uniongas
A Spectra Energy Company

June 30, 2015

BY COURIER & RESS

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

Dear Ms. Walli:

RE: EB-2015-0200 – Union Gas Limited ("Union") – 2017 Dawn Parkway Project

Enclosed please find two copies of Union's Application and pre-filed evidence in relation to the above-noted project.

The 2017 Dawn Parkway Project includes the installation of three new compressors and associated facilities at Union's Dawn (Dawn H Compressor), Lobo (Lobo C Compressor) and Bright (Bright C Compressor) Compressor Stations. Union is requesting approval of recovery of the cost consequences of all the facilities associated with the development of this Project from ratepayers.

The Project provides incremental capacity of 456,647 GJ/d on Union's Dawn Parkway System. The total estimated cost for the Project is $622.5 million. The Project will be completed in time to serve contracts beginning November 1, 2017. Construction will be staged over a two-year period with in-service dates of November 1, 2016 and November 1, 2017.

In the event that you have any questions on the above or would like to discuss in more detail, please do not hesitate to contact me at 519-436-5473.

Yours truly,

[original signed by]

Karen Hockin
Manager, Regulatory Initiatives

Encl.

cc: EB-2014-0271 (2015 Rates) Intervenors
Zora Crnojacki, Board staff
Mark Kitchen, Union Gas
Crawford Smith, Torys

2017 DAWN PARKWAY PROJECT

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ONTARIO ENERGY BOARD

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

AND IN THE MATTER OF an Application by Union Gas Limited for an Order or Orders for approval of recovery of the cost consequences of all facilities associated with the development of the proposed 2017 Dawn Parkway Project specifically the installation of the Dawn H, Lobo D and Bright C Compressors located in the Township of Dawn-Euphemia, the Municipality of Middlesex Centre and the Township of Blandford-Blenheim.

UNION GAS LIMITED

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1. Union Gas Limited (the "Applicant" or "Union") conducts an integrated natural gas business that combines the operations of selling, distributing, transmitting and storing gas within the meaning of the *Ontario Energy Board Act, 1998* (the "Act").

2. In accordance with the Board-approved Capital Pass-Through criteria forming part of Union's 2014-2018 Incentive Regulation Mechanism (EB-2013-0202), Union hereby applies to the Board pursuant to Section 36 of the Act for an Order granting approval of recovery of the cost consequences of all facilities associated with the development of the proposed 2017 Dawn Parkway Project from ratepayers.

3. The facilities associated with the 2017 Dawn Parkway Project include the installation of a new compressor and associated facilities at the Dawn Compressor Station (Dawn H Compressor), Lobo Compressor Station (Lobo D Compressor) and Bright Compressor Station (Bright C Compressor).

4. Union also applies to the Board pursuant to Section 36 for an Order approving an accounting order to establish the Dawn H/Lobo D/Bright C Compressor Project Costs Deferral Account.

5. Union further applies to the Board pursuant to Section 36 for approval of the Term Up Provision to be added to the General Terms and Conditions (Schedule A's) in the M12 and C1 rate schedules.

6. The persons affected by this Application are the customers resident or located in the Municipalities and First Nations Reserves served by Union, together with those to whom Union sells gas, or on whose behalf Union distributes, transmits or stores gas. It is impractical to set out in this Application the names and addresses of such persons because they are too numerous.

7. The Applicant now therefore applies to the Board for an Order or Orders for approval of recovery of the cost consequences of the facilities described above.

8. The address for service for Union is:

Union Gas Limited
P.O. Box 2001
50 Keil Drive North
Chatham, Ontario N7M 5M1

Attention:	Karen Hockin Manager, Regulatory Initiatives
Telephone:	519-436-5473
Fax:	519-436-4671
Email:	khockin@uniongas.com

-and-

Torys LLP
Suite 3000, 79 Wellington Street West
P.O. Box 270, Toronto Dominion Centre
Toronto, Ontario M5K 1N2

Attention:	Crawford Smith
Telephone:	416-865-8209
Fax:	416-865-7380
Email:	csmith@torys.com

Dated: June 30, 2015

UNION GAS LIMITED

[original signed by]

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Karen Hockin, Manager Regulatory Initiatives

PROJECT SUMMARY

Union is proposing to install three new compressors and associated facilities at Union's Dawn, Lobo and Bright Compressor Stations to meet the growing demand for Dawn Parkway System transportation capacity and address the need to replace an existing compressor facility at the Dawn Compressor Station due to aging infrastructure and system reliability and recovery requirements. The facilities are largely underpinned by signed long term contracts. Rate impacts for infranchise customers are generally decreases while rate impacts for ex-franchise customers are increases.

As noted in EB-2014-0261 (Union's 2016 Dawn Parkway Expansion Project), North American natural gas markets have and are expected to continue to experience dramatic change. Production from mature North American natural gas basins is in decline while production from shale gas formations continues to exceed expectations. While natural gas reserves still exist in mature natural gas basins, the economics of natural gas production and transportation favour shale gas and tight gas formations which are closer to the consuming markets. As a result, the flow of natural gas on the Canadian and U.S. pipeline grid is changing as shippers shift from long haul to short haul transportation.

To meet changing conditions in supply and transportation dynamics, the expansion of pipeline facilities within Ontario remains critical for Ontario, Québec and U.S. Northeast consumers. Expansion will improve access to:

- the liquidity and diversity of competitively priced supply at the Dawn Hub;
- the flexible storage services available at the Dawn Hub; and,
- the diversity and security of new, cost competitive supply from the nearby Marcellus and Utica shale formations.

These claims are further supported by the findings in the 2015 ICF Report filed at Exhibit A, Tab 5, Schedule 1. ICF conclusions with respect to the changing North American supply and transportation dynamics include:

- The development of the abundant and competitively priced sources of gas in the Marcellus and Utica formations in Pennsylvania, Ohio and West Virginia offers gas supply in relatively close proximity to Ontario.
- At the same time, the maturation of traditional supply sources from western Canada as well as the competition for the emerging unconventional natural gas resources in Alberta and British Columbia from Pacific Coast LNG export facilities and oil sands development creates gas supply planning risk for eastern Canadian consumers that currently rely on TransCanada Mainline pipeline capacity from Empress.
- The changes in natural gas markets are shifting the economics of natural gas supply for Ontario consumers, and for consumers that rely on Ontario pipeline capacity. Natural gas prices at Marcellus and Utica supply centres are expected to continue to decline relative to natural gas prices in the Gulf Coast and other North American supply centres, creating economic incentives to develop the infrastructure needed to access this source of supply.

- Natural gas markets in Ontario are at a pivotal point. Infrastructure will be required at various locations between production zones, liquid hubs and the consuming markets. For Ontario consumers, infrastructure is required upstream and downstream of Dawn and Niagara/Chippawa.

The proposed project includes building the Dawn H, Lobo D and Bright C compressors and associated facilities to meet growth in demands and, in the case of Dawn H, to also replace the existing Dawn B compressor ("Plant B"). Union's Open Season was held in December 2014 and resulted in 453 TJ/d of incremental demands on the Dawn Parkway System.

The ICF report also included the following conclusions regarding the expected utilization of the Dawn Parkway system in the future:

- Utilization of the Dawn Parkway System has increased significantly in the last five years, and ICF International is projecting continued growth in demand over the next 20 years.
- Growth in peak period utilization of the Dawn Parkway System has been driven by fundamental changes in natural gas markets, including changes in supply, demand and infrastructure.
- The changes in North American natural gas supply and demand patterns have a significant impact on Ontario, and the demand for pipeline assets in Ontario. ICF International analysis indicates that demand for pipeline flows on the Dawn Parkway

System during peak winter periods are expected to continue to increase from today's levels under a variety of different market scenarios.

- The proposed 2017 Dawn Parkway System expansion facilities respond to market needs, should remain fully contracted and should become more valuable over time. While there is a risk that specific customers may choose to turn back capacity, the risk that the capacity released will not be contracted by other parties is limited.

As described in Exhibit A, Tab 7, the specific facility requirements at Dawn involve the installation of a new ISO rated 44,500 HP compressor (Dawn H). In addition to providing the necessary increase in compression for new demands resulting from open season, the design of Dawn H also allows for the planned replacement of Plant B. Installed in 1977, Plant B is nearing the end of its service life. Plant B is an integral facility at Dawn and because of its vintage it poses a reliability risk to Union's Dawn Parkway System. Plant B will be functionally removed from service at the time Dawn H is commissioned in November 2017, and physically removed in 2018.

As established in evidence, the availability of parts is critical to proper plant maintenance and overall reliability. Siemens (formerly Rolls Royce), the manufacturer of the Plant B compressor has declared the compressor package obsolete and informed Union that it no longer supports overhaul parts for this vintage engine. Acquisition of repair parts will become increasingly difficult, if not impossible, going forward as existing inventories are depleted.

Over the past three years, compression at Dawn experienced between 9 and 12 unscheduled outages per year through the winter months lasting from two days to the entire season or more. During this period, Plant B experienced two short duration outages in winter 2013/2014 and was unavailable for the entire season in winter 2014/2015. It remains out of service today. The replacement of Plant B is not only necessary but supports Union's commitment to long-term reliable service and prudent asset management practices.

This application by Union is brought in response to these fundamental market changes combined with the facility reliability issue at Dawn. The application consists of the following requests:

1) Approval under Section 36 of the Ontario Energy Board Act ("the Act") granting pre-approval of the recovery of cost consequences associated with the installation of the Dawn H Compressor and associated facilities at the Dawn Compressor Station, the Lobo D Compressor and associated facilities at the Lobo Compressor Station, and the Bright C Compressor and associated facilities at the Bright Compressor Station, together the "Project".

2) Approval under Section 36 of the Act granting an approval of an accounting order to establish the 2017 Dawn Parkway System Expansion Deferral Account.

3) Approval under Section 36 of the Act granting approval of the Term Up provision to be added to the General Terms and Conditions (schedule A's) in the M12 and C1 rate schedules.

Union is seeking pre-approval of the recovery of the costs consequences of the Project as it meets the Board-approved capital pass-through criteria which form part of Union's 2014-2018 Incentive Regulation Mechanism (EB-2013-0202). As described at Exhibit A, Tab 10, given the magnitude of the Project, Union is not able to proceed with the development of the Project without reasonable certainty of cost recovery.

The total estimated cost for the Project is $622.5 million. This includes $107.4 million coming into service in 2016 and $500.8 million coming into service in 2017. The remaining $14.3 million will be spent in 2018. As of April 2016 Union anticipates it will have committed to approximately $200 million in spending related to the project.

To calculate rate impacts, Union added the largest revenue requirement directly attributable to the Project (rate base, return, interest, tax, depreciation and O&M) between 2016 and 2018 of $44.4 million to Union's 2013 Board-approved cost allocation study (updated per EB-2013-0365).

The impact on Union South in-franchise rate classes is a rate reduction as a result of the shift in indirect costs and the allocation of Project property and income taxes. The impact on Union North in-franchise rate classes is a rate reduction as a result of the shift in indirect costs and the allocation of Project property and income taxes.

In comparison to 2015 Board-approved rates per EB-2015-0035 (April 2015 QRAM), the bill impact for the average Rate M1 residential customer in Union South consuming 2,200 m^3 per year is a decrease of approximately $6.44 per year. For the average Rate 01 residential customer in Union North consuming 2,200 m^3 per year, the bill impact is a decrease of approximately $8.26 per year.

For ex-franchise customers taking M12 Dawn-Parkway transportation service, the Project costs are expected to increase the M12 rate by approximately $0.017/GJ/d; from $0.086/GJ/d to $0.102/GJ/d. Including the Project rate impacts with the rate impacts of Union's Parkway West, Brantford to Kirkwall Pipeline and Parkway D Compressor Projects and Hamilton to Milton Pipeline and Lobo C Compressor Projects, Union estimates that the M12 Dawn-Parkway transportation rate will increase by approximately $0.036/GJ/d; from $0.086/GJ/d to $0.121/GJ/d by 2018. When compared to the Ontario Landed Reference Price of $5.036/GJ (per April 2015 QRAM), the increase in the M12 rate of $0.036/GJ/d represents approximately 0.7%.

As discussed in Exhibit A, Tab 6, Union is proposing to add a five-year Term Up Provision for existing renewable transportation contracts on the Dawn Parkway System ("Dawn Parkway Shippers") when a facility expansion of the Dawn Parkway System is planned at a cost of $20.0 million or greater. Union's proposal is consistent with TransCanada's recently approved Term Up Provision (RH-001-2014). Union's Term Up Provision, once approved, is proposed to be implemented by Union for Dawn Parkway System facility expansions in 2018 or later. As part of this application, Union is requesting approval of changes to the M12 and C1 general terms and conditions ("GT&C's") to reflect the proposed Term Up Provision (see Exhibit A, Tab 10).

To ensure area residents and other key stakeholders were made aware of the Project, Union implemented a consultation outreach plan. To inform the public and solicit input from landowners, tenants and the general public with respect to the proposed compressor facilities, Union either mailed affected individuals a letter or held a public Information Session in the Project area. The Project was also identified at Union's July 2014 and April 2015 Stakeholder meetings. Union will continue its commitment to public consultation throughout the completion of the Project. No new permanent or temporary land rights are required for the construction of any of the proposed compressor and associated facilities.

There will be no long-term significant environmental concerns that cannot be mitigated. There are no cumulative impacts associated with this Project.

The Project will be completed in time to serve contracts beginning November 1, 2017. The Project is scheduled to be staged over a two-year period with in-service dates of November 1, 2016 and November 1, 2017. Plant B will be removed in 2018 along with clean-up activities. In order to meet this construction timeline, Union respectfully requests the Board issue a Decision no later than April 2016.

UNION GAS SYSTEM OVERVIEW

The purpose of this section is to provide an overview of Union's system, including the Dawn Hub and the Dawn Parkway System, and the importance of Union's system to energy supply in Ontario, Québec and the U.S. Northeast.

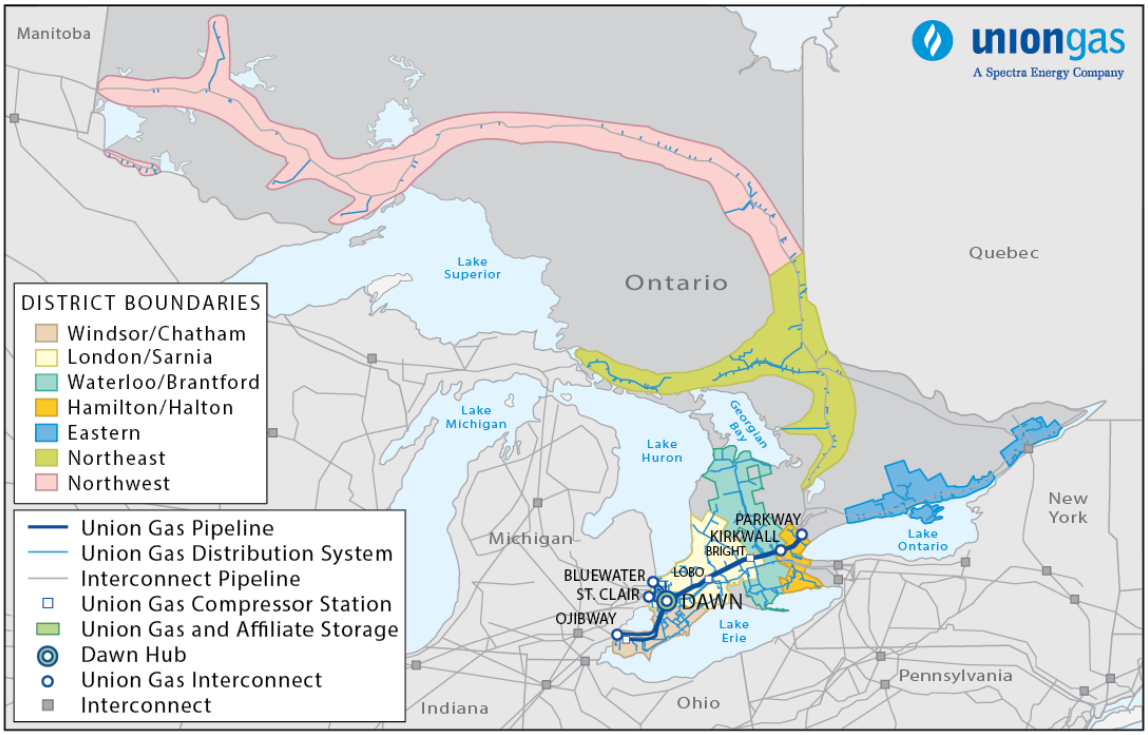
Union serves approximately 1.4 million customers in northern, eastern and southern Ontario through an integrated network of over 69,000 kilometres of natural gas pipelines. Union owns storage and transmission assets that include 157 Bcf of underground natural gas storage at the Dawn Hub as well as the Dawn Parkway System, which connects the Dawn Hub to consuming markets in Ontario, Québec and the U.S. Northeast. Throughput serving Union's in-franchise customers during 2014 was over 521 Bcf. Throughput serving Union's ex-franchise storage and transmission customers during 2014 was 695 Bcf. In total, Union transported over 1.2 Tcf of natural gas in 2014, which is slightly greater than all of the natural gas consumed in Ontario and Québec or approximately 4% of North American demand.

Union's Service Districts

Union divides its service territory areas into Union North and Union South. Union South includes customers located west of Mississauga and south of Georgian Bay (Windsor/Chatham, London/Sarnia, Waterloo/Brantford and Hamilton/Halton Districts). Union North includes customers located north of Barrie and north and west of North Bay (Northeast and Northwest Districts). Union North also includes customers located east of Bowmanville and west of the

Québec border (Eastern District). A map of Union's service districts as well as Union's system is provided at Figure 4-1 and at Exhibit A, Tab 4, Schedule 1.

Figure 4-1
Union Gas System and Service Districts



Union North is almost exclusively supplied from the TransCanada PipeLines Limited ("TransCanada") Mainline system, with no other option for the transportation or physical delivery of natural gas to Union's laterals located throughout each Union North service district. These customers are reliant upon the TransCanada Mainline.

The Dawn Hub

Union operates one of the largest and most important North American market hubs, the Dawn Hub. The Dawn Hub consists of a combination of interconnecting pipelines and underground natural gas storage, and is the main source of supply for Union's Dawn Parkway System. The Board recognized in its November 7, 2006 Natural Gas Electricity Interface Review Decision EB-2005-0551, ("NGEIR Decision"), that "the development of the Dawn Hub has brought substantial benefits to consumers in Ontario and to other market participants[1]".

Dawn is one of the most physically traded, liquid hubs in North America and is the most physically traded natural gas hub in the Great Lakes region. The liquidity of Dawn is the result of the combination of:

1) access to underground storage;
2) interconnections with upstream pipelines;
3) take away capacity to growth markets;
4) a large number of buyers and sellers of natural gas; and,
5) price transparency.

The Dawn Hub is also connected to a significant amount of underground natural gas storage within the Great Lakes region. In Ontario, Union owns 157 Bcf of natural gas storage in 23 pools that are all connected to the Dawn Hub. This storage is largely owned by Union, with a

[1] EB-2005-0551 Decision, November 7, 2006, p. 44.

small amount contracted from other Ontario storage operators. In addition, Enbridge Gas Distribution Inc. ("Enbridge") operates 112 Bcf of natural gas storage (the Tecumseh facilities) that is connected to the Dawn Hub. Dawn is also connected through various upstream pipelines to approximately 675 Bcf of underground natural gas storage in Michigan. A map of Union's storage connected to the Dawn Hub is provided at Exhibit A, Tab 4, Schedule 2.

A number of pipelines are connected to the Dawn Hub: Great Lakes Gas Transmission ("GLGT") via TransCanada, Vector Pipeline, Bluewater Gas Storage, Michigan Consolidated, Panhandle Eastern Pipeline via Union's Panhandle System, the Enbridge (Tecumseh) system, and ANR via the Niagara Gas Transmission (NiagaraLink) and Enbridge (Tecumseh) systems. Dawn is also connected to pipelines at the Ontario/New York border via TransCanada and the Dawn Parkway System that include Tennessee Gas Pipeline, Dominion Transmission and National Fuel Gas Supply Corporation ("National Fuel Gas") at the Niagara import/export point and Empire State Pipeline at the Chippawa import/export point.

In its NGEIR Decision, the Board concluded that:

> *"It is in the public interest to maintain and enhance the depth and liquidity of the market at the Dawn Hub as a means of facilitating competition*[2]*"*.

[2] EB-2005-0551 Decision November 7, 2006, p. 45.

In its Decision regarding Union's Parkway Projects and Enbridge's GTA Project, the Board reiterated this position:

> *"It is the Board's view that while uncertainties exist for all supply sources in terms of future cost and availability, it is widely acknowledged, including by this Board in prior decisions, that supply diversification enhances reliability and brings cost benefits through enhanced competition*[3]*".*

The depth and liquidity of the market at Dawn provides value to all Ontario customers by way of competitive natural gas commodity prices, attracting natural gas supply to Ontario. Pipeline projects are in development that would bring new supply from the Marcellus and Utica production zones to Dawn, including the NEXUS Project and ETP Rover Project[4].

Ontario's natural gas-fired generation market relies on a healthy, liquid Dawn Hub. Power generation contracts are commercially structured based on the price of natural gas at Dawn for approximately 5,500 MW of Ontario's electricity production capacity. Natural gas-fired generators have access to unique services at the Dawn Hub that provide operational flexibility through firm all day storage and transportation services allowing natural gas-fired generators to

[3] EB-2012-0451/EB-2012-0433/EB-2013-0074 Decision January 30, 2014, pp. 23-24.

[4] These pipeline projects will bring significant incremental supplies to Dawn, and are the first to do so since the Alliance and Vector pipelines were constructed in 2000. NEXUS and Rover are designed to transport 1.5 Bcf/d and 3.25 Bcf/d respectively from the Utica and Marcellus shale formations to delivery points in Ohio, Michigan, and the Dawn Hub in Ontario. These projects will enhance the depth and liquidity of the Dawn Hub by introducing new supplies and market participants. NEXUS is anticipated to begin service November 2017, and Rover is anticipated to begin service in June 2017. Union has recently filed EB-2015-0166 requesting pre-approval for the cost consequences of a long-term transportation contract as an anchor shipper with NEXUS for 150,000 Dth/d (158,258 GJ/d).

match natural gas supply needs to the electricity market that is priced hourly and dispatched every five minutes.

The Board further identified the importance of the Dawn Hub in its NGEIR Decision:

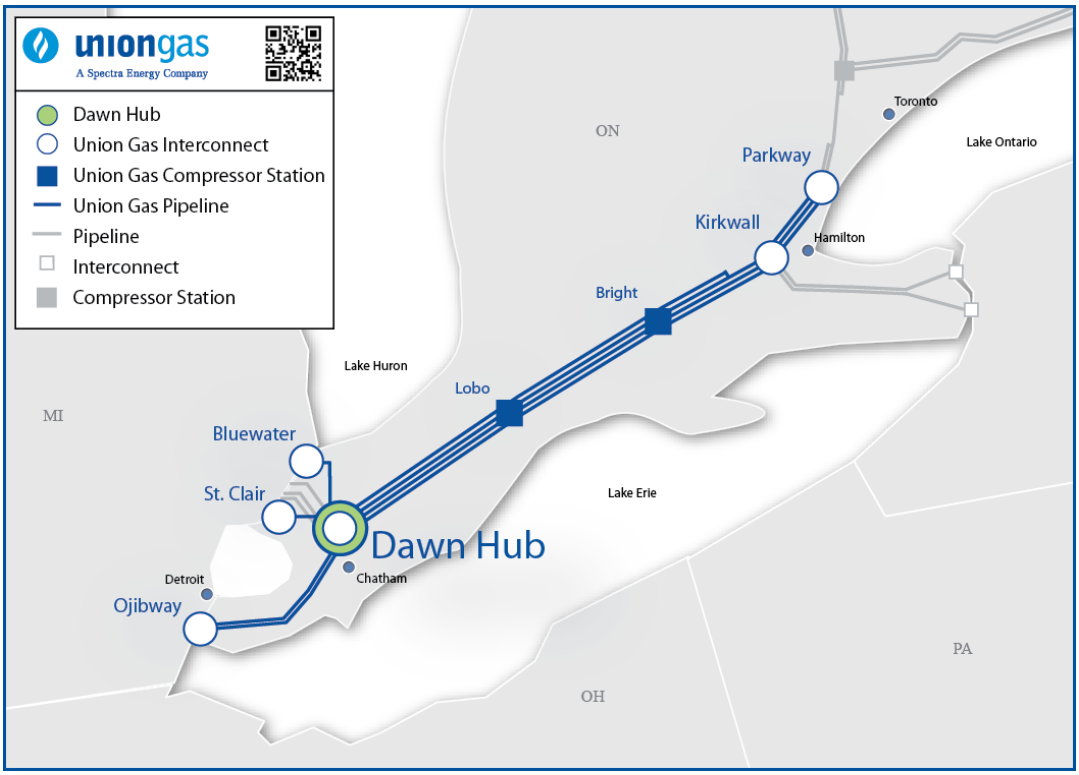
> *"The storage facilities are an integral part of what is commonly referred to as the Dawn Hub, which is widely recognized as one of the more important market centres in North America for the trading, transfer and storage of natural gas. In its Natural Gas Forum Report, the Board stated "The large amount of nearby storage, combined with the convergence of pipelines linking the U.S. and Ontario gas markets, have made Dawn the most liquid trading location in Ontario. The Federal Energy Regulatory Commission, in its assessment of energy markets in the United States in 2004, made similar comments about the significance of Dawn:*
>
> *The Dawn Hub is an increasingly important link that integrates gas produced from multiple basins for delivery to customers in the Midwest and Northeast…Dawn has many of the attributes that customers seek as they structure gas transactions at the Chicago Hub: access to diverse sources of gas production; interconnection to multiple pipelines; proximity to market area storage; choice of seasonal and daily park and loan services; liquid trade markets; and opportunities to reduce long haul pipeline capacity ownership by purchasing gas at downstream liquid hubs."* [5]

[5] EB-2005-0551 Decision November 7, 2006, pp. 7-8.

Dawn Parkway System

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

Figure 4-2
The Dawn Parkway System



Additionally at Parkway, in January 2014, the Board approved the Parkway West Compressor Station ("Parkway West") development[6]. Two compressors and related facilities are currently under construction at Parkway West. A portion of the Parkway West facilities were placed into service in 2014 with the majority of the facilities targeted for fall 2015 in-service. Once in-service, Parkway will become an integrated network of compressors and natural gas pipelines with the new Parkway West site located directly west of the existing Parkway site.

The Dawn Parkway System connects with other pipeline systems at three locations:

1) At Dawn, near Sarnia, the Dawn Parkway System connects to a number of pipelines: Vector Pipeline; Panhandle Eastern Pipeline via the Union Panhandle system; GLGT via TransCanada; Michigan Consolidated; Bluewater Gas Storage; Enbridge (Tecumseh) and ANR via the Niagara Gas Transmission (NiagaraLink) and Enbridge (Tecumseh) systems.
2) Near Hamilton, the Dawn Parkway System connects to the TransCanada Mainline at Union's Kirkwall Custody Transfer Station ("Kirkwall"). This portion of the TransCanada Mainline, known as the Niagara Export Line, connects to the import/export points at Niagara and Chippawa at the Ontario/New York border. TransCanada's Niagara Export Line connects to Tennessee Gas Pipeline, Dominion Transmission and National Fuel Gas at the Niagara import/export point and to the Empire State Pipeline at the Chippawa import/export point.

[6] EB-2012-0451/EB-2012-0433/EB-2013-0074 Decision January 30, 2014.

3) At Parkway, the Dawn Parkway System connects to the TransCanada Mainline and to the Enbridge system. Union connects to the TransCanada Mainline within the existing Parkway site at a delivery point referred to as Parkway (TCPL). Union connects to the Enbridge system within the existing Parkway site at a delivery point referred to as Parkway (Consumers), and at a second location two kilometres east of Parkway at a delivery point referred to as the Lisgar Custody Transfer Station ("Lisgar").

At Parkway West, once construction is complete in 2015, the Dawn Parkway System will connect to the Board-approved Enbridge GTA Project (Segment A), to the existing Enbridge system and to the TransCanada Mainline.

As described above, Union receives natural gas at Dawn from a number of interconnecting pipelines which connect the Dawn Hub to most of North America's major supply basins. In its Decision regarding Union's Parkway Projects and Enbridge's GTA Project, the Board concluded that:

> *"Supply diversity enhances security and has the tendency to lower gas prices from what they would otherwise be if the market continued to rely on fewer sources of supply[7]".*

The majority of Union South customers located east of Dawn are served via the Dawn Parkway System. Some of Union's customers in the Hamilton/Haldimand-Norfolk and

[7] EB-2012-0451/EB-2012-0433/EB-2013-0074 Decision January 30, 2014, p. 29.

Burlington/Oakville areas are currently served from TransCanada's Niagara Export Line and TransCanada's Domestic Line (which runs from the Niagara import/export point to Parkway). Union also uses its Dawn Parkway System (and also TransCanada services originating from Parkway) to ship natural gas from Dawn to Union North.

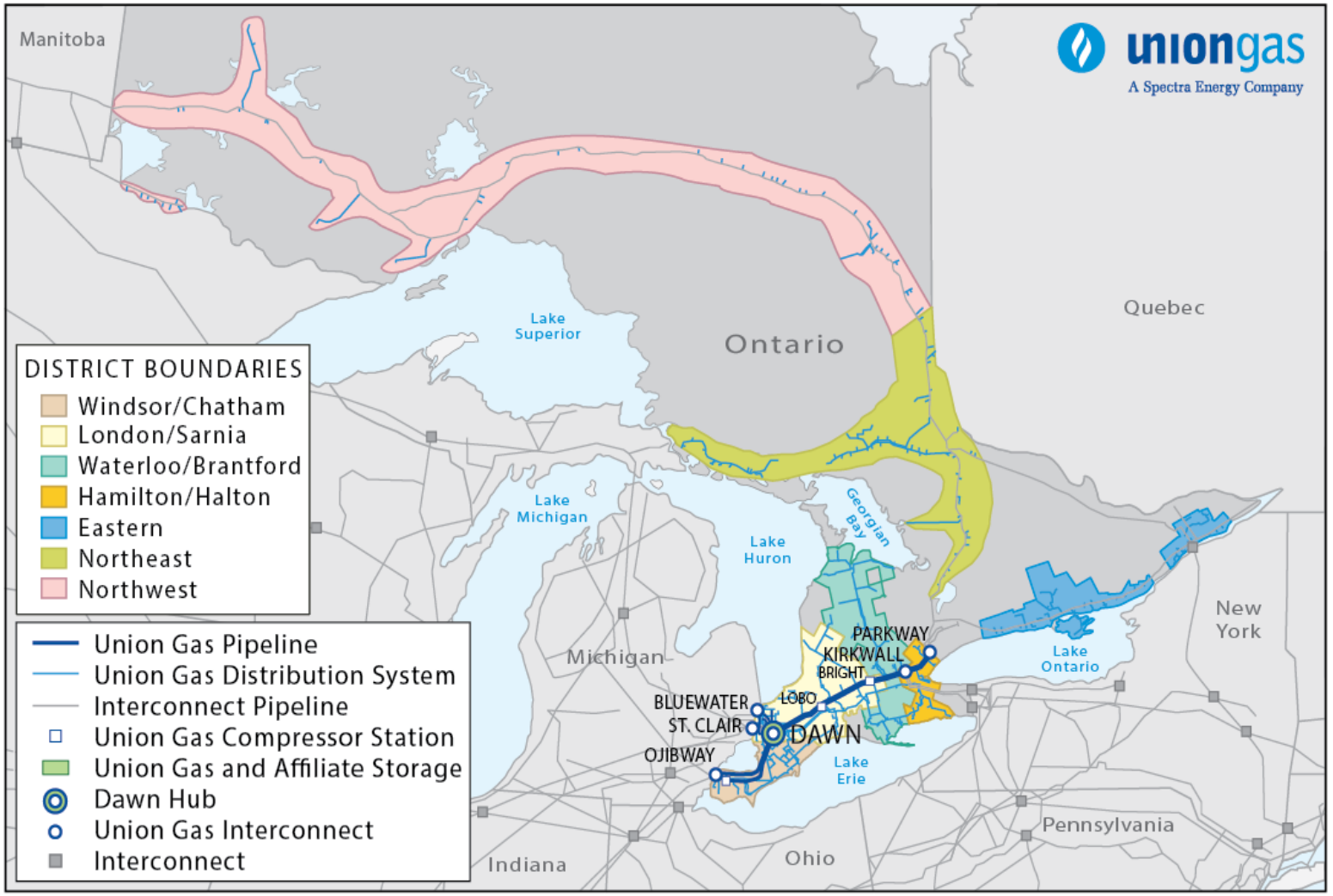
Union also provides transportation services on the Dawn Parkway System to ex-franchise customers, including Enbridge, TransCanada, Gaz Métro Limited Partnership and U.S. Northeast natural gas utilities. Union is accountable to its in-franchise customers and its ex-franchise firm transportation customers for the reliable delivery of natural gas.

Union's Dawn Parkway System has expanded over the years in response to increases in demand for transportation services from Union's in-franchise customers and ex-franchise customers. As of November 1, 2016, the Dawn Parkway System is expected to have a physical design day capacity of 7.0 PJ/d. As the system has expanded, compression and pipeline facilities have been added. A list of compressors at Dawn, Lobo, Bright and Parkway, including installation date and horsepower rating, is provided at Exhibit A, Tab 4, Schedule 3.

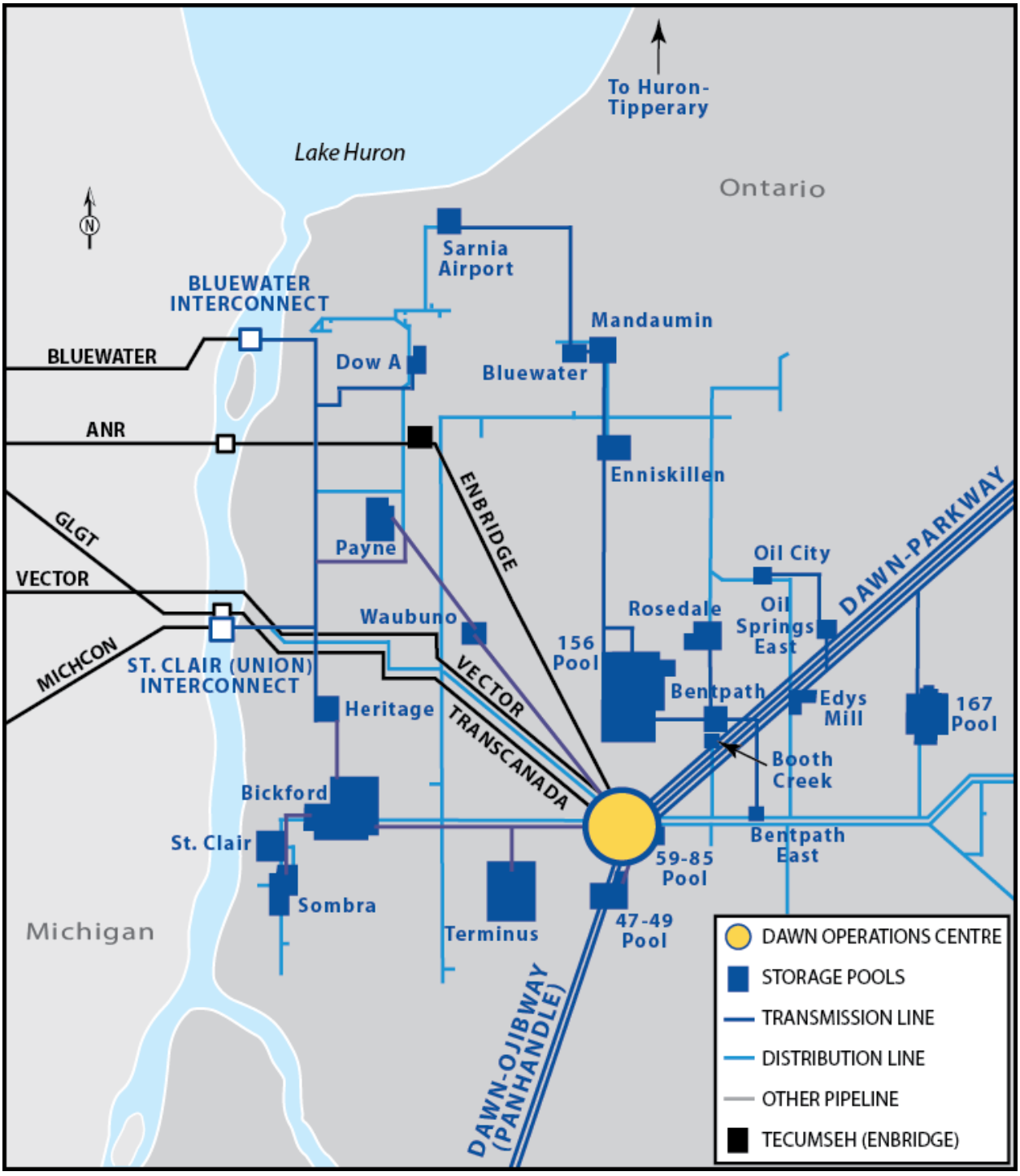
Union's Dawn Parkway System is an integral part of the natural gas delivery system for Ontario, Québec and U.S. Northeast residents, businesses and industry. The Dawn Parkway System connects these consuming markets to most of North America's major supply basins, to the largest region of underground natural gas storage in North America and to the liquid Dawn Hub.

Filed: 2015-06-30
EB-2015-0200
Exhibit A
Tab 4
Schedule 1

Union Gas System and Service Districts



Union Gas Storage Connected to the Dawn Hub



Compressors at Dawn, Lobo, Bright and Parkway			
Compressors	**Location**	**Install Date**	**Horespower (ISO)**
Dawn A1	Dawn	1956	retired - 2010
Dawn A2	Dawn	1958	retired - 2010
Dawn A3	Dawn	1963	retired - 2010
Dawn A4	Dawn	1967	retired - 2010
Dawn A5	Dawn	1971	retired - 2010
Dawn B	Dawn	1978	26,700
Dawn C	Dawn	1982	30,270
Dawn D	Dawn	1989	33,350
Dawn E	Dawn	1990	35,000
Dawn F-1	Dawn	2006	10,310
Dawn F-2	Dawn	2006	10,310
Dawn G	Dawn	1993	35,000
Dawn I	Dawn	2008	44,100
Dawn J	Dawn	2011	10,310
Lobo A1	Lobo	1970	20,510
Lobo A2	Lobo	1972	20,510
Lobo B	Lobo	1990	35,000
Bright A1	Bright	2008	39,600*
Bright A2	Bright	2008	39,600*
Bright B	Bright	1990	35,000
Parkway A	Parkway	1989	20,000
Parkway B	Parkway	2007	42,500
Trafalgar Unit 1	Trafalgar	1958	retired - 2012
Trafalgar Unit 2	Trafalgar	1963	retired - 2012
Trafalgar Unit 3	Trafalgar	1963	retired - 2012

* The original Rolls Royce Avon engine units in the Bright A1 and A2 berths were installed in 1970 and 1972 respectively. This retrofit increased the horsepower in each unit from between 15,000 and 20,000 ISO HP to 39,600 ISO HP.

Proposed Compressors			
Compressors	**Location**	**Install Date**	**Horespower (ISO)**
Parkway C*	Parkway	2015	44,500
Parkway D*	Parkway	2015	44,500
Lobo C	Lobo	2016	44,500
Lobo D	Lobo	2017	44,500
Bright C	Bright	2017	44,500
Dawn H	Dawn	2017	44,500

*Approved

SUPPLY AND TRANSPORTATION DYNAMICS

The purpose of this section is to address key changes that have occurred or are occurring with respect to natural gas supply and transportation in North America[1,2] and changes to Union's Dawn Parkway System[3].

Changing Gas Supply Dynamics

North American natural gas markets continue to experience dramatic change. Production from shale gas formations continues to exceed forecasts. In the 2016 Dawn Parkway Expansion Project proceeding (EB-2014-0261), ICF projected average daily production from the Marcellus and Utica shale gas plays of 25.7 billion cubic feet per day (Bcf/d) by 2020 and 30.8 Bcf/d by 2025. ICF is currently projecting production from the Marcellus and Utica plays to reach 26.5 Bcf/d by 2020 and 33.7 Bcf/d by 2025. While natural gas reserves still exist in mature production

[1] Union previously filed evidence addressing substantive changes in North American natural gas supply dynamics in the following proceedings: i) EB-2012-0433, Parkway West Project, Exhibit A, Tab 4; ii) EB-2013-0074, Brantford to Kirkwall Pipeline/Parkway D Compressor, Exhibit A, Tab 4; iii) EB-2014-0145, 2013 Deferral Disposition, Exhibit A, Tab 4, Appendix B and Appendix C; iv) EB-2014-0261, Dawn Parkway 2016 Expansion Project, Exhibit A, Tab 5; v) EB-2014-0289 Natural Gas Market Review; and vi) EB-2014-0333, Sarnia Expansion Project.

[2] Union previously filed expert reports that addressed the substantive changes in North American natural gas supply dynamics in the following proceedings: i) EB-2012-0433, Parkway West Project, Exhibit A, Tab 4, Schedule 4-7, "Impact of Changing Supply Dynamics on the Ontario Natural Gas Market" January 30, 2013; ii) EB-2013-0074, Brantford to Kirkwall Pipeline/Parkway D Compressor, Exhibit A, Tab 4, Schedule 4-1, "Impact of Changing Supply Dynamics on the Ontario Natural Gas Market" January 30, 2013; iii) EB-2014-0145, 2013 Deferral Disposition, Exhibit A, Tab 4, Appendix B, and Appendix C; iv) EB-2014-0261, Dawn Parkway 2016 Expansion Project, Exhibit A, Tab 5, pg. 21 of 23; v) EB-2014-0289, Natural Gas Market Review, "Future Trends: Assessing Ontario Natural Gas Market Requirements Through 2020" November 25, 2014; and vi) EB-2014-0333, Schedule 4-1, "Union Gas Sarnia Industrial Line Market Analysis" October 2014.

[3] Union previously filed evidence addressing changes to the Dawn Parkway System, including decreasing demand for Dawn to Kirkwall transportation, the development of significant receipts at Kirkwall from the Niagara import/export point at the Ontario/New York border and increasing demand for Dawn to Parkway transportation: i) EB-2011-0210, Exhibit A2, Tab 1, Schedule 4 – Natural Gas Market Conditions and Impact on Union Gas Limited, ICF International; ii) EB-2012-0433, Parkway West Project, Exhibit A, Tab 4; iii) EB-2013-0074, Brantford to Kirkwall Pipeline/Parkway D Compressor, Exhibit A, Tab 4; and iv) EB-2014-0261, Dawn Parkway 2016 Expansion Project, Exhibit A, Tab 5.

basins, the economics of natural gas production continue to favour shale gas and tight gas formations. This continues to be a challenge for production from mature North American natural gas basins which are also located further from eastern consuming markets.

The majority of Ontario's natural gas supply needs for the past five decades were met through the large resources of the Western Canadian Sedimentary Basin ("WCSB") and delivered via the TransCanada Mainline and other west-to-east pipelines[4]. Over the past ten years conventional production has matured and is now in decline. At the same time, domestic use of natural gas in Alberta has significantly increased, particularly to support oil sands development. This has reduced the amount of natural gas available to be transported to eastern markets. The Alberta Energy Regulator forecasts that approximately 2 Bcf/d of natural gas will be available in 2023 to transport out of the province of Alberta to a wide variety of markets, including eastern Canada[5] compared to 2013 actuals where approximately 5 Bcf/d was available to transport out of the province of Alberta.

Shale gas production in British Columbia, as well as the development of coal bed methane and shale gas resources in Alberta, will help stabilize WCSB production levels. Shale gas development in western Canada is predicted to be primarily linked to the growth of liquefied natural gas ("LNG") export terminals on the Pacific coast. Many other significant markets will also compete for new western Canadian shale gas production, including traditional western

[4] Northern Border Pipeline, Foothills Pipeline, Alliance Pipeline and Vector Pipeline were built to transport natural gas to markets east of Alberta. Alberta production traditionally served western Canadian, Pacific, U.S. Midwest, eastern Canadian and U.S. Northeast markets.
[5] Alberta Energy Regulator, ST98-2014, Alberta's Energy Reserves 2013 and Supply/Demand Outlook 2014-2023, p. 17.

Canadian, U.S. Pacific and U.S. Midwest markets and, to some extent, eastern North American markets. The decrease in the amount of natural gas available to be transported to eastern markets from western Canada is expected to continue as more western Canadian and Pacific markets access WCSB production.

For eastern North American customers, the westward diversion of WCSB supply will continue to have further impact on the amount of natural gas available to flow to eastern markets, affecting Ontario's security of supply and landed cost of natural gas. To feed Ontario's energy-intensive industry, natural gas-fired generators, businesses and homes, supply historically provided by the WCSB will need to be replaced.

Total U.S. dry natural gas production increased 35% from 2005 to 2013 largely due to the development of shale gas resources (including natural gas produced from tight oil formations)[6]. The U.S. Energy Information Administration ("EIA") forecasts annual production from shale gas resources in the U.S. to increase 73% from 11.3 Tcf in 2013 to 19.6 Tcf in 2040[7]. Over the same period, the EIA forecasts the percentage of U.S. natural gas production from shale gas resources to increase from 46% in 2013 to 55% in 2040[8].

The Appalachian Basin, specifically the Marcellus and Utica formations, has experienced the most prolific natural gas production growth in North America. This abundant supply is located within the Great Lakes region in close proximity to Ontario, the Dawn Hub and other eastern

[6] U.S. Energy Information Administration Annual Energy Outlook 2015, April 2015, p. 20.
[7] Ibid.
[8] Ibid.

North American consuming markets.

Appalachian shale gas is produced from both dry gas and wet gas production areas. The dry gas areas of the Marcellus formation in north-central Pennsylvania were brought to market quickly due to the quality of gas produced (no significant processing facilities required) and proximity to existing pipeline systems. The liquids-rich regions of the Marcellus formation in southwest Pennsylvania and West Virginia, and the Utica formation in southeastern Ohio, have taken longer to develop due to the requirement to separate and process the natural gas and natural gas liquids. However, the liquids-rich regions have the economic benefit of producing both natural gas (methane) and high value natural gas liquids (for example, condensates, ethane, butane and propane). This allows producers to sell multiple commodities. Supply from the liquids-rich areas of the Marcellus and Utica formations will continue to grow as midstream infrastructure is built to gather, separate and process the liquids-rich gas and as additional pipeline infrastructure is built to move the natural gas and natural gas liquids to market. The location of the Marcellus and Utica shale formations are shown in Figure 5-1.

Figure 5-1
Location Map – Marcellus and Utica Formations

Technology continues to improve and plays a significant role in the increase in production from shale gas resources (including natural gas produced from tight oil formations). Technology advances, such as longer laterals, increased use of pad drilling, closer fracturing zones, increased multi-zone drilling and more efficient horizontal well drilling and hydraulic fracturing techniques and practices, have produced larger returns per well and facilitated greater development of the abundant natural gas supplies found in shale, coal bed methane, tight gas and tight oil formations.

The combination of liquids rich resources, new infrastructure and technological advancements has resulted in accelerated growth of the development of shale gas resources. As a result, Marcellus and Utica natural gas producers are continuing to aggressively seek access to other North American markets in addition to the large neighbouring U.S. Northeast market. Timing of new natural gas supply infrastructure into Ontario will be critical for the Dawn Hub and Ontario consuming markets to ensure access to these prolific shale plays as many pipeline expansions are proposed to move Marcellus and Utica production to markets in the U.S. Northeast and markets distant from the U.S. Northeast, such as the Gulf Coast and U.S. Southeast.

With less natural gas available to flow to eastern markets from the WCSB and with the emergence of the prolific Marcellus and Utica production, the eastern markets have responded to the changing supply dynamics by decreasing reliance on the WCSB and associated long haul transportation to move natural gas to eastern markets. The LDCs in eastern Canada are in the process of adjusting their natural gas supply portfolios to purchase gas closer to their markets and to use short haul transportation to move gas to their markets. The result has been a well-known and significant decrease in demand for long haul transportation on the TransCanada Mainline (including transportation on the GLGT system)[9].

[9] To counter the decreasing demand for long haul transportation, TransCanada priced its discretionary services to encourage the use of firm transportation (FT) contracting following the release of the National Energy Board decision in RH-003-2011. This resulted in an increase in firm transportation contracting (either FT or FT-NR) of approximately 2 Bcf/d in the winter of 2014/2015.

New infrastructure is required within Ontario to provide access to new supply sources through incremental short haul transportation services. The Settlement Agreement[10] provides for the efficient development of natural gas infrastructure within Ontario including the addition of incremental capacity to meet evolving natural gas market and customer needs. Specifically the Settlement Agreement requires TransCanada to use best efforts to facilitate the natural gas market's desire for supply diversity and access to cost competitive supply on a timely basis. Tolls resulting from the Settlement Agreement were approved by the National Energy Board in RH-001-2014. Union's proposed facilities and related projects are discussed in Exhibit A, Tab 6.

ICF International Report

ICF International has previously completed reports that were submitted to the Board providing analysis of the natural gas supply and transportation dynamics across North America. In 2015, ICF International completed a further report entitled "Impact of Natural Gas Market Trends on Utilization of the Union Gas Dawn Parkway System" ("2015 ICF Report") which provides an updated analysis with respect to North American natural gas supply and transportation dynamics, including the impact that these changes have on the delivery of natural gas to Ontario consumers. The 2015 ICF Report also provides analysis with respect to future utilization of the Dawn Parkway System (discussed in Exhibit A, Tab 6). A copy of the 2015 ICF Report is attached at Exhibit A, Tab 5, Schedule 1.

[10] TransCanada PipeLines Limited Mainline Settlement Agreement among TransCanada PipeLines Limited, Enbridge Gas Distribution Inc., Union Gas Limited and Gaz Métro Limited Partnership, dated October 31, 2013. The Settlement Agreement provides long-term toll certainty and stability while creating an environment facilitating investment in, and the efficient development of natural gas infrastructure in eastern Canada. The Settlement Agreement also provides TransCanada a better opportunity to recover its costs. Natural gas infrastructure is required to respond to the urgent need for market choice and for open and non-discriminatory access to secure, diverse and cost-competitive natural gas supply for users of the TransCanada Mainline.

The main conclusions of the 2015 ICF Report with respect to the changing North American supply and transportation dynamics are:

- Technological advancements that made the development of the Marcellus and Utica formations, and other unconventional resources (production from shale formations, tight gas and coal bed methane) throughout North America possible have significantly changed the outlook for future natural gas commodity prices.
- The development of the abundant and competitively priced sources of gas in the Marcellus and Utica formations in Pennsylvania, Ohio and West Virginia offers gas supply in relatively close proximity to Ontario.
- At the same time, the maturation of traditional supply sources from western Canada as well as the competition for the emerging unconventional natural gas resources in Alberta and British Columbia from Pacific Coast LNG export facilities and oil sands development creates gas supply planning risk for eastern Canadian consumers that currently rely on TransCanada Mainline pipeline capacity from Empress.
- The changes in natural gas markets are shifting the economics of natural gas supply for Ontario consumers, and for consumers that rely on Ontario pipeline capacity. Natural gas prices at Marcellus and Utica supply centres are expected to continue to decline relative to natural gas prices in the Gulf Coast and other North American supply centres, creating economic incentives to develop the infrastructure needed to access this source of supply.

- Natural gas markets in Ontario are at a pivotal point. Infrastructure will be required at various locations between production zones, liquid hubs and the consuming markets. For Ontario consumers, infrastructure is required upstream and downstream of Dawn and Niagara/Chippawa.

These conclusions are consistent with the main conclusions of previous ICF International reports.

Changes to Union's Dawn Parkway System

The shift in terms of where natural gas is produced in North America has also impacted the flow of natural gas on the Canadian and U.S. pipeline grid. Long haul pipelines are experiencing lower utilization rates along the long haul paths (i.e. from origin to the market), even though short haul paths on those long haul pipelines may be fully utilized. In many cases in eastern North America, the short haul paths on long haul pipelines are expanding (such as the Parkway to Maple corridor within TransCanada's Eastern Ontario Triangle).

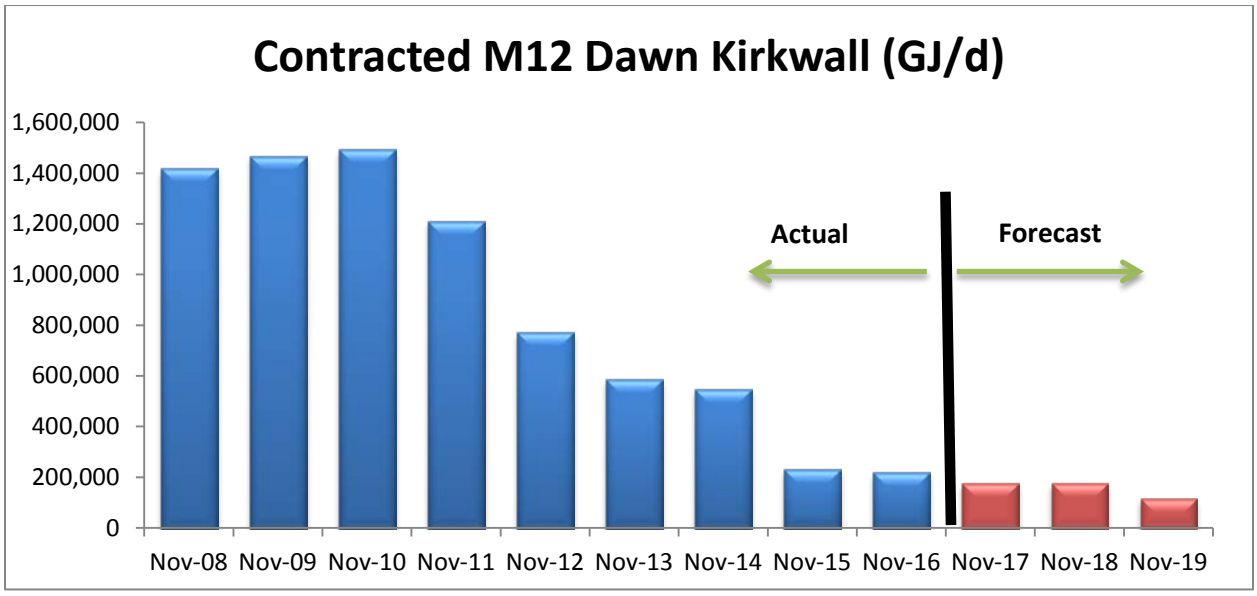
Union has seen fundamental changes in natural gas transportation contracting and flow on the Dawn Parkway System. The impacts to the Dawn Parkway System include: i) a significant decrease in Dawn to Kirkwall path contracting and flow; ii) the emergence of Kirkwall as a receipt point on Union's system as a result of imports from the Marcellus through the Niagara/Chippawa import/export point; and iii) a significant increase in Dawn to Parkway path contracting that will require Dawn Parkway System expansions in 2015 through 2017.

i) Dawn to Kirkwall Transportation

Firm Dawn to Kirkwall M12 transportation contracts have steadily declined since 2008 as U.S. Northeast shippers have access to more economic supply and more economic paths to the consuming areas. In 2008, Union had approximately 1.4 PJ/d of firm Dawn to Kirkwall transportation contracts secured as shown in Figure 5-2. As contract terms have expired and through reverse open seasons, shippers have turned back or have committed to turn back approximately 1.2 PJ/d of firm Dawn to Kirkwall transportation capacity (to November 1, 2016).

Figure 5-2

Summary of Dawn to Kirkwall Transportation Contracts



Union forecasts that 177,207 GJ/d of firm Dawn to Kirkwall transportation contracts will extend past November 1, 2017, primarily to serve customers in Ontario as shown in Table 5-1. Union

sees no future market opportunity for firm Dawn to Kirkwall transportation capacity intended for natural gas exports to the United States. Any further turn back of Dawn to Kirkwall firm transportation capacity will be utilized to mitigate the Parkway Delivery Obligation for Union's in-franchise customers[11].

Table 5-1

Forecast Firm Dawn to Kirkwall Contracts Remaining as of November 1, 2017

Shipper	Contract Identifier	Quantity (GJ/d)	Start Date	End Date
Enbridge Gas Distribution Inc.	M12079	32,123	01-Apr-04	31-Oct-19
Enbridge Gas Distribution Inc.	M12175	35,806	01-Nov-10	31-Oct-19
Thorold Cogen	M12129	49,500	01-Sep-09	31-Aug-29
TransCanada Pipelines	M12123	59,778	01-Nov-08	31-Oct-18
Total		**177,207**		

ii) Receipts at Kirkwall

With the development of production from the Marcellus formation and resulting regional flow changes, Union made facility modifications to add Kirkwall as a receipt point on Union's Dawn Parkway System in 2012. This has allowed natural gas imported from New York at the Niagara import/export point to be transported on TransCanada's system to Union's system at Kirkwall. In the near future, natural gas will also be imported at the Chippawa import/export

[11] EB-2013-0365 Decision dated June 16, 2014, Appendix B, p. 4 of 7, iii.

point (west of Niagara) on the Ontario/New York border and can be transported on TransCanada's system to Union's system at Kirkwall.

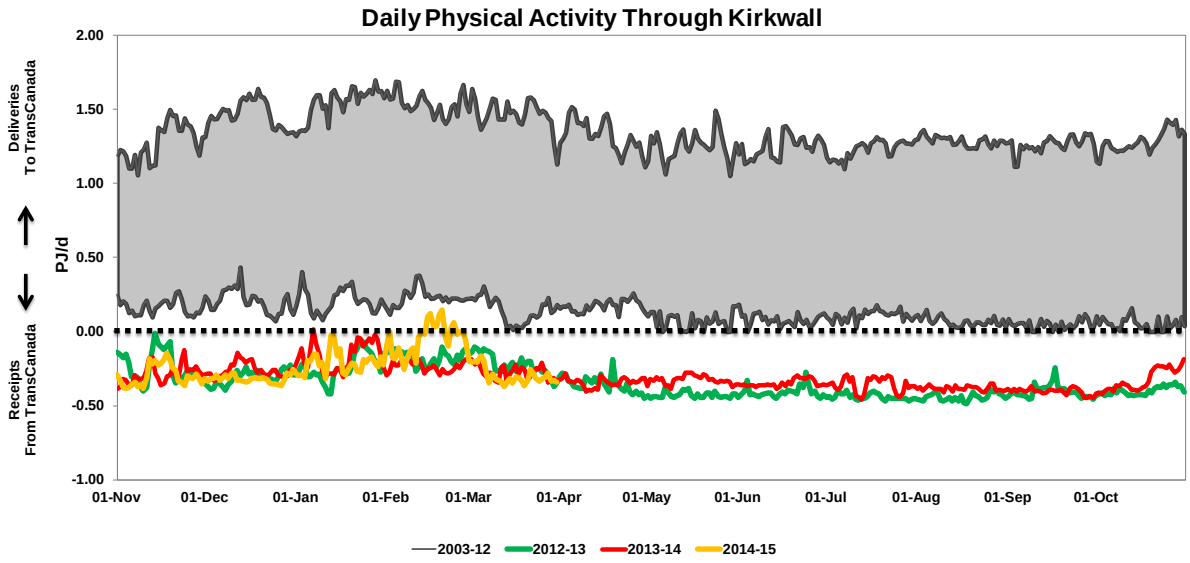
Union started contracting firm Kirkwall to Dawn, Kirkwall to Parkway and M12-X[12] transportation services in 2012. These transportation services deliver natural gas received from the TransCanada system at Kirkwall to Dawn and Parkway within Union's system. Union's contracts originating at Kirkwall (i.e. Kirkwall to Dawn, Kirkwall to Parkway and M12-X transportation services) for firm transportation services total 1.3 PJ/d effective November 1, 2017.

As a result of this contracting, as shown in Figure 5-3, flow through Kirkwall has reversed from traditional deliveries to the TransCanada system to receipts from the TransCanada system. However, during periods of peak demand restrictions in Marcellus production or when Marcellus supply is transported to higher value markets than Niagara, Union has exported volumes back into the TransCanada system as recently as last winter. This indicates that the demand for exports from Canada to the United States can still exceed the demand for imports from the United States to Canada on occasion.

[12] Flexible M12-X Firm Transportation Service is offered between Dawn, Parkway, and Kirkwall. This service provides shippers with the flexibility to transport gas between the three interconnects on Union's system in any direction on a firm basis.

Figure 5-3

Summary of Daily Kirkwall Receipts



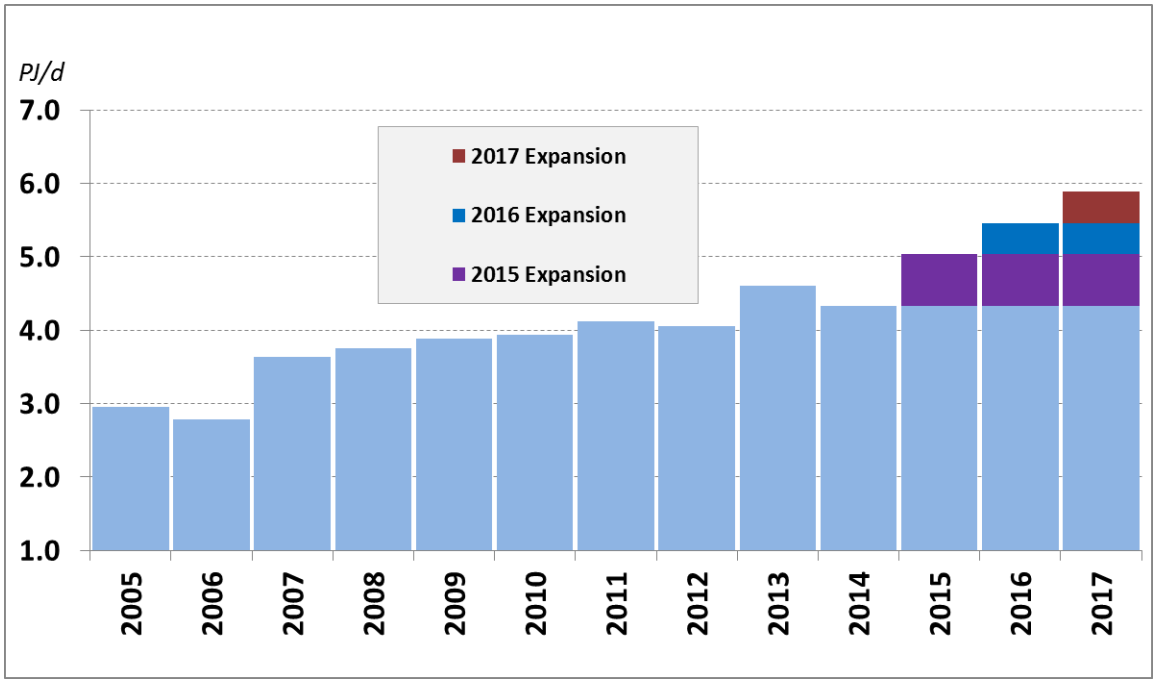
iii) Dawn to Parkway Contracting

From 2009 to 2014, Union was able to mitigate the impact of Dawn to Kirkwall transportation capacity turn back by selling capacity with Parkway deliveries to meet increased demand for transportation on the Dawn to Parkway path. Since that time, Union has continued to receive significant requests for Dawn to Parkway transportation. Firm easterly Dawn Parkway System transportation demand with deliveries at Parkway has steadily increased as eastern shippers have adjusted their natural gas supply portfolios seeking diversity and security of supply as well as cost-competitive supply through further access to the Dawn Hub and the production of the Marcellus and Utica formations. Further access to Marcellus and Utica supply allows Ontario and Québec business and industry to compete with business and industry in neighbouring states that readily have access to this prolific supply.

In 2014, Union had 4.3 PJ/d of firm contracted (ex-franchise) and system (in-franchise) Dawn to Parkway transportation demands (deliveries at Parkway) as shown in Figure 5-4. Union secured new firm Dawn Parkway System transportation contracts (combination of in-franchise and ex-franchise) with Parkway deliveries in 2015, 2016 and through Union's 2017 new capacity open season process as described in Exhibit A, Tab 6. Effective November 1, 2017, Union will have 5.9 PJ/d of firm contracted and system Dawn Parkway transportation demands with deliveries at Parkway as shown in Figure 5-4.[1]

Figure 5-4

Summary of Dawn Parkway System Transportation Contracts and System Demands (Deliveries at Parkway)



[1] The increase in Dawn Parkway System demand with Parkway deliveries from the 2015 to 2017 new capacity open seasons is offset slightly by turn back, system capacity adjustments and management of the Parkway shortfall. Deliveries at Parkway include deliveries to TransCanada as well as Enbridge at Parkway (Consumers) and Lisgar.

Continued expansion of the pipeline capacity in Ontario is critical to allow markets in Ontario, Québec and the U.S. Northeast to diversify gas supply portfolios through increased access to natural gas from the Dawn Hub and increased access to cost competitive natural gas from the Marcellus and Utica formations. TransCanada's Eastern Ontario Triangle is critical to supplying eastern Canadian and U.S. Northeast natural gas utilities and is a critical component of energy delivery to eastern Canadian natural gas customers. The Settlement Agreement will allow for the expansion of the TransCanada Mainline in the Eastern Ontario Triangle to provide incremental short haul transportation capacity when supported by market demand. This includes the removal of pipeline constraints in the Parkway to Maple corridor, allowing Ontario, Québec and U.S. Northeast customers more natural gas supply choice.

Impact of Natural Gas Market Trends on Utilization of the Union Gas Dawn Parkway System

June 30, 2015

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1 Introduction

ICF International (hereafter ICF) was engaged by Union Gas Limited (Union) to evaluate the impact of changes in North American natural gas demand and supply growth on Ontario's natural gas infrastructure and on the future utilization of Union's Dawn Parkway System. Specifically, this report focuses on Ontario's declining reliance on gas supplies from Western Canada, the increasing share of gas supplies originating from unconventional shale formations in the eastern half of the United States, and the potential changes in gas demand and supply patterns in the Northeastern United States and Ontario. The report then provides an assessment of the potential risk of future underutilization of new pipeline capacity on the Dawn Parkway System proposed by Union for November 1, 2017 service. The report also includes an analysis of various market scenarios with and without the expansion to evaluate the risk of future underutilization of the Dawn Parkway System under different market conditions.

This report is the latest in a series of reports on natural gas markets prepared by ICF and presented in various proceedings in Ontario. In 2010, the Ontario Energy Board (the Board or OEB) staff commissioned ICF to prepare a report to provide analysis and insight into the state of the North American and Ontario natural gas markets and the expected state of the Ontario natural gas market in the future. In 2011, Union commissioned ICF to prepare a report that reviewed and analyzed the state of the North American and Ontario natural gas markets and projected the outlook for the Ontario natural gas market through 2025. In 2013, ICF prepared a similar report describing the changes in North American markets, which was filed with the Board as part of Union's EB-2012-0433 and EB-2013-0074 proceeding (the Dawn Parkway 2015 Expansion Project proceeding). In 2014, ICF prepared a similar report on infrastructure utilization of the Dawn Parkway System, which was filed with the OEB as part of Union's 2016 Dawn Parkway Expansion Project (EB-2014-0261).

1.1 Summary of Conclusions

Based on our analysis, ICF concludes that the major natural gas market changes currently underway provide incentives for natural gas LDCs, power generators, and other natural gas purchasers in Ontario, Québec, and the U.S. Northeast to continue to diversify their supply portfolios by reducing the reliance on supplies from the Western Canadian Sedimentary Basin ("WCSB") and increasing supplies from the Marcellus/Utica shale. Union's Dawn Parkway System provides economic access to these supplies at a liquid trading hub with significant pipeline and storage infrastructure to ensure operational flexibility.

The growth in utilization of the Union Dawn Parkway System has been driven by fundamental changes in natural gas markets, including changes in supply, demand, and infrastructure.

- Production out of the Marcellus/Utica shales is projected to grow from less than one Bcfd in 2009 to more than 33 Bcfd by 2025. Production from these plays is displacing natural gas supplies from the U.S. Gulf Coast, the WCSB, and other traditional supply sources, and is expected to provide the majority of all natural gas consumed in the Northeastern U.S. as well as Central and Eastern Canada in the future.

- Natural gas production from the Offshore Eastern Maritimes is expected to decline rapidly as production from the Sable Island and Deep Panuke fields winds down and is not replaced. The decline in Maritimes production will be replaced primarily by production from the Appalachian Basin, which will require additional pipeline capacity into New England beyond the level required just to meet market growth.
- Conventional WCSB production continues to decline, and the emerging Montney and Horn River shales have higher full-cycle costs than the Marcellus/Utica shale;
- LNG export facilities expected to be constructed in the British Columbia coast, along with oil sands development in Alberta, will be competing for gas supplies from Western Canada. The recent decline in long term oil price outlook has slowed, but not stopped development of these facilities.
- Difficulties in building pipelines in the U.S. Northeast, including New England as well as consuming regions of New York, Pennsylvania, and New Jersey, are expected to persist.
- Growing natural gas demand and limited storage development will mean continued dependence on Ontario for gas storage within the consuming regions of the U.S. Northeast.

Based on our assessment of the changes in North American natural gas supply, demand, and infrastructure patterns, ICF reaches the following conclusions:

- The major natural gas market changes currently underway provide incentives for utilities in Ontario and Québec, and the U.S. Northeast to continue to increase reliance on supplies from the Marcellus/Utica shale.
- The Union Dawn Parkway System provides economic access to these supplies at a liquid trading hub with significant pipeline and storage infrastructure to ensure operational flexibility.
- The proposed capacity expansion on the Dawn Parkway System in 2017 is supported by market trends and demand for Dawn Parkway System capacity is expected to grow over time.
- The risk of significant future net capacity turnback on the Dawn Parkway System is limited. Nearly all of the capacity on TransCanada downstream of Parkway held by Union's Dawn Parkway System customers has been termed-up through 2022. After 2022, the risk of capacity turnback increases, however growth in demand for Dawn Parkway System capacity due to market growth is expected to more than offset the potential turnback.

In reaching these conclusions, ICF has considered different market scenarios to test the sensitivity of our results to changes in natural gas market conditions. The scenarios evaluated include a low demand scenario, with flat power generation demand in both Ontario and the Northeastern U.S. as well as alternative pipeline capacity expansion scenarios. Under the market scenarios analyzed using ICF's GMM model, Union's Dawn Parkway System utilization continues to increase over time during peak demand periods. The growth in peak period utilization of the system demonstrates that, given ICF's market expectations, demand for Union Dawn Parkway System capacity can be expected to continue to increase over time, resulting in

continuing utilization of the proposed capacity expansion project over the time frame of the ICF analysis (through 2035).

There will be sufficient growth in pipeline capacity demand due to overall growth in natural gas demand as well as continued shifting of supply from the WCSB to Dawn. This growth in demand will offset any capacity released in the Northeastern U.S. due to the construction of new pipelines directly from the Marcellus/Utica into the Iroquois Pipeline and into the U.S. Northeast market regions.

The ICF analysis indicates that future utilization of the Union 2017 Dawn Parkway Project capacity is not dependent on maintaining high annual or seasonal volumes on the pipelines (Iroquois, PNGTS, and other smaller pipelines) from Ontario and Québec into the Northeastern U.S. Capacity on these pipelines is expected to remain a valuable component of peak day pipeline capacity into the U.S. Northeast, particularly for customers with highly seasonal demands even if annual and seasonal flows from Ontario into the U.S. Northeast on these pipelines decline due to growth of Marcellus and Utica supply. Demand growth in Ontario and Québec as well as shifting patterns of supply will support the expansion despite any potential changes in the supply portfolios of U.S. customers currently utilizing Union Dawn Parkway System capacity to meet demand requirements.

1.2 Recent Market Changes

Since ICF filed the report, “Impact of Changing Supply Dynamics on the Ontario Natural Gas Market” with the Board as part of the 2016 Dawn Parkway Expansion Project proceeding in June 2014, there have been several major changes in ICF’s natural gas market outlook that impact Ontario and other eastern Canadian markets.

1) The outlook for growth in natural gas production from the Marcellus and Utica plays has continued to increase.
2) West Texas Intermediate (WTI) oil prices dropped by $56 between July 2014 and January 2015, from $103 per barrel to $47 per barrel, before rebounding modestly, reflecting the drop in global oil prices due to a global supply glut of oil.
3) The TransCanada Settlement Agreement was approved.
4) TransCanada filed for approval of the Energy East and Eastern Mainline Projects, which would reduce pipeline capacity in the TransCanada Eastern Ontario Triangle.
5) A number of pipeline projects in the U.S. Northeast, New England and the Midwest have been completed or moved closer to fruition.

Of these major shifts in the market, the most significant for the broader natural gas market has been the continued acceleration of the development of the Marcellus and Utica shale plays in the Appalachian Basin. Growth in production from these plays is largely responsible for the increase in the LNG export outlook for the U.S. Gulf Coast, and has contributed to the market

incentives behind the settlement between TransCanada and its largest shippers (Eastern LDCs).

