QUÉBEC NATURAL GAS MARKET ASSESSMENT

PREPARED FOR THE

RÉGIE DE L'ÉNERGIE DU QUÉBEC

AT THE REQUEST OF

TRANSCANADA PIPELINES LIMITED

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I. INTRODUCTION

A. Scope of the Report

Concentric Energy Advisors, Inc. ("Concentric") was retained by TransCanada PipeLines Limited ("TransCanada") to develop an independent assessment of the options available to serve future natural gas demand growth in Québec. The purpose of Concentric's assessment is to inform the Régie de l'énergie's ("Régie") efforts to develop a report for the Ministre de l'Énergie et des Ressouces naturelles (the "Minister") regarding:

- The forecast of Québec's needs in natural gas until 2030, for every type of consumer, and, more particularly, the industrial sector, under various economic scenarios;
- The options, in terms of supply and transport, of natural gas to Québec consumers that will be required to meet the anticipated demand for natural gas until 2030 and the impact of these options on the cost of natural gas for these consumers, notably in the context of TransCanada's proposed Energy East Pipeline Project being realized.[1]

This report describes the methodology, assumptions, and results associated with Concentric's assessment, and is based on publicly-available information. Concentric's report is organized into three major sections, consistent with the Minister's request to the Régie. The first major section addresses the expected demand for natural gas in Québec through 2030, the second major section addresses the supply and capacity options available to serve Québec's expected incremental natural gas demand, and the third section addresses natural gas prices. The final section contains conclusions.

B. Executive Summary

Based on the research and analysis described herein, Concentric believes that there will be multiple supply and transportation options available to fulfill Québec's expected incremental natural gas demand needs through 2030. Concentric reached this conclusion based on the research and analysis described herein.

- Historical natural gas demand in Quebec increased at a rate of 1.6% per year from 2001 through 2012, totaling 6.19 $10^9 m^3$/year (218.4 Bcf/year) or on average 17 $10^6 m^3$/d (598 MMcf/d) in 2012. On a forecasted basis, demand growth for natural gas in Quebec is expected to range from 1.6% to 2.2% per year through 2030 based on the NEB-CEF forecast, adjusted to include the IFFCO plant in 2018, and the Bécancour power plant returning to service in 2020.

1 Avis public, R-3900-2014-A-0002

- Since Quebec's current natural gas demand is being served, and since the net effect of the Energy East Project and the Eastern Mainline Project is that all firm commitments (including renewals) will continue to be served, it is only incremental demand beyond 2017 that will require additional natural gas supplies and capacity in the future.
- Québec's expected incremental natural gas capacity requirements of 0.29 $10^6m^3/d$ (10 MMcf/d), and even Québec's low price/high demand scenario incremental requirements of 2.22 $10^6m^3/d$ (78 MMcf/d) through 2030, are modest when compared to the abundant natural gas supplies available from a variety of options. Natural gas production in the Marcellus and Utica shale regions of the U.S. is expected to increase by over 280 $10^6m^3/d$ (roughly 10 Bcf/d) through 2030, which far exceeds Québec's requirements. Significant natural gas production in the Western Canadian Sedimentary Basin ("WCSB") would also be capable of satisfying future Québec demand. In addition, supplies from shale gas production in Québec and from existing and proposed LNG peak shaving facilities could also be used to supplement Québec's demand requirements.
- Sufficient pipeline transportation capacity is also projected to be available to serve future natural gas demand growth in Québec. Due to the large production in the Marcellus and Utica basins, there are a number of pipeline projects proposed to transport shale supplies into Québec via Dawn, Niagara, Chippawa, and Waddington. Combined, these projects that are in various stages of development represent approximately 112 $10^6m^3/d$ (4 Bcf/d) of capacity, and all are proposed to be in service prior to the end of 2017. This capacity represents only those projects that have been announced to date. When additional firm demand exists to support additional capacity in the future, additional projects will be proposed and built as pipelines are constantly looking to serve additional firm demand. In addition, existing capacity on the Mainline as well as new capacity additions that are being constructed in the near term (such as the Kings North and Eastern Mainline projects) will be available to transport WCSB supplies.
- Québec's incremental capacity requirements could be fulfilled by the potential expiration and non-renewal of existing firm capacity contracts on the Eastern Triangle by customers in the northeast U.S. that will have additional sources of gas to consider (e.g., Marcellus shale) when making future capacity decisions. Existing Eastern Triangle capacity held by customers in the northeast U.S. (over 14 $10^6m^3/d$, or 500 MMcf/d)[2] far exceeds Québec's low price/high demand capacity requirements of 2.22 $10^6m^3/d$ (78 MMcf/d) through 2030.
- It is generally accepted that Henry Hub natural gas prices will remain below $5.00 through 2020, and at or below $6.00 through 2030, which is lower than the prices experienced prior to the significant increase in shale production. Further, natural gas trading points in the Marcellus and Utica Shale production areas (and closer to Québec) are expected to trade below Henry Hub for the foreseeable future. Quebec is fortunate that these low cost natural gas supplies are located in close proximity and there are a number of proposed pipeline projects that plan to bring these low cost natural gas supplies to eastern Canada. As a result,

[2] NEB, RH-001-2014, Evidence of Alberta Northeast Gas, Limited, July 4, 2014, revised July 28, 2014, Attachment 1.

Quebec can expect modest natural gas prices in the future, when compared to the price of historical gas supplies.

- Because Québec's demand requirements in the near term will be met by existing firm capacity contracts and the Eastern Mainline Project, Québec will also have time before decisions about capacity requirements through 2030 will be required. Greater insight into uncertainties associated with future developments related to demand growth in Québec, proposed pipeline expansion and greenfield projects, shale gas production in Québec, and potential non-renewal of contracts in the Eastern Triangle will help inform these future decisions.

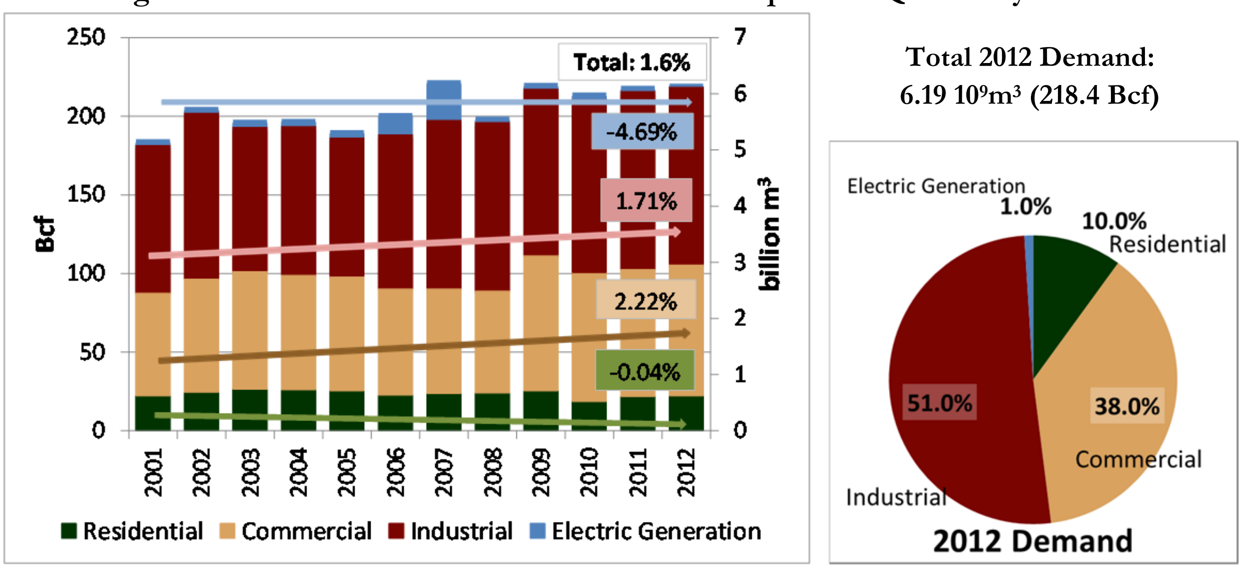
II. NATURAL GAS CAPACITY REQUIREMENTS IN QUÉBEC THROUGH 2030

A. Historical Natural Gas Demand in Québec

Québec's natural gas needs are primarily served through two utilities. Société en commandite Gaz Métropolitain ("Gaz Métro"), Québec's largest natural gas utility, serves approximately 190,000 customers, which are located mostly in and around Montréal, north along the St. Lawrence River, and around Québec City. In addition, Gazifère Inc. serves approximately 38,500 customers in the vicinity of Gatineau.

In November 2013, the National Energy Board ("NEB") published "Canada's Energy Future 2013: Energy Supply and Demand Projections to 2035" ("NEB-CEF"), which contains annual natural gas demand history and forecasts for each of the Canadian Provinces, including Québec. According to the NEB-CEF, and as illustrated in Figure 1, Québec consumed an average of 5.79 10^9m^3 (204 Bcf) of natural gas per year (on average 15.9 10^6m^3/d or 559 MMcf/d) over the 2001-2012 period, and consumption grew at approximately 1.6%[3] per year from 2001 to 2012.[4]

Figure 1: Historical Annual Natural Gas Consumption in Québec by Sector[5]



Also as shown in Figure 1, Québec's natural gas consumption is comprised of residential, commercial, industrial, and electric generation customers. Historically the industrial and commercial sectors have had the largest natural gas consumption in Québec (representing 51% and 38% of consumption in 2012, respectively), followed by the residential sector representing 10% and electric

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3 All growth herein represent compound annual growth rates.

4 To control for the effects of weather, 2001-2012 was used to calculate historical growth rates because these years had a similar number of heating degree days. Heating degree day source: http://quebec.weatherstats.ca/charts/hdd-25years.html, accessed September 5, 2014.

5 NEB-CEF 2013 Appendices, Table A2.6, Energy Demand: Reference Case, Quebec.

generation representing 1% of annual natural gas consumption in 2012. Over the period 2001 to 2012, industrial and commercial natural gas consumption had the highest growth rates, at 1.7% and 2.2% per year, respectively, while residential natural gas consumption was essentially flat, and natural gas consumption for electric generation declined.

B. Forecasted Natural Gas Demand in Québec

The NEB-CEF contains a reference case forecast, as well as high price (i.e., low demand) and low price (i.e., high demand) scenarios. The NEB-CEF reference case is based on the current macroeconomic outlook, a moderate view of energy prices (Henry Hub gas price assumption of $5.83/MMBtu and a WTI oil price of $108/barrel in 2030), and government policies and programs that were law or near-law at the time the report was prepared. It is considered the "most likely" outcome for Canada's energy future. The high price/low demand scenario utilizes a gas price assumption of $7.33/MMBtu and an oil price assumption of $138/barrel in 2030, while the low price/high demand scenario utilizes a gas price assumption of $4.33/MMBtu and an oil price assumption of $78/barrel in 2030.[6]

According to the NEB-CEF, total annual demand in Québec is expected to grow at approximately 0.63% per year from 2015-2030[7] under the reference case. The industrial and electric generation growth rates are expected to reverse historical trends: industrial demand is forecasted to decline at a rate of -0.41% per year, and electric generation demand is expected to grow at a rate of 4.41% per year.[8] Commercial annual demand is expected to grow at 0.56% per year, and residential annual demand is expected to decline at -0.51% per year through 2030. In 2013, the transportation sector started using natural gas as a new energy source, and the use of natural gas for transportation is expected to grow to approximately 300 $10^6 m^3$ (10.9 Bcf) by 2030.

The NEB-CEF high price/low demand scenario projects a total annual natural gas demand growth for Québec of 0.23% from 2015-2030, while the low price/high demand case has a total annual demand growth of 1.02% from 2015-2030, primarily due to changes in industrial sector growth in response to price changes. Figure 2 contains a summary of the NEB-CEF reference case annual natural gas demand forecasts for Québec. Figure 3 contains the NEB-CEF reference case forecast on an average day basis. Appendix A contains the NEB-CEF high price case results, and Appendix B contains the NEB-CEF low price case results.

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6 NEB-CEF, p. 1, NEB-CEF, Appendix A1.4.

7 The last fully historical year included in the NEB-CEF is 2012. Given that 2013 and most of 2014 has already occurred, Concentric used 2015 as the starting point to evaluate forecasted growth.

8 The large growth in electric generation demand for natural gas in the NEB-CEF likely represents the expectation that the suspended Bécancour gas-fired power plant will return to service.

Figure 2: NEB-CEF Forecast Annual Natural Gas Demand in Québec[9]

Billion m^3									
Reference Case – Québec									
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-30 CAGR**
Residential	0.64	0.64	0.64	0.64	0.64	0.64	0.62	0.59	-0.51%
Commercial	2.43	2.44	2.44	2.47	2.49	2.52	2.61	2.65	0.56%
Industrial	3.02	3.05	3.07	3.08	3.08	3.05	2.93	2.84	-0.41%
Transportation	0.02	0.03	0.04	0.06	0.07	0.09	0.19	0.31	19.58%
Electric Generation	0.41	0.69	0.70	0.70	0.72	0.73	0.77	0.79	4.41%
Total	6.53	6.85	6.90	6.94	7.00	7.03	7.12	7.17	0.63%

Bcf									
Reference Case - Québec									
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-30 CAGR**
Residential	22.56	22.65	22.65	22.65	22.56	22.47	21.82	20.88	-0.51%
Commercial	85.96	86.14	86.05	87.08	88.01	88.94	92.02	93.42	0.56%
Industrial	106.56	107.59	108.52	108.61	108.61	107.59	103.58	100.13	-0.41%
Transportation	0.75	1.12	1.49	1.96	2.52	3.26	6.71	10.91	19.58%
Electric Generation	14.64	24.33	24.80	24.89	25.36	25.82	27.22	27.97	4.41%
Total	230.46	241.84	243.51	245.19	247.06	248.08	251.35	253.30	0.63%

Figure 3: NEB-CEF Forecast Average Day Natural Gas Demand in Québec[10]

Million m^3 /day									
Reference Case – Québec									
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-30 CAGR**
Residential	1.75	1.76	1.76	1.76	1.75	1.74	1.69	1.62	-0.51%
Commercial	6.67	6.68	6.68	6.76	6.83	6.90	7.14	7.25	0.56%
Industrial	8.27	8.35	8.42	8.43	8.43	8.35	8.04	7.77	-0.41%
Transportation	0.06	0.09	0.12	0.15	0.20	0.25	0.52	0.85	19.58%
Electric Generation	1.14	1.89	1.92	1.93	1.97	2.00	2.11	2.17	4.41%
Total	17.88	18.76	18.89	19.02	19.17	19.25	19.50	19.65	0.63%

MMcf/day									
Reference Case - Québec									
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-30 CAGR**
Residential	61.81	62.07	62.07	62.07	61.81	61.56	59.77	57.21	-0.51%
Commercial	235.50	236.01	235.75	238.56	241.12	243.67	252.10	255.93	0.56%
Industrial	291.95	294.76	297.31	297.57	297.57	294.76	283.77	274.32	-0.41%
Transportation	2.04	3.07	4.09	5.36	6.90	8.94	18.39	29.88	19.58%
Electric Generation	40.10	66.67	67.94	68.20	69.47	70.75	74.58	76.63	4.41%
Total	631.40	662.56	667.16	671.76	676.87	679.68	688.62	693.98	0.63%

9 NEB-CEF 2013 Appendices, Table A2.6, Energy Demand: Reference Case, Quebec.

10 Figure 2 annual forecast converted to average day forecast by dividing by 365.

A new fertilizer production plant owned by Indian Farmers Fertilizer Cooperative Limited ("IFFCO") is planned to come online in Québec in 2018 and would represents a significant increase to natural gas demand. The plant would be located at the Bécancour port and industrial park and would produce 1.3 to 1.6 million metric tonnes per year of granular and liquid urea. The IFFCO plant is expected to have gas demand of approximately 2.27 $10^6 m^3/d$ (80 MMcf/d).[11] In January 2013, IFFCO acquired the necessary land, and in March 2014, the Government of Québec authorized IFFCO to proceed with the construction of the plant.[12] Since it does not appear that the NEB-CEF forecast includes demand for the IFFCO plant, Concentric adjusted the NEB-CEF forecast upward by 2.27 $10^6 m^3/d$ (80 MMcf/d) starting in 2018, through 2030 to account for the IFFCO plant demand.

As shown in Figures 2 and 3, electric generation demand for natural gas is expected to grow at a rate of 4.41% per year from 2015-2030 according to the reference case NEB-CEF forecast. This growth is due to the expectation that the suspended gas-fired power plant at Bécancour will return to service in the early years of the forecast. Annually, Hydro-Québec Distribution decides whether to suspend the Bécancour power plant for another year, or return it to service. In contrast to the NEB-CEF, the current expectation of the Northeast Power Coordinating Council is that the plant will remain suspended through the end of 2020.[13] As a result, Concentric replaced the NEB-CEF electric generation forecast demand for natural gas with a revised forecast. Specifically, Concentric assumed that the Bécancour plant will remain suspended until 2020, and until then gas demand for electric generation will be consistent with the historical minimal levels of gas use when Bécancour was suspended (i.e., the NEB-CEF average of 2008-2012). Starting in 2020, Concentric assumed that Bécancour returns to service and operates at levels corresponding to its firm contracted demand of 2.70 $10^6 m^3/d$ (95 MMcf/d).[14,15]

Figures 4 and 5 contain the annual and average day forecasts, including the adjustments for IFFCO and the electric generation forecast (i.e., the Bécancour power plant). As shown in these figures, the reference case demand forecast, adjusted for IFFCO and the Bécancour power plant, has an annual growth rate of 1.87%, which is approximately three times the growth rate contained in the NEB-CEF without adjustments.

