.

Volumes Deemed At Risk

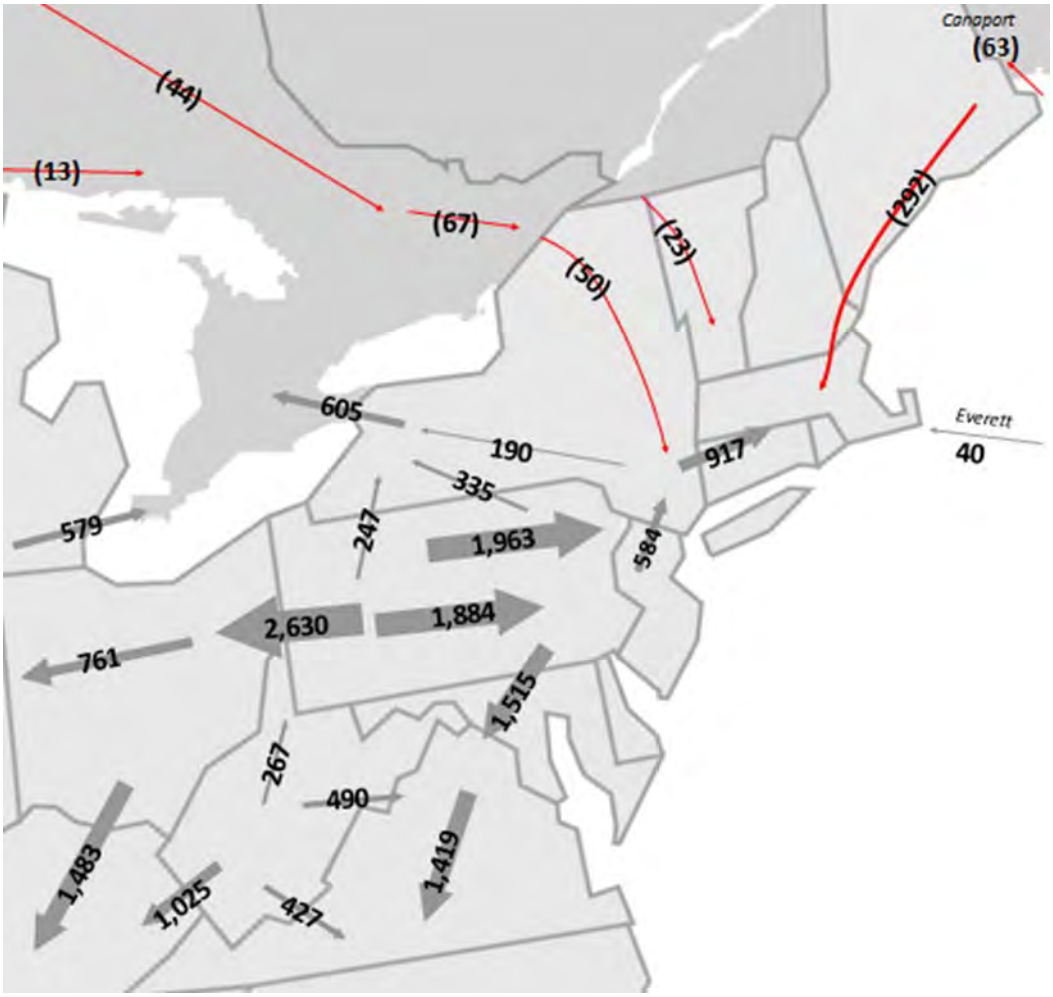
Path	Nov-15	Nov-16	Nov-17	Nov-18	Nov-19	Dec-20	Total
Dawn - Kirkwall	195,532	31,746	134,077	138,600	-	-	499,955
Dawn-Parkway	22,000	237,762	300,155	116,689	21,604	500	698,710
Total	217,532	269,508	434,232	255,289	21,604	500	1,198,665
Cumulative	217,532	487,040	921,272	1,176,561	1,198,165	1,198,665	

Forecasted Turnback - used for modelling

Path	Nov-15	Nov-16	Nov-17	Nov-18	Nov-19	Dec-20	Total
Dawn-Kirkwall	195,532	31,746	134,077	138,600		-	499,955
Dawn-Parkway	22,000	60,000	106,737	-	-	-	188,737
Total	217,532	91,746	240,814	138,600	-	-	688,692
Cumulative	217,532	309,278	550,092	688,692	688,692	688,692	

Exhibit 4-9: Impact of Marcellus Production Growth on Regional Flows (2012-2025)

Change in Average Annual Flows (MMcfd)



Source: ICF GMM® Oct 2012

4.5 Natural Gas Price Outlook

With growing gas demand and increased reliance on new sources of supply, the ICF Base Case forecasts higher gas prices from current levels. Nevertheless, the cost of producing shale gas moderates the price increase. In the ICF Base Case, gas prices in Alberta are expected to increase gradually, climbing from less than $2.50 per MMBtu in mid-2012 to about $4.50 per MMBtu in 2025 (in 2010 dollars) (see exhibit below). This gradual increase in gas prices supports development of new sources of supply, but prices are not so high as to discourage demand growth.

Gas prices throughout North America are expected to remain moderate; however, in some regions other market dynamics will influence regional prices. The price difference (or basis)

Filed: 2013-06-18
EB-2012-0451
EB-2012-0433
EB-2013-0074
Exhibit JT2.4
Page 30

UNION GAS LIMITED

Undertaking of Paul Rietdyk
to FRPO

To provide comparison of costs and values between 48 and 42 inch pipe between Brantford and Kirkwall.

If Union were to install an NPS42 pipeline between Kirkwall and Parkway, the entire length of 38 kilometers would need to be looped to provide capacity comparable to Brantford-Kirkwall. The estimated cost related to the 38 kilometers of NPS42 pipeline is over $240 million dollars, compared to the proposed Brantford-Kirkwall costs of $96 million. The cost per unit capacity of an NPS 42 pipeline between Kirkwall and Parkway is $960/GJ/d. The cost per unit capacity of the proposed Brantford to Kirkwall pipeline is $400/GJ/d. There is no change in the requirement for Parkway D in either scenario.