1.2.1 Marcellus and Utica Production Outlook

ICF is currently projecting production from the Marcellus and Utica plays in the Appalachian Basin to reach 26.5 billion cubic feet per day (Bcfd) by 2020 and 33.7 Bcfd by 2025. This represents a noticeable increase over the 2014 ICF projection referenced in the 2016 Dawn Parkway Expansion Project proceeding of 25.7 billion cubic feet per day (Bcfd/d) by 2020 and 30.8 Bcfd/d by 2025. The change in outlook has been driven by the faster than expected increases in the efficiency of exploration and development and in the productivity of the new wells, and occurs despite the recent decline in oil prices.

The outlook for Marcellus/Utica production has profound impacts on the North American natural gas markets in general, and specifically for Ontario and other eastern Canadian markets (provided these markets have access), as discussed in more detail in Section 3.

1.2.2 LNG Exports

ICF is currently projecting completion of 12 North American LNG export facilities between 2016 and 2021, which will export a total of 11.2 Bcfd by 2025. The development of the LNG export market is a result of increased availability of North American natural gas, largely due to the growth in Marcellus/Utica production, more detailed understanding of the potential resource base in Western Canada, and development progress of specific export terminals.

Most of the growth in LNG exports is expected to occur in the U.S. Gulf Coast and the North American West Coast (British Columbia (BC)). The growth in LNG exports increases natural gas demand in the exporting regions, resulting in higher regional natural gas prices, and changing natural gas flow patterns to ensure LNG supply availability. ICF expects this to occur in both the U.S. Gulf Coast and the WCSB.

The increase in the U.S. Gulf Coast LNG exports is expected to lead to higher Gulf Coast prices, reducing the attractiveness of Gulf Coast and Mid-Continent natural gas supplies to consumers in the U.S. Midwest. The increase in North American West Coast LNG exports is expected to lead to higher demand for WCSB gas supply, further reducing attractiveness of WCSB natural gas supplies to consumers in Ontario, other eastern Canadian markets and the U.S. Northeast. On the other hand, the growth in supply and resulting lower gas supply costs from the Appalachian Basin will provide incentives for consumers in the Ontario, Québec and U.S. Northeast markets to increasingly source supplies from these plays. The growth in supply will also lead to infrastructure expansions to connect these supplies to the market.

1.2.3 Lower Oil Prices

Despite the drop in global oil prices, U.S. oil production rose roughly 600,000 barrels per day (b/d) in 2014. Growth in oil production is expected to slow down substantially in 2015 due to the oil price drop. Sustained moderate global oil prices are expected for the next several years due

to the ongoing supply glut. Given the oil-indexed nature of a number of LNG export markets, international demand for LNG may be depressed as a result, and ICF has slowed down our forecast for LNG export growth as a result.

1.3 Analytical Framework

For this study, ICF relied on its proprietary Gas Market Model ("GMM") and its April 2015 Base Case outlook to estimate how Union's 2017 Dawn Parkway Project will integrate with regional and North American natural gas supply and demand. The GMM simulates the interaction of natural gas supply and demand conditions across the continent, and their impact on gas pipeline flows and regional prices.

The GMM is an internationally recognized modeling and market analysis system for the North American gas market that includes natural gas demand sectors, conventional and unconventional natural gas resources (including western Canadian developments), the impact of production costs, and other developments such as potential LNG exports and Alberta oil sands development.

1.4 Structure of Report

Section 2 of this report provides a broad overview of ICF's long-term natural gas market outlook, focusing on the changes in the market that are likely to impact Ontario. In Section 3, we look at the Ontario market, including demand growth and supply options in more detail. Section 4 discusses gas markets in the U.S. Northeast, both in the producing and consuming regions. Section 5 provides an assessment of the demand for new facilities on the Dawn Parkway System, including an evaluation of the potential turnback risk. Our overall conclusions are summarized in Section 6 of the report.

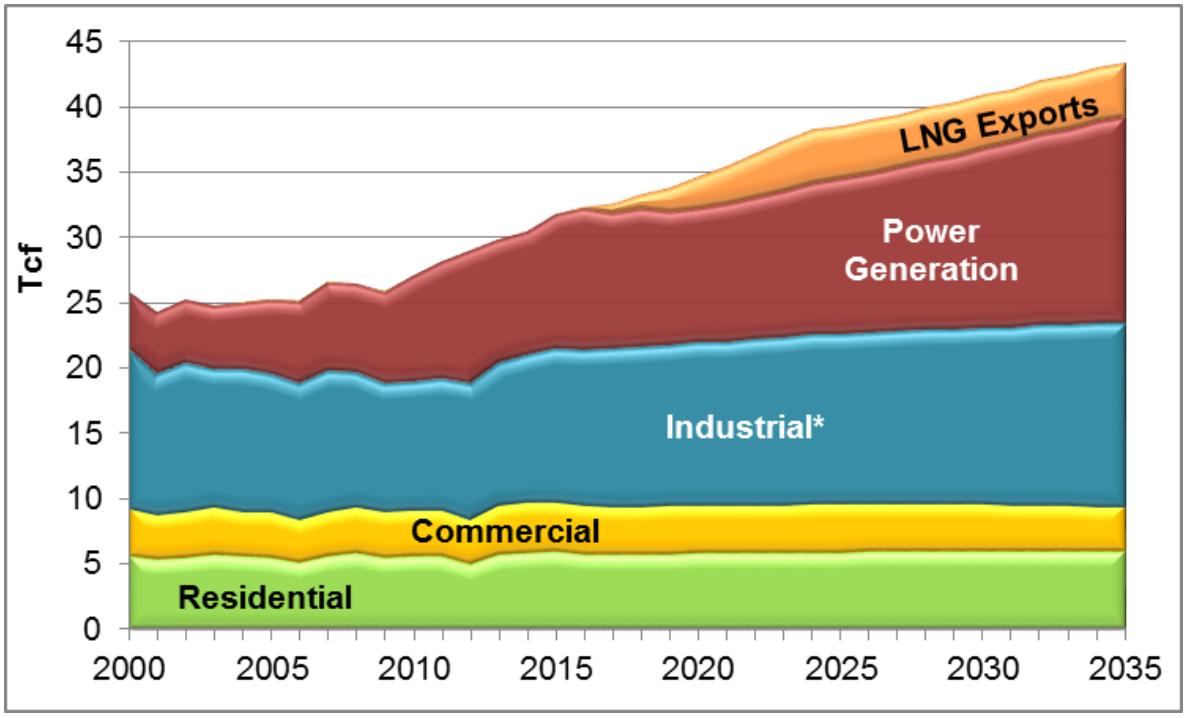
2 North American Natural Gas Market Outlook

This section discusses ICF's North American natural gas market outlook through 2025. ICF's forecasts for natural gas demand focus on the potential growth from the power generation sector and Western Canadian oil sand developments. The section then discusses trends in North American supply sources, focusing on the role of WCSB and unconventional production (such as the Marcellus), impact of production costs, and the apparent move toward natural gas liquids. Following discussions on LNG export outlook, ICF presents future pipeline flow trends and natural gas price forecasts.

2.1 North American Demand

As shown in Exhibit 2-1, ICF expects North American natural gas demand to increase by about 13.5 Tcf per year between 2013 and 2035. The growth in demand includes an increase of 9.4 Tcf per year in North American consumption, and an increase of 4.1 Tcf per year in LNG exports.

Exhibit 2-1: U.S. and Canadian Gas Consumption by Sector and LNG Exports



Source: ICF GMM® April 2015.

* Includes pipeline fuel and lease & plant gas

Incremental power sector gas use is expected to make up 68 percent of total incremental growth in U.S. and Canadian gas consumption between 2013 and 2035, growing 6.3 Tcf over the period. Growth in gas demand for power generation is driven by a number of factors:

- In the past 15 years, 460 gigawatts (GW) of new gas-fired generating capacity has been

built in the U.S. and Canada; with much of that capacity underutilized and available to satisfy incremental electric load growth.

- Electricity demand is projected to continue to grow modestly in the future. Electricity demand has historically been linked to Gross Domestic Product (GDP). Prior to the 2007-2008 global recession, demand for electricity was growing at about 2 percent per year. Over the next twenty years, although GDP is forecast to grow at 2.6 percent annually, electricity demand growth is expected to average only about 1.2 percent per year, mainly due to implementation of energy efficiency measures. Even at this lower growth rate, annual electricity sales are expected to increase to over 4,100 Terawatt-hours (TWh) per year by 2020, or about 11 percent over 2010 levels (3,700 TWh annually).
- Environmental regulations in the United States will drive the power sector to dispatch more natural gas fired generation. The ICF April 2015 Base Case reflects various EPA environmental rules including the Mercury & Air Toxics Standards Rule (MATS), water intake structures (316(b)), and coal combustion residuals (CCR), as well as the recently instated Cross-State Air Pollution Rule (CSAPR). ICF also assumes that all current state renewable portfolio standards are met and renewable generation grows at a rapid pace, but remains a relatively small portion of total generation. ICF also assumes that existing nuclear units have a maximum lifespan of 60 years, which results in 17 GW of nuclear retirement through 2035.

Industrial demand accounts for 23 percent of the total growth in U.S. and Canadian natural gas demand through 2035. The majority of the industrial gas demand increase is from the development of the western Canadian oil sands. Excluding natural gas use for oil sands, the growth in industrial sector gas demand in the ICF April 2015 Base Case is relatively small, as reducing energy intensity (i.e., energy input per unit of industrial output) remains a top priority for manufacturers.

Growth of gas demand in other sectors is limited. The number of customers is expected to continue to increase in the residential and commercial sectors. However, energy efficiency improvements lead to lower per-customer gas consumption, offsetting gas demand growth from an increase in the number of natural gas customers. ICF is projecting modest growth in natural gas vehicles, primarily in fleet applications (e.g., urban buses). However, vehicular gas consumption is not a major contributor to total demand growth.

2.1.1 Western Canadian Natural Gas Demand

Natural gas demand in Western Canada has a direct impact on Ontario markets due to its impact on natural gas supply available for export from the region. Western Canadian natural gas demand is expected to grow from 1.8 Tcf in 2010 to approximately 4.4 Tcf by 2035, driven by growth in LNG exports (discussed in Section 2.3) and the industrial sector, specifically the oil sands development.

Development of Alberta's oil sands will lead to significant growth in the consumption of natural gas in Alberta. ICF expects oil sands production in Alberta to reach 1.9 billion annual barrels by

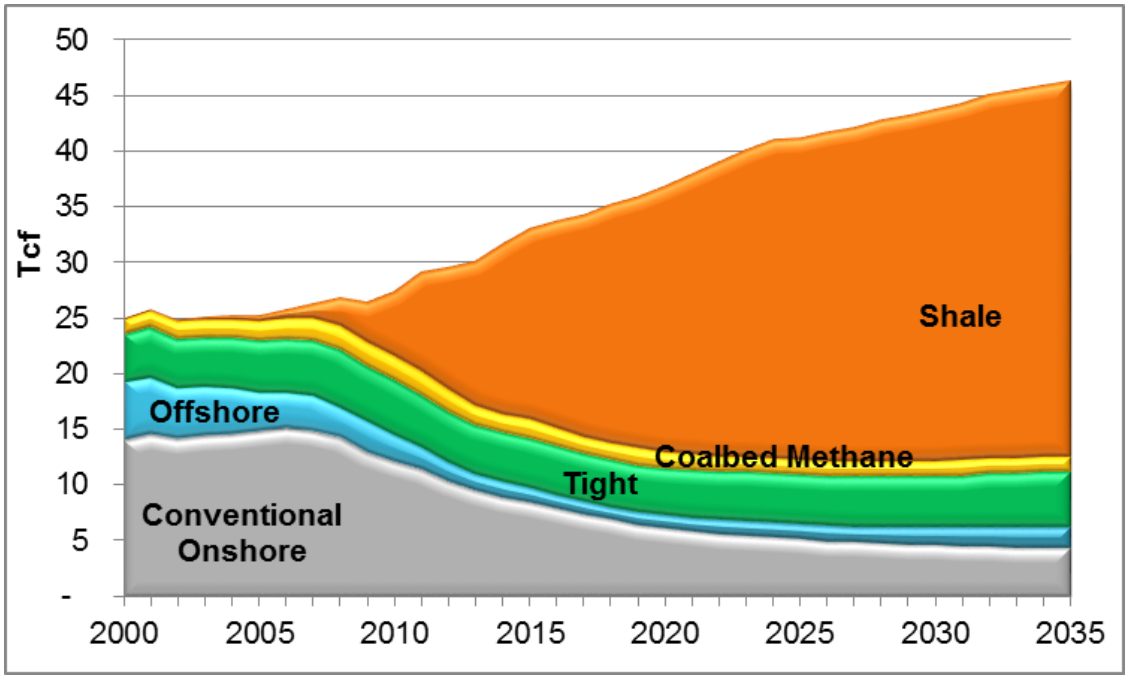
2035, which would require nearly 1.6 Tcf in annual gas consumption (the equivalent of 107 percent of Ontario's annual gas consumption that year). This represents an increase of about 1.6 Tcf, or 4.4 Bcfd, of natural gas demand between 2013 and 2035. The growth in natural gas demand for oil sands production will significantly reduce natural gas available for export from the WCSB to Ontario and other markets.

2.2 North American Natural Gas Supply Outlook

2.2.1 ICF April 2015 Base Case Supply Outlook

ICF projects U.S. and Canadian annual gas production to grow from about 27 trillion cubic feet (Tcf) in 2010 to over 46 Tcf by 2035, an average annual growth rate of 2.1 percent per year. This growth is anticipated to come from unconventional production (shale gas, tight gas, tight oil, and coalbed methane), while conventional onshore production is expected to decline (See Exhibit 2-2). Annual production from U.S. and Canadian shale formations is expected to grow from about 5.4 Tcf in 2010 to about 33.6 Tcf by 2035.

Exhibit 2-2: Projected U.S. and Canadian Gas Supplies (Tcf per Year)

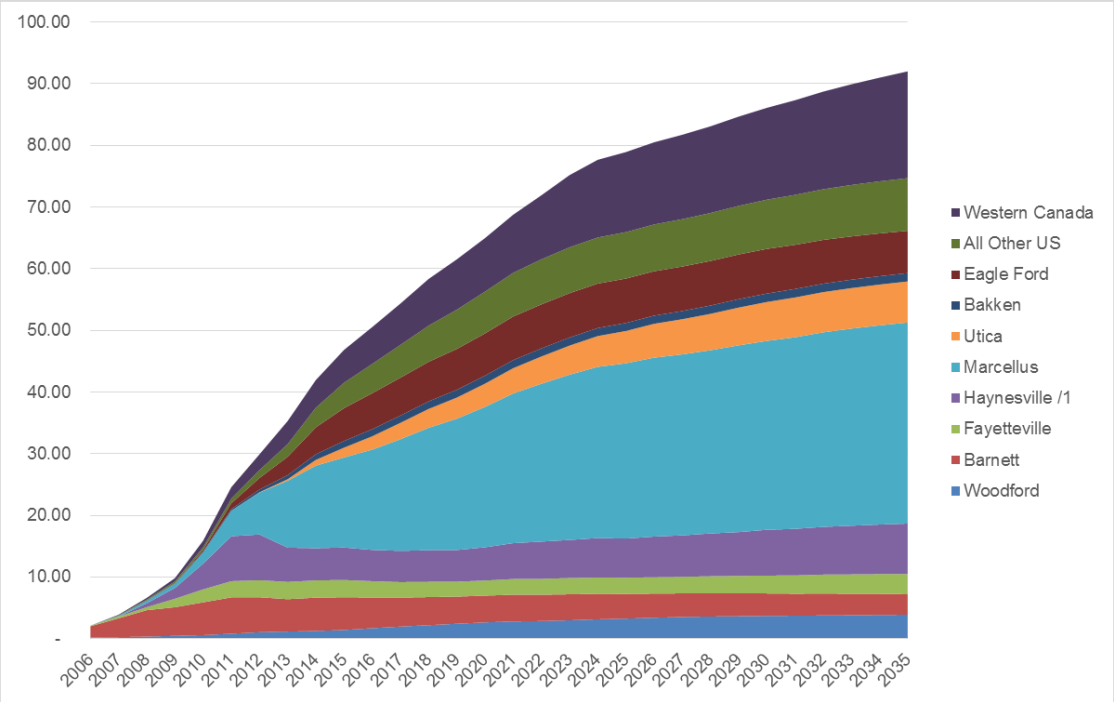


Source: ICF GMM® April 2015

Exhibit 2-2 shows that major shale formations provide the greatest production growth in North America. Exhibit 2-3 shows that the most prolific shale gas formations are located in the U.S. Northeast (Marcellus and Utica), the Mid-Continent (Barnett, Woodford, Fayetteville, and Haynesville), southern Texas (Eagle Ford), and Western Canada (Montney, Duvernay, and

Horn River). The Bakken Shale, which spans parts of North Dakota and Montana, is primarily an oil formation, but also has significant natural gas volumes. There are other shale formations in the U.S. and Canada that have not yet been evaluated or developed for gas production.

Exhibit 2-3: Projected U.S. and Canadian Shale Gas Production (Bcfd)



Source: ICF GMM® April 2015

Note: Haynesville production includes production from other shales in the vicinity (e.g., the Bossier Shale).

2.2.2 Marcellus and Utica Supply Outlook

The largest source of growth in North American natural gas supply is expected to come from the Marcellus and Utica shale plays. In 2009, the Marcellus and Utica plays had a minimal impact on natural gas markets, producing less than 1 Bcfd. In 2014, shale gas production from these plays exceeded 14 Bcfd, and is likely to exceed 17 Bcfd in 2015. ICF is currently projecting average daily production from the Marcellus and Utica plays to reach 26.5 Bcfd by 2020 and 33.7 Bcfd by 2025. This represents a notable increase over the ICF projection referenced in the 2016 Dawn Parkway Expansion Project proceeding of 25.7 billion cubic feet per day (Bcfd/d) by 2020 and 30.8 Bcfd/d by 2025.

The growth in production from these Appalachian plays has been more rapid than expected, and forecasters, including ICF, have increased their long-term outlook for production from the region in almost each new forecast. The change in outlook for Marcellus and Utica production has been driven by faster than expected increases in the efficiency of exploration and development and in the productivity of the new wells.

2.3 North American LNG Exports

LNG exports are expected to provide additional markets for both Canadian and U.S. natural gas production. The number of LNG facilities that may eventually enter the market will depend on the ability of the projects to sign long-term supply contracts with international buyers and to secure project financing and regulatory approvals. Based on our assessment of global LNG demand and supply, ICF is projecting completion of 12 North American export facilities between 2016 and 2025 (three in Canada, eight on the U.S. Gulf Coast, and one on the U.S. East Coast), exporting a total of 11.2 Bcfd by 2025 (see Exhibit 2.4 below), although slow growth in Asia and global LNG oversupply could result in project delays or cancellations.

The Western Canada LNG facilities are dependent on the development of pipeline capacity to transport natural gas from eastern BC and western Alberta to the LNG facilities in BC. Upon completion, these LNG facilities will reduce the available supply of natural gas that otherwise could be exported from Western Canada to eastern Canada and other domestic markets. The U.S. East Coast LNG export project included in ICF's Base Case is Elba Island near Savannah, Georgia.

2.4 North American Pipeline Flows and Capacity Requirements

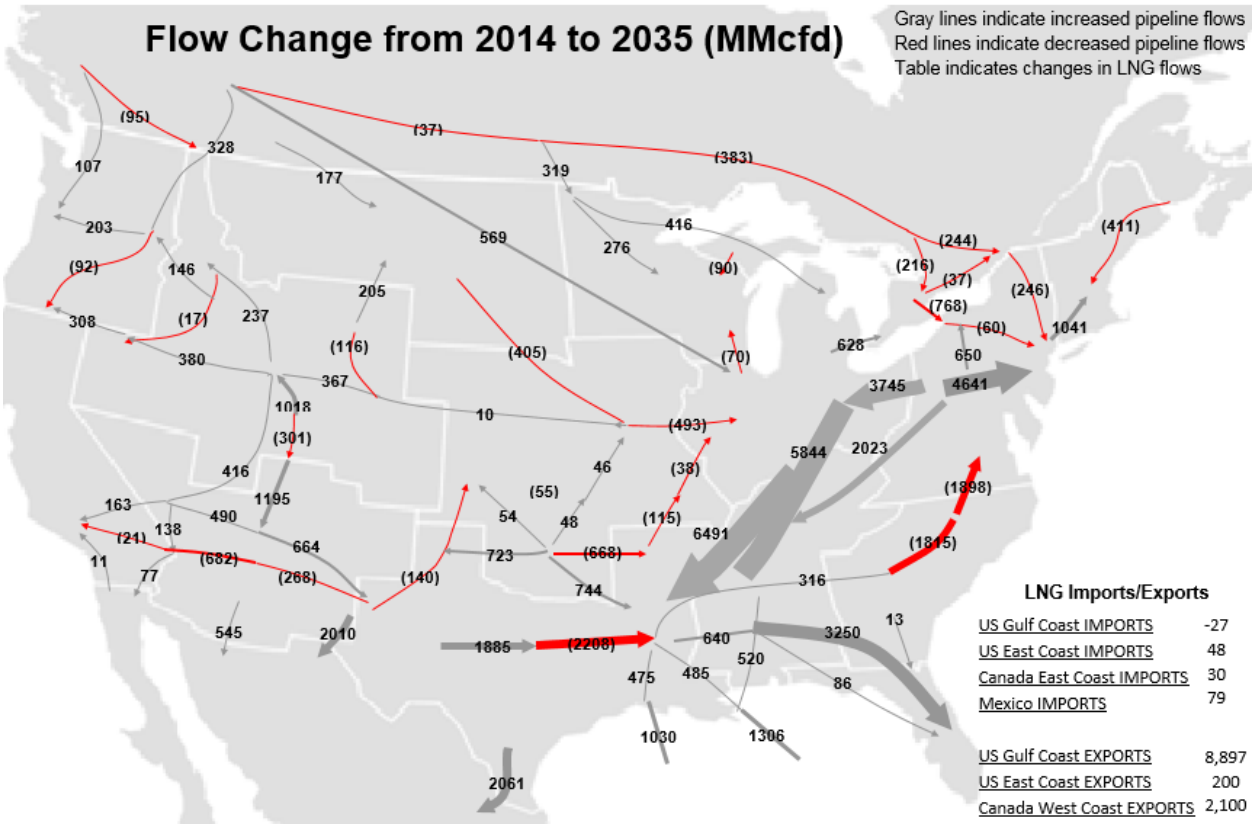
2.4.1 Pipeline Flows

As regional gas supply and demand continue to shift over time, there are likely to be significant changes in interregional pipeline flows. Exhibit 2-4 shows the projected changes in interregional pipeline flows from 2014 to 2035 in the ICF April 2015 Base Case. The arrows in the map show the changes in gas flows over the pipeline corridors among the regions between 2014 and 2035. The gray arrows indicate increases in flows and the red arrows indicate decreases. The thickness of the arrows is proportional to the volume change.

The growth in Marcellus and Utica shale gas production in the Appalachian Basin is displacing gas that once was imported into the Northeastern U.S. from Canada, the Midwest (Ohio), and the Gulf Coast and Mid-Continent. Over time, as production from the Marcellus and Utica continues to increase, additional gas from these plays will flow south into additional East Coast Markets, west into the Midwest, down into the Gulf Coast, and east into the Northeastern U.S. and Canadian Maritimes, displacing traditional sources of gas supply.

The large increases in flows eastward from the West South Central Region (Texas, Louisiana, and Arkansas) are due to growing shale gas production in the region. However, most of this gas is consumed in the East South Central Region (Mississippi, Alabama, Tennessee, and Kentucky) and South Atlantic Region (Florida to North Carolina) where demand is growing. In addition, natural gas will be exported from the West South Central Region in the form of LNG starting in 2016. The growing Marcellus gas production in the Middle Atlantic Region will also displace gas flow from the West South Central Region to the South Atlantic states.

Exhibit 2-4: Projected Change in Interregional Annual Pipeline Flows (2014-2035)



Source: ICF GMM® April 2015

Annual gas flows out of Western Canada are projected to continue to decrease in the near term, through 2017 before rebounding somewhat over time. Growth in production from shale gas resources in BC and Alberta will be more than offset by declines in conventional gas production in Alberta until 2020. In addition, growth in natural gas demand in Western Canada will reduce gas supplies available for export from the region. Strong industrial demand growth in Western Canada for producing oil from oil sands will keep more gas in the Western Canadian provinces. The planned LNG export terminals in BC also will draw off, or redirect, gas supply once exports of LNG begin.

As pipeline flows east from the Rocky Mountains decline due to growth in Marcellus and Utica production, pipeline flows west out of the Rocky Mountains will increase to northern California. The completion of the Ruby Pipeline in 2011 allowed Rocky Mountain gas to displace gas coming from Alberta on Gas Transmission Northwest.

The changes in LNG imports and exports, including imports to the East Coast, and exports from the Gulf Coast, the East Coast and from British Columbia and the U.S. West Coast will also change gas flow patterns.

Exhibit 2-5 focuses on the changes in the flow patterns in closer proximity to Ontario and Québec. Historically, considerable volumes of gas flowed from Ontario into the U.S. Northeast

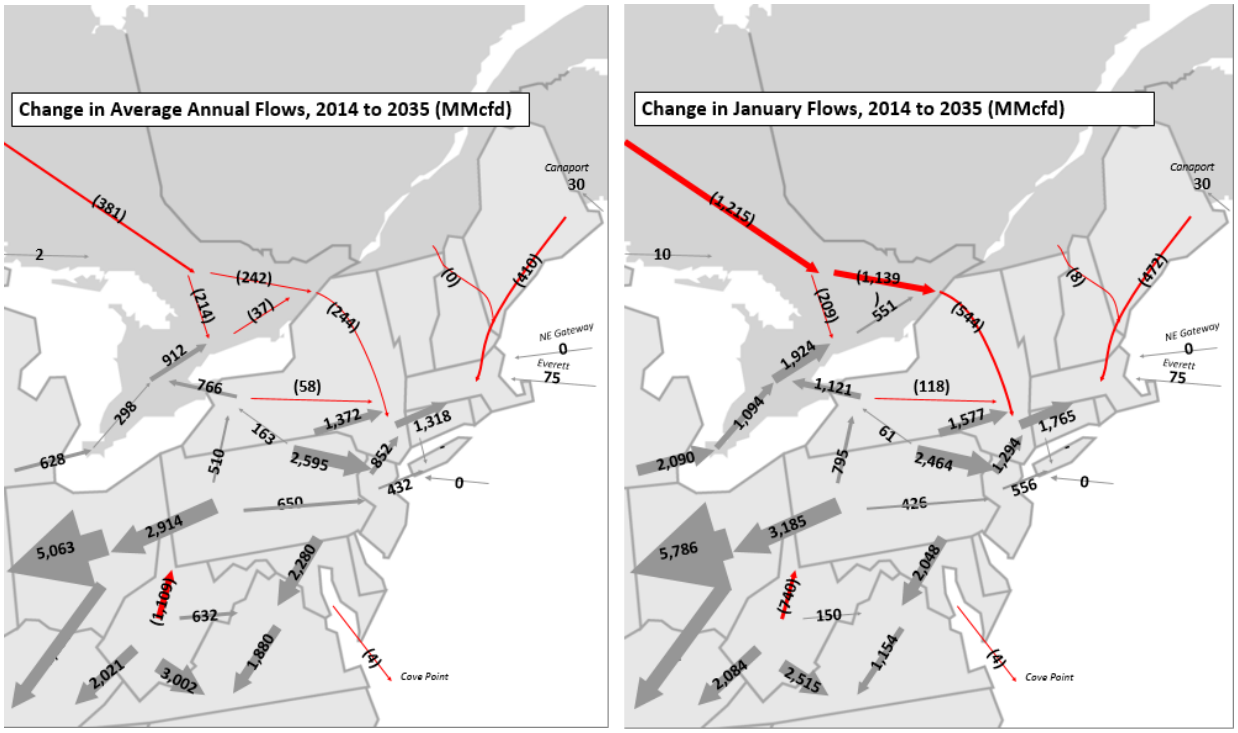
through three major pipeline paths: at Niagara (via TransCanada) into New York; at Iroquois (via TransCanada) into New York; and at East Hereford (via TransCanada) into New Hampshire. In the past several years, on an average annual basis, the flow of natural gas into the U.S. has decreased dramatically. This trend is expected to continue. Considerable volumes of gas from the Marcellus shale play are already flowing into Ontario at Niagara. These supplies will augment the growing volume of gas entering Ontario through Michigan.

However, changes in peak month (January) flows[1] will not necessarily follow the same patterns as the changes in annual flows shown. ICF is projecting average January flows on the Dawn Parkway System to increase more rapidly than the annual flows, indicating continuing growth in peak period demand for the pipeline capacity.

Average January flows from Ontario to the United States will remain at or near pipeline capacity limits on the pipelines serving New England, including PNGTS and other smaller pipelines. Average January flows on Iroquois Pipeline decline due to competition with new pipeline capacity from the Marcellus. However, despite the decline in peak month flows, Iroquois Pipeline is expected to remain a significant component of peak day gas supply portfolios in the Northeastern U.S. particularly for the Northeastern LDCs that rely on a combination of pipeline and storage capacity to meet peak winter loads.

[1] ICF projects January flows based on normal weather conditions. Normal January demands in ICF's forecasts are well below the level of demand that would occur during a colder than normal winter, and well below the level of design day demand that most of Union's Dawn Parkway System customers use to determine pipeline capacity requirements. As a result, contracted pipeline capacity requirements generally exceed January flows in ICF's forecasts, unless pipeline capacity is significantly constrained.

Exhibit 2-5: Impact of Marcellus Production Growth on Annual and Average January Flows (2014-2035)



Source: ICF GMM® April 2015

2.5 Natural Gas Price Outlook

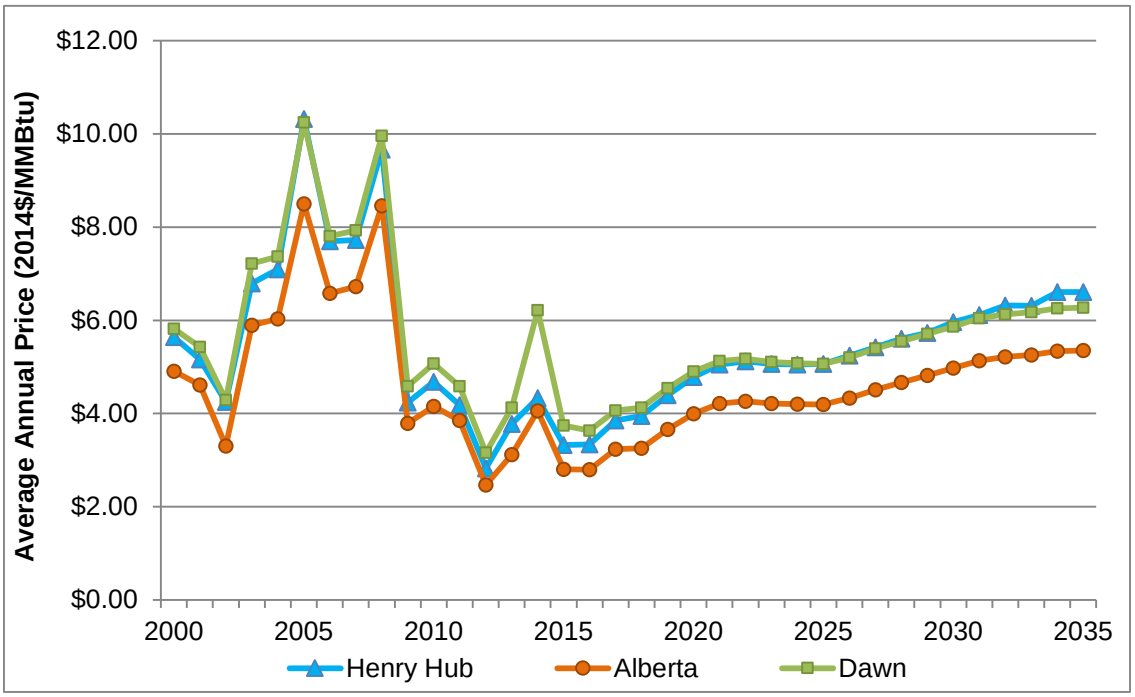
Since January 2008, natural gas prices at Dawn have fallen from US$9.12/MMBtu to US$3.07/MMBtu in 2012 before rebounding to US$6.27/MMBtu in 2014, and then falling dramatically during the first half of 2015. Prices at Henry Hub, Alberta and other markets have followed the same general pattern.

Going forward, ICF forecasts a moderate increase in natural gas prices from current levels as growth in natural gas demand and LNG exports put upward pressure on prices. Gas prices at Henry Hub are projected to increase gradually, climbing from a projected U.S. $3.33/ MMBtu in 2015 to about U.S. $6.60/ MMBtu in 2035 in 2014 dollars (see Exhibit 2-6 below). The increase in gas prices is sufficient to support development of new sources of supply, but not so high as to discourage demand growth.

While gas prices throughout North America are expected to remain moderate, market dynamics will influence regional prices. Over the last year, the price difference (or basis), between Henry Hub and Dawn, has averaged about $0.35/MMBtu in. Between 2016 and 2020, the basis between Henry Hub and Dawn is projected to fall to an average of about $0.25/MMBtu.

Between 2020 and 2030, prices at Dawn and prices at Henry Hub are expected to be at about the same level. The shift in the Henry Hub to Dawn basis is due to the impact of the growth in Marcellus and Utica supply on Dawn prices, as well as the growth in natural gas demand in the Gulf Coast for LNG exports, industrial and power generation demand, and Mexican exports.

Exhibit 2-6: GMM Average Annual Prices for Selected Markets



Source: ICF GMM® April 2015

As more gas is sourced from the U.S. Northeast shale resources, the market price in this region is also expected to increase more slowly than other regions, leading to a decline in price relative to other regions. At the same time, growth in LNG exports and other demand from the Gulf Coast are expected to lead to an increase in prices at Henry Hub relative to other regions.

The decline in U.S. Northeast gas prices is expected to be reflected in Ontario and Québec natural gas prices as well. The growth in supply from the Appalachian Basin will suppress natural gas prices in the regions directly connected with the new supply, including the U.S. Midwest, Ontario and Québec. Improved access to Marcellus production through new pipeline infrastructure will also limit price fluctuations in Ontario.

Prices in Western Canada will be linked to prices in U.S. markets by transportation costs into incremental markets. ICF is projecting the price relationship between Alberta and Ontario markets to remain relatively constant. However, in the event that BC LNG exports exceed projected levels or oil sands development requires more gas than expected, Ontario and other eastern Canadian consumers will be adversely impacted by both the actual demand and the demand response (i.e., price increases) for supplies originating in the WCSB.

2.6 Impact of Oil Price Trends on Natural Gas Markets

Reflecting recent oil price trends, ICF has reduced its near-term oil price projections and expects a slower recovery to the long-term equilibrium marginal production cost corresponding to a WTI price of $75 per barrel. In the near term prices are expected to remain between $60 and $70 per barrel due to increasing global oil inventory and U.S. oil inventories rising to unprecedented levels. The decline in oil prices slows growth in natural gas demand, particularly for LNG, but also reduces production of associated natural gas due to the decline in oil exploration and development activity. Overall, the decline in demand and decline in production largely offset each other, leading to a forecast of natural gas markets that is relatively insensitive to changes in oil prices.

2.7 Implications for Union Dawn Parkway System

Overall, the North American natural gas market continues to change and evolve at a very rapid pace. The major factor impacting the Union Dawn Parkway System is the growth in natural gas production from the Marcellus and Utica. The growth in Marcellus and Utica production is displacing natural gas production from other regions, including the U.S. Gulf Coast, the U.S. Rocky Mountains, Mid-Continent, and the WCSB.

The change in supply patterns is being amplified by changes in natural gas demand, primarily the potential for LNG exports from the Gulf Coast and Western Canada, natural gas exports to Mexico, natural gas demand for oil sands production in Alberta, and power generation demand growth.

The combination of the changes in supply and changes in demand are leading to fundamental changes in natural gas flows and natural gas infrastructure requirements, including declines in flows from traditional supplies, including the WCSB, Mid-Continent, and Gulf Coast into Ontario. The change in supply patterns is leading to a fundamental restructuring of North American pipeline infrastructure, including the development of new pipeline infrastructure needed to bring Marcellus and Utica production to a variety of North American markets including New England, the Middle and South Atlantic, the U.S. Midwest, Ontario, and the U.S. Gulf Coast.

3 Ontario Natural Gas Market Outlook

The recent changes in the North American natural gas market are creating both challenges and opportunities for Ontario. Natural gas consumption in Ontario is expected to see continued growth, led by expanding use in the power sector. At the same time, natural gas supplies available to Ontario from Western Canada, the traditional source for most of Ontario's natural gas supply, have been declining, and are expected to continue to decline. Growth in gas production from the Marcellus and Utica plays in the Northeastern U.S. provides a rapidly growing source of potential new supply for the region.

3.1 Ontario Natural Gas Market

Traditionally the Ontario natural gas market has included both consumption of natural gas in the province, as well as transshipments of natural gas from Western Canada and the U.S. to Québec and the U.S. Northeast. ICF projects gas consumption growth in Ontario to average 2.2 percent annually between 2013 and 2035, while decline in total natural gas supply flowing to and through Ontario will average 1.3 percent annually as annual exports to the U.S. continue to decline.[2] These two topics are discussed below.

3.1.1 Ontario Natural Gas Consumption

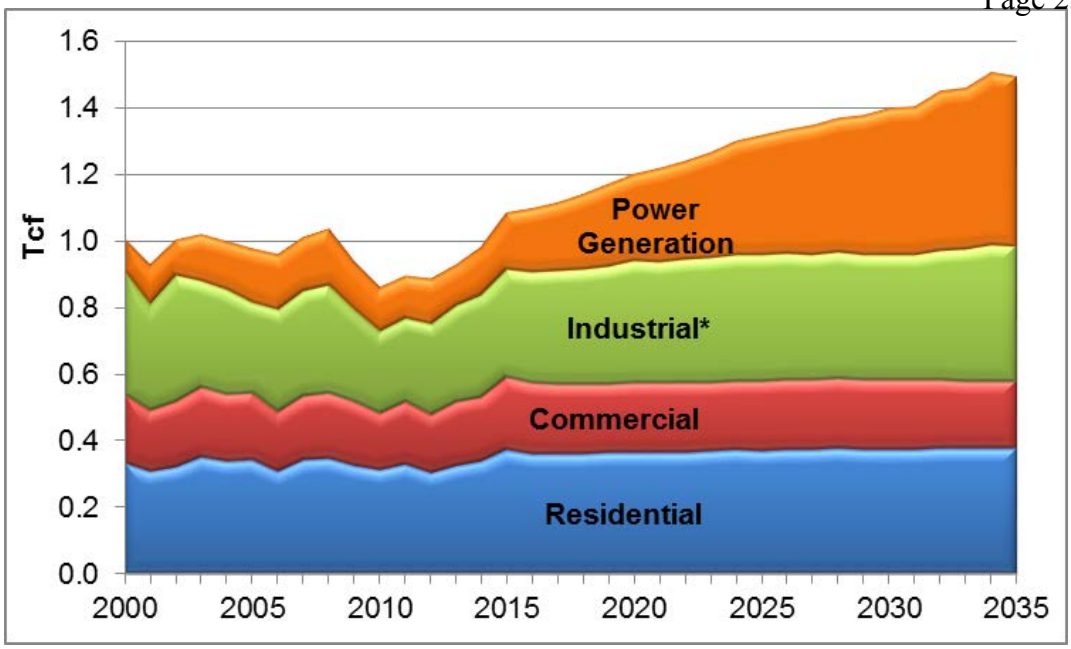
ICF expects natural gas consumption in Ontario to experience modest growth, led by expanding use in the power sector (see Exhibit 3-1) through the time frame of the ICF analysis. Higher utilization of existing units in Ontario and potential gas-fired capacity additions will be driven by modest demand growth, retirements of nuclear capacity, and replacement of nuclear capacity while nuclear refurbishments take place. Natural gas use in the industrial sector is also expected to increase over time with economic growth. Growth in other end-use sectors will remain modest, as energy efficiency improvements offset the impact of GDP and household growth on residential and commercial sector demand.

3.1.2 Ontario Natural Gas Exports

Prior to 2007, about half of the total natural gas delivered to Ontario was exported to Québec and the U.S. Northeast. As conventional natural gas production in Western Canada has declined and natural gas production in the U.S. Northeast has increased, annual export volumes from Ontario into the U.S. Northeast have declined substantially, as shown in Exhibit 3-2. However, peak winter flows from Ontario to the U.S. Northeast have remained high.

[2] Includes pipeline exports to Québec and the U.S. Mid-Atlantic and storage injections.

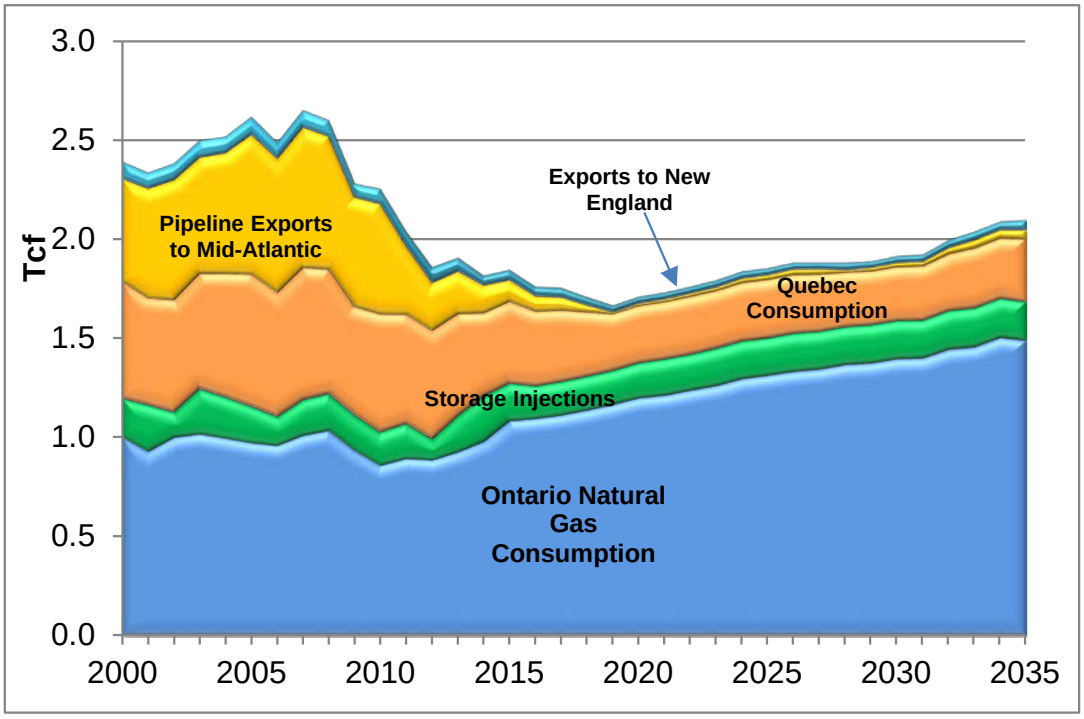
Exhibit 3-1: Ontario Natural Gas Consumption by End Use (Tcf per Year)



Source: ICF GMM® April 2015

* Includes lease, plant, and pipeline fuel

Exhibit 3-2: Historical and Projected Ontario Natural Gas Demand



Source: ICF GMM® April 2015

Note: New England includes Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, and Vermont. The U.S. Mid-Atlantic region includes New Jersey, New York, and Pennsylvania. The U.S. Northeast includes the New England and Mid-Atlantic states.

3.2 Natural Gas Supply

In the past, Ontario and Québec relied heavily on natural gas from Western Canada to meet consumption and pipeline export demand. However, gas flows from Western Canada have declined dramatically over the last several years, while gas imports from the U.S. Midwest through Michigan into Ontario have increased, and exports into the U.S. Northeast have declined (see Exhibit 3-3). In 2012, Ontario also started importing significant volumes of natural gas from the U.S. Northeast via Niagara.

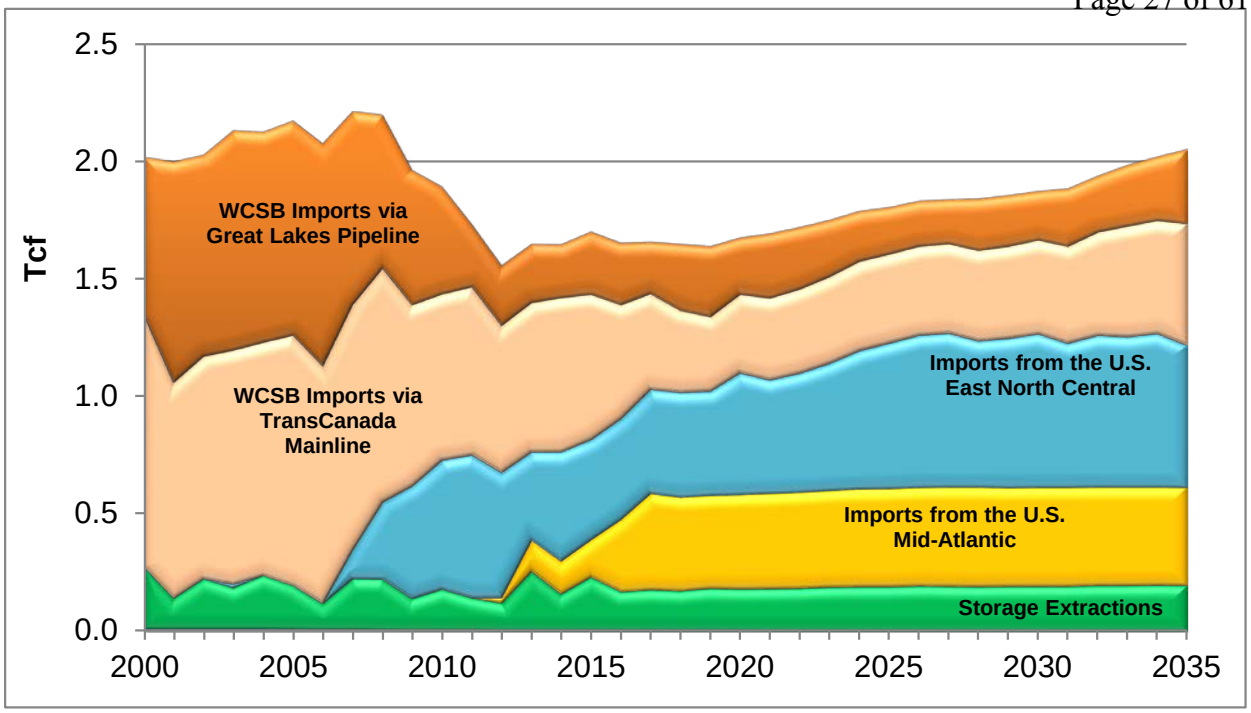
According to ICF's estimates, the WCSB share of Ontario's supply sources transported on the TransCanada Mainline and on Great Lakes Gas Transmission has declined from 90 percent in 2000 to less than 55 percent in 2014, and is expected to drop below 35 percent by 2025. The share of Ontario natural gas supply delivered into Ontario from the South and West, which includes WCSB gas delivered to the Chicago region on the Alliance Pipeline, and U.S. natural gas delivered to the Chicago region from the Rocky Mountains and U.S. Gulf Coast, is expected to decline modestly as Marcellus and Utica gas moves west.

The decline in gas supply from the WCSB will be offset by growth in natural gas supply via pipeline imports from Michigan in the U.S. East North Central region, and New York in the U.S. Mid-Atlantic[3] region, as well as declines in annual exports. Much of the incremental natural gas supply is expected to come from the Utica and Marcellus shale plays, which are projected to comprise an increasing share of Ontario's gas supply through 2035. Natural gas imports into Ontario from New York and Michigan, excluding imports via Great Lakes Gas Transmission, are projected to increase from 30 percent of the total Ontario supply in 2010 to 40 percent in 2015 and 60 percent in 2025 before stabilizing through 2035.

The increase in gas supply from the Marcellus and Utica region will be facilitated by additional pipeline capacity from Eastern Ohio to Michigan and Ontario, or through Niagara, as existing pipeline capacity from this region into Ontario is fully utilized. Incremental pipeline capacity within Ontario from Dawn through Maple and potentially downstream of Maple will also be required to fully utilize the expected increase in gas supply from this region.

[3] The Mid-Atlantic region includes New York, Pennsylvania, and New Jersey, and is a subset of the U.S. Northeast, which includes the Mid-Atlantic and New England states.

Exhibit 3-3: Historical and Projected Ontario Natural Gas Supply



Source: ICF GMM® April 2015

The U.S. East North Central region includes Illinois, Indiana, Michigan, Ohio, and Wisconsin. The U.S. Mid-Atlantic region includes New Jersey, New York, and Pennsylvania.

Imports from the U.S. East North Central includes WCSB supplies flowing on Alliance and Vector, as well as U.S. gas from the Appalachian Basin, Mid-Continent, and other sources flowing into Ontario through Michigan.

3.2.1 Role of U.S. Shale Gas Supplies in Serving Ontario Energy Markets

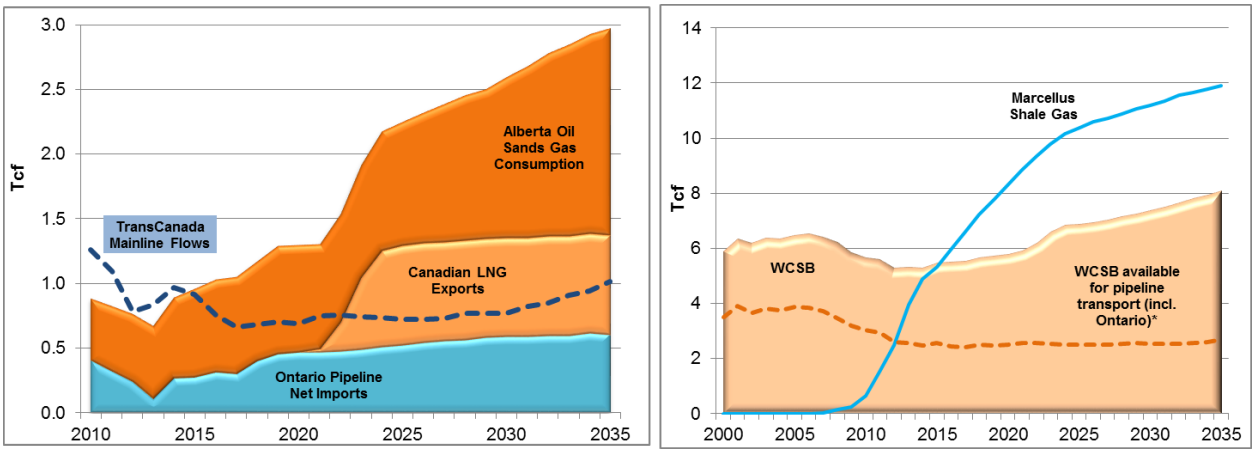
Exhibit 3-4 illustrates the magnitude of the competing demands for WCSB demand and the growth in supply projected for the Marcellus shale play. With projected substantial production growth, Marcellus and Utica gas production offers an economic source of gas supply to Ontario (and Québec). ICF is projecting continued growth in U.S. supplies of natural gas into Ontario to meet growth in Ontario and Québec demand.

ICF projects that significant new pipeline capacity from the Marcellus and Utica shale production regions will be built to meet the growth in demand and changes in supply. Announced projects include significant capacity from the Marcellus east into the Northeastern U.S. consumer markets, west into Ohio, Michigan, and Ontario, and South into the Mid-Atlantic.

Investment in pipeline capacity will depend on economic support provided by the market, as well as regulatory approvals. If the new infrastructure is not developed, Ontario and Québec consumers will pay higher gas prices as they attempt to compete with the alternative uses in Western Canada (e.g., LNG exports, oil sands development) and move the gas to Central Canada using long-haul transportation services.

Exhibit 3-4: Ontario's Supply Sources and Competing Demand Sources

Competing Demands for WCSB Supply ***Ontario's WCSB Access and Marcellus Growth***



Source: ICF GMM® April 2015

* Excludes consumption in Alberta, British Columbia, and Saskatchewan; LNG exports; pipeline fuel; and lease & plant fuel.

3.3 Pipeline Capacity in Ontario

Eastern Canada has experienced supply access issues leading to short term price spikes during peak winter periods for a number of years. The magnitude and frequency of these price spikes have been increasing over time. In 2013-2014, extreme winter weather conditions caused natural gas supply access issues, particularly in the U.S. Northeast, which led to historic highs in natural gas prices. In New England, natural gas prices exceeded U.S. $100 per million British thermal units (MMBtu) on a small number of days. While prices spiked at Dawn as well, the basis from Dawn to Eastern Ontario reached record highs. The basis between Dawn and Waddington exceeded $5.00 per MMBtu on more than 30 days in both the 2013/14 and 2014/15 winters. During the most recent winter, the basis exceeded $10 per MMBtu on more than 15 days. These price events highlight the need for additional pipeline capacity into and through Ontario.

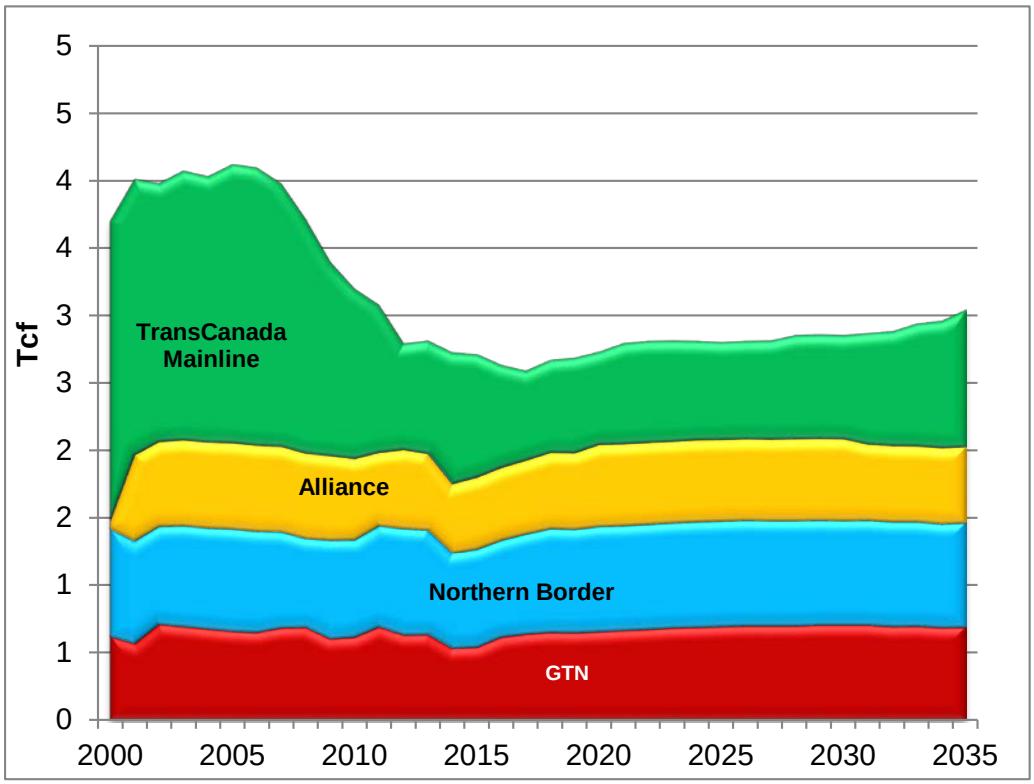
3.4 Changes in TransCanada's Role in Serving Ontario Markets

Flows on the TransCanada Mainline from Alberta to Ontario have dropped significantly over the past decade. The decline in volumes has been the result of waning WCSB production and increases in Alberta demand for natural gas, as shown in Exhibit 3-5 below. Flows from Alberta to Ontario increased after the decision of the National Energy Board in the TransCanada restructuring case was released in 2013, reducing WCSB exports on other pipelines. However, ICF projects that WCSB pipeline exports will continue to decline through 2017 before beginning to increase slowly as shale gas development in the WCSB continues to grow.

Two major factors in this decline are the reduced availability of WCSB supply for eastern markets as WCSB supply declines and Western Canadian demand increases and the eastern

markets' access to gas via short-haul transportation due to the terms of the 2013 TransCanada Settlement Agreement.

Exhibit 3-5: WCSB Pipeline Exports



Source: ICF GMM® April 2015

WCSB Pipeline Exports excludes pipeline fuel and lease & plant fuel

TransCanada has also proposed two major infrastructure projects, the Energy East Project and the Eastern Mainline Project that will have important impacts on Ontario natural gas markets if implemented. However, the role of TransCanada's Energy East and Eastern Mainline Projects will play in future flows remains uncertain given that TransCanada is currently revising the regulatory applications, and the National Energy Board has not had an opportunity to rule on the merits of the projects.

3.4.1 TransCanada Settlement Agreement

In December 2013, a settlement between TransCanada Pipelines Limited, Enbridge Gas Distribution Limited, Union and Gaz Métro Limited Partnership (Settlement Agreement) was filed with the NEB.[4] The Settlement Agreement was approved by the National Energy Board in November 2014 (RH-001-2014).

[4] TransCanada PipeLine Limited Application for Approval of Mainline 2013-2030 Settlement.

The Settlement Agreement includes a commitment that TransCanada will construct additional facilities to provide shippers with access to supplies from Dawn and/or the eastern United States including gas produced in the Marcellus and Utica plays. The commitment includes construction of incremental short-haul facilities necessary to provide customers east and north of Toronto with access to supplies from Dawn and Niagara/Chippawa.

The Settlement Agreement also requires that the three eastern local distribution companies (LDCs) hold at least 435 TJ/d of long-haul FT capacity on the TransCanada Mainline through at least 2020. The long-haul FT capacity sets a floor on pipeline flows from the WCSB to Ontario on the TransCanada Mainline.

ICF expects the Settlement Agreement to result in a significant shift in flows on the TransCanada Mainline and other pipelines as eastern shippers reduce long-haul capacity on the TransCanada Mainline from Alberta, and increase short-haul capacity on the Union Dawn Parkway System and TransCanada Mainline from Dawn, Parkway and Niagara/Chippawa. The decline in contracted long-haul capacity on the TransCanada Mainline from Alberta is likely to reduce flows east from Alberta, particularly during peak periods.

3.4.2 TransCanada Energy East and Eastern Mainline Projects

The Energy East Project involves the conversion of a section of TransCanada's Canadian Mainline (Mainline) from natural gas to crude oil service from Empress (at the Alberta Saskatchewan border) to and across northern Ontario, through North Bay and southeast to Cornwall, where a section of new pipeline running to Saint John would be constructed. The project will supply oil to refineries in Montréal, near Québec City, and in Saint John, as well as potential marine terminals in Eastern Canada.

The proposed TransCanada Energy East and Eastern Mainline Projects have the potential to significantly impact natural gas flows and prices in Ontario. While the full scope of the project remains uncertain, the project is expected to remove from service about 1.5 petajoules per day (PJ/d) of natural gas transportation capacity in Northern Ontario and 1.2 (PJ/d) in eastern Ontario[5]. To offset the reduction in gas transport capacity, TransCanada also proposes to replace capacity in the Eastern Ontario Triangle. The Eastern Mainline Project (EMP) as currently proposed would replace about 0.6 PJ/d of natural gas capacity in Eastern Ontario. TransCanada has delayed the Energy East and Eastern Mainline Projects in order to revise the projects to address environmental concerns as well as changes in the market. Based on TransCanada announcements, ICF expects completion of the projects to be delayed by at least two years from 2018 to 2020, with the Eastern Mainline Project having to be completed and in service before the Energy East conversion removes the Eastern Ontario Triangle capacity from service. The ICF Base Case includes the proposed TransCanada Energy East Project implemented in 2020 and Eastern Mainline Project implemented by 2019.

[5] Table 4-1. Vol 2A Sale and Purchase of Mainline Assets - Effects of Transfer on Mainline Shippers - A4D8S4

ICF expects the net reduction in pipeline capacity on the Eastern Ontario Triangle to impact natural gas flows across the Eastern Ontario Triangle. Based on analysis conducted by ICF for the Ontario Energy Board,[6] the projects are likely to result in declines in flows from Alberta to Ontario as well as reducing gas available to flow from Canada into the U.S. Northeast. Utilities in the U.S. Northeast holding firm capacity would not be impacted but discretionary volumes flowing to the U.S. Northeast would be. The projects are also expected to lead to an increase in flows into Ontario from Michigan as well as on the Union Dawn Parkway System.

3.5 Implications for Union Dawn Parkway System

Natural gas consumption in Ontario is expected to see continued growth, led by expanding use in the power sector, at the same time that the Ontario natural gas industry is adapting to the changes in North American natural gas supply patterns.

The development of abundant and competitively priced sources of gas in the Marcellus and Utica formations in Pennsylvania, Ohio, and West Virginia offer gas supply in relatively close proximity to the Province. At the same time, the maturation of traditional supply sources of Western Canadian gas supply and the competition for the emerging unconventional gas resources in Alberta and BC from North American West Coast LNG export facilities and oil sands developments create gas supply planning risk for eastern Canadian consumers that currently rely on TransCanada Mainline pipeline capacity from Empress.

The technological advancements that made the development of these and other unconventional resources (shale gas, tight gas, shale oil and coal bed methane) throughout North America possible have significantly changed the outlook for future natural gas commodity prices.

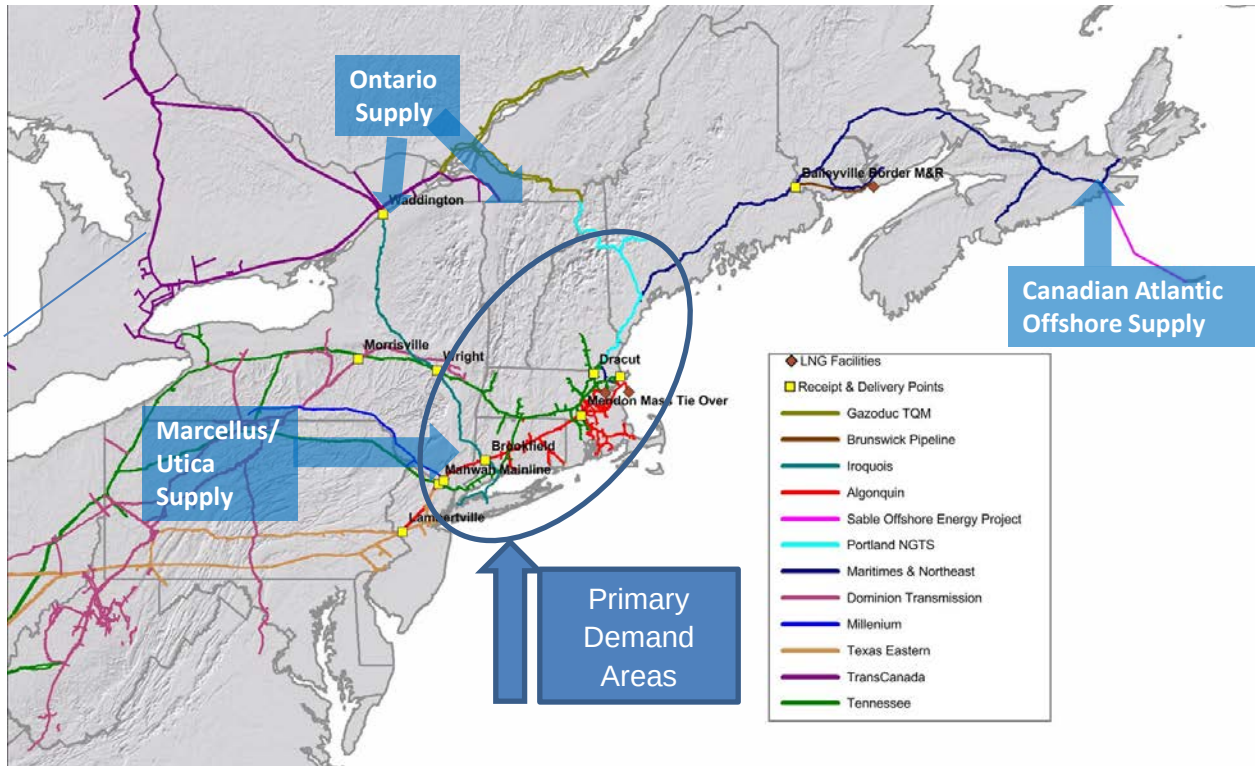
The changes in natural gas markets are shifting the economics of natural gas supply for Ontario consumers, and for consumers that rely on Ontario pipeline capacity. Natural gas prices at Marcellus and Utica supply centers are expected to continue to decline relative to natural gas prices in the U.S. Gulf Coast, and other North American supply centers, creating significant economic incentives to develop the infrastructure needed to access this source of supply. This infrastructure will be required at various locations between production zones, liquid hubs and the consuming markets which for Ontario consumers means infrastructure upstream and downstream of Dawn and Niagara/Chippawa.

[6] ICF International, “Impact of Energy East on Ontario Natural Gas Prices”, prepared for the Ontario Energy Board, April 2015.

4 U.S. Northeast and Canadian Maritimes Markets

Natural gas markets downstream of Dawn that will impact the demand for Union Dawn Parkway System capacity include markets in the Northeastern United States[7] served by the Iroquois and PNGTS pipelines, as well as several smaller pipeline systems. These markets include consumer markets in New York, as well as New England and the Maritimes provinces in Canada. In the past, demand in these markets has been met with natural gas from the U.S. Gulf Coast; Ontario via Niagara, the Iroquois and PNGTS pipelines; and production from the Canadian Maritimes. In the past five years, supply from the Marcellus and Utica has displaced supply from the Gulf Coast and Canadian supply through Niagara.

Exhibit 4-1: U.S. Northeast and Canadian Maritimes Natural Gas Markets



ICF is projecting growth in natural gas demand in these regions, primarily due to growth in power generation demand, with modest growth in residential and commercial demand.[8] At the same time, production from the Canadian Maritimes is expected to decline rapidly in the future.

[7] The U.S. Northeast includes the New England States, as well as New York, New Jersey, and Pennsylvania.

[8] Many of the LDCs in the Northeastern U.S. are projecting increases in the number of residential and commercial natural gas customers. However, much of the growth in demand from these new customers will be offset by continuing improvements in efficiency.

The increase in natural gas requirements in the region resulting from the growth in demand and decline in Maritimes production will be met primarily by the development of new pipeline capacity from the Marcellus and Utica into New York and New England. The increase in natural gas pipeline capacity from the Marcellus/Utica is projected to be sufficient to displace some of the annual flows from Ontario to the Iroquois Pipeline, potentially reducing annual flows on the Union Dawn Parkway System to serve this market.

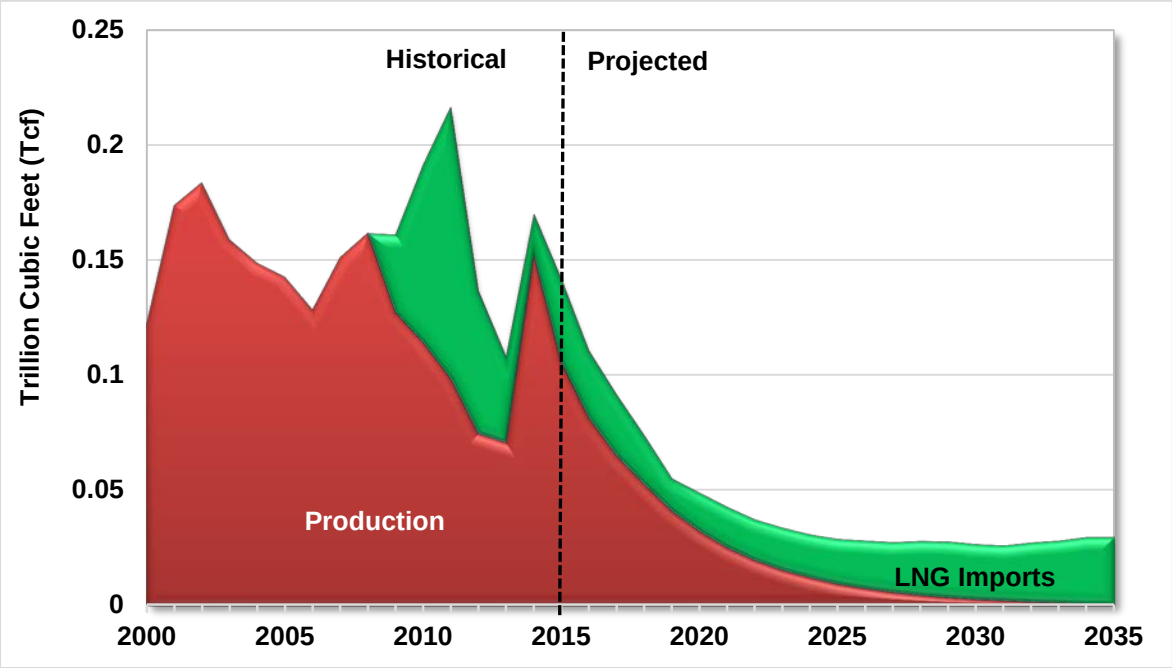
However, access to storage in the region around Dawn, and the availability of existing pipeline capacity into the market regions of the U.S. Northeast is expected to lead to continued reliance on Union's transmission facilities by many of the gas customers currently using these facilities to meet demand during peak winter periods.

4.1 Regional Natural Gas Supply

Currently, the majority of natural gas supply into New England and the Canadian Maritimes provinces is delivered by pipeline from the Mid-Atlantic States and from pipelines into the region from Québec. Regional sources of natural gas are limited to Offshore Nova Scotia production, and LNG imports.

ICF projects a rapid decline in Offshore Nova Scotia natural gas production as Sable Island and Deep Panuke production winds down over the next few years. In addition, LNG imports at Canaport and Everett are expected to decline from 2014/15 levels as new pipeline capacity is built into the region. Exhibit 4-2 below shows ICF's projected decline in natural gas supplies in this region.

Exhibit 4-2: Production and LNG Imports in New England and the Canadian Maritimes



4.2 Regional Natural Gas Demand

ICF is projecting growth in natural gas demand in the Northeastern U.S. and Canadian Maritimes regions, primarily due to growth in power generation demand, with modest growth in residential and commercial demand. Natural gas power generation demand is expected to increase by about 1.7 percent per year through 2035, and residential and commercial demand is expected to increase by about 1 percent per year over the same period. ICF's forecast of demand growth in New England and the Canadian Maritimes is shown below in Exhibit 4-3.

The demand in these regions is also highly seasonal, with significant residential and commercial load driven by winter heating requirements, and power generation demands that have winter peaks as well as summer peaks. Exhibit 4-4 illustrates the seasonal nature of demand for the New England States. The U.S. Northeast and Canadian Maritimes have similar demand patterns with respect to seasonal peaks. In absolute terms, demand seasonality is increasing over time, with the difference between peak month (January) demand and average annual demand increasing due to growth in residential and consumer load. Exhibit 4-5 illustrates the change in the load duration curve for New England over time, showing the growth in peak demand relative to the overall load profile. The growth in seasonal load requirements and in peak winter demand is projected to lead to continuing growth in the requirements for firm natural gas supply in the region.