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11 Indian Fertilizer Co-Op Seeking Global Tie to U.S. Shale Gas via Québec & St. Lawrence Seaway, April 21, 2014, Natural Gas Intelligence; IFFCO Canada Project Update, News Release, September 17, 2014.

12 The Conseil des ministers adopted the decree approving the IFFCO project on March 26, 2014 published in the Gazette officielle du Québec on April 16, 2014. Proposed IFFCO Canada fertilizer plant at Bécancour - Government of Québec formally endorses project, April 16, 2014.

13 Northeast Power Coordinating Council 2013 Long Range Adequacy Overview, Approved by the RCC, Conducted by the NPCC CP-8 Working Group, February 26, 2014, p. 74.

14 TransCanada, Contract Demand Energy (CDE) Report – Mainline, As of: September 5, 2014.

15 While the expectations for the timing of the Bécancour plant differ, the important point to note is that this plant represents a potential gas demand; the specific year this plant returns to service is less important for the purpose of this analysis.

Figure 4: Forecast Annual Natural Gas Demand in Québec (Adjusted NEB-CEF)[16]

Billion m³									
Reference Case – Québec									
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-30 CAGR**
Residential	0.64	0.64	0.64	0.64	0.64	0.64	0.62	0.59	-0.51%
Commercial	2.43	2.44	2.44	2.47	2.49	2.52	2.61	2.65	0.56%
Industrial	3.02	3.05	3.07	3.08	3.08	3.05	2.93	2.84	-0.41%
Transportation	0.02	0.03	0.04	0.06	0.07	0.09	0.19	0.31	19.58%
Electric Generation	0.10	0.10	0.10	0.10	0.10	0.98	0.98	0.98	16.78%
IFFCO	0.00	0.00	0.00	0.83	0.83	0.83	0.83	0.83	*NA*
Total	6.21	6.26	6.29	7.16	7.20	8.11	8.16	8.19	1.87%
Bcf									
Reference Case - Québec									
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-30 CAGR**
Residential	22.56	22.65	22.65	22.65	22.56	22.47	21.82	20.88	-0.51%
Commercial	85.96	86.14	86.05	87.08	88.01	88.94	92.02	93.42	0.56%
Industrial	106.56	107.59	108.52	108.61	108.61	107.59	103.58	100.13	-0.41%
Transportation	0.75	1.12	1.49	1.96	2.52	3.26	6.71	10.91	19.58%
Electric Generation	3.39	3.39	3.39	3.39	3.39	34.76	34.76	34.76	16.78%
IFFCO	0.00	0.00	0.00	29.20	29.20	29.20	29.20	29.20	*NA*
Total	219.22	220.90	222.11	252.89	254.29	286.22	288.08	289.30	1.87%

Figure 5: Forecast Average Day Natural Gas Demand in Québec (Adjusted NEB-CEF)[17]

Million m³ /day									
Reference Case – Québec									
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-30 CAGR**
Residential	1.75	1.76	1.76	1.76	1.75	1.74	1.69	1.62	-0.51%
Commercial	6.67	6.68	6.68	6.76	6.83	6.90	7.14	7.25	0.56%
Industrial	8.27	8.35	8.42	8.43	8.43	8.35	8.04	7.77	-0.41%
Transportation	0.06	0.09	0.12	0.15	0.20	0.25	0.52	0.85	19.58%
Electric Generation	0.26	0.26	0.26	0.26	0.26	2.70	2.70	2.70	16.78%
IFFCO	-	-	-	2.27	2.27	2.27	2.27	2.27	*NA*
Total	17.01	17.14	17.23	19.62	19.73	22.21	22.35	22.45	1.87%
MMcf/day									
Reference Case - Québec									
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-30 CAGR**
Residential	61.81	62.07	62.07	62.07	61.81	61.56	59.77	57.21	-0.51%
Commercial	235.50	236.01	235.75	238.56	241.12	243.67	252.10	255.93	0.56%
Industrial	291.95	294.76	297.31	297.57	297.57	294.76	283.77	274.32	-0.41%
Transportation	2.04	3.07	4.09	5.36	6.90	8.94	18.39	29.88	19.58%
Electric Generation	9.30	9.30	9.30	9.30	9.30	95.24	95.24	95.24	16.78%
IFFCO	-	-	-	80.00	80.00	80.00	80.00	80.00	*NA*
Total	600.60	605.20	608.52	692.86	696.69	784.16	789.27	792.59	1.87%

16 NEB-CEF 2013 Appendices, Table A2.6, Energy Demand: Reference Case, Quebec.

17 Figure 4 annual forecast converted to average day forecast by dividing by 365.

C. Forecasted Natural Gas Capacity Requirements in Québec

To determine the forecasted natural gas capacity requirements in Québec, Concentric used the average day demand forecast discussed above to develop a design day demand forecast.[18] Natural gas pipeline capacity is typically constructed to meet firm contractual demand. Forecasted design day demand is used to assess demand requirements on a day of extremely cold weather conditions. Typically, LDCs demonstrate that they have a supply and capacity portfolio that can serve firm demand on a design day (as well as other weather scenarios) using a combination of pipeline capacity, storage, LNG regasification, and on-system delivered supplies. Therefore, for the purposes of this analysis, Concentric relies upon firm design day demand forecasts as a proxy for future firm contractual demands.[19]

Concentric prepared an analysis of the projected design day natural gas demand in Québec through 2030 to inform the necessary firm natural gas capacity requirements in the future. As Québec is winter peaking (*i.e.*, winter load is higher than summer load due to heating needs), the projected natural gas demand focused on winter design day demand. The NEB-CEF forecast does not include design day demand, therefore, design day demand for Québec was determined by developing multipliers to apply to average day demand to represent the increase in demand on a design day compared to average day. Because natural gas demand from electric generation and transportation is not typically winter peaking,[20] it was assumed that the design day demand is equal to average day demand (*i.e.*, the winter design day multiplier for these sectors was 1.00). In addition, since it is expected that the IFFCO plant will run consistently throughout the year, it was assumed that the winter design day multiplier for IFFCO was also 1.00 (*i.e.*, design day demand is equal to average day demand).

Recent information from Gaz Métro[21] was used to estimate the design day multiplier to apply collectively to residential, commercial, and industrial load as Gaz Métro's customer base is representative of this collective group of customers. Gaz Métro's system wide design day and average day demand forecasts were converted into a design day multiplier (*i.e.*, the factor by which design day demand is larger than average day demand). According to Concentric's calculations, on

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18 The terms "design day" and "peak day" are often used in the industry interchangeably. For the purposes of this report, the term "design day" was used.

19 It should be noted that pipelines build capacity to match firm contracts, not to match forecasts of demand. For the purposes of this analysis, however, the firm design day demand forecast is being used as a proxy for future firm contractual requirements.

20 Electric generation and transportation demand for natural gas typically peaks in the summer, or is fairly constant year round.

21 Société en commandite Gaz Métro Cause tarifaire 2015, R-3879-2014, Original: 2014.06.26, Gaz Métro-7, Document 1, Annexe 14, Page 1 de 1.

average, Gaz Métro's collective design day demand forecast is approximately 2.03 times its average day demand forecast, as shown in Figure 6.[22]

Figure 6 – Residential, Commercial, and Industrial Design Day Demand Multiplier

Line No.		2015	2016	2017	2018	Average	Source/Calculation
1	Total Annual Demand ($10^9 m^3$)	5.814	6.014	6.174	6.815	6.204	Gaz Métro Annexe 14
2	Average Day Demand ($10^6 m^3/d$)	15.929	16.477	16.915	18.671	16.998	Line 1/365*1,000
3	Design Day Demand ($10^6 m^3/d$)	32.746	33.169	33.854	37.938	34.427	Gaz Métro Annexe 14
4	Design Day Multiplier	2.056	2.013	2.001	2.032	2.026	Line 3/ Line 2

As a result of this analysis, it was assumed that residential, commercial, and industrial demand in Québec has an aggregate design day multiplier of approximately 2.03 (*i.e.*, design day demand is 2.03 times higher than average day demand), and the less weather sensitive electric generation, transportation, and IFFCO plant has a design day multiplier of 1.00 (*i.e.*, design day demand is equal to average day demand).

The design day demand forecast for Québec through 2030 was determined by applying the appropriate design day multipliers to the sector-specific average day demand forecast shown in Figure 5 above. As shown in Figure 5, the expected average day demand for Québec is 17.01 $10^6 m^3/d$ (600 MMcf/d) in 2015, growing to 22.45 $10^6 m^3/d$ (793 MMcf/d) in 2030; however, as shown in Figure 7, design day natural gas demand in Québec is expected to be approximately 34.12 $10^6 m^3$ (1,205 MMcf/d) in 2015, growing to 39.51 $10^6 m^3$ (1,395 MMcf/d) in 2030.

22 It would be expected that the design day multiplier for the residential and commercial segments would be higher than the design day multiplier for the industrial segment; however, Gaz Metro's filing did not have separate design day forecasts for the residential, commercial and industrial segments, therefore one multiplier was developed to apply to all three segments collectively.

Figure 7 – Forecasted Design Day Demand in Québec

in Million m3 /day									
	2015	2016	2017	2018	2019	2020	2025	2030	2017-2030 Incremental Demand
Residential, Commercial, & Industrial	33.80	34.00	34.14	34.31	34.44	34.41	34.16	33.70	(0.44)
Transportation	0.06	0.09	0.12	0.15	0.20	0.25	0.52	0.85	0.73
Electric Generation	0.26	0.26	0.26	0.26	0.26	2.70	2.70	2.70	2.43
IFFCO	-	-	-	2.27	2.27	2.27	2.27	2.27	2.27
Total	34.12	34.35	34.51	37.00	37.17	39.63	39.65	39.51	4.99
Gaz Métro on-system supplies	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	-
Design Day Net of Gaz Métro on-system supplies	24.60	24.83	24.99	27.48	27.65	30.11	30.13	29.99	4.99
Net Design Day excluding Electric Gen. and IFFCO	24.34	24.57	24.73	24.94	25.12	25.15	25.17	25.02	0.29

in MMcf/day									
	2015	2016	2017	2018	2019	2020	2025	2030	2017-2030 Incremental Demand
Residential, Commercial, & Industrial	1,194	1,201	1,205	1,212	1,216	1,215	1,207	1,190	(15.52)
Transportation	2.04	3.07	4.09	5.36	6.90	8.94	18.39	29.88	25.80
Electric Generation	9.30	9.30	9.30	9.30	9.30	95.24	95.24	95.24	85.94
IFFCO	-	-	-	80.00	80.00	80.00	80.00	80.00	80.00
Total	1,204.91	1,213.17	1,218.85	1,306.34	1,312.52	1,399.47	1,400.13	1,395.07	176.22
Gaz Métro on-system supplies	336.19	336.19	336.19	336.19	336.19	336.19	336.19	336.19	-
Design Day Net of Gaz Métro on-system supplies	868.72	876.98	882.66	970.15	976.33	1,063.28	1,063.94	1,058.88	176.22
Net Design Day excluding Electric Gen. and IFFCO	859.42	867.68	873.36	880.85	887.04	888.05	888.70	883.64	10.28

In addition to long haul pipeline capacity, LDCs typically use a combination of other on-system resources, including storage, liquefied natural gas ("LNG" also known as liquefaction, storage, regasification, "LSR"), propane, and demand side management/curtailments, to meet design day requirements. Gaz Métro has a number of on-system supplies available for meeting design day demand, including on-system underground storage at Point-du-Lac and Saint-Flavien, regasification from its LSR plant in Montréal, biogas, and third party contracts for receipts at Iroquois.[23] In addition, it is Concentric's understanding that Gaz Métro can curtail certain customers during extremely cold conditions. According to Gaz Métro's 2015 Tariff filing, Gaz Métro has 9.52 $10^6 m^3/d$ (336 MMcf/d) of on-system resources. Subtracting the 9.52 $10^6 m^3/d$ (336 MMcf/d) from the design day demand forecast produces a design day demand forecast net of on-system resources.

23 Receipt quantities from Iroquois are downstream of the constrained portions of TransCanada's Mainline and therefore have similar positive contribution as on-system supplies towards the ability to meet overall demand in Québec.

To determine the amount of capacity necessary to serve future firm design day demand in Québec, it is assumed that there is a balance between firm capacity demand and firm pipeline capacity availability through 2017. In other words, this analysis assumes that the firm design day requirements in Québec through 2017 are supported by current firm capacity and supply arrangements, as well as projected firm capacity currently contemplated pursuant to recent open seasons on the TransCanada system, as there have been no curtailments of firm customers on the Mainline, and utilities typically commit to firm contracts to serve firm customers several years in advance.

TransCanada has announced its intention to convert a portion of its existing natural gas pipeline to oil service, known as the Energy East Project. The vast majority of the natural gas pipeline that will be converted to oil service as part of the Energy East Project is uncontracted. As part of the Energy East Project, TransCanada also plans to convert a portion of the North Bay Shortcut to oil service, thereby reducing natural gas capacity in the Eastern Triangle.[24] However, TransCanada also plans to complete the Eastern Mainline Project to replace a portion of the capacity reduction in the Eastern Triangle associated with the transfer of facilities to the Energy East Project.[25] It is Concentric's understanding that the net capacity reduction associated with TransCanada's proposed transfer of a portion of the North Bay Shortcut to oil service and the concurrent Eastern Mainline Project will not impact long-term firm contracts because the Eastern Mainline Project will be sized to serve all existing firm contracts (including renewals). In addition, all current and potential customers were provided an opportunity to sign up for additional firm capacity to fulfill future demand requirements during TransCanada's November 2013-January 2014 open season (i.e., a period during which any interested party can indicate interest in contracting for long-term firm pipeline capacity on a proposed project). The Eastern Mainline Project will also be sized to accommodate all firm contracts that resulted from the open season. Pipelines are obligated to meet all firm contractual requirements, therefore it is assumed that all existing and new firm contract needs will be met. Further, for the purposes of this analysis, it is assumed that firm capacity arrangements are equal to firm design day requirements through 2017. Therefore, the focus is determining the need for incremental firm capacity to meet firm design day growth from 2017 through 2030.

Both IFFCO[26] and the gas-fired power plant at Bécancour have arranged for firm pipeline capacity to fulfill their demand requirements. Design day demand associated with these loads is already

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24 The Eastern Triangle is the portion of the TransCanada pipeline system that connects the North Bay area of Ontario with the southern Ontario area and the Iroquois/Ottawa/Montréal area. The North Bay Shortcut is the portion of the Eastern Triangle that starts in North Bay and extends eastward to Iroquois.

25 The Eastern Mainline Project will expand capacity on the southern leg of the Eastern Triangle, i.,e. the portion from the Toronto area to the Iroquois area.

26 In 2014, IFFCO Canada bid for pipeline capacity through TransCanada's open season process, and also made an agreement with Gaz Metro for transportation and distribution capacity. Therefore, IFFCO has already acquired the required supply of natural gas and can be excluded from the expected need for future pipeline capacity to serve

incorporated in the design of the Eastern Mainline Project and does not represent incremental capacity requirements. Therefore, as shown in Figure 7, the design day demand growth of 0.29 $10^6m^3/d$ (10 MMcf/d) from 2017 to 2030, excluding IFFCO and electric generation, is a proxy for the potential incremental capacity needs of Québec through 2030, based on the NEB-CEF reference case demand. The high price and low price cases produce a range of design day growth (excluding IFFCO and the Bécancour power plant), and therefore incremental gas capacity needs for Québec, that range from -1.22 to 2.22 $10^6m^3/d$ (-46 to 78 MMcf/d) from 2017 to 2030.[27] Therefore, 2.22 $10^6m^3/d$ (78 MMcf/d) is a conservative estimate of Québec's incremental capacity requirements through 2030, given that it reflects the NEB low price/high demand scenario.

demand in Québec. (Proposed IFFCO Canada fertilizer plant at Bécancour - Government of Québec formally endorses project, April 16, 2014; IFFCO Canada Project Update, News Release, September 17, 2014).