Exhibit 4-3: Natural Gas Demand in New England and Canadian Maritimes Provinces

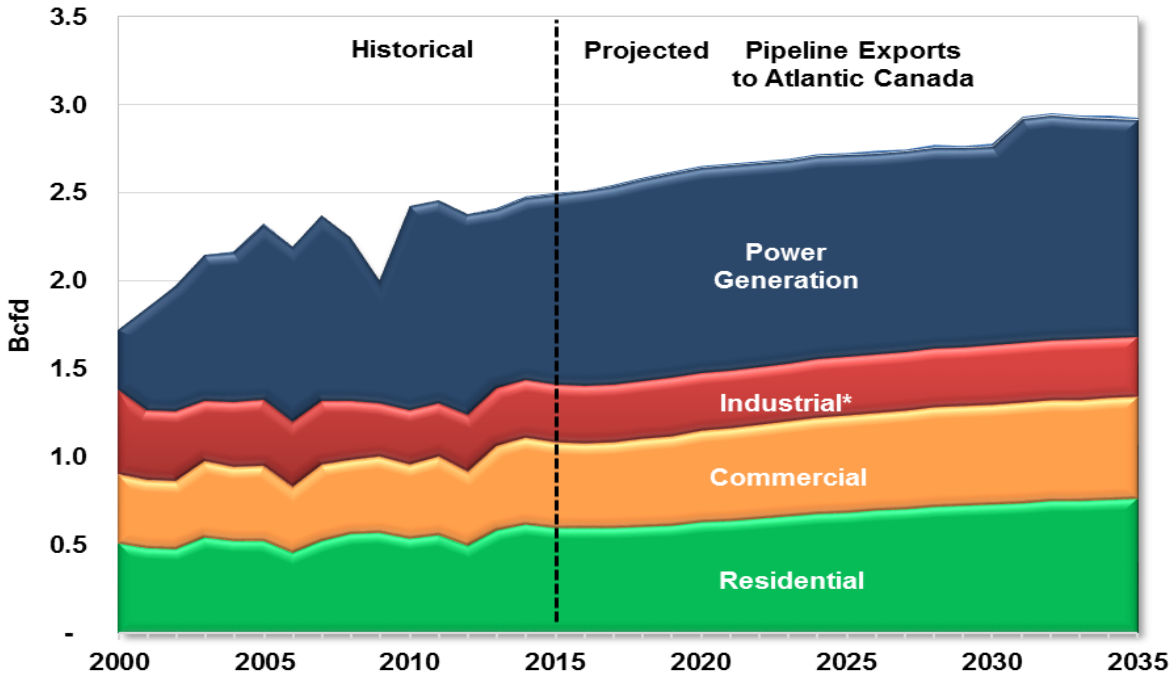


Exhibit 4-4: Seasonal Natural Gas Demand in New England (2020)

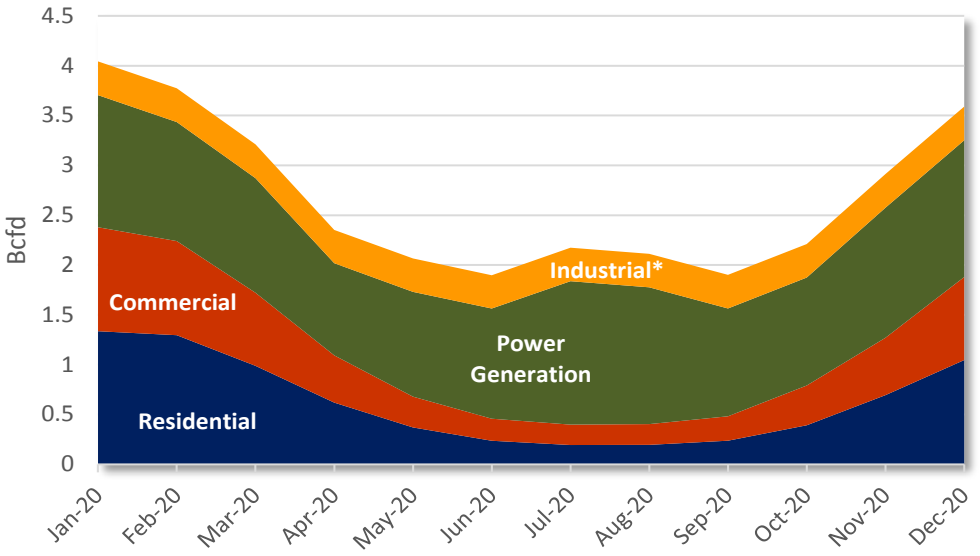
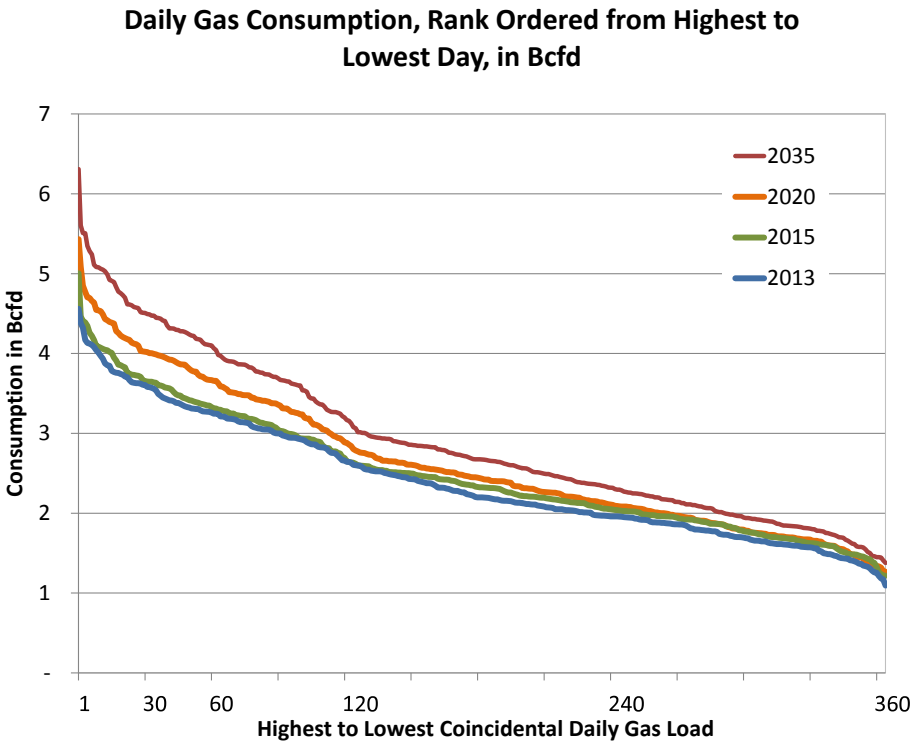


Exhibit 4-5: New England Load Duration Curve[9]



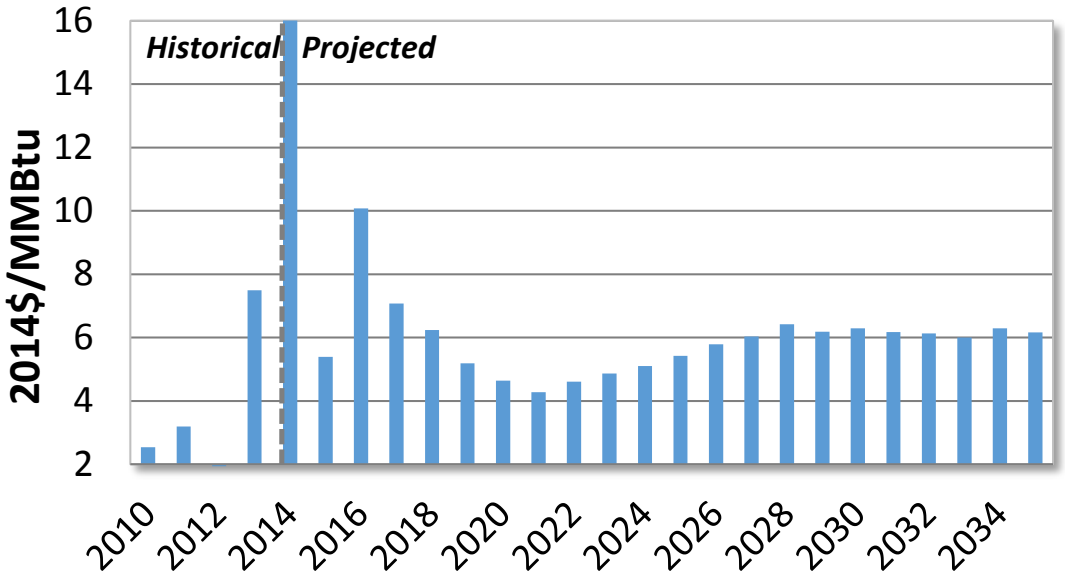
[9] The load duration curves shown in Exhibit 4-5 reflect 365 days of demand, ordered from the highest to lowest demand.

4.3 U.S. Northeast Market Area Storage

The combination of highly seasonal demand and limited natural gas supply options places a significant premium on natural gas storage to meet winter demand. While many other regions in North America have underground storage options, the consuming regions of the U.S. Northeast, including New England and eastern New York, eastern Pennsylvania, and New Jersey have very limited underground storage capacity available due to geological constraints.

The lack of storage capacity, combined with the pipeline constraints into the region results in a significant seasonal difference (seasonal basis) in natural gas prices. ICF's Base Case forecast of the seasonal basis for New England is shown in Exhibit 4-6. Even though ICF is projecting a moderation in the seasonal basis through 2021, New England seasonal basis is expected to remain above $4.00 per MMBtu. In the longer term, the seasonal basis is projected to increase to above $6.00 per MMBtu in real $2014 throughout the forecast period

Exhibit 4-6: Seasonal Natural Gas Price Basis in New England



The very high seasonal natural gas price basis in New England helps to ensure that available pipeline capacity into the region with direct access to natural gas storage will remain highly utilized.

Historically the region has relied on the pinnacle reef storage fields around Dawn in Ontario and Michigan, and storage capacity in the Appalachian Basin, including depleted field storage in Pennsylvania and Western New York, as well as salt cavern storage in Western New York. The pipeline system into the Northeastern U.S. consuming regions generally, and New England specifically, has been designed to facilitate access to the storage facilities.

Currently, there is only limited new storage development activity in the Northeastern U.S. The growth in gas supply has generally suppressed seasonal price differences in the producing regions where potential storage expansions could be feasible, and the storage development options in regions with significant seasonal price spreads, including New England and the Northeastern U.S. market centers, are very limited. As a result, Ontario will continue to be an important storage hub for the U.S. Northeast.

4.4 U.S. Northeast Issues

The past two winters have highlighted a significant disconnect in the gas-consuming regions of the U.S. Northeast between the growth in gas-fired power generation in competitive power markets and the lack of pipeline capacity to accommodate such growth, particularly in New England. As shown below, between 2000 and 2014, power generation gas use as a share of New England's total gas use grew from 20 percent to 46 percent, with little growth in pipeline infrastructure. As a result, the winter of 2013-2014 saw dramatic price escalation in both gas and power prices, given that natural gas is on the margin in such markets. Gas prices spiked to $88/MMBtu at Algonquin Citygate (i.e., Boston) in January 2014, driven by gas deliverability issues. The 2014-2015 winter also saw gas and power price escalation, with gas prices nearing $30/MMBtu in late February 2015. In addition, basis remains high, relative to other markets, further highlighting pipeline capacity constraints, particularly during peak winter demand periods.

While power generators see peak loads during the summer in New England and other U.S. Northeast markets, the winter months see high price spikes due to the combination of LDC load demand, the growth in gas-fired power generation, and the lack of commensurate pipeline infrastructure to accommodate the gas-fired power generation growth.

Natural gas pipeline developers require firm, long-term (typically 15+ year) contracts with shippers in order to ensure that multibillion-dollar pipeline infrastructure can be recovered. Typically, a pipeline will not get built without a significant percentage of the incremental pipeline capacity signed under firm transportation contracts. LDCs, with relatively stable demand, are able to sign up for firm contracts when additional demand is required. However, gas-fired power generators, facing significant load variability, do not typically sign up for firm contracts. Rather, U.S. Northeast gas-fired power generators often sign up for interruptible transportation contracts. As the name suggests, interruptible transportation contracts can be interrupted, such as during peak winter days. This means that growth in gas-fired power generation gas use cannot initiate incremental pipeline development (driven by firm pipeline contracts) and are subject to supply access issues during peak winter days when firm shippers such as LDCs will likely call on all contracted pipeline volumes. LDCs are able to contract for firm capacity when incremental capacity is needed, while gas-fired power generators, which rely on interruptible pipeline capacity, are not able to contract long-term for additional capacity. Thus, while gas-fired power generation growth in the U.S. Northeast is driving the incremental pipeline capacity needs, power generators lack the capability to sign up for firm pipeline contracts.

Natural gas pipelines recover the majority of their costs through capacity reservation and commodity throughput charges. The capacity reservation charge is the largest fee and typically covers the capital costs of a pipeline through long-term firm pipeline contracts. A commodity rate is often also charged to both firm and interruptible shippers, and is based on the volumes moved through the pipeline. Generally, pipelines rely on firm shippers to recoup most of the pipeline capital costs.

4.5 U.S. Northeast Market Changes

The 2014-2015 winter gas and power prices did not see the extreme price spikes experienced during the prior year. Price spikes were lower primarily due to milder weather, increased use of LNG imports, changes in competitive power market approaches to firm supply procurement, increased pipeline capacity into the region, and growth in Marcellus and Utica natural gas production.

While the 2014-2015 winter saw milder weather than the year before, an increase in LNG imports also played a significant role in muting natural gas and power price spikes. The 2014-2015 winter saw higher LNG deliveries over the previous year for a number of reasons. First, the offshore Northeast Gateway LNG import terminal in New England was used for the first time in five years. Second, Everett and Canaport LNG import terminals, which supply the New England market, saw larger import volumes than the year before, with more supplies contracted by end users and marketers.

The increase in LNG imports resulted in part from a change in ISO-NE's winter reliability program, which included on-site fuel oil the year before, and was expanded to include LNG imports during the 2014-2015 winter. The ISO also changed the capacity payment structure to include firm fuel supplies, including LNG when determining capacity payments. This past winter, several generators expanded fuel oil backup capability, while others contracted for LNG imports.

4.5.1 Pipeline Expansions

Growth in pipeline capacity out of the Marcellus and Utica supply regions has been unable to keep up with growing production, leading to constraints on production growth. The capacity constraints are evident in the region's basis trends, with Marcellus and Utica supply hubs depressed by an average of $1.29 per MMBtu below Henry Hub over the last year (June 1, 2014 through May 31, 2015), with many days exceeding $2.00 per MMBtu. Over the same time period, the basis between Dominion Southpoint and Dawn averaged $1.69.[10] Prices in the consuming regions in the U.S. Northeast are also well above regional supply hub prices. Over the last year, the basis between Dominion Southpoint and Algonquin Citygates averaged $3.55, with basis regularly above $10.00 per MMBtu during peak winter periods when the pipelines into the consuming regions are congested. The market has responded to these price disparities with a range of pipeline expansion projects, which are discussed below.

Much of the future market demand growth for natural gas is projected to occur in the U.S. Gulf Coast region (Texas, Louisiana, Mississippi) due to growth in LNG exports and power

[10] Bloomberg.

generation demand, while most of the increase in natural gas production is expected to occur in the U.S. Northeast. The location shifts in production, and the resulting changes in natural gas flows have been accompanied by aggressive midstream infrastructure development over the past few years, a trend that will need to continue in order to support additional production from the Marcellus and Utica.

Many gas pipeline projects have been completed to de-bottleneck Marcellus gas supplies, and there are still many projects under development. ICF is currently tracking more than 40 pipeline projects in the Appalachian Basin. Many of the gas pipeline projects are localized expansions of existing infrastructure that allow for incremental production to enter the existing pipeline network. ICF assumes that many of these smaller projects will proceed. In addition to the potential pipeline projects below, the Texas Eastern Appalachia to Market (TEAM 2014) [11] and TransCo Northeast Connector Projects[12] were placed into service in 2014.

Exhibit 4-7 shows the potential Marcellus and Utica pipeline expansion projects into the U.S. Northeast assumed in the ICF Base Case. While there are a number of projects at various stages of development, significant uncertainty exists over project completion, given the difficulties gas-fired power generators face in providing pipeline funding.

While Kinder Morgan's Northeast Energy Direct (NED) Project and Spectra Energy's Access Northeast Project are both announced projects, they are competing for the same markets. The ICF Base Case assumes a generic project for this incremental volume expansion, as it is unlikely that both projects will get built within the announced project time frame. In addition, Iroquois' South-to-North (SoNo) Project is included in the exhibit below, but is not included in the ICF Base Case. While producers are under pressure to bring gas to market during the summer months, it is uncertain whether a reversal during the summer months would be economic to bring gas into Ontario, given the capital costs.

Regardless of whether SONO is completed, ICF's analysis indicates that the Iroquois Pipeline will remain a significant gas supplier from Canada into the U.S. Northeast during the winter months, and capacity on the Iroquois Pipeline will remain an important part of the overall gas supply portfolio for meeting peak winter requirements in the Northeastern U.S.

[11] Spectra Energy. "New Projects and Our Process: Texas Eastern Appalachia to Market 2014 (TEAM 2014)." Spectra Energy, 2015: Houston, TX. Available at: http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Texas-Eastern-Appalachia-to-Market-2014-TEAM-2014/

[12] Federal Energy Regulatory Commission (FERC). "Docket Nos. CP13-36-000, CP13-132-000." FERC, October 2013: Washington, D.C. Available at: http://www.gpo.gov/fdsys/pkg/FR-2013-10-11/html/2013-24441.htm

Exhibit 4-7: Potential Marcellus and Utica Expansion into the Northeast

Project Name	Company	Route	Planned In-Service Date	Planned Capacity MMcfd	Status
East Side Exp	Columbia Gas Transmission	Increased receipt capacity in NY from Millennium and NJ from Tennessee	Dec-15	310	Under Construction
Wright Interconnect Project	Iroquois Gas Transmission	Expand Wright Interconnect to accommodate Constitution Pipeline	Nov-16	650	FERC Approved
Constitution Pipeline	Williams/Cabot Oil/Piedmont Nat Gas	Susquehanna PA to TGP/IGT Wright Interconnect in Schoharie NY	Apr-16	650	FERC Approved
AIM Project	Algonquin	Algonquin looping and compression	Nov-16	342	FERC Approved
Connecticut Expansion Project	Tennessee Gas Pipeline	Wright NY to Connecticut on Lines 200 & 300.	Nov-16	72	Filed with FERC
New Market Expansion	Dominion Transmission	Additional compression along existing system in east central NY	Nov-16	112	Filed with FERC
South to North [1]	Iroquois Gas Transmission	Reversal of system between Wright and Waddington	Nov-17	300	Announced
Penneast Pipeline	AGL, NJ, and UGI	Pennsylvania to New Jersey	Sep-17	1,000	Announced
Atlantic Bridge	Algonquin & M&N	New Jersey to New England and Maritimes Canada	Nov-17	300	Announced
Millennium Expansion	Millennium Pipeline	Open season March 2015	Nov-17	~350	Announced
Diamond East	Williams Transcontinental	Pennsylvania to New Jersey	Jun-18	1,000	Announced
Access Northeast [2]	Algonquin & M&N	Into New England	Nov-18	1,000	Announced
Northeast Energy Direct [2]	Kinder Morgan	North central PA through east central NY and eastern MA and southern NH	Nov-18	~1,400	Announced

[1] The proposed reversal of the Iroquois system is currently not active in the ICF base case.

[2] ICF assumes an expansion of roughly 1000 MMcfd will be built into New England late in 2018 or 2019. However, it is unlikely that both the Spectra Energy Access Northeast project and the Kinder Morgan Northeast Energy Direct project will both be completed within this time window so only one project is assumed in the ICF Base Case.

Source: ICF GMM April 2015 Base Case

Exhibit 4-8 below shows potential Marcellus and Utica pipeline projects into the U.S. Midwest and Ontario. About 6 to 9 Bcfd of additional pipeline capacity is planned to transport the growing Marcellus and Utica gas production to Midwest and Ontario markets. From the Marcellus and Utica plays into Michigan, ICF projects that roughly 3 Bcfd out of the proposed 6+ Bcfd of incremental pipeline capacity will be built.

Three major projects have been proposed to move Marcellus and Utica gas into the U.S. Midwest and Ontario. These include:

1) **The Nexus Pipeline**, proposed by DTE Energy and Spectra Energy, which will provide up to 1.5 Bcfd of pipeline capacity from eastern Ohio to Michigan. Part of the capacity will be extended to the Dawn Hub in Ontario using contracted capacity on the Michigan

Consolidated Gas Company transportation system and the Vector Pipeline (Vector) System. Nexus has submitted a preliminary application to FERC for the project.

2) **The Rover Pipeline**, proposed by Energy Transfer Partners, which will provide up to 3.25 Bcfd of pipeline capacity to interconnections from eastern Ohio to Michigan, including the potential for up to 1.35 Bcfd of pipeline capacity to a proposed interconnect with the Vector Pipeline, and 950 MMcfd of capacity on Vector to Michigan and to the Dawn Hub in Ontario. Rover has applied to FERC for approval to construct the pipeline.

3) **The ANR East Project**, proposed by ANR, which will provide up to 2.4 Bcfd of new pipeline capacity from eastern Ohio to interconnect with the existing ANR system in western Ohio near Defiance (for flow south towards the Gulf of Mexico), and up to 300 MMcfd of new pipeline capacity into the Dawn Hub in Ontario.

These projects will reduce the price of natural gas in the Michigan and Ontario markets and provide additional supply diversity in these markets, which will increase the attractiveness of the markets to natural gas purchasers.

Exhibit 4-8: Potential Marcellus and Utica Expansions to the Midwest and Ontario

Project Name	Company	Route	Planned In-Service Date	Planned Capacity MMcfd	Status
East to West Project	Rockies Express Pipeline	Clarington OH to Southern Illinois	Jun-15	1,800	FERC Approved
Uniontown to City Gas	Texas Eastern	Reverse capacity in PA, Ohio, and Indiana	Nov-15	425	FERC Approved
Ohio Valley Connector	Equitrans Pipeline	Looping and compression expansion in WV and OH	Jun-16	850	FERC filed
Dominion Clarington	Dominion Transmission	Compression expansion WV to OH	Nov-16	250	FERC Filed
Rover Pipeline Pt1*	Energy Transfer	Marcellus/Utica to Ohio/Michigan	Dec-16	2,200	FERC Filed
Rover Pipeline Pt2*	Energy Transfer	Marcellus/Utica to Ohio/Michigan	Jun 17	1,050	FERC Filed
ANR East*	ANR Pipeline	Clarington OH to feed ANR pipeline at Defiance OH and into Michigan	Jul-17	~1,000	Announced
NEXUS Gas Transmission*	Spectra	NE Ohio to Michigan	Nov-17	~2,000	Prelim FERC Filed

* These projects are competing to move Utica and Marcellus gas into existing markets in Michigan and Ontario by building new pipe across Ohio and using existing pipeline infrastructure in Michigan and Indiana to reach market areas.

Source: ICF GMM April 2015 Base Case

There are a number of larger gas pipeline projects that are much broader in geographic reach. Examples include the Leach and Rayne Express Projects sponsored by NiSource (Columbia

Gas) and Atlantic Sunrise sponsored by Williams (Transco). These projects are aimed at reversing flows on pipelines that have historically transported gas from the U.S. Gulf Coast toward the U.S. Mid-Atlantic. They are much more expansive in scope and reach, requiring significant enhancements to existing lines (i.e., substantial changes to compression and a significant amount of looping of existing lines).

Exhibit 4-9 shows potential Pipeline expansion into Western New York and within Ontario. Pipeline expansions are planned to deliver gas through the Niagara and Chippawa border points and from the Dawn Hub to customers throughout Ontario, Québec and the U.S. Northeast.

4.6 Northeastern U.S. and Maritimes Canada Conclusions

Growth in natural gas production in the Northeastern U.S. is the primary driving force behind recent changes in natural gas markets, and will continue to be the most important source of change for the foreseeable future. Production out of the Marcellus/Utica is projected to grow to 33.7 Bcfd by 2025. Production from these basins is displacing natural gas supplies from the U.S. Gulf Coast, the WCSB, and other traditional supply sources, and is expected to provide the vast majority of all natural gas consumed in the Northeastern U.S. as well as Central and Eastern Canada in the future.

At the same time, natural gas production from the Offshore Eastern Maritimes is expected to decline rapidly as the Sable Island and Deep Panuke fields wind down and are not replaced.

Regional demand is highly seasonal, and seasonal demand is expected to continue to grow over time, leading to relatively low annual utilization of pipeline capacity into the region, and a high demand for natural gas storage.

The decline in Maritimes production, combined with growth in natural gas demand in the region is placing a premium on pipeline capacity into the region, although difficulties in building pipelines in the U.S. Northeast are expected to persist.

Exhibit 4-9: Potential Pipeline Expansions in Western New York and within Ontario

Project Name	Company	Route	Planned In-Service Date	Planned Capacity MMcfd	Status
Enbridge GTA	Enbridge Gas Distribution	GTA (Greater Toronto Area) project is sized greater than Toronto needs and combined with TCPL builds will relieve constraints on Parkway to Maple corridor.	Oct-15	1900	Under Construction
Kings North	TransCanada Pipe Line	Will receive gas from the Enbridge GTA pipeline.	Oct-15	347	NEB Approved
Niagara Expansion	Tennessee Gas Pipeline	Modify Interconnect with NFGS and small pipeline loops in NY and PA.	Nov-15	158	FERC Approved
Northern Access 2015	National Fuel Gas Supply	Compression expansion to allow additional Niagara deliveries	Nov-15	140	FERC Approved
Niagara to Parkway	TransCanada Pipe Line	Reverse capacity on existing line	Nov-15	333	Contracted
Dawn to Parkway Projects	Union Gas	Includes Bradford-Kirkwall pipeline and Parkway compressor project	Nov-15	690	Under Construction
Dawn to Parkway Projects 2016	Union Gas	48" Hamilton to Milton loop and Lobo compressor project	Nov-16	589	Under Construction
Northern Access 2016	National Fuel & Empire Pipeline	Loop pipe and add compression to increase deliveries to Niagara and Chippawa	Nov-16	350	Filed w/ FERC
Dawn to Parkway Projects 2017	Union Gas	Bright, Lobo, and Dawn compression	Nov-17	433	Announced
Vaughan Mainline Expansion	TransCanada Pipe Line	Connects the Enbridge GTA pipe to Maple	Nov-17	380	Announced
Maple Compression	TransCanada Pipeline	Incremental compression added at existing Maple Compressor Station	Nov-16		Announced

** Represents 760 MMcfd of capacity dedicated to the Enbridge demand areas, and 1140 MMcfd of capacity for TCPL expansions.*

Source: ICF GMM April 2015 Base Case

4.7 Implications for Union Dawn Parkway System

Growth in natural gas production in the Northeastern U.S. is the primary driving force behind recent changes in natural gas markets, and will continue to be the most important source of change for the foreseeable future. Production out of the Marcellus/Utica is projected to grow to more than 33 Bcfd by 2025, from less than one Bcfd in 2010. Production from these basins is displacing natural gas supplies from the U.S. Gulf Coast, the WCSB, and other traditional supply sources, and is expected to provide the majority of all natural gas consumed in the Northeastern U.S. as well as Central and Eastern Canada in the future. The changes in infrastructure needed to accommodate the changes in supply will have significant impacts on the Union Dawn Parkway System.

The initial impact on the Dawn Parkway System of the growth in Marcellus production was the displacement of Ontario gas supplies previously delivered into Western New York via Niagara. As Marcellus production increased, these flows dropped to zero, and Western New York has

transitioned from taking delivery of natural gas from Ontario to a source of natural gas supply for Ontario. During this transition, contracts on the Union Dawn Parkway System for delivery of natural gas from Dawn to Kirkwall were turned back.

However, as Marcellus and Utica production continues to grow, the amount of Marcellus and Utica gas delivered into Ontario is expected to continue to increase, further reducing the amount of Ontario supply sourced from other supply basins. These new supplies will be delivered via new pipeline capacity into Ontario through Michigan to Dawn, and through Niagara to Kirkwall, increasing the need for Union Dawn Parkway System capacity.

At the same time, natural gas production from the Offshore Canadian Maritimes is expected to decline rapidly as the Sable Island and Deep Panuke fields wind down and are not replaced. The decline in Maritimes production will create supply constraints in the Maritimes Provinces and in New England that will increase the value of pipeline capacity capable of delivering other sources of natural gas into these regions, including the existing pipelines from Ontario and Québec into the Northeastern U.S.

In addition, regional demand is highly seasonal, and seasonal demand is expected to continue to grow over time, leading to relatively low annual utilization of pipeline capacity into the region, and a high demand for natural gas storage. The difficulty in developing new storage capacity in the region is expected to lead to continuing customer interest in utilizing storage in Ontario and Michigan.

Given the high costs and difficulties in building pipelines in the U.S. Northeast, and the difficulty in developing new storage capacity to serve seasonal loads, the existing pipelines capable of serving this market are expected to increase in value over time.

5 Evaluation of Future Utilization of the Dawn Parkway System

The changes in natural gas markets described earlier in this report will have significant impacts on pipeline flows and the demand for pipeline capacity throughout the Midwest, the Northeastern U.S., and Ontario and Québec.

Over the last three years, Union has received numerous requests for incremental Dawn Parkway System capacity. Union is currently in the process of building 433 TJ/d of new capacity to be available in November 2015, and recently received OEB approval for construction of an additional 443 TJ/d of capacity to be completed by November 2016.

Union recently held an open season for incremental Dawn Parkway System capacity to be available by November 2017. Union is proposing to add an additional 457 TJ/d of capacity, including 368 TJ/d of capacity from Dawn to Parkway and 85 TJ/d of capacity from Kirkwall to Parkway to provide the requested capacity.

ICF evaluated the impacts of the likely changes in gas markets in order to determine the likely impact of the changes on the future utilization/ contracting of the Dawn Parkway System and to determine the potential risks and opportunities for the Dawn Parkway System. ICF has considered factors that could result in turnback/de-contracting or reduced needs for new capacity requests, as well as factors that could lead to continued growth in the demand for and utilization of Union's facilities.

5.1 Changes in Natural Gas Markets Expected to Increase Demand for Union Dawn Parkway System Assets

The growth in natural gas production in the U.S. Northeast and decline in Canadian Maritimes natural gas production are changing the natural gas supply balance throughout the U.S. Northeast and U.S. Midwest and into Ontario, leading to an increase in the demand for pipeline capacity on the Dawn Parkway System.

As Marcellus and Utica production increases, natural gas prices in Appalachia are expected to decline relative to other producing regions, resulting in significant incentives to flow gas from the U.S. Northeast into Ontario through Niagara and Dawn, and the U.S. Midwest as well as south into the U.S. Mid-Atlantic and U.S. Gulf Coast.

At the same time, growth in natural gas demand in Western Canada for oil sands production, LNG exports, power generation and other uses is expected to exceed growth in natural gas production from the WCSB, resulting in higher natural gas prices in Western Canada and lower exports.

5.1.1 Growth in Marcellus/Utica Production

The Marcellus and Utica will continue to be the most dominant natural gas plays in North America. Gas production from the area has grown from near nothing in early 2007 to an average of more than 17 Bcfd in 2015, equaling roughly 20 percent of the total gas production in the U.S. ICF projects that Marcellus production will continue to grow at a robust rate of between 2 and 3 Bcfd per year over the next few years. Absent market growth and expansion of pipeline capacity to transport the new production out of the area, this type of growth would continue to place downward pressure on the region's gas prices.

5.1.2 Impact of Gas Market Changes on Natural Gas Prices and Basis

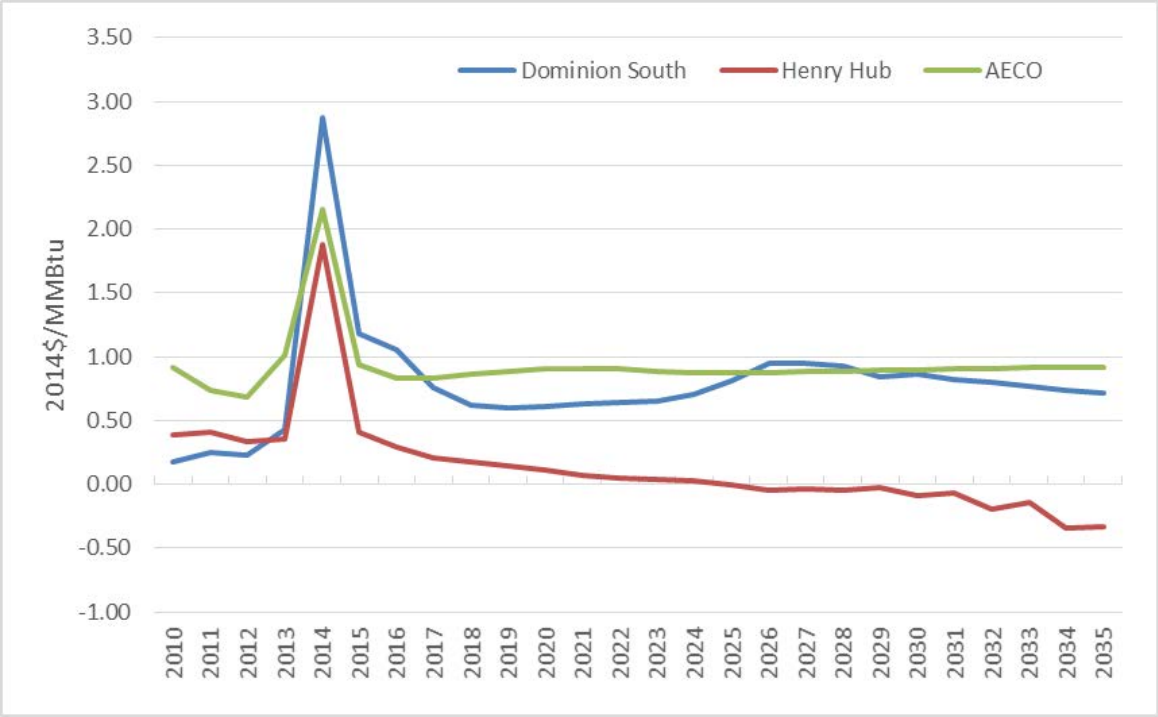
The changes in location of natural gas supply and demand are projected by ICF to have a fundamental impact on the price relationships between the available sources of natural gas for Ontario and Québec consumers.

- The rapid growth in Marcellus/Utica supply is turning the U.S. Northeast into a major supply center, and pushing down prices in the region, at market centers such as Dominion Southpoint, Columbia Appalachia, Clarington (Ohio) and other regional pricing points.
- The growth in LNG exports and Mexican exports from the Gulf of Mexico is changing the U.S. Gulf Coast into a demand region that will purchase natural gas from the Marcellus and Utica plays. As flows from the U.S. Gulf Coast into the U.S. Midwest and U.S. Northeast markets decline and then essentially disappear, prices in the U.S. Gulf Coast are expected to increase relative to prices in the U.S. Northeast producing regions.
- In the WCSB, the decline in conventional natural gas production, combined with growth in natural gas demand for oil sands production and LNG exports, is expected to lead to increasing prices, relative to U.S. Northeast supply regions.

The natural gas price change from these three producing regions is reflected in the basis from the producing regions to the Dawn Hub over time, as shown in the exhibit below.[13] The change in price relationship increases the attractiveness of natural gas supply purchased from the U.S. Northeast supply centers for consumers throughout the U.S. Northeast, U.S. Midwest and eastern Canada relative to the supply basins that these regions have historically relied upon. However, access to natural gas from the U.S. Northeast is dependent on the development of new pipeline infrastructure in each region and upstream. Much of the new infrastructure needed to move natural gas south from the Marcellus and Utica plays will be developed by repurposing existing infrastructure originally developed to deliver natural gas from traditional supply basins to the U.S. Midwest and to the U.S. Northeast.

[13] The increase in basis in 2014 is due to the price spikes that occurred in market regions due to the extreme weather conditions during the 2013/14 winter.

Exhibit 5-1: Impact of Natural Gas Market Changes on Natural Gas Pipeline Basis to Dawn from Alternative Supply Basins



5.2 Capacity Turnback Risk

Customer behavior during the last two open seasons on the Union Dawn Parkway System, and during the recent capacity term-up notification by TransCanada, indicates that the potential for capacity turnback appears to be very low through at least 2022.

- As part of the recent Union open seasons, Union has offered the ability to turnback transportation capacity to reduce the scope of the new facilities required. U.S. Northeast utilities have turned back nearly all of their capacity on the Dawn to Kirkwall path but have only turned back a minimal amount of their capacity on the Dawn to Parkway path.
- During the recent TransCanada contract term-up requirement notification, almost all of the capacity from Parkway to Dawn that was scheduled to expire in the next few years was extended through 2022. Of the capacity impacted by the term-up notification, only 49 TJ/d out of approximately 2,600 TJ/d of firm transportation capacity was not extended. Only 6 TJ/d of capacity to Iroquois was not termed up.

There is more uncertainty with respect to turnback after 2022. To evaluate the potential risk of long term capacity turnback, ICF has looked at the market factors influencing turnback risk for different types of customers. The capacity on the Dawn Parkway System is currently contracted or used, to a high degree, by five major parties; Enbridge Gas Distribution, Gaz Métro, TransCanada, U.S. Northeast utilities and Union to serve in-franchise customers. Enbridge Gas Distribution, Gaz Métro and TransCanada currently account for about 48 percent of the total Dawn Parkway System transportation capacity, and Union holds about 31 percent of the

capacity for in-franchise needs. In addition, U.S. Northeast utilities hold about 12 percent of the total Dawn Parkway System transportation capacity. Other customers, including power generators, industrial customers, and smaller utilities, hold an additional 8 percent of the capacity.

5.2.1 Capacity Turn-back Risk from Ontario and Québec LDCs

ICF considers the potential for capacity turnback on the Dawn Parkway System by Ontario and Québec LDCs to be very low. The access to natural gas storage capacity at or near the Dawn Hub, where Union and Enbridge Gas Distribution are both storage owners and operators, and where Gaz Métro (and Enbridge) contracts for significant storage capacity limits the likelihood of capacity turnback by the Ontario and Québec LDCs. In addition Dawn is a liquid trading hub and price discovery point that supports supply purchasing at that location. Given the projected growth in demand in these regions, demand for Dawn Parkway System transportation capacity is expected to continue to increase over time.

In addition, the primary alternative to Union Dawn Parkway System transportation currently available is long-haul capacity on TransCanada from Alberta. The Eastern Canadian LDCs have been shifting away from long-haul transportation capacity to short-haul transportation capacity due to the relative economics of short-haul services and the ability to enhance reliability by diversifying their natural gas supply portfolios. Given the continuing changes in the North American natural gas market structure, ICF anticipates that gas supply from the Marcellus and Utica plays will continue to become increasingly attractive to Ontario and Québec consumers due to lower price of gas supplies from the U.S. Northeast relative to the WCSB and other supply basins.

With the expansion of pipeline capacity within the Appalachian Basin, Marcellus and Utica supply could also be transported into the Iroquois Pipeline for export to Canada. Iroquois Pipeline has proposed a project to deliver Marcellus gas to the TransCanada system at Waddington as an alternative to supply sourced from the WCSB and from Dawn. ICF does not currently include the reversal of the Iroquois Pipeline in the ICF Base Case forecast due to the cost of the project and the limited market for the project. If the Iroquois SONO project eventually is implemented, and the northern section of the Iroquois Pipeline is reversed, ICF projects that the this capacity would likely be used to inject into storage at the Dawn Hub in the summer rather than for serving peak winter demand. ICF is projecting Iroquois Pipeline capacity from Ontario to New York to continue to be an important source of natural gas supply into Northeastern U.S. market centers during peak winter periods, limiting the potential for Ontario and Québec LDCs to turnback Dawn Parkway System capacity.

5.2.2 Impact of PNGTS and Other Smaller Pipelines into the U.S. Northeast on Turnback Risk

PNGTS, Vermont Gas System, and several smaller pipelines deliver gas from Ontario and Québec into the Northeastern U.S. These pipelines, which receive natural gas supply from TransCanada, are expected to remain fully contracted going forward due to the combination of

declining supplies from the Canadian Maritimes, regional market growth, and difficulty in building new capacity into the regions served by these pipelines. As a result, these pipelines have limited potential for turnback, and may lead to future growth in demand for Union's Dawn Parkway System capacity.

Vermont Gas System and the other smaller pipelines serve dedicated markets with limited or no access to sources of supply other than the TransCanada system. The demand for these pipeline systems is not expected to be significantly impacted by growth in natural gas supplies in the Marcellus and Utica, due to the difficulty and cost of building alternative pipeline capacity in the areas served by these pipelines.

Currently, most of the contracts on TransCanada delivering natural gas to PNGTS are long-haul contracts from Empress. The amount of capacity on the Union Dawn Parkway System contracted by customers taking delivery via PNGTS is limited, hence the turnback risk associated with potential changes in usage on PNGTS is small. Instead, PNGTS provides an opportunity for future growth in Union Dawn Parkway System demand that reduces turnback risk from other customers, and could underpin future expansion of the Union Dawn Parkway System.

PNGTS serves New England markets and interconnects with the Maritimes and Northeast Pipeline near Portland, Maine. The expected decline in Canadian Maritimes production, which is currently relied on for a significant proportion of peak period as well as annual supply in New England, increases the value of the PNGTS.

Earlier this year, PNGTS initiated a binding open season to evaluate market interest in expanding pipeline capacity from Québec into New England by between 132 MMcfd and 182 MMcfd.[14] An increase in capacity on PNGTS would increase demand for pipeline capacity in Ontario, including potentially an increase in demand for Union Dawn Parkway System capacity. In addition, customers that have contracted for Mainline capacity on TransCanada to deliver firm gas into PNGTS will consider transitioning from long-haul Mainline capacity to short-haul capacity from Dawn, leading to potential growth in the demand for Union Dawn Parkway System capacity.

5.2.3 Capacity Turnback Risk due to Changes in Utilization of the Iroquois Pipeline

The Iroquois Pipeline currently is a major source of natural gas supply into the Northeastern U.S., and indirectly into New England. The Iroquois Pipeline receives gas from TransCanada at Waddington at the northern end of the system, and from the Algonquin Pipeline at Brookfield near the southern end of the system. In the last year, from June 2014 through May 2015, 57 percent of the Iroquois receipts were at Waddington, and 43 percent of receipts were at Brookfield. During the peak period from January through March of 2015, 80 percent of receipts were at Waddington, and 20 percent of receipts were at Brookfield.

[14] The results of the PNGTS open season have not yet been announced.

On an annual basis, about 43 percent of the flows on the Iroquois Pipeline are delivered to power generators, 36 percent is delivered to LDCs, and the remaining 21 percent is delivered to other pipelines, primarily to Tennessee Gas Pipeline at Wright. During the peak demand period from January through March of 2015, 40 percent of the deliveries were to LDCs, 32 percent was delivered to power generators, and 28 percent was delivered to other pipelines, primarily to Tennessee Gas Pipeline at Wright. Currently, the pipeline is fully utilized during peak winter periods, with flows dropping to negligible levels during low demand periods. Iroquois Pipeline customers generally rely on the pipeline to provide deliveries during peak demand periods when other pipeline options are fully utilized.

A number of LDCs holding pipeline capacity on the Iroquois Pipeline also hold capacity on the Union Dawn Parkway System. The Iroquois Pipeline is likely to be impacted by the growth in natural gas supply in the Marcellus and Utica regions. As noted earlier, several pipeline projects are planned to deliver natural gas from the Marcellus to the Iroquois Pipeline at Wright and to expand the capacity of the Tennessee Gas Pipeline system from Wright, and the Algonquin system from Brookfield to move gas into New England.

The expansion of pipeline capacity from the Marcellus to interconnects with the Iroquois system provide a potential opportunity for Iroquois Pipeline receipts at Wright from the Marcellus to displace TransCanada deliveries to Iroquois Pipeline at Waddington. The potential ability to displace shipments from Waddington with shipments directly to Wright creates additional risk of Iroquois Pipeline capacity turnback. The impact on Dawn Parkway System capacity turnback risk depends on the degree to which the shippers considering Iroquois capacity turnback also hold capacity on the Union Dawn Parkway System.

Regardless of the changes in pipeline capacity, the advantages of holding pipeline capacity back to Dawn are expected to continue to provide incentives for the current customers in the U.S. Northeast to continue to hold capacity back to Dawn. The access to storage, the diversity of supply available at Dawn, and the difficulty in building new or expanded pipeline capacity into certain U.S. Northeast markets provide sound reasons for U.S. Northeast utilities to continue to hold capacity on the Union Dawn Parkway System. These advantages are discussed below:

1) <u>New Pipeline Capacity from Marcellus/Utica to U.S Northeast Demand Centers</u>

While ICF expects some additional pipeline capacity to be built to deliver natural gas from the Marcellus/Utica to the demand centers in the U.S. Northeastern United States, new pipeline capacity into the U.S. Northeast is expected to be expensive, difficult to site, and with unpredictable timing. Some of the Northeastern utilities currently holding capacity on the Union Dawn Parkway System could have the opportunity to replace this capacity with new pipeline capacity from the Marcellus/Utica. The costs of the new capacity are also expected to be high. If this is the case, any new pipeline capacity into the U.S. Northeast would likely only be used to serve incremental load growth rather than displacing existing capacity options.

Construction scheduling concerns, including both project cancellation and project delays associated with all new pipeline construction projects in the Northeastern U.S. market areas also increase the value of holding existing pipeline capacity.

In addition, ICF does not expect sufficient growth in pipeline capacity to serve growth in power generation demands in the U.S. Northeast. As a result, we expect the region to continue to suffer from significant winter price volatility and price spikes caused by limitations on pipeline capacity in the U.S. Northeast downstream of the production regions. Holding pipeline capacity back to Dawn will continue to provide the U.S. Northeast utilities with access to alternative sources of supply, spreading basis risk over different markets.

2) Access to Dawn Storage

ICF expects storage at Dawn to continue to have significant value to the U.S. Northeast utilities and that they will retain access to Dawn to secure that storage. Building new storage capacity in the areas accessible to the U.S. Northeast utilities during peak winter periods is expensive, and would be available only in very limited locations. As natural gas demand in the Northeastern U.S. continues to increase, access to storage will continue to be a valuable asset to these utilities. Ontario and Midwest U.S. storage is expected to be the most readily available and economic storage option.

3) Access to Gas Markets at Dawn

Dawn will continue to provide access to a large and liquid market upstream of the pipeline constraints into the U.S. Northeast, with a range of different supply options providing diversity of supply, adding value to the holding of pipeline capacity from Dawn.

In addition, growth in natural gas demand in the Northeastern U.S. is expected to continue due to increased reliance on natural gas for power generation, as well as residential and commercial demand growth.

The customers on Iroquois Pipeline that are not using Iroquois Pipeline capacity to reach back to Dawn, and hence do not currently find additional value associated with the use of Union's assets, are more likely to turnback Iroquois Pipeline capacity than the customers that currently hold Dawn Parkway System capacity in addition to their Iroquois Pipeline capacity.

Given the above, ICF is of the view that while some of the capacity on the Union Dawn Parkway System held by the utilities in the U.S. Northeast could be at risk of turnback, the risk is relatively limited. In addition, ICF would expect any capacity turned back by U.S. shippers to be readily marketable due to expected market growth in Eastern Canada, and increases in demand from customers on PNGTS and the other smaller pipelines over the period of the ICF analysis, through 2035.

5.3 Assessing the Impact of Market Uncertainty on Potential Turnback Risk

ICF conclusions regarding the future utilization of the Union Dawn Parkway System, and our assessment of capacity turnback risk is based on our assessment of the most likely future natural gas market conditions. However, as in all forecasts, there are areas of uncertainty in the forecast. In order to assess the robustness of our conclusions with respect to future utilization of the Union Dawn Parkway System, ICF considered several variables in the analysis.

5.3.1 Development of Pipeline Capacity from the Marcellus/Utica to Ontario

Based on ICF analysis, additional pipeline capacity from the Marcellus/Utica region is not necessary to support the proposed 2017 Dawn Parkway Project. However additional supply from the Marcellus will dampen prices, and increase supply diversity at Dawn, increasing the attractiveness of Dawn as a source of supply relative to other options, and likely increasing interest in additional Dawn Parkway System capacity.

5.3.2 Natural Gas Demand Growth

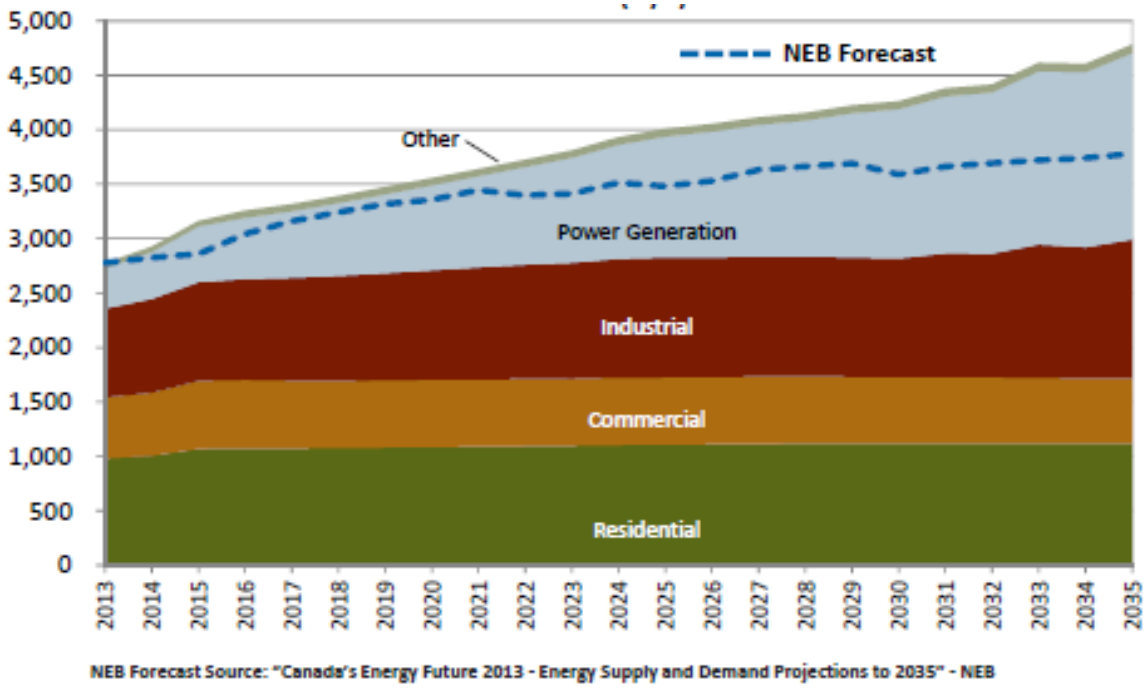
The projection of demand growth in Eastern Canada, including Ontario and Quebec, and in the Northeastern U.S. and Canadian Maritimes has a significant impact on ICF's forecast of pipeline flows in these regions, and could have a potentially significant impact on the projected utilization of Union's Dawn Parkway System. ICF's Base Case demand forecasts for Ontario and for the Northeastern U.S. are somewhat higher than the forecasts presented by the National Energy Board and the New England Power Pool (NEPOOL). Figure 5-2 below shows ICF's Base Case Ontario demand forecast under our Base Case compared to the demand forecast of the National Energy Board for all demand in Ontario (the dotted line).

In order to assess the impact of demand variability on the results of the analysis, ICF developed a low demand forecast reflecting growth in power generation demand consistent with the National Energy Board and NEPOOL projections.

5.3.3 Pipeline Capacity Expansion into the U.S. Northeast

The ICF Base Case analysis includes several major pipeline capacity projects from the Marcellus into New York and New England. However, public opposition to pipeline development, difficulty in obtaining long term contracts from the power generators driving part of the demand growth in the region, and the high cost of pipeline expansions in the region increases the risk that these projects may not get built. To address the impact of this market uncertainty on the value of the Union 2017 Dawn Parkway Project, ICF evaluated a market scenario with lower than anticipated pipeline expansions into this region.

Exhibit 5-2: ICF Base Case Ontario Demand Forecast



NEB Forecast Source: "Canada's Energy Future 2013 - Energy Supply and Demand Projections to 2035" - NEB

5.4 ICF Scenario Analysis

In order to assess the impact of market variability on turnback risk, ICF conducted four market sensitivity cases to assess the impact of the Union 2017 Dawn Parkway Project on U.S. Northeast gas demand and flows. The market scenarios are as follows:

1) Case 1 – Base Case with 2017 Union Dawn Parkway Project
2) Case 2 – Base Case without 2017 Union Dawn Parkway Project
3) Case 3 – Lower Demand Scenario – based on National Energy Board forecast for Ontario power generation demand and reduced U.S. Northeast power generation demand growth matching the New England Power Pool (NEPOOL) forecast
4) Case 4 – Constrained U.S. NE Pipeline Capacity – based on removal of Northeast Energy Direct pipeline expansion (primary and future compression expansion).

ICF analysis indicates that demand for capacity on the Union Dawn Parkway System will continue to grow over time in the Base Case (with the 2017 Union Dawn Parkway Project) and Constrained U.S. NE Pipeline Capacity Case, and that there is little risk of underutilization of the Dawn Parkway System associated with the Union 2017 Dawn Parkway Project. Additional expansion of the Union Dawn Parkway System would be warranted by the growth in demand. Even in the "Low Demand" scenario, peak period utilization on the Union Dawn Parkway System is expected to increase through 2020 and then remain fairly stable.

The exhibit below shows that demand for additional expansions is expected after the Union 2017 Dawn Parkway Project is completed. Peak month flows on the Union Dawn Parkway

System are expected to increase by 0.5 Bcfd to 2025, indicating continuing growth in demand for pipeline capacity. Gas demand growth in Ontario, Québec, and U.S. Northeast is expected to continue to drive demand for capacity, which is illustrated by the increase in flows through 2020.

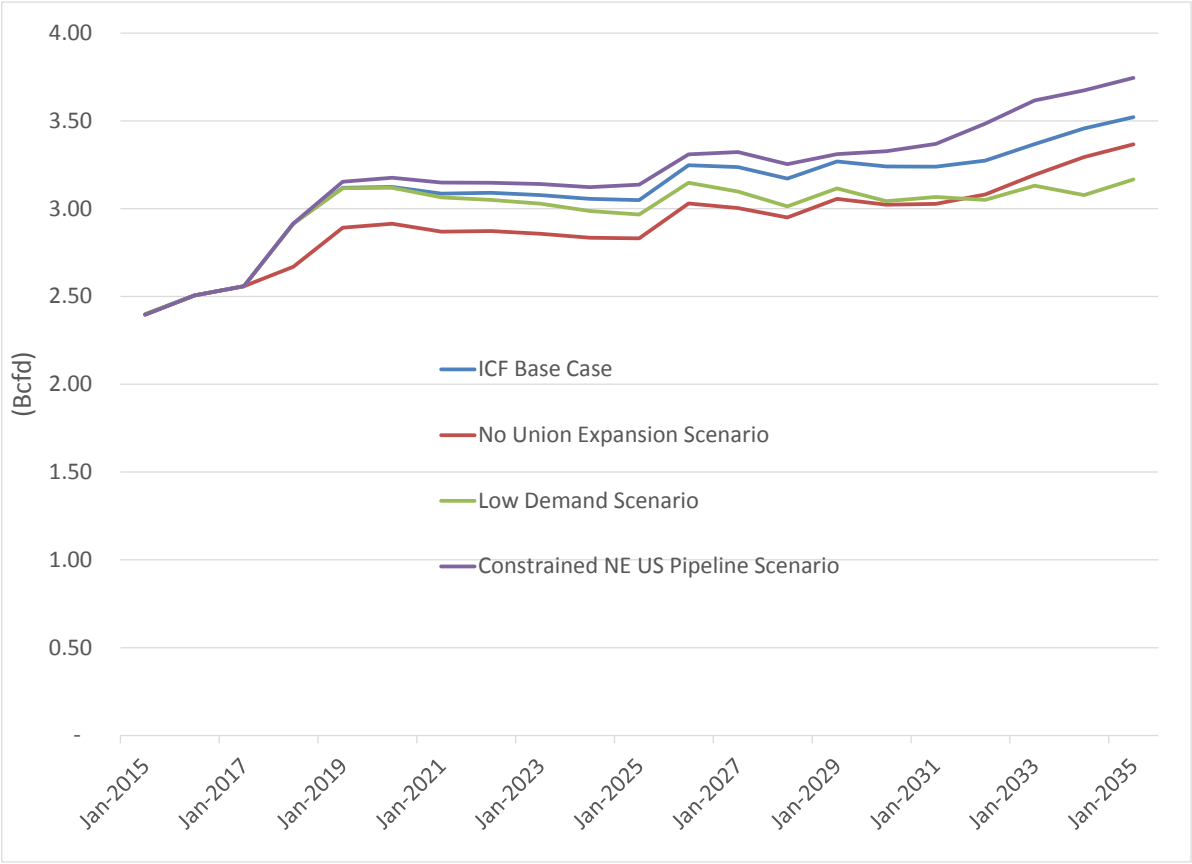
In all cases except the scenario without the Union 2017 Dawn Parkway Project, pipeline flows continue to increase in the early years. With the expansion, there is a significant increase in flows in January (i.e., average January, rather than peak days). After 2018/2019, the Union Dawn Parkway System is expected to face capacity constraints into the TransCanada Mainline, unless TransCanada expands its system concurrently.

The growth in the Base Case excluding the Union 2017 Dawn Parkway Project, results in higher utilization of the existing capacity primarily due to increases in power generation demand during off peak periods (e.g., power generation gas use after nuclear retirements) and additional utilization of the Dawn Parkway System during peak winter periods other than under design day conditions. The red line in Exhibit 5-5 indicates that even without additional capacity, the Union Dawn Parkway System utilization increases.

Existing capacity on the Union Dawn Parkway System is fully contracted. Average January flows continue to increase over time as the Dawn Parkway System capacity becomes more fully utilized. January flows on the Dawn Parkway System increase more quickly in the cases that include the Union 2017 Dawn Parkway Project, indicating that the capacity provided by the Union 2017 Dawn Parkway Project will be desirable to the market. The growth in January flows in this case provides an indication of unmet demand for new capacity.

Significant growth through January of 2019 – with the Union 2017 Dawn Parkway Project – suggests there is a potential demand push for another expansion in 2018 or 2019, though not to the degree of the 2017 expansion. The flows plateau between 2020 and 2025 as the model assumes limited downstream capacity on the TransCanada Mainline after capacity is removed for the Energy East Project. However, additional expansion of the TransCanada Mainline in the Eastern Ontario Triangle subsequent to the Energy East Project completion is expected to lead to additional growth in demand for capacity on the Union Dawn Parkway System. This point is shown clearly in Exhibit 5-3. The ICF Base Case includes an expansion of the TransCanada Eastern Ontario Triangle in 2025, leading to additional growth in utilization on the Union Dawn Parkway System.

Exhibit 5-3: ICF Forecast of January Flows (Normal Weather) on the Dawn Parkway System to Parkway for Alternative Market Scenarios



Source: ICF

In the lower demand scenario, where power generation growth in Ontario and the Northeastern U.S. is held constant over time, demand for additional growth in the Union Dawn Parkway System after the Union 2017 Dawn Parkway Project is completed is expected to slow relative to ICF's Base Case outlook. However, the scenario also indicates that Union Dawn Parkway System capacity available, including the Union 2017 Dawn Parkway Project, should remain fully utilized and contracted.

5.5 U.S. Northeast Pipeline Flows

The maps shown in Exhibit 5-4 below show the change in regional flows during a normal weather January for each of the four demand cases between 2016 and 2030. During this period, ICF is projecting average January flows on the Union Dawn Parkway System to increase by 767 MMcfd even in the absence of the Union 2017 Dawn Parkway Project, up to 1,070 MMcfd in the Constrained U.S. NE Pipeline scenario. In each case, including the Low Demand and "No Union Expansion" cases, January flows on the Union Dawn Parkway System increase between 2016 and 2030. The increase in peak month flow on the Union Dawn Parkway System reflects growth in peak month demand in Ontario and Québec as well as changes in the Ontario natural gas supply portfolio. ICF is projecting a decline in reliance on natural gas sourced in the WCSB,

which is reflected in the decline in flows on the TransCanada Mainline shown in Exhibit 5-4, as well as declines in flows on other pipelines from the WCSB not shown on these maps. The decline in flows from the WCSB is offset by an increase in flows to Ontario from the Appalachian Basin.

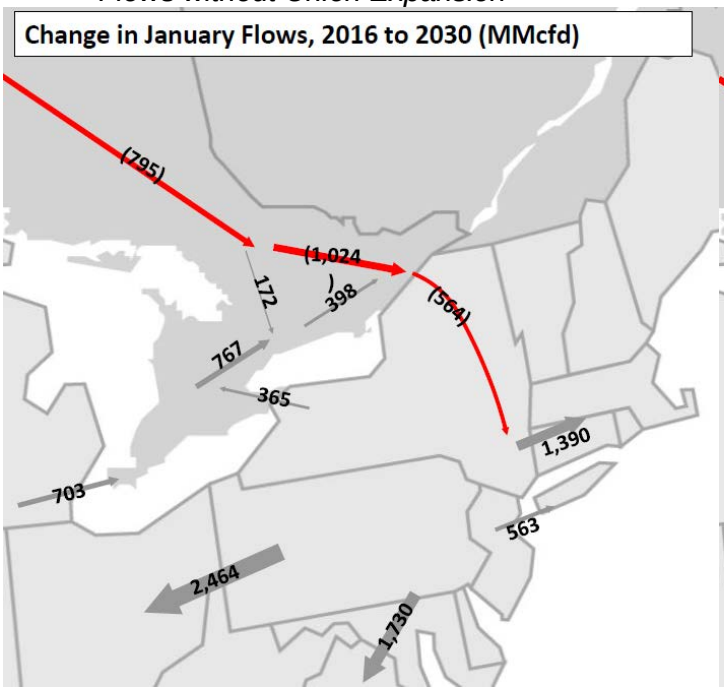
The ICF analysis also indicates that future utilization of the Union 2017 Dawn Parkway Project is not dependent on maintaining high seasonal volumes on Iroquois Pipeline. Exhibit 5-4 indicates that average January pipeline flows on the Iroquois Pipeline into the U.S. are expected to decline over time, with reductions ranging from 295 MMcfd in the Constrained U.S. NE Pipeline scenario up to 580 MMcfd in the Low Demand case.

The decline in average January flows on the Iroquois Pipeline suggests that contracted capacity on the Iroquois system may decline in the future. However, actual pipeline capacity requirements on the Iroquois Pipeline will be determined based on customer supply portfolios designed to meet peak period requirements. For LDCs, the peak requirement is generally set by design day demand, which is much higher than average January demand. The LDCs that currently hold capacity on both the Iroquois Pipeline and on the Union Dawn Parkway System use a combination of pipeline capacity and storage capacity to meet these requirements. Contracting for capacity through the Iroquois Pipeline by the LDCs that currently use Iroquois Pipeline capacity to link to Ontario and Michigan storage capacity is expected to change by much less than the decline in average January flows.

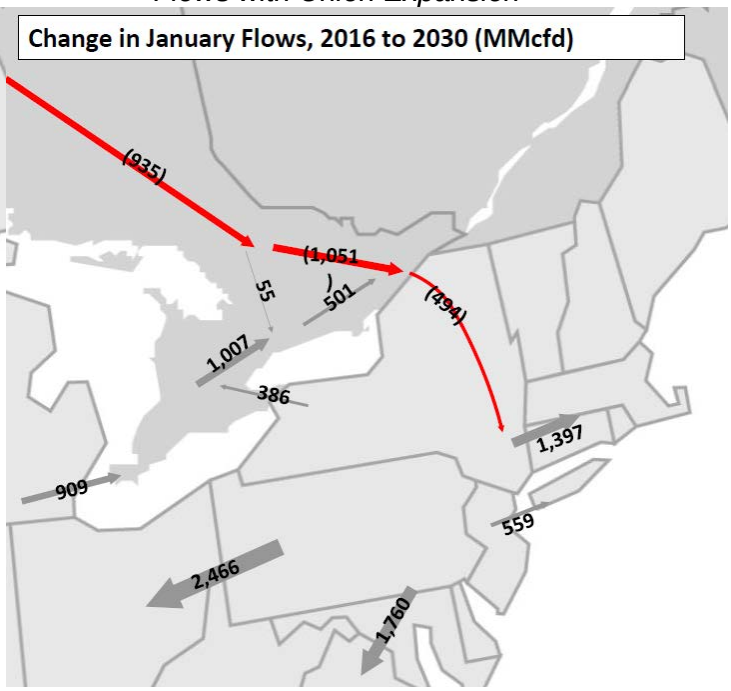
As shown in Exhibit 5-5, the decline in Iroquois flows is concentrated in the near term as several currently planned pipeline expansion projects are completed. Long term demand rebounds and regional demand increases as it remains difficult to build pipeline capacity into New England.

Exhibit 5-4: Flow Changes by Case

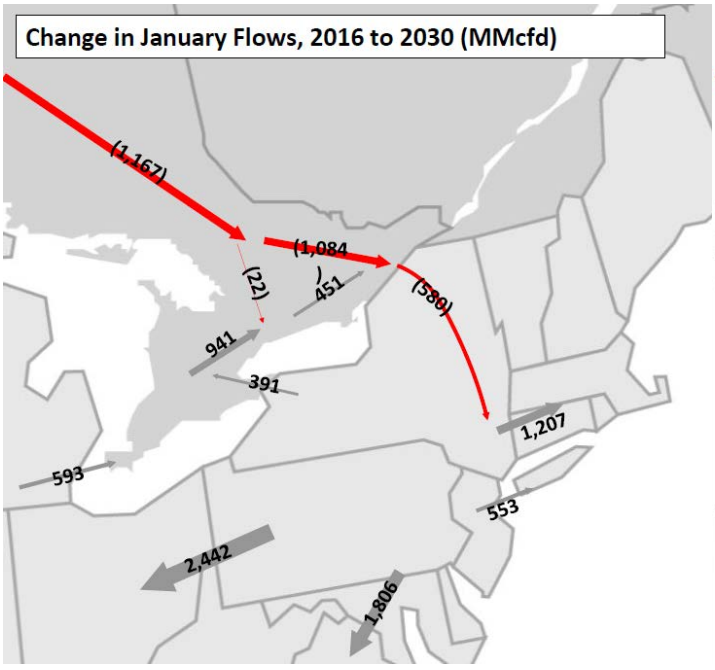
Flows without Union Expansion



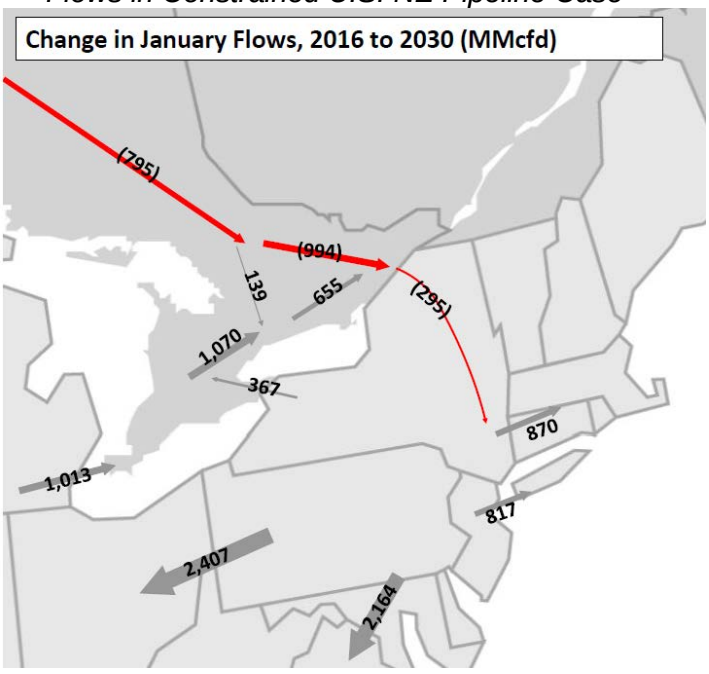
Flows with Union Expansion



Flows in Low Demand Case



Flows in Constrained U.S. NE Pipeline Case



Source: ICF

Exhibit 5-5: ICF Forecast of Average January Flows (Normal Weather) on Iroquois Pipeline through Waddington for Alternative Market Scenarios

Source: ICF

6 Conclusions

Based on our analysis, ICF concludes that the major natural gas market changes currently underway provide incentives for utilities in Ontario and Québec, and the U.S. Northeast to continue to increase reliance on supplies from the Marcellus/Utica shale. The Union Dawn Parkway System provides economic access to these supplies at a liquid trading hub with significant pipeline and storage infrastructure to ensure operational flexibility. ICF finds that the proposed capacity expansion on the Dawn Parkway System in 2017 is supported by market trends.

In addition, based on the results of the Union reverse open seasons, and the TransCanada capacity term-up notice, the risk of future capacity turnback prior to 2022 is very limited. While there is additional market uncertainty after 2022, the market trends evaluated by ICF suggest that demand for Union Dawn Parkway System capacity should be expected to increase, and the risks of capacity turnback are limited, and offset by potential market growth.

6.1 North American and Ontario Natural Gas Markets

Natural gas markets in Ontario are at a pivotal point. The development of abundant and competitively priced sources of gas in the Marcellus and Utica formations in Pennsylvania, Ohio, and West Virginia offer gas supply in relatively close proximity to the Province. The technological advancements that made the development of these and other unconventional resources (shale gas, tight gas, shale oil and coal bed methane) throughout North America possible have significantly changed the outlook for future natural gas commodity prices.

At the same time, the maturation of traditional supply sources of Western Canadian gas supply and the competition for the emerging unconventional gas resources in Alberta and BC from North American West Coast LNG export facilities and oil sands developments create gas supply planning risk for Eastern Canadian consumers that currently rely on TransCanada Mainline pipeline capacity from Empress.

The changes in natural gas markets are shifting the economics of natural gas supply for Ontario consumers, and for consumers that rely on Ontario pipeline capacity. Natural gas prices at Marcellus and Utica supply centers are expected to continue to decline relative to natural gas prices in the U.S. Gulf Coast, and other North American supply centers, creating significant economic incentives to develop the infrastructure needed to access this source of supply. This infrastructure will be required at various locations between production zones, liquid hubs and the consuming markets which for Ontario consumers means infrastructure upstream and downstream of Dawn and Niagara/Chippawa.

6.2 Union Dawn Parkway System

Contracted capacity and utilization on the Union Dawn Parkway System during peak winter periods has increased significantly in the last five years, and ICF is projecting continued growth in peak period utilization for the system over the next 20 years. The growth in peak period

utilization of the Union Dawn Parkway System has been driven by fundamental changes in natural gas markets, including changes in supply, demand, and infrastructure.

- Production out of the Marcellus/Utica is projected to grow to 33.7 Bcfd by 2025. Production from these basins is displacing natural gas supplies from the U.S. Gulf Coast, the WCSB, and other traditional supply sources, and is expected to provide the vast majority of all natural gas consumed in the Northeastern U.S. as well as Central and Eastern Canada in the future.
- Natural gas production from the Offshore Canadian Maritimes is expected to decline rapidly as the Sable Island and Deep Panuke fields wind down and are not replaced.
- Conventional WCSB production continues to decline, and the emerging Montney and Horn River have higher full-cycle costs than the Marcellus/Utica;
- LNG export facilities expected to be constructed on the British Columbia coast, along with oil sands development in Alberta, will be competing for gas supplies from Western Canada.
- Difficulties in building pipelines in the U.S. Northeast are expected to persist.
- Growing natural gas demand in the U.S. Northeast will mean continued dependence on Ontario and Michigan for gas storage.

The changes in North American natural gas supply and demand patterns have a significant impact on Ontario, and the demand for pipeline assets in Ontario. ICF's analysis indicates that demand for pipeline flows on the Union Dawn Parkway System during peak winter periods are expected to continue to increase from today's levels under a variety of different market scenarios.

When additional pipeline capacity is added downstream of Parkway, and where additional pipeline capacity is built from the Appalachian Basin into Michigan and Ontario, the demand for capacity on the Dawn Parkway System is expected to increase steadily over time. If no new pipeline capacity is built either upstream of Dawn, or downstream of Parkway, beyond what has already been contracted for, peak demand growth on the Dawn Parkway System will be limited. However, even in this scenario, the capacity proposed by Union for November 1, 2017 service will be needed to meet capacity requirements during peak winter periods.

In the lower demand scenarios, where power generation growth in Ontario and the Northeastern U.S. is held constant over time, demand for additional growth in the Union Dawn Parkway System after the Union 2017 Dawn Parkway Project is completed is expected to slow relative to ICF's Base Case outlook. However, the scenario also indicates that January utilization of the Union Dawn Parkway System, including the Union 2017 Dawn Parkway Project, will remain stable or continue to grow slowly. As a result, the ICF analysis of the low demand scenario indicates that there is limited risk of underutilization of the Union Dawn Parkway System even if expected demand growth does not materialize.

While there is always some risk that natural gas markets will change in unanticipated directions, ICF's analysis indicates that the new facilities proposed by Union respond to market needs, should remain fully contracted and should become more valuable over time. While there is

always risk that specific customers may choose to release capacity, the risk that the capacity released by these customers will not be contracted by other parties is limited. In fact, the ICF analysis indicates that additional expansion of the Union Dawn Parkway System beyond the 2017 facilities is likely to have significant market support in all cases other than the low demand case, and moderate market support in the low demand case.

NEED FOR FACILITIES

GROWING DAWN PARKWAY SYSTEM DEMAND

This section addresses incremental capacity requests for Dawn Parkway System transportation commencing November 1, 2017 and includes:

i. Dawn Parkway System Open Season
ii. Reverse Open Season
iii. Binding Contracts
iv. Union Required Capacity
v. Related Projects
vi. Long-Term Expectations for the Dawn Parkway System

The growing demand for Dawn Parkway System transportation capacity is one of two drivers of the need for incremental facilities on the Dawn Parkway System. The other driver is the planned replacement of the existing Dawn Compressor Plant B as described in Exhibit A, Tab 7.

Demand for transportation on the Dawn Parkway System continues to grow. Customer interest in contracting Dawn Parkway System capacity is driven by:

1) the desire to increase access to the liquid market, diverse natural gas supplies and strategic storage facilities at the Dawn Hub;
2) the desire to increase access to Marcellus and Utica supply through Dawn, Niagara and Chippawa;

3) the continuing trend of converting long haul transportation to short haul transportation on TransCanada to supply eastern markets; and,
4) the growing demand in Ontario, Québec, the Maritimes and the U.S. Northeast.

To determine market interest in Dawn Parkway System transportation capacity, Union conducted an open season (the "Open Season").

i) Dawn Parkway System Open Season

On December 12, 2014 Union announced the Open Season for firm transportation capacity on the Dawn Parkway System commencing as early as November 1, 2017. Publication of Union's Open Season was as broad as possible to provide all market participants the opportunity to bid. Communication included direct e-mails to over 680 current and potential customers, a Press Release and the posting of the Open Season notice and information package on Union's website.

The Open Season information package and process followed the Standards for Transportation Open Seasons under the Storage and Transportation Access Rule ("STAR"). The package included the following:

1) a description of Union's transportation offering;
2) a description of the Open Season process;
3) a link to the M12 Rate Schedule, General Term and Conditions and M12 Standard Contract; and,
4) a transportation bid form.

The Open Season closed January 30, 2015. The Press Release and Open Season package are attached as Exhibit A, Tab 6, Schedule 1. In the Open Season, Union offered up to 650,000 GJ/d of M12 or M12X Dawn Parkway System transportation capacity commencing November 1, 2017 and up to 550,000 GJ/d of M12 or M12X Dawn Parkway System transportation capacity commencing November 1, 2018 as summarized in Table 6-1[1].

Table 6-1
Open Season Capacity Offered

Transportation Services Offered	Start Date	Capacity (GJ/d)
Dawn Parkway System Transportation: M12 Dawn to Parkway M12 Dawn to Kirkwall M12 Kirkwall to Parkway M12X	 01-Nov-17 01-Nov-18	 650,000 550,000

In response to the Open Season, Union received interest for M12 Dawn Parkway System capacity of 597,504 GJ/d plus interest for M12X capacity of 27,770 GJ/d from the market[2]. Capacity requests that met the Open Season requirements were allocated as per Union's Allocation Procedures in Section XVI of the M12 Transportation Rate Schedule. Union allocated five shippers a total of 362,082 GJ/d of incremental Dawn to Parkway capacity for November 1, 2017 service and executed Precedent Agreements, Financial Backstopping Agreements and Transportation Contracts with those shippers. In addition, for November 1, 2017 Union reserved 5,975 GJ/d of incremental Dawn to Parkway transportation capacity to

[1] Easterly Dawn Parkway System transportation services include M12 Dawn to Parkway, M12 Dawn to Kirkwall, M12 Kirkwall to Parkway and the flexible M12X.
[2] No requests for transportation capacity commencing November 1, 2018 were received in the Open Season responses from the market.

serve in-franchise demand. In total, 368,057 GJ/d of incremental Dawn to Parkway transportation capacity was allocated as shown in Table 6-2. Three shippers were also allocated transportation capacity from Kirkwall to Parkway of 84,854 GJ/d as shown in Table 6-2 and have executed Precedent Agreements, Financial Backstopping Agreements and Transportation Contracts. The total new Dawn Parkway System demands are 452,911 GJ/d and are described in Table 6-2.

Table 6-2
Open Season Capacity Allocated

Shipper	Start Date	Term (Years)	Path	Allocated Quantity (GJ/d)
Enbridge	01-Nov-17	15	Dawn to Parkway	190,000
Gaz Métro	01-Nov-17	15	Dawn to Parkway	36,670
St. Lawrence Gas	01-Nov-17	15	Dawn to Parkway	10,412
TransCanada Energy	01-Nov-17	15	Dawn to Parkway	120,000
Utilities Kingston	01-Nov-17	15	Dawn to Parkway Kirkwall to Parkway	5,000 1,000
Corporation of the City of Kitchener	01-Nov-17	15	Kirkwall to Parkway	10,000
DTE	01-Nov-16[3]	15	Kirkwall to Parkway	73,854
Union	01-Nov-17	15	Dawn to Parkway	5,975
Total				**452,911**

Based on available Dawn Parkway System capacity, incremental facilities will be required to meet the long term transportation capacity allocated in the Open Season.

[3] The DTE Kirkwall to Parkway transportation contract commences November 1, 2016. Union will receive fifteen years of demand charges for this M12 service with the first year (November 1, 2016 to October 31, 2017) provided on an interruptible basis and the remaining fourteen years (commencing November 1, 2017) provided on a firm basis. This was requested by DTE to match the Dawn Parkway System contract commencement date and term with downstream contracts held by DTE on the TransCanada Mainline.

ii)Reverse Open Season

Under STAR, Section 2.2.1 (iii), Union is required to conduct a reverse open season in order to ensure the rational expansion of the Dawn Parkway System. All firm M12 Dawn to Parkway transportation contract holders on the Dawn Parkway System received a reverse open season notice by email on February 19, 2015 requesting that they confirm their interest in maintaining their current firm M12 Dawn to Parkway transportation contracts. The reverse open season notice was also posted on Union's website. A copy of the reverse open season notice is provided as Exhibit A, Tab 6, Schedule 2.

Union conducted the reverse open season from February 19, 2015 through February 26, 2015. Two requests to turn back capacity were received from Union's Dawn to Parkway shippers. One firm M12 Dawn to Parkway transportation capacity holder, Ag Energy, provided a request to turn back capacity in the amount of 1,363 GJ/d effective November 1, 2017. Union did not accept this return of open season capacity for two reasons: i) 1,363 GJ/d of Dawn to Parkway turn back does not reduce the scope of the 2017 Dawn Parkway facilities expansion (see Exhibit A, Tab 8); and ii) Union forecasts to be in a slight surplus position after the 2017 Dawn Parkway facilities expansion is complete and accepting this turn back would increase that surplus position.

The second reverse open season response was a duplicate request to that received in the reverse open season held for the 2015 facilities[4]. That turn back is planned to be awarded effective

[4] EB-2013-0074, Exhibit A, Tab 7, pp. 7-8 of 14.

October 31, 2015 coincident with and as part of the completion of the Brantford to Kirkwall Pipeline Project.

iii) Binding Contracts

The Open Season requested transportation contracts be executed, including Precedent Agreements and Financial Backstopping Agreements, within 30 days after Union allocated capacity. Union allocated capacity on February 19, 2015 and issued contract packages on March 3, 2015 to customers. At that time, Union set March 31, 2015 as the target for all contract documents to be signed and returned. Union now has binding agreements with Enbridge, Gaz Métro, TransCanada Energy, St. Lawrence Gas Company ("St. Lawrence Gas"), 1425445 Ontario Limited (o/a Utilities Kingston), the Corporation of the City of Kitchener ("CCK") and DTE Energy Trading, Inc. ("DTE").

In addition to incremental Dawn Parkway System capacity, Enbridge, Gaz Métro, TransCanada Energy, St. Lawrence Gas, Utilities Kingston and Union each require capacity downstream of Parkway on the TransCanada Mainline to reach their intended market areas. TransCanada will require new facilities to be built for November 2017 in-service to provide the necessary incremental capacity between Parkway and the Maple Compressor Station ("Maple") – the Vaughan Mainline Expansion Project. It should be noted that TransCanada initially expected to build this facility as part of their 2016 new capacity open season requirements. TransCanada recently announced that they would instead build new compression at Maple to meet the 2016 new capacity open season requirements and defer the Vaughn Mainline Expansion Project to 2017.

The expansion of pipeline facilities within Ontario remains critical for Ontario, Québec, Maritimes and U.S. Northeast consumers to access: the liquidity and diversity of competitively priced supply at the Dawn Hub; the flexible storage services available at the Dawn Hub; and the diversity and security of new, cost competitive supply from the nearby Appalachian Basin.

Enbridge Capacity

Enbridge has been allocated 190,000 GJ/d of firm Dawn to Parkway transportation capacity commencing service November 1, 2017[5]. This incremental firm transportation capacity is in addition to approximately 2,527,173 GJ/d of firm Dawn to Parkway transportation capacity, 200,000 GJ/d of firm M12X transportation capacity and 68,000 GJ/d of firm Dawn to Kirkwall transportation capacity that Enbridge currently has contracted with Union.

Enbridge has executed an M12 transportation contract, a Precedent Agreement and a Financial Backstopping Agreement and has waived or satisfied all shipper conditions precedent. Enbridge is the largest shipper on the Dawn Parkway System which links Enbridge consuming markets to Dawn and the Enbridge storage (Tecumseh facilities) located near Sarnia, Ontario.

Gaz Métro Capacity

Gaz Métro has been allocated 36,670 GJ/d of firm Dawn to Parkway transportation capacity starting November 1, 2017. This incremental firm transportation capacity is in addition to

[5] In late April, Enbridge requested a reduction in its capacity allocation from 240,579 GJ/d of interest expressed in the Open Season to 190,000 GJ/d.

approximately 688,000 GJ/d of firm Dawn to Parkway transportation capacity that Gaz Métro currently has contracted with Union. Gaz Métro is the second largest shipper on the Dawn Parkway System by volume.

Gaz Métro has executed an M12 transportation contract, Precedent Agreement and Financial Backstopping Agreement and has waived or satisfied all shipper conditions precedent. Gaz Métro has received Régie de l'énergie support to secure this incremental capacity[6].

St. Lawrence Gas Capacity

St. Lawrence Gas has been allocated 10,412 GJ/d of firm Dawn to Parkway transportation capacity starting November 1, 2017. This incremental firm transportation capacity is in addition to approximately 11,000 GJ/d of firm Dawn to Parkway transportation capacity that St. Lawrence Gas has currently contracted with Union.

St. Lawrence Gas has executed an M12 transportation contract, Precedent Agreement and Financial Backstopping Agreement and has waived or satisfied all shipper conditions precedent.

Utilities Kingston Capacity

Utilities Kingston has been allocated 5,000 GJ/d of firm Dawn to Parkway transportation capacity and 1,000 GJ/d of firm Kirkwall to Parkway transportation capacity, both starting November 1, 2017. This incremental firm transportation capacity is in addition to approximately

[6] R-3879-2014 Phase 2, D-2015-003

8,000 GJ/d of firm Dawn to Parkway transportation capacity and 5,000 GJ/d of firm M12X capacity that Utilities Kingston has currently contracted with Union.

Utilities Kingston has executed M12 transportation contracts, Precedent Agreements and Financial Backstopping Agreements and has waived or satisfied all shipper conditions precedent.

CCK Capacity

CCK has been allocated 10,000 GJ/d of firm Kirkwall to Parkway transportation capacity starting November 1, 2017. CCK will be sourcing supply from Niagara and has obtained incremental firm transportation from TransCanada between Niagara and Kirkwall.

CCK has executed an M12 transportation contract, Precedent Agreement and Financial Backstopping Agreement and has waived or satisfied all shipper conditions precedent.

TransCanada Energy Capacity

TransCanada Energy has been allocated 120,000 GJ/d of firm Dawn to Parkway transportation capacity starting November 1, 2017. TransCanada Energy has executed an M12 transportation contract, Precedent Agreement and Financial Backstopping Agreement and has waived or satisfied all shipper conditions precedent for this firm Dawn to Parkway transportation capacity.

DTE Capacity

DTE has been allocated 73,854 GJ/d of interruptible Kirkwall to Parkway transportation capacity starting November 1, 2016 for a period of one year and has been allocated 73,854 GJ/d of firm Kirkwall to Parkway transportation capacity starting November 1, 2017 for a period of fourteen years as described in Table 6-2.

DTE has executed an M12 transportation contract, Precedent Agreement and Financial Backstopping Agreement and has waived or satisfied all shipper conditions precedent.

iv) Union Required Capacity

Union requires an incremental 5,975 GJ/d of Dawn to Parkway transportation capacity for Union's North T-service customers starting November 1, 2017 related to a new firm service developed to facilitate supply from Dawn (North T-service Transportation from Dawn service, hereinafter referred to as the "New Firm North Transportation Service"[7]). The Dawn to Parkway transportation capacity required to facilitate the New Firm North Transportation Service is made up of two components: i) 5,887 GJ/d represents demand for the New Firm North Transportation Service (this capacity is in addition to the 29,115 GJ/d of Dawn to Parkway capacity used for the New Firm North Transportation Service in 2016[8]); and ii) 88 GJ/d represents fuel requirements on the TransCanada system (fuel needs to be transported from Dawn to Parkway where it is provided to TransCanada). .

[7] This service has been renamed from North T-service Supply at Dawn as presented in EB-2014-0261.
[8] EB-2014-0261 Dawn Parkway 2016 Expansion Project, Exhibit A, Tab 7, p.21.

Union has executed binding agreements for 5,887 GJ/d of the New Firm North Transportation Service with in-franchise customers. These contracts incorporate conditions precedent with respect to; i) Board approval of the New Firm North Transportation Service; and ii) construction of Union's Dawn Parkway System facilities required to provide the New Firm North Transportation Service. Union has entered into corresponding firm transportation contracts, with TransCanada, to provide transportation capacity from Parkway to the necessary delivery areas.

Union will be applying to the Board for approvals related to the New Firm North Transportation Service. The New Firm North Transportation Service will provide firm access to the Dawn Hub for Union North T-service customers in the Union EDA, Union NDA and Union NCDA. This new service helps customers achieve greater security of supply, greater diversity of supply and cost competitiveness. Pending approval by the Board, the proposed New Firm North Transportation Service will be added to Union's R10, R20 and R100 rate schedules.

v) Related Projects

The new Dawn Parkway System demands effective November 1, 2017 are expected to require downstream facilities built in 2015 by Enbridge (Segment A) and facilities built in 2015, 2016 and 2017 (Kings North Connector Project, New Compression at Maple and the Vaughn Mainline Expansion Project respectively) by TransCanada to facilitate increased natural gas deliveries. Exhibit A, Tab 6, Schedule 3 provides an overview of the location and timing of the following projects.

Enbridge GTA Project

The Board approved the Enbridge GTA Project (EB-2012-0451) in January 2014. The portion that runs between Union's Parkway West Compressor Station and Enbridge's Albion Station (Segment A) will provide 1.2 PJ/d of incremental transmission capacity effective November 1, 2015[9]. In accordance with the Settlement Agreement[10], it is expected that TransCanada will contract for all 1.2 PJ/d of the transmission capacity on the Enbridge GTA Project (Segment A) which will be utilized along with existing and new Parkway to Maple facilities to provide incremental short haul transportation capacity. Union expects that the Enbridge GTA Project (Segment A) will be in-service and that TransCanada will have contracted for the transmission capacity on the Enbridge GTA Project (Segment A) well in advance of November 1, 2017.

TransCanada Projects

TransCanada proposes to construct its King's North Connector Project in 2015 from the terminus of the Enbridge GTA Project (Segment A) at Enbridge's Albion Station to a point near Vaughn on the TransCanada Mainline between Parkway and Maple. The King's North Connector Project received National Energy Board approval on June 2, 2015 and TransCanada provided a letter to Union confirming their intent to proceed with construction of the project. In 2016, TransCanada will install incremental compression at Maple to provide expansion capacity[11]. These facilities are required to meet the capacity contracted through TransCanada's 2015 and 2016 new capacity open seasons, respectively. Union expects TransCanada's King's North

[9] Of the total 2 PJ/d, the remaining capacity on the Enbridge GTA Project (Segment A) will be utilized by Enbridge to provide natural gas supply of 0.8 PJ/d to its distribution system customers.
[10] Settlement Agreement, Section 11.1(d).
[11] Previously TransCanada proposed the Vaughan Mainline Expansion for its 2016 expansion.

Connector Project and Maple Compression Expansion to be in-service well in advance of November 1, 2017.

The proposed Vaughan Mainline Expansion Project will provide TransCanada with the additional facilities required to support the capacity contracted through its 2017 new capacity open season. The Vaughan Mainline Expansion Project will consist of NPS 42 pipe constructed from the terminus of the King's North Connector Project to a point on the TransCanada Mainline south and west of Maple. By deferring the build of the Vaughan Mainline Expansion to 2017, and advancing the Maple compressor construction to 2016, TransCanada has an opportunity for further consultation with stakeholders prior to submitting its National Energy Board application for the Vaughan Mainline Expansion Project. Union expects TransCanada to apply to the National Energy Board for approval of the Vaughan Mainline Expansion in late 2015 with a regulatory decision expected later in 2016. At this time, Union is not aware of any delays that would prevent TransCanada from meeting the in-service date of November 1, 2017.

Union is proposing to install three new compressors to meet new Dawn Parkway System transportation capacity demands in 2017 as more fully described in Exhibit A, Tab 8. Union will be required to order compressors in early July 2015 in order to meet the November 1, 2017 in-service date. Construction is planned to start upon receiving Board approval.

Union's construction activities for its proposed 2017 Dawn Parkway System facilities cannot be linked to downstream project approvals without significantly impacting the in-service date of

Union's proposed facilities. Linking the start of construction to TransCanada's project approvals would add significant uncertainty to Union's project development process and would result in a minimum one year delay to the construction of Union's proposed facilities. Commencing service in 2018 or 2019 (vs. the planned 2017) would unfairly burden Union's shippers, including LDCs, industrial customers and power generators that would then need to seek alternative natural gas supply arrangements.

Upstream Projects

The proposed expansion of the Dawn Parkway System is not dependent upon any upstream pipeline projects that connect to the Dawn Hub (including proposed projects such as NEXUS Pipeline or ETP Rover Pipeline)[12]. All shippers have waived their conditions precedent with respect to upstream and downstream pipeline capacity. Therefore the in-service date of Union's proposed 2017 Dawn Parkway System facilities is not impacted by upstream pipeline projects.

The Dawn Hub is the second most physically traded hub in North America and is the most physically traded hub in eastern North America. As described in Exhibit A, Tab 4, the Dawn Hub is connected to most of North America's major supply basins. Previous expansions of the Dawn Parkway System in 2006 to 2008 were not dependent upon the completion of upstream supply projects nor were the Board-approved Dawn Parkway System expansions in 2015 and

[12] The NEXUS Pipeline is proposed to be constructed from the Utica production zone, and pipeline interconnects with access to Marcellus production, to delivery points in Ohio, Michigan and Ontario (the Dawn Hub). The ETP Rover Pipeline is proposed to be constructed from the southern portion of the Utica and Marcellus production zone to delivery points in Ohio, Michigan and Ontario (the Dawn Hub). The majority of the supply on ETP Rover Pipeline is expected to flow south to the Gulf Coast for natural gas power generation and LNG plants.

2016[13]. With each Dawn Parkway System expansion the market has responded or will respond to the supply/demand fundamentals and customers have received or will receive supply needed.

While Union's proposed Dawn Parkway System 2017 facilities expansion is not dependent upon upstream pipeline projects being constructed, the new Dawn Parkway System demand growth experienced in 2015 through 2017 helps attract new natural gas supply from the Appalachian Basin (Marcellus and Utica) to the Dawn Hub. This new natural gas supply may be transported through existing pipelines connected to the Dawn Hub as well as through new pipeline projects, such as the NEXUS Pipeline and the ETP Rover Pipeline. Increasing supply into the Dawn Hub, coupled with the increased transactional activity, will increase liquidity and diversity at Dawn, which benefits all shippers and consumers in Ontario, Québec and the U.S. Northeast that purchase supply at the Dawn Hub[14].

vi) Long-Term Expectations for the Dawn Parkway System

Growth Opportunities

Union has had significant incremental Dawn Parkway System firm transportation capacity contracted effective 2015 through 2017. Union expects future growth opportunities on the Dawn Parkway System as early as 2018. Subsequent to the Open Season, Union also received interest in Dawn to Parkway transportation capacity of 55,000 GJ/d commencing November 1, 2018. Although not contracted yet, this capacity may still be contracted for a November 1, 2018 start.

[13] EB-2012=0451/EB-2012-0433/EB-2013-0074, Exhibit I.A1.UGL.Staff.1, b) and EB-2014-0261, Interrogatory Response, Exhibit B.APPrO.1, d), e), f)

[14] Includes natural gas-fired power generator contracts that are commercially structured based on the price of natural gas at Dawn for approximately 5,560 MW of Ontario's electricity production capacity.

Union is planning to hold a binding transportation open season later in 2015 to gauge further market interest for transportation capacity commencing November 1, 2018.

Future demand opportunities (2018 and beyond) are difficult to predict but could include; natural gas-fired power generation growth; residential (including supply required by new communities), commercial and industrial demand growth in Ontario[15] and Québec; continued conversion of long haul transportation to short haul transportation[16]; demand driven by compressed natural gas and liquefied natural gas developments; increased demand in the U.S. Northeast; residential, commercial and industrial demand growth and supply diversification in the Maritimes; and elimination of the Parkway Delivery Obligation.

In addition, during the term of the Settlement Agreement, TransCanada will utilize Union's Dawn Parkway System to accommodate further requests for firm transportation service from the Niagara and Chippawa import/export points to Parkway or to delivery points downstream of Parkway[17].

Turn Back Risk

Transportation contracts on Union's Dawn Parkway System have varying term expirations. Shippers with initial terms that have expired automatically extend their contract term one year or

[15] www.ontarioenergyboard.ca/oeb/_Documents/Documents/Letter_Minister_to_OEB_Chair_20150217.pdf and www.fin.gov.on.ca/en/budget/ontariobudgets/2015/papers_all.pdf, p. 57.
[16] Section 8.1(b) of the Settlement Agreement requires Union, Enbridge and Gaz Métro to hold a combined 435,000 GJ/d of long haul transportation contracts on the TransCanada Mainline to December 31, 2020, at which time each of Union, Enbridge and Gaz Métro will determine whether to continue contracting for long haul transportation on the TransCanada Mainline or seek other supply and transportation arrangements.
[17] Settlement Agreement, Section 8.2(b). TransCanada is contracting 200 TJ/d of transportation capacity

can terminate their contract with two years notice. As a result, Union may be required to manage turn back risk[18]. The current average term remaining on easterly flowing Dawn Parkway System transportation contracts is 7.3 years (weighted by quantity).

As discussed in Exhibit A, Tab 5, Union has received considerable Dawn to Kirkwall transportation capacity turn back which has been used in the 2015 Dawn Parkway expansion facility design[19] and has also been utilized to reduce the Parkway Delivery Obligation for in-franchise customers[20]. Any further turn back of Dawn to Kirkwall transportation capacity will be used to further reduce the Parkway Delivery Obligation for in-franchise customers. Union is forecasting 31,746 GJ/d of Dawn to Kirkwall turn back effective November 1, 2017 reducing the Parkway Delivery Obligation from 383 TJ/d to 360 TJ/d (as of November 1, 2017)[21]. The expected 360 TJ/d of Parkway Delivery Obligation remaining could be used to mitigate any underutilization of the Dawn Parkway System in the future.

There is also some risk of turn back of Dawn to Parkway transportation capacity. Union is forecasting 2,600 GJ/d of Dawn Parkway capacity turn back effective November 1, 2017. The Dawn to Parkway capacity held by U.S. Northeast utilities is viewed by some as being at risk for turn back due to their proximity to emerging shale basins. U.S. Northeast utilities have been sourcing natural gas supply at the Dawn Hub and have been purchasing Dawn Parkway System

[18] Shippers can also turn back transportation capacity on the Dawn Parkway System through reverse open seasons which are utilized to potentially reduce expansion capacity and resulting facility requirements.
[19] EB-2013-0074 Brantford to Kirkwall Pipeline/Parkway D Compressor Project, Exhibit A, Tab 8.
[20] EB-2014-0145, IR Exhibit B.FRPO_OGVG.25, Filed 2014-07-17
[21] Dawn Parkway System hydraulics result in Dawn to Kirkwall turn back creating Dawn to Parkway capacity but at an amount less than the Dawn to Kirkwall capacity turned back.

transportation capacity since 2006. Currently U.S. Northeast utilities hold 489 TJ/d of Dawn to Parkway transportation capacity directly with Union[22].

It is unlikely that the U.S. Northeast utility customers will turn back their Dawn to Parkway capacity. Union has had many discussions with the U.S. Northeast utilities that hold capacity on the Dawn Parkway System and no indication has been given that capacity of significance will be turned back. U.S. Northeast utilities find the Dawn Hub a valuable trading point in terms of liquidity and access to storage. The Dawn Hub provides diversity of supply plus the TransCanada Mainline to Iroquois Gas Transmission path provides diversity of transportation path for U.S. Northeast utilities.

TransCanada recently implemented its term up provision which is a new addition to its Mainline Tariff. The TransCanada term up provision requires all Mainline shippers with firm service contracts that TransCanada determines may impact the design of expansion facilities (costing greater than $20 million) to extend the term of their existing contract for at least five years after the in-service date of the expansion facilities. Shippers that do not elect to extend the term of their contracts do not retain renewal rights and contracts terminate at the end of the then-current term. A term up provision notice was issued by TransCanada on March 5, 2015 for facilities proposed to be constructed in 2017 in the Eastern Ontario Triangle. As a result, shippers representing 49 TJ/d of an approximate total 2,600 TJ/d of firm transportation capacity made no election therefore not extending the term of their existing contracts. Of the 49 TJ/d total, only 6

[22] U.S. Northeast utilities have also contracted with TransCanada for capacity from Dawn to East Hereford for approximately 53 TJ/d.

TJ/d represents U.S. Northeast shippers (Parkway to Iroquois). Consequently, there is no reason to expect that U.S. Northeast shippers would turn back capacity on Union's system.

Some U.S. Northeast utilities have indicated that they are evaluating further access to the Dawn Hub. If the U.S. Northeast utilities do elect to turn back some Dawn to Parkway capacity in the future, Union could use that capacity to offset future Dawn Parkway System expansions or to further mitigate the Parkway Delivery Obligation for Union's in-franchise customers.

In summary, Union strongly believes there are greater Dawn Parkway System growth opportunities than capacity at risk of turn back.

Union's Term Up Provision

As discussed at the Ontario Energy Board Stakeholder Conference in April 2015, Union has evaluated the implementation of a Term Up Provision that will provide an additional tool to promote efficient expansion of the Dawn Parkway System and help maintain toll stability for Union's in-franchise and ex-franchise customers.

Union is proposing to add a five-year Term Up Provision for existing renewable transportation contracts on the Dawn Parkway System ("Dawn Parkway Shippers") when facility expansions of the Dawn Parkway System are planned at a cost of $20.0 million or greater. Easterly flow on the Dawn Parkway System will be defined as any existing renewable transportation contract with: i) a Dawn receipt point and a Kirkwall or Parkway delivery point; or ii) a Kirkwall receipt point

and a Parkway delivery point (including M12X transportation contracts). Westerly flow will be defined as any existing renewable transportation contract with: i) a Kirkwall receipt point and a Dawn delivery point; or, ii) a Parkway receipt point and a Kirkwall or Dawn delivery point. All Dawn Parkway Shippers with transportation in the direction of the facilities expansion (either easterly or westerly flow) will have the opportunity to elect to extend their contract term at least five years beyond the in-service date of a planned Dawn Parkway System expansion.

Alternatively, if the five-year term extension is not elected then i) the contract will terminate at the end of the current term when the end of the current term occurs beyond the in-service date of the planned Dawn Parkway System expansion facilities (i.e. no renewal rights); or ii) renewal rights will be retained until the October 31st before the planned expansion facilities go into service when the end of the current term occurs before the in-service date of the planned Dawn Parkway System expansion facilities. An individual transportation contract quantity may be split such that a portion of the quantity is extended and retains renewal rights while the remaining quantity terminates under the terms described above. Union will provide a minimum 60 day period to Dawn Parkway Shippers to respond to a Term-up Provision Notice.

Union's five-year Term Up Provision is consistent with TransCanada's recently approved Term Up Provision (RH-001-2014). Short haul shippers contracted on the Dawn Parkway System and the TransCanada Mainline would have the ability to match contract terms on each pipeline and manage contracting risk. Union's five-year Term Up Provision, once approved, is proposed to be implemented by Union for Dawn Parkway System facility expansion in 2018 or later. Union

is requesting approval of changes to the general terms and conditions ("GT&C's") to reflect the proposed five-year Term Up Provision. The GT&C's are included at Exhibit A, Tab 10, Schedule 8 and implementation is outlined at Exhibit A, Tab 10, page 11.

ICF International Findings on Dawn Parkway System Utilization

In its 2014 Report "Impact of Changing North American Supply and Demand on Union Gas Pipeline Facilities" filed in EB-2014-0261, ICF International conclusions on the future utilization of the Dawn Parkway System include:

- Under the market scenarios analyzed using ICF's GMM model, Union's Dawn Parkway System capacity expansion project remains highly utilized in the future;
- Approval of TransCanada's Settlement Agreement will provide additional downstream infrastructure for Union's Dawn Parkway System to reach a larger market.

In its 2015 ICF Report (Exhibit A, Tab 5, Schedule 1), ICF International addressed the expected utilization of the Dawn Parkway System in the future, particularly in light of the changing North American natural gas supply dynamics and approved TransCanada tolls and tariffs based on the Settlement Agreement. The main conclusions of the 2015 ICF Report with respect to future utilization of the Dawn Parkway System follow[23]:

- Utilization of the Dawn Parkway System has increased significantly in the last five years, and ICF International is projecting continued growth in demand for the system over the next 20 years.

[23] Exhibit A, Tab 5, Schedule 1, pp. 54-55.

- Growth in peak period utilization of the Dawn Parkway System has been driven by fundamental changes in natural gas markets, including changes in supply, demand and infrastructure.
- The changes in North American natural gas supply and demand patterns have a significant impact on Ontario, and the demand for pipeline assets in Ontario. ICF International analysis indicates that demand for pipeline flows on the Dawn Parkway System during peak winter periods are expected to continue to increase from today's levels under a variety of different market scenarios.
- The proposed 2017 Dawn Parkway System facilities will be needed to meet capacity requirements during peak winter periods.
- Demand for capacity is expected to increase steadily over time as additional pipeline capacity is installed upstream and downstream of the Dawn Parkway System. .
- In lower demand scenarios, such as no gas-fired power generation demand growth in Ontario and the U.S. Northeast, growth of the Dawn Parkway System is expected to be slower. However, the proposed 2017 Dawn Parkway System expansion facilities should remain fully utilized in peak months.
- The proposed 2017 Dawn Parkway System expansion facilities respond to market needs, should remain fully contracted and should become more valuable over time. While there is a risk that specific customers may choose to turn back capacity, the risk that the capacity released will not be contracted by other parties is limited.

- ICF International analysis indicates that there is little risk of underutilized assets on the Dawn Parkway System associated with the proposed 2017 Dawn Parkway System expansion facilities even if expected future demand growth does not materialize.

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Dawn to Parkway Firm Transportation Open Season

Accessing liquid, diverse, abundant supply sources

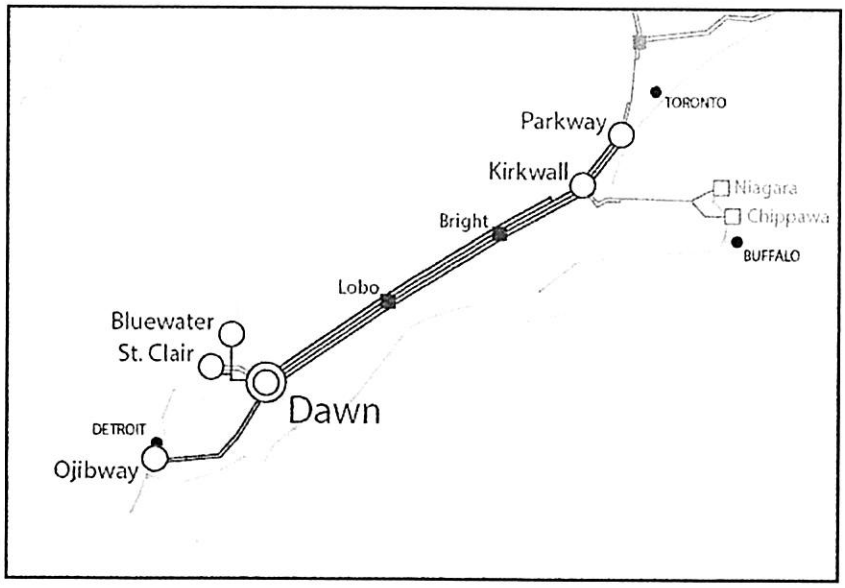
December 12, 2014

Union Gas is holding a binding open season for incremental firm capacity of up to 650,000 GJ/d beginning in 2017 and 550,000 GJ/d beginning in 2018 along the following transportation paths:

(a) Dawn to Parkway;
(b) Dawn to Kirkwall; and
(c) Kirkwall to Parkway.

Union Gas is also offering the flexible M12-X Firm Transportation Service between Dawn, Parkway, and Kirkwall. This service provides shippers with the flexibility to transport gas between the three interconnects on Union Gas' system in any direction on a firm basis.

The binding open season closes and all bids are due on or before 1:00 PM Eastern Time, January 30, 2015. Union Gas will contact all responding parties who meet the requirements of the binding open season on or before February 6, 2015. Union Gas expects to award capacity on or before February 20, 2015.



The binding open season offers firm access to not only the liquidity and diversity of the Dawn Hub, but also access to Marcellus supplies from Dawn, Niagara and Chippawa. Customers in eastern Canada and the U.S. Northeast can access these supply points by aligning Union Gas transportation service with capacity on TransCanada and interconnecting systems in the United States.

The Dawn Hub, one of the fastest growing market hubs in North America, is the largest integrated natural gas storage facility in Canada and one of the biggest in North America. Storage and transmission facilities at the Dawn Hub are fully integrated into the North American supply and transportation system providing shippers with price stability, diversity and security of supply.

M12 Dawn to Parkway / Dawn to Kirkwall / Kirkwall to Parkway Firm Transportation Service
Total Capacity Available: up to 650,000 GJ/d starting in 2017*, 550,000 GJ/d starting in 2018
Start Date(s): November 1, 2017 or November 1, 2018
Term: Minimum of 15 Years
Receipt Point(s): Dawn or Kirkwall
Delivery Point: Kirkwall or Parkway
Rate: Service is proposed to be in accordance with the Union Gas M12 Rate Schedule
Fuel: As per M12 tariff, subject to quarterly YCR Adjustment. M12 Rate Schedule
• M12 Transportation Bid Form • Standard Contract • M12 Rate Schedule

M12-X Firm Transportation Service
Total Capacity Available: up to 650,000 GJ/d starting in 2017*, 550,000 GJ/d starting in 2018**
Start Date: November 1, 2017 or November 1, 2018
Term: Minimum of 15 Years
Receipt Point(s): Dawn, Parkway, Kirkwall
Delivery Point: Dawn (Facilities), Parkway, Kirkwall
Rate: Service is proposed to be in accordance with the Union Gas M12-X Rate Schedule
Fuel: As per M12 tariff, subject to quarterly YCR Adjustment. M12-X Rate Schedule
• M12-X Transportation Bid Form • Standard Contract • M12-X Rate Schedule

**Capacity available for M12-X and M12 Firm Transportation service is 650,000 GJ/d combined.*

*** Capacity available for M12-X Firm Transportation service for 2017 and 2018 combined is 750,000 GJ/d*

Submitting a Binding Bid for Service

Union Gas, at its sole discretion, reserves the right to reject any and all proposals received, terminate the open season, or modify or extend the open season or related documents. All capacity requests that meet the respective service parameters during this open season will be awarded as per Union Gas' Allocation Procedures in Section XVI of the Union Gas M12 tariff General Terms and Conditions, starting with those bids with the highest economic value. If the economic values of two or more independent bids are equal, then service shall be allocated on a pro-rata basis. The economic value shall be based on the net present value which shall be calculated based on the proposed per unit rate and the proposed term of the contract and without regard to the proposed contract demand.

Any suggested conditions precedent proposed by the shipper should be clearly articulated and attached to the bid form and will be considered during the capacity allocation process. Successful bidders will be expected to enter into a definitive Precedent Agreement with Union Gas within 30 days of awarding the binding open season capacity.

A Financial Backstopping Agreement might also be required. The need for such an agreement will be determined by the facilities required to provide the transportation service requested by the shipper. If costs are incurred prior to the shipper or Union Gas waiving their conditions precedent, the shipper will be required to backstop their pro-rated costs until the conditions precedent are waived or satisfied. Contact your account manager or Lucian Bratu (email: lbratu@uniongas.com phone: (519) 436-4551) to discuss the Financial Backstopping Agreement in more detail.

Any party wishing to submit a bid for M12/M12-X service should complete, sign and return the appropriate Firm Transportation Bid Form by email or fax to Lucian Bratu:

Email: lbratu@uniongas.com **Fax**: (519) 436-4643

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UNION GAS M12 FIRM TRANSPORTATION SERVICE BID FORM

Please complete and submit this bid form on or before 1:00 PM, EDT, on January 30, 2015.

This is a binding bid, subject to specified conditions precedent. By submitting this form, Shipper irrevocably commits to enter into a firm transportation contract, a related Precedent Agreement and potentially a Financial Backstopping Agreement. The purpose of this open season is for Union Gas to determine the facility design requirements to support market needs. Union Gas will determine whether or not to proceed with offering any of the services defined in this open season based on the assessment of the results from this open season.

Shippers may submit more than one bid form. Please indicate your requirements below:

Firm Transportation Binding Bid

Receipt Point (select one per bid): _____

Delivery Point (select one per bid): _____

Start Date (select one per bid): ◯ November 1, 2017 ◯ November 1, 2018

Quantity (GJ/d): _____

Term (Years, 15 year minimum ending October 31): _____

Bidder Information:

Shipper Legal Name: _____

Contact Person: _____

Telephone Number: _____

Email Address: _____

Is the bid subject to any conditions precedent in addition to the standard preconditions in Section XXI of Union Gas' M12 General Terms and Conditions? If so, please articulate those conditions here:

_____

Date (mm/dd/yyyy): _____ Signature: _____

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UNION GAS M12-X FIRM TRANSPORTATION SERVICE BID FORM

Please complete and submit this bid form on or before 1:00 PM, EDT, on January 30, 2015.

This is a binding bid, subject to specified conditions precedent. By submitting this form, Shipper irrevocably commits to enter into a firm transportation contract, a related Precedent Agreement and potentially a Financial Backstopping Agreement. The purpose of this open season is for Union Gas to determine the facility design requirements to support market needs. Union Gas will determine whether or not to proceed with offering any of the services defined in this open season based on the assessment of the results from this open season.

Start Date (select one per bid): ◯ November 1, 2017 ◯ November 1, 2018

Quantity (GJ/d):

Term (Years, 15 year minimum ending October 31):

Bidder Information:

Shipper Legal Name:

Contact Person:

Telephone Number:

Email Address:

Is the bid subject to any conditions precedent in addition to the standard preconditions in Section XXI of Union Gas' M12 General Terms and Conditions? If so, please articulate those conditions here:

Date (mm/dd/yyyy): Signature: _____

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Limited Binding Reverse Open Season 2015: Dawn to Parkway Firm Transportation Capacity

Feb. 19, 2015

Union Gas Limited ("**Union Gas**") recently conducted an open season for new transportation capacity on Union Gas' Dawn Parkway System. The open season commenced December 12, 2014 and closed on January 30, 2015 (the "**2014 Open Season**").

Incremental requests for transportation capacity on the Dawn Parkway System arising from the 2014 open Season can be satisfied through the expansion of physical facilities on the system or through a reduction in the current contractual commitments with existing shippers on the system, such reductions to be effective November 1, 2017.

In order to promote the most efficient use of Union Gas' transportation system, while minimizing the overall costs to our shippers, Union Gas is conducting a reverse open season (the "**2015 Reverse Open Season**").

Current shippers on the Dawn Parkway System that wish to turn back Dawn to Parkway transportation capacity before the end of the initial term of their contract are invited to bid into the 2015 Reverse Open Season.

Your cooperation in completing the attached Binding Turn Back Bid Form ("**Bid Form**") will serve to advise Union Gas of your binding commitment to turn back existing contracted transportation capacity.

To be eligible to turn back capacity, Bid Forms **must be received prior to 2 p.m. Eastern Time on February 26, 2015.** Union Gas will review Bid Forms and acknowledge all Bid Forms received by 2 p.m. Eastern Time on February 27, 2015.

If a bid is accepted, with or without conditions, Union Gas will notify the capacity holder accordingly **no later than nine months in advance of the turn back date.**

Bids will be ranked and accepted according to lowest net present value. For example, a contract with two years remaining on the primary term would be accepted ahead of a similar contract with five years remaining on the term.

Any and all bids will be binding upon shipper and conditional upon Union Gas executing contracts with other shippers for new capacity on the Dawn Parkway System for service commencing Nov 1, 2017, with all conditions precedent within those contracts being satisfied or waived in accordance with the terms of those contracts. .

Shippers who currently have an option to provide notice of termination on their existing transportation contracts by Oct. 31, 2015, and who wish to turn capacity back to Union Gas (in whole or in part) may participate in this 2015 Reverse Open Season (preferable), or they may wait and provide notice by Oct. 31, 2015 as per the renewal provisions in their contract.

If you have any questions, please contact your account manager.

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Binding Turn Back Bid Form

Limited Binding Reverse Open Season 2015: Dawn to Parkway Firm Transportation Capacity

Please complete, sign and return this Binding Turn Back Bid Form on or before 2 p.m. Eastern Time on February 26, 2015 via email or fax to:

Lucian Bratu
lbratu@uniongas.com
(519) 436-4643

In response to Union Gas' Limited Binding Reverse Open Season 2015 notification, dated February 19, 2015, **(Please enter your company name here)**

_____

("**Shipper**") irrevocably and firmly confirms its wish to permanently turn back a portion or all of its Union Gas Dawn to Parkway transportation contracts as of Nov. 1, 2017, as outlined below:

Contract Number				
Turnback Start Date	Nov. 1, 2017	Nov. 1, 2017	Nov. 1, 2017	Nov. 1, 2017
Receipt Point (Dawn or Kirkwall)				
Delivery Point	Parkway	Parkway	Parkway	Parkway
Turnback Quantity (GJ/d)				

It is understood that Union Gas will review all Bid Forms and acknowledge all Bid Forms received by 2 p.m. Eastern Time on February 27, 2015. If Shipper's bid is accepted, with or without conditions, Union Gas will notify Shipper accordingly **no later than nine months in advance of the turnback date.** Any and all bids will be conditional upon Union Gas executing and finalizing contracts with other shippers for new capacity on the Dawn Parkway System for service commencing Nov 1, 2017, with all conditions precedent within those contracts being satisfied or waived in accordance with the terms of those contracts. .

Acknowledged and agreed by:_____

_____ _____
Signature **Phone**

_____ _____
Name (please print) **Fax**

_____ _____
Title **Date**

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Binding Turn Back Bid Form

Limited Binding Reverse Open Season 2015: Dawn to Parkway Firm Transportation Capacity

Please complete, sign and return this Binding Turn Back Bid Form on or before 2 p.m. Eastern Time on February 26, 2015 via email or fax to:

Lucian Bratu
lbratu@uniongas.com
(519) 436-4643

In response to Union Gas' Limited Binding Reverse Open Season 2015 notification, dated February 19, 2015, **(Please enter your company name here)**

_____

("**Shipper**") irrevocably and firmly confirms its wish to permanently turn back a portion or all of its Union Gas Dawn to Parkway transportation contracts as of Nov. 1, 2017, as outlined below:

Contract Number				
Turnback Start Date	Nov. 1, 2017	Nov. 1, 2017	Nov. 1, 2017	Nov. 1, 2017
Receipt Point (Dawn or Kirkwall)				
Delivery Point	Parkway	Parkway	Parkway	Parkway
Turnback Quantity (GJ/d)				

It is understood that Union Gas will review all Bid Forms and acknowledge all Bid Forms received by 2 p.m. Eastern Time on February 27, 2015. If Shipper's bid is accepted, with or without conditions, Union Gas will notify Shipper accordingly **no later than nine months in advance of the turnback date.** Any and all bids will be conditional upon Union Gas executing and finalizing contracts with other shippers for new capacity on the Dawn Parkway System for service commencing Nov 1, 2017, with all conditions precedent within those contracts being satisfied or waived in accordance with the terms of those contracts. .

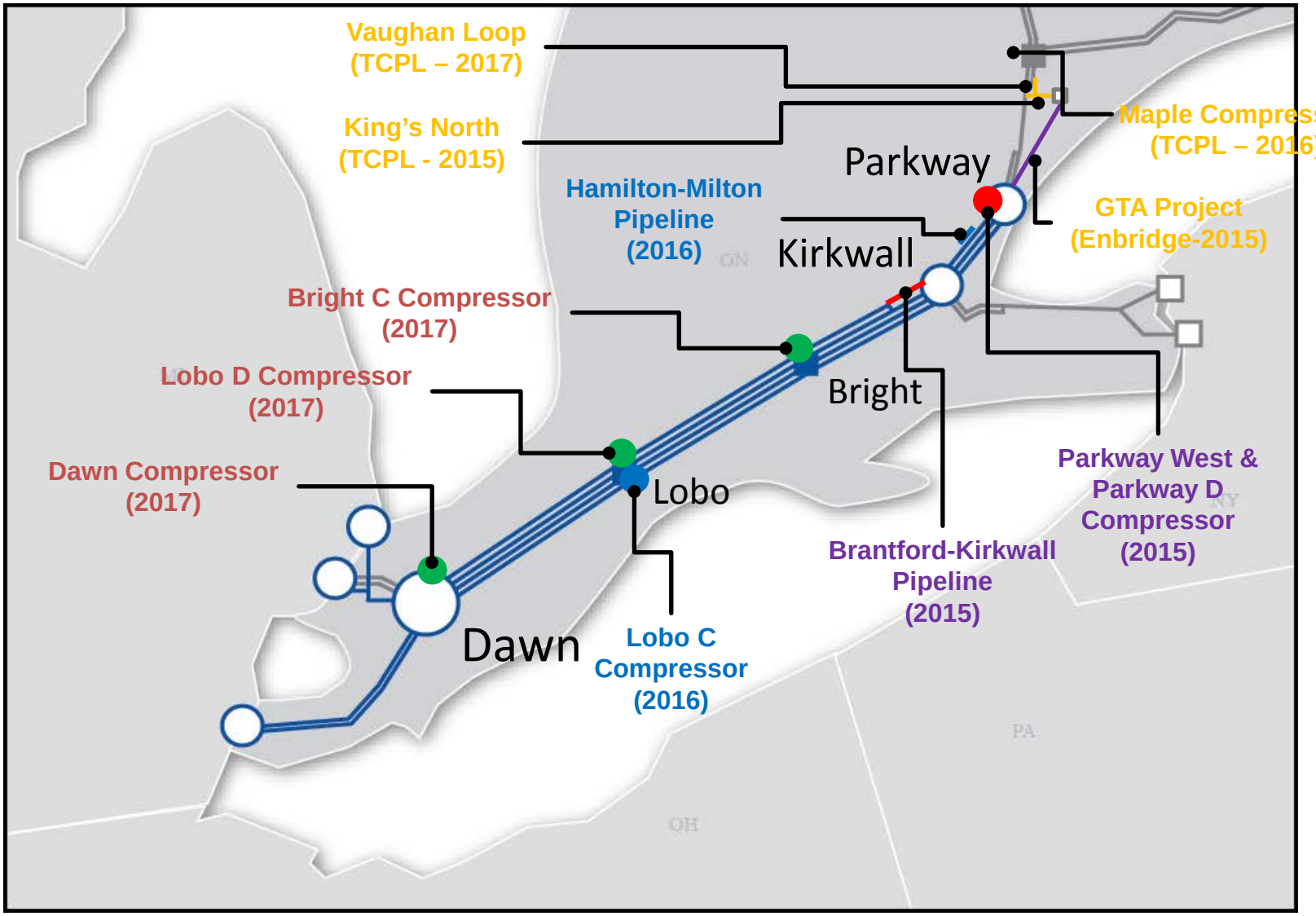
Acknowledged and agreed by:_____

_____
Signature **Phone**

_____ _____
Name (please print) **Fax**

_____ _____
Title **Date**

Dawn Parkway - Related EyÕNJÅRƎŜ and TNJl·yã / l·yÝl·ŘI· projects



NEED FOR FACILITIES

REPLACEMENT OF DAWN B PLANT

This section addresses the specific requirements to replace the Dawn B Compressor ("Plant B") at the Dawn Compressor Station ("Dawn"). The Project, including the Dawn H Compressor and associated facilities, is required to meet the incremental long-term Dawn Parkway System transportation requirements as addressed in Exhibit A, Tab 6 and to allow for the planned replacement of the existing Plant B as discussed below. The Dawn H Compressor ("Dawn H") component of the Project meets both of these needs.

Installed in 1977, Plant B is nearing the end of its service life. As a result, Plant B poses a reliability risk to Union's Dawn Parkway System and must be replaced. Although Union employs a loss of critical unit ("LCU") strategy at Dawn that can accommodate an outage of any single compressor, including on a design day, the intent of the LCU strategy is to accommodate shorter term outages. LCU in not intended to accommodate compressor reliability issues that result in long-term compression outages and is not intended to substitute for prudent long term asset planning[1]. Plant B will be functionally removed from service when Dawn H is commissioned and Plant B will be physically removed in 2018.

Dawn Operations Overview

Dawn is the largest integrated natural gas storage facility in Canada and one of the largest in

[1] EB-2012-0451/EB-2012-0433/EB-2013-0074 Decision Januray 30, 2014.

North America. It features a number of interconnects with several major pipelines and direct access to underground natural gas storage as outlined in Exhibit A, Tab 4. Dawn offers customers such as power generators, distribution and pipeline companies and energy marketers an important link in the movement of natural gas from key supply basins to markets in central Canada and the northeast U.S.

There are a total of nine natural gas fired compressor engines at Dawn with a combined total of 235,350 ISO horsepower (see Exhibit A, Tab 4, Schedule 3) that move gas for both transmission and storage reservoir operations. The Dawn Parkway System also includes three other transmission compressor stations (Lobo, Bright and Parkway) that help move gas from west to east.

Plant B provides 26,700 ISO horsepower and is an integral facility at Dawn. The RB211-22 gas turbine engine powering Plant B is required to meet 1.8 PJ/d of Dawn's total design day transmission output.

Attached as Exhibit A, Tab 7, Schedule 1 is an aerial view of the Dawn facility. It shows both the existing Plant B as well as the location of the proposed Dawn H Compressor.

Plant B Maintainability Risk

The availability of parts is critical to proper compressor plant maintenance and overall compressor plant reliability. Since its inception, the Siemens (formerly Rolls Royce) compressor

package based on the RB211 engine platform has undergone several technological upgrades. These upgrades resulted in Siemens latest compressor package offering based on the RB211-24GT DLE engine which was introduced in 1994. This latest compressor package differs significantly from the 1977 vintage RB211-22 compressor package installed in Plant B. None of the internal parts or ancillary systems are common. As a result, Siemens declared the RB211-22 compressor package obsolete and does not guarantee availability of spare parts. It is Union's understanding that only three RB211-22 engines are in service worldwide today, one of which is at Plant B.

In 2011, Siemens (formerly Rolls Royce) recommended that a full end of life engine overhaul be performed on the Plant B RB211-22 engine because availability of parts to perform this extensive overhaul were becoming scarce. Although Plant B had not reached the operational hours requiring a rebuild of this extent, Union decided to act upon the manufacturer's recommendation in order to extend the engine's life. Two years after the overhaul was completed, the overhaul shop requested the engine be removed from the plant and shipped back to replace a part that was suspect. Union was informed that the suspect part created a risk of leakage and subsequent internal oil fire. This additional work resulted in an unscheduled Plant B outage of three months in early 2013.

Recent upgrades to Plant B have resulted in extended compressor outages due to project re-work required due to customization of standard products to retrofit this 'no longer supported' compressor package. In the fall of 2014, the compressor was out of service due to a fuel valve

issue. In early 2015, when the compressor was being commissioned after the installation of a rebuilt fuel valve, a controls communication failure between the upgraded oil skid and the station controls system resulted in the engine seizing due to lack of oil flow. The result was another unscheduled outage. Plant B was unavailable for the entire 2014/2015 winter season and remains unavailable today.

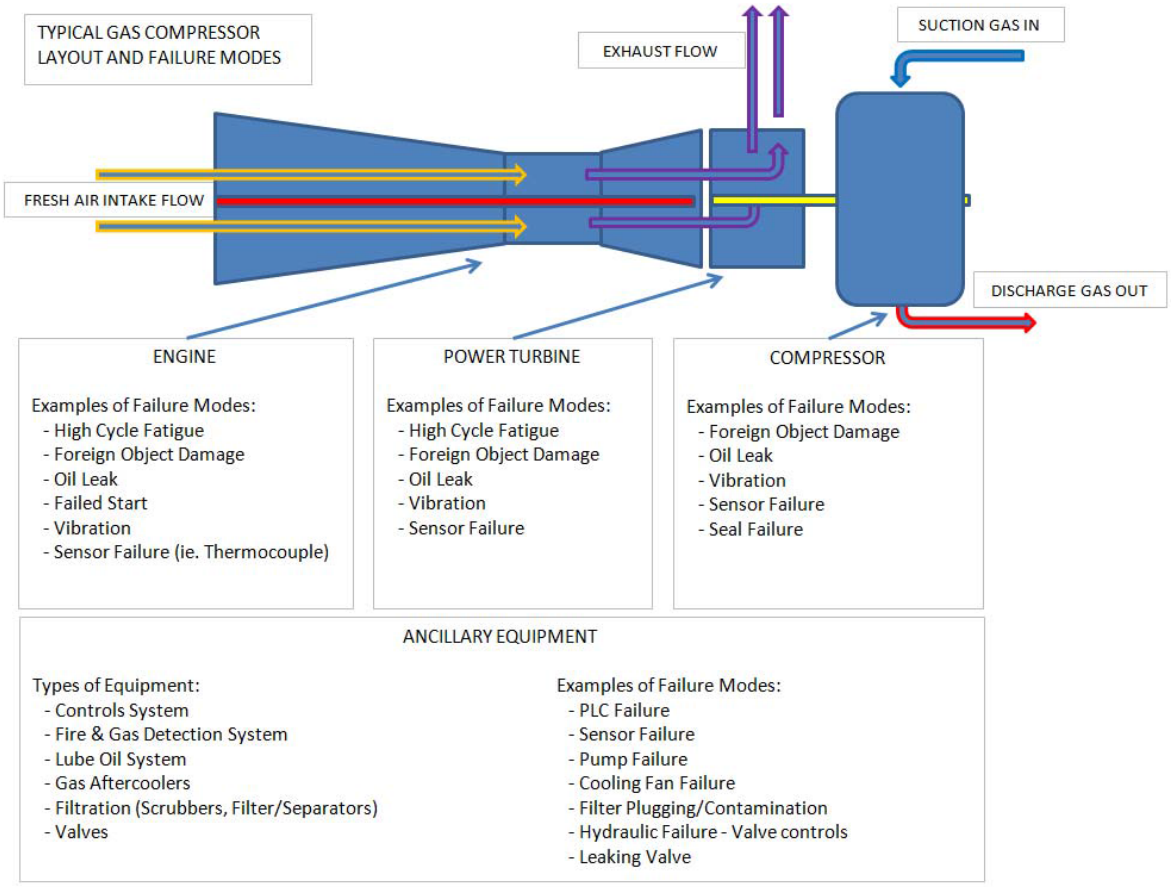
This recent engine seizure confirms Siemen's view that repair parts are scarce or not available. Five of the parts required to repair the engine in accordance with the manufacturer's procedures are no longer available. These parts include a set of starter gears, a rear seal segment, an air seal sleeve and an oil scavenge line. Siemens Technical Support approved a deviation from their normal acceptance criteria and allowed reuse of these existing parts in order to extend the working life of this engine. However, the acquisition of other repair parts will become increasingly difficult, if not impossible, going forward as existing inventories are depleted.

Designing and building Dawn H with adequate capacity to allow for the planned replacement of Plant B will address all of the Plant B maintainability risks and allow Union to continue to meet its firm transportation commitments from Dawn.

Compressor Plant Failure Modes

Plant B, similar to other natural gas compressors, is comprised of a number of integrated, complex systems made up of various materials, components and equipment. A schematic of a typical gas turbine driven compressor and associated failure modes is shown in Figure 7-1.

Figure 7-1



There are several failure modes that could impact the operation of the compressor plants at Dawn, interrupting flow of natural gas into the Dawn Parkway System. The most common failure modes result in minor outages due to control, electrical or non-critical mechanical system failures. These failures are typically resolved within hours.

More significant failure modes involve the rotating equipment, including the turbine engine, power turbine, and the compressor unit, which are more difficult to repair and will result in

longer periods of interrupted gas flow. In the case of Plant B, this is especially sensitive given repairs are largely dependent on the availability of parts. Depending on severity, failures could render the engine non-repairable.

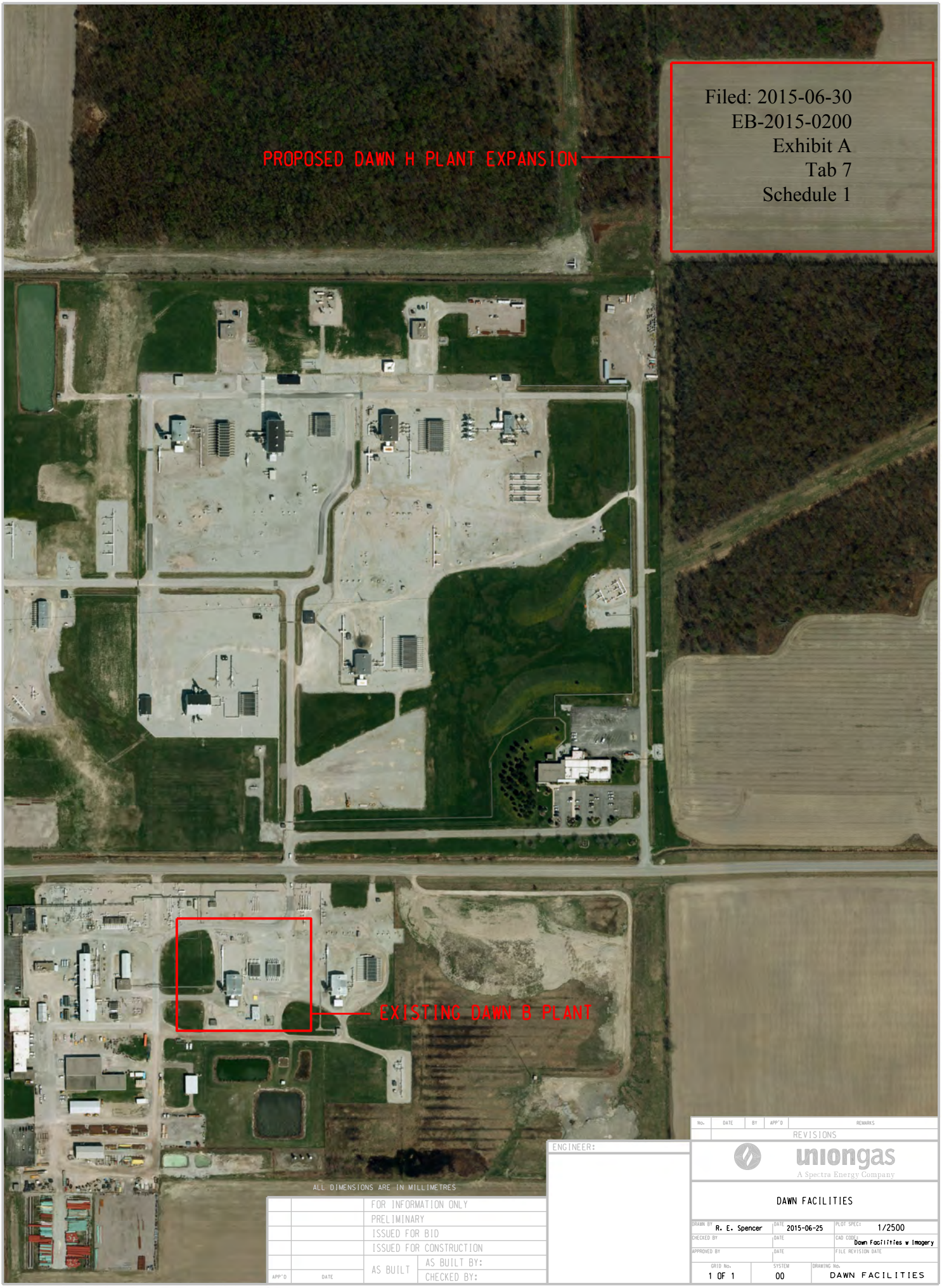
There is also potential for more catastrophic failures that could create significant damage to associated piping and valves, controls, auxiliary equipment systems, the turbine engine, compressor unit and the building envelope. In terms of natural gas flow, these types of failures would be measured in months, or possibly years, depending upon the equipment that needs to be repaired or replaced.

Dawn Facility Reliability Assessment

Over the past three years, compression at Dawn experienced between 9 and 12 unscheduled outages per year through the winter months lasting from two days to the entire season or more. Over the same period Plant B experienced two short duration outages in winter 2013/14 and was unavailable for the entire season in winter 2014/15. Continuing reliance on LCU to support single compressor outages for the entire season would not represent best practice as LCU needs to be available to support all the compressors at Dawn. If LCU is repeatedly used to support a long term outage at a single compressor, it is no longer available to support other compressor outages.

The maintainability of Plant B due to the lack of availability of parts remains an issue. Given this situation, the need for a long term plan to replace Plant B was identified. The proposed

Dawn H compressor is Union's standard design and will provide enough capacity to replace the requirements of Plant B and to meet the incremental long-term Dawn Parkway System transportation requirements identified in Exhibit A, Tab 6.



Filed: 2015-06-30
EB-2015-0200
Exhibit A
Tab 7
Schedule 1

ALL DIMENSIONS ARE IN MILLIMETRES

		FOR INFORMATION ONLY	
		PRELIMINARY	
		ISSUED FOR BID	
		ISSUED FOR CONSTRUCTION	
		AS BUILT	AS BUILT BY:
APP'D	DATE		CHECKED BY:

No.	DATE	BY	APP'D	REMARKS
				REVISIONS

ENGINEER:

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DAWN FACILITIES

DRAWN BY: R. E. Spencer	DATE: 2015-06-25	PLOT SPEC: 1/2500	
CHECKED BY:	DATE:	CAD CODE: Dawn Facilities w Imagery	
APPROVED BY:	DATE:	FILE REVISION DATE:	
GRID No.: 1 OF 1	SYSTEM: 00	DRAWING No.: DAWN FACILITIES	

FACILITIES PLANNING

The purpose of this section is to review the current operation of the Dawn Parkway System, to outline changes to Dawn Parkway System demand and capacity, to outline the proposed system reinforcement requirements and reinforcement alternatives and to describe the proposed Project facilities.

This evidence is comprised of the following sections:

i. Dawn Parkway System Design
ii. Dawn Parkway System Demand
iii. Dawn Parkway System Capacity
iv. Dawn Parkway System Reinforcement Requirements and Facility Alternatives
v. Proposed Facilities

The evidence assumes the Board-approved NPS 48 Brantford to Kirkwall pipeline and Parkway D Compressor will be constructed and in-service. It further assumes the Burlington Oakville Project and the Board-approved Lobo C Compressor and the NPS 48 Hamilton to Milton Pipeline will be constructed and in-service by November 1, 2016. The existing Parkway Compressor Station and the new Parkway West Compressor Station are referred to as “Parkway” in this section of evidence.

Dawn Parkway System Design

The Dawn Parkway System transports natural gas to delivery locations along the pipeline to meet energy demands and pressure requirements of Union's customers. Union's customers include both Union South and Union North in-franchise customers and ex-franchise transportation customers. The primary functions of the Dawn Parkway System include:

1) Transportation of natural gas to meet in-franchise demands. The Dawn Parkway System delivers gas to:
   i) take off points along the pipeline system between Dawn and Parkway for customers in Union South;
   ii) TransCanada at Parkway (for redelivery to Union North customers); and
   iii) TransCanada at Kirkwall (for redelivery to Union South customers in Hamilton and Nanticoke).
2) Easterly transportation of natural gas for ex-franchise transportation customers. The Dawn Parkway System transports gas from:
   i) Dawn with deliveries to TransCanada at Kirkwall and Parkway and deliveries to Enbridge at Parkway and Lisgar; and,
   ii) Kirkwall with deliveries to TransCanada at Parkway and deliveries to Enbridge at Parkway and Lisgar.
3) Westerly transportation of natural gas for ex-franchise transportation customers. The Dawn Parkway System transports gas from:
   i) Kirkwall with deliveries to Dawn; and,
   ii) Parkway with deliveries to Dawn and to TransCanada at Kirkwall.

Union models the capacity of the Dawn Parkway System to meet in-franchise and easterly ex-franchise firm demand on the design day. The design day weather condition for Union South is 43.1 Degree Days ("43.1DD"), which represents an average daily temperature of minus -25.1 degrees centigrade. This temperature was derived from the coldest recorded temperature as measured at the London International Airport. Union North is modeled based on multiple distinct design days to reflect the colder temperatures experienced in those regions.

The design day model of the Dawn Parkway System includes the following assumptions:

1) All in-franchise interruptible customers have been curtailed;
2) All ex-franchise customers require their full easterly firm contracted volumes;
3) All in-franchise customers consume volumes equivalent to design day estimates, which are derived from historical consumption and forecast growth;
4) There are no supply failures and all obligated deliveries arrive at Parkway;
5) A critical unit compressor outage has occurred at either Lobo or Bright;
6) All compression at Parkway is available and online and the capacity of the Parkway C Compressor will be held in reserve in the event of a critical unit outage at Parkway;
7) Required pressure and supply are available from Dawn;
8) Maximum Operating Pressure of 6,160 kPag (894 psig);
9) Minimum pressures for laterals supplying in-franchise customers are met;
10) Minimum suction pressures for Dawn Parkway System compressor units are met; and,
11) Minimum contractual delivery pressures at Kirkwall of 4,480 kPag (650 psig), at Parkway (TCPL) and Parkway (GTA) of 6,450 kPag (935 psig) and at Parkway (Consumers) and Lisgar of 3,450 kPag (500 psig) are met.

Many in-franchise customers have a component of their gas contract with Union called the Parkway Delivery Obligation ("PDO") which is the requirement of some Union South in-franchise customers to deliver gas to the discharge side of Parkway on a firm basis. The PDO reduces the volume of gas to be delivered on the Dawn Parkway System.

Dawn Parkway System Demand

The Dawn Parkway System transports natural gas to serve the energy demands of Union's customers. The Dawn Parkway System transports gas for a portion of Union South in-franchise customer demand, a portion of Union North in-franchise customer demand and easterly ex-franchise customer transportation demand as detailed below.

The total forecasted Dawn Parkway System design day demand including both in-franchise and ex-franchise customer demand is 7,463,163 GJ/d for Winter 2016/2017 and 7,874,027 GJ/d for Winter 2017/2018. A summary of these forecasted Dawn Parkway System demand changes can be found in Table 8-1.

Table 8-1
Dawn Parkway System Demand Summary

Forecast Demand Change	**GJ/d**
2016/2017 System Demand (Nov 1, 2016)	7,463,163
In-franchise South	0
In-franchise North	5,975
Dawn to Parkway	362,082
Kirkwall to Parkway	84,854
Dawn to Parkway turn back	-10,301
Dawn to Kirkwall turn back	-31,746
2017/2018 System Demand (Nov 1, 2017)	7,874,027

More detail on the Dawn Parkway System demands can be found in Exhibit A, Tab 8, Schedules 1-3.

The Union South design day demand served from the Dawn Parkway System is 1,793,456 GJ/d for Winter 2017/2018 which is the same volume as stated in Winter 2016/2017.

A portion of the Union North design day demand is supplied from Dawn and is transported on the Dawn Parkway System to Parkway and delivered to Union North delivery areas via the TransCanada Mainline. The Union North demand transported on the Dawn Parkway System is 415,247 GJ/d for Winter 2017/2018, an increase of 5,975 GJ/d from Winter 2016/2017 demand. The North demand increase consists of the following components:

i)	5,887 GJ/d	New Firm Transportation Service customers
ii)	88 GJ/d	TransCanada fuel Requirement

The demand increase of 446,936 GJ/d is a result of the Open Season contracting for the Dawn to Parkway and Kirkwall to Parkway paths (see Exhibit A, Tab 6):

Open Season Capacity

i)	120,000 GJ/d	Dawn to Parkway for TransCanada Energy
ii)	36,670 GJ/d	Dawn to Parkway for Gaz Métro
iii)	5,000 GJ/d	Dawn to Parkway for Utilities Kingston
iv)	190,000 GJ/d	Dawn to Parkway for Enbridge
v)	10,412 GJ/d	Dawn to Parkway for St Lawrence Gas
vi)	1,000 GJ/d	Kirkwall to Parkway for Utilities Kingston

vii) 10,000 GJ/d Kirkwall to Parkway for City of Kitchener

viii) 73,854 GJ/d Kirkwall to Parkway for DTE

The total increase in demand is 452,911 GJ/d and includes 5,975 GJ/d for Union North and East and 446,936 GJ/d for ex-franchise customers.

Union has forecast 34,346 GJ/d of Dawn to Parkway and Dawn to Kirkwall contracts will not renew for November 1, 2017. The Dawn to Kirkwall non-renewal will facilitate some reduction to the PDO.

The Dawn to Kirkwall forecast non-renewal creates an equivalent volume at Parkway of 29,556 GJ/d. This volume can be used to reduce the PDO M12 customers by 7,701 GJ/d. The impact of this change is further detailed next in the Dawn Parkway System capacity section.
The forecast non-renewals of 34,346 GJ/d and the forecast PDO reduction of 7,701 GJ/d results in a reduction in demand of 42,047 GJ/d. The net design day demand increases by 410,864 GJ/d in Winter 2017/2018.

Dawn Parkway System Capacity

The Dawn Parkway System capacity is determined by the pipeline and compressor facilities in operation as well as the location the demand is being consumed and the location of supply delivery to the system. The system capacity is also dependent upon the gas supply delivered to the discharge side of Parkway.

In Winter 2016/2017, the Dawn Parkway System has a total capacity of 7,396,781 GJ/d which includes the capacity created by the installation of the Hamilton to Milton Pipeline and the Lobo C Compressor. The capacity is comprised of the physical design day capacity of 7,014,034 GJ/d, plus the PDO of 382,747 GJ/d. There is a shortfall of capacity in Winter 2016/2017 of 66,382 GJ/d relative to the demand of 7,463,163 GJ/d.

For Winter 2017/2018, the additional facilities proposed to meet the increase in demand on November 1, 2017 are the Lobo D, Bright C and Dawn H Compressors. These facilities increase the system capacity by 456,647 GJ/d. The Dawn Parkway System has a total capacity of 7,904,420 GJ/d and is comprised of the physical design day capacity of 7,027,855 GJ/d, plus the PDO of 359,969 GJ/d and the increase in capacity of 29,556 GJ/d due to the Dawn to Kirkwall turnback. After the implementation of the proposed facilities to meet the demand of 7,874,027 GJ/d, there remains a system surplus of 30,393 GJ/d. More detail on the Dawn Parkway System capacity changes can be found in Exhibit A, Tab 8, Schedules 1-3.

As noted earlier, some Union South in-franchise customers have a PDO. This requirement reduces the amount of gas required to physically flow from Dawn to Parkway and through Parkway compression. The volume of gas delivered to the Parkway discharge is 359,969 GJ/d for Winter 2017/2018 which is a decrease of 22,778 GJ/d. The PDO volume is decreasing as per the Board-approved settlement agreement in EB-2013-0365

As per the Board-approved settlement agreement in EB-2014-0365, the PDO was reduced in Winter 2014/2015 by 146,000 GJ/d for direct purchase customers who do not hold M12

capacity. The 146,000 GJ/d is to be managed by future Dawn to Kirkwall turn back. In Winter 2015/2016 the shortfall will be managed using the forecast KeySpan Dawn to Kirkwall turn back which results in a Parkway equivalent volume of 122,677 GJ/d. The TransCanada Dawn to Kirkwall turn back forecast of 12,060 GJ/d in Winter 2016/2017 results in a Parkway equivalent volume of 8,844 GJ/d. In total 131,521 GJ/d has been managed leaving 14,479 GJ/d to be managed through the Consolidated Edison Dawn to Kirkwall turnback. The Consolidated Edison Dawn to Kirkwall turnback of 31,746 GJ/d results in a Parkway equivalent volume of 29,556 GJ/d, of which 14,479 GJ/d will be used to complete the early release, leaving 15,077 GJ/d of PDO reduction for non M12 customers. The PDO reduction will result in an additional Dawn to Parkway turnback of 7,701 GJ/d for M12 customers.

The forecast demand increases as detailed in Table 8-1 and the PDO reductions result in a 359,872 GJ/d increase to the system shortfall without the proposed 2017 facilities. The Union North in-franchise demand increases the shortfall by 5,975 GJ/d. The ex-franchise Dawn to Parkway changes increases the shortfall by 362,082 GJ/d while the ex-franchise Kirkwall to Parkway changes increases the shortfall by 8,894 GJ/d. The PDO increases the shortfall by 22,778 GJ/d. The increase in shortfall is reduced by the capacity provided by the proposed Project of 456,647 GJ/d, the Dawn to Parkway turnback of 10,301 GJ/d and the Dawn to Kirkwall turn back of 29,556 GJ/d. The change to the Dawn Parkway System shortfall required to meet the incremental flow on the Dawn Parkway System in 2017/2018 is shown in Table 8-2.

Table 8-2

Forecast Dawn Parkway System Shortfall/Surplus Changes

Shortfall/Surplus Change	GJ/d
2016/2017 System Shortfall (Nov 1, 2016)	-66,382
In-franchise South	0
In-franchise North	-5,975
Parkway Delivery Obligation Reduction [1]	-22,778
Dawn to Parkway	-362,082
Kirkwall to Parkway	-8,894
Dawn to Parkway turnback	10,301
Dawn to Kirkwall turn back	29,556
Lobo D, Bright C, Dawn H	456,647
2017/2018 System Surplus (Nov 1, 2017)	30,393

1 Ex-Franchise Dawn to Kirkwall turn back includes 14,479GJ/d pay back of the early release

Dawn Parkway System Reinforcement Requirements and Facility Alternatives

The proposed facilities for 2017 construction were assessed against both facility and non-facility alternatives.