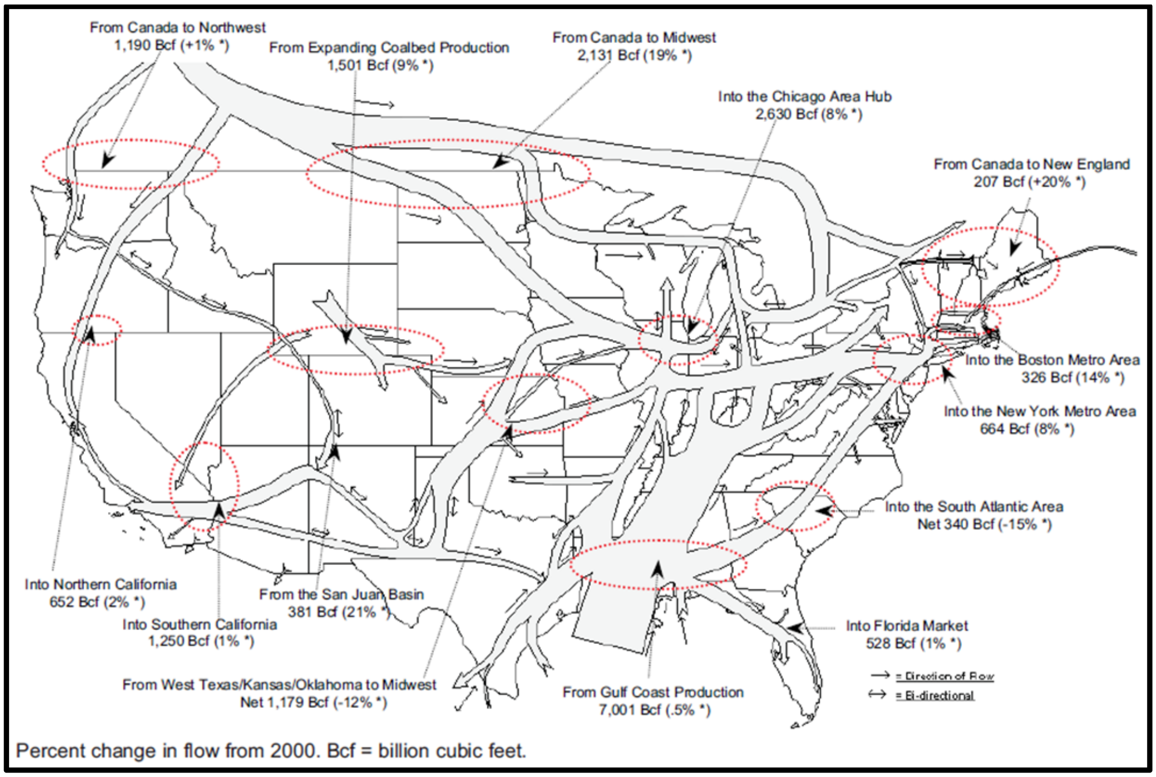
27 Calculations associated with the high price and low price scenarios are included in Appendix A and Appendix B.

III. SUPPLY OPTIONS TO SERVE NATURAL GAS DEMAND IN QUÉBEC

A. Marcellus/Utica Production

Historically, the natural gas markets in eastern Canada (*i.e.*, Québec and Ontario) and the northeastern U.S. predominantly have been sourced from distant production basins and delivered via long-haul pipelines. Québec and Ontario have traditionally received the majority of their gas from the Western Canadian Sedimentary Basin ("WCSB"), delivered using the TransCanada Mainline. The northeastern U.S. also has traditionally sourced much of its natural gas from the Gulf of Mexico and western Canada, with the gas sourced from the WCSB flowing through eastern Canada on the TransCanada Mainline to various export points for delivery into the U.S. Figure 8 provides an overview of the historical flow pattern of natural gas to and from eastern Canada.

Figure 8 – 2001 Major Natural Gas Pipeline Transportation Routes and Flow Levels[28]



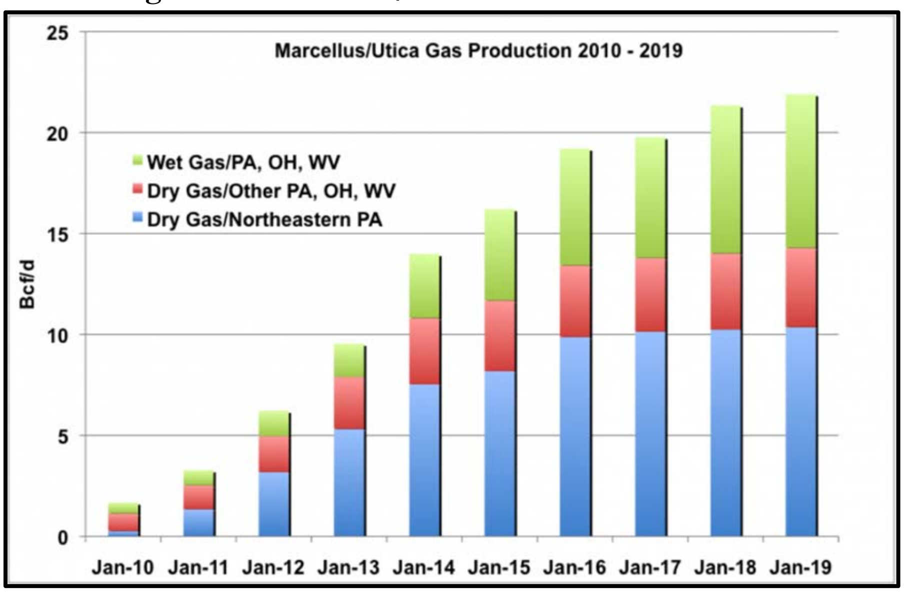
However, in the past decade, advances in drilling technologies have made the extraction of natural gas from shale deposits across North America more economic, adding substantial new natural gas production in both Canada and the U.S. and drastically changing the pattern of flows on the continent.

28 EIA, Natural Gas Annual 2001, p. 12.

The Marcellus Basin is the largest shale gas basin in North America, both in terms of proved reserves and production, with approximately 4.0 trillion cubic meters ("$10^{12}m^3$") or 141 trillion cubic feet ("Tcf") of reserves located in Pennsylvania, West Virginia, and New York.[29] Production in the Marcellus Basin has increased from effectively zero in 2008, to 56.7 10^6m^3/d (2 Bcf/d) in 2010, to currently greater than 453 10^6m^3/d (16 Bcf/d), which equates to approximately 20 percent of total U.S. production.[30] The impressive growth from the Marcellus continues to exceed industry projections—the U.S. Energy Information Administration has adjusted the forecast of dry gas production from the northeastern U.S. in its Annual Energy Outlook upward by more than 50% over the past two years—and that production is now expected to reach 623 10^6m^3/d (22 Bcf/d) by 2019.[31]

While a less mature shale gas play, the Utica Basin is also expected to produce substantial natural gas supplies in the northeastern U.S. The Utica Basin has estimated reserves of 0.45 $10^{12}m^3$ (16 Tcf).[32] Current production in the Utica Basin is approximately 42.5 10^6m^3/d (1.5 Bcf/d). Production from the combined Marcellus/Utica basins is projected to reach 850 10^6m^3/d (30 Bcf/d) by 2025.[33]

Figure 9 – Marcellus/Utica Production Forecast[34]



29 U.S. Energy Information Administration, 2012 Annual Energy Outlook.

30 U.S. Energy Information Administration, Drilling Productivity Report, September 2014; SNL Financial, "ICF Expert: Despite shale, LDCs, others hold tight to legacy Gulf contracts", September 9, 2014.

31 RBN Energy, "They Long to be Close to You – Moving Marcellus/Utica Natural Gas South and West", May 15, 2014.

32 U.S. Energy Information Administration, 2012 Annual Energy Outlook.

33 Platts Inside FERC, "Appalachian shales continue to boom; US gas prices to hover around $4/MMBtu, analysts say", April 28, 2014.

34 RBN Energy, "They Long to be Close to You – Moving Marcellus/Utica Natural Gas South and West", May 15, 2014.

Production growth from the Marcellus/Utica is currently outpacing the build-out of pipeline infrastructure to provide takeaway capacity for producers, which has placed downward pressure on natural gas prices in the production area. As shown in Figure 10, historical prices in the Marcellus/Utica production area have been comparable with prices at other major supply points in North America, and are currently lower than at other major supply points in Canada and the U.S.

Figure 10 – Historical and Future Prices at Major Supply Points[35]

Date	Marcellus/Utica Production Area			Other Major Supply Points		
	Dominion South	Leidy	TGP Z4 Marcellus*	Henry Hub	AECO	Dawn
Average Annual Historical Spot Prices (US$/MMBtu)						
2011	$ 4.14	$ 4.31	--	$ 4.00	$ 3.46	$ 4.39
2012	$ 2.78	$ 2.85	--	$ 2.76	$ 2.27	$ 3.08
2013	$ 3.52	$ 3.17	--	$ 3.73	$ 3.00	$ 4.06
2014 YTD	$ 3.75	$ 3.14	--	$ 4.64	$ 4.56	$ 6.81
Average Annual Forward Prices (US$/MMBtu)						
2015	$ 2.57	$ 2.26	$ 2.53	$ 3.91	$ 3.54	$ 4.11
2016	$ 2.85	$ 2.54	$ 2.81	$ 4.05	$ 3.57	$ 4.10
2017	$ 3.24	$ 2.92	$ 3.20	$ 4.20	$ 3.59	$ 4.13
2018	$ 3.51	$ 3.20	$ 3.47	$ 4.30	$ 3.68	$ 4.16
2019	$ 3.62	$ 3.30	$ 3.58	$ 4.40	$ 3.85	$ 4.29
2020	$ 3.78	$ 3.47	$ 3.74	$ 4.56	$ 4.14	$ 4.73

* SNL Financial only began reporting prices at the TGP Z4 Marcellus location on March 3, 2014.

Numerous pipeline projects in various stages of development have been proposed to provide additional takeaway capacity for Marcellus/Utica production and to alleviate the capacity constraints in these basins. In 2014, nearly 85 $10^6m^3/d$ (3 Bcf/d) of incremental pipeline capacity out of the Marcellus/Utica basins is expected to come online, with a multitude of additional, large-scale pipeline projects under development that are expected to be in-service in the next few years.[36] Despite this substantial increase in incremental pipeline capacity, forward markets indicate that prices for trading points within the Marcellus and Utica basins are projected to remain below $4.00/MMBtu through 2020. As shown in Figure 10, Marcellus/Utica gas is expected to trade at a significant discount to gas from other major supply points. The sustained low prices in the Marcellus/Utica producing region are a clear indication that the market believes the prolific production growth from these basins will continue to keep pace with this build-out of pipeline infrastructure.

35 SNL Financial. 2014 YTD is as of September 16, 2014. Forward prices are based on average over the trade dates September 2, 2014 to September 16, 2014.

36 Platts Gas Daily, "US production to jump 2.3 Bcf/d this year: Barclays", April 25, 2014.

Québec, and the rest of eastern Canada, is expected to continue to serve a portion of its existing gas demand from western Canada, but due to the abundance of low-cost natural gas being produced in the northeastern U.S., and its proximity to eastern Canada, the Marcellus/Utica basins will be attractive supply sources for incremental demand in eastern Canada going forward. In fact, in the Decision to allow Gaz Metro to source a significant amount of their gas from Dawn, as opposed to the WCSB, the Régie stated [unofficial translation]:

> *"The Régie also recognizes the fundamental logic in preferring a supply source that is close to the Gaz Métro territory rather than a supply that is 3,000 km away. […] The Régie finds that the solution of moving the supply structure to Dawn is advantageous because of its flexibility. It allows Gaz Métro and its clients to benefit from savings provided by the Northeastern US supply, while keeping the option to adjust if need be and buy at Empress, for example, if there is an advantage to do so."* [37]

This viewpoint is also common among industry stakeholders. In its April 2014 Canadian Pipeline Transportation System Energy Market Assessment, the NEB stated:

> *"Natural gas produced from the U.S. Rockies region and U.S. shale gas plays, such as the Marcellus, increasingly competes with Canadian supply delivered on TransCanada's Mainline into key markets such as Ontario, the U.S. Midwest and the U.S. Northeast. This new supply displaces gas which TransCanada's Mainline transports from the Western Canadian Sedimentary Basin (WCSB) to these markets."* [38]

In its application for the Brantford-Kirkwall/Parkway D Project, Union Gas justified the project in connection with access to shale supplies in the northeastern U.S., stating:

> *"...it will facilitate access to gas supplies from eastern U.S. sources (primarily the Marcellus and Utica shale) and will therefore increase security and diversity of supply for its in-franchise customers, particularly in the Union North area."* [39]

B. Shifting Flow Patterns and New Supply Options for Québec

The advent of shale gas production has significantly altered the traditional flow patterns of natural gas across North America. Whereas most markets in eastern Canada and the northeastern U.S. have traditionally been served by long-haul pipelines connected to a distant production areas (*e.g.*, WCSB, Gulf of Mexico), today most markets have access to more proximate regional production. Due to Marcellus and Utica production, the northeastern U.S.—once seen as a premium market—now has more gas than it can consume and is pushing gas into adjacent markets to the north, west, and south. As a result of the glut of Marcellus/Utica gas in the region, exports of Canadian gas to the

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[37] Régie, D-2012-175, R-3809-2012, *Décision finale sur le plan d'approvisionnement, le projet multipoints et la stratégie de déplacement de la structure d'approvisionnement d'Empress vers Dawn*, December 18, 2012, paragraphs 47, 49.

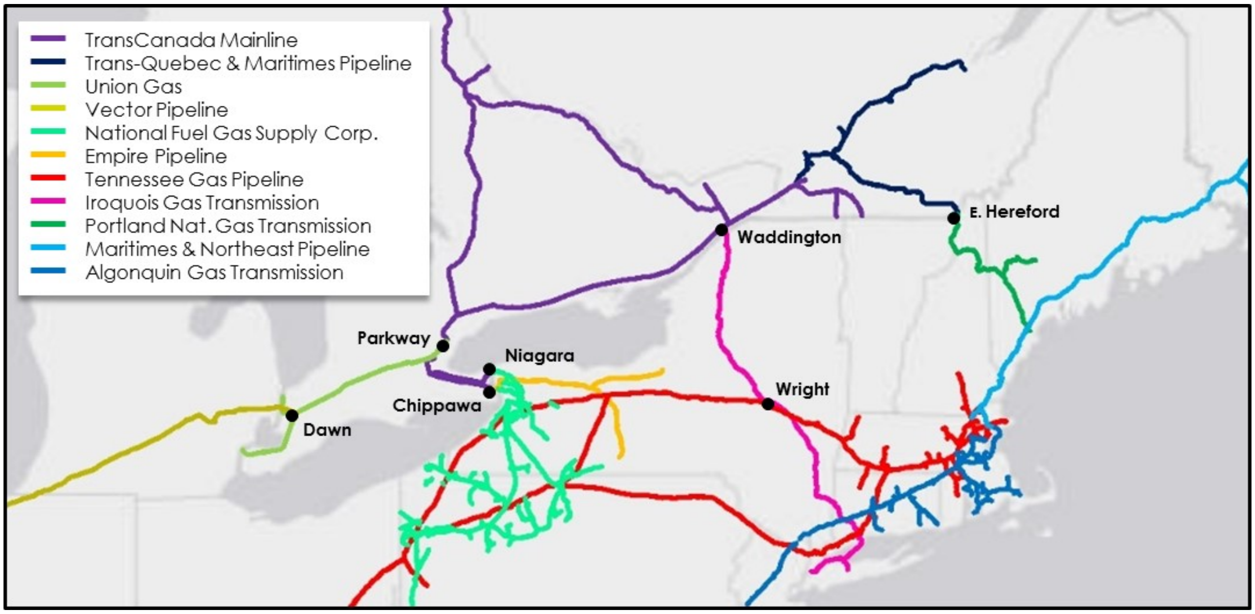
[38] NEB, Canadian Pipeline Transportation System Energy Market Assessment, April 2014, p. 8.

[39] Ontario Energy Board, EB-2013-0074, Decision and Order, January 30, 2014.

northeastern U.S. have declined markedly and, at certain locations, flows have reversed with Marcellus and Utica shale gas being imported into eastern Canada, a trend that is likely to continue as mounting production in the northeastern U.S. seeks new demand markets.

There are four main natural gas import/export locations connecting eastern Canada and the U.S.: (i) Dawn; (ii) Niagara/Chippawa; (iii) Waddington; and (iv) East Hereford. Figure 11 provides a map of these import/export locations in eastern Canada as well as the major pipelines serving the region.