Non-facility alternatives are services purchased from third parties at Parkway to meet design day demand. Winter Peaking Service purchased from a gas marketer is an example of a non-facility alternative. The capacity shortfall for Winter 2017/2018 without the additional new capacity resulting from the proposed facilities is forecast to be 426,254 GJ/d. It is not possible to manage such a large shortfall through contracted services. Significant changes in the TransCanada Mainline including an increase in firm long haul transportation contracts, the unknown

availability and pricing of Short Term Firm Transportation (STFT) and the shift from long haul transportation to short haul transportation creates uncertainty in the market for purchasing services for natural gas delivery at Parkway.

The facility options considered for a November 1, 2017 in-service date include pipeline looping between Dawn and Parkway and compression at the Lobo, Bright, Dawn and Parkway compressor stations. The following facilities (which are listed in no particular order) were included in the capacity analysis:

1) Dawn H Compression (44,500 ISO HP)
2) Lobo D Compression (44,500 ISO HP)
3) Bright C Compression (44,500 ISO HP)
4) Parkway E Compression (44,500 ISO HP)
5) Dawn to Enniskillen NPS 48 Pipeline (17.1 km)
6) Lobo to London North NPS 48 Pipeline (16.9 km)
7) Kirkwall to Hamilton NPS 48 Pipeline (10.1 km)
8) Milton to Parkway NPS 48 Pipeline (8.7 km)

Each of the above facilities was analyzed separately and in combination immediately following the Open Season to determine potential impacts on the Dawn Parkway System. The results of that analysis, including the proposed facilities and the two next best alternatives are shown in Table 8-3, ranked by lowest cost per unit of capacity. Building Dawn H plus either Lobo D or Bright C only, would result in a system shortfall of over 300 TJ/d and therefore, these two-facility options were not considered as alternatives.

Table 8-3
Relative Economics of Facility Alternatives

Alternative	Additional Capacity (GJ/d)	Capital Cost ($ Million)1	Cost per Unit of Capacity ($/GJ/d)
Dawn H, Lobo D and Bright C Compressors	456,647	623	1,364
NPS 48 Dawn to Enniskillen Pipeline, Dawn H and Bright C Compressors	350,349	642	1,832
NPS 48 Kirkwall to Hamilton and Milton to Parkway Pipelines, Dawn H and Lobo D Compressors	311,301	687	2,207

(Note 1: capital costs reflect current estimates)

The most economical facilities alternative to meet the requirements discussed above (including 362,082 GJ/d of Dawn to Parkway transportation and 84,854 GJ/d of Kirkwall to Parkway transportation) are the Dawn H, Lobo D and, Bright C Compressors. The Dawn H compressor is required to provide adequate pressure and capacity to replace the 26,700 ISO HP Dawn B Plant (1.8 PJ/d) and support incremental transportation capacity.

Proposed Facilities

The resulting proposed facilities are the Dawn H, Lobo D and Bright C Compressors. These facilities provide 456,647 GJ/d of capacity at an estimated capital cost of $623 million.

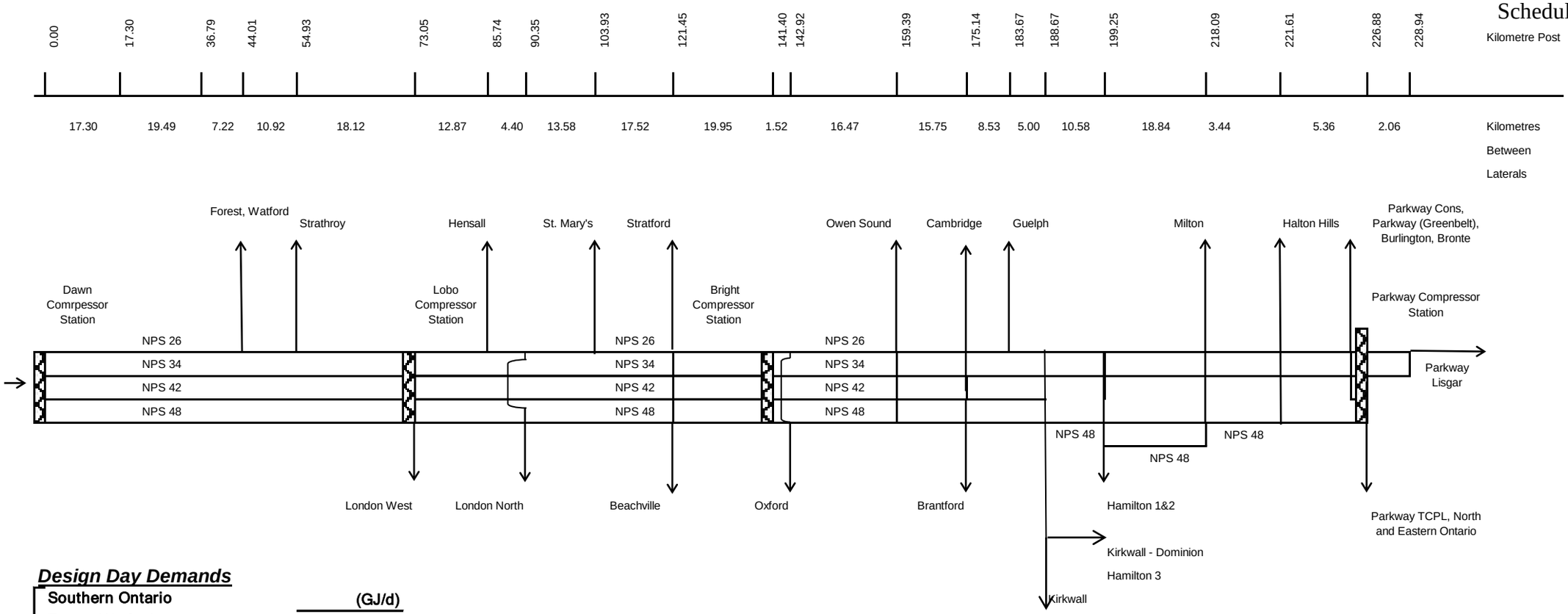
The Dawn Compressor Station is located at 3332 Bentpath Line East, Dresden. The existing Dawn Compressor Station includes 235,350 ISO HP and the addition of the Dawn H Compressor will increase the available horsepower by 44,500 ISO HP for a total of 279,850 ISO HP. With the removal of Plant B, the total HP will be 253,150 for a net increase of 17,800 HP.

The Lobo Compressor Station is located at Lot 13 and 14, Concession 8, former Lobo Township, in the Municipality of Middlesex Centre. The existing Lobo Compressor Station includes 120,100 ISO HP with the construction of the Lobo C Compressor in 2016. The addition of the Lobo D Compressor in 2017 will increase the available horsepower by 44,500 ISO HP for a total of 164,600 ISO HP.

The Bright Compressor Station is located at Lot 3, Concession 10, in Blandford - Blenheim Township. The existing Bright Compressor Station includes 113,470 ISO HP with the construction of the Bright C Compressor will increase the available horsepower by 44,500 ISO HP for a total of 157,970 ISO HP.

The existing Lobo and Bright Compressors require additional modifications to allow the various compressor units to work together under the new flow and pressure requirements. Additional information on the required modifications are included in Exhibit A, Tab 11.

Union Gas Dawn to Parkway System



Design Day Demands

	Southern Ontario	(GJ/d)
	Forest, Watford	11663
	Strathroy	8945
	London West	102533
U	Hensall	52695
N	London North	95779
I	St. Mary's	7774
O	Stratford	49051
N	Beachville	54899
	Oxford	49342
M	Owen Sound	249767
A	Cambridge	75899
R	Brantford	104666
K	Kirkwall - Dominion	94738
E	Guelph	91335
T	Hamilton 3	70254
S	Hamilton 1&2	266213
	Milton	74184
	Halton Hills	144373
	Parkway (Greenbelt)	43203
	Burlington, Bronte	146143
	Total Southern Ontario	1,793,456
	North and Eastern Ontario	409,272
	Kirkwall	208,953
	Parkway TCPL	3,813,397
M	Parkway Cons/Lisgar	1,238,085
1	**Total M12**	5,260,435
2	**Total Design Day Demands**	**7,463,163**

System Capacity

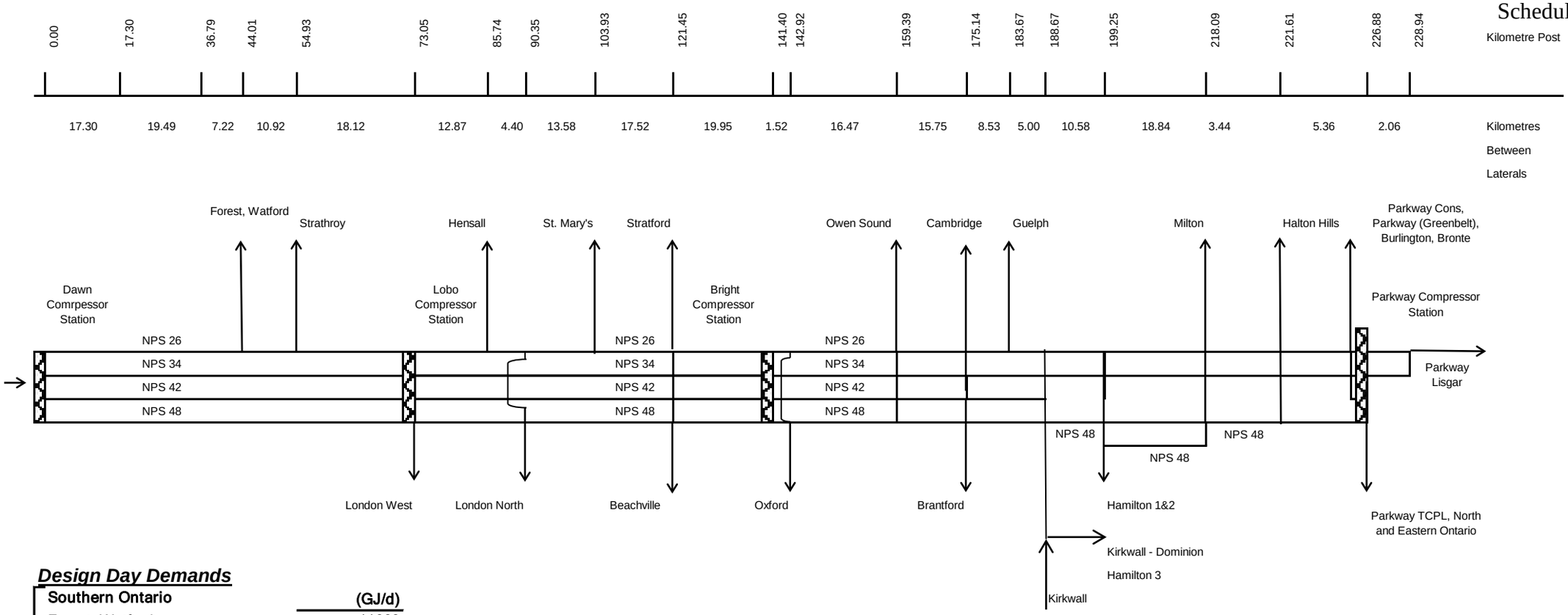
	(GJ/d)
Total System Capacity including Parkway Delivery Obligation	**7,396,781** 382,747
Supplies for Kirkwall to Parkway Contracts and Union	357,402
Total Requirements	**7,463,163**
Total (Shortfall) Surplus	**-66,382**

WINTER DESIGN DAY
DAWN - PARKWAY SYSTEM
WINTER 2016/2017

Compressor Stations Operating Conditions at Peak Hour

STATION	LOBO	BRIGHT	PARKWAY
Power Available (MW)	66.8	93.5	87.7
Power Required (MW)	66.8	93.5	87.3
Pressure			
Suction (kPa)	4,195	3,705	3,448
Discharge (kPa)	5,450	5,588	6,453
Compression Ratio	1.30	1.51	1.87
Flow (GJ/d)	6,611,766	6,309,276	3,773,214
Daily Fuel (GJ/d)	21,645	23,160	18,926

Union Gas Dawn to Parkway System



Design Day Demands

	Southern Ontario	(GJ/d)
	Forest, Watford	11663
	Strathroy	8945
	London West	102533
U	Hensall	52695
N	London North	95779
I	St. Mary's	7774
O	Stratford	49051
N	Beachville	54899
	Oxford	49342
M	Owen Sound	249767
A	Cambridge	75899
R	Brantford	104666
K	Kirkwall - Dominion	94738
E	Guelph	91335
T	Hamilton 3	70254
S	Hamilton 1&2	266213
	Milton	74184
	Halton Hills	144373
	Parkway (Greenbelt)	43203
	Burlington, Bronte	146143
	Total Southern Ontario	1,793,456
	North and Eastern Ontario	415,247
	Kirkwall	177,207
	Parkway TCPL	4,250,032
M	Parkway Cons/Lisgar	1,238,085
1	**Total M12**	5,665,324
2	**Total Design Day Demands**	**7,874,027**

System Capacity

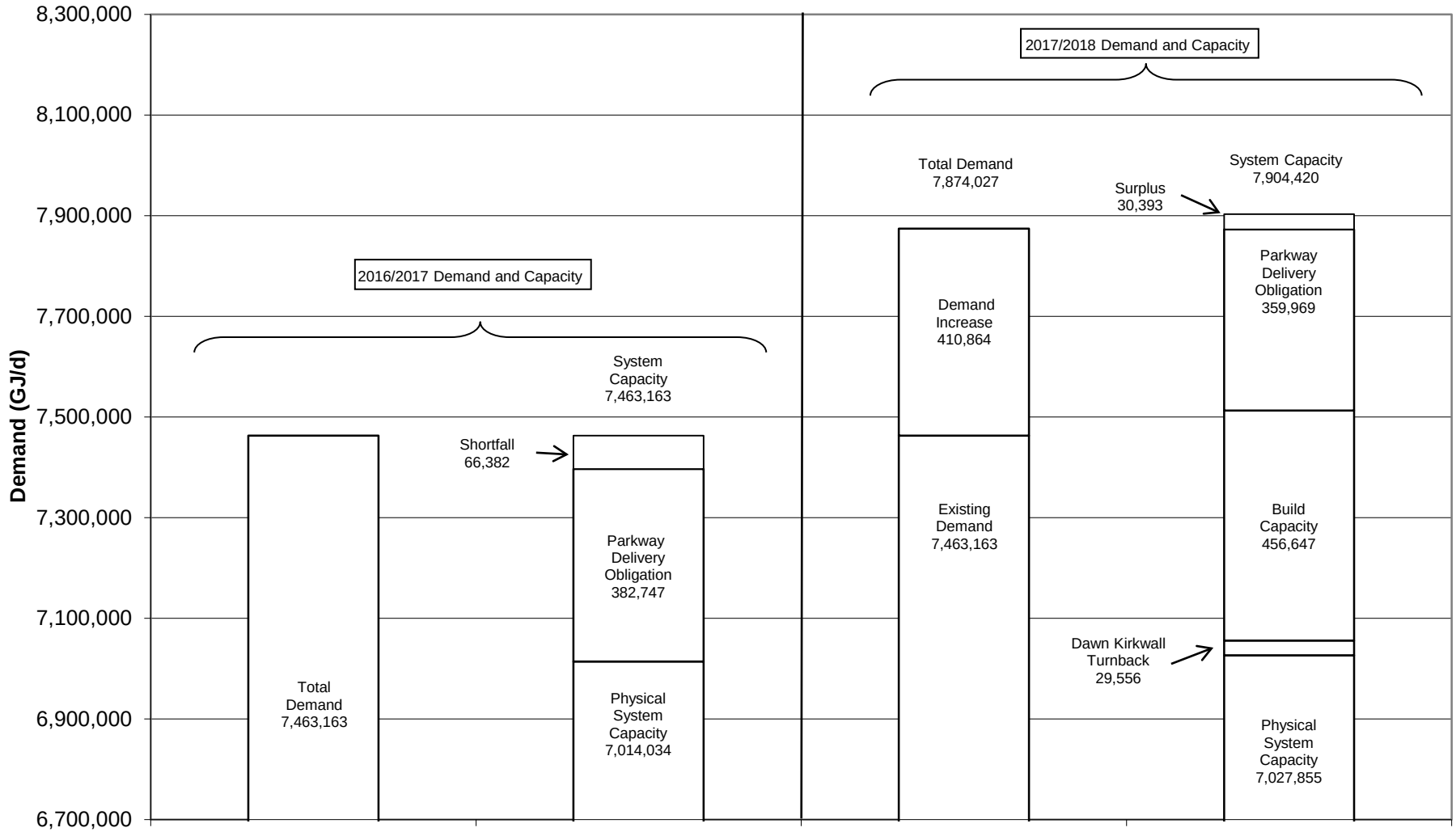
	(GJ/d)
Total System Capacity	**7,904,420**
including	
Parkway Delivery Obligation	359,969
Supplies for Kirkwall to Parkway Contracts and Union	442,256
Total Requirements	**7,874,027**
Total (Shortfall) Surplus	**30,393**
Union Markets	
M12 Transportation	
Kirkwall	
Lisgar, Parkway	30,393

WINTER DESIGN DAY
DAWN - PARKWAY SYSTEM
WINTER 2017/2018

Compressor Stations Operating Conditions at Peak Hour

STATION	LOBO	BRIGHT	PARKWAY
Power Available (MW)	102.3	126.6	87.7
Power Required (MW)	102.3	0.0	87.7
Pressure			
Suction (kPa)	3,791	3,547	3,651
Discharge (kPa)	5,584	6,022	6,453
Compression Ratio	1.47	1.70	1.77
Flow (GJ/d)	7,131,782	7,030,239	4,346,759
Daily Fuel (GJ/d)	30,947	31,954	18,880

Dawn-Parkway System Design Day Demands and Capacity



PROJECT COSTS AND ECONOMICS

As part of the 2017 Dawn Parkway System Project, Union proposes to construct the following facilities at a total cost of $622.5 million:

- Dawn H Compressor and associated facilities at an estimated capital cost of $249.8 million (see Exhibit A, Tab 9, Schedule 1).
- Lobo D Compressor and associated facilities at an estimated capital cost of $144.9 million (see Exhibit A, Tab 9, Schedule 2).
- Bright C Compressor and associated facilities at an estimated capital cost of $227.8 million (see Exhibit A, Tab 9, Schedule 3).

The total estimated cost for the Project is $622.5 million. This includes $107.4 million coming into service in 2016 and $500.8 million coming into service in 2017. The remaining $14.3 million will be spent in 2018. The in-service facilities are described in Exhibit A, Tab 11.

The amounts shown in Exhibit A, Tab 9, Schedules 1 to 3 cover all costs related to materials, construction and labour, environmental protection measures, contingencies, and interest during construction ("IDC").

The total material cost covers the cost of all compressors, pipe, valves, fittings, coatings, miscellaneous items and stores overheads. The material costs are based on historical records as well as more recent quotes received and purchases made.

The total construction and labour cost covers the costs of the installation of the compressors and related facilities. It includes the costs of all labour on the Project. The installation costs are based on project specific information and recent project experiences.

Project Economics

Economic Feasibility Tests

Union employs a three-stage analysis to assess the economic feasibility of projects in accordance with OEB recommendations from the E.B.O. 134 Report on System Expansion. This methodology is consistent with the methodology used in Union's past Dawn Parkway System facilities applications.

Stage 1 consists of a discounted cash flow ("DCF") analysis specific to Union. All incremental cash inflows and outflows resulting from the Project are identified. The net present value ("NPV") of the cash inflows is divided by the NPV of the cash outflows to arrive at a profitability index ("PI"). If the NPV of the cash inflows is equal to or greater than the NPV of the cash outflows, then the PI is equal to or greater than one which indicates the project is considered economic based on current approved rates.

If the project NPV is less than $0 or the PI is less than 1.0, a Stage 2 benefit/cost analysis may be undertaken in order to quantify benefits and costs accruing to Union's customers as a result of the project. The NPV of quantified benefits to customers resulting from the project is added to

the project NPV from Stage 1 and then discounted at a social discount rate in order to calculate the direct net benefit of the project to Union's customers. The project is considered to be in the public interest if the net benefit is greater than $0.

The Stage 3 analysis considers other quantifiable benefits and costs related to the construction of the proposed facilities that are not included in the Stage 2 analysis, and other non-quantifiable public interest considerations.

Stage 1 – Project Specific Discounted Cash Flow (DCF) Analysis

Stage 1 economics were completed for the proposed facilities and results of the Stage 1 DCF analysis are shown at Exhibit A, Tab 9, Schedule 6. The results indicate a cumulative NPV of ($344.2) million and a PI of 0.43.

Incremental cash inflows are estimated based on:

a. Revenues from incremental M12 transportation service demands that can be served by the additional facilities;
b. Revenues from New Firm Northern Transportation Service (at a rate assumed to be equal to M12 Dawn-Parkway service for purposes of the DCF); and,
c. Operating and maintenance expenses and taxes which are deducted from incremental revenues to arrive at net incremental cash inflows.

The revenue calculation for M12 and the New Firm North Transportation Service referenced in points a. and b. above is provided at Exhibit A, Tab 9, Schedule 4.

The M12 Dawn Parkway rate used for the purpose of the DCF is the 2015 approved M12 rate (EB-2014-0271) plus the 2017 rate impacts of the 2015 Dawn Parkway Projects (EB-2012-0433 and EB 2013-0074) and the 2016 Dawn Parkway Project (EB-2014-0261). The Dawn compression margin component is included in forecast revenue since the Project includes incremental Dawn compression. See Exhibit A, Tab 9, Schedule 4 for the components of the rate.

Incremental cash outflows include the cost of the Project specific facilities as shown in Exhibit A, Tab 9, Schedules 1 to 3. The capital costs exclude general overheads, which would be incurred whether or not the Project proceeds. IDC is included for capital costs incurred prior to the in-service date.

All cash flows are discounted using Union's after tax incremental weighted average cost of capital. The average cost of capital is the weighted average of the expected incremental cost of each of the components of the capital structure in the same proportions as approved in Union's 2013 Rebasing application (EB-2011-0210).

The Project economics have been evaluated over a 30-year period. A summary of the key input parameters used in the economic analysis are shown on Exhibit A, Tab 9, Schedule 5.

Stage 2 – Benefit/Cost Analysis

A Stage 2 analysis may be undertaken when the Stage 1 NPV is less than zero. The Stage 2 analysis considers the estimated energy cost savings that accrue directly to Union's infranchise general service rate customers as a result of using natural gas instead of another fuel to meet their energy requirements. This analysis was not quantified in this case because the infranchise use of the proposed Project is based on the New Firm North Transportation Service rather than incremental growth in energy demand using gas instead of alternative energy sources.

Energy cost savings are also available to customers in Ontario that will be served as a result of additional transportation services on Union's Dawn Parkway System. Although these savings are likely to be substantial, they are not estimated for purposes of the Stage 2 analysis. These customers select transportation services on Union's Dawn Parkway System based on their own assessment of the most economical way to meet increases in energy requirements.

Stage 3 – Other Public Interest Considerations

There are a number of other public interest factors for consideration as a result of the addition of the proposed facilities that are not readily quantifiable. These include, but are not limited to, enhanced security of supply, contribution to a competitive market, enhanced supply choices, economic benefits for Ontario, employment, utility taxes, and environmental benefits. These factors are detailed below.

i. Enhanced Security of Supply

As Union adds additional facilities on the Dawn Parkway System, security, reliability and diversity of supply for all customers will be enhanced. The proposed facilities improve the diversity of supply to all customers by enabling the movement of additional gas supplies away from Dawn. The proposed facilities provide all customers with enhanced access to alternative sources of supply in the event of insufficient capacity or disruptions to other pipeline systems. When approving previous expansions of the Dawn Parkway System, the Board has consistently recognized these benefits.

ii. Contribution to a Competitive Market

Construction of the proposed facilities will enhance and improve the competitive market. As take away capacity from Dawn increases, trading activity increases which results in increased price transparency and liquidity. All natural gas customers benefit from increased access to competitively priced gas supply.

iii. Enhanced Supply Choices

As noted in Exhibit A, Tab 5, Marcellus and Utica shale gas supplies have fundamentally changed the supply options and reduced the cost of natural gas. The shale supply in close proximity to the Ontario market reduces the cost exposure for transportation demand charges for gas buyers as compared to supplies from the Western Canadian Sedimentary Basin. This cost and risk reduction benefits all Ontario gas consumers either directly or indirectly through the purchase of goods and services produced with natural gas as an input cost.

iv. Economic Benefits for Ontario

A report titled The Economic Impact of Ontario's Infrastructure Investment Program, (the "Report") was produced by the Conference Board of Canada and published April 2013. This public report quantifies the economic impact of infrastructure spending in Ontario and can be found at Exhibit A, Tab 9, Schedule 8. This Report was also used in EB-2014-0261 (Union's 2016 Dawn to Parkway facilities expansion) to estimate the GDP impact of those facilities.

Union has used the metrics in the Report to estimate the economic impact of the Project to the Province of Ontario. The construction of the Project will provide direct and indirect economic benefits to Ontario estimated at approximately $467 million. Exhibit A, Tab 9, Schedule 7 shows how this figure is derived. The economic impact figures in Exhibit A, Tab 9, Schedule 7 use factors from the Report plus the NPV of the direct taxes paid by Union from the DCF found at Exhibit A, Tab 9, Schedule 6.

v. Employment

The Project will result in additional direct and indirect employment. In addition to the jobs required to execute the Project, other jobs will result from its construction. As referenced in the Report, approximately 1,670 jobs are created for each $100 million of infrastructure spending (16.7 jobs per $1.0 million). The Project is estimated to create approximately 6,300 jobs as referenced in Exhibit A, Tab 9, Schedule 7.

vi. Utility Taxes

The Project will result in tax payments to various levels of government. These taxes include Ontario income taxes and municipal taxes paid by Union as a direct result of the Project and are included as costs in the Stage 1 analysis. These taxes are not true economic costs of the Project since they represent transfer payments within the economy that are available for redistribution by the federal, provincial and municipal governments. The net present value of Ontario income taxes and municipal taxes payable by Union related to the proposed facilities over the 30-year project life is approximately $38.0 million with a further $30.0 million paid to the Federal Government. These figures are further detailed in Exhibit A, Tab 9, Schedule 7. These taxes are in addition to the benefits referenced in the Report. The figures in the Report are based on government investment in infrastructure and as such income and property taxes are not included.

While not quantified in the calculation, the additional employment that will result from the construction of the Project will generate additional employer health tax payments to aid in covering the cost of providing health services in Ontario.

vii. Environmental Effects

Natural gas, because of its clean-burning properties, has an increasingly important role to play in reducing the environmental impacts of energy use. The use of natural gas, either with or in place of other fossil fuels, in residential, commercial, industrial and transportation applications reduces the environmental impact in two key areas. First of all, the process is frequently more efficient,

reducing total energy use. Secondly, natural gas pollutant release per unit of energy is less than other fossil fuels.

Some of the inherent advantages of natural gas are as follows:

a. Unlike the combustion of cheaper grades of fuel oil for electrical power generation, natural gas combustion produces virtually no sulphur dioxide – the most significant component to acid rain formation.
b. Natural gas vehicles emit up to 90% less carbon monoxide than gasoline-powered vehicles.
c. Natural gas combustion also emits significantly lower amounts of reactive hydrocarbons and nitrogen oxides – the key photochemical agents in the formation of urban smog.
d. For stationary power generation, natural gas can reduce carbon dioxide emissions by approximately 35% per unit of energy when compared to fuel oil.

Summary of Stages 1 to 3

Table 9-1 shows the NPV calculated for the 3-stage economic analysis completed for the proposed facilities.

Table 9-1
NPV $ Millions

Stage	NPV Excluding Gas Savings
Stage 1	(344)
Stage 2	Not Quantified
Stage 3	+ 467
Total	+ 123

On February 21, 2013, the Board issued a new requirement to the Filing Guidelines on the Economic Tests for Transmission Pipeline Applications with respect to EBO 134 (EB-2012-0092). This new requirement is:

> *"Any project brought before the Board for approval should be supported by an assessment of the potential impacts of the proposed natural gas pipeline(s) on the existing transportation pipeline infrastructure in Ontario, including an assessment of the impacts on Ontario consumers in terms of cost, rates, reliability and access to supplies."*

This requirement relates to pipeline applications only. However, given that the proposed compressors will increase the capacity of the overall Dawn Parkway System, these impacts have been addressed throughout this application. Table 9-2 summarizes the impacts and provides references where more detailed analysis can be found.

Table 9-2

Entity Impacted		Summary of Impact	Reference
Existing Infrastructure	Union	Union is proposing to construct Dawn H, Lobo D, and Bright C compressors and related facilities.	The facilities are described in Tab 8 and Tab 12.
	TransCanada	TransCanada requires additional facilities to support capacity contracted on Union's Dawn Parkway system and TransCanada's 2017 new capacity open season.	Tab 6, pg. 12, 13
Impacts to Ontario consumers	Costs and Rates	The rate impact for ex-franchise customers can be found in Tab 10 of this Application Union is not in a position to evaluate the possible effects of this Project on TransCanada's costs. TransCanada tolls resulting from the Settlement Agreement were approved by the National Energy Board in RH-001-2014.	Tab 10
	Reliability and Access to Supplies	The Project supports Shippers looking to access the Dawn Hub providing lower cost, greater reliability and diversity of supply and enhanced liquidity at Dawn over the long term.	Tab 5

TOTAL ESTIMATE COMPRESSOR STATION COST - Dawn H

Materials	$ 75,521,000
Construction & Labou	$ 135,130,000
Contingencies	$ 32,982,000
Interest During Construction	$ 6,197,000
Total Estimate Capital Cost - Dawn H	$ 249,830,000

TOTAL ESTIMATE COMPRESSOR STATION COST - Lobo D

Materials	$	62,551,000
Construction & Labou	$	59,655,000
Contingencies	$	18,331,000
Interest During Construction	$	4,386,000
Total Estimate Capital Cost - Lobo D	$	144,923,000

TOTAL ESTIMATE COMPRESSOR STATION COST - Bright C

Materials	$ 77,732,000
Construction & Labo	$ 115,090,000
Contingencies	$ 28,924,000
Interest During Construction	$ 6,006,000
Total Estimate Capital Cost - Bright C	$ 227,752,000

UNION GAS LIMITED
2017 DAWN-PARKWAY FACILITIES EXPANSION PROGRAM
Calculation of Incremental Project Revenues

Line No.	Particulars	Demands (TJ/d)		Demand Rate ($/GJ/mo.)			Project Year Revenue ($000's) 1	2	3	4	5	6-31
1	Excluding Dawn Compression Margin:											
2	M12 Dawn-Parkway	441.8	[1]	$ 2.937	[2]	$ -	$ 15,569	$ 15,569	$ 15,569	$ 15,569	$ 15,569	
3	M12 Kirkwall-Parkway	84.9		$ 0.517	[2]	-	526	526	526	526	526	
4	New Firm North Transportation Service	6.0		$ 2.937	[3]	-	211	211	211	211	211	
5	Dawn Compression Margin:											
6	Incremental Dawn compression required on 2017 demands	447.8	[4]	$ 0.232	[2]	-	1,246	1,246	1,246	1,246	1,246	
7	**Total Transportation Revenue Used in Economics ($000's)**					**$ -**	**$ 17,551**	**$ 17,551**	**$ 17,551**	**$ 17,551**	**$ 17,551**	

Notes:

(1) Dawn-Parkway demands are the portion of total incremental demands that can be served by the 2017 proposed facilities calculated as follows (TJ/d):

Total incremental system design day capacity	Tab 8, Table 8-2	456.6
Total Union requirements to serve New Firm North Transportation Service demands	Tab 6, Page 10	6.0
Balance incremental capacity available to meet increased M12 market demands		450.7
Kirkwall-Parkway Demand		
Dawn-Parkway Equivalency required for Kirkwall to Parkway Demands	Tab 8, Table 8-2	8.9
Net Capacity for M12 Dawn-Parkway Service		441.8

(2) Rate which was used for the purpose of economics represents the 2015 approved rate (EB-2014-0271) plus the 2017 rate impacts of the 2015 Dawn-Parkway projects (EB-2012-0433 and EB 2013-0074) and the 2016 Dawn-Parkway project (EB-2014-0261)

($/GJ/mo.):	Dawn-Parkway	Kirkwall-Parkway
M12 rate including Dawn compression	$ 3.169	$ 0.517
Less: Dawn compression margin	$ 0.232	$ -
M12 rate excluding Dawn compression	$ 2.937	$ 0.517

(3) Assumed New Firm North Transportation Service demand charge to be M12 Dawn-Parkway demand charge.

(4) Represents the 2017 capacity on which incremental Dawn compression is applied - M12 Dawn-Parkway (441.8 TJ/d) and New Firm North Transportation Service (6.0 TJ/d).

2017 DAWN-PARKWAY FACILITIES EXPANSION PROGRAM
(Project Specific DCF Analysis - Schedule 9-5)
Stage 1 DCF - Listing of Key Input
Parameters, Values and Assumptions

Discounting Assumptions	
Project Time Horizon	Commencing November 1, 2016. Term of economic analysis is 30 years from November 1, 2017 in-service date. (maximum 30 years revenue recognition from in-service date of facility)
Discount Rate	Incremental after-tax weighted average cost of capital of 5.10%
Key DCF Input Parameters, Values and Assumptions	
Net Cash Inflow:	
Incremental Transportation Revenue: Rate M12 Demand Charges	Effective November 1, 2017. Refer to Schedule 9-4 Approved per EB-2014-0271 effective January 1, 2015, plus 2017 rate impacts of: 1) 2015 Dawn-Parkway Projects EB-2012-0433 and EB-2013-0074 2) 2016 Dawn-Parkway Projects EB-2014-0261
Total M12 transportation demands served by 2017 proposed facilities:	
- Dawn-Parkway	441.8 TJ/d per Schedule 9-4, Note 1
- Kirkwall-Parkway	84.9 TJ/d per Schedule 9-4
Total New Firm North Transportation Service demands served by 2017 proposed facilities (at M12 rate)	6.0 TJ/d per Schedule 9-4
Operating and Maintenance Expense	Estimated incremental cost
Incremental Tax Expenses:	
Municipal Tax	Estimated incremental cost
Income Tax Rate	26.5%
CCA Rates (Transmission Plant):	
CCA Classes:	Declining balance depreciation rates by CCA class:
Class 1 (Structures)	6%
Class 7 (Compressor Equipment)	15%
Class 8 (Measuring & Regulating Equipment)	20%
Transmission Plant Depreciation Rates:	Approved per EB-2011-0210
Structures	2.03%
Compressor Equipment	3.23%
Measuring & Regulating Equipment	2.60%
Cash Outflow:	
Incremental Capital Costs	Refer to Section 9, Schedules 1 to 4
Major Capital Overhaul Expenditures	$2.5 Million for each compressor ($7.5 Million total) in each of years 16 and 31
Change in Working Capital	5.051% applied to O&M expenses based on EB-2011-0210 cash working capital estimates

Project Year ($000's)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Cash Inflow										
Revenue	-	17,551	17,551	17,551	17,551	17,551	17,551	17,551	17,551	17,551
Expenses:										
O & M Expense	-	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)
Municipal Tax	-	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)
Income Tax	2,466	14,106	17,575	14,612	11,913	9,622	7,677	6,025	4,622	3,430
Net Cash Inflow	2,466	26,998	30,467	27,504	24,805	22,514	20,569	18,917	17,514	16,322
Cash Outflow										
Incremental Capital - 2016 In-Service	107,400	6,723	-	-	-	-	-	-	-	-
Incremental Capital - 2017 In-Service	-	494,114	14,267	-	-	-	-	-	-	-
Sub Total	107,400	500,838	14,267	-	-	-	-	-	-	-
Change in Working Capital	-	182	-	-	-	-	-	-	-	-
Cash Outflow	107,400	501,020	14,267	-	-	-	-	-	-	-
Cumulative Net Present Value										
Cash Inflow	2,405	27,462	54,367	77,476	97,306	114,432	129,319	142,345	153,821	163,996
Cash Outflow	107,400	584,108	597,024	597,024	597,024	597,024	597,024	597,024	597,024	597,024
NPV By Year	(104,994)	(556,646)	(542,657)	(519,548)	(499,718)	(482,592)	(467,705)	(454,679)	(443,203)	(433,028)
Project NPV	-344,236									
Profitability Index										
By Year PI	0.02	0.05	0.09	0.13	0.16	0.19	0.22	0.24	0.26	0.27
Project PI	0.43									

Project Year ($000's)	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Cash Inflow										
Revenue	17,551	17,551	17,551	17,551	17,551	17,551	17,551	17,551	17,551	17,551
Expenses:										
O & M Expense	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)
Municipal Tax	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)
Income Tax	2,417	1,556	824	202	(328)	(629)	(886)	(1,254)	(1,567)	(1,833)
Net Cash Inflow	15,309	14,448	13,716	13,094	12,564	12,263	12,006	11,638	11,325	11,059
Cash Outflow										
Incremental Capital - 2016 In-Service	-	-	-	-	-	-	-	-	-	-
Incremental Capital - 2017 In-Service	-	-	-	-	-	7,500	-	-	-	-
Sub Total	-	-	-	-	-	7,500	-	-	-	-
Change in Working Capital	-	-	-	-	-	-	-	-	-	-
Cash Outflow	-	-	-	-	-	7,500	-	-	-	-
Cumulative Net Present Value										
Cash Inflow	173,077	181,231	188,596	195,286	201,394	207,066	212,350	217,224	221,736	225,929
Cash Outflow	597,024	597,024	597,024	597,024	597,024	600,580	600,580	600,580	600,580	600,580
NPV By Year	(423,947)	(415,793)	(408,428)	(401,738)	(395,630)	(393,514)	(388,230)	(383,357)	(378,844)	(374,652)
Project NPV										
Profitability Index										
By Year PI	0.29	0.30	0.32	0.33	0.34	0.34	0.35	0.36	0.37	0.38
Project PI										

Project Year ($000's)	21	22	23	24	25	26	27	28	29	30	31
Cash Inflow											
Revenue	17,551	17,551	17,551	17,551	17,551	17,551	17,551	17,551	17,551	17,551	17,551
Expenses:											
O & M Expense	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)	(3,611)
Municipal Tax	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)	(1,048)
Income Tax	(2,061)	(2,254)	(2,419)	(2,560)	(2,680)	(2,783)	(2,871)	(2,945)	(3,010)	(3,064)	(2,962)
Net Cash Inflow	10,831	10,638	10,473	10,332	10,212	10,109	10,021	9,946	9,882	9,828	9,930
Cash Outflow											
Incremental Capital - 2016 In-Service	-	-	-	-	-	-	-	-	-	-	-
Incremental Capital - 2017 In-Service	-	-	-	-	-	-	-	-	-	-	7,500
Sub Total	-	-	-	-	-	-	-	-	-	-	7,500
Change in Working Capital	-	-	-	-	-	-	-	-	-	-	-
Cash Outflow	-	-	-	-	-	-	-	-	-	-	7,500
Cumulative Net Present Value											
Cash Inflow	229,835	233,486	236,906	240,116	243,135	245,978	248,660	251,193	253,587	255,853	258,031
Cash Outflow	600,580	600,580	600,580	600,580	600,580	600,580	600,580	600,580	600,580	600,580	602,267
NPV By Year	(370,745)	(367,094)	(363,674)	(360,464)	(357,446)	(354,602)	(351,920)	(349,387)	(346,993)	(344,728)	(344,236)
Project NPV											
Profitability Index											
By Year PI	0.38	0.39	0.39	0.40	0.40	0.41	0.41	0.42	0.42	0.43	0.43
Project PI											

Economic Benefits from Infrastructure Spending

Figures in $ Millions

Line No	Description	Note	Capex Spend Out of Country (a)	Capex Spend within Ontario (b)	Capex Spend within Canada Excluding Ontario (c)	Capex Total (d)= sum (a-c)	
1	Dawn H		$ 58	$ 163	$ 29	$ 250	
2	Lobo D		$ 58	$ 73	$ 14	$ 145	
3	Bright C		$ 59	$ 140	$ 29	$ 228	
4	Total		$ 175	$ 376	$ 72	$ 623	
5							
6	% of Total Spend		28%	60%	12%	100%	Line 4 /Total Line 4 Col (d)
7							
8	GDP						
9	GDP Factor	(a)		1.14			Source : Schedule 9-8
10	GDP Impact $ Millions			$ 429			Line 4 * Line 9
11							
12	Employment (Jobs)						
13	Jobs Factor	(b)		16.7			Source : Schedule 9-8
14	Jobs Created			6,279			Line 4 * Line 13
15							
16	Taxes Paid by Union Gas	(c)					
17	Property Tax			$ 15			Source: NPV DCF
18	Provincial Income Tax			$ 23			Source: NPV DCF
19	Total Provincial Taxes			$ 38			
20	Federal Income Tax			$ 30			Source: NPV DCF
21	Total Taxes Paid			$ 68			
22							
23	Total Value to Ontario						
24	GDP Impact $ Millions			$ 429			Line 10
25	Total Provincial Taxes			$ 38			Line 19
26	NPV Total Value to Ontario			$ 467			

Notes:
Schedule 9-8 : The Economic Impact of Ontario’s Infrastructure Investment Program Conference Board of Canada
(a) Schedule 9-8 page 7 ($ Real GDP $ 114 million for each $ 100 million invested)= 1.14
(b) Schedule 9-8 page 7 (1,670 jobs for each $ 100 million invested) = 1670/100 = 16.70 per $ 1million
(c) Net Present Value taxes by Union paid over 30 years

The Conference Board of Canada
Insights You Can Count On

Briefing April 2013

The Economic Impact of Ontario's Infrastructure Investment Program

At a Glance

- Ontario's public infrastructure spending has important repercussions on the provincial economy, employment, and the income of its residents.
- As infrastructure projects are completed, they bolster the stock of physical capital and boost productivity in the private sector.
- Ontario's past and planned public infrastructure spending over 2006 to 2014 lifts the province's real productive capacity by 2.1 per cent by 2014 and adds $1,044 (in constant 2012 dollars) to the average income per resident.

INTRODUCTION

This briefing follows and updates an earlier study[1] to assess the contribution of Ontario's infrastructure investment program to the province's economy. Our findings suggest that the direct employment and purchases generated by public infrastructure spending have substantial impacts on the economy. However, the long-term benefits are just as important. Evidence from research conducted in Canada, the United States, and other jurisdictions suggests that there is a robust link between the stock of public infrastructure and the level of income in an economy. As infrastructure projects are completed, they bolster the stock of physical capital and boost potential output.

1 Antunes, Beckman, and Johnson, *The Economic Impact of Public Infrastructure in Ontario*.

And, more importantly, there is a high degree of interdependence between the quality and quantity of public infrastructure and the performance (productivity) of an economy's business sector. Thus, we utilize findings from the literature to quantify the impact of Ontario's past and planned infrastructure spending on the province's potential output and the income of its residents.

It is important to note that we assess only the benefits of Ontario's past and planned infrastructure spending on the economy. We do not attempt to quantify the potential benefits of additional public savings (should the funds not have been spent) or of alternate spending.

While the direct employment and purchases generated by public infrastructure spending have substantial impacts on the economy, the long-term benefits are as important.

First, we present results of the economic impact stemming from the construction and purchases generated by Ontario's infrastructure spending. The following section looks at the long-term benefits of the same spending on the productive capacity of Ontario's economy. The final section concludes.

THE ECONOMIC IMPACT OF ONTARIO'S INFRASTRUCTURE SPENDING

In this section, we rely on the Conference Board's proprietary model of the Ontario economy to quantify the economic impact of infrastructure spending. The analysis captures not only the effects of direct spending on construction and machinery, but also supply chain and other impacts related to the employment and purchases generated by Ontario's public infrastructure spending program. In effect, we assess the impacts associated with increased economic activity directly related to the construction phase of the infrastructure spending program. But because infrastructure spending builds assets whose economic useful life will extend beyond the construction phase, in the next section we quantify the long-term impact that the increased stock of public capital has on Ontario's potential output and the income of its residents.

DATA

The Ontario Ministry of Infrastructure provided the Conference Board with past and planned public capital investment expenditures over the fiscal years running from 2005–06 to 2014–15, as shown in Table 1.

The data were converted to a calendar-year basis, resulting in data spanning a period of nine years from 2006 to 2014. Because there are large differences between the economic impacts obtained from labour-intensive construction and those obtained from machinery and equipment (M&E) investment (because of higher import content), it was necessary to break out the capital investment spending by type of asset. We relied on historical data from Statistics Canada's Private and Public Investment Intentions Survey to split the public capital investment data between construction (or what is termed "structures") and M&E investment, depending on the broad sectors to which the funds were allotted. The investment spending categories were transportation, education, health, and "other" (a combination of sectors such as water, the environment, municipal and local infrastructure, and justice). Furthermore, the government construction and M&E deflators from Statistics Canada's Provincial and Territorial Economic Accounts were used to convert nominal capital expenditures displayed in Table 1 into real terms—that is, adjusted for inflation.

KEY ASSUMPTIONS AND METHODOLOGY

Aggregate infrastructure investment data were used to "shock" the Conference Board's provincial economic model of Ontario—that is, show the effect that infrastructure spending has had on Ontario's economy. The model simulations were performed over 2006 to 2014.

The shock to the Conference Board's Ontario economic model was to real public construction investment and real public machinery and equipment (M&E) capital outlays. The government construction and M&E deflators from Statistics Canada's Provincial and Territorial Economic Accounts were used to deflate the public investment data provided by the Ministry of Infrastructure in 2002 dollars. (Deflators are used to convert nominal capital expenditures into real terms—that is, adjusted for inflation.) As a point of interest, the two government capital investment deflators have very different trends over history. From 2006 to 2011, M&E prices remained relatively

Table 1
Annual Gross Infrastructure Expenditure
($ millions)

	Actual							Planned		
Sector	**2005–06**	**2006–07**	**2007–08**	**2008–09**	**2009–10**	**2010–11**	**2011–12**	**2012–13**	**2013–14**	**2014–15**
Transportation[1]	3,272	3,126	4,020	3,012	4,235	4,430	4,754	5,753		
Health	461	558	1,340	2,525	2,860	3,064	3,043	3,247		
Education[2]	1,524	1,806	2,324	1,690	2,001	2,163	2,368	2,405	2,363	1,672
Other	1,349	1,617	3,115	1,763	1,870	1,955	2,520	2,492	1,735	1,057
Stimulus investments	n.a.	n.a.	n.a.	n.a.	1,616	3,598	n.a.	n.a.	n.a.	n.a.
Subtotal	**6,606**	**7,107**	**10,798**	**8,991**	**12,582**	**15,209**	**12,685**	**13,897**	**13,611**	**11,994**
Less: Other partner funding[3]	n.a.	n.a.	441	531	620	597	1,268	1,018	707	638
Total excluding partner funding	**n.a.**	**n.a.**	**10,357**	**8,459**	**11,961**	**14,612**	**11,417**	**12,879**	**12,904**	**11,356**
Less: Flow-throughs[4]	244	246	273	221	1,133	340	438	335	416	196
Total provincial expenditure	**6,362**	**6,861**	**10,525**	**8,238**	**10,829**	**14,272**	**10,979**	**12,544**	**12,488**	**11,159**

1 Transportation includes planning activities, property acquisition, highway service centres, and other infrastructure programs (e.g., municipal/local roads/remote airports).
2 Figures include updates since Quarterly Finances, August 2012.
3 Third-party contributions to capital investment in the consolidated sectors (schools, colleges, and hospitals).
4 Mostly federal government transfers for capital investments. Reported only as a footnote in FES for 2005–06, 2006–07, and 2007–08.
Source: Ontario Ministry of Infrastructure.

flat, partly because a robust Canadian dollar made imported M&E cheaper. On the other hand, construction prices advanced by nearly 25 per cent over the same period due to rising construction material costs and wage pressures.

Data from the Conference Board's latest provincial forecast were used to extend the deflators over the 2012 to 2014 period. The decline in M&E prices suggests that the government purchasing power for this type of capital grew more strongly over 2006 to 2011 (a trend that should continue through to 2014) and that in inflation-adjusted terms, a larger share of infrastructure spending is allotted to M&E than to structures. (See Chart 1.)

Chart 1
Real Provincial Infrastructure Spending: Machinery and Equipment, and Structures
(2002 $ millions)

Sources: Infrastructure Ontario; Statistics Canada; The Conference Board of Canada.

The Conference Board's macroeconometric model of the Ontario economy was used to quantify the impact of the real capital investment streams estimated for 2006 to 2014. The analysis evaluates the combined direct, indirect, and induced economic impacts, where:

- **Direct impact** measures the value-added[2] on the economy of the increased public capital spending on those firms that would either build structures or manufacture equipment. Because demand for M&E has a high import content, the direct effect on the Ontario economy is muted. Nonetheless, the increased demand will generate domestic activity in the transportation sector.
- **Indirect impact** (or supply chain impact) measures the value-added that the "direct impact firms" generate economically through their demand for intermediate inputs or other support services. For example, increased construction activity will lift demand for utilities, transportation, financial, and insurance services.
- **Induced impacts** are derived when employees of the aforementioned industries spend their earnings and owners spend their profits. These purchases lead to more employment, wages, income, and tax revenues, and can be felt across a wide range of industries.

Thus, increased investment in infrastructure will not only have direct impacts on the economy (on construction, for example) but will also spread through the economy through a series of multiplier effects. Supply chain effects are first felt on demand for industries that are direct suppliers. Second-round induced effects produce a widespread impact (albeit usually smaller) on all sectors of the economy, largely through a general increase in consumer spending. The overall economic multiplier is calculated as the sum of all value-added impacts (direct, indirect, and induced) divided by the initial spending on infrastructure (in constant dollars).

It is important to note that the initial constant dollar value of the public capital investment does not result in a one-to-one increase in real GDP. This is because a significant portion of the investment is assumed to go toward the purchase of M&E, much of which is imported. Moreover, even as demand is lifted for M&E produced in Ontario, the lift in demand for manufactured goods will require intermediate inputs purchased from suppliers that may be outside the provincial boundaries. This dependence of the supply chain on imported components will determine the level of leakages and the extent to which the overall economic multiplier is reduced.

The Conference Board's provincial forecasting model captures the sum of the direct, indirect, and induced impacts on Ontario's economy, based on its estimated historical relationships. The model incorporates a detailed modelling of prices, households, and businesses. It also provides economic impact results for a wide range of economic indicators.

Increased investment in infrastructure will not only have direct impacts on the economy but will also spread through the economy through a series of multiplier effects.

Some key points and assumptions about the methodology are worth mentioning. The Conference Board's Ontario forecasting model contains only a partial accounting of government revenues (including direct and indirect tax revenues). In addition, government accounts in the Conference Board's Ontario models are based on national accounts data and not on the public accounts. In principle, one can assume that the impact of the shock on a national account and public account basis would be similar. Finally, although the shock has only small effects on costs and prices, these variables do move in response to a change in economic activity. Price effects are assumed to be too small to have an impact on monetary policy or the value of the currency.

FINDINGS

Cumulative infrastructure spending will total an estimated $96.7 billion, in current dollars, from 2006 to 2014. In real 2002 dollars, the cumulative value of the past and planned investment will be $89.7 billion, with $39.9 billion toward structures and $49.8 billion toward

2 Value-added, or net output, is the difference between total revenue and the sum of expenses on parts, materials, and services used in the production process. Summing the value-added across all industries in a region will yield the GDP in that region.

machinery and equipment. Table 2 summarizes the impact of Ontario's infrastructure investment program on key economic indicators.

Not surprisingly, the investment spending will have widespread impacts on the Ontario economy. From 2006 to 2014, the average contribution to real GDP—including direct, indirect, and induced impacts—is about $11.3 billion per year, helping to support roughly 167,000 jobs per year. It is interesting to note that the increase in Ontario's economic activity associated with infrastructure spending has a positive impact on net interprovincial migration. The result is an increase in population and a boost to housing starts and residential construction.

The increase in employment lifts up personal income in current dollars by an annual average of $7.4 billion from 2006 to 2014, while corporate profits are up by $2.2 billion per year on average. Increases in personal income and corporate profits help push up total income (GDP in current dollars) in Ontario by an average of $12.6 billion per year from 2006 to 2014.

A sizable benefit accrues back to federal and provincial governments. The boost to personal income results in an average annual increase of $1.6 billion in personal income tax collection, while increases in profits yield an average increase of $583 million per year in corporate income taxes over 2006 to 2014 for federal and

Table 2
Total Public Infrastructure Investment—Economic Impact in Ontario
(key economic indicators)*

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Annual average
Investments										
Total investment generated ($ millions)	6,736	9,609	8,810	10,181	13,411	11,802	12,152	12,502	11,491	10,744
Total investment generated (2002 $ millions)	6,673	9,375	8,174	9,460	12,755	10,743	10,865	11,241	10,378	9,963
Structures (2002 $ millions)	3,282	4,545	3,921	4,273	5,498	4,848	4,808	4,685	4,050	4,434
Machinery and equipment (2002 $ millions)	3,391	4,831	4,253	5,188	7,257	5,895	6,056	6,556	6,327	5,528
Effects										
Real GDP at market prices (2002 $ millions)	7,546	10,796	8,525	9,308	14,071	12,390	12,847	13,440	13,041	11,329
GDP at market prices ($ millions)	7,966	11,643	8,875	10,333	15,748	13,742	14,533	15,332	14,927	12,567
Personal income ($ millions)	4,268	6,251	5,451	6,141	9,205	8,340	8,660	9,250	9,424	7,443
Corporate profits ($ millions)	1,288	1,790	170	1,556	3,075	1,947	2,865	3,652	3,804	2,239
Population of labour force age	8,555	15,697	23,580	31,533	41,457	51,892	62,140	72,532	82,310	43,300
Employment	107,016	152,049	129,474	142,289	208,423	185,181	188,310	194,756	191,563	166,562
Unemployment rate (level difference in rate)	–0.65	–0.91	–0.76	–0.83	–1.20	–1.05	–1.06	–1.08	–1.05	
Retail sales ($ millions)	3,553	5,066	5,343	4,671	5,809	6,677	7,054	7,428	7,951	5,950
Housing starts	2,584	5,998	4,308	3,301	7,575	6,666	6,592	6,964	7,139	5,681
Personal income tax collections ($ millions)	996	1,476	1,255	1,341	1,906	1,725	1,779	1,883	1,870	1,581
Corporate income tax collections ($ millions)	450	601	49	570	877	437	625	792	846	583
Total indirect taxes ($ millions)	761	1,209	1,262	951	1,348	1,790	1,963	2,156	2,530	1,552

*level difference = shock minus control, except where otherwise indicated
Sources: Ontario Ministry of Infrastructure; The Conference Board of Canada.

provincial governments. Indirect taxes (which consist largely of sales taxes) are boosted by the lift to income and consumer spending, up on average by $1.6 billion per year over the simulation period. It is interesting to note that the provincial government recoups roughly $16.7 billion in cumulative personal and corporate income taxes and indirect taxes over the 2006 to 2014 period. This compares with the cumulative $96.7 billion spent on the province's infrastructure program.

Table 3 shows the impact of increased infrastructure spending on the components of real GDP by spending category. The direct impact of the shock shows up in real government fixed capital formation, averaging a lift of just under $10 billion per year. The increase in public investment and associated boost to economic activity results in a sizable lift to private investment—up about $3.6 billion per year. As we will see in the following section, there is an important relationship between infrastructure spending and private sector productivity. This $3.6 billion can be spent on various investments, including improving existing capital and acquiring new technologies. It also reflects the induced aspects of higher household income leading to increased residential spending.

However, the import content associated with the private and public sectors' lift to M&E investment represents a leakage that offsets the overall impact on Ontario's economy. Additional imports are required to meet the extra demand for consumer goods resulting from increased employment and income. As a result of this extra demand, imports increase by an average of $10.5 billion per year from 2006 to 2014, dampening the total impact on real GDP. Export volumes are unaffected by the shock, given stable external demand and our assumption that the simulation has no impact on the exchange rate. Real government spending on goods and services is also generally unaffected by the simulation assumptions.

The economic impact results on real GDP by industry are presented in Table 4. The largest impact is on the construction industry, which increases by an average of $3 billion per year. Manufacturing industries also

Table 3
Total Public Infrastructure Investment—Economic Impact in Ontario
(real GDP expenditure-based)

2002 $ millions (market prices)*	2006	2007	2008	2009	2010	2011	2012	2013	2014	Annual average
Final domestic demand	**13,632**	**19,310**	**17,342**	**17,966**	**24,550**	**23,042**	**23,454**	**24,014**	**23,417**	**20,747**
Consumer expenditures	4,392	6,464	6,023	5,311	7,808	8,233	8,638	9,031	9,756	7,295
Government spending on goods and services	0	2	4	5	5	8	10	13	16	7
Gross fixed capital formation	9,478	13,202	11,617	12,944	17,158	15,145	15,153	15,332	13,977	13,778
Government	6,851	9,570	8,317	9,488	12,640	10,782	10,837	11,031	10,036	9,950
Private	2,492	3,420	3,146	3,237	4,213	4,179	4,125	4,097	3,818	3,636
Residential construction	88	130	119	139	205	186	192	202	205	163
Non-residential structures	976	1,333	1,190	1,267	1,607	1,494	1,486	1,450	1,291	1,344
Machinery and equipment	1,518	2,095	1,979	1,944	2,582	2,753	2,669	2,668	2,548	2,306
Net exports	**–6,673**	**–9,411**	**–9,817**	**–9,606**	**–11,643**	**–11,885**	**–11,824**	**–11,769**	**–11,531**	**–10,462**
Exports	0	0	0	0	0	0	0	0	0	0
Imports	6,673	9,411	9,818	9,606	11,643	11,885	11,824	11,769	11,531	10,462
Gross domestic product at market prices	**7,546**	**10,796**	**8,525**	**9,308**	**14,071**	**12,390**	**12,847**	**13,440**	**13,041**	**11,329**

*level difference = shock minus control, except where otherwise indicated
Source: The Conference Board of Canada.

Table 4
Total Public Infrastructure Investment—Economic Impact in Ontario
(real GDP by industry)*

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Annual average
Real GDP at basic prices (2002 $ millions)	**7,529**	**10,757**	**8,187**	**9,154**	**14,452**	**12,386**	**12,855**	**13,698**	**13,409**	**11,381**
Total goods	**4,044**	**5,705**	**4,216**	**4,818**	**7,481**	**6,184**	**6,340**	**6,673**	**6,270**	**5,748**
Primary sector	266	386	197	310	582	368	399	457	418	376
Manufacturing	1,495	2,150	1,291	1,543	3,016	2,358	2,489	2,815	2,837	2,222
Construction	2,175	3,009	2,609	2,836	3,664	3,267	3,249	3,179	2,786	2,975
Utilities	107	160	120	129	218	191	204	222	229	176
Business services	**3,486**	**5,052**	**3,969**	**4,334**	**6,969**	**6,199**	**6,512**	**7,021**	**7,134**	**5,631**
Transportation, storage, and communication	328	479	306	391	712	554	596	668	669	523
Wholesale and retail trade	1,546	2,236	1,870	1,868	2,901	2,631	2,719	2,889	2,972	2,404
Finance, insurance, and real estate	579	847	653	736	1,221	1,179	1,267	1,368	1,408	1,029
Community, business, and personal services	1,033	1,489	1,140	1,338	2,135	1,835	1,930	2,095	2,085	1,676
Public administration and defence	**0**	**1**	**1**	**2**	**2**	**3**	**3**	**4**	**5**	**2**

*level difference = shock minus control except where otherwise indicated
Source: The Conference Board of Canada.

experience a sizable boost, with sectors such as the fabricated metals industry and the electrical equipment and component manufacturing industry benefiting from the investment. Business services industries also experience an increase in demand for services that include architecture, engineering, and computer system design. The services sector also benefits from the induced impacts, where higher employment and wages bolster household spending. In total, output in business services increases by an average of $5.6 billion per year over 2006 to 2014.

The overall economic multiplier is calculated as the total change in real GDP divided by the initial constant-dollar increase in infrastructure spending. Our estimates indicate that for every $100 million (inflation-adjusted) invested in public infrastructure, real GDP is boosted by $114 million and roughly 1,670 person-years of employment are created or supported. In other words, for each $100 million of public infrastructure investment, about 1,670 jobs will be created for one year.

Table 5 breaks down the employment gains by industry. Construction employment is up sharply—nearly 49,000 construction jobs are supported annually by Ontario's infrastructure program. Business services employment is up by more than 88,400 jobs annually, encompassing a wide range of sectors that include, for example, transportation, financial services, wholesale and retail, and others. The job creation stimulated by the infrastructure spending will have helped keep Ontarians in the province, lowering the outflow of interprovincial migrants and boosting population. This, along with an increase in labour force participation and a reduction in the number of unemployed, helps meet the demand for workers. Overall, the number of unemployed people is reduced by about 62,500 per year, lowering the unemployment rate by just under 1 percentage point.

Table 5
Total Public Infrastructure Investment—Economic Impact in Ontario
(employment by industry)*

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Annual average
Total employment	**107,016**	**152,049**	**129,474**	**142,289**	**208,423**	**185,181**	**188,310**	**194,756**	**191,563**	**166,562**
Primary sector	3,281	4,537	2,439	4,749	9,659	5,192	5,952	6,822	6,164	5,422
Manufacturing	15,960	21,844	14,605	16,910	29,437	24,847	25,564	27,808	27,970	22,772
Construction	31,672	44,866	46,455	48,097	58,085	56,805	54,508	51,827	48,267	48,953
Utilities	515	885	725	736	1,237	1,016	1,127	1,178	1,214	959
Business services	55,587	79,910	65,235	71,777	109,982	97,287	101,117	107,070	107,884	88,428
Public administration and defence	2	7	16	21	23	34	41	53	65	29
Unemployment	**–41,029**	**–58,384**	**–49,535**	**–52,068**	**–77,038**	**–69,141**	**–70,282**	**–72,724**	**–72,327**	**–62,503**
Unemployment rate (level difference in rate)	–0.65	–0.91	–0.76	–0.83	–1.20	–1.05	–1.06	–1.08	–1.05	

*level difference = shock minus control, except where otherwise indicated
Source: The Conference Board of Canada.

PUBLIC CAPITAL'S CONTRIBUTION TO PRIVATE SECTOR PRODUCTION

In our 2010 study,[3] we reported on the widespread benefits of public infrastructure spending. Public capital includes schools, hospitals, utilities, and transportation, as well as recreational and cultural infrastructure. We noted that public capital helps private sector production by providing an educated and healthy population as well as transportation and other infrastructure relied on by businesses. In essence, public capital provides the environment that businesses need to operate, and by doing so helps boost private sector productivity. As we saw in the previous section, infrastructure investments can also lead to private sector investments in new technologies and capital.

Specifically, we found that public capital had contributed significantly to labour productivity over the past 30 years and that the contribution had strengthened over the 2000s in comparison with the previous two decades due to an increasing contribution of public capital to the overall growth in capital stock in Ontario. We found that, from 2000 to 2008, public capital contributed 0.23 percentage points per year to labour productivity's growth of 0.93 per cent per year—or that public capital was responsible for roughly a quarter of overall labour productivity growth in recent years.

Public capital provides the environment that businesses need to operate—thereby boosting private sector productivity.

In this section, we update our 2010 findings by quantifying the potential benefits that public capital has brought to private sector production. We assess the potential benefit that Ontario's infrastructure program, over the 2006 to 2014 period, has on the economy and on the level of income that Ontarians earn today.

The methodology relies on simplifying the complex production that occurs in the economy to a single equation, where total output is a function of capital, labour, and total factor productivity. Total factor productivity (TFP) captures the efficiency with which capital and labour mix to create output, and is essentially the motor of

3 Antunes, Beckman, and Johnson, *The Economic Impact of Public Infrastructure in Ontario.*

economic prosperity. Positive TFP growth contributes, one for one, to overall GDP growth and labour productivity. Moreover, it remains the key long-term driver of competitiveness and real per capita income. Note that in the production function approach, public capital is not captured explicitly, but is instead nestled in the TFP variable. Therefore, public capital is a component of TFP that is estimated and split out from TFP.

According to our framework,[4] TFP is influenced by the stock of public capital through the following formulation:

Equation 1: $\Delta \ln (TFP_t) = \Delta \ln (TFP^*_t) + \beta_g \Delta \ln(G_t)$

Where TFP* is TFP excluding public capital, G_t is the real stock of public capital, and β_g is the output elasticity of public capital. The subscript t denotes time. The equation simply states that for a 1 per cent change in the stock of public capital, TFP would rise by β_g per cent. The difficulty is that β_g is unknown and not directly measurable, since we do not know the market price of public capital. However, Macdonald[5] estimates β_g for Canadian infrastructure to be around 0.1, with warnings that there is considerable range around the estimate. We use this estimate, and a margin around it, to estimate the contribution that Ontario's past and planned investments in infrastructure have had on Ontario's residents today.

FINDINGS

Using the same infrastructure spending estimates as in the previous section, we find that Ontario's past and planned public infrastructure spending over 2006 to 2014 provides a significant and permanent boost to the province's overall potential output. In addition to the economic activity generated by the construction phase of projects, the cumulative increase in the stock of public capital helped boost the province's real productive capacity by 1.9 per cent in 2012 and, accounting for future planned investments, increases to 2.1 per cent by 2014. This represents an increase in the average income of Ontario residents of $902 per person in 2012, increasing to $1,044 per resident by 2014 (in constant 2012 dollars). These estimates are based on Macdonald's national estimate (β_g of 0.1) for the output elasticity of public capital.

This increase in real income per capita is due to the impact of increased infrastructure investment on Ontario's potential output as projects are completed. For example, income gains can come in the form of reduced time spent in traffic after transportation infrastructure is completed. These longer-term benefits come in addition to the economic impacts associated with the construction phase discussed above.

Ontario's past and planned public infrastructure spending over 2006 to 2014 provides a significant and permanent boost to the province's overall potential output.

It is important to note that the methodology on which these results are based relies on an approximated relationship between production, labour, and capital inputs. The theoretical foundation for the "production function" used is common in the literature and is useful for capturing effects of overall public infrastructure on the economy. However, this does not mean that the mathematical relationship between public infrastructure investment and productivity will hold equally for all public investment projects. Some infrastructure projects may have more direct impacts on productivity than others. Consider, for example, transportation infrastructure versus recreational or cultural infrastructure: while both provide benefits to society, they will likely contribute very differently to private sector productivity. In Table 6 we provide a wide range of estimates that bound some of this variation in different types of public capital and their benefits to productivity.

The impact of past and planned infrastructure spending under various assumptions about the strength of the link between public capital and TFP is displayed in Table 6. The range of increases in real productivity capacity lies between 1.1 and 2.6 per cent in 2012, with the range increasing to between 1.2 to 3.0 per cent in 2014. At a minimum, the average Ontarian is earning $536 more

4 The derivation of the impact of public capital on total factor productivity is developed in the technical notes to this briefing. See text box "Technical Notes."

5 Macdonald, "An Examination of Public Capital's Role in Production."

Table 6
Change in Productive Capacity Associated With Ontario's Public Infrastructure Spending From 2006 to 2014
(in constant 2012 $)

	Alternate values for output elasticity of capital		
	$Bg = 0.06$	$Bg = 0.10$	$Bg = 0.14$
Percentage change in real productivity capacity in 2012	1.1	1.9	2.6
Percentage change in real productivity capacity in 2014	1.2	2.1	3.0
Change in income per Ontario resident in 2012	536	902	1,274
Change in income per Ontario resident in 2014	620	1,044	1,477

Source: The Conference Board of Canada.

per year today because of investments in infrastructure that occurred over 2006 to 2012. And if investments progress as planned through to 2014, the minimum benefit grows to $620 per person in 2014 (in constant 2012 dollars).

CONCLUSION

In this briefing, we examine the benefits of Ontario's infrastructure spending program on the provincial economy. We look at the economic impacts associated with the direct employment and purchases generated by public infrastructure spending. In addition, we quantify the benefits of the same infrastructure spending on the province's potential output and the income of its residents.

Past and planned infrastructure spending will total an estimated $96.7 billion, in current dollars, from 2006 to 2014. Not surprisingly, the investment spending will have widespread impacts on the Canadian economy. From 2006 to 2014, the average contribution to real GDP—including direct, indirect, and induced impacts—is about $11.3 billion per year, helping to support roughly 167,000 jobs per year. The complementary nature of public and private capital investments is reflected in the analysis: the $10-billion annual increase in public investment results in an average annual boost to private sector investment of $3.6 billion. A sizable benefit accrues back to the federal and provincial governments. The lift to income and profits helps generate nearly $3.7 billion per year in taxes over 2006 to 2014. It is interesting to note that the provincial government recoups roughly $16.7 billion in cumulative personal and corporate income taxes and indirect taxes over the 2006 to 2014 period. This compares with the cumulative $96.7 billion spent on the province's infrastructure program.

The economic multiplier associated with infrastructure spending is calculated as the total change in real GDP divided by the initial constant dollar increase in infrastructure spending. Our estimates indicate that for every $100 million (inflation-adjusted) invested in public infrastructure, real GDP is boosted by $114 million and roughly 1,670 person-years of employment are supported. In other words, for each $100 million of public infrastructure investment, about 1,670 jobs will be created for one year.

Moreover, as infrastructure projects are completed, they bolster the stock of physical capital and boost the productive capacity of the economy over the long term. There is strong evidence in the literature about the link between public capital and private sector productivity; however, the strength of the relationship is difficult to establish with certainty. Thus, we quantify the impact of past and planned infrastructure spending using various assumptions about the strength of the link between public capital and productivity. The mid-point among these assumptions suggests that, in addition to the economic activity generated by the construction phase of projects, Ontario's past and planned public infrastructure spending over 2006 to 2014 lifts the province's real productive capacity by 2.1 per cent by 2014. This represents an increase in the average income of Ontarians of $1,044 per person by 2014 (in constant 2012 dollars).

Technical Notes

Here we develop the framework that allows us to isolate the impact of public capital on total factor productivity.

We start with an aggregate production function of Ontario's economy. We use the standard Cobb-Douglas production function:

(1) $GDP_t = (TFP_t) * (L_t^{\beta l}) * (K_t^{\beta k})$

Here, *GDP* is total output generated in the business sector, *TFP* is total factor productivity, and *L* and *K* are measures for labour composition and capital stock in the business sector. β_l and β_k represent the elasticities of labour and capital—in other words, the responsiveness of output to changes in labour or capital. The year is denoted by the subscript *t*.

First, we estimate the elasticity of labour (β_l) as the proportion of nominal labour income in the business sector out of total income in the business-sector economy. From there, we take the standard economic assumptions of competitive markets and constant returns to scale to generate ($\beta_l + \beta_k = 1$).

Second, we take the logarithmic difference of (1) and get:

(2) $\Delta\ln(GDP_t) = \Delta\ln(TFP_t) + \beta_l \Delta\ln(L_t) + \beta_k \Delta\ln(K_t)$

Total factor productivity is the only unknown variable in the equation, so it is calculated as the residual when all other changes in GDP are accounted for by labour and capital.

Third, to estimate the contribution to labour productivity, we subtract the change in hours worked from the change in GDP in equation (2) to get:

(3) $$\Delta\ln\left(\frac{GDP_t}{Hrs_t}\right) = \Delta\ln(TFP_t) + \beta_l \Delta\ln\left(\frac{L_t}{Hrs_t}\right) + \beta_k \Delta\ln\left(\frac{K_t}{Hrs_t}\right)$$

This equation shows the relationship between labour productivity in the business sector (on the left-hand side) and the components that contribute to this productivity (TFP, labour composition, and business sector capital).

Note that public capital is not included in equation (3). Because TFP is calculated as a residual, public capital has been lumped in with it. Therefore, we separate out public capital from TFP:

(4) $\Delta\ln(TFP_t) = \Delta\ln(TFP^*_t) + \beta_g \Delta\ln(G_t)$

. . . where G_t is the public capital stock and β_g is the output elasticity of public capital.

The unknown variable in equation (4) is the output elasticity of public capital, β_g. Measuring this is a challenging exercise because we do not know the market price of public capital and there are no close proxies where private companies have created public infrastructure in Ontario that would yield a market price. Macdonald points out that estimates of TFP and the elasticity of public capital are statistically very hard to disentangle in the traditional production function approach because both track trend GDP in a similar fashion.[1] Macdonald estimates β_g for Canadian infrastructure[2] to be around 0.1 and warns there is a considerable range around the estimate. We use this estimate for the output elasticity of public capital in this analysis, but we also provide estimates for $\beta_g = 0.06$ and $\beta_g = 0.14$ to assess the sensitivity of results under different assumptions.

The analysis was based on the infrastructure investment data provided by the Ontario Ministry of Infrastructure over the 2006 to 2014 period. We utilized a modified version of our model's potential output block that separates the contribution of public and private capital based on the output elasticities presented here.

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1 Macdonald. "An Examination of Public Capital's Role in Production."

2 Macdonald's 2008 paper includes all investments made by the public administration sector defined as the North American Industry Classification System (NAICS) 91 industry in his definition of public capital. Our study uses a broader definition that includes schools and hospitals.

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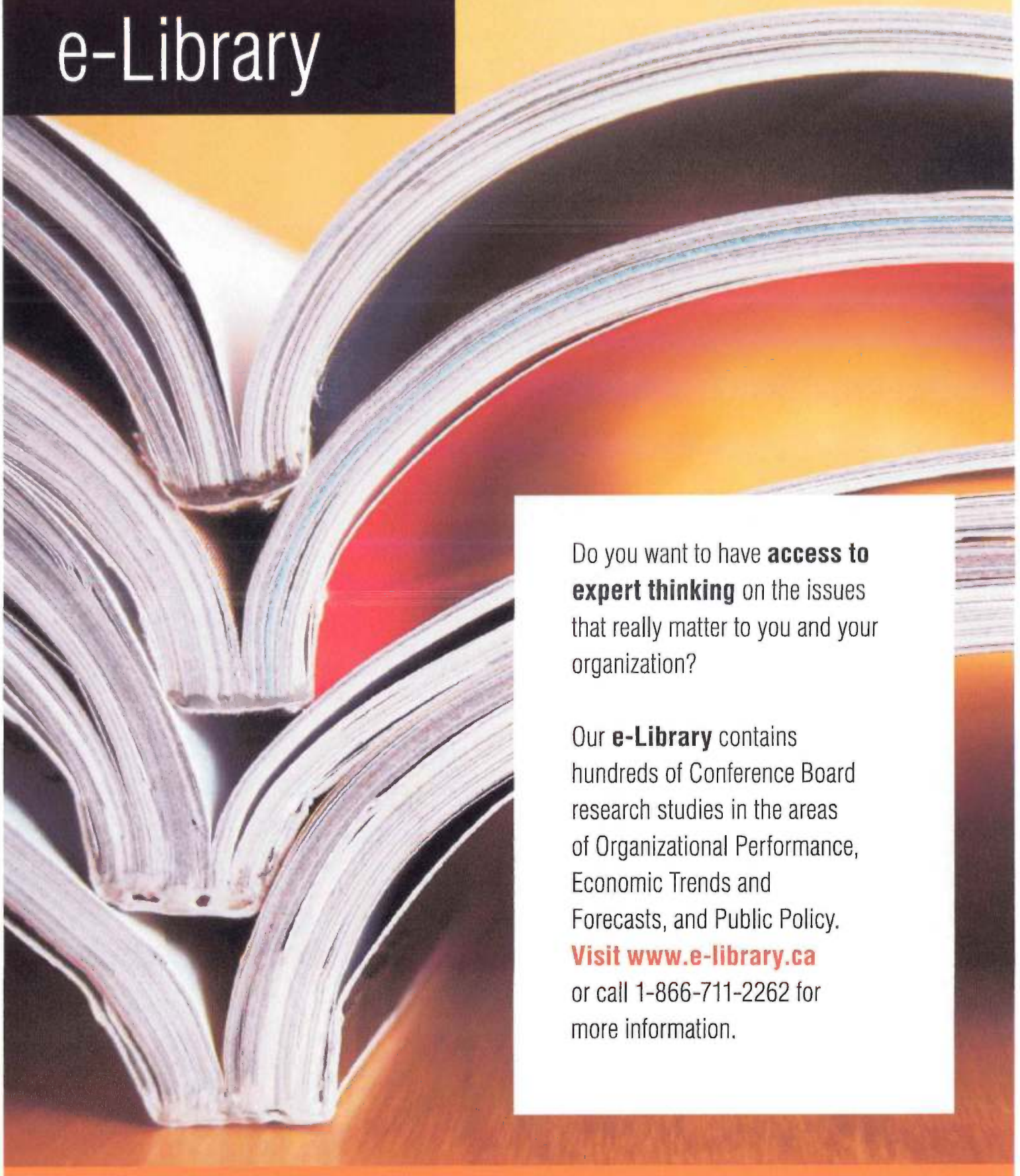

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The Economic Impact of Ontario's Infrastructure Investment Program
by *Pedro Antunes* and *Jacqueline Palladini*

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CAPITAL PASS THROUGH AND RATE IMPACTS

Capital Pass-Through Mechanism and Rate Impacts

Union is seeking approval of the recovery of the costs consequences of the Project as part of this proceeding because it meets the capital pass-through criteria as determined from Union's 2014-2018 Incentive Regulation Mechanism ("IRM") proceeding (EB-2013-0202). Given the magnitude of the Project, Union is not able to proceed with the development of the Project without reasonable certainty of cost recovery.

The intent of the capital pass-through mechanism ("CPM") in Union's Board Approved 2014-2018 IRM is to adjust rates during the IRM term to reflect the associated impacts of significant capital investments made throughout the IRM term. Such investments are considered "not-business-as-usual," meaning capital expenditures that are significant and cannot be managed within Union's Board-approved capital budget.

The key components of the CPM are:

- Any qualifying project must exceed two financial thresholds, related to both revenue shortfall and capital cost;
- Any qualifying project will be subject to a full regulatory review, either in a Leave-to-Construct proceeding or in a rates proceeding, but prior to being included in rates; and,

- Any qualifying project will be subject to both annual revenue requirement true-ups during the IRM term and an end-of-term qualification assessment.

The Board established eight criteria for approving a CPM during the EB-2013-0202 proceeding. A major capital project must meet the criteria to be included in rates during the IRM term. The criteria were subject to the settlement agreement and approved by the Board on October 7, 2013. The Project meets each of the criteria as follows:

	Criterion	Applicability
i)	A minimum increase, or a minimum decrease, of $5 million in net delivery revenue requirement for a single new project (the "Rate Impact Threshold").	The net delivery revenue requirement associated with the Project ranges from ($0.1) million in 2016 to $26.8 million in 2018, as provided at Exhibit A, Tab 10, Schedule 1, in the Cost Allocation and Rate Design section. The net delivery revenue requirement was calculated using the parameters outlined in the EB-2013-0202 settlement agreement.
ii)	The capital cost of the project must exceed $50 million.	1. The capital cost of the Project is $622.5 million.
iii)	The project is outside the base rates on which the IRM is set.	2. The Project was not included in 2013 base rates.
iv)	The project must be needed to serve customers and/or to maintain system safety, reliability or integrity, and cannot reasonably be delayed, and is demonstrated to be the most cost effective manner of achieving the project's objective relative to the reasonably available alternatives.	3. Please see Exhibit A, Tabs 6 and 7 with respect to the need for the Project. Please see Exhibit A, Tabs 7 and 8 regarding the alternatives considered.
v)	The project will be identified to stakeholders and the Board as soon as possible, including in that year's IRM stakeholder review session where practical.	4. The Project was identified during Union's July 2014 and April 2015 Stakeholder meetings.
vi)	The project will be subject to a full regulatory review; for any project that requires leave-to-construct approval of the Board, the full regulatory review in which the applicant must demonstrate need, safety or reliability purposes, and economic viability prior to inclusion in rates will be conducted in that proceeding. For any project that does not require Leave-to-Construct approval of the Board, Union commits to filing its annual rate adjustment application with the Board by July 1 of the year prior to the rate impacts of the project going into effect, to allow sufficient time for a full regulatory review of the project in its rates application.	5. Leave to construct is not required under Section 91 of the Act. There will be a full regulatory review within the present case.

vii)	Union will allocate the net revenue requirement using EB-2011-0210 Board-approved cost allocation methodologies. Any party, including Union, may take any position with respect to the proposed allocation for any particular capital project during review of the project, or its rate impacts, by the Board.	6.	Union has allocated the net revenue requirement using EB-2011-0210 Board-approved cost allocation methodologies.
viii)	The project will include a deferral account request to capture any differences between the forecast annual net delivery revenue requirement and the actual net delivery revenue requirement for each year of the IRM for which the project is included in rates.	The request for a deferral account is included in Exhibit A, Tab 10, Schedule 6.	

The Board has applied these criteria in Union's Parkway West, Brantford to Kirkwall/Parkway D and 2016 Lobo C and Hamilton to Milton applications. In those proceedings, the Board granted pre-approval of cost recovery in recognition of the magnitude of the proposed expenditure and the consistency with the regulatory structure proposed in the IRM. In approving those applications, the Board stated:

"However given the magnitude of the expenditure that is proposed, the Board is of the view that Union's request is reasonable and consistent with the overall regulatory structure. Recovery of these costs is specifically contemplated in the IRM settlement agreement approved by the Board." (p. 14, EB-2012-0451/EB-2012-0433/EB-2013-0074 Decision and Order, January 30, 2014)

Rate Impact and Recovery

Rate Impacts

The following section provides the revenue requirement, cost allocation methodology and rate impacts associated with the Project.

Lobo D, Bright C and Dawn H Compressors Revenue Requirement and Cost Allocation Methodology

The annual revenue requirement associated with the Project ranges from approximately ($0.1) million in 2016 to $44.4 million in 2018. The revenue requirements represent the costs associated with the Project facilities deemed to be in service from 2016 to 2018. The calculation of the annual revenue requirement from 2016 to 2018 and the underpinning assumptions are provided at Exhibit A, Tab 10, Schedule 1.

In Union's 2013 Board-approved cost allocation study, the costs associated with the Dawn Parkway System are allocated between in-franchise and ex-franchise rate classes using distance weighted Dawn Parkway System design day demands. The approved cost allocation methodology recognizes that the Dawn Parkway System is designed to meet easterly design day requirements and that a rate class' use of the Dawn Parkway System depends on that rate class' design day demands and the distance those design day demands are required to be transported on the system. The current Board-approved method for allocating Dawn Parkway System transmission costs was most recently reviewed and approved by the Board in EB-2011-0210.

The Board-approved cost allocation methodology for Dawn Station transmission costs is to allocate these costs between in-franchise and ex-franchise rate classes using Dawn Parkway System easterly design day demands requiring Dawn compression. The approved cost allocation methodology recognizes that Dawn compression assets used in the provision of Dawn Parkway System transmission service are designed to meet easterly design day requirements and that a

rate class' use of Dawn assets depends on the rate class' design day demands. The current Board-approved method for allocating Dawn Station transmission costs associated with the Dawn Parkway System was most recently reviewed and approved by the Board in EB-2011-0210.

Based on the current Board-approved allocation of Dawn Parkway System costs (adjusted to include the Project demands) 10.5% of the costs directly attributable to the Dawn Parkway System are allocated to Union South in-franchise rate classes and 4.7% are allocated to Union North in-franchise rate classes. The remaining 84.8% of the costs directly attributable to the Project are allocated to ex-franchise rate classes.

The change to the 2013 Board-approved Dawn Parkway System allocation factor is provided at Table 10-1. The allocation of Dawn Parkway System costs includes demands associated with the Project of 452,911 GJ/d, as provided in Exhibit A, Tab 8, Table 8-1.

Table 10-1
2013 Dawn-Parkway Distance Weighted Design Day Demands Including Project Demands

Line No.	Particulars	Union North In-franchise	Union South In-franchise	Ex-franchise	Total
		(a)	(b)	(c)	(d) = (a+b+c)
	2013 Board-Approved				
1	Distance Weighted Demands (10^6m^3/d x km) ((1)	1,592	3,588	26,557	31,737
2	Distance Weighted Demands (%)	5.0%	11.3%	83.7%	100.0%
	Updated for Project				
3	Project Demands (10^6m^3/d) (2)	-	-	11.998	12.00
4	Distance (km)	-	-	194	194
5	Distance Weighted Demands (10^6m^3/d x km) (line 3 x line 4)	-	-	2,323	2,323
6	Total Distance Weighted Demands (10^6m^3/d) (line 1 + line 5)	1,592	3,588	28,879	34,060
7	Total Distance Weighted Demands (%)	4.7%	10.5%	84.8%	100.0%
8	Percent Change ((line 6 - line 1) / line 1)	0%	0%	8.7%	7.3%

Notes:
(1) EB-2011-0210, Exhibit G3, Tab 5, Schedule 23, Updated, pages 7-8, line 5.
(2) Project demands of 452,911 GJ/d are converted to 10^6m^3/d using a heat value of 37.75 GJ/10^3m^3.

Based on the current Board-approved allocation of Dawn Station transmission costs, adjusted to include the Project demands, Union South in-franchise rate classes are allocated 16.4% and Union North in-franchise rate classes 4.3% of the costs directly attributable to the Dawn Station. The remaining 79.3% of the costs directly attributable to the Project are allocated to ex-franchise rate classes. The change to the 2013 Board-approved Dawn compression allocation factor is provided at Table 10-2. The allocation of Dawn compression costs includes demands that require Dawn compression and exclude the Rate M12 Kirkwall to Parkway demands.

Accordingly, Union has included 368,057 GJ/d of the total 452,911 GJ/d, as provided in Exhibit A, Tab 8, Table 8-1.

Table 10-2

2013 Design Day Demands requiring Dawn Compression Including Project Demands

Line No.	Particulars ($10^3m^3/d$)	Union North In-franchise	Union South In-franchise	Ex-franchise	Total
		(a)	(b)	(c)	(d) = (a+b+c)
	2013 Board-Approved				
1	Total Demands Requiring Dawn Compression (1)	6,956	26,186	117,041	150,183
2	Adjusted Load Not Requiring Dawn Compression	(51)	(192)	(857)	(1,100)
3	Total Dawn Compression Demands	6,905	25,994	116,184	149,083
4	Total Dawn Compression Demands (%)	4.6%	17.4%	77.9%	100.0%
	Updated for Project				
5	Dawn-Parkway Project Demands (2)	-	-	9,750	9,750
6	Total Demands Requiring Dawn Compression (line 1 + line 5)	6,956	26,186	126,791	159,933
7	Adjusted Load Not Requiring Dawn Compression	(48)	(180)	(872)	(1,100)
8	Total Updated Dawn Compression Demands	6,908	26,005	125,919	158,833
9	Total Updated Dawn Compression Demands (%)	4.3%	16.4%	79.3%	100.0%

Notes:

(1) As per EB 2013-0365, Exhibit B9.10, p. 2
(2) Project demands of 368,057 GJ/d are converted to $10^3m^3/d$ using a heat value of 37.75 $GJ/10^3m^3$.

Rate Impacts of the Lobo D, Bright C and Dawn H Compressors Project

To calculate rate impacts, Union added the largest revenue requirement directly attributable to the Project (rate base, return, interest, tax, depreciation and O&M) between 2016 and 2018 of $44.4 million to Union's 2013 Board-approved cost allocation study (updated per EB-2013-0365). Using the allocation of Dawn Parkway System and Dawn Station costs per the 2013 Board-approved cost allocation study, adjusted to include the Project demands described above, results in: (i) a decrease of approximately $2.9 million, allocated to Union North in-franchise rate

classes, (ii) an increase of approximately $52.4 million allocated to ex-franchise rate classes and (iii) a decrease of approximately $5.2 million, allocated to Union South in-franchise rate classes. The cost allocation impact by rate class is provided at Exhibit A, Tab 10, Schedule 2, column (a). The inclusion of the Project demands shift some existing Dawn Parkway System and Dawn Station costs from Union South and Union North in-franchise rate classes to ex-franchise rate classes. As shown in Table 10-1 and Table 10-2, including the Project demands results in an increase in the allocation of Dawn Parkway System and Dawn Station costs to the M12 rate class and an equal and offsetting decrease to the allocation of costs to Union South and Union North in-franchise rate classes. Specifically, the allocation of existing Dawn Parkway System and Dawn Station costs increases by approximately $1.9 million for Rate M12 and decreases by $1.9 million for Union North and Union South in-franchise rate classes. The cost allocation impact by rate class associated with the inclusion of the Project demands is provided at Exhibit A, Tab 10, Schedule 2, column (b).

Adding the rate base and operating costs associated with the Project to the 2013 Board-approved cost allocation study results in the re-allocation of cost components that are functionalized based on rate base and O&M. As a result of the additional transmission rate base and operating costs associated with the Project, $8.6 million in indirect costs (general plant, administrative and general expenses, and general operations and engineering costs) are re-allocated from distribution, storage and other transmission-related functional classifications to the Dawn Parkway System and Dawn Station functional classifications. Applying the Board-approved cost allocation methodology, ($8.6 million) in proposed Project-related property and income taxes are

also allocated to distribution, storage and other transmission-related functional classifications. The total allocation of the ($17.2 million) allocated to other functional classifications is provided at Exhibit A, Tab 10, Schedule 2, column (m).

Of the total annual Project costs of $44.4 million, $35.4 million is functionalized to the Dawn Parkway System functional classification and $26.2 million is functionalized to the Dawn Station functional classification (including $8.6 million of indirect costs). The Dawn Parkway System costs are allocated to rate classes based on the distance weighted design day demands, as provided at Table 10-1, and the Dawn Station costs are allocated to rate classes based on design day demands requiring Dawn compression, as provided at Table 10-2. The cost allocation impact by rate class to the Dawn Parkway System and Dawn Station functional classifications is provided at Exhibit A, Tab 10, Schedule 2, column (e) and column (i).

The impact on Union South in-franchise rate classes is a rate reduction as a result of the shift in indirect costs and the allocation of Project property and income taxes. While Union South in-franchise customers will bear 16.4% (or $4.3 million) of Dawn Station costs and 10.5% (or $3.7 million) of Dawn Parkway System costs directly attributable to the Project, those costs are more than offset by the reduction in the allocation of indirect costs ($6.0 million), Project-related taxes ($5.8 million) and existing Dawn Parkway System and Dawn Station costs ($1.3 million). Please see Exhibit A, Tab 10, Schedule 2, line 11, columns (b), (e), (i) and (m).

The impact on Union North in-franchise rate classes is a rate reduction as a result of the shift in indirect costs and the allocation of Project property and income taxes. Union North in-franchise customers will bear 4.3% (or $1.1 million) of Dawn Station costs and 4.7% (or $1.7 million) of Dawn Parkway System costs directly attributable to the Project, those costs are more than offset by the reduction in the allocation of indirect costs ($2.5 million), Project-related taxes ($2.6 million) and existing Dawn Parkway System and Dawn Station costs ($0.5 million). Please see Exhibit A, Tab 10, Schedule 2, line 23, columns (b), (e), (i) and (m).

The impact on ex-franchise rate classes is a rate increase as a result of the allocation of Project costs and an additional allocation of existing Dawn Parkway System and Dawn Station costs. Ex-franchise rate classes will bear 79.3% (or $20.8 million) of Dawn Station costs, 84.8% (or $30.0 million) of Dawn Parkway System costs and an additional allocation of $1.9 million of existing Dawn Parkway System and Dawn Station costs. Those costs are partially offset by the reduction in the allocation of indirect costs ($0.1 million) and Project-related taxes ($0.1 million). Please see Exhibit A, Tab 10, Schedule 2, line 17, columns (b), (e), (i) and (m).

In comparison to 2015 Board-approved rates per EB-2015-0035 (April 2015 QRAM), the bill impact for the average Rate M1 residential customer in Union South consuming 2,200 m^3 per year is a decrease of approximately $6.44 per year. For the average Rate 01 residential customer in Union North consuming 2,200 m^3 per year, the bill impact is a decrease of approximately $8.26 per year. Rate M1 and Rate 01 bill impacts are provided at Exhibit A, Tab 10, Schedule 3.

For ex-franchise customers taking M12 Dawn to Parkway transportation service, the Project costs are expected to increase the M12 rate by approximately $0.017/GJ/d; from $0.086/GJ/d to $0.102/GJ/d. Including the Project rate impacts with the rate impacts of Union's Parkway West, Brantford to Kirkwall Pipeline and Parkway D Compressor Projects and Hamilton to Milton Pipeline and Lobo C Compressor Projects, Union estimates that the M12 Dawn to Parkway transportation rate will increase by approximately $0.036/GJ/d; from $0.086/GJ/d to $0.121/GJ/d by 2018. When compared to the Ontario Landed Reference Price of $5.036/GJ (per April 2015 QRAM), the increase in the M12 rate of $0.036/GJ represents approximately 0.7%. The Rate M12 demand charge impacts are provided at Exhibit A, Tab 10, Schedule 4.

Rate Implementation

Effective January 1, 2016, Union proposes to build the annual costs associated with the Project into Union South delivery rates, Union North gas supply transportation and storage rates, and ex-franchise transportation rates based on the cost estimates included in this application. Specifically, Union will include costs of ($0.1) million in 2016.

To align with its 2014 to 2018 Incentive Regulation term, Union also proposes to adjust in-franchise and ex-franchise rates in 2017 and 2018 in order to recover the estimated annual costs associated with the Project. Union will include the costs of $6.8 million in 2017 and $44.4 million in 2018. Please see Exhibit A, Tab 10, Schedule 5 for the proposed annual rate adjustments.

Union proposes to track any variance between what is approved in rates for the Project and the actual annual revenue requirement of the Project in a new deferral account. Union will dispose of any balance in the deferral account as part of Union's annual non-commodity deferral account disposition proceeding. The proposed draft accounting order is provided at Exhibit A, Tab 10, Schedule 6.

As referenced in Exhibit A, Tab 6, the Term Up Provision proposal will result in a change to the M12 and C1 general terms and conditions ("GT&Cs"). Clean and blackline versions of the GT&Cs incorporating the Term Up Provision are provided in Exhibit A, Tab 10, Schedule 7. Both M12 pre-STAR and post-STAR GT&Cs are provided. For C1, only the post-STAR GT&Cs have been updated to incorporate the Term Up Provision as there is only one remaining contract that references the pre-STAR GT&Cs and that contract does not have renewal rights. Union requests approval of the changes to the GT&Cs as proposed, for implementation after approval through a subsequent rates or QRAM application process.

Filed: 2015-06-30
EB-2015-0200
Exhibit A
Tab 10
Schedule 1

UNION GAS LIMITED
Lobo D, Bright C and Dawn H Compressor Project Revenue Requirement

Line No.	Particulars ($000's)	2016 (a)	2017 (b)	2018 (c)
	Rate Base Investment			
1	Capital Expenditures	107,400	500,838	14,267
2	Average Investment	11,432	171,034	592,525
	Revenue Requirement Calculation:			
	Operating Expenses:			
3	Operating and Maintenance Expenses (1)	0	602	3,623
4	Depreciation Expense (2)	1,677	11,310	19,416
5	Property Taxes (3)	0	175	1,051
6	Total Operating Expenses	1,677	12,086	24,091
7	Required Return (5.77% x line 2) (4)	660	9,877	34,217
	Income Taxes:			
8	Income Taxes - Equity Return (5)	126	1,879	6,510
9	Income Taxes - Utility Timing Differences (6)	(2,610)	(17,084)	(20,468)
10	Total Income Taxes	(2,485)	(15,205)	(13,958)
11	Total Revenue Requirement (line 6 + line 7 + line 10)	(148)	6,758	44,350
12	Incremental Project Revenue (7)	-	2,925	17,551
13	Net Revenue Requirement (line 11 - line 12)	(148)	3,833	26,799

Notes:

(1) Expenses include salaries and wages, employee-related expenses, fleet costs, materials and operating expenses.

(2) Depreciation expense at 2013 Board-approved depreciation rates.

(3) Property taxes in 2018 include $0.366 million for the Dawn H compressor and facilities and $0.685 million for Lobo D and Bright C compressors and facilities.

(4) The required return of 5.77% assumes a capital structure of 64% long-term debt at 4.0% and 36% common equity at the 2013 Board-approved return of 8.93% (0.64 * 0.04 + 0.36 * 0.0893)

The 2018 required return calculation is as follows:
$592.525 million * 64% * 4.0% = $15.169 million plus
$592.525 million * 36% * 8.93% = $19.048 million for a total of $34.217 million.

(5) Taxes related to the equity component of the return at a tax rate of 25.5%.

(6) Taxes related to utility timing differences are negative as the capital cost allowance deduction in arriving at taxable income exceeds the provision of book depreciation in the year.

(7) Project revenue assumes an estimated M12 Dawn-Parkway rate of $2.937 GJ/mth, an M12 Kirkwall-Parkway rate of $0.517 GJ/mth and a Dawn Compression rate of $0.232 GJ/mth.

The 2018 revenue is calculated as follows:
M12 Dawn-Parkway demands of 441,778 GJ x $2.937 x 12 / 1000 = $15.570 million plus
C1 Dawn-Parkway demands (North T-Service) of 5,975 GJ x $2.937 x 12 / 1000 = $0.211 million plus
M12 Kirkwall-Parkway demands of 84,854 GJ x $0.517 x 12 / 1000 = $0.526 million plus
M12/C1 Dawn Compression demands of 447,753 GJ x $0.232 x 12 / 1000 = $1.247 million

UNION GAS LIMITED
2018 Cost Allocation Impacts of Lobo D, Bright C and Dawn H Compressor Project

Line No.	Particulars	Total Cost Allocation Impacts ($000's)	Cost Allocation Change in Demands (1) ($000's)	Dawn Station Transmission (2) Project Costs (4) ($000's)	Indirect Costs ($000's)	Total ($000's)	(%)	Dawn-Parkway Easterly Transmission (3) Project Costs (4) ($000's)	Indirect Costs ($000's)	Total ($000's)	(%)	Other Functional Classifications Project Costs (4) ($000's)	Indirect Costs ($000's)	Total ($000's)
		(a) = (b + e + i)	(b)	(c)	(d)	(e) = (c + d)	(f)	(g)	(h)	(i) = (g + h)	(j)	(k)	(l)	(m) = (k + l)
1	Rate M1	(5,439)	(670)	1,863	313	2,177	8.3%	1,633	258	1,890	5.3%	(4,228)	(4,608)	(8,836)
2	Rate M2	2	(225)	626	105	731	2.8%	548	87	635	1.8%	(623)	(517)	(1,139)
3	Rate M4	33	(65)	182	31	213	0.8%	159	25	185	0.5%	(151)	(148)	(299)
4	Rate M5	(291)	(1)	2	0	2	0.0%	2	0	2	0.0%	(133)	(161)	(294)
5	Rate M7	56	(30)	84	14	98	0.4%	74	12	85	0.2%	(51)	(45)	(97)
6	Rate M9	39	(11)	30	5	35	0.1%	26	4	30	0.1%	(9)	(7)	(16)
7	Rate M10	1	(0)	1	0	1	0.0%	1	0	1	0.0%	(0)	(1)	(1)
8	Rate T1	(50)	(32)	90	15	105	0.4%	79	12	91	0.3%	(111)	(103)	(214)
9	Rate T2	188	(210)	584	98	682	2.6%	511	81	592	1.7%	(484)	(391)	(875)
10	Rate T3	297	(76)	211	36	247	0.9%	185	29	214	0.6%	(57)	(32)	(89)
11	Subtotal - Union South	(5,164)	(1,321)	3,673	617	4,290	16.4%	3,218	508	3,726	10.5%	(5,847)	(6,012)	(11,859)
12	Excess Utility Space	(101)	-	-	-	-	0.0%	-	-	-	0.0%	(94)	(8)	(101)
13	Rate C1	(54)	-	-	-	-	0.0%	-	-	-	0.0%	(25)	(29)	(54)
14	Rate M12 (5)	52,591	1,871	17,785	2,988	20,773	79.3%	25,902	4,089	29,991	84.8%	(24)	(19)	(43)
15	Rate M13	(2)	-	-	-	-	0.0%	-	-	-	0.0%	(2)	(0)	(2)
16	Rate M16	(5)	-	-	-	-	0.0%	-	-	-	0.0%	(4)	(1)	(5)
17	Subtotal - Ex-franchise	52,429	1,871	17,785	2,988	20,773	79.3%	25,902	4,089	29,991	84.8%	(148)	(57)	(205)
18	Rate 01	(2,149)	(411)	730	123	853	3.3%	1,069	169	1,237	3.5%	(1,920)	(1,908)	(3,828)
19	Rate 10	(65)	(108)	191	32	223	0.9%	280	44	324	0.9%	(288)	(216)	(505)
20	Rate 20	(272)	(29)	51	9	60	0.2%	75	12	87	0.2%	(208)	(182)	(390)
21	Rate 100	(310)	(2)	4	1	4	0.0%	5	1	6	0.0%	(162)	(156)	(318)
22	Rate 25	(118)	-	-	-	-	0.0%	-	-	-	0.0%	(58)	(61)	(118)
23	Subtotal - Union North	(2,914)	(550)	976	164	1,140	4.3%	1,428	225	1,654	4.7%	(2,636)	(2,522)	(5,158)
24	In-franchise (line 11 + line 23)	(8,079)	(1,871)	4,649	781	5,430	20.7%	4,646	733	5,380	15.2%	(8,483)	(8,534)	(17,017)
25	Ex-franchise (line 17)	52,429	1,871	17,785	2,988	20,773	79.3%	25,902	4,089	29,991	84.8%	(148)	(57)	(205)
26	Total	44,350	(0)	22,434	3,769	26,203	100.0%	30,548	4,823	35,370	100.0%	(8,631)	(8,591)	(17,223)

Notes:

(1) Allocation of the 2013 Board-approved costs updated to include the incremental Project demands of 452,911 GJ/d.

(2) The Project costs of $22.434 million and the indirect costs of $3.769 million are allocated in proportion to the Dawn compression demand allocation provided at EB-2011-0210, Exhibit G3, Tab 5, Schedule 23, Updated, pages 7-8, line 5, updated to include the incremental demands of 492,911 GJ/d.

(3) The Project costs of $30.548 million and the indirect costs of $4.823 million are allocated in proportion to the Dawn-Parkway demand allocation provided at EB-2011-0210, Exhibit G3, Tab 5, Schedule 23, Updated, pages 7-8, line 5, updated to include the incremental demands of 492,911 GJ/d.

(4) The total 2018 Project costs of $44.350 million include $22.434 million directly allocated to the Dawn Station functional classification and $30.548 million directly allocated to the Dawn-Parkway Easterly functional classification and ($8.631) million of property and income taxes allocated to distribution, storage and other transmission-related functional classifications.

UNION GAS LIMITED
2018 General Service Bill Impacts
Rate Impacts of the Lobo D, Bright C and Dawn H Compressors Project
Annual Consumption of 2,200 m³

Line No.	Rate M1 - Particulars	EB-2015-0035 Approved 01-Apr-15 Total Bill (1) ($) (a)	- Proposed 01-Jan-18 Total Bill ($) (b)	Bill Impact ($) (c) = (b - a)	Bill Impact (%) (d) = (c / a)
	Delivery Charges				
1	Monthly Charge	252.00	252.00	-	
2	Delivery Commodity Charge	81.16	75.22	(5.93)	
3	Storage Services	16.32	15.81	(0.50)	
4	Total Delivery Charge	349.47	343.04	(6.44)	-1.8%
	Supply Charges				
5	Transportation to Union	77.43	77.43	-	
6	Commodity & Fuel	264.58	264.58	-	
7	Total Gas Supply Charge	342.01	342.01	-	
8	Total Bill (line 4 + line 7)	691.49	685.05	(6.44)	-0.9%
9	Impacts for Customer Notices - Sales (line 8)			(6.44)	
10	Impacts for Customer Notices - Direct Purchase (line 4)			(6.44)	

Line No.	Rate 01 Eastern Zone - Particulars	EB-2015-0035 Approved 01-Apr-15 Total Bill (1) ($) (a)	0 Proposed 01-Jan-18 Total Bill ($) (b)	Bill Impact ($) (c) = (b - a)	Bill Impact (%) (d) = (c / a)
	Delivery Charges				
11	Monthly Charge	252.00	252.00	-	
12	Delivery Commodity Charge	195.00	182.94	(12.06)	
13	Total Delivery Charge	447.00	434.94	(12.06)	-2.7%
	Supply Charges				
14	Transportation to Union	172.43	172.53	0.10	
15	Storage Services	95.59	99.28	3.70	
16	Subtotal	268.02	271.82	3.80	1.4%
17	Commodity & Fuel	264.80	264.80	-	
18	Total Gas Supply Charge (line 16 + line 17)	532.82	536.62	3.80	
19	Total Bill (line 13 + line 18)	979.82	971.56	(8.26)	-0.8%
20	Impacts for Customer Notices - Sales (line 19)			(8.26)	
21	Impacts for Customer Notices - Direct Purchase (line 13 + line 16)			(8.26)	

Notes:
(1) Calculated as per Appendix A, EB-2015-0035.

UNION GAS LIMITED
2018 Rate M12/M12-X/C1 Transportation Demand Charges Impacts of the
Lobo D, Bright C and Dawn H Compressor Project

Line No.	Services	EB-2015-0035 Approved ($/GJ/day) (1) (a)	EB-2015-0200 Proposed ($/GJ/day) (b)	Difference (c) = (b - a)	% Change (d) = (c / a)	EB-2015-0200 Including Parkway Projects ($/GJ/day) (2) (e)	Difference (f) = (e- a)	% Change (g) = (f / a)
1	M12/C1 Dawn to Kirkwall	0.072	0.088	0.016	21.6%	0.103	0.031	43.0%
2	M12/C1 Dawn to Parkway	0.086	0.102	0.017	19.4%	0.121	0.036	41.9%
3	M12/C1 Kirkwall to Parkway	0.014	0.015	0.001	7.4%	0.018	0.005	35.8%
4	C1 Parkway to Kirkwall	0.021	0.023	0.002	7.4%	0.029	0.008	35.8%
5	C1 Parkway to Dawn	0.021	0.023	0.002	7.4%	0.029	0.008	35.8%
6	M12-X	0.107	0.125	0.018	17.0%	0.150	0.043	40.7%

Notes:
(1) EB-2015-0035, Appendix A, Pages 14-16, column (c), effective April 1, 2015.
(2) Parkway Projects includes Parkway West, Brantford to Kirkwall Pipeline, Parkway D Compressor Project, Hamilton-Milton Pipeline and Lobo C Compressor.

UNION GAS LIMITED
Lobo D, Bright C and Dawn H Compressor Project Revenue Requirement by Rate Class

Line No.	Particulars ($000's)	2016	Variance	2017	Variance	2018
		(a)	(b) = (c - a)	(c)	(d) = (e - c)	(e)
1	Rate M1	(841)	(5,012)	(5,853)	414	(5,439)
2	Rate M2	(91)	(574)	(665)	667	2
3	Rate M4	(20)	(136)	(156)	189	33
4	Rate M5	(33)	(186)	(219)	(72)	(291)
5	Rate M7	(5)	(38)	(43)	100	56
6	Rate M9	0	(2)	(1)	40	39
7	Rate M10	(0)	(0)	(0)	1	1
8	Rate T1	(17)	(105)	(122)	72	(50)
9	Rate T2	(55)	(375)	(430)	618	188
10	Rate T3	6	7	13	284	297
11	Subtotal - Union South	(1,056)	(6,421)	(7,477)	2,312	(5,164)
12	Excess Utility Space	(12)	(61)	(73)	(28)	(101)
13	Rate C1	(4)	(24)	(28)	(26)	(54)
14	Rate M12	1,447	16,562	18,009	34,582	52,591
15	Rate M13	(0)	(2)	(2)	0	(2)
16	Rate M16	(1)	(3)	(4)	(1)	(5)
17	Subtotal - Ex-franchise	1,430	16,472	17,902	34,527	52,429
18	Rate 01	(382)	(2,290)	(2,672)	523	(2,149)
19	Rate 10	(48)	(302)	(350)	285	(65)
20	Rate 20	(42)	(257)	(299)	27	(272)
21	Rate 100	(37)	(217)	(254)	(56)	(310)
22	Rate 25	(13)	(79)	(92)	(26)	(118)
23	Subtotal - Union North	(523)	(3,144)	(3,667)	753	(2,914)
24	In-franchise	(1,578)	(9,566)	(11,144)	3,065	(8,079)
25	Ex-franchise	1,430	16,472	17,902	34,527	52,429
26	Total	(148)	6,906	6,758	37,592	44,350

UNION GAS LIMITED

Accounting Entries for
Dawn H/Lobo D/Bright C Compressor Project Costs
Deferral Account No. 179-XXX

Account numbers are from the Uniform System of Accounts for Gas Utilities, Class A prescribed under the Ontario Energy Board Act.

Debit	-	Account No.179-XXX Other Deferred Charges – Dawn H/Lobo D/Bright C Compressor Project Costs
Credit	-	Account No. 579 Miscellaneous Operating Revenue

To record, as a debit (credit) in Deferral Account No. 179-XXX, the difference between the actual revenue requirement related to the costs for the Dawn H/Lobo D/Bright C Compressor Project and the revenue requirement included in rates as approved by the Board.

Debit	-	Account No.179-XXX Other Deferred Charges – Dawn H/Lobo D/Bright C Compressor Project Costs
Credit	-	Account No. 323 Other Interest Expense

To record, as a debit (credit) in Deferral Account No. 179-XXX, interest on the balance in Deferral Account No. 179-XXX. Simple interest will be computed monthly on the opening balance in the said account in accordance with the methodology approved by the Board in EB-2006-0117.

SCHEDULE "A"

RATE M12
GENERAL TERMS & CONDITIONS

I. DEFINITIONS

Except where the context expressly requires or states another meaning, the following terms, when used in these General Terms & Conditions and in any contract into which these General Terms & Conditions are incorporated, shall be construed to have the following meanings:

1. "Contract" shall refer to the Contract to which these General Terms & Conditions shall apply, and into which they are incorporated;

2. "cubic metre" shall mean the volume of gas which occupies one cubic metre when such gas is at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

3. "day" shall mean a period of twenty-four (24) consecutive hours beginning at 9:00 a.m. Central Standard time. The reference date for any day shall be the calendar date upon which the twenty-four (24) hour period shall commence;

4. "delivery" shall mean any gas that is delivered by Union into Shipper's possession, or to the possession of Shipper's agent;

5. "firm" shall mean service not subject to curtailment or interruption except under Articles XI and XII of this Schedule "A";

6. "gas" shall mean gas as defined in the Ontario Energy Board Act, 1998, S.O. 1998, c.15, Sch. B, as amended, supplemented or re-enacted from time to time;

7. "gross heating value" shall mean the total heat expressed in megajoules per cubic metre (MJ/m^3) produced by the complete combustion at constant pressure of one (1) cubic metre of gas with air, with the gas free of water vapour and the temperature of the gas, air and products of combustion at standard temperature and all water formed by the combustion reaction condensed to the liquid state;

8. "interruptible service" shall mean service subject to curtailment or interruption, after notice, at any time;

9. “Interconnecting Pipeline” shall mean a pipeline that directly connects to the Union pipeline system;

10. "joule" (J) shall mean the work done when the point of application of a force of one (1) newton is displaced a distance of one (1) metre in the direction of the force. The term "megajoule" (MJ) shall mean 1,000,000 joules. The term “gigajoule” (GJ) shall mean 1,000,000,000 joules;

11. "limited interruptible service" shall mean gas service subject to interruption or curtailment on a limited number of days as specified in the Contract;

12. "m^3" shall mean cubic metre of gas and "10^3m^3" shall mean 1,000 cubic metres of gas;

13. "month" shall mean the period beginning at 9:00 a.m. Central Standard time on the first day of a calendar month and ending at 9:00 a.m. Central Standard time on the first day of the following calendar month;

14. "OEB" means the Ontario Energy Board;

15. "pascal" (Pa) shall mean the pressure produced when a force of one (1) newton is applied to an area of one (1) square metre. The term "kilopascal" (kPa) shall mean 1,000 pascals;

16. "receipt" shall mean any gas that is delivered into Union's possession, or the possession of Union’s agent;

17. "Shipper" shall have the meaning as defined in the Contract and shall also include Shipper's agent(s);

18. "TCPL" means TransCanada PipeLines Limited;

19. "cricondentherm hydrocarbon dewpoint" shall mean the highest hydrocarbon dewpoint temperature on the phase envelope;

20. "hydrocarbon dewpoint" shall mean temperature at a specific pressure where hydrocarbon vapour condensation begins;

21. "specific gravity" shall mean density of the gas divided by density of air, with both at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

22. "Wobbe Number" shall mean gross heating value of the gas divided by the square root of its specific gravity.

23. "Term-Up Notice" shall mean notice provided to Shipper by Union in accordance with Article XVI.

II. GAS QUALITY

1. Natural Gas: The minimum gross heating value of the gas delivered to/by Union hereunder, shall be thirty-six (36) megajoules per cubic metre. The maximum gross heating value of the gas delivered to/by Union hereunder shall be forty point two (40.2) megajoules per cubic metre. The gas to be delivered hereunder to Union may be a commingled supply from Shipper's gas sources of supply. The gas to be delivered by Union may be a commingled supply from Union's sources of gas supply; provided, however, that helium, natural gasoline, butane, propane and other hydrocarbons, except methane, may be removed prior to delivery to Shipper. Further, Union may subject, or permit the subjection of, the gas to compression, dehydration, cooling, cleaning and other processes.

2. Freedom from objectionable matter: The gas to be delivered to/by Union hereunder,

   a. shall be commercially free from bacteria, sand, dust, gums, crude oils, lubricating oils, liquids, chemicals or compounds used in the production, treatment, compression or dehydration of the gas or any other objectionable substance in sufficient quantity so as to render the gas toxic, unmerchantable or cause injury to or interference with the proper operation of the lines, regulators, meters or other appliances through which it flows,

   b. shall not contain more than seven (7) milligrams of hydrogen sulphide per cubic metre of gas nor more than four hundred and sixty (460) milligrams of total sulphur per cubic metre of gas,

   c. shall not contain more than five (5) milligrams of mercaptan sulphur per cubic metre of gas,

   d. shall not contain more than two point zero (2.0) molar percent by volume of carbon dioxide in the gas,

   e. shall not contain more than zero point four (0.4) molar percent by volume of oxygen in the gas,

   f. shall not contain more than zero point five (0.5) molar percent by volume of carbon monoxide in the gas,

   g. shall not contain more than four point zero (4.0) molar percent by volume of hydrogen in the gas,

   h. shall not contain more than sixty-five (65) milligrams of water vapour per cubic metre of gas,

   i. shall not have a cricondentherm hydrocarbon dewpoint exceeding minus eight (-8) degrees Celsius,

   j. shall have Wobbe Number from forty seven point fifty (47.50) megajoules per cubic metre of gas to fifty one point forty six (51.46) megajoules per cubic metre of gas, maximum of one point five (1.5) mole percent by volume of butane plus (C4+) in the gas, and maximum of four point zero (4.0) mole percent by volume of total inerts in the gas in order to be interchangeable with other Interconnecting Pipeline gas.

3. Non-conforming Gas: In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in this Article II.

4. Quality of Gas Received: The quality of the gas to be received by Union hereunder is to be of a merchantable quality and in accordance with the quality standards as set out by Union in this Article II, but, Union will also accept gas of a quality as set out in any other Interconnecting Pipeline's general terms and conditions, provided that all Interconnecting Pipelines accept such quality of gas. In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in Union's M12 Rate Schedule.

III. MEASUREMENTS

1. Storage, Transportation, and/or Sales Unit: The unit of the gas delivered to Union shall be a megajoule or a gigajoule. The unit of gas transported or stored by Union shall be a megajoule or a gigajoule. The unit of gas delivered by Union shall be a megajoule, a gigajoule, a cubic metre (m^3) or one thousand cubic metres (10^3m^3) at Union's discretion.

2. Determination of Volume and Energy:

   a. The volume and energy amounts determined under the Contract shall be determined in accordance with the Electricity and Gas Inspection Act (Canada), RSC 1985, c E-4- (the "Act") and the Electricity and Gas Inspection Regulations, SOR 86/131 (the "Regulations"), and any documents issued under the authority of the Act and Regulations and any amendments thereto.

   b. The supercompressibility factor shall be determined in accordance with either the "Manual for Determination of Supercompressibility Factors for Natural Gas" (PAR Project NX-19) published in 1962 or with American Gas Association Transmission Measurement Committee Report No. 8, Nov. 1992, at Union's discretion, all as amended from time to time.

   c. The volume and/or energy of the gas delivered to/by Union hereunder shall be determined by the measurement equipment designated in Article VII herein.

   d. Upon request by Union, Shipper shall obtain measurement of the total quantity of gas received by Union hereunder from the Interconnecting Pipeline. Such measurement shall be done in accordance with established practices between Union and the Interconnecting Pipeline.

IV. RECEIPT POINT AND DELIVERY POINT

1. Unless otherwise specified in the Contract, the point or points of receipt for all gas to be covered hereunder shall be on the outlet side of the measuring stations located at or near the point or points of connection specified in the Contract, where Union takes possession of the gas.

2. Unless otherwise specified in the Contract, the point or points of delivery for all gas to be covered hereunder shall be on the outlet side of the measuring stations located at or near the point or points of connection as specified in the Contract where Shipper takes possession of the gas.

V. POSSESSION OF AND RESPONSIBILITY FOR GAS

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VI. FACILITIES ON SHIPPER'S PROPERTY

Except under those conditions where Union is delivering to TCPL for TCPL or Shipper at Union's Parkway Point of Delivery, or to an Interconnecting Pipeline, or where otherwise specified in the Contract, the following will apply:

1. Construction and Maintenance: Union, at its own expense may construct, maintain and operate on Shipper's property at the delivery point a measuring station properly equipped with a meter or meters and any other necessary measuring equipment for properly measuring the gas redelivered under the Contract. Shipper will grant to Union a lease and/or rights-of-way over property of Shipper as required by Union to install such facilities and to connect same to Union's pipeline.

2. Entry: Union, its servants, agents and each of them may at any reasonable time on notice (except in cases of emergency) to Shipper or his duly authorized representative enter Shipper's property for the purpose of constructing, maintaining, removing, operating and/or repairing station equipment.

3. Property: The said station and equipment will be and remain the property of Union notwithstanding it is constructed on and attached to the realty of Shipper, and Union may at its own expense remove it upon termination of the Contract and will do so if so requested by Shipper.

VII. MEASURING EQUIPMENT

1. Metering by Union: Union will install and operate meters and related equipment as required and in accordance with the Act and Regulations referenced in Article III herein.

2. Metering by Others: In the event that all or any gas delivered to/by Union hereunder is measured by a meter that is owned and operated by an Interconnecting Pipeline, then Union and Shipper agree to accept that metering for the purpose of determining the volume and energy of gas delivered to/by Union on behalf of the Shipper. The standard of measurement and tests for the gas delivered to/by Union hereunder shall be in accordance with the general terms and conditions as incorporated in that Interconnecting Pipeline company's gas tariff as approved by their regulatory body.

3. Check Measuring Equipment: Shipper may install, maintain and operate, at the redelivery point, at its own expense, such check measuring equipment as desired, provided that such equipment shall be so installed as not to interfere with the operation of Union's measuring equipment at or near the delivery point, and shall be installed, maintained and operated in conformity with the same standards and specifications applicable to Union's metering facilities.

4. Rights of Parties: The measuring equipment installed by either party, together with any building erected by it for such equipment, shall be and remain its property. However, Union and Shipper shall have the right to have representatives present at the time of any installing, reading, cleaning, changing, repairing, inspecting, testing, calibrating, or adjusting done in connection with the other's measuring equipment used in measuring or checking the measurement of deliveries of gas to/by Union under the Contract. Either party will give the other party reasonable notice of its intention to carry out the acts herein specified. The records from such measuring equipment shall remain the property of their owner, but upon request each will submit to the other its records and charts, together with calculations therefrom, for inspection and verification, subject to return within ten (10) days after receipt thereof.

5. Calibration and Test of Measuring Equipment: The accuracy of Union's measuring equipment shall be verified by Union at reasonable intervals, and if requested, in the presence of representatives of Shipper, but Union shall not be required to verify the accuracy of such equipment more frequently than once in any thirty (30) day period. In the event either party notifies the other that it desires a special test of any measuring equipment, the parties shall co-operate to secure a prompt verification of the accuracy of such equipment. The expense of any such special test, if called for by Shipper, shall be borne by Shipper if the measuring equipment tested is found to be in error by not more than two per cent (2%). If, upon test, any measuring equipment is found to be in error by not more than two per cent (2%), previous recordings of such equipment shall be considered accurate in computing redeliveries of gas, but such equipment shall be adjusted at once to record as near to absolute accuracy as possible. If the test conducted shows a percentage of inaccuracy greater than two percent (2%), the financial adjustment, if any, shall be calculated in accordance with the Act and Regulations , as may be amended from time to time and in accordance with any successor statutes and regulations.

SCHEDULE "A"

6. Preservation of Metering Records: Union and Shipper shall each preserve for a period of at least six (6) years all test data, and other relevant records.

7. Error in Metering or Meter Failure: In the event of an error in metering or a meter failure, (such error or failure being determined through check measurement by Union or any other available method), then Shipper shall enforce its rights as Shipper with the Interconnecting Pipeline(s) to remedy such error or failure including enforcing any inspection and/or verification rights and procedures.

VIII. BILLING

1. Monthly Billing Date: Union shall render bills on or before the 10th day of each month for all services furnished during the preceding month. Such charges may be based on estimated quantities, if actual quantities are unavailable in time to prepare the billing. Union shall provide, in a succeeding month's billing, an adjustment based on any difference between actual quantities and estimated quantities, without any interest charge. If presentation of a bill to Shipper is delayed after the 10th day of the month, then the time of payment shall be extended accordingly, unless Shipper is responsible for such delay.

2. Right of Examination: Both Union and Shipper shall have the right to examine at any reasonable time the books, records and charts of the other to the extent necessary to verify the accuracy of any statement, chart or computation made under or pursuant to the provisions of the Contract.

IX. PAYMENTS

1. Monthly Payments: Shipper shall pay the invoiced amount directly into Union's bank account as directed on the invoice on or before the twentieth (20th) day of each month. If the payment date is not a business day, then payment must be received in Union's account on the first business day preceding the twentieth (20th) day of the month.

2. Remedies for Non-payment: Should Shipper fail to pay all of the amount of any bill as herein provided when such amount is due,

   a. Shipper shall pay to Union interest on the unpaid portion of the bill accruing at a rate per annum equal to the minimum commercial lending rate of Union's principal banker in effect from time to time from the due date until the date of payment.

   b. If such failure to pay continues for thirty (30) days after payment is due, Union, in addition to any other remedy it may have under the Contract, may suspend service(s) until such amount is paid. Notwithstanding such suspension, all demand charges shall continue to accrue hereunder as if such suspension were not in place.

   If Shipper in good faith disputes the amount of any such bill or part thereof Shipper shall pay to Union such amounts as it concedes to be correct. At any time thereafter, within twenty (20) days of a demand made by Union, Shipper shall furnish financial assurances satisfactory to Union, guaranteeing payment to Union of the amount ultimately found due upon such bill after a final determination. Such a final determination may be reached either by agreement, arbitration decision or judgement of the courts, as may be the case. Union shall not be entitled to suspend service(s) because of such non-payment unless and until default occurs in the conditions of such financial assurances or default occurs in payment of any other amount due to Union hereunder.

   Notwithstanding the foregoing paragraph(s), Shipper is not relieved from the obligation to continue its deliveries of gas to Union under the terms of any agreement, where Shipper has contracted to deliver specified quantities of gas to Union.

3. Billing Adjustments: If it shall be found that at any time or times Shipper has been overcharged or undercharged in any form whatsoever under the provisions of the Contract and Shipper shall have actually paid the bills containing such

overcharge or undercharge, Union shall refund the amount of any such overcharge and interest shall accrue from and including the first day of such overcharge as paid to the date of refund and shall be calculated but not compounded at a rate per annum determined each day during the calculation period to be equal to the minimum commercial lending rate of Union's principal banker, and the Shipper shall pay the amount of any such undercharge, but without interest. In the event Union renders a bill to Shipper based upon measurement estimates, the required adjustment to reflect actual measurement shall be made on the bill next following the determination of such actual measurement, without any charge of interest. In the event an error is discovered in the amount billed in any statement rendered by Union, such error shall be adjusted by Union. Such overcharge, undercharge or error shall be adjusted by Union on the bill next following its determination (where the term "bill" next following shall mean a bill rendered at least fourteen (14) days after the day of its determination), provided that claim therefore shall have been made within six (6) years from the date of the incorrect billing. In the event any refund is issued with Shipper's gas bill, the aforesaid date of refund shall be deemed to be the date of the issue of bill.

X. ARBITRATION

If and when any dispute, difference or question shall arise between the parties hereto touching the Contract or anything herein contained, or the construction hereof, or the rights, duties or liabilities of the parties in relation to any matter hereunder, the matter in dispute shall be submitted and referred to arbitration within ten (10) days after written request of either party. Upon such request each party shall appoint an arbitrator, and the two so appointed shall appoint a third. A majority decision of the arbitrators shall be final and binding upon both parties. In all other respects the provisions of the Arbitration Act of the Province of Ontario, or any act passed in amendment thereof or substitution therefore, shall apply to each such submission. Operations under the Contract shall continue, without prejudice, during any such arbitration and the costs attributable to such arbitration shall be shared equally by the parties hereto.

XI. FORCE MAJEURE

1. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or any other industrial disturbance, acts of the public enemy, sabotage, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of governments and people, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or lines of pipe, inability to obtain materials, supplies, permits or labour, any laws, orders, rules, regulations, acts or restraints of any governmental body or authority (civil or military), any act or omission that is excused by any event or occurrence of the character herein defined as constituting force majeure, any act or omission by parties not controlled by the party having the difficulty and any other similar cases not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to prevent or overcome.

2. In the event that either the Shipper or Union is rendered unable, in whole or in part, by force majeure, to perform or comply with any obligation or condition of the Contract, such party shall give notice and full particulars of such force majeure in writing delivered by hand, fax or other direct written electronic means to the other party as soon as possible after the occurrence of the cause relied on and subject to the provision of this Article.

3. Neither party shall be entitled to the benefit of the provisions of force majeure hereunder if any or all of the following circumstances prevail: the failure resulting in a condition of force majeure was caused by the negligence of the party claiming suspension; the failure was caused by the party claiming suspension where such party failed to remedy the condition by making all reasonable efforts (short of litigation, if such remedy would require litigation); the party claiming suspension failed to resume the performance of such condition obligations with reasonable dispatch; the failure was caused by lack of funds; the party claiming suspension did not, as soon as possible after determining, or within a period within which it should acting reasonably have determined, that the occurrence was in the nature of force majeure and would affect its ability to observe or perform any of its conditions or obligations under the Contract, give to the other party the notice required hereunder.

4. The party claiming suspension shall likewise give notice as soon as possible after the force majeure condition is remedied, to the extent that the same has been remedied, and that such party has resumed or is then in a position to resume the performance of the obligations and conditions of the Contract.

5. An event of force majeure on Union's system will excuse the failure to deliver gas by Union or the failure to accept gas by Union hereunder, and both parties shall be excused from performance of their obligations hereunder, except for payment obligations, to the extent of and for the duration of the force majeure.

6. Upstream or Downstream Force Majeure: An event of force majeure upstream or downstream of Union's system shall not relieve Shipper of any payment obligations.

7. Delay of Firm Transportation Services: Despite Article XI herein, if Union is prevented, by reason of an event of force majeure on Union's system from delivering gas on the Day or Days upon which Union has accepted gas from Shipper, Union shall thereafter make all reasonable efforts to deliver such quantities as soon as practicable and on such Day or Days as are agreed to by Shipper and Union. If Union accepts such gas on this basis, Shipper shall not receive any demand charge relief as contemplated under Article XI herein.

8. Demand Charge Relief for Firm Transportation Services: Despite Article XI herein, if on any Day Union fails to accept gas from Shipper by reason of an event of force majeure on Union's system and fails to deliver the quantity of gas nominated hereunder by Shipper up to the firm Contract Demand for that Contract, then for that Day the Monthly demand charge shall be reduced by an amount equal to the applicable Daily Demand Rate, as defined in this paragraph, multiplied by the difference between the quantity of gas actually delivered by Union during such Day and the quantity of gas which Shipper in good faith nominated on such Day. The term "Daily Demand Rate" shall mean the Monthly demand charge or equivalent pursuant to the M12 Rate Schedule divided by the number of days in the month for which such rate is being calculated.

9. If, due to the occurrence of an event of force majeure as outlined above, the capacity for gas deliveries by Union is impaired, it will be necessary for Union to curtail Shipper's gas receipts to Union hereunder, via proration based on utilization of such facilities for the Day. This prorating shall be determined by multiplying the capability of such facilities as available downstream of the impairment on the Day, by a fraction where the numerator is Shipper's nominated firm quantity and the denominator is the total of all such nominated firm quantities for nominated services and planned consumption for in-franchise customers on the Day. For the purposes of this Article XI, firm services shall mean all firm services provided by Union to in-franchise customers and ex-franchise shippers.

XII. DEFAULT AND TERMINATION

In case of the breach or non-observance or non-performance on the part of either party hereto of any covenant, proviso, condition, restriction or stipulation contained in the Contract (but not including herein failure to take or make delivery in whole or in part of the gas delivered to/by Union hereunder occasioned by any of the reasons provided for in Article XI hereof) which has not been waived by the other party, then and in every such case and as often as the same may happen, the Non-defaulting party may give written notice to the Defaulting party requiring it to remedy such default and in the event of the Defaulting party failing to remedy the same within a period of thirty (30) days from receipt of such notice, the Non-defaulting party may at its sole option declare the Contract to be terminated and thereupon the Contract shall be terminated and be null and void for all purposes other than and except as to any liability of the parties under the same incurred before and subsisting as of termination. The right hereby conferred upon each party shall be in addition to, and not in derogation of or in substitution for, any other right or remedy which the parties respectively at law or in equity shall or may possess.

XIII. MODIFICATION

Subject to Union's M12 Rate Schedule, Schedule A, Article XV and the ability of Union to amend the M12 Rate Schedule with the approval of the OEB, no amendment or modification of the Contract shall be effective unless the same shall be in writing and signed by each of the Shipper and Union.

XIV. NON-WAIVER AND FUTURE DEFAULT

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XV. LAWS, REGULATIONS AND ORDERS

The Contract and the respective rights and obligations of the parties hereto are subject to all present and future valid laws, orders, rules and regulations of any competent legislative body, or duly constituted authority now or hereafter having jurisdiction and the Contract shall be varied and amended to comply with or conform to any valid order or direction of any board, tribunal or administrative agency which affects any of the provisions of the Contract.

XVI. RENEWALS

1. Initial Term: Subject to Article XVI, Section 3 herein, Contracts with an Initial Term of five (5) years or greater will continue in full force and effect beyond the Initial Term, automatically renewing for a period of one (1) year, and every one (1) year thereafter. Shipper may reduce the Contract Demand or terminate the Contract with notice in writing by Shipper at least two (2) years prior to the expiration thereof.

2. Expansion Facilities: If at any time Union determines, acting reasonably, that:

    i) Expansion Facilities are required to increase the capacity or capabilities of flow on Union's pipeline system; and

    ii) the estimated cost of such Expansion Facilities will exceed $20 million;

    Union will provide a Term-Up Notice to Shipper if Union determines Shipper's Contract, which contains a right of renewal pursuant to Section 1 immediately above, may impact the design of the Expansion Facilities.

3. Term-Up Notice: Upon receipt of the Term-Up Notice, Shipper may elect, within sixty (60) days of receipt of the Term-Up Notice, to extend the existing term of the Contract for all or a portion of the Contract Demand for an additional period such that the new termination date of the Contract shall not be less than five (5) years after the expected in-service date of the Expansion Facilities. If Shipper does not elect to extend the existing term of the Contract within such sixty (60) day period, Shipper shall not be entitled to renew the Contract pursuant to Article XVI, Section 1 herein and the Contract shall expire at the end of the existing term.

SCHEDULE "A"

RATE M12
GENERAL TERMS & CONDITIONS

I. DEFINITIONS

Except where the context expressly requires or states another meaning, the following terms, when used in these General Terms & Conditions and in any contract into which these General Terms & Conditions are incorporated, shall be construed to have the following meanings:

1. "Contract" shall refer to the Contract to which these General Terms & Conditions shall apply, and into which they are incorporated;

2. "cubic metre" shall mean the volume of gas which occupies one cubic metre when such gas is at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

3. "day" shall mean a period of twenty-four (24) consecutive hours beginning at 9:00 a.m. Central Standard time. The reference date for any day shall be the calendar date upon which the twenty-four (24) hour period shall commence;

4. "delivery" shall mean any gas that is delivered by Union into Shipper's possession, or to the possession of Shipper's agent;

5. "firm" shall mean service not subject to curtailment or interruption except under Articles XI and XII of this Schedule "A";

6. "gas" shall mean gas as defined in the Ontario Energy Board Act, 1998, S.O. 1998, c.15, Sch. B, as amended, supplemented or re-enacted from time to time;

7. "gross heating value" shall mean the total heat expressed in megajoules per cubic metre (MJ/m^3) produced by the complete combustion at constant pressure of one (1) cubic metre of gas with air, with the gas free of water vapour and the temperature of the gas, air and products of combustion at standard temperature and all water formed by the combustion reaction condensed to the liquid state;

8. "interruptible service" shall mean service subject to curtailment or interruption, after notice, at any time;

9. “Interconnecting Pipeline” shall mean a pipeline that directly connects to the Union pipeline system;

10. "joule" (J) shall mean the work done when the point of application of a force of one (1) newton is displaced a distance of one (1) metre in the direction of the force. The term "megajoule" (MJ) shall mean 1,000,000 joules. The term “gigajoule” (GJ) shall mean 1,000,000,000 joules;

11. "limited interruptible service" shall mean gas service subject to interruption or curtailment on a limited number of days as specified in the Contract;

12. "m^3" shall mean cubic metre of gas and "10^3m^3" shall mean 1,000 cubic metres of gas;

13. "month" shall mean the period beginning at 9:00 a.m. Central Standard time on the first day of a calendar month and ending at 9:00 a.m. Central Standard time on the first day of the following calendar month;

14. "OEB" means the Ontario Energy Board;

15. "pascal" (Pa) shall mean the pressure produced when a force of one (1) newton is applied to an area of one (1) square metre. The term "kilopascal" (kPa) shall mean 1,000 pascals;

16. "receipt" shall mean any gas that is delivered into Union's possession, or the possession of Union’s agent;

17. "Shipper" shall have the meaning as defined in the Contract and shall also include Shipper's agent(s);

SCHEDULE "A"

18. "TCPL" means TransCanada PipeLines Limited;

19. "cricondentherm hydrocarbon dewpoint" shall mean the highest hydrocarbon dewpoint temperature on the phase envelope;

20. "hydrocarbon dewpoint" shall mean temperature at a specific pressure where hydrocarbon vapour condensation begins;

21. "specific gravity" shall mean density of the gas divided by density of air, with both at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

22. "Wobbe Number" shall mean gross heating value of the gas divided by the square root of its specific gravity.

23. "Term-Up Notice" shall mean notice provided to Shipper by Union in accordance with Article XVI.

II. GAS QUALITY

1. Natural Gas: The minimum gross heating value of the gas delivered to/by Union hereunder, shall be thirty-six (36) megajoules per cubic metre. The maximum gross heating value of the gas delivered to/by Union hereunder shall be forty point two (40.2) megajoules per cubic metre. The gas to be delivered hereunder to Union may be a commingled supply from Shipper's gas sources of supply. The gas to be delivered by Union may be a commingled supply from Union's sources of gas supply; provided, however, that helium, natural gasoline, butane, propane and other hydrocarbons, except methane, may be removed prior to delivery to Shipper. Further, Union may subject, or permit the subjection of, the gas to compression, dehydration, cooling, cleaning and other processes.

2. Freedom from objectionable matter: The gas to be delivered to/by Union hereunder,

   a. shall be commercially free from bacteria, sand, dust, gums, crude oils, lubricating oils, liquids, chemicals or compounds used in the production, treatment, compression or dehydration of the gas or any other objectionable substance in sufficient quantity so as to render the gas toxic, unmerchantable or cause injury to or interference with the proper operation of the lines, regulators, meters or other appliances through which it flows,

   b. shall not contain more than seven (7) milligrams of hydrogen sulphide per cubic metre of gas nor more than four hundred and sixty (460) milligrams of total sulphur per cubic metre of gas,

   c. shall not contain more than five (5) milligrams of mercaptan sulphur per cubic metre of gas,

   d. shall not contain more than two point zero (2.0) molar percent by volume of carbon dioxide in the gas,

   e. shall not contain more than zero point four (0.4) molar percent by volume of oxygen in the gas,

   f. shall not contain more than zero point five (0.5) molar percent by volume of carbon monoxide in the gas,

   g. shall not contain more than four point zero (4.0) molar percent by volume of hydrogen in the gas,

   h. shall not contain more than sixty-five (65) milligrams of water vapour per cubic metre of gas,

   i. shall not have a cricondentherm hydrocarbon dewpoint exceeding minus eight (-8) degrees Celsius,

   j. shall have Wobbe Number from forty seven point fifty (47.50) megajoules per cubic metre of gas to fifty one point forty six (51.46) megajoules per cubic metre of gas, maximum of one point five (1.5) mole percent by volume of butane plus (C4+) in the gas, and maximum of four point zero (4.0) mole percent by volume of total inerts in the gas in order to be interchangeable with other Interconnecting Pipeline gas.

3. Non-conforming Gas: In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in this Article II.

4. Quality of Gas Received: The quality of the gas to be received by Union hereunder is to be of a merchantable quality and in accordance with the quality standards as set out by Union in this Article II, but, Union will also accept gas of a quality as set out in any other Interconnecting Pipeline's general terms and conditions, provided that all Interconnecting Pipelines accept such quality of gas. In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in Union's M12 Rate Schedule.

III. MEASUREMENTS

1. Storage, Transportation, and/or Sales Unit: The unit of the gas delivered to Union shall be a megajoule or a gigajoule. The unit of gas transported or stored by Union shall be a megajoule or a gigajoule. The unit of gas delivered by Union shall be a megajoule, a gigajoule, a cubic metre (m^3) or one thousand cubic metres (10^3m^3) at Union's discretion.

2. Determination of Volume and Energy:

   a. The volume and energy amounts determined under the Contract shall be determined in accordance with the Electricity and Gas Inspection Act (Canada), RSC 1985, c E-4- (the "Act") and the Electricity and Gas Inspection Regulations, SOR 86/131 (the "Regulations"), and any documents issued under the authority of the Act and Regulations and any amendments thereto.

   b. The supercompressibility factor shall be determined in accordance with either the "Manual for Determination of Supercompressibility Factors for Natural Gas" (PAR Project NX-19) published in 1962 or with American Gas Association Transmission Measurement Committee Report No. 8, Nov. 1992, at Union's discretion, all as amended from time to time.

   c. The volume and/or energy of the gas delivered to/by Union hereunder shall be determined by the measurement equipment designated in Article VII herein.

   d. Upon request by Union, Shipper shall obtain measurement of the total quantity of gas received by Union hereunder from the Interconnecting Pipeline. Such measurement shall be done in accordance with established practices between Union and the Interconnecting Pipeline.

IV. RECEIPT POINT AND DELIVERY POINT

1. Unless otherwise specified in the Contract, the point or points of receipt for all gas to be covered hereunder shall be on the outlet side of the measuring stations located at or near the point or points of connection specified in the Contract, where Union takes possession of the gas.

2. Unless otherwise specified in the Contract, the point or points of delivery for all gas to be covered hereunder shall be on the outlet side of the measuring stations located at or near the point or points of connection as specified in the Contract where Shipper takes possession of the gas.

V. POSSESSION OF AND RESPONSIBILITY FOR GAS

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VI. FACILITIES ON SHIPPER'S PROPERTY

Except under those conditions where Union is delivering to TCPL for TCPL or Shipper at Union's Parkway Point of Delivery, or to an Interconnecting Pipeline, or where otherwise specified in the Contract, the following will apply:

1. Construction and Maintenance: Union, at its own expense may construct, maintain and operate on Shipper's property at the delivery point a measuring station properly equipped with a meter or meters and any other necessary measuring equipment for properly measuring the gas redelivered under the Contract. Shipper will grant to Union a lease and/or rights-of-way over property of Shipper as required by Union to install such facilities and to connect same to Union's pipeline.

2. Entry: Union, its servants, agents and each of them may at any reasonable time on notice (except in cases of emergency) to Shipper or his duly authorized representative enter Shipper's property for the purpose of constructing, maintaining, removing, operating and/or repairing station equipment.

3. Property: The said station and equipment will be and remain the property of Union notwithstanding it is constructed on and attached to the realty of Shipper, and Union may at its own expense remove it upon termination of the Contract and will do so if so requested by Shipper.

VII. MEASURING EQUIPMENT

1. Metering by Union: Union will install and operate meters and related equipment as required and in accordance with the Act and Regulations referenced in Article III herein.

2. Metering by Others: In the event that all or any gas delivered to/by Union hereunder is measured by a meter that is owned and operated by an Interconnecting Pipeline, then Union and Shipper agree to accept that metering for the purpose of determining the volume and energy of gas delivered to/by Union on behalf of the Shipper. The standard of measurement and tests for the gas delivered to/by Union hereunder shall be in accordance with the general terms and conditions as incorporated in that Interconnecting Pipeline company's gas tariff as approved by their regulatory body.

3. Check Measuring Equipment: Shipper may install, maintain and operate, at the redelivery point, at its own expense, such check measuring equipment as desired, provided that such equipment shall be so installed as not to interfere with the operation of Union's measuring equipment at or near the delivery point, and shall be installed, maintained and operated in conformity with the same standards and specifications applicable to Union's metering facilities.

4. Rights of Parties: The measuring equipment installed by either party, together with any building erected by it for such equipment, shall be and remain its property. However, Union and Shipper shall have the right to have representatives present at the time of any installing, reading, cleaning, changing, repairing, inspecting, testing, calibrating, or adjusting done in connection with the other's measuring equipment used in measuring or checking the measurement of deliveries of gas to/by Union under the Contract. Either party will give the other party reasonable notice of its intention to carry out the acts herein specified. The records from such measuring equipment shall remain the property of their owner, but upon request each will submit to the other its records and charts, together with calculations therefrom, for inspection and verification, subject to return within ten (10) days after receipt thereof.

5. Calibration and Test of Measuring Equipment: The accuracy of Union's measuring equipment shall be verified by Union at reasonable intervals, and if requested, in the presence of representatives of Shipper, but Union shall not be required to verify the accuracy of such equipment more frequently than once in any thirty (30) day period. In the event either party notifies the other that it desires a special test of any measuring equipment, the parties shall co-operate to secure a prompt verification of the accuracy of such equipment. The expense of any such special test, if called for by Shipper, shall be borne by Shipper if the measuring equipment tested is found to be in error by not more than two per cent (2%). If, upon test, any measuring equipment is found to be in error by not more than two per cent (2%), previous recordings of such equipment shall be considered accurate in computing redeliveries of gas, but such equipment shall be adjusted at once to record as near to absolute accuracy as possible. If the test conducted shows a percentage of inaccuracy greater than two percent (2%), the financial adjustment, if any, shall be calculated in accordance with the Act and Regulations , as may be amended from time to time and in accordance with any successor statutes and regulations.

6. Preservation of Metering Records: Union and Shipper shall each preserve for a period of at least six (6) years all test data, and other relevant records.

7. Error in Metering or Meter Failure: In the event of an error in metering or a meter failure, (such error or failure being determined through check measurement by Union or any other available method), then Shipper shall enforce its rights as Shipper with the Interconnecting Pipeline(s) to remedy such error or failure including enforcing any inspection and/or verification rights and procedures.

VIII. BILLING

1. Monthly Billing Date: Union shall render bills on or before the 10th day of each month for all services furnished during the preceding month. Such charges may be based on estimated quantities, if actual quantities are unavailable in time to prepare the billing. Union shall provide, in a succeeding month's billing, an adjustment based on any difference between actual quantities and estimated quantities, without any interest charge. If presentation of a bill to Shipper is delayed after the 10th day of the month, then the time of payment shall be extended accordingly, unless Shipper is responsible for such delay.

2. Right of Examination: Both Union and Shipper shall have the right to examine at any reasonable time the books, records and charts of the other to the extent necessary to verify the accuracy of any statement, chart or computation made under or pursuant to the provisions of the Contract.

IX. PAYMENTS

1. Monthly Payments: Shipper shall pay the invoiced amount directly into Union's bank account as directed on the invoice on or before the twentieth (20th) day of each month. If the payment date is not a business day, then payment must be received in Union's account on the first business day preceding the twentieth (20th) day of the month.

2. Remedies for Non-payment: Should Shipper fail to pay all of the amount of any bill as herein provided when such amount is due,

   a. Shipper shall pay to Union interest on the unpaid portion of the bill accruing at a rate per annum equal to the minimum commercial lending rate of Union's principal banker in effect from time to time from the due date until the date of payment.

   b. If such failure to pay continues for thirty (30) days after payment is due, Union, in addition to any other remedy it may have under the Contract, may suspend service(s) until such amount is paid. Notwithstanding such suspension, all demand charges shall continue to accrue hereunder as if such suspension were not in place.

   If Shipper in good faith disputes the amount of any such bill or part thereof Shipper shall pay to Union such amounts as it concedes to be correct. At any time thereafter, within twenty (20) days of a demand made by Union, Shipper shall furnish financial assurances satisfactory to Union, guaranteeing payment to Union of the amount ultimately found due upon such bill after a final determination. Such a final determination may be reached either by agreement, arbitration decision or judgement of the courts, as may be the case. Union shall not be entitled to suspend service(s) because of such non-payment unless and until default occurs in the conditions of such financial assurances or default occurs in payment of any other amount due to Union hereunder.

   Notwithstanding the foregoing paragraph(s), Shipper is not relieved from the obligation to continue its deliveries of gas to Union under the terms of any agreement, where Shipper has contracted to deliver specified quantities of gas to Union.

3. Billing Adjustments: If it shall be found that at any time or times Shipper has been overcharged or undercharged in any form whatsoever under the provisions of the Contract and Shipper shall have actually paid the bills containing such

overcharge or undercharge, Union shall refund the amount of any such overcharge and interest shall accrue from and including the first day of such overcharge as paid to the date of refund and shall be calculated but not compounded at a rate per annum determined each day during the calculation period to be equal to the minimum commercial lending rate of Union's principal banker, and the Shipper shall pay the amount of any such undercharge, but without interest. In the event Union renders a bill to Shipper based upon measurement estimates, the required adjustment to reflect actual measurement shall be made on the bill next following the determination of such actual measurement, without any charge of interest. In the event an error is discovered in the amount billed in any statement rendered by Union, such error shall be adjusted by Union. Such overcharge, undercharge or error shall be adjusted by Union on the bill next following its determination (where the term "bill" next following shall mean a bill rendered at least fourteen (14) days after the day of its determination), provided that claim therefore shall have been made within six (6) years from the date of the incorrect billing. In the event any refund is issued with Shipper's gas bill, the aforesaid date of refund shall be deemed to be the date of the issue of bill.