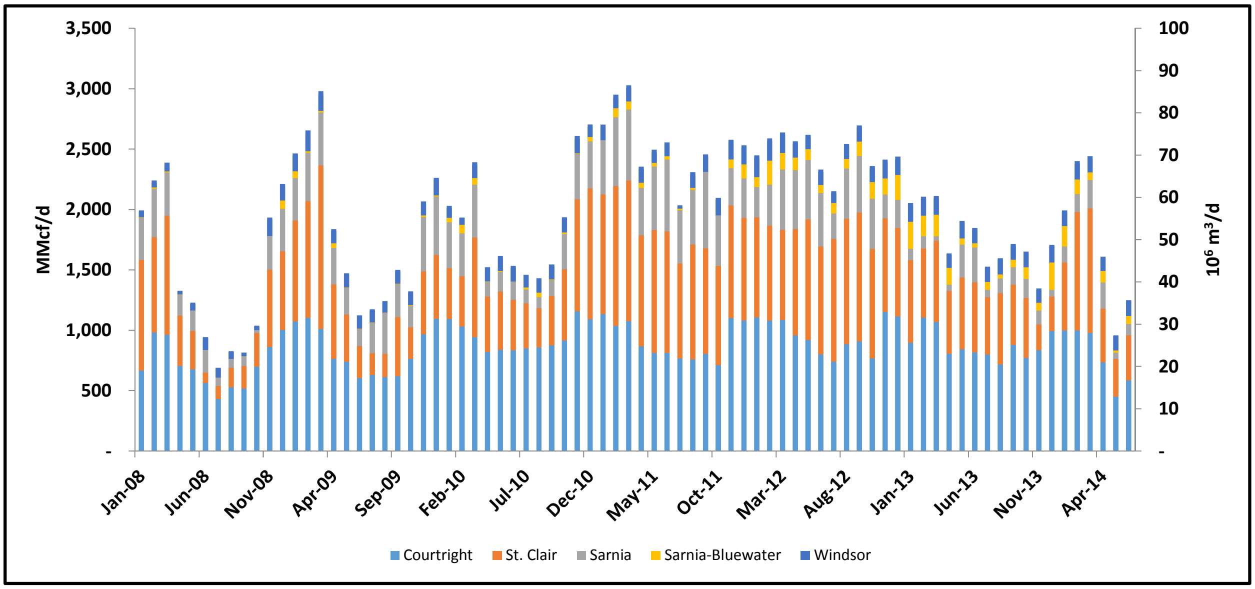
Figure 11 – Map of Export/Import Locations and Major Pipelines in Eastern Canada



Dawn—used herein as a general term to encompass St. Clair, Sarnia, and other interconnections of the Canadian and U.S. pipeline networks in the vicinity of the Dawn Hub—has traditionally seen the heaviest flows of gas at the border crossings to and from eastern Canada. The majority of these flows have been imports from various U.S. production basins, via a cluster of pipeline interconnections at the Canadian-U.S. border, to the large storage facilities operated by Union Gas and Enbridge at the Dawn Hub, with imports from the U.S. averaging more than 49.6 $10^6 m^3/d$ (1.75 Bcf/d) in 2013 as shown in Figure 12.[40] Shale gas production in the northeastern U.S. has not affected the direction of flows in southwestern Ontario; however, the quantity of gas imported at the location is expected to increase significantly as there are a number of pipeline projects under development that would deliver Marcellus and Utica gas to the Dawn Hub among other destinations, as will be discussed in Section III.C below.

40 National Energy Board, Natural Gas Imports and Exports, Monthly Summary by Port – Volumes.

Figure 12 – Historical Imports into Southeastern Ontario[41]

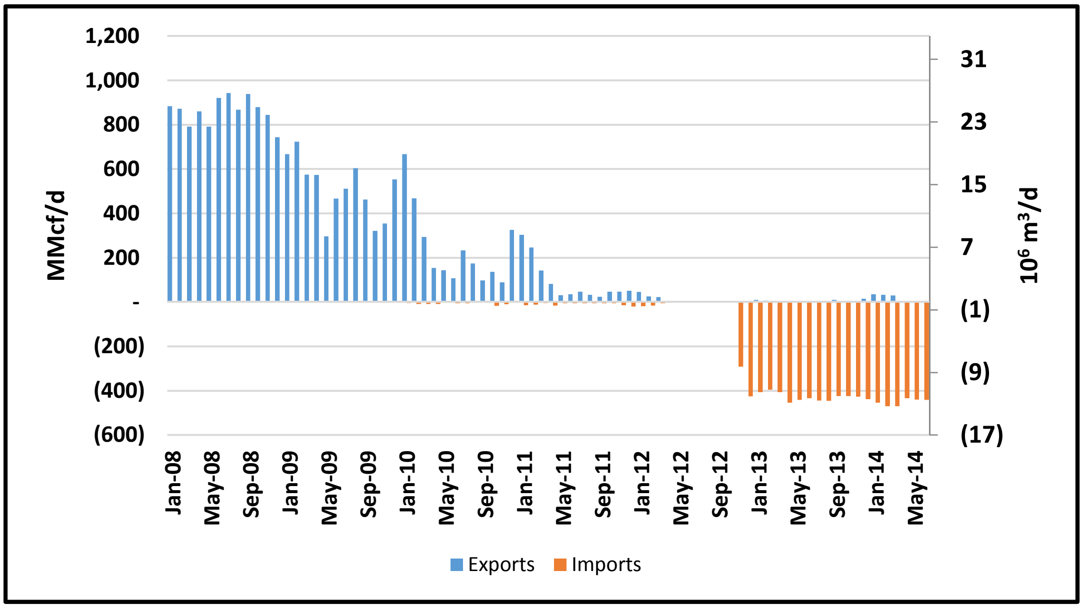


The other three border crossings connecting the eastern Canadian and U.S. gas markets have traditionally been used to export WCSB gas to markets in the northeastern U.S., but the scale of production from the Marcellus and Utica basins has already begun to alter flow patterns at these locations.

Niagara and Chippawa are located at the Canadian-U.S. border in eastern Ontario and connect the TransCanada Mainline to U.S. gas pipeline systems. Niagara, located near Niagara Falls, Ontario, is the interconnection between the TransCanada Mainline and the Tennessee Gas Pipeline ("Tennessee") system. Chippawa is the interconnection between the TransCanada Mainline and the Empire Pipeline ("Empire").

41 National Energy Board, Natural Gas Imports and Exports, Monthly Summary by Port – Volumes.

Figure 13 – Historical Flows at Niagara – Exports to the U.S. and Imports into Canada[42]

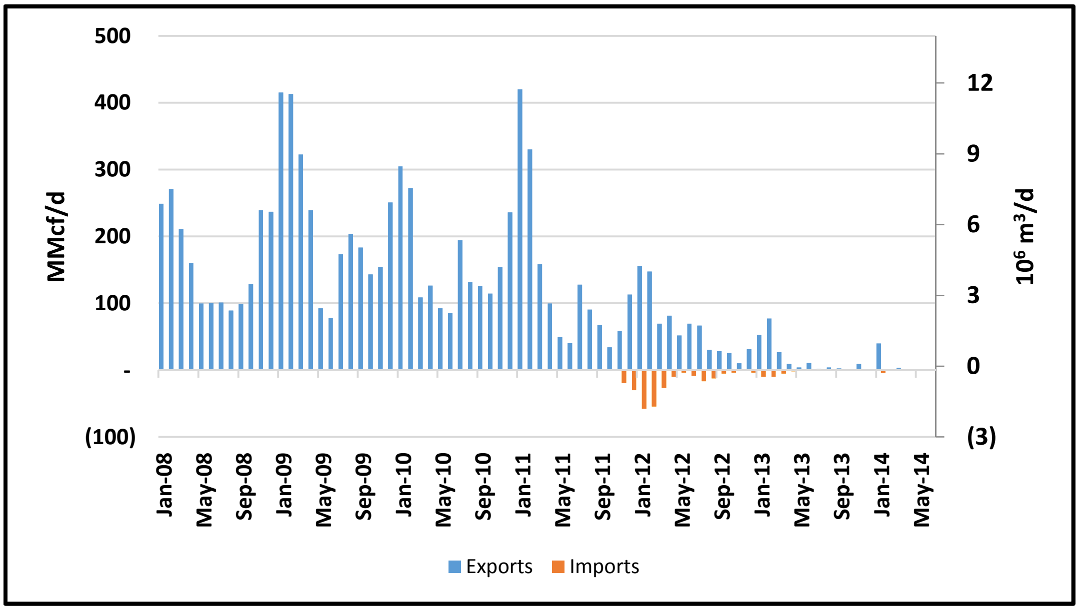


As shown in Figure 13, in 2008, prior to the development of the Marcellus/Utica shale, significant amounts of Canadian gas were exported to markets in the northeastern U.S. by way of Niagara, with exports averaging 24.4 $10^6m^3/d$ (860 MMcf/d). From January 2010 to October 2012, however, average exports at Niagara declined sharply to only 3.4 $10^6m^3/d$ (120 MMcf/d), as shale gas production in the northeastern U.S. began to displace gas imported from Canada. In November 2012, modifications were made to the TransCanada Mainline and Tennessee systems that allowed Niagara to serve as an import point.[43] The Tennessee system can now deliver Marcellus/Utica gas to the TransCanada Mainline via Niagara to serve eastern Canadian markets, and from November 2012 through June 2014, imports at Niagara have averaged 12.0 $10^6m^3/d$ (425 MMcf/d). The amount of gas entering eastern Canada from Niagara is expected to continue to grow, as the capacity on Tennessee's Niagara spur—more than 28 $10^6m^3/d$ (roughly 1 Bcf/d)—far exceeds current flows and is only constrained by the current configuration of the TransCanada Mainline where it interconnects with Tennessee at Niagara. TransCanada is currently advancing projects to increase the capacity to receive gas at Niagara and also to be able to commence the receipt of volumes at Chippawa.

42 National Energy Board, Natural Gas Imports and Exports, Monthly Summary by Port – Volumes.

43 National Energy Board, Canadian Pipeline Transportation System Energy Market Assessment, April 2014.

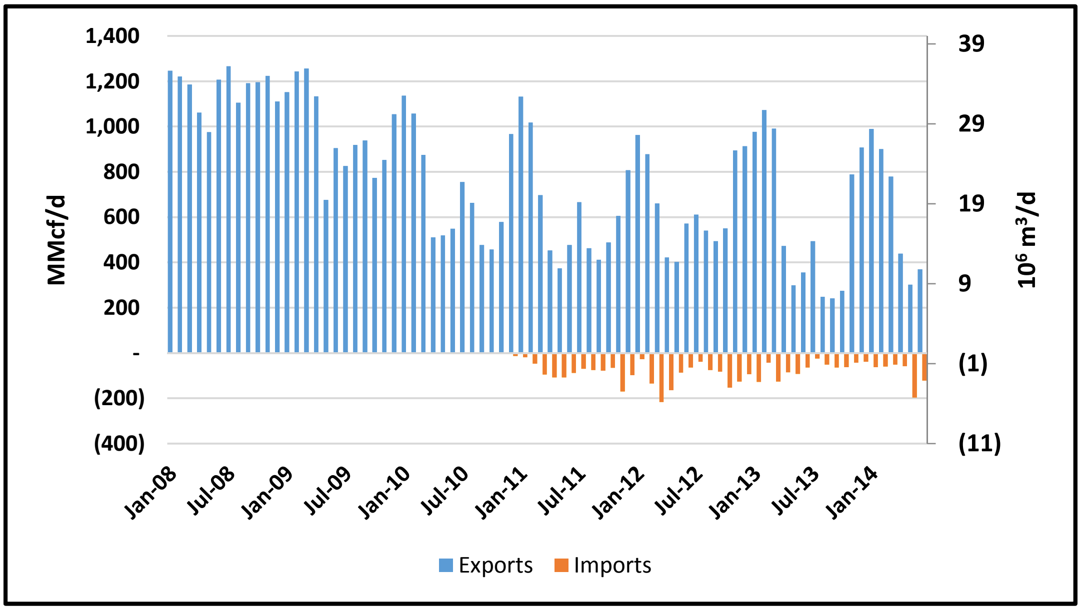
Figure 14– Historical Flows at Chippawa– Exports to the U.S. and Imports into Canada[44]



As shown in Figure 14 Chippawa has also traditionally served as an export point for Canadian gas to the northeastern U.S., particularly during winter months. Like Niagara though, Chippawa has seen export volumes decline in recent years due to growing production from the Marcellus/Utica basins. Exports at Chippawa have declined from approximately 6.2 $10^6 m^3/d$ (220 MMcf/d) in 2009 to less than 0.6 $10^6 m^3/d$ (roughly 20 MMcf/d) in 2013. While flows at Chippawa have not yet reversed to import Marcellus/Utica gas into eastern Canada, National Fuel Gas Co. subsidiaries, National Fuel Gas Supply Corp. and Empire Pipeline Inc., are jointly developing a project that would deliver additional volumes of U.S. gas to Chippawa and, combined with the planned modifications by TransCanada, will allow for imports to eastern Canada at Chippawa. This National Fuel Gas Co. project and other projects under development to import Marcellus/Utica gas to eastern Canada are reviewed in more detail in the next section.

44 National Energy Board, Natural Gas Imports and Exports, Monthly Summary by Port – Volumes.

Figure 15 – Historical Flows at Waddington – Exports to the U.S. and Imports into Canada[45]



Waddington is on the border of Ontario and New York and is the interconnection between the TransCanada Mainline and the Iroquois Gas Transmission pipeline ("IGT"). Many of the local distribution companies ("LDCs") in New England, New York and New Jersey hold contracts on IGT to deliver Canadian gas to their respective service territories, and in 2008, exports to the U.S. at Waddington averaged over 31 $10^6m^3/d$ (roughly 1.1 Bcf/d), as shown in Figure 15. Similar to Niagara and Chippawa, exports at Waddington have consistently declined year-on-year as Canadian gas is increasingly displaced by Marcellus/Utica gas. Unlike Niagara and Chippawa, however, Waddington has remained a substantial source of exports to the U.S during winter months as highly-publicized pipeline constraints into New England have thus far inhibited customers in that region from accessing Marcellus/Utica gas. IGT is currently considering modifications that would allow for bi-directional flows on its system, potentially making Waddington an additional import point into eastern Canada.[46] In addition, TransCanada has highlighted the potential for flow reversals at Waddington, as it has had discussions with producers and consumers for receipts of northeast U.S. production at Waddington.[47] There are multiple pipeline projects under development, such as Williams Co.'s Constitution Pipeline, that would connect IGT directly to the producing areas in northeastern Pennsylvania. However, until additional pipeline capacity is constructed to better link New England to Marcellus/Utica supplies, it is expected that Waddington will continue to serve predominantly as an export point in the winter. Once additional pipeline capacity is built from the Marcellus/Utica shale basins to New England, however, Waddington has the potential to become a

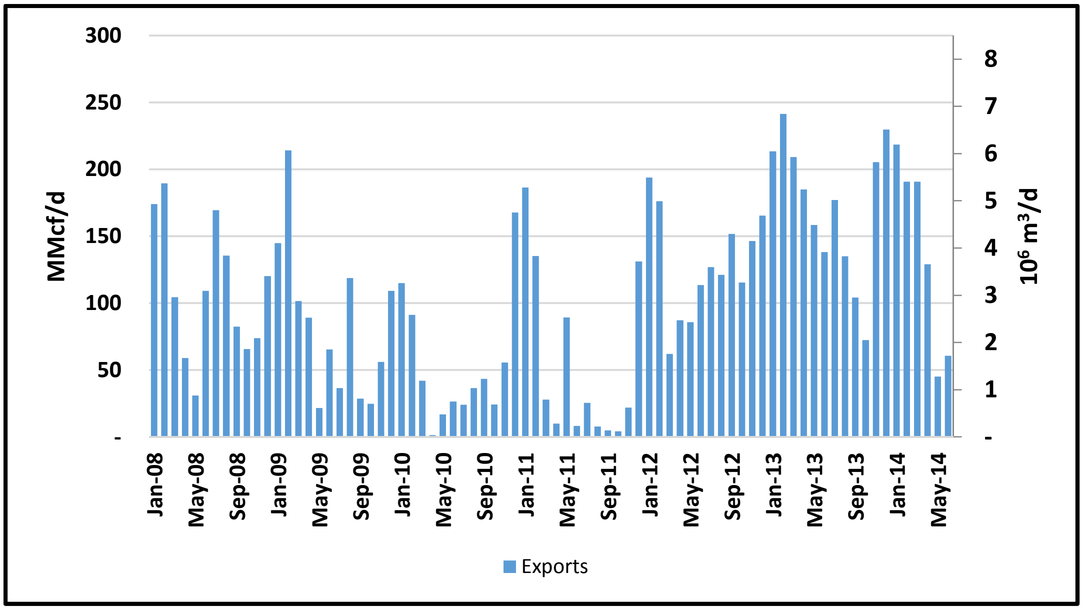
45 National Energy Board, Natural Gas Imports and Exports, Monthly Summary by Port – Volumes.

46 The configuration of the interconnection between the TransCanada Mainline and IGT at Iroquois/Waddington does not currently support physical imports of gas into eastern Canada. All imports appearing in Figure 15 were achieved via displacement.

47 NEB, RH-001-2014, TransCanada Additional Written Evidence, May 5, 2014, p. 25, ll. 21-29.

major source of imports into Québec due to its interconnections with existing and proposed pipelines originating in the Marcellus/Utica production region.

Figure 16 – Historical Flows at East Hereford– Exports to the U.S. and Imports into Canada[48]



East Hereford is located on the border of Québec and the states of Vermont and New Hampshire, and is the interconnection of the Trans-Québec & Maritimes ("TQM") pipeline and the Portland Natural Gas Transmission System ("PNGTS") pipeline. Prior to 2012, exports at East Hereford were modest and utilization on PNGTS was low. Unlike the other border crossings in eastern Canada, exports at East Hereford have actually increased over the past few years. Depending on which pipelines are expanded and/or built to increase capacity into New England, it is conceivable that East Hereford could become an import point into Québec.

Overall, exports from Eastern Canada to the northeastern U.S. continue to decline as shale gas production from the Marcellus/Utica basins displaces Canadian gas in the region. As production in the Marcellus and Utica continues to increase, the demand for Canadian gas—and associated TransCanada Mainline transportation capacity—to serve the northeastern U.S. should further diminish and more of these border crossings should reverse to allow imports of U.S. gas to serve Canadian markets.

48 National Energy Board, Natural Gas Imports and Exports, Monthly Summary by Port – Volumes.

C. New Projects to Deliver Marcellus/Utica Gas into Eastern Canada

When potential new market demand for natural gas pipeline service is identified, pipelines will conduct an open season to determine the level and nature of incremental transportation service that is desired. If the open season results in sufficient commitments for long-term firm transportation, then the pipeline will submit an application to construct and operate the project. These firm capacity shippers are willing to pay to reserve capacity on a given project in return for a guarantee from the pipeline that they will provide firm service. Pipelines also offer interruptible and short-term firm services on an as-available basis in order to maximize total revenue when firm shippers are not utilizing their full contracted capacity, but a pipeline has no obligation to serve interruptible customers, and interruptible and short-term firm demand does not factor into a pipeline's decision to invest in and construct a pipeline project. Pipelines define market need as the willingness of shippers to sign up for firm transportation service. If sufficient market need is demonstrated, barring extreme permitting challenges, a pipeline project will typically be constructed.

As discussed, the Marcellus and Utica basins contain vast reserves of natural gas and offer eastern Canada a more proximate supply source than traditional WCSB supplies at comparable, if not lower, delivered prices. While there is currently only limited pipeline capacity available to import Marcellus/Utica gas into eastern Canada—presently just the 12.0 $10^6m^3/d$ (425 MMcf/d) on Tennessee that is delivered at Niagara—pipeline companies have an incentive to build more pipe and are constantly testing the market. Should shippers in Québec signal a market need in the form of firm service commitments, and a willingness to pay the applicable transportation tolls to support the required infrastructure investment, pipelines will respond and capacity will be built.

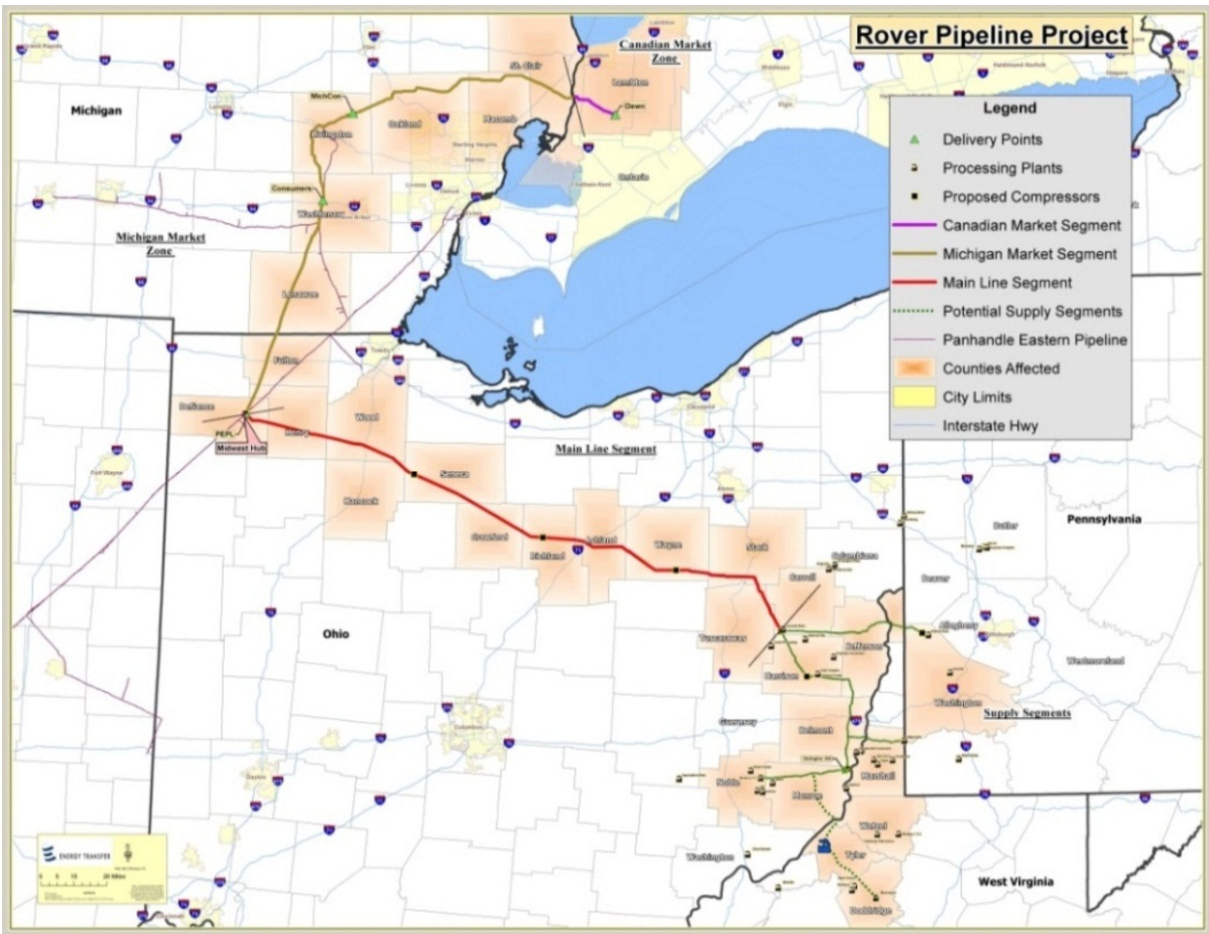
There are currently several proposed pipeline projects being developed to deliver shale gas from the northeastern U.S. to markets in Ontario and Québec that, if constructed, could provide more than 112 $10^6m^3/d$ (roughly 4 Bcf/d) of incremental deliverability to eastern Canada by the end of 2017. The announced projects would increase pipeline deliverability at the following locations: (i) Dawn; (ii) Niagara/Chippawa; and (iii) Iroquois. The remainder of this section describes these projects.

1. Dawn

There are three major projects— Energy Transfer Partners' ("ETP") Rover Pipeline Project, Spectra Energy's NEXUS Gas Transmission project, and TransCanada's ANR East Pipeline Project—under development to deliver Marcellus production from southwestern Pennsylvania and West Virginia and Utica production from eastern Ohio to mid-western markets, and the Dawn Hub in southeastern Ontario. A map of each of these projects is provided in Figures 17, 18, and 19.

ETP announced the greenfield Rover Pipeline Project in June 2014 that would consist of a mainline that is scalable up to 92 $10^6m^3/d$ (3.25 Bcf/d) spanning from the processing hub near Clarington, Ohio to Defiance, Ohio where it would interconnect with ANR Pipeline and Panhandle Eastern Pipe Line, and a second segment from Defiance to the Dawn Hub in Ontario with a capacity of 36.8 $10^6m^3/d$ (1.3 Bcf/d). ETP pre-filed with FERC in June 2014 and held an open season from June 27 to July 25, 2014. ETP recently announced that they had secured 83.6 $10^6 m^3/d$ (2.95 Bcf/d) of binding commitments for service on the mainline to Defiance and had fully subscribed the 36.8 $10^6 m^3/d$ (1.3 Bcf/d) of capacity to the Dawn Hub.[49] The minimum reservation rate for negotiated shippers delivering to the Dawn Hub is listed as US$0.80 per dekatherm ("Dth") in the open season notice. To date, announced shippers include Marcellus/Utica producers Antero Resources, Range Resources, and American Energy-Utica LLC.[50] ETP plans to file with FERC in January 2015, and expects the mainline to be in-service by December 2016, with the segment to the Dawn Hub on-line by June 2017.[51]

Figure 17 – Rover Pipeline Project Map[52]



49 Energy Transfer Partners LP, Q2 2014 Earnings Call Transcript, August 7, 2014.

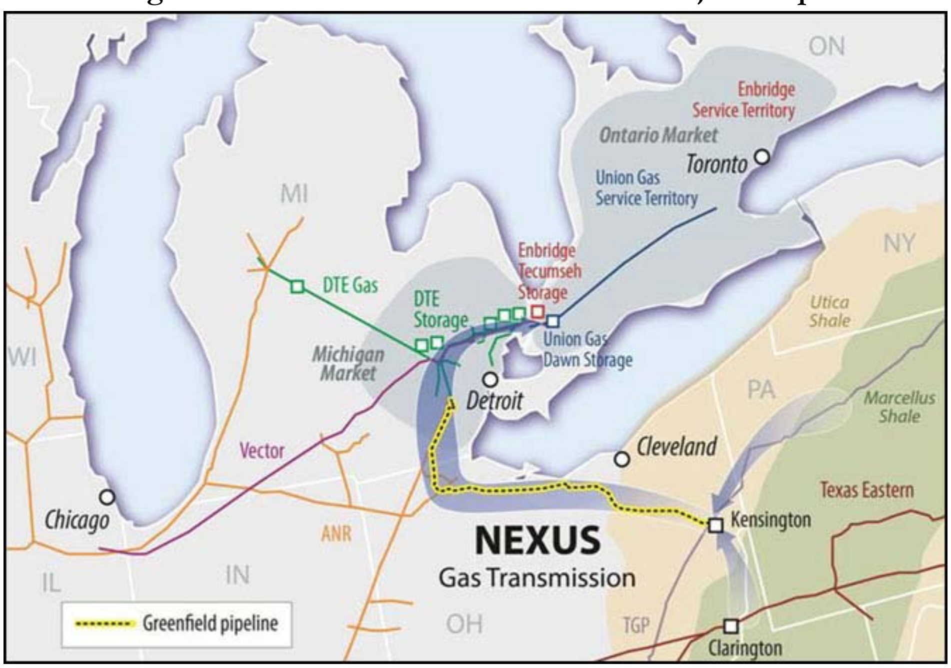
50 Platts Inside FERC, "ETP looking to add up to 3.25 Bcf/d of new gas pipeline capacity from Marcellus, Utica", June 30, 2014.

51 ET Rover pipeline Project LLC, Request to Initiate the FERC Pre-Filing Review Process, June 25, 2014.

52 Rover Pipeline Project Map, Energy Transfer Partners website: http://www.energytransfer.com/ops_etrover.aspx. Accessed September 12, 2014.

In addition, Spectra Energy has partnered with DTE Energy to develop the NEXUS Gas Transmission project, which would deliver up to 56.7 $10^6 m^3/d$ (2 Bcf/d) of Marcellus/Utica gas to markets in the mid-western U.S. as well as the Dawn Hub. NEXUS would involve greenfield construction from receipt points in eastern Ohio to interconnections with existing pipelines in southeastern Michigan. From there, NEXUS would utilize both existing and expansion capacity on the existing DTE Gas and Vector Pipeline systems—the size of these expansions will depend on the ultimate level of contractual demand—to deliver gas to both the Enbridge and Union storage facilities near Dawn. Originally announced in 2012, with an original open season held from October 15 to November 30, 2012 that resulted in over 28.0 $10^6 m^3/d$ (roughly 1 Bcf/d) of interest,[53] Spectra held a supplemental open season from July 23 to August 21, 2014, and now has binding commitments for approximately 34 $10^6 m^3/d$ (1.2 Bcf/d).[54] The full list of shippers has not yet been disclosed for the project, however, Spectra has commented that it has commitments from gas and electric utilities as well as Appalachian producers,[55] and Union has indicated that it has signed a 15-year agreement for 4.2 $10^6 m^3/d$ (150 MMcf/d).[56] Spectra plans to pre-file with FERC in late 2014, and the projected in-service date for NEXUS is the second half of 2017.[57]

Figure 18 – NEXUS Gas Transmission Project Map[58]



53 Spectra Energy, NEXUS Gas Transmission Project, Supplemental Open Season Notice for Firm Service.

54 Spectra Energy Corp., Transcript from Barclays CEO Energy-Power Conference, September 3, 2014.

55 Ibid.

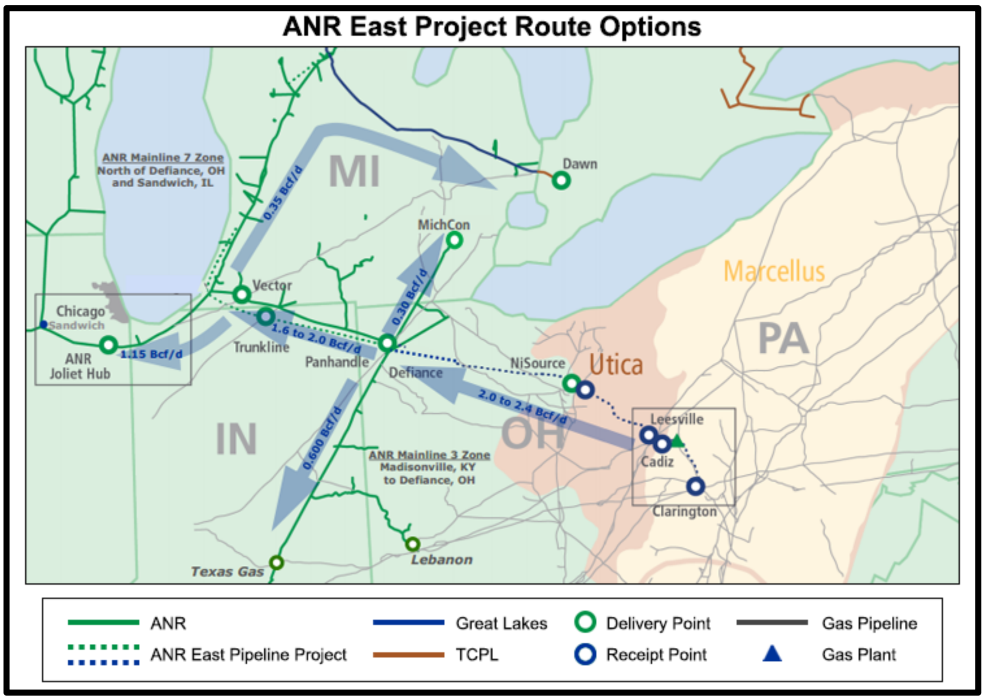
56 EB-2013-0109, Union Gas Letter to Board Secretary, Ontario Energy Board, May 6, 2014.

57 Spectra Energy, NEXUS Gas Transmission Project, Supplemental Open Season Notice for Firm Service.

58 Ibid.

TransCanada is developing the ANR East Pipeline Project that would connect Marcellus/Utica production to the mid-western U.S. as well as to markets in the Gulf Coast and eastern Canada. The ANR East project would consist of a mainline from various receipt points in eastern Ohio to the existing hub in Defiance, Ohio with a capacity of 68 $10^6m^3/d$ (2.4 Bcf/d). From Defiance, shippers would have multiple options including service to Dawn via service on the existing ANR system in Ohio and Michigan, Great Lakes Gas Transmission ("GLGT") and then the TransCanada system from St. Clair to Dawn. The project would offer 9.9 $10^6m^3/d$ (350 MMcf/d) of capacity to Dawn as currently designed, but is capable of being scaled up to 24 $10^6m^3/d$ (850 MMcf/d) based on shipper interest. TransCanada held a non-binding open season for ANR East from July 3 through July 28, 2014, but has not commented publicly on the results to date. The maximum indicative recourse rate for deliveries from Defiance to Dawn is $0.69/MMBtu, and ranges from $1.17/MMBtu to $1.26/MMBtu for the various receipt points in eastern Ohio.[59]

Figure 19 – ANR East Pipeline Project Map[60]



The Rover, NEXUS and ANR East projects would deliver additional supplies into the Dawn area, and would then travel on downstream expansions on Union's Dawn-to-Parkway pipeline, and on TransCanada's Mainline from Parkway to Maple, as well as the southern leg of the Eastern Triangle to serve markets in eastern Ontario and Québec. Figure 20 provides a detailed map of these various pipeline interconnections.

59 TransCanada Corp., ANR EAST Pipeline Project open season materials.

60 TransCanada Corp., ANR East open season materials.

Figure 20 – Pipeline Interconnections in Southeastern Ontario[61]

Spectra Energy, which owns the Union Dawn-to-Parkway pipeline, is currently developing a multi-phased expansion of this pipeline's capacity. The 2015 Expansion Project, which will add approximately 18.4 $10^6m^3/d$ (650 MMcf/d) of incremental capacity between Dawn and Parkway, received approval from the Ontario Energy Board ("OEB") in January 2014 is expected to come on-line in 2015.[62] Union is also in the process of executing contracts for the 2016 Expansion Project and an open season for a 2017 Expansion Project is expected before the end of 2014.[63] Gaz Métro, Enbridge, and Union have all contracted for capacity on both the 2015 and 2016 expansions from Dawn to Parkway.[64]

In order to increase pipeline capacity on TransCanada's Mainline between Parkway and Maple, TransCanada has proposed the King's North Connection Project. This project would connect proposed new Enbridge distribution pipeline capacity, spanning from Parkway to the Greater Toronto Area ("GTA"), to the existing TransCanada Mainline facilities near Maple. Employing a Transportation by Others ("TBO") arrangement with Enbridge for the use of its new GTA expansion capacity, the King's North project would allow TransCanada to deliver approximately 9.9 $10^6m^3/d$ (350 MMcf/d) of incremental gas from either the northeastern U.S. or the Dawn Hub to the Eastern Triangle segment of the TransCanada Mainline. TransCanada submitted an application to the NEB for the King's North Connection Project in August 2014, and the project is expected to be in-service by the end of 2015. Figure 21 contains a map of the King's North Connection Project. Additional capacity expansions in the Parkway to Maple corridor are expected in the future.