X. ARBITRATION

If and when any dispute, difference or question shall arise between the parties hereto touching the Contract or anything herein contained, or the construction hereof, or the rights, duties or liabilities of the parties in relation to any matter hereunder, the matter in dispute shall be submitted and referred to arbitration within ten (10) days after written request of either party. Upon such request each party shall appoint an arbitrator, and the two so appointed shall appoint a third. A majority decision of the arbitrators shall be final and binding upon both parties. In all other respects the provisions of the Arbitration Act of the Province of Ontario, or any act passed in amendment thereof or substitution therefore, shall apply to each such submission. Operations under the Contract shall continue, without prejudice, during any such arbitration and the costs attributable to such arbitration shall be shared equally by the parties hereto.

XI. FORCE MAJEURE

1. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or any other industrial disturbance, acts of the public enemy, sabotage, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of governments and people, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or lines of pipe, inability to obtain materials, supplies, permits or labour, any laws, orders, rules, regulations, acts or restraints of any governmental body or authority (civil or military), any act or omission that is excused by any event or occurrence of the character herein defined as constituting force majeure, any act or omission by parties not controlled by the party having the difficulty and any other similar cases not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to prevent or overcome.

2. In the event that either the Shipper or Union is rendered unable, in whole or in part, by force majeure, to perform or comply with any obligation or condition of the Contract, such party shall give notice and full particulars of such force majeure in writing delivered by hand, fax or other direct written electronic means to the other party as soon as possible after the occurrence of the cause relied on and subject to the provision of this Article.

3. Neither party shall be entitled to the benefit of the provisions of force majeure hereunder if any or all of the following circumstances prevail: the failure resulting in a condition of force majeure was caused by the negligence of the party claiming suspension; the failure was caused by the party claiming suspension where such party failed to remedy the condition by making all reasonable efforts (short of litigation, if such remedy would require litigation); the party claiming suspension failed to resume the performance of such condition obligations with reasonable dispatch; the failure was caused by lack of funds; the party claiming suspension did not, as soon as possible after determining, or within a period within which it should acting reasonably have determined, that the occurrence was in the nature of force majeure and would affect its ability to observe or perform any of its conditions or obligations under the Contract, give to the other party the notice required hereunder.

4. The party claiming suspension shall likewise give notice as soon as possible after the force majeure condition is remedied, to the extent that the same has been remedied, and that such party has resumed or is then in a position to resume the performance of the obligations and conditions of the Contract.

5. An event of force majeure on Union's system will excuse the failure to deliver gas by Union or the failure to accept gas by Union hereunder, and both parties shall be excused from performance of their obligations hereunder, except for payment obligations, to the extent of and for the duration of the force majeure.

6. Upstream or Downstream Force Majeure: An event of force majeure upstream or downstream of Union's system shall not relieve Shipper of any payment obligations.

7. Delay of Firm Transportation Services: Despite Article XI herein, if Union is prevented, by reason of an event of force majeure on Union's system from delivering gas on the Day or Days upon which Union has accepted gas from Shipper, Union shall thereafter make all reasonable efforts to deliver such quantities as soon as practicable and on such Day or Days as are agreed to by Shipper and Union. If Union accepts such gas on this basis, Shipper shall not receive any demand charge relief as contemplated under Article XI herein.

8. Demand Charge Relief for Firm Transportation Services: Despite Article XI herein, if on any Day Union fails to accept gas from Shipper by reason of an event of force majeure on Union's system and fails to deliver the quantity of gas nominated hereunder by Shipper up to the firm Contract Demand for that Contract, then for that Day the Monthly demand charge shall be reduced by an amount equal to the applicable Daily Demand Rate, as defined in this paragraph, multiplied by the difference between the quantity of gas actually delivered by Union during such Day and the quantity of gas which Shipper in good faith nominated on such Day. The term "Daily Demand Rate" shall mean the Monthly demand charge or equivalent pursuant to the M12 Rate Schedule divided by the number of days in the month for which such rate is being calculated.

9. If, due to the occurrence of an event of force majeure as outlined above, the capacity for gas deliveries by Union is impaired, it will be necessary for Union to curtail Shipper's gas receipts to Union hereunder, via proration based on utilization of such facilities for the Day. This prorating shall be determined by multiplying the capability of such facilities as available downstream of the impairment on the Day, by a fraction where the numerator is Shipper's nominated firm quantity and the denominator is the total of all such nominated firm quantities for nominated services and planned consumption for in-franchise customers on the Day. For the purposes of this Article XI, firm services shall mean all firm services provided by Union to in-franchise customers and ex-franchise shippers.

XII. DEFAULT AND TERMINATION

In case of the breach or non-observance or non-performance on the part of either party hereto of any covenant, proviso, condition, restriction or stipulation contained in the Contract (but not including herein failure to take or make delivery in whole or in part of the gas delivered to/by Union hereunder occasioned by any of the reasons provided for in Article XI hereof) which has not been waived by the other party, then and in every such case and as often as the same may happen, the Non-defaulting party may give written notice to the Defaulting party requiring it to remedy such default and in the event of the Defaulting party failing to remedy the same within a period of thirty (30) days from receipt of such notice, the Non-defaulting party may at its sole option declare the Contract to be terminated and thereupon the Contract shall be terminated and be null and void for all purposes other than and except as to any liability of the parties under the same incurred before and subsisting as of termination. The right hereby conferred upon each party shall be in addition to, and not in derogation of or in substitution for, any other right or remedy which the parties respectively at law or in equity shall or may possess.

XIII. MODIFICATION

Subject to Union's M12 Rate Schedule, Schedule A, Article XV and the ability of Union to amend the M12 Rate Schedule with the approval of the OEB, no amendment or modification of the Contract shall be effective unless the same shall be in writing and signed by each of the Shipper and Union.

XIV. NON-WAIVER AND FUTURE DEFAULT

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XV. LAWS, REGULATIONS AND ORDERS

The Contract and the respective rights and obligations of the parties hereto are subject to all present and future valid laws, orders, rules and regulations of any competent legislative body, or duly constituted authority now or hereafter having jurisdiction and the Contract shall be varied and amended to comply with or conform to any valid order or direction of any board, tribunal or administrative agency which affects any of the provisions of the Contract.

XVI. RENEWALS

1. Initial Term: Subject to Article XVI, Section 3 herein, Contracts with an Initial Term of five (5) years or greater will continue in full force and effect beyond the Initial Term, automatically renewing for a period of one (1) year, and every one (1) year thereafter. Shipper may reduce the Contract Demand or terminate the Contract with notice in writing by Shipper at least two (2) years prior to the expiration thereof.

2. Expansion Facilities: If at any time Union determines, acting reasonably, that:

   i) Expansion Facilities are required to increase the capacity or capabilities of flow on Union's pipeline system; and

   ii) the estimated cost of such Expansion Facilities will exceed $20 million;

   Union will provide a Term-Up Notice to Shipper if Union determines Shipper's Contract, which contains a right of renewal pursuant to Section 1 immediately above, may impact the design of the Expansion Facilities.

3. Term-Up Notice: Upon receipt of the Term-Up Notice, Shipper may elect, within sixty (60) days of receipt of the Term-Up Notice, to extend the existing term of the Contract for all or a portion of the Contract Demand for an additional period such that the new termination date of the Contract shall not be less than five (5) years after the expected in-service date of the Expansion Facilities. If Shipper does not elect to extend the existing term of the Contract within such sixty (60) day period, Shipper shall not be entitled to renew the Contract pursuant to Article XVI, Section 1 herein and the Contract shall expire at the end of the existing term.

SCHEDULE "A 2010"

RATE M12
GENERAL TERMS & CONDITIONS

I. DEFINITIONS

Except where the context expressly requires or states another meaning, the following terms, when used in these General Terms & Conditions and in any contract into which these General Terms & Conditions are incorporated, shall be construed to have the following meanings:

"Authorized Overrun" shall mean the amount by which Shipper's Authorized Quantity exceeds the Contract Demand;

"Available Capacity" shall mean at any time, Union's remaining available capacity to provide Transportation Services;

"Business Day" shall mean any day, other than Saturday, Sunday or any days on which national banks in the Province of Ontario are authorized to close;

"Contract" shall refer to the Contract to which these General Terms & Conditions shall apply, and into which they are incorporated;

"Contract Year" shall mean a period of three hundred and sixty-five (365) consecutive days; provided however, that any such period which contains a date of February 29 shall consist of three hundred and sixty-six (366) consecutive days, commencing on November 1 of each year; except for the first Contract Year which shall commence on the Commencement Date and end on the first October 31 that follows such date;

"cricondentherm hydrocarbon dewpoint" shall mean the highest hydrocarbon dewpoint temperature on the phase envelope;

"cubic metre" shall mean the volume of gas which occupies one cubic metre when such gas is at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

"Day" shall mean a period of twenty-four (24) consecutive hours beginning at 10:00 a.m. Eastern Clock Time. The reference date for any Day shall be the calendar date upon which the twenty-four (24) hour period shall commence;

"delivery" shall mean any gas that is delivered by Union into Shipper's possession, or to the possession of Shipper's agent;

"Eastern Clock Time" shall mean the local clock time in the Eastern Time Zone on any Day;

"Expansion Facilities" shall mean any new facilities to be constructed by Union in order to provide Transportation Services;

"firm" shall mean service not subject to curtailment or interruption except under Articles XI, XII and XVIII herein;

"gas" shall mean gas as defined in the Ontario Energy Board Act, 1998, S.O. 1998, c.15, Sch. B, as amended, supplemented or re-enacted from time to time;

"gross heating value" shall mean the total heat expressed in megajoules per cubic metre (MJ/m^3) produced by the complete combustion at constant pressure of one (1) cubic metre of gas with air, with the gas free of water vapour and the temperature of the gas, air and products of combustion at standard temperature and all water formed by the combustion reaction condensed to the liquid state;

"hydrocarbon dewpoint" shall mean temperature at a specific pressure where hydrocarbon vapour condensation begins;

"Interruptible Service HUB Contract" shall mean a contract between Shipper and Union under which Union provides interruptible HUB service;

"interruptible service" or "Interruptible" shall mean service subject to curtailment or interruption, after notice, at any time;

"Interconnecting Pipeline" shall mean a pipeline that directly connects to the Union pipeline system;

"joule" (J) shall mean the work done when the point of application of a force of one (1) newton is displaced a distance of one (1) metre in the direction of the force. The term "megajoule" (MJ) shall mean 1,000,000 joules. The term "gigajoule" (GJ) shall mean 1,000,000,000 joules;

"Loaned Quantities" shall mean those quantities of gas loaned to Shipper under the Facilitating Agreement;

"m^3" shall mean cubic metre of gas and "10^3m^3" shall mean 1,000 cubic metres of gas;

"Month" shall mean the period beginning at 10:00 a.m. Eastern Clock Time on the first day of a calendar month and ending at 10:00 a.m. Eastern Clock Time on the first day of the following calendar month;

"NAESB" shall mean North American Energy Standards Board;

"OEB" means the Ontario Energy Board;

"Open Season" or "open season" shall mean an open access auction or bidding process held by Union as a method of allocating capacity;

"pascal" (Pa) shall mean the pressure produced when a force of one (1) newton is applied to an area of one (1) square metre. The term "kilopascal" (kPa) shall mean 1,000 pascals;

"receipt" shall mean any gas that is delivered into Union's possession, or the possession of Union's agent;

"Shipper" shall have the meaning as defined in the Contract, and shall also include Shipper's agent(s);

"specific gravity" shall mean density of the gas divided by density of air, with both at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

"Taxes" shall mean any tax (other than tax on income or tax on property), duty, royalty, levy, license, fee or charge not included in the charges and rates as per the applicable rate schedule (including but not limited to charges under any form of cap and trade, carbon tax, or similar system) and that is levied, assessed or made by any governmental authority on the gas itself, or the act, right, or privilege of producing, severing, gathering, storing, transporting, handling, selling or delivering gas under the Contract;

"TCPL" means TransCanada PipeLines Limited;

"Term-Up Notice" shall mean notice provided to Shipper by Union in accordance with Article XVII.

"Wobbe Number" shall mean gross heating value of the gas divided by the square root of its specific gravity.

II. GAS QUALITY

1. Natural Gas: The minimum gross heating value of the gas delivered to/by Union hereunder, shall be thirty-six (36) megajoules per cubic metre. The maximum gross heating value of the gas delivered to/by Union hereunder shall be forty point two (40.2) megajoules per cubic metre. The gas to be delivered hereunder to Union may be a commingled supply from Shipper's gas sources of supply. The gas to be delivered by Union may be a commingled supply from Union's sources of gas supply; provided, however, that helium, natural gasoline, butane, propane and other hydrocarbons, except methane, may be removed prior to delivery to Shipper. Further, Union may subject, or permit the subjection of, the gas to compression, dehydration, cooling, cleaning and other processes.

2. Freedom from objectionable matter: The gas to be delivered to/by Union hereunder,

   a. shall be commercially free from bacteria, sand, dust, gums, crude oils, lubricating oils, liquids, chemicals or compounds used in the production, treatment, compression or dehydration of the gas or any other objectionable

substance in sufficient quantity so as to render the gas toxic, unmerchantable or cause injury to, or interference with, the proper operation of the lines, regulators, meters or other appliances through which it flows,

b. shall not contain more than seven (7) milligrams of hydrogen sulphide per cubic metre of gas, nor more than four hundred and sixty (460) milligrams of total sulphur per cubic metre of gas,

c. shall not contain more than five (5) milligrams of mercaptan sulphur per cubic metre of gas,

d. shall not contain more than two point zero (2.0) molar percent by volume of carbon dioxide in the gas,

e. shall not contain more than zero point four (0.4) molar percent by volume of oxygen in the gas,

f. shall not contain more than zero point five (0.5) molar percent by volume of carbon monoxide in the gas,

g. shall not contain more than four point zero (4.0) molar percent by volume of hydrogen in the gas,

h. shall not contain more than sixty-five (65) milligrams of water vapour per cubic metre of gas,

i. shall not have a cricondentherm hydrocarbon dewpoint exceeding minus eight (-8) degrees Celsius,

j. shall have Wobbe Number from forty seven point fifty (47.50) megajoules per cubic metre of gas to fifty one point forty six (51.46) megajoules per cubic metre of gas, maximum of one point five (1.5) mole percent by volume of butane plus (C4+) in the gas, and maximum of four point zero (4.0) mole percent by volume of total inerts in the gas in order to be interchangeable with other Interconnecting Pipeline gas.

3. Non-conforming Gas: In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in this Article II.

4. Quality of Gas Received: The quality of the gas to be received by Union hereunder is to be of a merchantable quality and in accordance with the quality standards as set out by Union in this Article II, but, Union will also accept gas of a quality as set out in any other Interconnecting Pipeline's general terms and conditions, provided that all Interconnecting Pipelines accept such quality of gas. In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in Union's M12 Rate Schedule.

III. MEASUREMENTS

1. Storage, Transportation, and/or Sales Unit: The unit of the gas delivered to Union shall be a megajoule or a gigajoule. The unit of gas transported or stored by Union shall be a megajoule or a gigajoule. The unit of gas delivered by Union shall be a megajoule, a gigajoule, a cubic metre (m^3) or one thousand cubic metres (10^3m^3) at Union's discretion.

2. Determination of Volume and Energy:

a. The volume and energy amounts determined under the Contract shall be determined in accordance with the Electricity and Gas Inspection Act (Canada), RSC 1985, c E-4- (the "**Act**") and the Electricity and Gas Inspection Regulations, SOR 86/131 (the "**Regulations**"), and any documents issued under the authority of the Act and Regulations and any amendments thereto.

b. The supercompressibility factor shall be determined in accordance with either the "Manual for Determination of Supercompressibility Factors for Natural Gas" (PAR Project NX-19) published in 1962 or with American Gas Association Transmission Measurement Committee Report No. 8, Nov. 1992, at Union's discretion, all as amended from time to time.

c. The volume and/or energy of the gas delivered to/by Union hereunder shall be determined by the measurement equipment designated in Article VII herein.

d. Upon request by Union, Shipper shall obtain measurement of the total quantity of gas received by Union hereunder from the Interconnecting Pipeline. Such measurement shall be done in accordance with established practices between Union and the Interconnecting Pipeline.

IV. RECEIPT POINT AND DELIVERY POINT

1. Unless otherwise specified in the Contract, the point or points of receipt and point or points of delivery for all gas to be covered hereunder shall be on the outlet side of the measuring stations located at or near the point or points of connection specified in the Contract, where possession of the gas changes from one party to the other, and as per Schedule "D 2010".

V. POSSESSION OF AND RESPONSIBILITY FOR GAS

1. Union accepts no responsibility for any gas prior to such gas being delivered to Union at the Receipt Point or after its delivery by Union at the Delivery Point. As between the parties hereto, Union shall be deemed to be in control and possession of and responsible for all such gas from the time that such gas enters Union's system until such gas is delivered to Shipper.

2. Shipper agrees that Union is not a common carrier and is not an insurer of Shipper's gas, and that Union shall not be liable to Shipper or any third party for loss of gas in Union's possession, except to the extent such loss is caused entirely by Union's negligence or wilful misconduct.

VI. FACILITIES ON SHIPPER'S PROPERTY

Except under those conditions where Union is delivering to TCPL for TCPL or Shipper at Parkway (TCPL), or to an Interconnecting Pipeline, or where otherwise specified in the Contract, the following will apply:

1. Construction and Maintenance: Union, at its own expense may construct, maintain and operate on Shipper's property at the delivery point a measuring station properly equipped with a meter or meters and any other necessary measuring equipment for properly measuring the gas redelivered under the Contract. Shipper will grant to Union a lease and/or rights-of-way over property of Shipper as required by Union to install such facilities and to connect same to Union's pipeline.

2. Entry: Union, its servants, agents and each of them may at any reasonable time on notice (except in cases of emergency) to Shipper or his duly authorized representative enter Shipper's property for the purpose of constructing, maintaining, removing, operating and/or repairing station equipment.

3. Property: The said station and equipment will be and remain the property of Union notwithstanding it is constructed on and attached to the realty of Shipper, and Union may at its own expense remove it upon termination of the Contract and will do so if so requested by Shipper.

VII. MEASURING EQUIPMENT

1. Metering by Union: Union will install and operate meters and related equipment as required and in accordance with the Act and Regulations referenced in Article III herein.

2. Metering by Others: In the event that all or any gas delivered to/by Union hereunder is measured by a meter that is owned and operated by an Interconnecting Pipeline, then Union and Shipper agree to accept that metering for the purpose of determining the volume and energy of gas delivered to/by Union on behalf of the Shipper. The standard of measurement and tests for the gas delivered to/by Union hereunder shall be in accordance with the general terms and conditions as incorporated in that Interconnecting Pipeline company's gas tariff as approved by its regulatory body.

3. Check Measuring Equipment: Shipper may install, maintain and operate, at the redelivery point, at its own expense, such check measuring equipment as desired, provided that such equipment shall be so installed as not to interfere with the

operation of Union's measuring equipment at or near the delivery point, and shall be installed, maintained and operated in conformity with the same standards and specifications applicable to Union's metering facilities.

4. Rights of Parties: The measuring equipment installed by either party, together with any building erected by it for such equipment, shall be and remain its property. However, Union and Shipper shall have the right to have representatives present at the time of any installing, reading, cleaning, changing, repairing, inspecting, testing, calibrating, or adjusting done in connection with the other's measuring equipment used in measuring or checking the measurement of deliveries of gas to/by Union under the Contract. Either party will give the other party reasonable notice of its intention to carry out the acts herein specified. The records from such measuring equipment shall remain the property of their owner, but upon request each will submit to the other its records and charts, together with calculations therefrom, for inspection and verification, subject to return within ten (10) days after receipt thereof.

5. Calibration and Test of Measuring Equipment: The accuracy of Union's measuring equipment shall be verified by Union at reasonable intervals, and if requested, in the presence of representatives of Shipper, but Union shall not be required to verify the accuracy of such equipment more frequently than once in any thirty (30) day period. In the event either party notifies the other that it desires a special test of any measuring equipment, the parties shall co-operate to secure a prompt verification of the accuracy of such equipment. The expense of any such special test, if called for by Shipper, shall be borne by Shipper if the measuring equipment tested is found to be in error by not more than two per cent (2%). If, upon test, any measuring equipment is found to be in error by not more than two per cent (2%), previous recordings of such equipment shall be considered accurate in computing receipts and deliveries of gas, but such equipment shall be adjusted at once to record as near to absolute accuracy as possible. If the test conducted shows a percentage of inaccuracy greater than two percent (2%), the financial adjustment, if any, shall be calculated in accordance with the Act and Regulations, as may be amended from time to time and in accordance with any successor statutes and regulations.

6. Preservation of Metering Records: Union and Shipper shall each preserve for a period of at least six (6) years all test data, and other relevant records.

7. Error in Metering or Meter Failure: In the event of an error in metering or a meter failure, (such error or failure being determined through check measurement by Union or any other available method), then Shipper shall enforce its rights as Shipper with the Interconnecting Pipeline(s) to remedy such error or failure including enforcing any inspection and/or verification rights and procedures.

VIII. BILLING

1. Monthly Billing Date: Union shall render bills on or before the tenth (10th) day of each month for all Transportation Services furnished during the preceding Month. Such charges may be based on estimated quantities, if actual quantities are unavailable in time to prepare the billing. Union shall provide, in a succeeding Month's billing, an adjustment based on any difference between actual quantities and estimated quantities, without any interest charge. If presentation of a bill to Shipper is delayed after the tenth (10th) day of the month, then the time of payment shall be extended accordingly, unless Shipper is responsible for such delay.

2. Right of Examination: Both Union and Shipper shall have the right to examine at any reasonable time the books, records and charts of the other to the extent necessary to verify the accuracy of any statement, chart or computation made under or pursuant to the provisions of the Contract.

3. Amendment of Statements: For the purpose of completing a final determination of the actual quantities of gas handled in any of the Transportation Services to Shipper, the parties shall have the right to amend their statement for a period equal to the time during which the Interconnecting Pipeline retains the right to amend their statements, which period shall not exceed three (3) years from the date of termination of the Contract.

IX. PAYMENTS

1. Monthly Payments: Shipper shall pay the invoiced amount directly into Union's bank account as directed on the invoice on or before the twentieth (20th) day of each month. If the payment date is not a Business Day, then payment must be received in Union's account on the first Business Day preceding the twentieth (20th) day of the month.

2. Remedies for Non-payment: Should Shipper fail to pay all of the amount of any bill as herein provided when such amount is due,

   a. Shipper shall pay to Union interest on the unpaid portion of the bill accruing at a rate per annum equal to the minimum commercial lending rate of Union's principal banker in effect from time to time from the due date until the date of payment; and,

   b. If such failure to pay continues for thirty (30) days after payment is due, Union, in addition to any other remedy it may have under the Contract, may suspend Services until such amount is paid. Notwithstanding such suspension, all demand charges shall continue to accrue hereunder as if such suspension were not in place.

   If Shipper in good faith disputes the amount of any such bill or part thereof Shipper shall pay to Union such amounts as it concedes to be correct. At any time thereafter, within twenty (20) days of a demand made by Union, Shipper shall furnish financial assurances satisfactory to Union, guaranteeing payment to Union of the amount ultimately found due upon such bill after a final determination. Such a final determination may be reached either by agreement, arbitration decision or judgement of the courts, as may be the case. Union shall not be entitled to suspend Services because of such non-payment unless and until default occurs in the conditions of such financial assurances or default occurs in payment of any other amount due to Union hereunder.

   Notwithstanding the foregoing, Shipper is not relieved from the obligation to continue its deliveries of gas to Union under the terms of any agreement, where Shipper has contracted to deliver specified quantities of gas to Union.

3. Billing Adjustments: If it shall be found that at any time or times Shipper has been overcharged or undercharged in any form whatsoever under the provisions of the Contract and Shipper shall have actually paid the bills containing such overcharge or undercharge, Union shall refund the amount of any such overcharge and interest shall accrue from and including the first day of such overcharge as paid to the date of refund and shall be calculated but not compounded at a rate per annum determined each day during the calculation period to be equal to the minimum commercial lending rate of Union's principal banker, and the Shipper shall pay the amount of any such undercharge, but without interest. In the event Union renders a bill to Shipper based upon measurement estimates, the required adjustment to reflect actual measurement shall be made on the bill next following the determination of such actual measurement, without any charge of interest. In the event an error is discovered in the amount billed in any statement rendered by Union, such error shall be adjusted by Union. Such overcharge, undercharge or error shall be adjusted by Union on the bill next following its determination (where the term "bill next following" shall mean a bill rendered at least fourteen (14) days after the day of its determination), provided that claim therefore shall have been made within three (3) years from the date of the incorrect billing. In the event any refund is issued with Shipper's bill, the aforesaid date of refund shall be deemed to be the date of the issue of bill.

4 Taxes:

In addition to the charges and rates as per the applicable rate schedules and price schedules, Shipper shall pay all Taxes which are imposed currently or subsequent to the execution of the Contract by any legal authority having jurisdiction and any amount in lieu of such Taxes paid or payable by Union.

5. Set Off:

If either party shall, at any time, be in arrears under any of its payment obligations to the other party under the Contract, then the party not in arrears shall be entitled to reduce the amount payable by it to the other party in arrears under the Contract, or any other contract, by an amount equal to the amount of such arrears or other indebtedness to the other party. In addition to the foregoing remedy, Union may, upon forty-eight (48) hours verbal notice, to be followed by written notice, take possession of any or all of Shipper's gas under the Contract or any enhancement to the Contract, which shall be deemed to have been assigned to Union, to reduce such arrears or other indebtedness to Union.

X. ARBITRATION

If and when any dispute, difference or question shall arise between the parties hereto touching the Contract or anything herein contained, or the construction hereof, or the rights, duties or liabilities of the parties in relation to any matter hereunder, the matter in dispute shall be submitted and referred to arbitration within ten (10) days after written request of either party. Upon such request each party shall appoint an arbitrator, and the two so appointed shall appoint a third. A

majority decision of the arbitrators shall be final and binding upon both parties. In all other respects the provisions of the Arbitration Act, 1991, or any act passed in amendment thereof or substitution therefore, shall apply to each such submission. Operations under the Contract shall continue, without prejudice, during any such arbitration and the costs attributable to such arbitration shall be shared equally by the parties hereto.

XI. FORCE MAJEURE

1. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or any other industrial disturbance, acts of the public enemy, sabotage, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of governments and people, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or lines of pipe, inability to obtain materials, supplies, permits or labour, any laws, orders, rules, regulations, acts or restraints of any governmental body or authority (civil or military), any act or omission that is excused by any event or occurrence of the character herein defined as constituting force majeure, any act or omission by parties not controlled by the party having the difficulty and any other similar cases not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to prevent or overcome.

2. In the event that either the Shipper or Union is rendered unable, in whole or in part, by force majeure, to perform or comply with any obligation or condition of the Contract, such party shall give notice and full particulars of such force majeure in writing delivered by hand, fax or other direct written electronic means to the other party as soon as possible after the occurrence of the cause relied on and subject to the provision of this Article.

3. Neither party shall be entitled to the benefit of the provisions of force majeure hereunder if any or all of the following circumstances prevail: the failure resulting in a condition of force majeure was caused by the negligence of the party claiming suspension; the failure was caused by the party claiming suspension where such party failed to remedy the condition by making all reasonable efforts (short of litigation, if such remedy would require litigation); the party claiming suspension failed to resume the performance of such condition obligations with reasonable dispatch; the failure was caused by lack of funds; the party claiming suspension did not, as soon as possible after determining, or within a period within which it should acting reasonably have determined, that the occurrence was in the nature of force majeure and would affect its ability to observe or perform any of its conditions or obligations under the Contract, give to the other party the notice required hereunder.

4. The party claiming suspension shall likewise give notice as soon as possible after the force majeure condition is remedied, to the extent that the same has been remedied, and that such party has resumed or is then in a position to resume the performance of the obligations and conditions of the Contract.

5. An event of force majeure on Union's system will excuse the failure to deliver gas by Union or the failure to accept gas by Union hereunder, and both parties shall be excused from performance of their obligations hereunder, except for payment obligations, to the extent of and for the duration of the force majeure.

6. Upstream or Downstream Force Majeure: An event of force majeure upstream or downstream of Union's system shall not relieve Shipper of any payment obligations.

7. Delay of Firm Transportation Services: Despite Article XI herein, if Union is prevented, by reason of an event of force majeure on Union's system from delivering gas on the Day or Days upon which Union has accepted gas from Shipper, Union shall thereafter make all reasonable efforts to deliver such quantities as soon as practicable and on such Day or Days as are agreed to by Shipper and Union. If Union accepts such gas on this basis, Shipper shall not receive any demand charge relief as contemplated under Article XI herein.

8. Demand Charge Relief for Firm Transportation Services: Despite Article XI herein, if on any Day Union fails to accept gas from Shipper by reason of an event of force majeure on Union's system and fails to deliver the quantity of gas nominated hereunder by Shipper up to the firm Contract Demand for that Contract, then for that Day the Monthly demand charge shall be reduced by an amount equal to the applicable Daily Demand Rate, as defined in this paragraph, multiplied by the difference between the quantity of gas actually delivered by Union during such Day and the quantity of gas which Shipper in good faith nominated on such Day. The term "Daily Demand Rate" shall mean the Monthly demand charge or equivalent pursuant to the M12 Rate Schedule divided by the number of days in the month for which such rate is being calculated.

9. If, due to the occurrence of an event of force majeure as outlined above, the capacity for gas deliveries by Union is impaired, it will be necessary for Union to curtail Shipper's gas receipts to Union hereunder, via proration based on utilization of such facilities for the Day. This prorating shall be determined by multiplying the capability of such facilities as available downstream of the impairment on the Day, by a fraction where the numerator is Shipper's nominated firm quantity and the denominator is the total of all such nominated firm quantities for nominated services and planned consumption for in-franchise customers on the Day. For the purposes of this Article XI, firm services shall mean all firm services provided by Union to in-franchise customers and ex-franchise shippers.

XII. DEFAULT AND TERMINATION

In case of the breach or non-observance or non-performance on the part of either party hereto of any covenant, proviso, condition, restriction or stipulation contained in the Contract (but not including herein failure to take or make delivery in whole or in part of the gas delivered to/by Union hereunder occasioned by any of the reasons provided for in Article XI herein) which has not been waived by the other party, then and in every such case and as often as the same may happen, the non-defaulting party may give written notice to the defaulting party requiring it to remedy such default and in the event of the defaulting party failing to remedy the same within a period of thirty (30) days from receipt of such notice, the non-defaulting party may at its sole option declare the Contract to be terminated and thereupon the Contract shall be terminated and be null and void for all purposes other than and except as to any liability of the parties under the same incurred before and subsisting as of termination. The right hereby conferred upon each party shall be in addition to, and not in derogation of or in substitution for, any other right or remedy which the parties respectively at law or in equity shall or may possess.

XIII. AMENDMENT

Subject to Article XV herein and the ability of Union to amend the applicable rate schedules and price schedules, with the approval of the OEB (if required), no amendment or modification of the Contract shall be effective unless the same shall be in writing and signed by each of the Shipper and Union.

XIV. NON-WAIVER AND FUTURE DEFAULT

No waiver of any provision of the Contract shall be effective unless the same shall be in writing and signed by the party entitled to the benefit of such provision and then such waiver shall be effective only in the specific instance and for the specified purpose for which it was given. No failure on the part of Shipper or Union to exercise, and no course of dealing with respect to, and no delay in exercising, any right, power or remedy under the Contract shall operate as a waiver thereof.

XV. LAWS, REGULATIONS AND ORDERS

The Contract and the respective rights and obligations of the parties hereto are subject to all present and future valid laws, orders, rules and regulations of any competent legislative body, or duly constituted authority now or hereafter having jurisdiction and the Contract shall be varied and amended to comply with or conform to any valid order or direction of any board, tribunal or administrative agency which affects any of the provisions of the Contract.

XVI ALLOCATION OF CAPACITY

1. A potential shipper may request firm transportation service on Union's system at any time. Any request for firm M12 transportation service must include: potential shipper's legal name, Receipt Point(s), Delivery Point(s), Commencement Date, Initial Term, Contract Demand and proposed payment. This is applicable for M12 service requests for firm transportation service with minimum terms of ten (10) years where Expansion Facilities are required or a minimum term of five (5) years for use of existing capacity.

2. If requests for firm transportation services cannot be met through existing capacity such that the only way to satisfy the requests for transportation service would require the construction of Expansion Facilities which create new capacity, Union

shall allocate any such new capacity by open season, subject to the terms of the open season, and these General Terms and Conditions.

3. If requests for long-term firm transportation service can be met through existing facilities upon which long-term capacity is becoming available, Union shall allocate such long-term capacity by open season, subject to the terms of the open season, and these General Terms and Conditions. "Long-term", for the purposes of this Article XVI, means, in the case of a transportation service, a service that has a term of one year or greater.

4. Capacity requests received during an open season shall be awarded starting with those bids with the highest economic value. If the economic values of two or more independent bids are equal, then service shall be allocated on a pro-rata basis. The economic value shall be based on the net present value which shall be calculated based on the proposed per-unit rate and the proposed term of the contract and without regard to the proposed Contract Demand ("NPV").

5. Union may at any time allocate capacity to respond to any M12 transportation service request through an open season. If a potential shipper requests M12 transportation service that can be provided through Available Capacity that was previously offered by Union in an open season but was not awarded, then:

   a. Any such request must conform to the requirements of Section 1 of this Article XVI;

   b. Union shall allocate capacity to serve such request pursuant to this Section 5, and subject to these General Terms and Conditions and Union's standard form M12 transportation contract;

   c. Union may reject a request for M12 transportation service for any of the following reasons:

      i) if there is insufficient Available Capacity to fully meet the request, but if that is the only reason for rejecting the request for service, Union must offer to supply the Available Capacity to the potential shipper;

      ii) if the proposed monthly payment is less than Union's Monthly demand charge plus fuel requirements for the applicable service;

      iii) if prior to Union accepting the request for transportation service Union receives a request for transportation service from one or more other potential shippers and there is, as a result, insufficient Available Capacity to service all the requests for service, in which case Union shall follow the procedure in Section 5 d hereof; -

      iv) if Union does not provide the type of transportation service requested; or

      v) if all of the conditions precedent specified in Article XXI Sections 1 and 2 herein have not been satisfied or waived.

   d. Union will advise the potential shipper in writing whether Union accepts or rejects the request for service, subject to Article XVI 5 c, within 5 calendar days of receiving a request for M12 transportation service. If Union rejects a request for service, Union shall inform the potential shipper of the reasons why its request is being rejected; and

   e. If Union has insufficient Available Capacity to service all pending requests for transportation service Union may:

      i) Reject all the pending requests for transportation service and conduct an open season; or

      ii) Union shall inform all the potential shippers who have submitted a pending request for transportation service that it does not have sufficient capacity to service all pending requests for service, and Union shall provide all such potential shippers with an equal opportunity to submit a revised request for service. Union shall then allocate the Available Capacity to the request for transportation service with the highest economic value to Union. If the economic values of two or more requests are equal, then service shall be allocated on a pro-rata basis. The economic value of any request shall be based on the NPV.

XVII. RENEWALS

1. Initial Term: Subject to Article XVII, Section 3 herein, Contracts with an Initial Term of five (5) years or greater will continue in full force and effect beyond the Initial Term, automatically renewing for a period of one (1) year, and every one (1) year thereafter. Shipper may reduce the Contract Demand or terminate the Contract with notice in writing by Shipper at least two (2) years prior to the expiration thereof.

2. Expansion Facilities: If at any time Union determines, acting reasonably, that:

   i) Expansion Facilities are required to increase the capacity or capabilities of flow on Union's pipeline system; and

   ii) the estimated cost of such Expansion Facilities will exceed $20 million;

   Union will provide a Term-Up Notice to Shipper if Union determines Shipper's Contract, which contains a right of renewal pursuant to Section 1 immediately above, may impact the design of the Expansion Facilities.

3. Term-Up Notice: Upon receipt of the Term-Up Notice, Shipper may elect, within sixty (60) days of receipt of the Term-Up Notice, to extend the existing term of the Contract for all or a portion of the Contract Demand for an additional period such that the new termination date of the Contract shall not be less than five (5) years after the expected in-service date of the Expansion Facilities. If Shipper does not elect to extend the existing term of the Contract within such sixty (60) day period, Shipper shall not be entitled to renew the Contract pursuant to Article XVII, Section 1 herein and the Contract shall expire at the end of the existing term.

XVIII. SERVICE CURTAILMENT

1. Union shall have the right to curtail or not to schedule part or all of Transportation Services, in whole or in part, on all or a portion of its pipeline system at any time for reasons of Force Majeure or when, in Union sole discretion, acting reasonably, capacity or operating conditions so require or it is desirable or necessary to make modifications, repairs or operating changes to its pipeline system. Union shall provide Shipper such notice of such curtailment as is reasonable under the circumstances. If due to any cause whatsoever Union is unable to receive or deliver the quantities of Gas which Shipper has requested, then Union shall order curtailment by all Shippers affected and to the extent necessary to remove the effect of the disability. Union has a priority of service policy to determine the order of service curtailment. In order to place services on the priority of service list, Union considers the following business principles: appropriate level of access to core services, customer commitment, encouraging appropriate contracting, materiality, price and term, and promoting and enabling in-franchise consumption.

   The Priority ranking for all services utilizing Union Gas' storage, transmission and distribution system as applied to both in-franchise and ex-franchise services are as follows; with number 1 having the highest priority and the last interrupted.

   1. Firm In-franchise Transportation and Distribution services and firm Ex-franchise services (Note 1)
   2. In-franchise Interruptible Distribution services
   3. C1/M12 IT Transport and IT Exchanges with Take or Pay rates
   4. Balancing (Hub Activity) < = 100 GJ/d; Balancing (Direct Purchase) < = 500 GJ/d; In-franchise distribution authorized overrun (Note 3)
   5. C1/M12 IT Transport and IT Exchanges at premium rates
   6. C1/M12 Overrun < = 20% of CD (Note 4)
   7. Balancing (Direct Purchase) > 500 GJ/d
   8. Balancing (Hub Activity) > 100 GJ/d; C1/M12 IT Transport and IT Exchanges
   9. C1/M12 Overrun > 20% of CD
   10. C1/M12 IT Transport and IT Exchanges at a discount
   11. Late Nominations

   Notes:

   1. Nominated services must be nominated on the NAESB Timely Nomination Cycle otherwise they are considered to be late nomination and are therefore interruptible.

2. Higher value or more reliable IT is contemplated in the service and contract, when purchase at market competitive prices.
3. Captures the majority of customers that use Direct Purchase balancing transactions.
4. Captures the majority of customers that use overrun.

2. Union reserves the right to change its procedures for sharing interruptible capacity and will provide Shipper with two (2) months prior notice of any such change.

3. Maintenance: Union's facilities from time to time may require maintenance or construction. If such maintenance or construction is required, and in Union's sole opinion, acting reasonably, such maintenance or construction may impact Union's ability to meet Shipper's requirements, Union shall provide at least ten (10) days notice to Shipper, except in the case of an emergency. In the event the maintenance impacts on Union's ability to meet Shipper's requirements, Union shall not be liable for any damages and shall not be deemed in breach of the Contract. To the extent that Union's ability to accept and/or deliver Shipper's gas is impaired, the Monthly demand charge shall be reduced in accordance with Article XI Section 8 and available capacity allocated in accordance with Article XI Section 9 herein.

Union shall use reasonable efforts to determine a mutually acceptable period during which such maintenance or construction will occur and also to limit the extent and duration of any impairments. Union will endeavour to schedule and complete the maintenance and construction, which would normally be expected to impact on Union's ability to meet Shipper's requirements, during the period from April 1 through to November 1.

XIX. SHIPPER'S REPRESENTATIONS AND WARRANTIES

1. Shipper's Warranty: Shipper warrants that it will, if required, maintain, or have maintained on its behalf, all external approvals including the governmental, regulatory, import/export permits and other approvals or authorizations that are required from any federal, state or provincial authorities for the gas quantities to be handled under the Contract. Shipper further warrants that it shall maintain in effect the Facilitating Agreements.

2. Financial Representations: Shipper represents and warrants that the financial assurances (including the Initial Financial Assurances and Security) (if any) shall remain in place throughout the term hereof, unless Shipper and Union agree otherwise. Shipper shall notify Union in the event of any change to the financial assurances throughout the term hereof. Should Union have reasonable grounds to believe that Shipper will not be able to perform or continue to perform any of its obligations under the Contract as a result of one of the following events ("Material Event");

   a. Shipper is in default, which default has not been remedied, of the Contract or is in default of any other material contract with Union or another party; or,

   b. Shipper's corporate or debt rating falls below investment grade according to at least one nationally recognized rating agency; or,

   c. Shipper ceases to be rated by a nationally recognized agency; or,

   d. Shipper has exceeded credit available as determined by Union from time to time,

   then Shipper shall within fourteen (14) days of receipt of written notice by Union, obtain and provide to Union a letter of credit or other security in the form and amount reasonably required by Union (the "Security"). The Security plus the Initial Financial Assurances shall not exceed twelve (12) months of Monthly demand charges (in accordance with Article IX herein) multiplied by Contract Demand. In the event that Shipper does not provide to Union such Security within such fourteen (14) day period, Union may deem a default under the Default and Termination provisions of Article XII herein.

   In the event that Shipper in good faith, reasonably believes that it should be entitled to reduce the amount of or value of the Security previously provided, it may request such a reduction from Union and to the extent that the Material Event has been mitigated or eliminated, Union shall return all or a portion of the Security to Shipper within fourteen (14) Business Days after receipt of the request.

XX. MISCELLANEOUS PROVISIONS

1. Permanent Assignment: Shipper may assign the Contract to a third party ("Assignee"), up to the Contract Demand, (the "Capacity Assigned"). Such assignment shall require the prior written consent of Union and release of obligations by Union for the Capacity Assigned from the date of assignment. Such consent and release shall not be unreasonably withheld and shall be conditional upon the Assignee providing, amongst other things, financial assurances as per Article XXI herein. Any such assignment will be for the full rights, obligations and remaining term of the Contract as relates to the Capacity Assigned.

2. Temporary Assignment: Shipper may, upon notice to Union, assign all or a part of its service entitlement under the Contract (the "Assigned Quantity") and the corresponding rights and obligations to an Assignee on a temporary basis for not less than one calendar month. Such assignment shall not be unreasonably withheld and shall be conditional upon the Assignee executing the Facilitating Agreement as per Article XXI herein. Notwithstanding such assignment, Shipper shall remain obligated to Union to perform and observe the covenants and obligations contained herein in regard to the Assigned Quantity to the extent that Assignee fails to do so.

3. Title to Gas: Shipper represents and warrants to Union that Shipper shall have good and marketable title to, or legal authority to deliver to Union, all gas delivered to Union hereunder. Furthermore, Shipper hereby agrees to indemnify and save Union harmless from all suits, actions, debts, accounts, damages, costs, losses and expenses arising from or out of claims of any or all third parties to such gas or on account of Taxes, or other charges thereon.

XXI. PRECONDITIONS TO TRANSPORTATION SERVICES

1. The obligations of Union to provide Transportation Services hereunder are subject to the following conditions precedent, which are for the sole benefit of Union and which may be waived or extended in whole or in part in the manner provided in the Contract:

   a. Union shall have obtained, in form and substance satisfactory to Union, and all conditions shall have been satisfied under, all governmental, regulatory and other third party approvals, consents, orders and authorizations, that are required to provide the Transportation Services; and,

   b. Union shall have obtained all internal approvals that are necessary or appropriate to provide the transportation Services; and,

   c. Union shall have received from Shipper the requisite financial assurances reasonably necessary to ensure Shipper's ability to honour the provisions of the Contract (the "Initial Financial Assurances"). The Initial Financial Assurances, if required, will be as determined solely by Union; and,

   d. Shipper and Union shall have entered into the Interruptible Service HUB Contract or equivalent (the "Facilitating Agreement") with Union.

2. The obligations of Shipper hereunder are subject to the following conditions precedent, which are for the sole benefit of Shipper and which may be waived or extended in whole or in part in the manner provided in the Contract:

   a. Shipper shall, as required, have entered into the necessary contracts with Union and/or others to facilitate the Transportation Services contemplated herein, including contracts for upstream and downstream transportation, and shall specifically have an executed and valid Facilitating Agreement; and shall, as required, have entered into the necessary contracts to purchase the gas quantities handled under the Contract; and,

   b. Shipper shall have obtained, in form and substance satisfactory to Shipper, and all conditions shall have been satisfied under, all governmental, regulatory and other third party approvals, consents, orders and authorizations, that are required from federal, state, or provincial authorities for the gas quantities handled under the Contract; and,

   c. Shipper shall have obtained all internal approvals that are necessary or appropriate for the Shipper to execute the Contract.

3. Union and Shipper shall each use due diligence and reasonable efforts to satisfy and fulfil the conditions precedent specified in this Article XXI Section 1 a, c, and d and Section 2 a and b. Each party shall notify the other forthwith in writing

of the satisfaction or waiver of each condition precedent for such party's benefit. If a party concludes that it will not be able to satisfy a condition precedent that is for its benefit, such party may, upon written notice to the other party, terminate the Contract and upon the giving of such notice, the Contract shall be of no further force and effect and each of the parties shall be released from all further obligations thereunder.

4. If any of the conditions precedent in this Article XXI Section 1 c or Section 2 are not satisfied or waived by the party entitled to the benefit of that condition by the Conditions Date as such term is defined in the Contract, then either party may, upon written notice to the other party, terminate the Contract and upon the giving of such notice, the Contract shall be of no further force and effect and each of the parties shall be released from all further obligations hereunder, provided that any rights or remedies that a party may have for breaches of the Contract prior to such termination and any liability a party may have incurred before such termination shall not thereby be released.

SCHEDULE "A 2010"

RATE M12
GENERAL TERMS & CONDITIONS

I. DEFINITIONS

Except where the context expressly requires or states another meaning, the following terms, when used in these General Terms & Conditions and in any contract into which these General Terms & Conditions are incorporated, shall be construed to have the following meanings:

"Authorized Overrun" shall mean the amount by which Shipper's Authorized Quantity exceeds the Contract Demand;

"Available Capacity" shall mean at any time, Union's remaining available capacity to provide Transportation Services;

"Business Day" shall mean any day, other than Saturday, Sunday or any days on which national banks in the Province of Ontario are authorized to close;

"Contract" shall refer to the Contract to which these General Terms & Conditions shall apply, and into which they are incorporated;

"Contract Year" shall mean a period of three hundred and sixty-five (365) consecutive days; provided however, that any such period which contains a date of February 29 shall consist of three hundred and sixty-six (366) consecutive days, commencing on November 1 of each year; except for the first Contract Year which shall commence on the Commencement Date and end on the first October 31 that follows such date;

"cricondentherm hydrocarbon dewpoint" shall mean the highest hydrocarbon dewpoint temperature on the phase envelope;

"cubic metre" shall mean the volume of gas which occupies one cubic metre when such gas is at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

"Day" shall mean a period of twenty-four (24) consecutive hours beginning at 10:00 a.m. Eastern Clock Time. The reference date for any Day shall be the calendar date upon which the twenty-four (24) hour period shall commence;

"delivery" shall mean any gas that is delivered by Union into Shipper's possession, or to the possession of Shipper's agent;

"Eastern Clock Time" shall mean the local clock time in the Eastern Time Zone on any Day;

"Expansion Facilities" shall mean any new facilities to be constructed by Union in order to provide Transportation Services;

"firm" shall mean service not subject to curtailment or interruption except under Articles XI, XII and XVIII herein;

"gas" shall mean gas as defined in the Ontario Energy Board Act, 1998, S.O. 1998, c.15, Sch. B, as amended, supplemented or re-enacted from time to time;

"gross heating value" shall mean the total heat expressed in megajoules per cubic metre (MJ/m^3) produced by the complete combustion at constant pressure of one (1) cubic metre of gas with air, with the gas free of water vapour and the temperature of the gas, air and products of combustion at standard temperature and all water formed by the combustion reaction condensed to the liquid state;

"hydrocarbon dewpoint" shall mean temperature at a specific pressure where hydrocarbon vapour condensation begins;

"Interruptible Service HUB Contract" shall mean a contract between Shipper and Union under which Union provides interruptible HUB service;

"interruptible service" or "Interruptible" shall mean service subject to curtailment or interruption, after notice, at any time;

"Interconnecting Pipeline" shall mean a pipeline that directly connects to the Union pipeline system;

"joule" (J) shall mean the work done when the point of application of a force of one (1) newton is displaced a distance of one (1) metre in the direction of the force. The term "megajoule" (MJ) shall mean 1,000,000 joules. The term "gigajoule" (GJ) shall mean 1,000,000,000 joules;

"Loaned Quantities" shall mean those quantities of gas loaned to Shipper under the Facilitating Agreement;

"m^3" shall mean cubic metre of gas and "10^3m^3" shall mean 1,000 cubic metres of gas;

"Month" shall mean the period beginning at 10:00 a.m. Eastern Clock Time on the first day of a calendar month and ending at 10:00 a.m. Eastern Clock Time on the first day of the following calendar month;

"NAESB" shall mean North American Energy Standards Board;

"OEB" means the Ontario Energy Board;

"Open Season" or "open season" shall mean an open access auction or bidding process held by Union as a method of allocating capacity;

"pascal" (Pa) shall mean the pressure produced when a force of one (1) newton is applied to an area of one (1) square metre. The term "kilopascal" (kPa) shall mean 1,000 pascals;

"receipt" shall mean any gas that is delivered into Union's possession, or the possession of Union's agent;

"Shipper" shall have the meaning as defined in the Contract, and shall also include Shipper's agent(s);

"specific gravity" shall mean density of the gas divided by density of air, with both at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

"Taxes" shall mean any tax (other than tax on income or tax on property), duty, royalty, levy, license, fee or charge not included in the charges and rates as per the applicable rate schedule (including but not limited to charges under any form of cap and trade, carbon tax, or similar system) and that is levied, assessed or made by any governmental authority on the gas itself, or the act, right, or privilege of producing, severing, gathering, storing, transporting, handling, selling or delivering gas under the Contract;

"TCPL" means TransCanada PipeLines Limited;

"Term-Up Notice" shall mean notice provided to Shipper by Union in accordance with Article XVII.

"Wobbe Number" shall mean gross heating value of the gas divided by the square root of its specific gravity.

II. GAS QUALITY

1. Natural Gas: The minimum gross heating value of the gas delivered to/by Union hereunder, shall be thirty-six (36) megajoules per cubic metre. The maximum gross heating value of the gas delivered to/by Union hereunder shall be forty point two (40.2) megajoules per cubic metre. The gas to be delivered hereunder to Union may be a commingled supply from Shipper's gas sources of supply. The gas to be delivered by Union may be a commingled supply from Union's sources of gas supply; provided, however, that helium, natural gasoline, butane, propane and other hydrocarbons, except methane, may be removed prior to delivery to Shipper. Further, Union may subject, or permit the subjection of, the gas to compression, dehydration, cooling, cleaning and other processes.

2. Freedom from objectionable matter: The gas to be delivered to/by Union hereunder,

   a. shall be commercially free from bacteria, sand, dust, gums, crude oils, lubricating oils, liquids, chemicals or compounds used in the production, treatment, compression or dehydration of the gas or any other objectionable

substance in sufficient quantity so as to render the gas toxic, unmerchantable or cause injury to, or interference with, the proper operation of the lines, regulators, meters or other appliances through which it flows,

b. shall not contain more than seven (7) milligrams of hydrogen sulphide per cubic metre of gas, nor more than four hundred and sixty (460) milligrams of total sulphur per cubic metre of gas,

c. shall not contain more than five (5) milligrams of mercaptan sulphur per cubic metre of gas,

d. shall not contain more than two point zero (2.0) molar percent by volume of carbon dioxide in the gas,

e. shall not contain more than zero point four (0.4) molar percent by volume of oxygen in the gas,

f. shall not contain more than zero point five (0.5) molar percent by volume of carbon monoxide in the gas,

g. shall not contain more than four point zero (4.0) molar percent by volume of hydrogen in the gas,

h. shall not contain more than sixty-five (65) milligrams of water vapour per cubic metre of gas,

i. shall not have a cricondentherm hydrocarbon dewpoint exceeding minus eight (-8) degrees Celsius,

j. shall have Wobbe Number from forty seven point fifty (47.50) megajoules per cubic metre of gas to fifty one point forty six (51.46) megajoules per cubic metre of gas, maximum of one point five (1.5) mole percent by volume of butane plus (C4+) in the gas, and maximum of four point zero (4.0) mole percent by volume of total inerts in the gas in order to be interchangeable with other Interconnecting Pipeline gas.

3. Non-conforming Gas: In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in this Article II.

4. Quality of Gas Received: The quality of the gas to be received by Union hereunder is to be of a merchantable quality and in accordance with the quality standards as set out by Union in this Article II, but, Union will also accept gas of a quality as set out in any other Interconnecting Pipeline's general terms and conditions, provided that all Interconnecting Pipelines accept such quality of gas. In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in Union's M12 Rate Schedule.

III. MEASUREMENTS

1. Storage, Transportation, and/or Sales Unit: The unit of the gas delivered to Union shall be a megajoule or a gigajoule. The unit of gas transported or stored by Union shall be a megajoule or a gigajoule. The unit of gas delivered by Union shall be a megajoule, a gigajoule, a cubic metre (m^3) or one thousand cubic metres (10^3m^3) at Union's discretion.

2. Determination of Volume and Energy:

a. The volume and energy amounts determined under the Contract shall be determined in accordance with the Electricity and Gas Inspection Act (Canada), RSC 1985, c E-4- (the "**Act**") and the Electricity and Gas Inspection Regulations, SOR 86/131 (the "**Regulations**"), and any documents issued under the authority of the Act and Regulations and any amendments thereto.

b. The supercompressibility factor shall be determined in accordance with either the "Manual for Determination of Supercompressibility Factors for Natural Gas" (PAR Project NX-19) published in 1962 or with American Gas Association Transmission Measurement Committee Report No. 8, Nov. 1992, at Union's discretion, all as amended from time to time.

c. The volume and/or energy of the gas delivered to/by Union hereunder shall be determined by the measurement equipment designated in Article VII herein.

d. Upon request by Union, Shipper shall obtain measurement of the total quantity of gas received by Union hereunder from the Interconnecting Pipeline. Such measurement shall be done in accordance with established practices between Union and the Interconnecting Pipeline.

IV. RECEIPT POINT AND DELIVERY POINT

1. Unless otherwise specified in the Contract, the point or points of receipt and point or points of delivery for all gas to be covered hereunder shall be on the outlet side of the measuring stations located at or near the point or points of connection specified in the Contract, where possession of the gas changes from one party to the other, and as per Schedule "D 2010".

V. POSSESSION OF AND RESPONSIBILITY FOR GAS

1. Union accepts no responsibility for any gas prior to such gas being delivered to Union at the Receipt Point or after its delivery by Union at the Delivery Point. As between the parties hereto, Union shall be deemed to be in control and possession of and responsible for all such gas from the time that such gas enters Union's system until such gas is delivered to Shipper.

2. Shipper agrees that Union is not a common carrier and is not an insurer of Shipper's gas, and that Union shall not be liable to Shipper or any third party for loss of gas in Union's possession, except to the extent such loss is caused entirely by Union's negligence or wilful misconduct.

VI. FACILITIES ON SHIPPER'S PROPERTY

Except under those conditions where Union is delivering to TCPL for TCPL or Shipper at Parkway (TCPL), or to an Interconnecting Pipeline, or where otherwise specified in the Contract, the following will apply:

1. Construction and Maintenance: Union, at its own expense may construct, maintain and operate on Shipper's property at the delivery point a measuring station properly equipped with a meter or meters and any other necessary measuring equipment for properly measuring the gas redelivered under the Contract. Shipper will grant to Union a lease and/or rights-of-way over property of Shipper as required by Union to install such facilities and to connect same to Union's pipeline.

2. Entry: Union, its servants, agents and each of them may at any reasonable time on notice (except in cases of emergency) to Shipper or his duly authorized representative enter Shipper's property for the purpose of constructing, maintaining, removing, operating and/or repairing station equipment.

3. Property: The said station and equipment will be and remain the property of Union notwithstanding it is constructed on and attached to the realty of Shipper, and Union may at its own expense remove it upon termination of the Contract and will do so if so requested by Shipper.

VII. MEASURING EQUIPMENT

1. Metering by Union: Union will install and operate meters and related equipment as required and in accordance with the Act and Regulations referenced in Article III herein.

2. Metering by Others: In the event that all or any gas delivered to/by Union hereunder is measured by a meter that is owned and operated by an Interconnecting Pipeline, then Union and Shipper agree to accept that metering for the purpose of determining the volume and energy of gas delivered to/by Union on behalf of the Shipper. The standard of measurement and tests for the gas delivered to/by Union hereunder shall be in accordance with the general terms and conditions as incorporated in that Interconnecting Pipeline company's gas tariff as approved by its regulatory body.

3. Check Measuring Equipment: Shipper may install, maintain and operate, at the redelivery point, at its own expense, such check measuring equipment as desired, provided that such equipment shall be so installed as not to interfere with the

operation of Union's measuring equipment at or near the delivery point, and shall be installed, maintained and operated in conformity with the same standards and specifications applicable to Union's metering facilities.

4. Rights of Parties: The measuring equipment installed by either party, together with any building erected by it for such equipment, shall be and remain its property. However, Union and Shipper shall have the right to have representatives present at the time of any installing, reading, cleaning, changing, repairing, inspecting, testing, calibrating, or adjusting done in connection with the other's measuring equipment used in measuring or checking the measurement of deliveries of gas to/by Union under the Contract. Either party will give the other party reasonable notice of its intention to carry out the acts herein specified. The records from such measuring equipment shall remain the property of their owner, but upon request each will submit to the other its records and charts, together with calculations therefrom, for inspection and verification, subject to return within ten (10) days after receipt thereof.

5. Calibration and Test of Measuring Equipment: The accuracy of Union's measuring equipment shall be verified by Union at reasonable intervals, and if requested, in the presence of representatives of Shipper, but Union shall not be required to verify the accuracy of such equipment more frequently than once in any thirty (30) day period. In the event either party notifies the other that it desires a special test of any measuring equipment, the parties shall co-operate to secure a prompt verification of the accuracy of such equipment. The expense of any such special test, if called for by Shipper, shall be borne by Shipper if the measuring equipment tested is found to be in error by not more than two per cent (2%). If, upon test, any measuring equipment is found to be in error by not more than two per cent (2%), previous recordings of such equipment shall be considered accurate in computing receipts and deliveries of gas, but such equipment shall be adjusted at once to record as near to absolute accuracy as possible. If the test conducted shows a percentage of inaccuracy greater than two percent (2%), the financial adjustment, if any, shall be calculated in accordance with the Act and Regulations, as may be amended from time to time and in accordance with any successor statutes and regulations.

6. Preservation of Metering Records: Union and Shipper shall each preserve for a period of at least six (6) years all test data, and other relevant records.

7. Error in Metering or Meter Failure: In the event of an error in metering or a meter failure, (such error or failure being determined through check measurement by Union or any other available method), then Shipper shall enforce its rights as Shipper with the Interconnecting Pipeline(s) to remedy such error or failure including enforcing any inspection and/or verification rights and procedures.

VIII. BILLING

1. Monthly Billing Date: Union shall render bills on or before the tenth (10th) day of each month for all Transportation Services furnished during the preceding Month. Such charges may be based on estimated quantities, if actual quantities are unavailable in time to prepare the billing. Union shall provide, in a succeeding Month's billing, an adjustment based on any difference between actual quantities and estimated quantities, without any interest charge. If presentation of a bill to Shipper is delayed after the tenth (10th) day of the month, then the time of payment shall be extended accordingly, unless Shipper is responsible for such delay.

2. Right of Examination: Both Union and Shipper shall have the right to examine at any reasonable time the books, records and charts of the other to the extent necessary to verify the accuracy of any statement, chart or computation made under or pursuant to the provisions of the Contract.

3. Amendment of Statements: For the purpose of completing a final determination of the actual quantities of gas handled in any of the Transportation Services to Shipper, the parties shall have the right to amend their statement for a period equal to the time during which the Interconnecting Pipeline retains the right to amend their statements, which period shall not exceed three (3) years from the date of termination of the Contract.

IX. PAYMENTS

1. Monthly Payments: Shipper shall pay the invoiced amount directly into Union's bank account as directed on the invoice on or before the twentieth (20th) day of each month. If the payment date is not a Business Day, then payment must be received in Union's account on the first Business Day preceding the twentieth (20th) day of the month.

2. Remedies for Non-payment: Should Shipper fail to pay all of the amount of any bill as herein provided when such amount is due,

   a. Shipper shall pay to Union interest on the unpaid portion of the bill accruing at a rate per annum equal to the minimum commercial lending rate of Union's principal banker in effect from time to time from the due date until the date of payment; and,

   b. If such failure to pay continues for thirty (30) days after payment is due, Union, in addition to any other remedy it may have under the Contract, may suspend Services until such amount is paid. Notwithstanding such suspension, all demand charges shall continue to accrue hereunder as if such suspension were not in place.

   If Shipper in good faith disputes the amount of any such bill or part thereof Shipper shall pay to Union such amounts as it concedes to be correct. At any time thereafter, within twenty (20) days of a demand made by Union, Shipper shall furnish financial assurances satisfactory to Union, guaranteeing payment to Union of the amount ultimately found due upon such bill after a final determination. Such a final determination may be reached either by agreement, arbitration decision or judgement of the courts, as may be the case. Union shall not be entitled to suspend Services because of such non-payment unless and until default occurs in the conditions of such financial assurances or default occurs in payment of any other amount due to Union hereunder.

   Notwithstanding the foregoing, Shipper is not relieved from the obligation to continue its deliveries of gas to Union under the terms of any agreement, where Shipper has contracted to deliver specified quantities of gas to Union.

3. Billing Adjustments: If it shall be found that at any time or times Shipper has been overcharged or undercharged in any form whatsoever under the provisions of the Contract and Shipper shall have actually paid the bills containing such overcharge or undercharge, Union shall refund the amount of any such overcharge and interest shall accrue from and including the first day of such overcharge as paid to the date of refund and shall be calculated but not compounded at a rate per annum determined each day during the calculation period to be equal to the minimum commercial lending rate of Union's principal banker, and the Shipper shall pay the amount of any such undercharge, but without interest. In the event Union renders a bill to Shipper based upon measurement estimates, the required adjustment to reflect actual measurement shall be made on the bill next following the determination of such actual measurement, without any charge of interest. In the event an error is discovered in the amount billed in any statement rendered by Union, such error shall be adjusted by Union. Such overcharge, undercharge or error shall be adjusted by Union on the bill next following its determination (where the term "bill next following" shall mean a bill rendered at least fourteen (14) days after the day of its determination), provided that claim therefore shall have been made within three (3) years from the date of the incorrect billing. In the event any refund is issued with Shipper's bill, the aforesaid date of refund shall be deemed to be the date of the issue of bill.

4 Taxes:

In addition to the charges and rates as per the applicable rate schedules and price schedules, Shipper shall pay all Taxes which are imposed currently or subsequent to the execution of the Contract by any legal authority having jurisdiction and any amount in lieu of such Taxes paid or payable by Union.

5. Set Off:

If either party shall, at any time, be in arrears under any of its payment obligations to the other party under the Contract, then the party not in arrears shall be entitled to reduce the amount payable by it to the other party in arrears under the Contract, or any other contract, by an amount equal to the amount of such arrears or other indebtedness to the other party. In addition to the foregoing remedy, Union may, upon forty-eight (48) hours verbal notice, to be followed by written notice, take possession of any or all of Shipper's gas under the Contract or any enhancement to the Contract, which shall be deemed to have been assigned to Union, to reduce such arrears or other indebtedness to Union.

X. ARBITRATION

If and when any dispute, difference or question shall arise between the parties hereto touching the Contract or anything herein contained, or the construction hereof, or the rights, duties or liabilities of the parties in relation to any matter hereunder, the matter in dispute shall be submitted and referred to arbitration within ten (10) days after written request of either party. Upon such request each party shall appoint an arbitrator, and the two so appointed shall appoint a third. A

majority decision of the arbitrators shall be final and binding upon both parties. In all other respects the provisions of the Arbitration Act, 1991, or any act passed in amendment thereof or substitution therefore, shall apply to each such submission. Operations under the Contract shall continue, without prejudice, during any such arbitration and the costs attributable to such arbitration shall be shared equally by the parties hereto.

XI. FORCE MAJEURE

1. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or any other industrial disturbance, acts of the public enemy, sabotage, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of governments and people, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or lines of pipe, inability to obtain materials, supplies, permits or labour, any laws, orders, rules, regulations, acts or restraints of any governmental body or authority (civil or military), any act or omission that is excused by any event or occurrence of the character herein defined as constituting force majeure, any act or omission by parties not controlled by the party having the difficulty and any other similar cases not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to prevent or overcome.

2. In the event that either the Shipper or Union is rendered unable, in whole or in part, by force majeure, to perform or comply with any obligation or condition of the Contract, such party shall give notice and full particulars of such force majeure in writing delivered by hand, fax or other direct written electronic means to the other party as soon as possible after the occurrence of the cause relied on and subject to the provision of this Article.

3. Neither party shall be entitled to the benefit of the provisions of force majeure hereunder if any or all of the following circumstances prevail: the failure resulting in a condition of force majeure was caused by the negligence of the party claiming suspension; the failure was caused by the party claiming suspension where such party failed to remedy the condition by making all reasonable efforts (short of litigation, if such remedy would require litigation); the party claiming suspension failed to resume the performance of such condition obligations with reasonable dispatch; the failure was caused by lack of funds; the party claiming suspension did not, as soon as possible after determining, or within a period within which it should acting reasonably have determined, that the occurrence was in the nature of force majeure and would affect its ability to observe or perform any of its conditions or obligations under the Contract, give to the other party the notice required hereunder.

4. The party claiming suspension shall likewise give notice as soon as possible after the force majeure condition is remedied, to the extent that the same has been remedied, and that such party has resumed or is then in a position to resume the performance of the obligations and conditions of the Contract.

5. An event of force majeure on Union's system will excuse the failure to deliver gas by Union or the failure to accept gas by Union hereunder, and both parties shall be excused from performance of their obligations hereunder, except for payment obligations, to the extent of and for the duration of the force majeure.

6. Upstream or Downstream Force Majeure: An event of force majeure upstream or downstream of Union's system shall not relieve Shipper of any payment obligations.

7. Delay of Firm Transportation Services: Despite Article XI herein, if Union is prevented, by reason of an event of force majeure on Union's system from delivering gas on the Day or Days upon which Union has accepted gas from Shipper, Union shall thereafter make all reasonable efforts to deliver such quantities as soon as practicable and on such Day or Days as are agreed to by Shipper and Union. If Union accepts such gas on this basis, Shipper shall not receive any demand charge relief as contemplated under Article XI herein.

8. Demand Charge Relief for Firm Transportation Services: Despite Article XI herein, if on any Day Union fails to accept gas from Shipper by reason of an event of force majeure on Union's system and fails to deliver the quantity of gas nominated hereunder by Shipper up to the firm Contract Demand for that Contract, then for that Day the Monthly demand charge shall be reduced by an amount equal to the applicable Daily Demand Rate, as defined in this paragraph, multiplied by the difference between the quantity of gas actually delivered by Union during such Day and the quantity of gas which Shipper in good faith nominated on such Day. The term "Daily Demand Rate" shall mean the Monthly demand charge or equivalent pursuant to the M12 Rate Schedule divided by the number of days in the month for which such rate is being calculated.

9. If, due to the occurrence of an event of force majeure as outlined above, the capacity for gas deliveries by Union is impaired, it will be necessary for Union to curtail Shipper's gas receipts to Union hereunder, via proration based on utilization of such facilities for the Day. This prorating shall be determined by multiplying the capability of such facilities as available downstream of the impairment on the Day, by a fraction where the numerator is Shipper's nominated firm quantity and the denominator is the total of all such nominated firm quantities for nominated services and planned consumption for in-franchise customers on the Day. For the purposes of this Article XI, firm services shall mean all firm services provided by Union to in-franchise customers and ex-franchise shippers.

XII. DEFAULT AND TERMINATION

In case of the breach or non-observance or non-performance on the part of either party hereto of any covenant, proviso, condition, restriction or stipulation contained in the Contract (but not including herein failure to take or make delivery in whole or in part of the gas delivered to/by Union hereunder occasioned by any of the reasons provided for in Article XI herein) which has not been waived by the other party, then and in every such case and as often as the same may happen, the non-defaulting party may give written notice to the defaulting party requiring it to remedy such default and in the event of the defaulting party failing to remedy the same within a period of thirty (30) days from receipt of such notice, the non-defaulting party may at its sole option declare the Contract to be terminated and thereupon the Contract shall be terminated and be null and void for all purposes other than and except as to any liability of the parties under the same incurred before and subsisting as of termination. The right hereby conferred upon each party shall be in addition to, and not in derogation of or in substitution for, any other right or remedy which the parties respectively at law or in equity shall or may possess.

XIII. AMENDMENT

Subject to Article XV herein and the ability of Union to amend the applicable rate schedules and price schedules, with the approval of the OEB (if required), no amendment or modification of the Contract shall be effective unless the same shall be in writing and signed by each of the Shipper and Union.

XIV. NON-WAIVER AND FUTURE DEFAULT

No waiver of any provision of the Contract shall be effective unless the same shall be in writing and signed by the party entitled to the benefit of such provision and then such waiver shall be effective only in the specific instance and for the specified purpose for which it was given. No failure on the part of Shipper or Union to exercise, and no course of dealing with respect to, and no delay in exercising, any right, power or remedy under the Contract shall operate as a waiver thereof.

XV. LAWS, REGULATIONS AND ORDERS

The Contract and the respective rights and obligations of the parties hereto are subject to all present and future valid laws, orders, rules and regulations of any competent legislative body, or duly constituted authority now or hereafter having jurisdiction and the Contract shall be varied and amended to comply with or conform to any valid order or direction of any board, tribunal or administrative agency which affects any of the provisions of the Contract.

XVI ALLOCATION OF CAPACITY

1. A potential shipper may request firm transportation service on Union's system at any time. Any request for firm M12 transportation service must include: potential shipper's legal name, Receipt Point(s), Delivery Point(s), Commencement Date, Initial Term, Contract Demand and proposed payment. This is applicable for M12 service requests for firm transportation service with minimum terms of ten (10) years where Expansion Facilities are required or a minimum term of five (5) years for use of existing capacity.

2. If requests for firm transportation services cannot be met through existing capacity such that the only way to satisfy the requests for transportation service would require the construction of Expansion Facilities which create new capacity, Union

shall allocate any such new capacity by open season, subject to the terms of the open season, and these General Terms and Conditions.

3. If requests for long-term firm transportation service can be met through existing facilities upon which long-term capacity is becoming available, Union shall allocate such long-term capacity by open season, subject to the terms of the open season, and these General Terms and Conditions. "Long-term", for the purposes of this Article XVI, means, in the case of a transportation service, a service that has a term of one year or greater.

4. Capacity requests received during an open season shall be awarded starting with those bids with the highest economic value. If the economic values of two or more independent bids are equal, then service shall be allocated on a pro-rata basis. The economic value shall be based on the net present value which shall be calculated based on the proposed per-unit rate and the proposed term of the contract and without regard to the proposed Contract Demand ("NPV").

5. Union may at any time allocate capacity to respond to any M12 transportation service request through an open season. If a potential shipper requests M12 transportation service that can be provided through Available Capacity that was previously offered by Union in an open season but was not awarded, then:

   a. Any such request must conform to the requirements of Section 1 of this Article XVI;

   b. Union shall allocate capacity to serve such request pursuant to this Section 5, and subject to these General Terms and Conditions and Union's standard form M12 transportation contract;

   c. Union may reject a request for M12 transportation service for any of the following reasons:

      i) if there is insufficient Available Capacity to fully meet the request, but if that is the only reason for rejecting the request for service, Union must offer to supply the Available Capacity to the potential shipper;

      ii) if the proposed monthly payment is less than Union's Monthly demand charge plus fuel requirements for the applicable service;

      iii) if prior to Union accepting the request for transportation service Union receives a request for transportation service from one or more other potential shippers and there is, as a result, insufficient Available Capacity to service all the requests for service, in which case Union shall follow the procedure in Section 5 d hereof; -

      iv) if Union does not provide the type of transportation service requested; or

      v) if all of the conditions precedent specified in Article XXI Sections 1 and 2 herein have not been satisfied or waived.

   d. Union will advise the potential shipper in writing whether Union accepts or rejects the request for service, subject to Article XVI 5 c, within 5 calendar days of receiving a request for M12 transportation service. If Union rejects a request for service, Union shall inform the potential shipper of the reasons why its request is being rejected; and

   e. If Union has insufficient Available Capacity to service all pending requests for transportation service Union may:

      i) Reject all the pending requests for transportation service and conduct an open season; or

      ii) Union shall inform all the potential shippers who have submitted a pending request for transportation service that it does not have sufficient capacity to service all pending requests for service, and Union shall provide all such potential shippers with an equal opportunity to submit a revised request for service. Union shall then allocate the Available Capacity to the request for transportation service with the highest economic value to Union. If the economic values of two or more requests are equal, then service shall be allocated on a pro-rata basis. The economic value of any request shall be based on the NPV.