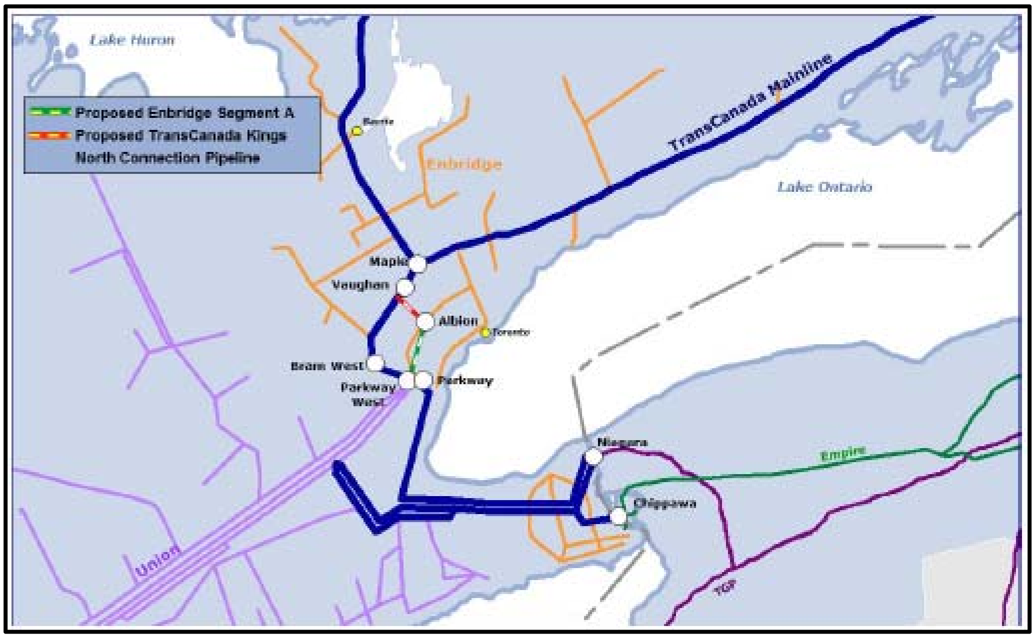
61 Spectra Energy, Supplemental Information Appendix, 2014 Second Quarter Update, August 6, 2014.

62 Spectra Energy, Supplemental Information Appendix, 2014 Second Quarter Update, August 6, 2014; Union Gas, Cold Weather & Growth, Calgary Customer Meeting. March 3, 2014.

63 Spectra Energy Corp., Transcript from Barclays CEO Energy-Power Conference, September 3, 2014.

64 Spectra Energy, Supplemental Information Appendix, 2014 Second Quarter Update, August 6, 2014.

Figure 21 – King's North Connection Project[65]



As discussed previously, TransCanada is also developing the Eastern Mainline Project to accommodate demand for increased capacity on the southern leg of the Eastern Triangle to serve markets in Ontario and Québec as well as New England. The Eastern Mainline Project will enable TransCanada to continue to meet its existing and new firm obligations following the conversion of certain TransCanada Mainline facilities to crude oil service in association with TransCanada's proposed Energy East Project. TransCanada expects to file an application with the NEB soon and the Eastern Mainline Project is scheduled to be placed in service in the first quarter of 2017.[66]

In addition, pursuant to a currently outstanding application before the NEB for approval of a settlement agreement between TransCanada, Gaz Métro, Union, and Enbridge, TransCanada has committed to undertaking further expansions in the Eastern Triangle when requested.[67] A decision has not yet been rendered by the NEB regarding this application. However, should the settlement agreement be approved, the term of which extends through 2030, Marcellus/Utica gas delivered to the Dawn Hub would continue to have adequate downstream capacity to serve markets in Québec as such incremental capacity is requested in the future.

One other factor that could affect the availability of capacity in the Eastern Triangle is the fact that a number of LDCs in the northeastern U.S. together have 15.4 $10^6 m^3/d$ (544 MMcf/d) of existing

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65 TransCanada PipeLines Ltd., Application for Approval of Mainline 2013-2030 Settlement, December 2013, page 19.

66 TransCanada PipeLines Ltd., Eastern Mainline Project, Project Description, May 2014.

67 Application for Approval of Mainline 2015-2030 Settlement, RH-001-2014, filed December 20, 2013, Section 2.3(b).

contracts on this segment of the TransCanada Mainline,[68] the vast majority of which are due to expire in the 2016-2018 timeframe. When these contracts come up for renewal, these LDCs will have additional supply options available to them due to the emergence of Marcellus/Utica production. Many pipelines in other regions (e.g., the U.S. Gulf Coast) are seeing capacity turned back as their shippers can now obtain gas closer to their markets as a result of Marcellus/Utica shale production. While there is no specific indication from these U.S. LDCs at this point related to the future renewal of their existing Eastern Triangle capacity, a number of these LDCs (or their affiliates) have been identified as shippers on pipeline projects to bring additional Marcellus/Utica supplies to constrained areas. Therefore, there is the potential that other options may provide greater value, which could lead U.S. LDCs to release their Eastern Triangle capacity. If U.S. LDCs release their Eastern Triangle capacity, it would provide another source of additional capacity for future natural gas demand growth in Québec. The existing Eastern Triangle capacity held by customers in the northeast U.S. far exceeds Québec's expected capacity requirements of 0.29 $10^6m^3/d$ (10 MMcf/d) and even Québec's low price/high demand scenario incremental requirements of 2.22 $10^6m^3/d$ (78 MMcf/d) through 2030.

2. Niagara/Chippawa

In December 2013, Tennessee signed a binding precedent agreement with Seneca Resources for long-term transportation service on the proposed Niagara Expansion Project. The Niagara Expansion Project will be capable of transporting 4.5 $10^6m^3/d$ (158 MMcf/d) of Marcellus/Utica gas to the interconnection with the TransCanada's Mainline at Niagara. The project involves minor pipeline looping and modifications to the Tennessee system, as well as the leasing of 4.0 $10^6m^3/d$ (140 MMcf/d) of capacity on the National Fuel Gas Supply Corp. pipeline in Pennsylvania and New York. Tennessee filed an abbreviated certificate application with FERC in February 2014 for approval of the proposed project, and expects the project to be in service by November 2015.

With the Northern Access 2016 Project, National Fuel Gas Company is proposing expansions to its National Fuel Gas Supply and Empire pipelines to deliver 9.9 $10^6m^3/d$ (350 MMcf/d) of capacity from the Marcellus in central Pennsylvania north through New York to the border crossing at Chippawa. National Fuel Gas held an open season for the project from June 3 to June 26, 2014, which resulted in Seneca Resources, a producer, contracting for the full 9.9 $10^6m^3/d$. National Fuel Gas pre-filed with FERC in July 2014 and expects the project to be in-service by the second half of 2016. The indicative rate for transportation service from central Pennsylvania to Chippawa is US$0.53/Dth according to the open season notices.

Similar to the proposed projects delivering northeastern U.S. gas to Dawn, the proposed pipeline expansions to Niagara and Chippawa also could serve markets in Québec (subject to, as just discussed, the outcome of TransCanada's Mainline Settlement proceeding and the possibility of non-renewal of firm capacity in the Eastern Triangle by U.S. LDCs).

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68 NEB, RH-001-2014, Evidence of Alberta Northeast Gas, Limited, July 4, 2014, revised July 28, 2014, Attachment 1.

3. Iroquois

IGT is currently configured to flow north-to-south, receiving gas exported from Canada at the interconnection with the TransCanada Mainline at Waddington and delivering to various interstate pipeline and utility interconnections in New York and Connecticut. In January 2014, IGT completed a non-binding open season for the South-to-North Project, which, if built, would provide up to 8.5 $10^6m^3/d$ (300 MMcf/d) of capacity for delivery to TransCanada's Mainline at Waddington beginning in November 2016, but the results of this open season have not yet been made public.[69] The South-to-North Project would provide another potential supply option for future demand growth in Québec.

Figure 22 – South-to-North Pipeline Project Map[70]

IGT does not directly access the shale basins in the northeastern U.S., but a number of upstream projects have been proposed that would provide takeaway capacity from Marcellus/Utica production areas to interconnections with IGT. The proposed Constitution Pipeline (18.4 $10^6m^3/d$, or 650 MMcf/d), which would connect Marcellus production from northeastern Pennsylvania to an interconnection with IGT at Wright, New York, filed with FERC in June 2013 and could be on-line by late 2015/early 2016.[71] The supply leg of Tennessee's Northeast Energy Direct project would also deliver up to 28.0 $10^6m^3/d$ (roughly 1 Bcf/d) of Marcellus production from northeastern Pennsylvania to Wright, New York.[72] Dominion Transmission held a non-binding open season in

69 The open season for Iroquois' "South-to-North" project was coordinated with open seasons for TransCanada's "2016 NCOS" project and PNGTS' "Continent-to-Coast" project, in order to provide expanded capacity from Wright to an interconnection with the M&NP-US system at Westbrook.

70 Iroquois Gas Transmission, South-to-North Project Open Season Notice.

71 Williams Companies, Inc., Presentation to Barclays CEO Energy-Power Conference, September 3, 2014.

72 Tennessee Gas Pipeline Company, Presentation by Curtis Cole to the Northeast Energy and Commerce Association, Cambridge, Massachusetts, June 5, 2014.

the spring of 2013 for their own project that would deliver up to 7.1 $10^6m^3/d$ (250 MMcf/d) of Marcellus/Utica gas to an interconnection with IGT at Canajoharie, New York.[73]

Figure 23 – Additional Canadian Imports from Proposed Pipeline Projects

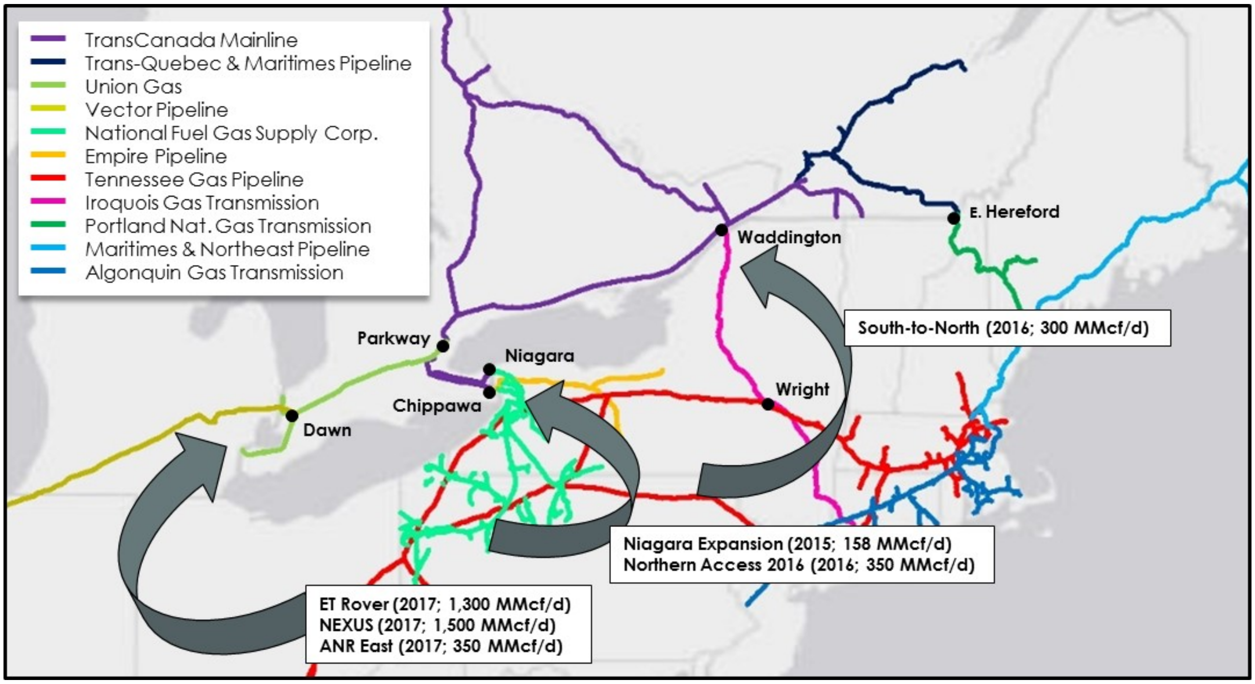


Figure 24 – Summary of Proposed Pipeline Projects into Eastern Canada

Project	Import Location	Est. In-Service	Capacity ($10^6m^3/d$)	Capacity (MMcf/d)
Niagara Expansion Project	Niagara	Nov-15	4.5	158
Northern Access 2016	Chippawa	Nov-16	9.9	350
South-to-North	Waddington	Nov-16	8.5	300
Rover Pipeline Project	Dawn	Jun-17	36.8	1,300
NEXUS Gas Transmission	Dawn	Nov-17	42.5	1,500
ANR East	Dawn	Nov-17	9.9	350
TOTAL			**112.1**	**3,958**

As demonstrated in Figure 24, there are a host of proposed pipeline projects that would expand the availability of Marcellus and Utica shale gas supplies in eastern Canada, and the size of these projects, individually and collectively, far exceed Québec's expected incremental firm gas capacity need of 0.29 $10^6m^3/d$ (10 MMcf/d) and even Québec's low price/high demand scenario incremental requirements of 2.22 $10^6m^3/d$ (78 MMcf/d) through 2030.

73 Platts Inside FERC, "Iroquois looking to provide reverse-flow service on its system from New York City to the US-Canada border", December 9, 2013.

While Concentric acknowledges that these specific near-term projects may not meet Quebec's specific needs due to timing (i.e., many of these projects have completed the open season process and are expected to come on-line in the 2015-2017 timeframe, which may predate or not be synchronized with the future demand growth in Québec), these projects highlight the general trend of projects to enable flow reversals and greater natural gas imports into eastern Canada from the northeastern U.S. that will provide Québec with numerous gas supply and transportation options going forward. Additional projects, similar to the ones discussed, will be built to address long-term firm demand commitments in the future. With the escalating production forecasts, favorable economics, and proximity of the Marcellus and Utica basins to Québec markets, these shale plays are well situated to provide supply options for demand growth in Québec through 2030.

D. Other Supply Options

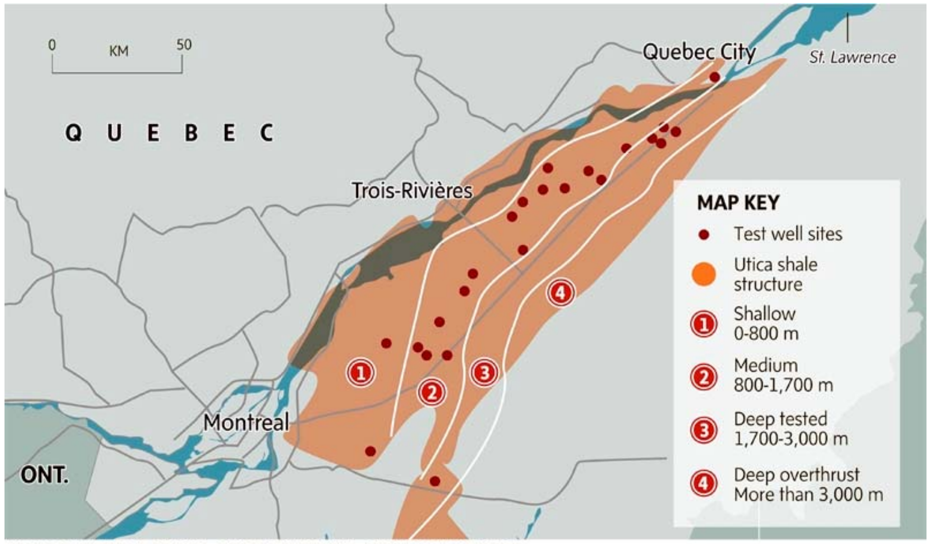
In addition to transporting a portion of prolific natural gas supplies from the Marcellus and Utica shale formations, Québec's incremental design day natural gas requirements could be fulfilled from a number of other sources, including shale gas production in Québec, liquefied natural gas ("LNG") in Québec, as well as additional supplies transported from the WCSB. Each of these potential supply sources is discussed below.

1. Québec Shale

A portion of the Utica shale formation is located in Québec, which, along with the Marcellus shale formation, also underlies many of the U.S. mid-Atlantic states. According to the Library of Parliament of Canada, Québec could have between 2.8 $10^{12}m^3$ (100 Tcf) and 8.5 $10^{12}m^3$ (300 Tcf) of gas in place in shale formations, and to date, 31 exploration wells have been drilled in the Utica shale play between Montréal and Québec City.[74] The map in Figure 25 illustrates the location of the Utica shale formation in Québec, as well as the test wells that have been drilled by Questerre Energy Corporation. As discussed above, while natural gas production from the Marcellus shale region has continued to exceed expectations, there is less experience to date with the Utica shale formation, but analyst expectations remain high for future production output from this formation.

[74] "Shale Gas in Canada: Resource Potential, Current Production and Economic Implications" Publication No. 2014-08-E, Library of Parliament, January 30, 2014.

Figure 25 – Map of Utica Shale in Québec[75]



In 2011, the Québec government withdrew all exploration permits and issued a moratorium on gas exploration, to allow time for a Strategic Environmental Assessment ("SEA"). As a result, shale gas exploration in Québec stopped. The initial SEA was released in February 2014, with a final report due to be released in the last quarter of 2014. The February 2014 SEA indicated that the risks and impacts associated with shale gas development in Québec are manageable, which has led to the possibility for further shale development in Québec in the future.[76]

While the timing and extent to which Québec shale gas will be developed is uncertain, the quantity of shale gas that could be produced in Québec far exceeds Québec's expected incremental firm gas capacity need of 0.29 $10^6m^3/d$ (10 MMcf/d) and even Québec's low price/high demand scenario incremental requirements of 2.22 $10^6m^3/d$ (78 MMcf/d) through 2030.

2. Québec LNG

Gaz Métro has an LSR/LNG plant in Montréal that provides Gaz Métro customers with natural gas supplies during peak periods. LSR plants operate by liquefying natural gas delivered on low use days in the summer, storing the LNG in tanks, and then regasifying the natural gas on cold winter days when it is needed to serve higher demand. Gaz Métro's existing Montréal facility can produce 460 m^3 (121,500 US gallons) of LNG per day and also has LNG storage tanks with a capacity of 95,400 m^3 of LNG (25.2 million US gallons).[77] The plant has regasification capacity of 5.7 $10^6m^3/d$

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75 "Questerre Gets $26.5M Loan for Drilling, Still Hopeful for Utica," Marcellus Drilling News, http://marcellusdrilling.com/2013/07/questerre-gets-26-5m-loan-for-drilling-still-hopeful-for-utica/, accessed September 11, 2014.

76 Altai Resources Inc. Management's Discussion And Analysis (Form 51-102f1) For The Six Months Ended June 30, 2014.

77 Gaz Metro website, accessed September 11, 2014 .http://www.corporatif.gazmetro.com/corporatif/grandprojet/en/html/3906416_en.aspx?culture=en-ca.

(206 MMcf/d).[78] Because Gaz Métro does not currently require the full use of the facility to meet customer demand, in recent years, Gaz Métro has used excess liquefaction capacity at the LSR plant to provide LNG to third parties outside of Québec. For example, in August 2014, Gaz Métro agreed to provide up to 27.6 $10^6 m^3$ (975 MMcf) of LNG by truck to GDF Suez, the owner of the Distrigas LNG import facility in Massachusetts.[79]

In addition, there are multiple proposals to increase LNG capacity in Québec. Gas Metro has plans to expand its LSR in Montréal in order to supply emerging LNG needs in Québec, including Québec-based businesses and transporters, such as the Societe des traversiers du Québec, Transport Robert and the Stornoway mine.[80] Also, Norway's Stolt-Nielsen Gas is planning to build a $570 million liquefaction facility in Bècancour to be operational in Fall 2017. The plant will have two liquefaction units and storage for 50,000 m^3 (13.2 million gallons) of LNG. The press release regarding the proposed LNG plant in Becancour, mentions that "cost advantages are expected to enable surplus production to be exported to northern Europe."[81]

Each of these options, (*i.e.*, the excess liquefaction that Gas Metro is currently selling to GDF Suez, the volumes associated with Gaz Métro's expansion of the Montréal LSR facility, and/or LNG from the proposed Stolt-Nielsen Gas facility), could potentially be used in the future to fulfill incremental design day gas capacity requirements in Québec, if necessary.[82]

3. WCSB

The WCSB, spanning portions of British Columbia, Alberta, Saskatchewan, Manitoba and the Northwest Territories, is the largest source of Canadian natural gas production, currently accounting for 98% of the nation's gas production. Natural gas production in the WCSB has been in decline in recent years, however, declines in conventional production have been replaced by unconventional production in the form of coal bed methane and shale gas. As shown in Figure 26, according to the NEB, WCSB production is expected to increase in the short term under mid-range and high natural gas price scenarios, and is expected to decrease under a low natural gas price scenario with gas prices too low to incent drilling activity.[83]

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78 Société en commandite Gaz Métro Cause tarifaire 2015, R-3879-2014, Original: 2014.06.26, Gaz Métro-7, Document 1, Annexe 14, Page 1 de 1.

79 Reuters, GDF SUEZ Taps into New North American Natural Gas Supply Source for New England, August 12, 2014.

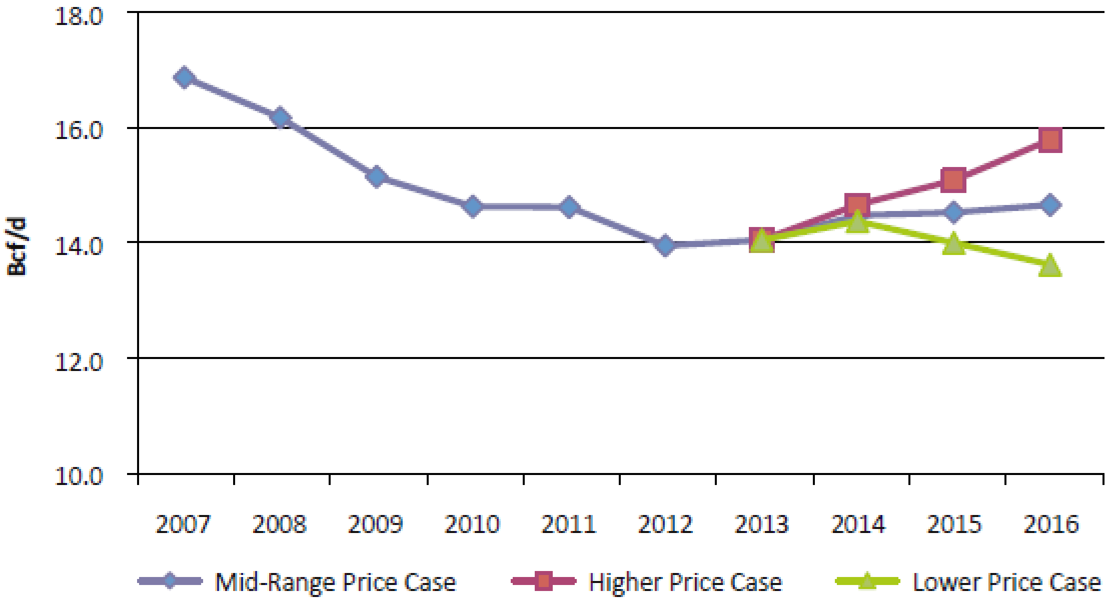
80 Gaz Metro press release, "Natural Gas Service in the Cote-Nord and Remote Regions – Gaz Metro is delighted with the Direction of the Government of Quebec Budget," June 4, 2014.

81 Stolt-Nielsen Backs Quebec LNG Plant, HHP Insight, June 18, 2014.

82 This could be achieved without additional pipeline capacity by liquefying additional LNG on low demand days in the summer and regasifying it in the winter. While this may require additional storage or regasification capability to serve additional design day demand, the proposed Gaz Métro expansion project implies that modifications and expansions are possible.

83 "Short-term Canadian Natural Gas Deliverability 2014-2016," National Energy Board, May 2014.

Figure 26 – NEB Projected Natural Gas Deliverability Outlook for Canada[84]



Additional natural gas production from the WCSB represents an option to serve incremental natural gas capacity requirements in Québec because the quantity of potential production in the WCSB far exceeds Québec's expected incremental firm gas capacity need of 0.29 $10^6 m^3/d$ (10 MMcf/d) and even Québec's low price/high demand scenario incremental requirements of 2.22 $10^6 m^3/d$ (78 MMcf/d) through 2030. As discussed, Québec has traditionally relied on WCSB supply to satisfy its demand, and although there has been a shift away from such supplies to serve Québec, WCSB production and the TransCanada Mainline will remain a viable supply option to serve Québec going forward. TransCanada has indicated that there will be uncontracted capacity on the TransCanada Mainline, and TransCanada has also agreed to further expansions in the Eastern Triangle should they be necessary in the future,[85] which would continue to provide a means of transportation of WCSB supplies to Québec.

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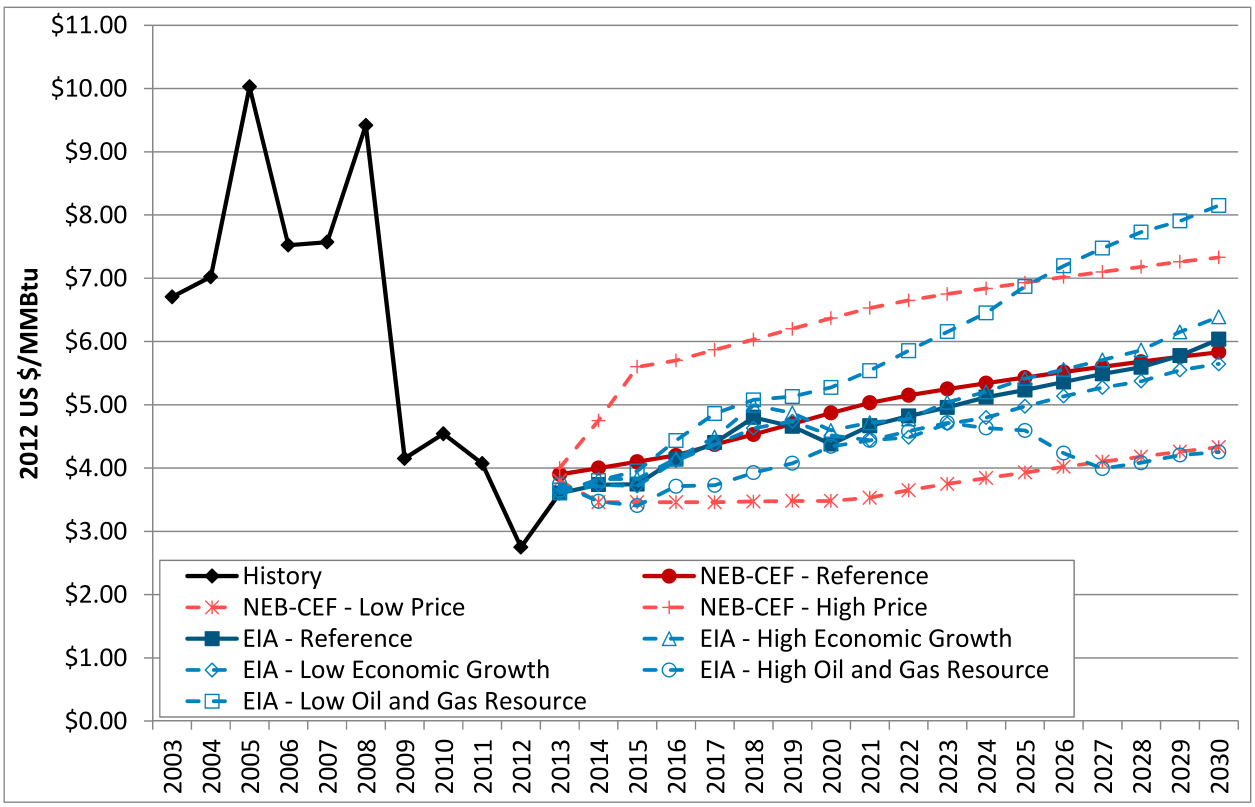
84 "Short Term Canadian Natural Gas Deliverability 2014-2016," National Energy Board, May 2014.

85 Application for Approval of Mainline 2015-2030 Settlement, RH-001-2014, filed December 20, 2013, Section 2.3(b).

IV. NATURAL GAS PRICES

As shown in Figure 27, historical prices for natural gas at Henry Hub[86] ranged from $6.70/MMBtu to $10.03/MMBtu, and averaged close to $8.00 over the 2003-2008 period. Due to the increased availability of natural gas supplies, mostly because of increased production from shale resources, starting in 2009, gas prices remained at or below $4.50. According to forecasts released by both the NEB and the U.S. Energy Information Administration ("EIA") natural gas prices at Henry Hub are expected to remain below approximately $6.00 through 2030. (The solid lines in the graph represent the reference cases). Both the NEB and the EIA also produce high and low price forecasts. The NEB high price forecast has gas prices reaching $7.33 in 2030, while the EIA highest price forecast has gas prices reaching $8.15 in 2030. Both the NEB and EIA low price forecast has gas prices of approximately $4.30 in 2030.

Figure 27 – Henry Hub Natural Gas Prices[87]



[86] Henry Hub is a point in Louisiana, which is typically used as a benchmark natural gas price for North America.

[87] Sources: NEB-CEF Appendix A1.4; EIA 2014 Annual Energy Outlook, Figure MT-41 supporting data. Note: The low oil and gas resource case from the EIA represents a scenario where the estimated ultimate recovery per shale gas, tight gas, and tight oil well is 50% lower than in the Reference case. The high oil and gas resource case represents a scenario where the estimated ultimate recovery per shale gas, tight gas, and tight oil well is 50% higher and well spacing is 50% lower (or the number of wells left to be drilled is 100% higher) than in the Reference case.

While the NEB price forecast was released in November 2013 and the EIA price forecast was released in April 2014, current futures market prices indicate similar expectations for gas prices at Henry Hub. As shown in Figure 10, gas at Henry Hub is trading at or below $4.56 through 2020, while the NEB reference case forecast has Henry Hub gas prices of $4.87 in 2020, and the EIA reference case forecast has Henry Hub gas prices of $4.38 in 2020.

As discussed previously, forward markets indicate that prices for trading points within the Marcellus and Utica basins are projected to remain below $4.00/MMBtu through 2020. As shown in Figure 10, Marcellus/Utica gas is expected to trade at a significant discount to gas from other major supply points. The sustained low prices in the Marcellus/Utica producing region are a clear indication that the market believes the prolific production growth from these basins will continue to keep pace with the expected build-out of pipeline infrastructure. Quebec is fortunate that these low cost natural gas supplies are located in close proximity and, as discussed previously, there are a number of proposed pipeline projects that plan to bring these low cost natural gas supplies to eastern Canada.

Actual natural gas prices will be affected by a number of economic, political and environmental factors, and assumptions regarding these factors will greatly influence any forecast of natural gas prices. Due to the numerous challenges associated with forecasting natural gas prices, including the number of assumptions required and the high degree of uncertainty, especially in mid to long term forecasting, Concentric relied on the NEB and EIA forecasts, and futures markets as a general indication of expected prices.[88] All of these sources expect that Henry Hub natural gas prices will remain below $5.00 through 2020, and will remain at or below $6.00 through 2030, which is lower than the prices experienced prior to the significant increase in shale production. Further, natural gas trading points in the Marcellus and Utica shale production areas (and closer to Quebec) are expected to trade below Henry Hub for the foreseeable future.

[88] The Strategic Environmental Assessment on Shale Gas Committee noted similar challenges associated with forecasting of natural gas prices ("RAPPORT SYNTHÈSE Évaluation environnementale stratégique sur le gaz de schiste," January 2014, p. 214).

V. CONCLUSION

As discussed herein, Québec's expected incremental natural gas capacity requirements of 0.29 $10^6 m^3/d$ (10 MMcf/d) and even Québec's low price/high demand scenario incremental natural gas capacity requirements of 2.22 $10^6 m^3/d$ (78 MMcf/d) through 2030 are modest when compared to the abundant natural gas supplies available from a variety of options. For example, natural gas production in the Marcellus and Utica shale regions of the U.S. is expected to increase by over 283 $10^6 m^3/d$ (10 Bcf/d) through 2030, which far exceeds Québec's requirements. There also is projected to continue to be significant natural gas production in the WCSB that would be capable of satisfying future Québec demand. In addition, supplies from shale gas production in Québec and from existing and proposed LNG peakshaving facilities could also be used to satisfy Québec's demand requirements.

Sufficient pipeline transportation capacity is also projected to be available to serve future natural gas demand growth in Québec. Due to the large production in the Marcellus and Utica basins, there are a number of pipeline projects proposed to transport shale supplies into Québec via Dawn, Waddington, Niagara, and Chippawa. Combined, these projects that are in various stages of development represent approximately 112 $10^6 m^3/d$ (4 Bcf/d) of capacity, and all are proposed to be in service prior to the end of 2017. This capacity represents only those projects that have been announced to date, when additional firm demand exists to support additional capacity in the future, additional projects will be proposed and built as pipelines are constantly looking to serve additional firm demand. In addition, capacity on the Mainline will be available to transport WCSB supplies as well.

There is also the possibility that Québec's incremental capacity requirements could be fulfilled by the potential expiration and non-renewal of existing firm capacity contracts on the Eastern Triangle by customers in the northeast U.S. that will have additional sources of gas to consider (e.g., Marcellus shale) when making future capacity decisions. Existing Eastern Triangle capacity held by customers in the northeast U.S. (15.4 $10^6 m^3/d$, or 544 MMcf/d)[89] far exceeds Québec's expected capacity requirements of 0.29 $10^6 m^3/d$ (10 MMcf/d) and even Québec's low price/high demand scenario incremental requirements of 2.22 $10^6 m^3/d$ (78 MMcf/d) through 2030.

It is generally accepted that Henry Hub natural gas prices will remain below $5.00 through 2020, and at or below $6.00 through 2030, which is lower than the prices experienced prior to the significant increase in shale production. As a result, Quebec can expect modest natural gas prices in the future, when compared to the price of historical gas supplies.

As a result, Concentric believes that based on the information currently available, there will be multiple supply and transportation options available to fulfill Québec's expected incremental natural gas demand needs through 2030. Because Québec's demand requirements in the near term will be

89 NEB, RH-001-2014, Evidence of Alberta Northeast Gas, Limited, July 4, 2014, revised July 28, 2014, Attachment 1.

met by existing firm capacity contracts and the Eastern Mainline Project, Québec will also have time before decisions about capacity requirements through 2030 will be required. Greater insight into uncertainties associated with future developments related to demand growth in Québec, proposed pipeline expansion and greenfield projects, shale gas production in Québec, and potential non-renewal of contracts in the Eastern Triangle will help inform these future decisions.

NEB-CEF Forecast Annual Natural Gas Demand in Quebec - High Price Case									
Billions m3	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	0.63	0.63	0.63	0.63	0.63	0.62	0.60	0.57	-0.73%
Commercial	2.42	2.41	2.40	2.42	2.44	2.46	2.53	2.57	0.42%
Industrial	2.89	2.88	2.87	2.84	2.79	2.74	2.55	2.42	-1.18%
Transportation	0.02	0.03	0.04	0.05	0.07	0.08	0.18	0.29	20.23%
Electric Generation	0.40	0.66	0.67	0.67	0.67	0.68	0.70	0.73	4.08%
Total	6.36	6.62	6.62	6.60	6.60	6.59	6.56	6.58	0.23%
Bcf	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	22.37	22.37	22.37	22.28	22.10	22.00	21.07	20.04	-0.73%
Commercial	85.30	85.12	84.75	85.49	86.33	86.98	89.50	90.90	0.42%
Industrial	102.09	101.81	101.43	100.13	98.64	96.68	89.97	85.40	-1.18%
Transportation	0.65	1.03	1.40	1.77	2.33	2.89	6.34	10.35	20.23%
Electric Generation	14.17	23.40	23.68	23.49	23.68	24.05	24.80	25.82	4.08%
Total	224.59	233.73	233.63	233.17	233.07	232.61	231.67	232.51	0.23%

NEB-CEF Forecast Average Day Natural Gas Demand in Quebec - High Price Case									
Million m3 /day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	1.74	1.74	1.74	1.73	1.71	1.71	1.63	1.56	-0.73%
Commercial	6.62	6.60	6.57	6.63	6.70	6.75	6.94	7.05	0.42%
Industrial	7.92	7.90	7.87	7.77	7.65	7.50	6.98	6.63	-1.18%
Transportation	0.05	0.08	0.11	0.14	0.18	0.22	0.49	0.80	20.23%
Electric Generation	1.10	1.82	1.84	1.82	1.84	1.87	1.92	2.00	4.08%
Total	17.42	18.13	18.13	18.09	18.08	18.05	17.97	18.04	0.23%
MMcf/day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	61.30	61.30	61.30	61.05	60.53	60.28	57.73	54.92	-0.73%
Commercial	233.71	233.20	232.18	234.22	236.52	238.31	245.20	249.04	0.42%
Industrial	279.69	278.92	277.90	274.32	270.24	264.87	246.48	233.97	-1.18%
Transportation	1.79	2.81	3.83	4.85	6.39	7.92	17.37	28.35	20.23%
Electric Generation	38.82	64.11	64.88	64.37	64.88	65.90	67.94	70.75	4.08%
Total	615.31	640.34	640.09	638.81	638.55	637.28	634.72	637.02	0.23%

Forecast Annual Natural Gas Demand in Quebec (NEB-CEF with Adjustments) - High Price Case									
Billions m3	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	0.63	0.63	0.63	0.63	0.63	0.62	0.60	0.57	-0.73%
Commercial	2.42	2.41	2.40	2.42	2.44	2.46	2.53	2.57	0.42%
Industrial	2.89	2.88	2.87	2.84	2.79	2.74	2.55	2.42	-1.18%
Transportation	0.02	0.03	0.04	0.05	0.07	0.08	0.18	0.29	20.23%
Electric Generation	0.10	0.10	0.10	0.10	0.10	0.98	0.98	0.98	16.78%
IFFCO	-	-	-	0.83	0.83	0.83	0.83	0.83	*NA*
Total	6.05	6.05	6.04	6.86	6.85	7.72	7.67	7.67	1.59%
Bcf	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	22.37	22.37	22.37	22.28	22.10	22.00	21.07	20.04	-0.73%
Commercial	85.30	85.12	84.75	85.49	86.33	86.98	89.50	90.90	0.42%
Industrial	102.09	101.81	101.43	100.13	98.64	96.68	89.97	85.40	-1.18%
Transportation	0.65	1.03	1.40	1.77	2.33	2.89	6.34	10.35	20.23%
Electric Generation	3.39	3.39	3.39	3.39	3.39	34.76	34.76	34.76	16.78%
IFFCO	-	-	-	29.20	29.20	29.20	29.20	29.20	*NA*
Total	213.81	213.72	213.35	242.27	241.99	272.52	270.84	270.65	1.58%

Forecast Average Day Natural Gas Demand in Quebec (NEB-CEF with Adjustments) - High Price Case									
Million m3 /day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	1.74	1.74	1.74	1.73	1.71	1.71	1.63	1.56	-0.73%
Commercial	6.62	6.60	6.57	6.63	6.70	6.75	6.94	7.05	0.42%
Industrial	7.92	7.90	7.87	7.77	7.65	7.50	6.98	6.63	-1.18%
Transportation	0.05	0.08	0.11	0.14	0.18	0.22	0.49	0.80	20.23%
Electric Generation	0.26	0.26	0.26	0.26	0.26	2.70	2.70	2.70	16.78%
IFFCO	-	-	-	2.27	2.27	2.27	2.27	2.27	*NA*
Total	16.59	16.58	16.55	18.80	18.78	21.15	21.02	21.00	1.59%
MMcf/day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	61.30	61.30	61.30	61.05	60.53	60.28	57.73	54.92	-0.73%
Commercial	233.71	233.20	232.18	234.22	236.52	238.31	245.20	249.04	0.42%
Industrial	279.69	278.92	277.90	274.32	270.24	264.87	246.48	233.97	-1.18%
Transportation	1.79	2.81	3.83	4.85	6.39	7.92	17.37	28.35	20.23%
Electric Generation	9.30	9.30	9.30	9.30	9.30	95.24	95.24	95.24	16.78%
IFFCO	-	-	-	80.00	80.00	80.00	80.00	80.00	*NA*
Total	585.78	585.53	584.51	663.74	662.97	746.62	742.02	741.51	1.58%

Forecasted Design Day Demand in Québec - High Price Case									
Million m3 /day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2017-2030 Incremental Change**
Residential, Commercial, & Industrial	32.96	32.89	32.77	32.67	32.54	32.32	31.51	30.85	(1.92)
Transportation	0.05	0.08	0.11	0.14	0.18	0.22	0.49	0.80	0.69
Electric Generation	0.26	0.26	0.26	0.26	0.26	2.70	2.70	2.70	2.43
IFFCO	-	-	-	2.27	2.27	2.27	2.27	2.27	2.27
Total	33.28	33.23	33.14	35.34	35.25	37.51	36.97	36.62	3.48
Gaz Metro on-system supplies	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	-
Design Day Net of Gaz Metro on-system supplies	23.76	23.71	23.62	25.82	25.73	27.99	27.45	27.10	3.48
Net Design Day excluding Electric Gen. and IFFCO	23.49	23.45	23.36	23.29	23.20	23.02	22.49	22.14	(1.22)
MMcf/day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2017-2030 Incremental Change**
Residential, Commercial, & Industrial	1,164	1,210	1,206	1,202	1,197	1,189	1,159	1,135	(70.60)
Transportation	2	3	4	5	6	8	17	28	24.52
Electric Generation	9.30	9.30	9.30	9.30	9.30	95.24	95.24	95.24	85.94
IFFCO	0	0	0	80	80	80	80	80	80.00
Total	1,175	1,222	1,219	1,296	1,293	1,372	1,352	1,339	119.86
Gaz Metro on-system supplies	336.19	336.19	336.19	336.19	336.19	336.19	336.19	336.19	-
Design Day Net of Gaz Metro on-system supplies	838.97	885.81	882.52	959.76	956.45	1,035.84	1,015.65	1,002.38	119.86
Net Design Day excluding Electric Gen. and IFFCO	829.67	876.51	873.22	870.47	867.15	860.60	840.41	827.14	(46.08)

NEB-CEF Forecast Annual Natural Gas Demand in Quebec - Low Price Case									
Billions m3	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	0.64	0.64	0.65	0.65	0.65	0.65	0.64	0.62	-0.25%
Commercial	2.44	2.45	2.45	2.48	2.52	2.55	2.66	2.71	0.71%
Industrial	3.10	3.15	3.22	3.26	3.30	3.31	3.30	3.24	0.31%
Transportation	0.02	0.03	0.04	0.06	0.08	0.10	0.20	0.32	19.04%
Electric Generation	0.42	0.70	0.72	0.73	0.75	0.77	0.79	0.81	4.51%
Total	6.62	6.98	7.08	7.19	7.29	7.37	7.60	7.71	1.02%
Bcf	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	22.65	22.75	22.93	22.93	22.93	22.93	22.56	21.82	-0.25%
Commercial	86.24	86.52	86.52	87.73	88.85	89.97	94.07	95.84	0.71%
Industrial	109.36	111.22	113.55	115.14	116.63	116.82	116.63	114.58	0.31%
Transportation	0.84	1.12	1.58	2.14	2.70	3.45	7.18	11.47	19.04%
Electric Generation	14.82	24.80	25.45	25.82	26.48	27.13	28.06	28.71	4.51%
Total	233.91	246.40	250.04	253.77	257.59	260.30	268.50	272.42	1.02%

NEB-CEF Forecast Average Day Natural Gas Demand in Quebec - Low Price Case									
Million m3 /day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	1.76	1.76	1.78	1.78	1.78	1.78	1.75	1.69	-0.25%
Commercial	6.69	6.71	6.71	6.81	6.89	6.98	7.30	7.44	0.71%
Industrial	8.48	8.63	8.81	8.93	9.05	9.06	9.05	8.89	0.31%
Transportation	0.07	0.09	0.12	0.17	0.21	0.27	0.56	0.89	19.04%
Electric Generation	1.15	1.92	1.97	2.00	2.05	2.10	2.18	2.23	4.51%
Total	18.15	19.12	19.40	19.69	19.98	20.19	20.83	21.13	1.02%
MMcf/day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	62.07	62.32	62.83	62.83	62.83	62.83	61.81	59.77	-0.25%
Commercial	236.27	237.03	237.03	240.35	243.42	246.48	257.72	262.57	0.71%
Industrial	299.61	304.72	311.10	315.45	319.53	320.04	319.53	313.91	0.31%
Transportation	2.30	3.07	4.34	5.87	7.41	9.45	19.67	31.42	19.04%
Electric Generation	40.61	67.94	69.73	70.75	72.54	74.33	76.88	78.67	4.51%
Total	640.85	675.08	685.04	695.26	705.73	713.14	735.61	746.34	1.02%

Forecast Annual Natural Gas Demand in Quebec (NEB-CEF with Adjustments) - Low Price Case									
Billions m3	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	0.64	0.64	0.65	0.65	0.65	0.65	0.64	0.62	-0.25%
Commercial	2.44	2.45	2.45	2.48	2.52	2.55	2.66	2.71	0.71%
Industrial	3.10	3.15	3.22	3.26	3.30	3.31	3.30	3.24	0.31%
Transportation	0.02	0.03	0.04	0.06	0.08	0.10	0.20	0.32	19.04%
Electric Generation	0.10	0.10	0.10	0.10	0.10	0.98	0.98	0.98	16.78%
IFFCO	-	-	-	0.83	0.83	0.83	0.83	0.83	*NA*
Total	6.30	6.37	6.46	7.38	7.47	8.42	8.62	8.71	2.19%
Bcf	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	22.65	22.75	22.93	22.93	22.93	22.93	22.56	21.82	-0.25%
Commercial	86.24	86.52	86.52	87.73	88.85	89.97	94.07	95.84	0.71%
Industrial	109.36	111.22	113.55	115.14	116.63	116.82	116.63	114.58	0.31%
Transportation	0.84	1.12	1.58	2.14	2.70	3.45	7.18	11.47	19.04%
Electric Generation	3.39	3.39	3.39	3.39	3.39	34.76	34.76	34.76	16.78%
IFFCO	-	-	-	29.20	29.20	29.20	29.20	29.20	*NA*
Total	222.48	225.00	227.98	260.54	263.71	297.13	304.40	307.66	2.18%

Forecast Average Day Natural Gas Demand in Quebec (NEB-CEF with Adjustments) - Low Price Case									
Million m3 /day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	1.76	1.76	1.78	1.78	1.78	1.78	1.75	1.69	-0.25%
Commercial	6.69	6.71	6.71	6.81	6.89	6.98	7.30	7.44	0.71%
Industrial	8.48	8.63	8.81	8.93	9.05	9.06	9.05	8.89	0.31%
Transportation	0.07	0.09	0.12	0.17	0.21	0.27	0.56	0.89	19.04%
Electric Generation	0.26	0.26	0.26	0.26	0.26	2.70	2.70	2.70	16.78%
IFFCO	-	-	-	2.27	2.27	2.27	2.27	2.27	*NA*
Total	17.26	17.46	17.69	20.22	20.46	23.06	23.62	23.87	2.19%
MMcf/day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2015-2030 CAGR**
Residential	62.07	62.32	62.83	62.83	62.83	62.83	61.81	59.77	-0.25%
Commercial	236.27	237.03	237.03	240.35	243.42	246.48	257.72	262.57	0.71%
Industrial	299.61	304.72	311.10	315.45	319.53	320.04	319.53	313.91	0.31%
Transportation	2.30	3.07	4.34	5.87	7.41	9.45	19.67	31.42	19.04%
Electric Generation	9.30	9.30	9.30	9.30	9.30	95.24	95.24	95.24	16.78%
IFFCO	-	-	-	80.00	80.00	80.00	80.00	80.00	*NA*
Total	609.54	616.43	624.61	713.80	722.49	814.05	833.97	842.91	2.18%

Forecasted Design Day Demand in Québec - Low Price Case									
Million m3 /day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2017-2030 Incremental Change**
Residential, Commercial, & Industrial	34.30	34.65	35.04	35.48	35.89	36.10	36.66	36.49	1.45
Transportation	0.07	0.09	0.12	0.17	0.21	0.27	0.56	0.89	0.77
Electric Generation	0.26	0.26	0.26	0.26	0.26	2.70	2.70	2.70	2.43
IFFCO	-	-	-	2.27	2.27	2.27	2.27	2.27	2.27
Total	34.63	35.00	35.43	38.18	38.64	41.33	42.18	42.35	6.92
Gaz Metro on-system supplies	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52	-
Design Day Net of Gaz Metro on-system supplies	25.11	25.48	25.91	28.66	29.12	31.81	32.66	32.83	6.92
Net Design Day excluding Electric Gen. and IFFCO	24.84	25.22	25.65	26.13	26.58	26.85	27.69	27.86	2.22
MMcf/day	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2017-2030 Incremental Change**
Residential, Commercial, & Industrial	1,211	1,224	1,238	1,253	1,268	1,275	1,294	1,289	51.22
Transportation	2	3	4	6	7	9	20	31	27.07
Electric Generation	9.30	9.30	9.30	9.30	9.30	95.24	95.24	95.24	85.94
IFFCO	-	-	-	80	80	80	80	80	80.00
Total	1,223	1,236	1,251	1,348	1,364	1,459	1,489	1,495	244.23
Gaz Metro on-system supplies	336.19	336.19	336.19	336.19	336.19	336.19	336.19	336.19	-
Design Day Net of Gaz Metro on-system supplies	886.56	899.75	914.99	1,012.05	1,028.06	1,123.29	1,153.17	1,159.23	244.23
Net Design Day excluding Electric Gen. and IFFCO	877.27	890.45	905.69	922.75	938.77	948.05	977.93	983.99	78.29