XVII. RENEWALS

1. Initial Term: Subject to Article XVII, Section 3 herein, Contracts with an Initial Term of five (5) years or greater will continue in full force and effect beyond the Initial Term, automatically renewing for a period of one (1) year, and every one (1) year thereafter. Shipper may reduce the Contract Demand or terminate the Contract with notice in writing by Shipper at least two (2) years prior to the expiration thereof.

2. Expansion Facilities: If at any time Union determines, acting reasonably, that:

   i) Expansion Facilities are required to increase the capacity or capabilities of flow on Union's pipeline system; and

   ii) the estimated cost of such Expansion Facilities will exceed $20 million;

   Union will provide a Term-Up Notice to Shipper if Union determines Shipper's Contract, which contains a right of renewal pursuant to Section 1 immediately above, may impact the design of the Expansion Facilities.

~~1.~~3. Term-Up Notice: Upon receipt of the Term-Up Notice, Shipper may elect, within sixty (60) days of receipt of the Term-Up Notice, to extend the existing term of the Contract for all or a portion of the Contract Demand for an additional period such that the new termination date of the Contract shall not be less than five (5) years after the expected in-service date of the Expansion Facilities. If Shipper does not elect to extend the existing term of the Contract within such sixty (60) day period, Shipper shall not be entitled to renew the Contract pursuant to Article XVII, Section 1 herein and the Contract shall expire at the end of the existing term.

XVIII. SERVICE CURTAILMENT

1. Union shall have the right to curtail or not to schedule part or all of Transportation Services, in whole or in part, on all or a portion of its pipeline system at any time for reasons of Force Majeure or when, in Union sole discretion, acting reasonably, capacity or operating conditions so require or it is desirable or necessary to make modifications, repairs or operating changes to its pipeline system. Union shall provide Shipper such notice of such curtailment as is reasonable under the circumstances. If due to any cause whatsoever Union is unable to receive or deliver the quantities of Gas which Shipper has requested, then Union shall order curtailment by all Shippers affected and to the extent necessary to remove the effect of the disability. Union has a priority of service policy to determine the order of service curtailment. In order to place services on the priority of service list, Union considers the following business principles: appropriate level of access to core services, customer commitment, encouraging appropriate contracting, materiality, price and term, and promoting and enabling in-franchise consumption.

   The Priority ranking for all services utilizing Union Gas' storage, transmission and distribution system as applied to both in-franchise and ex-franchise services are as follows; with number 1 having the highest priority and the last interrupted.

   1. Firm In-franchise Transportation and Distribution services and firm Ex-franchise services (Note 1)
   2. In-franchise Interruptible Distribution services
   3. C1/M12 IT Transport and IT Exchanges with Take or Pay rates
   4. Balancing (Hub Activity) < = 100 GJ/d; Balancing (Direct Purchase) < = 500 GJ/d; In-franchise distribution authorized overrun (Note 3)
   5. C1/M12 IT Transport and IT Exchanges at premium rates
   6. C1/M12 Overrun < = 20% of CD (Note 4)
   7. Balancing (Direct Purchase) > 500 GJ/d
   8. Balancing (Hub Activity) > 100 GJ/d; C1/M12 IT Transport and IT Exchanges
   9. C1/M12 Overrun > 20% of CD
   10. C1/M12 IT Transport and IT Exchanges at a discount
   11. Late Nominations

   Notes:

   1. Nominated services must be nominated on the NAESB Timely Nomination Cycle otherwise they are considered to be late nomination and are therefore interruptible.

2. Higher value or more reliable IT is contemplated in the service and contract, when purchase at market competitive prices.
3. Captures the majority of customers that use Direct Purchase balancing transactions.
4. Captures the majority of customers that use overrun.

2. Union reserves the right to change its procedures for sharing interruptible capacity and will provide Shipper with two (2) months prior notice of any such change.

3. Maintenance: Union's facilities from time to time may require maintenance or construction. If such maintenance or construction is required, and in Union's sole opinion, acting reasonably, such maintenance or construction may impact Union's ability to meet Shipper's requirements, Union shall provide at least ten (10) days notice to Shipper, except in the case of an emergency. In the event the maintenance impacts on Union's ability to meet Shipper's requirements, Union shall not be liable for any damages and shall not be deemed in breach of the Contract. To the extent that Union's ability to accept and/or deliver Shipper's gas is impaired, the Monthly demand charge shall be reduced in accordance with Article XI Section 8 and available capacity allocated in accordance with Article XI Section 9 herein.

Union shall use reasonable efforts to determine a mutually acceptable period during which such maintenance or construction will occur and also to limit the extent and duration of any impairments. Union will endeavour to schedule and complete the maintenance and construction, which would normally be expected to impact on Union's ability to meet Shipper's requirements, during the period from April 1 through to November 1.

XIX. SHIPPER'S REPRESENTATIONS AND WARRANTIES

1. Shipper's Warranty: Shipper warrants that it will, if required, maintain, or have maintained on its behalf, all external approvals including the governmental, regulatory, import/export permits and other approvals or authorizations that are required from any federal, state or provincial authorities for the gas quantities to be handled under the Contract. Shipper further warrants that it shall maintain in effect the Facilitating Agreements.

2. Financial Representations: Shipper represents and warrants that the financial assurances (including the Initial Financial Assurances and Security) (if any) shall remain in place throughout the term hereof, unless Shipper and Union agree otherwise. Shipper shall notify Union in the event of any change to the financial assurances throughout the term hereof. Should Union have reasonable grounds to believe that Shipper will not be able to perform or continue to perform any of its obligations under the Contract as a result of one of the following events ("Material Event");

   a. Shipper is in default, which default has not been remedied, of the Contract or is in default of any other material contract with Union or another party; or,

   b. Shipper's corporate or debt rating falls below investment grade according to at least one nationally recognized rating agency; or,

   c. Shipper ceases to be rated by a nationally recognized agency; or,

   d. Shipper has exceeded credit available as determined by Union from time to time,

   then Shipper shall within fourteen (14) days of receipt of written notice by Union, obtain and provide to Union a letter of credit or other security in the form and amount reasonably required by Union (the "Security"). The Security plus the Initial Financial Assurances shall not exceed twelve (12) months of Monthly demand charges (in accordance with Article IX herein) multiplied by Contract Demand. In the event that Shipper does not provide to Union such Security within such fourteen (14) day period, Union may deem a default under the Default and Termination provisions of Article XII herein.

   In the event that Shipper in good faith, reasonably believes that it should be entitled to reduce the amount of or value of the Security previously provided, it may request such a reduction from Union and to the extent that the Material Event has been mitigated or eliminated, Union shall return all or a portion of the Security to Shipper within fourteen (14) Business Days after receipt of the request.

XX. MISCELLANEOUS PROVISIONS

1. Permanent Assignment: Shipper may assign the Contract to a third party ("Assignee"), up to the Contract Demand, (the "Capacity Assigned"). Such assignment shall require the prior written consent of Union and release of obligations by Union for the Capacity Assigned from the date of assignment. Such consent and release shall not be unreasonably withheld and shall be conditional upon the Assignee providing, amongst other things, financial assurances as per Article XXI herein. Any such assignment will be for the full rights, obligations and remaining term of the Contract as relates to the Capacity Assigned.

2. Temporary Assignment: Shipper may, upon notice to Union, assign all or a part of its service entitlement under the Contract (the "Assigned Quantity") and the corresponding rights and obligations to an Assignee on a temporary basis for not less than one calendar month. Such assignment shall not be unreasonably withheld and shall be conditional upon the Assignee executing the Facilitating Agreement as per Article XXI herein. Notwithstanding such assignment, Shipper shall remain obligated to Union to perform and observe the covenants and obligations contained herein in regard to the Assigned Quantity to the extent that Assignee fails to do so.

3. Title to Gas: Shipper represents and warrants to Union that Shipper shall have good and marketable title to, or legal authority to deliver to Union, all gas delivered to Union hereunder. Furthermore, Shipper hereby agrees to indemnify and save Union harmless from all suits, actions, debts, accounts, damages, costs, losses and expenses arising from or out of claims of any or all third parties to such gas or on account of Taxes, or other charges thereon.

XXI. PRECONDITIONS TO TRANSPORTATION SERVICES

1. The obligations of Union to provide Transportation Services hereunder are subject to the following conditions precedent, which are for the sole benefit of Union and which may be waived or extended in whole or in part in the manner provided in the Contract:

   a. Union shall have obtained, in form and substance satisfactory to Union, and all conditions shall have been satisfied under, all governmental, regulatory and other third party approvals, consents, orders and authorizations, that are required to provide the Transportation Services; and,

   b. Union shall have obtained all internal approvals that are necessary or appropriate to provide the transportation Services; and,

   c. Union shall have received from Shipper the requisite financial assurances reasonably necessary to ensure Shipper's ability to honour the provisions of the Contract (the "Initial Financial Assurances"). The Initial Financial Assurances, if required, will be as determined solely by Union; and,

   d. Shipper and Union shall have entered into the Interruptible Service HUB Contract or equivalent (the "Facilitating Agreement") with Union.

2. The obligations of Shipper hereunder are subject to the following conditions precedent, which are for the sole benefit of Shipper and which may be waived or extended in whole or in part in the manner provided in the Contract:

   a. Shipper shall, as required, have entered into the necessary contracts with Union and/or others to facilitate the Transportation Services contemplated herein, including contracts for upstream and downstream transportation, and shall specifically have an executed and valid Facilitating Agreement; and shall, as required, have entered into the necessary contracts to purchase the gas quantities handled under the Contract; and,

   b. Shipper shall have obtained, in form and substance satisfactory to Shipper, and all conditions shall have been satisfied under, all governmental, regulatory and other third party approvals, consents, orders and authorizations, that are required from federal, state, or provincial authorities for the gas quantities handled under the Contract; and,

   c. Shipper shall have obtained all internal approvals that are necessary or appropriate for the Shipper to execute the Contract.

3. Union and Shipper shall each use due diligence and reasonable efforts to satisfy and fulfil the conditions precedent specified in this Article XXI Section 1 a, c, and d and Section 2 a and b. Each party shall notify the other forthwith in writing

of the satisfaction or waiver of each condition precedent for such party's benefit. If a party concludes that it will not be able to satisfy a condition precedent that is for its benefit, such party may, upon written notice to the other party, terminate the Contract and upon the giving of such notice, the Contract shall be of no further force and effect and each of the parties shall be released from all further obligations thereunder.

4. If any of the conditions precedent in this Article XXI Section 1 c or Section 2 are not satisfied or waived by the party entitled to the benefit of that condition by the Conditions Date as such term is defined in the Contract, then either party may, upon written notice to the other party, terminate the Contract and upon the giving of such notice, the Contract shall be of no further force and effect and each of the parties shall be released from all further obligations hereunder, provided that any rights or remedies that a party may have for breaches of the Contract prior to such termination and any liability a party may have incurred before such termination shall not thereby be released.

SCHEDULE "A 2010"

RATE C1
GENERAL TERMS & CONDITIONS

I. DEFINITIONS

Except where the context expressly requires or states another meaning, the following terms, when used in these General Terms & Conditions and in any contract into which these General Terms & Conditions are incorporated, shall be construed to have the following meanings:

"Authorized Overrun" shall mean the amount by which Shipper's Authorized Quantity exceeds the Contract Demand;

"Available Capacity" shall mean at any time, Union's remaining available capacity to provide Transportation Services;

"Business Day" shall mean any day, other than Saturday, Sunday or any days on which national banks in the Province of Ontario are authorized to close;

"Contract" shall refer to the Contract to which these General Terms & Conditions shall apply, and into which they are incorporated;

"Contract Year" shall mean a period of three hundred and sixty-five (365) consecutive days; provided however, that any such period which contains a date of February 29 shall consist of three hundred and sixty-six (366) consecutive days, commencing on November 1 of each year; except for the first Contract Year which shall commence on the Commencement Date and end on the first October 31 that follows such date;

"cricondentherm hydrocarbon dewpoint" shall mean the highest hydrocarbon dewpoint temperature on the phase envelope;

"cubic metre" shall mean the volume of gas which occupies one cubic metre when such gas is at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

"Day" shall mean a period of twenty-four (24) consecutive hours beginning at 10:00 a.m. Eastern Clock Time. The reference date for any Day shall be the calendar date upon which the twenty-four (24) hour period shall commence;

"delivery" shall mean any gas that is delivered by Union into Shipper's possession, or to the possession of Shipper's agent;

"Eastern Clock Time" shall mean the local clock time in the Eastern Time Zone on any Day;

"Expansion Facilities" shall mean any new facilities to be constructed by Union in order to provide Transportation Services;

"firm" shall mean service not subject to curtailment or interruption except under Articles XI, XII and XVIII herein;

"gas" shall mean gas as defined in the Ontario Energy Board Act, 1998, S.O. 1998, c.15, Sch. B, as amended, supplemented or re-enacted from time to time;

"gross heating value" shall mean the total heat expressed in megajoules per cubic metre (MJ/m^3) produced by the complete combustion at constant pressure of one (1) cubic metre of gas with air, with the gas free of water vapour and the temperature of the gas, air and products of combustion at standard temperature and all water formed by the combustion reaction condensed to the liquid state;

"hydrocarbon dewpoint" shall mean temperature at a specific pressure where hydrocarbon vapour condensation begins;

"Interruptible Service HUB Contract" shall mean a contract between Shipper and Union under which Union provides interruptible HUB service;

"interruptible service" or "Interruptible" shall mean service subject to curtailment or interruption, after notice, at any time;

"Interconnecting Pipeline" shall mean a pipeline that directly connects to the Union pipeline system;

"joule" (J) shall mean the work done when the point of application of a force of one (1) newton is displaced a distance of one (1) metre in the direction of the force. The term "megajoule" (MJ) shall mean 1,000,000 joules. The term "gigajoule" (GJ) shall mean 1,000,000,000 joules;

"Limited Firm" shall mean gas service subject to interruption or curtailment on a limited number of Days as specified in the Contract;

"Loaned Quantities" shall mean those quantities of gas loaned to Shipper under the Facilitating Agreement;

"m^3" shall mean cubic metre of gas and "10^3m^3" shall mean 1,000 cubic metres of gas;

"Month" shall mean the period beginning at 10:00 a.m. Eastern Clock Time on the first day of a calendar month and ending at 10:00 a.m. Eastern Clock Time on the first day of the following calendar month;

"NAESB" shall mean North American Energy Standards Board;

"OEB" means the Ontario Energy Board;

"Open Season" or "open season" shall mean an open access auction or bidding process held by Union as a method of allocating capacity;

"pascal" "(Pa)" shall mean the pressure produced when a force of one (1) newton is applied to an area of one (1) square metre. The term "kilopascal" "(kPa)" shall mean 1,000 pascals;

"receipt" shall mean any gas that is delivered into Union's possession, or the possession of Union's agent;

"Shipper" shall have the meaning as defined in the Contract, and shall also include Shipper's agent(s);

"specific gravity" shall mean density of the gas divided by density of air, with both at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

"Taxes" shall mean any tax (other than tax on income or tax on property), duty, royalty, levy, license, fee or charge not included in the charges and rates as per the applicable rate schedule (including but not limited to charges under any form of cap and trade, carbon tax, or similar system) and that is levied, assessed or made by any governmental authority on the gas itself, or the act, right, or privilege of producing, severing, gathering, storing, transporting, handling, selling or delivering gas under the Contract;

"TCPL" means TransCanada PipeLines Limited;

"Term-Up Notice" shall mean notice provided to Shipper by Union in accordance with Article XVII.

"Wobbe Number" shall mean gross heating value of the gas divided by the square root of its specific gravity.

II. GAS QUALITY

1. Natural Gas: The minimum gross heating value of the gas delivered to/by Union hereunder, shall be thirty-six (36) megajoules per cubic metre. The maximum gross heating value of the gas delivered to/by Union hereunder shall be forty point two (40.2) megajoules per cubic metre. The gas to be delivered hereunder to Union may be a commingled supply from Shipper's gas sources of supply. The gas to be delivered by Union may be a commingled supply from Union's sources of gas supply; provided, however, that helium, natural gasoline, butane, propane and other hydrocarbons, except

methane, may be removed prior to delivery to Shipper. Further, Union may subject, or permit the subjection of, the gas to compression, dehydration, cooling, cleaning and other processes.

2. Freedom from objectionable matter: The gas to be delivered to/by Union hereunder,

   a. shall be commercially free from bacteria, sand, dust, gums, crude oils, lubricating oils, liquids, chemicals or compounds used in the production, treatment, compression or dehydration of the gas or any other objectionable substance in sufficient quantity so as to render the gas toxic, unmerchantable or cause injury to, or interference with, the proper operation of the lines, regulators, meters or other appliances through which it flows,

   b. shall not contain more than seven (7) milligrams of hydrogen sulphide per cubic metre of gas, nor more than four hundred and sixty (460) milligrams of total sulphur per cubic metre of gas,

   c. shall not contain more than five (5) milligrams of mercaptan sulphur per cubic metre of gas,

   d. shall not contain more than two point zero (2.0) molar percent by volume of carbon dioxide in the gas,

   e. shall not contain more than zero point four (0.4) molar percent by volume of oxygen in the gas,

   f. shall not contain more than zero point five (0.5) molar percent by volume of carbon monoxide in the gas,

   g. shall not contain more than four point zero (4.0) molar percent by volume of hydrogen in the gas,

   h. shall not contain more than sixty-five (65) milligrams of water vapour per cubic metre of gas,

   i. shall not have a cricondentherm hydrocarbon dewpoint exceeding minus eight (-8) degrees Celsius,

   j. shall have Wobbe Number from forty seven point fifty (47.50) megajoules per cubic metre of gas to fifty one point forty six (51.46) megajoules per cubic metre of gas, maximum of one point five (1.5) mole percent by volume of butane plus (C4+) in the gas, and maximum of four point zero (4.0) mole percent by volume of total inerts in the gas in order to be interchangeable with other Interconnecting Pipeline gas.

3. Non-conforming Gas: In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in this Article II.

4. Quality of Gas Received: The quality of the gas to be received by Union hereunder is to be of a merchantable quality and in accordance with the quality standards as set out by Union in this Article II, but, Union will also accept gas of a quality as set out in any other Interconnecting Pipeline's general terms and conditions, provided that all Interconnecting Pipelines accept such quality of gas. In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in Union's C1 Rate Schedule.

III. MEASUREMENTS

1. Storage, Transportation, and/or Sales Unit: The unit of the gas delivered to Union shall be a megajoule or a gigajoule. The unit of gas transported or stored by Union shall be a megajoule or a gigajoule. The unit of gas delivered by Union shall be a megajoule, a gigajoule, a cubic metre (m^3) or one thousand cubic metres (10^3m^3) at Union's discretion.

2. Determination of Volume and Energy:

   a. The volume and energy amounts determined under the Contract shall be determined in accordance with the Electricity and Gas Inspection Act (Canada), RSC 1985, c E-4- (the "**Act**") and the Electricity and Gas Inspection Regulations, SOR 86/131 (the "**Regulations**"), and any documents issued under the authority of the Act and Regulations and any amendments thereto.

b. The supercompressibility factor shall be determined in accordance with either the "Manual for Determination of Supercompressibility Factors for Natural Gas" (PAR Project NX-19) published in 1962 or with American Gas Association Transmission Measurement Committee Report No. 8, Nov. 1992, at Union's discretion, all as amended from time to time.

c. The volume and/or energy of the gas delivered to/by Union hereunder shall be determined by the measurement equipment designated in Article VII herein.

d. Upon request by Union, Shipper shall obtain measurement of the total quantity of gas received by Union hereunder from the Interconnecting Pipeline. Such measurement shall be done in accordance with established practices between Union and the Interconnecting Pipeline.

IV. RECEIPT POINT AND DELIVERY POINT

1. Unless otherwise specified in the Contract, the point or points of receipt and point or points of delivery for all gas to be covered hereunder shall be on the outlet side of the measuring stations located at or near the point or points of connection specified in the Contract, where possession of the gas changes from one party to the other, and as per Schedule "C 2010".

V. POSSESSION OF AND RESPONSIBILITY FOR GAS

1. Union accepts no responsibility for any gas prior to such gas being delivered to Union at the Receipt Point or after its delivery by Union at the Delivery Point. As between the parties hereto, Union shall be deemed to be in control and possession of and responsible for all such gas from the time that such gas enters Union's system until such gas is delivered to Shipper.

2. Shipper agrees that Union is not a common carrier and is not an insurer of Shipper's gas, and that Union shall not be liable to Shipper or any third party for loss of gas in Union's possession, except to the extent such loss is caused entirely by Union's negligence or wilful misconduct.

VI. FACILITIES ON SHIPPER'S PROPERTY

Except under those conditions where Union is delivering to TCPL for TCPL or Shipper at Parkway (TCPL), or to an Interconnecting Pipeline, or where otherwise specified in the Contract, the following will apply:

1. Construction and Maintenance: Union, at its own expense may construct, maintain and operate on Shipper's property at the delivery point a measuring station properly equipped with a meter or meters and any other necessary measuring equipment for properly measuring the gas redelivered under the Contract. Shipper will grant to Union a lease and/or rights-of-way over property of Shipper as required by Union to install such facilities and to connect same to Union's pipeline.

2. Entry: Union, its servants, agents and each of them may at any reasonable time on notice (except in cases of emergency) to Shipper or his duly authorized representative enter Shipper's property for the purpose of constructing, maintaining, removing, operating and/or repairing station equipment.

3. Property: The said station and equipment will be and remain the property of Union notwithstanding it is constructed on and attached to the realty of Shipper, and Union may at its own expense remove it upon termination of the Contract and will do so if so requested by Shipper.

VII. MEASURING EQUIPMENT

1. Metering by Union: Union will install and operate meters and related equipment as required and in accordance with the Act and Regulations referenced in Article III herein.

2. Metering by Others: In the event that all or any gas delivered to/by Union hereunder is measured by a meter that is owned and operated by an Interconnecting Pipeline, then Union and Shipper agree to accept that metering for the purpose of determining the volume and energy of gas delivered to/by Union on behalf of the Shipper. The standard of measurement and tests for the gas delivered to/by Union hereunder shall be in accordance with the general terms and conditions as incorporated in that Interconnecting Pipeline company's gas tariff as approved by its regulatory body.

3. Check Measuring Equipment: Shipper may install, maintain and operate, at the redelivery point, at its own expense, such check measuring equipment as desired, provided that such equipment shall be so installed as not to interfere with the operation of Union's measuring equipment at or near the delivery point, and shall be installed, maintained and operated in conformity with the same standards and specifications applicable to Union's metering facilities.

4. Rights of Parties: The measuring equipment installed by either party, together with any building erected by it for such equipment, shall be and remain its property. However, Union and Shipper shall have the right to have representatives present at the time of any installing, reading, cleaning, changing, repairing, inspecting, testing, calibrating, or adjusting done in connection with the other's measuring equipment used in measuring or checking the measurement of deliveries of gas to/by Union under the Contract. Either party will give the other party reasonable notice of its intention to carry out the acts herein specified. The records from such measuring equipment shall remain the property of their owner, but upon request each will submit to the other its records and charts, together with calculations therefrom, for inspection and verification, subject to return within ten (10) days after receipt thereof.

5. Calibration and Test of Measuring Equipment: The accuracy of Union's measuring equipment shall be verified by Union at reasonable intervals, and if requested, in the presence of representatives of Shipper, but Union shall not be required to verify the accuracy of such equipment more frequently than once in any thirty (30) day period. In the event either party notifies the other that it desires a special test of any measuring equipment, the parties shall co-operate to secure a prompt verification of the accuracy of such equipment. The expense of any such special test, if called for by Shipper, shall be borne by Shipper if the measuring equipment tested is found to be in error by not more than two per cent (2%). If, upon test, any measuring equipment is found to be in error by not more than two per cent (2%), previous recordings of such equipment shall be considered accurate in computing receipts and deliveries of gas, but such equipment shall be adjusted at once to record as near to absolute accuracy as possible. If the test conducted shows a percentage of inaccuracy greater than two percent (2%), the financial adjustment, if any, shall be calculated in accordance with the Act and Regulations, as may be amended from time to time and in accordance with any successor statutes and regulations.

6. Preservation of Metering Records: Union and Shipper shall each preserve for a period of at least six (6) years all test data, and other relevant records.

7. Error in Metering or Meter Failure: In the event of an error in metering or a meter failure, (such error or failure being determined through check measurement by Union or any other available method), then Shipper shall enforce its rights as Shipper with the Interconnecting Pipeline(s) to remedy such error or failure including enforcing any inspection and/or verification rights and procedures.

VIII. BILLING

1. Monthly Billing Date: Union shall render bills on or before the tenth (10th) day of each month for all Transportation Services furnished during the preceding Month. Such charges may be based on estimated quantities, if actual quantities are unavailable in time to prepare the billing. Union shall provide, in a succeeding Month's billing, an adjustment based on any difference between actual quantities and estimated quantities, without any interest charge. If presentation of a bill to Shipper is delayed after the tenth (10th) day of the month, then the time of payment shall be extended accordingly, unless Shipper is responsible for such delay.

2. Right of Examination: Both Union and Shipper shall have the right to examine at any reasonable time the books, records and charts of the other to the extent necessary to verify the accuracy of any statement, chart or computation made under or pursuant to the provisions of the Contract.

3. Amendment of Statements: For the purpose of completing a final determination of the actual quantities of gas handled in any of the Transportation Services to Shipper, the parties shall have the right to amend their statement for a period equal to the time during which the Interconnecting Pipeline retains the right to amend their statements, which period shall not exceed three (3) years from the date of termination of the Contract.

IX. PAYMENTS

1. Monthly Payments: Shipper shall pay the invoiced amount directly into Union's bank account as directed on the invoice on or before the twentieth (20th) day of each month. If the payment date is not a Business Day, then payment must be received in Union's account on the first Business Day preceding the twentieth (20th) day of the month.

2. Remedies for Non-payment: Should Shipper fail to pay all of the amount of any bill as herein provided when such amount is due,

   a. Shipper shall pay to Union interest on the unpaid portion of the bill accruing at a rate per annum equal to the minimum commercial lending rate of Union's principal banker in effect from time to time from the due date until the date of payment; and,

   b. If such failure to pay continues for thirty (30) days after payment is due, Union, in addition to any other remedy it may have under the Contract, may suspend Services until such amount is paid. Notwithstanding such suspension, all demand charges shall continue to accrue hereunder as if such suspension were not in place.

   If Shipper in good faith disputes the amount of any such bill or part thereof Shipper shall pay to Union such amounts as it concedes to be correct. At any time thereafter, within twenty (20) days of a demand made by Union, Shipper shall furnish financial assurances satisfactory to Union, guaranteeing payment to Union of the amount ultimately found due upon such bill after a final determination. Such a final determination may be reached either by agreement, arbitration decision or judgement of the courts, as may be the case. Union shall not be entitled to suspend Services because of such non-payment unless and until default occurs in the conditions of such financial assurances or default occurs in payment of any other amount due to Union hereunder.

   Notwithstanding the foregoing, Shipper is not relieved from the obligation to continue its deliveries of gas to Union under the terms of any agreement, where Shipper has contracted to deliver specified quantities of gas to Union.

3. Billing Adjustments: If it shall be found that at any time or times Shipper has been overcharged or undercharged in any form whatsoever under the provisions of the Contract and Shipper shall have actually paid the bills containing such overcharge or undercharge, Union shall refund the amount of any such overcharge and interest shall accrue from and including the first day of such overcharge as paid to the date of refund and shall be calculated but not compounded at a rate per annum determined each day during the calculation period to be equal to the minimum commercial lending rate of Union's principal banker, and the Shipper shall pay the amount of any such undercharge, but without interest. In the event Union renders a bill to Shipper based upon measurement estimates, the required adjustment to reflect actual measurement shall be made on the bill next following the determination of such actual measurement, without any charge of interest. In the event an error is discovered in the amount billed in any statement rendered by Union, such error shall be adjusted by Union. Such overcharge, undercharge or error shall be adjusted by Union on the bill next following its determination (where the term "bill next following" shall mean a bill rendered at least fourteen (14) days after the day of its determination), provided that claim therefore shall have been made within three (3) years from the date of the incorrect billing. In the event any refund is issued with Shipper's bill, the aforesaid date of refund shall be deemed to be the date of the issue of bill.

4. Taxes:

   In addition to the charges and rates as per the applicable rate schedules and price schedules, Shipper shall pay all Taxes which are imposed currently or subsequent to the execution of the Contract by any legal authority having jurisdiction and any amount in lieu of such Taxes paid or payable by Union.

5. Set Off:

If either party shall, at any time, be in arrears under any of its payment obligations to the other party under the Contract, then the party not in arrears shall be entitled to reduce the amount payable by it to the other party in arrears under the Contract, or any other contract, by an amount equal to the amount of such arrears or other indebtedness to the other party. In addition to the foregoing remedy, Union may, upon forty-eight (48) hours verbal notice, to be followed by written notice, take possession of any or all of Shipper's gas under the Contract or any enhancement to the Contract, which shall be deemed to have been assigned to Union, to reduce such arrears or other indebtedness to Union.

X. ARBITRATION

If and when any dispute, difference or question shall arise between the parties hereto touching the Contract or anything herein contained, or the construction hereof, or the rights, duties or liabilities of the parties in relation to any matter hereunder, the matter in dispute shall be submitted and referred to arbitration within ten (10) days after written request of either party. Upon such request each party shall appoint an arbitrator, and the two so appointed shall appoint a third. A majority decision of the arbitrators shall be final and binding upon both parties. In all other respects the provisions of the Arbitration Act, 1991, or any act passed in amendment thereof or substitution therefore, shall apply to each such submission. Operations under the Contract shall continue, without prejudice, during any such arbitration and the costs attributable to such arbitration shall be shared equally by the parties hereto.

XI. FORCE MAJEURE

1. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or any other industrial disturbance, acts of the public enemy, sabotage, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of governments and people, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or lines of pipe, inability to obtain materials, supplies, permits or labour, any laws, orders, rules, regulations, acts or restraints of any governmental body or authority (civil or military), any act or omission that is excused by any event or occurrence of the character herein defined as constituting force majeure, any act or omission by parties not controlled by the party having the difficulty and any other similar cases not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to prevent or overcome.

2. In the event that either the Shipper or Union is rendered unable, in whole or in part, by force majeure, to perform or comply with any obligation or condition of the Contract, such party shall give notice and full particulars of such force majeure in writing delivered by hand, fax or other direct written electronic means to the other party as soon as possible after the occurrence of the cause relied on and subject to the provision of this Article.

3. Neither party shall be entitled to the benefit of the provisions of force majeure hereunder if any or all of the following circumstances prevail: the failure resulting in a condition of force majeure was caused by the negligence of the party claiming suspension; the failure was caused by the party claiming suspension where such party failed to remedy the condition by making all reasonable efforts (short of litigation, if such remedy would require litigation); the party claiming suspension failed to resume the performance of such condition obligations with reasonable dispatch; the failure was caused by lack of funds; the party claiming suspension did not, as soon as possible after determining, or within a period within which it should acting reasonably have determined, that the occurrence was in the nature of force majeure and would affect its ability to observe or perform any of its conditions or obligations under the Contract, give to the other party the notice required hereunder.

4. The party claiming suspension shall likewise give notice as soon as possible after the force majeure condition is remedied, to the extent that the same has been remedied, and that such party has resumed or is then in a position to resume the performance of the obligations and conditions of the Contract.

5. An event of force majeure on Union's system will excuse the failure to deliver gas by Union or the failure to accept gas by Union hereunder, and both parties shall be excused from performance of their obligations hereunder, except for payment obligations, to the extent of and for the duration of the force majeure.

6. Upstream or Downstream Force Majeure: An event of force majeure upstream or downstream of Union's system shall not relieve Shipper of any payment obligations.

7. Delay of Firm Transportation Services: Despite Article XI herein, if Union is prevented, by reason of an event of force majeure on Union's system from delivering gas on the Day or Days upon which Union has accepted gas from Shipper, Union shall thereafter make all reasonable efforts to deliver such quantities as soon as practicable and on such Day or Days as are agreed to by Shipper and Union. If Union accepts such gas on this basis, Shipper shall not receive any demand charge relief as contemplated under Article XI herein.

8. Demand Charge Relief for Firm Transportation Services: Despite Article XI herein, if on any Day Union fails to accept gas from Shipper by reason of an event of force majeure on Union's system and fails to deliver the quantity of gas nominated hereunder by Shipper up to the firm Contract Demand for that Contract, then for that Day the Monthly demand charge shall be reduced by an amount equal to the applicable Daily Demand Rate, as defined in this paragraph, multiplied by the difference between the quantity of gas actually delivered by Union during such Day and the quantity of gas which Shipper in good faith nominated on such Day. The term "Daily Demand Rate" shall mean the Monthly demand charge or equivalent pursuant to the C1 Rate Schedule divided by the number of days in the month for which such rate is being calculated.

9. If, due to the occurrence of an event of force majeure as outlined above, the capacity for gas deliveries by Union is impaired, it will be necessary for Union to curtail Shipper's gas receipts to Union hereunder, via proration based on utilization of such facilities for the Day. This prorating shall be determined by multiplying the capability of such facilities as available downstream of the impairment on the Day, by a fraction where the numerator is Shipper's nominated firm quantity and the denominator is the total of all such nominated firm quantities for nominated services and planned consumption for in-franchise customers on the Day. For the purposes of this Article XI, firm services shall mean all firm services provided by Union to in-franchise customers and ex-franchise shippers.

XII. DEFAULT AND TERMINATION

In case of the breach or non-observance or non-performance on the part of either party hereto of any covenant, proviso, condition, restriction or stipulation contained in the Contract (but not including herein failure to take or make delivery in whole or in part of the gas delivered to/by Union hereunder occasioned by any of the reasons provided for in Article XI herein) which has not been waived by the other party, then and in every such case and as often as the same may happen, the non-defaulting party may give written notice to the defaulting party requiring it to remedy such default and in the event of the defaulting party failing to remedy the same within a period of thirty (30) days from receipt of such notice, the non-defaulting party may at its sole option declare the Contract to be terminated and thereupon the Contract shall be terminated and be null and void for all purposes other than and except as to any liability of the parties under the same incurred before and subsisting as of termination. The right hereby conferred upon each party shall be in addition to, and not in derogation of or in substitution for, any other right or remedy which the parties respectively at law or in equity shall or may possess.

XIII. AMENDMENT

Subject to Article XV herein and the ability of Union to amend the applicable rate schedules and price schedules, with the approval of the OEB (if required), no amendment or modification of the Contract shall be effective unless the same shall be in writing and signed by each of the Shipper and Union.

XIV. NON-WAIVER AND FUTURE DEFAULT

No waiver of any provision of the Contract shall be effective unless the same shall be in writing and signed by the party entitled to the benefit of such provision and then such waiver shall be effective only in the specific instance and for the specified purpose for which it was given. No failure on the part of Shipper or Union to exercise, and no course of dealing with respect to, and no delay in exercising, any right, power or remedy under the Contract shall operate as a waiver thereof.

XV. LAWS, REGULATIONS AND ORDERS

The Contract and the respective rights and obligations of the parties hereto are subject to all present and future valid laws, orders, rules and regulations of any competent legislative body, or duly constituted authority now or hereafter having jurisdiction and the Contract shall be varied and amended to comply with or conform to any valid order or direction of any board, tribunal or administrative agency which affects any of the provisions of the Contract.

XVI. ALLOCATION OF CAPACITY

1. A potential shipper may request transportation service on Union's system at any time. Any request for C1 transportation service must include: potential shipper's legal name, Receipt Point(s), Delivery Point(s), Commencement Date, Initial Term, Contract Demand, proposed payment, and type of transportation service requested.

2. If requests for firm transportation services cannot be met through existing capacity such that the only way to satisfy the requests for transportation service would require the construction of Expansion Facilities which create new capacity, Union shall allocate any such new capacity by open season, subject to the terms of the open season, and these General Terms and Conditions.

3. If requests for long-term transportation service can be met through existing facilities upon which long-term capacity is becoming available, Union shall allocate such long-term capacity by open season, subject to the terms of the open season, and these General Terms and Conditions. "Long-term", for the purposes of this Article XVI, means, in the case of a transportation service, a service that has a term of one year or greater.

4. Capacity requests received during an open season shall be awarded starting with those bids with the highest economic value. If the economic values of two or more independent bids are equal, then service shall be allocated on a pro-rata basis. The economic value shall be based on the net present value which shall be calculated based on the proposed per-unit rate and the proposed term of the contract and without regard to the proposed Contract Demand ("NPV").

5. Union may at any time allocate capacity to respond to any C1 transportation service request through an open season. If a potential shipper requests C1 transportation service that can be provided through Available Capacity that was previously offered by Union in an open season but was not awarded, then:

   a. Any such request must conform to the requirements of Section 1 of this Article XVI;

   b. Union shall allocate capacity to serve such request pursuant to this Section 5, and subject to these General Terms and Conditions and Union's standard form C1 transportation contract;

   c. Union may reject a request for C1 transportation service for any of the following reasons:

      i) if there is insufficient Available Capacity to fully meet the request, but if that is the only reason for rejecting the request for service, Union must offer to supply the Available Capacity to the potential shipper;

      ii) if the proposed monthly payment is less than Union's Monthly demand charge plus fuel requirements for the applicable service;

      iii) if prior to Union accepting the request for transportation service Union receives a request for transportation service from one or more other potential shippers and there is, as a result, insufficient Available Capacity to service all the requests for service, in which case Union shall follow the procedure in Section 5 d hereof; -

      iv) if Union does not provide the type of transportation service requested; or

v) if all of the conditions precedent specified in Article XXI Sections 1 and 2 herein have not been satisfied or waived.

d. Union will advise the potential shipper in writing whether Union accepts or rejects the request for service, subject to Article XVI 5(c) within 5 calendar days of receiving a request for C1 transportation service. If Union rejects a request for service, Union shall inform the potential shipper of the reasons why its request is being rejected; and

e. If Union has insufficient Available Capacity to service all pending requests for transportation service Union may:

i) Reject all the pending requests for transportation service and conduct an open season; or

ii) Union shall inform all the potential shippers who have submitted a pending request for transportation service that it does not have sufficient capacity to service all pending requests for service, and Union shall provide all such potential shippers with an equal opportunity to submit a revised request for service. Union shall then allocate the Available Capacity to the request for transportation service with the highest economic value to Union. If the economic values of two or more requests are equal, then service shall be allocated on a pro-rata basis. The economic value of any request shall be based on the NPV.

XVII. RENEWALS

1. Initial Term: Subject to Article XVII, Section 3 herein, Contracts with an Initial Term of five (5) years or greater, with Receipt Points and Delivery Points of Parkway or Kirkwall or Dawn (Facilities), will continue in full force and effect beyond the Initial Term, automatically renewing for a period of one (1) year, and every one (1) year thereafter. Shipper may reduce the Contract Demand or terminate the Contract with notice in writing by Shipper at least two (2) years prior to the expiration thereof.

For all other contracts, the Contract will continue in full force and effect until the end of the Initial Term, but shall not renew.

2. Expansion Facilities: If at any time Union determines, acting reasonably, that:

i) Expansion Facilities are required to increase the capacity or capabilities of flow on Union's pipeline system; and

ii) the estimated cost of such Expansion Facilities will exceed $20 million;

Union will provide a Term-Up Notice to Shipper if Union determines Shipper's Contract, which contains a right of renewal pursuant to Section 1 immediately above, may impact the design of the Expansion Facilities.

3. Term-Up Notice: Upon receipt of the Term-Up Notice, Shipper may elect, within sixty (60) days of receipt of the Term-Up Notice, to extend the existing term of the Contract for all or a portion of the Contract Demand for an additional period such that the new termination date of the Contract shall not be less than five (5) years after the expected in-service date of the Expansion Facilities. If Shipper does not elect to extend the existing term of the Contract within such sixty (60) day period, Shipper shall not be entitled to renew the Contract pursuant to Article XVII, Section 1 herein and the Contract shall expire at the end of the existing term.

XVIII. SERVICE CURTAILMENT

1. Union shall have the right to curtail or not to schedule part or all of Transportation Services, in whole or in part, on all or a portion of its pipeline system at any time for reasons of Force Majeure or when, in Union sole discretion, acting reasonably, capacity or operating conditions so require or it is desirable or necessary to make modifications, repairs or operating changes to its pipeline system. Union shall provide Shipper such notice of such curtailment as is reasonable under the circumstances. If due to any cause whatsoever Union is unable to receive or deliver the quantities of Gas which Shipper has requested, then Union shall order curtailment by all Shippers affected and to the extent necessary to remove the effect of the disability. Union has a priority of service policy to determine the order of service curtailment. In order to place

services on the priority of service list, Union considers the following business principles: appropriate level of access to core services, customer commitment, encouraging appropriate contracting, materiality, price and term, and promoting and enabling in-franchise consumption.

The Priority ranking for all services utilizing Union Gas' storage, transmission and distribution system as applied to both in-franchise and ex-franchise services are as follows; with number 1 having the highest priority and the last interrupted.

1. Firm In-franchise Transportation and Distribution services and firm Ex-franchise services (Note 1)
2. In-franchise Interruptible Distribution services
3. C1/M12 IT Transport and IT Exchanges with Take or Pay rates
4. Balancing (Hub Activity) < = 100 GJ/d; Balancing (Direct Purchase) < = 500 GJ/d; In-franchise distribution authorized overrun (Note 3)
5. C1/M12 IT Transport and IT Exchanges at premium rates
6. C1/M12 Overrun < = 20% of CD (Note 4)
7. Balancing (Direct Purchase) > 500 GJ/d
8. Balancing (Hub Activity) > 100 GJ/d; C1/M12 IT Transport and IT Exchanges
9. C1/M12 Overrun > 20% of CD
10. C1/M12 IT Transport and IT Exchanges at a discount
11. Late Nominations

Notes:

1. Nominated services must be nominated on the NAESB Timely Nomination Cycle otherwise they are considered to be late nomination and are therefore interruptible.
2. Higher value or more reliable IT is contemplated in the service and contract, when purchase at market competitive prices.
3. Captures the majority of customers that use Direct Purchase balancing transactions.
4. Captures the majority of customers that use overrun.

2. Union reserves the right to change its procedures for sharing interruptible capacity and will provide Shipper with two (2) months prior notice of any such change.

3. Maintenance: Union's facilities from time to time may require maintenance or construction. If such maintenance or construction is required, and in Union's sole opinion, acting reasonably, such maintenance or construction may impact Union's ability to meet Shipper's requirements, Union shall provide at least ten (10) days notice to Shipper, except in the case of an emergency. In the event the maintenance impacts on Union's ability to meet Shipper's requirements, Union shall not be liable for any damages and shall not be deemed in breach of the Contract. To the extent that Union's ability to accept and/or deliver Shipper's gas is impaired, the Monthly demand charge shall be reduced in accordance with Article XI Section 8 and available capacity allocated in accordance with Article XI Section 9 herein.

Union shall use reasonable efforts to determine a mutually acceptable period during which such maintenance or construction will occur and also to limit the extent and duration of any impairments. Union will endeavour to schedule and complete the maintenance and construction, which would normally be expected to impact on Union's ability to meet Shipper's requirements, during the period from April 1 through to November 1.

XIX. SHIPPER'S REPRESENTATIONS AND WARRANTIES

1. Shipper's Warranty: Shipper warrants that it will, if required, maintain, or have maintained on its behalf, all external approvals including the governmental, regulatory, import/export permits and other approvals or authorizations that are required from any federal, state or provincial authorities for the gas quantities to be handled under the Contract. Shipper further warrants that it shall maintain in effect the Facilitating Agreements.

2. Financial Representations: Shipper represents and warrants that the financial assurances (including the Initial Financial Assurances and Security) (if any) shall remain in place throughout the term hereof, unless Shipper and Union agree otherwise. Shipper shall notify Union in the event of any change to the financial assurances throughout the term hereof. Should Union have reasonable grounds to believe that Shipper will not be able to perform or continue to perform any of its obligations under the Contract as a result of one of the following events ("Material Event");

a. Shipper is in default, which default has not been remedied, of the Contract or is in default of any other material contract with Union or another party; or,

b. Shipper's corporate or debt rating falls below investment grade according to at least one nationally recognized rating agency; or,

c. Shipper ceases to be rated by a nationally recognized agency; or,

d. Shipper has exceeded credit available as determined by Union from time to time,

then Shipper shall within fourteen (14) days of receipt of written notice by Union, obtain and provide to Union a letter of credit or other security in the form and amount reasonably required by Union (the "Security"). The Security plus the Initial Financial Assurances shall not exceed twelve (12) months of Monthly demand charges (in accordance with Article IX herein) multiplied by Contract Demand. In the event that Shipper does not provide to Union such Security within such fourteen (14) day period, Union may deem a default under the Default and Termination provisions of Article XII herein.

In the event that Shipper in good faith, reasonably believes that it should be entitled to reduce the amount of or value of the Security previously provided, it may request such a reduction from Union and to the extent that the Material Event has been mitigated or eliminated, Union shall return all or a portion of the Security to Shipper within fourteen (14) Business Days after receipt of the request.

XX. MISCELLANEOUS PROVISIONS

1. Permanent Assignment: Shipper may assign the Contract to a third party ("Assignee"), up to the Contract Demand, (the "Capacity Assigned"). Such assignment shall require the prior written consent of Union and release of obligations by Union for the Capacity Assigned from the date of assignment. Such consent and release shall not be unreasonably withheld and shall be conditional upon the Assignee providing, amongst other things, financial assurances as per Article XXI herein. Any such assignment will be for the full rights, obligations and remaining term of the Contract as relates to the Capacity Assigned.

2. Temporary Assignment: Shipper may, upon notice to Union, assign all or a part of its service entitlement under the Contract (the "Assigned Quantity") and the corresponding rights and obligations to an Assignee on a temporary basis for not less than one calendar month. Such assignment shall not be unreasonably withheld and shall be conditional upon the Assignee executing the Facilitating Agreement as per Article XXI herein. Notwithstanding such assignment, Shipper shall remain obligated to Union to perform and observe the covenants and obligations contained herein in regard to the Assigned Quantity to the extent that Assignee fails to do so.

3. Title to Gas: Shipper represents and warrants to Union that Shipper shall have good and marketable title to, or legal authority to deliver to Union, all gas delivered to Union hereunder. Furthermore, Shipper hereby agrees to indemnify and save Union harmless from all suits, actions, debts, accounts, damages, costs, losses and expenses arising from or out of claims of any or all third parties to such gas or on account of Taxes, or other charges thereon.

XXI. PRECONDITIONS TO TRANSPORTATION SERVICES

1. The obligations of Union to provide Transportation Services hereunder are subject to the following conditions precedent, which are for the sole benefit of Union and which may be waived or extended in whole or in part in the manner provided in the Contract:

   a. Union shall have obtained, in form and substance satisfactory to Union, and all conditions shall have been satisfied under, all governmental, regulatory and other third party approvals, consents, orders and authorizations, that are required to provide the Transportation Services; and,

b. Union shall have obtained all internal approvals that are necessary or appropriate to provide the Transportation Services; and,

c. Union shall have received from Shipper the requisite financial assurances reasonably necessary to ensure Shipper's ability to honour the provisions of the Contract (the "Initial Financial Assurances"). The Initial Financial Assurances, if required, will be as determined solely by Union; and,

d. Shipper and Union shall have entered into the Interruptible Service HUB Contract or equivalent (the "Facilitating Agreement") with Union.

2. The obligations of Shipper hereunder are subject to the following conditions precedent, which are for the sole benefit of Shipper and which may be waived or extended in whole or in part in the manner provided in the Contract:

a. Shipper shall, as required, have entered into the necessary contracts with Union and/or others to facilitate the Transportation Services contemplated herein, including contracts for upstream and downstream transportation, and shall specifically have an executed and valid Facilitating Agreement; and shall, as required, have entered into the necessary contracts to purchase the gas quantities handled under the Contract; and,

b. Shipper shall have obtained, in form and substance satisfactory to Shipper, and all conditions shall have been satisfied under, all governmental, regulatory and other third party approvals, consents, orders and authorizations, that are required from federal, state, or provincial authorities for the gas quantities handled under the Contract; and,

c. Shipper shall have obtained all internal approvals that are necessary or appropriate for the Shipper to execute the Contract.

3. Union and Shipper shall each use due diligence and reasonable efforts to satisfy and fulfil the conditions precedent specified in this Article XXI Section 1 a, c, and d and Section 2 a and b. Each party shall notify the other forthwith in writing of the satisfaction or waiver of each condition precedent for such party's benefit. If a party concludes that it will not be able to satisfy a condition precedent that is for its benefit, such party may, upon written notice to the other party, terminate the Contract and upon the giving of such notice, the Contract shall be of no further force and effect and each of the parties shall be released from all further obligations thereunder.

4. If any of the conditions precedent in this Article XXI Section 1 c or Section 2 are not satisfied or waived by the party entitled to the benefit of that condition by the Conditions Date as such term is defined in the Contract, then either party may, upon written notice to the other party, terminate the Contract and upon the giving of such notice, the Contract shall be of no further force and effect and each of the parties shall be released from all further obligations hereunder, provided that any rights or remedies that a party may have for breaches of the Contract prior to such termination and any liability a party may have incurred before such termination shall not thereby be released.

SCHEDULE "A 2010"

RATE C1
GENERAL TERMS & CONDITIONS

I. DEFINITIONS

Except where the context expressly requires or states another meaning, the following terms, when used in these General Terms & Conditions and in any contract into which these General Terms & Conditions are incorporated, shall be construed to have the following meanings:

"Authorized Overrun" shall mean the amount by which Shipper's Authorized Quantity exceeds the Contract Demand;

"Available Capacity" shall mean at any time, Union's remaining available capacity to provide Transportation Services;

"Business Day" shall mean any day, other than Saturday, Sunday or any days on which national banks in the Province of Ontario are authorized to close;

"Contract" shall refer to the Contract to which these General Terms & Conditions shall apply, and into which they are incorporated;

"Contract Year" shall mean a period of three hundred and sixty-five (365) consecutive days; provided however, that any such period which contains a date of February 29 shall consist of three hundred and sixty-six (366) consecutive days, commencing on November 1 of each year; except for the first Contract Year which shall commence on the Commencement Date and end on the first October 31 that follows such date;

"cricondentherm hydrocarbon dewpoint" shall mean the highest hydrocarbon dewpoint temperature on the phase envelope;

"cubic metre" shall mean the volume of gas which occupies one cubic metre when such gas is at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

"Day" shall mean a period of twenty-four (24) consecutive hours beginning at 10:00 a.m. Eastern Clock Time. The reference date for any Day shall be the calendar date upon which the twenty-four (24) hour period shall commence;

"delivery" shall mean any gas that is delivered by Union into Shipper's possession, or to the possession of Shipper's agent;

"Eastern Clock Time" shall mean the local clock time in the Eastern Time Zone on any Day;

"Expansion Facilities" shall mean any new facilities to be constructed by Union in order to provide Transportation Services;

"firm" shall mean service not subject to curtailment or interruption except under Articles XI, XII and XVIII herein;

"gas" shall mean gas as defined in the Ontario Energy Board Act, 1998, S.O. 1998, c.15, Sch. B, as amended, supplemented or re-enacted from time to time;

"gross heating value" shall mean the total heat expressed in megajoules per cubic metre (MJ/m^3) produced by the complete combustion at constant pressure of one (1) cubic metre of gas with air, with the gas free of water vapour and the temperature of the gas, air and products of combustion at standard temperature and all water formed by the combustion reaction condensed to the liquid state;

"hydrocarbon dewpoint" shall mean temperature at a specific pressure where hydrocarbon vapour condensation begins;

"Interruptible Service HUB Contract" shall mean a contract between Shipper and Union under which Union provides interruptible HUB service;

"**interruptible service**" or "**Interruptible**" shall mean service subject to curtailment or interruption, after notice, at any time;

"**Interconnecting Pipeline**" shall mean a pipeline that directly connects to the Union pipeline system;

"**joule**" (J) shall mean the work done when the point of application of a force of one (1) newton is displaced a distance of one (1) metre in the direction of the force. The term "**megajoule**" (MJ) shall mean 1,000,000 joules. The term "**gigajoule**" (GJ) shall mean 1,000,000,000 joules;

"**Limited Firm**" shall mean gas service subject to interruption or curtailment on a limited number of Days as specified in the Contract;

"Loaned Quantities" shall mean those quantities of gas loaned to Shipper under the Facilitating Agreement;

"**m³**" shall mean cubic metre of gas and "**10³m³**" shall mean 1,000 cubic metres of gas;

"**Month**" shall mean the period beginning at 10:00 a.m. Eastern Clock Time on the first day of a calendar month and ending at 10:00 a.m. Eastern Clock Time on the first day of the following calendar month;

"NAESB" shall mean North American Energy Standards Board;

"OEB" means the Ontario Energy Board;

"**Open Season**" or "**open season**" shall mean an open access auction or bidding process held by Union as a method of allocating capacity;

"**pascal**" "**(Pa)**" shall mean the pressure produced when a force of one (1) newton is applied to an area of one (1) square metre. The term "kilopascal" **"(kPa)**" shall mean 1,000 pascals;

"**receipt**" shall mean any gas that is delivered into Union's possession, or the possession of Union's agent;

"**Shipper**" shall have the meaning as defined in the Contract, and shall also include Shipper's agent(s);

"**specific gravity**" shall mean density of the gas divided by density of air, with both at a temperature of 15 degrees Celsius, and at a pressure of 101.325 kilopascals absolute;

"**Taxes**" shall mean any tax (other than tax on income or tax on property), duty, royalty, levy, license, fee or charge not included in the charges and rates as per the applicable rate schedule (including but not limited to charges under any form of cap and trade, carbon tax, or similar system) and that is levied, assessed or made by any governmental authority on the gas itself, or the act, right, or privilege of producing, severing, gathering, storing, transporting, handling, selling or delivering gas under the Contract;

"TCPL" means TransCanada PipeLines Limited;

"Term-Up Notice" shall mean notice provided to Shipper by Union in accordance with Article XVII.

"**Wobbe Number**" shall mean gross heating value of the gas divided by the square root of its specific gravity.

II. GAS QUALITY

1. Natural Gas: The minimum gross heating value of the gas delivered to/by Union hereunder, shall be thirty-six (36) megajoules per cubic metre. The maximum gross heating value of the gas delivered to/by Union hereunder shall be forty point two (40.2) megajoules per cubic metre. The gas to be delivered hereunder to Union may be a commingled supply from Shipper's gas sources of supply. The gas to be delivered by Union may be a commingled supply from Union's sources of gas supply; provided, however, that helium, natural gasoline, butane, propane and other hydrocarbons, except

methane, may be removed prior to delivery to Shipper. Further, Union may subject, or permit the subjection of, the gas to compression, dehydration, cooling, cleaning and other processes.

2. Freedom from objectionable matter: The gas to be delivered to/by Union hereunder,

   a. shall be commercially free from bacteria, sand, dust, gums, crude oils, lubricating oils, liquids, chemicals or compounds used in the production, treatment, compression or dehydration of the gas or any other objectionable substance in sufficient quantity so as to render the gas toxic, unmerchantable or cause injury to, or interference with, the proper operation of the lines, regulators, meters or other appliances through which it flows,

   b. shall not contain more than seven (7) milligrams of hydrogen sulphide per cubic metre of gas, nor more than four hundred and sixty (460) milligrams of total sulphur per cubic metre of gas,

   c. shall not contain more than five (5) milligrams of mercaptan sulphur per cubic metre of gas,

   d. shall not contain more than two point zero (2.0) molar percent by volume of carbon dioxide in the gas,

   e. shall not contain more than zero point four (0.4) molar percent by volume of oxygen in the gas,

   f. shall not contain more than zero point five (0.5) molar percent by volume of carbon monoxide in the gas,

   g. shall not contain more than four point zero (4.0) molar percent by volume of hydrogen in the gas,

   h. shall not contain more than sixty-five (65) milligrams of water vapour per cubic metre of gas,

   i. shall not have a cricondentherm hydrocarbon dewpoint exceeding minus eight (-8) degrees Celsius,

   j. shall have Wobbe Number from forty seven point fifty (47.50) megajoules per cubic metre of gas to fifty one point forty six (51.46) megajoules per cubic metre of gas, maximum of one point five (1.5) mole percent by volume of butane plus (C4+) in the gas, and maximum of four point zero (4.0) mole percent by volume of total inerts in the gas in order to be interchangeable with other Interconnecting Pipeline gas.

3. Non-conforming Gas: In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in this Article II.

4. Quality of Gas Received: The quality of the gas to be received by Union hereunder is to be of a merchantable quality and in accordance with the quality standards as set out by Union in this Article II, but, Union will also accept gas of a quality as set out in any other Interconnecting Pipeline's general terms and conditions, provided that all Interconnecting Pipelines accept such quality of gas. In addition to any other right or remedy of a party, each party shall be entitled to refuse to accept delivery of any gas which does not conform to any of the specifications set out in Union's C1 Rate Schedule.

III. MEASUREMENTS

1. Storage, Transportation, and/or Sales Unit: The unit of the gas delivered to Union shall be a megajoule or a gigajoule. The unit of gas transported or stored by Union shall be a megajoule or a gigajoule. The unit of gas delivered by Union shall be a megajoule, a gigajoule, a cubic metre (m^3) or one thousand cubic metres (10^3m^3) at Union's discretion.

2. Determination of Volume and Energy:

   a. The volume and energy amounts determined under the Contract shall be determined in accordance with the Electricity and Gas Inspection Act (Canada), RSC 1985, c E-4- (the "**Act**") and the Electricity and Gas Inspection Regulations, SOR 86/131 (the "**Regulations**"), and any documents issued under the authority of the Act and Regulations and any amendments thereto.

b. The supercompressibility factor shall be determined in accordance with either the "Manual for Determination of Supercompressibility Factors for Natural Gas" (PAR Project NX-19) published in 1962 or with American Gas Association Transmission Measurement Committee Report No. 8, Nov. 1992, at Union's discretion, all as amended from time to time.

c. The volume and/or energy of the gas delivered to/by Union hereunder shall be determined by the measurement equipment designated in Article VII herein.

d. Upon request by Union, Shipper shall obtain measurement of the total quantity of gas received by Union hereunder from the Interconnecting Pipeline. Such measurement shall be done in accordance with established practices between Union and the Interconnecting Pipeline.

IV. RECEIPT POINT AND DELIVERY POINT

1. Unless otherwise specified in the Contract, the point or points of receipt and point or points of delivery for all gas to be covered hereunder shall be on the outlet side of the measuring stations located at or near the point or points of connection specified in the Contract, where possession of the gas changes from one party to the other, and as per Schedule "C 2010".

V. POSSESSION OF AND RESPONSIBILITY FOR GAS

1. Union accepts no responsibility for any gas prior to such gas being delivered to Union at the Receipt Point or after its delivery by Union at the Delivery Point. As between the parties hereto, Union shall be deemed to be in control and possession of and responsible for all such gas from the time that such gas enters Union's system until such gas is delivered to Shipper.

2. Shipper agrees that Union is not a common carrier and is not an insurer of Shipper's gas, and that Union shall not be liable to Shipper or any third party for loss of gas in Union's possession, except to the extent such loss is caused entirely by Union's negligence or wilful misconduct.

VI. FACILITIES ON SHIPPER'S PROPERTY

Except under those conditions where Union is delivering to TCPL for TCPL or Shipper at Parkway (TCPL), or to an Interconnecting Pipeline, or where otherwise specified in the Contract, the following will apply:

1. Construction and Maintenance: Union, at its own expense may construct, maintain and operate on Shipper's property at the delivery point a measuring station properly equipped with a meter or meters and any other necessary measuring equipment for properly measuring the gas redelivered under the Contract. Shipper will grant to Union a lease and/or rights-of-way over property of Shipper as required by Union to install such facilities and to connect same to Union's pipeline.

2. Entry: Union, its servants, agents and each of them may at any reasonable time on notice (except in cases of emergency) to Shipper or his duly authorized representative enter Shipper's property for the purpose of constructing, maintaining, removing, operating and/or repairing station equipment.

3. Property: The said station and equipment will be and remain the property of Union notwithstanding it is constructed on and attached to the realty of Shipper, and Union may at its own expense remove it upon termination of the Contract and will do so if so requested by Shipper.

VII. MEASURING EQUIPMENT

1. Metering by Union: Union will install and operate meters and related equipment as required and in accordance with the Act and Regulations referenced in Article III herein.

2. Metering by Others: In the event that all or any gas delivered to/by Union hereunder is measured by a meter that is owned and operated by an Interconnecting Pipeline, then Union and Shipper agree to accept that metering for the purpose of determining the volume and energy of gas delivered to/by Union on behalf of the Shipper. The standard of measurement and tests for the gas delivered to/by Union hereunder shall be in accordance with the general terms and conditions as incorporated in that Interconnecting Pipeline company's gas tariff as approved by its regulatory body.

3. Check Measuring Equipment: Shipper may install, maintain and operate, at the redelivery point, at its own expense, such check measuring equipment as desired, provided that such equipment shall be so installed as not to interfere with the operation of Union's measuring equipment at or near the delivery point, and shall be installed, maintained and operated in conformity with the same standards and specifications applicable to Union's metering facilities.

4. Rights of Parties: The measuring equipment installed by either party, together with any building erected by it for such equipment, shall be and remain its property. However, Union and Shipper shall have the right to have representatives present at the time of any installing, reading, cleaning, changing, repairing, inspecting, testing, calibrating, or adjusting done in connection with the other's measuring equipment used in measuring or checking the measurement of deliveries of gas to/by Union under the Contract. Either party will give the other party reasonable notice of its intention to carry out the acts herein specified. The records from such measuring equipment shall remain the property of their owner, but upon request each will submit to the other its records and charts, together with calculations therefrom, for inspection and verification, subject to return within ten (10) days after receipt thereof.

5. Calibration and Test of Measuring Equipment: The accuracy of Union's measuring equipment shall be verified by Union at reasonable intervals, and if requested, in the presence of representatives of Shipper, but Union shall not be required to verify the accuracy of such equipment more frequently than once in any thirty (30) day period. In the event either party notifies the other that it desires a special test of any measuring equipment, the parties shall co-operate to secure a prompt verification of the accuracy of such equipment. The expense of any such special test, if called for by Shipper, shall be borne by Shipper if the measuring equipment tested is found to be in error by not more than two per cent (2%). If, upon test, any measuring equipment is found to be in error by not more than two per cent (2%), previous recordings of such equipment shall be considered accurate in computing receipts and deliveries of gas, but such equipment shall be adjusted at once to record as near to absolute accuracy as possible. If the test conducted shows a percentage of inaccuracy greater than two percent (2%), the financial adjustment, if any, shall be calculated in accordance with the Act and Regulations, as may be amended from time to time and in accordance with any successor statutes and regulations.

6. Preservation of Metering Records: Union and Shipper shall each preserve for a period of at least six (6) years all test data, and other relevant records.

7. Error in Metering or Meter Failure: In the event of an error in metering or a meter failure, (such error or failure being determined through check measurement by Union or any other available method), then Shipper shall enforce its rights as Shipper with the Interconnecting Pipeline(s) to remedy such error or failure including enforcing any inspection and/or verification rights and procedures.

VIII. BILLING

1. Monthly Billing Date: Union shall render bills on or before the tenth (10th) day of each month for all Transportation Services furnished during the preceding Month. Such charges may be based on estimated quantities, if actual quantities are unavailable in time to prepare the billing. Union shall provide, in a succeeding Month's billing, an adjustment based on any difference between actual quantities and estimated quantities, without any interest charge. If presentation of a bill to Shipper is delayed after the tenth (10th) day of the month, then the time of payment shall be extended accordingly, unless Shipper is responsible for such delay.

2. Right of Examination: Both Union and Shipper shall have the right to examine at any reasonable time the books, records and charts of the other to the extent necessary to verify the accuracy of any statement, chart or computation made under or pursuant to the provisions of the Contract.

3. Amendment of Statements: For the purpose of completing a final determination of the actual quantities of gas handled in any of the Transportation Services to Shipper, the parties shall have the right to amend their statement for a period equal to the time during which the Interconnecting Pipeline retains the right to amend their statements, which period shall not exceed three (3) years from the date of termination of the Contract.

IX. PAYMENTS

1. Monthly Payments: Shipper shall pay the invoiced amount directly into Union's bank account as directed on the invoice on or before the twentieth (20th) day of each month. If the payment date is not a Business Day, then payment must be received in Union's account on the first Business Day preceding the twentieth (20th) day of the month.

2. Remedies for Non-payment: Should Shipper fail to pay all of the amount of any bill as herein provided when such amount is due,

   a. Shipper shall pay to Union interest on the unpaid portion of the bill accruing at a rate per annum equal to the minimum commercial lending rate of Union's principal banker in effect from time to time from the due date until the date of payment; and,

   b. If such failure to pay continues for thirty (30) days after payment is due, Union, in addition to any other remedy it may have under the Contract, may suspend Services until such amount is paid. Notwithstanding such suspension, all demand charges shall continue to accrue hereunder as if such suspension were not in place.

   If Shipper in good faith disputes the amount of any such bill or part thereof Shipper shall pay to Union such amounts as it concedes to be correct. At any time thereafter, within twenty (20) days of a demand made by Union, Shipper shall furnish financial assurances satisfactory to Union, guaranteeing payment to Union of the amount ultimately found due upon such bill after a final determination. Such a final determination may be reached either by agreement, arbitration decision or judgement of the courts, as may be the case. Union shall not be entitled to suspend Services because of such non-payment unless and until default occurs in the conditions of such financial assurances or default occurs in payment of any other amount due to Union hereunder.

   Notwithstanding the foregoing, Shipper is not relieved from the obligation to continue its deliveries of gas to Union under the terms of any agreement, where Shipper has contracted to deliver specified quantities of gas to Union.

3. Billing Adjustments: If it shall be found that at any time or times Shipper has been overcharged or undercharged in any form whatsoever under the provisions of the Contract and Shipper shall have actually paid the bills containing such overcharge or undercharge, Union shall refund the amount of any such overcharge and interest shall accrue from and including the first day of such overcharge as paid to the date of refund and shall be calculated but not compounded at a rate per annum determined each day during the calculation period to be equal to the minimum commercial lending rate of Union's principal banker, and the Shipper shall pay the amount of any such undercharge, but without interest. In the event Union renders a bill to Shipper based upon measurement estimates, the required adjustment to reflect actual measurement shall be made on the bill next following the determination of such actual measurement, without any charge of interest. In the event an error is discovered in the amount billed in any statement rendered by Union, such error shall be adjusted by Union. Such overcharge, undercharge or error shall be adjusted by Union on the bill next following its determination (where the term "bill next following" shall mean a bill rendered at least fourteen (14) days after the day of its determination), provided that claim therefore shall have been made within three (3) years from the date of the incorrect billing. In the event any refund is issued with Shipper's bill, the aforesaid date of refund shall be deemed to be the date of the issue of bill.

4. Taxes:

   In addition to the charges and rates as per the applicable rate schedules and price schedules, Shipper shall pay all Taxes which are imposed currently or subsequent to the execution of the Contract by any legal authority having jurisdiction and any amount in lieu of such Taxes paid or payable by Union.

5. Set Off:

If either party shall, at any time, be in arrears under any of its payment obligations to the other party under the Contract, then the party not in arrears shall be entitled to reduce the amount payable by it to the other party in arrears under the Contract, or any other contract, by an amount equal to the amount of such arrears or other indebtedness to the other party. In addition to the foregoing remedy, Union may, upon forty-eight (48) hours verbal notice, to be followed by written notice, take possession of any or all of Shipper's gas under the Contract or any enhancement to the Contract, which shall be deemed to have been assigned to Union, to reduce such arrears or other indebtedness to Union.

X. ARBITRATION

If and when any dispute, difference or question shall arise between the parties hereto touching the Contract or anything herein contained, or the construction hereof, or the rights, duties or liabilities of the parties in relation to any matter hereunder, the matter in dispute shall be submitted and referred to arbitration within ten (10) days after written request of either party. Upon such request each party shall appoint an arbitrator, and the two so appointed shall appoint a third. A majority decision of the arbitrators shall be final and binding upon both parties. In all other respects the provisions of the Arbitration Act, 1991, or any act passed in amendment thereof or substitution therefore, shall apply to each such submission. Operations under the Contract shall continue, without prejudice, during any such arbitration and the costs attributable to such arbitration shall be shared equally by the parties hereto.

XI. FORCE MAJEURE

1. The term "force majeure" as used herein shall mean acts of God, strikes, lockouts or any other industrial disturbance, acts of the public enemy, sabotage, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of governments and people, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or lines of pipe, inability to obtain materials, supplies, permits or labour, any laws, orders, rules, regulations, acts or restraints of any governmental body or authority (civil or military), any act or omission that is excused by any event or occurrence of the character herein defined as constituting force majeure, any act or omission by parties not controlled by the party having the difficulty and any other similar cases not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to prevent or overcome.

2. In the event that either the Shipper or Union is rendered unable, in whole or in part, by force majeure, to perform or comply with any obligation or condition of the Contract, such party shall give notice and full particulars of such force majeure in writing delivered by hand, fax or other direct written electronic means to the other party as soon as possible after the occurrence of the cause relied on and subject to the provision of this Article.

3. Neither party shall be entitled to the benefit of the provisions of force majeure hereunder if any or all of the following circumstances prevail: the failure resulting in a condition of force majeure was caused by the negligence of the party claiming suspension; the failure was caused by the party claiming suspension where such party failed to remedy the condition by making all reasonable efforts (short of litigation, if such remedy would require litigation); the party claiming suspension failed to resume the performance of such condition obligations with reasonable dispatch; the failure was caused by lack of funds; the party claiming suspension did not, as soon as possible after determining, or within a period within which it should acting reasonably have determined, that the occurrence was in the nature of force majeure and would affect its ability to observe or perform any of its conditions or obligations under the Contract, give to the other party the notice required hereunder.

4. The party claiming suspension shall likewise give notice as soon as possible after the force majeure condition is remedied, to the extent that the same has been remedied, and that such party has resumed or is then in a position to resume the performance of the obligations and conditions of the Contract.

5. An event of force majeure on Union's system will excuse the failure to deliver gas by Union or the failure to accept gas by Union hereunder, and both parties shall be excused from performance of their obligations hereunder, except for payment obligations, to the extent of and for the duration of the force majeure.

6. Upstream or Downstream Force Majeure: An event of force majeure upstream or downstream of Union's system shall not relieve Shipper of any payment obligations.

7. Delay of Firm Transportation Services: Despite Article XI herein, if Union is prevented, by reason of an event of force majeure on Union's system from delivering gas on the Day or Days upon which Union has accepted gas from Shipper, Union shall thereafter make all reasonable efforts to deliver such quantities as soon as practicable and on such Day or Days as are agreed to by Shipper and Union. If Union accepts such gas on this basis, Shipper shall not receive any demand charge relief as contemplated under Article XI herein.

8. Demand Charge Relief for Firm Transportation Services: Despite Article XI herein, if on any Day Union fails to accept gas from Shipper by reason of an event of force majeure on Union's system and fails to deliver the quantity of gas nominated hereunder by Shipper up to the firm Contract Demand for that Contract, then for that Day the Monthly demand charge shall be reduced by an amount equal to the applicable Daily Demand Rate, as defined in this paragraph, multiplied by the difference between the quantity of gas actually delivered by Union during such Day and the quantity of gas which Shipper in good faith nominated on such Day. The term "Daily Demand Rate" shall mean the Monthly demand charge or equivalent pursuant to the C1 Rate Schedule divided by the number of days in the month for which such rate is being calculated.

9. If, due to the occurrence of an event of force majeure as outlined above, the capacity for gas deliveries by Union is impaired, it will be necessary for Union to curtail Shipper's gas receipts to Union hereunder, via proration based on utilization of such facilities for the Day. This prorating shall be determined by multiplying the capability of such facilities as available downstream of the impairment on the Day, by a fraction where the numerator is Shipper's nominated firm quantity and the denominator is the total of all such nominated firm quantities for nominated services and planned consumption for in-franchise customers on the Day. For the purposes of this Article XI, firm services shall mean all firm services provided by Union to in-franchise customers and ex-franchise shippers.

XII. DEFAULT AND TERMINATION

In case of the breach or non-observance or non-performance on the part of either party hereto of any covenant, proviso, condition, restriction or stipulation contained in the Contract (but not including herein failure to take or make delivery in whole or in part of the gas delivered to/by Union hereunder occasioned by any of the reasons provided for in Article XI herein) which has not been waived by the other party, then and in every such case and as often as the same may happen, the non-defaulting party may give written notice to the defaulting party requiring it to remedy such default and in the event of the defaulting party failing to remedy the same within a period of thirty (30) days from receipt of such notice, the non-defaulting party may at its sole option declare the Contract to be terminated and thereupon the Contract shall be terminated and be null and void for all purposes other than and except as to any liability of the parties under the same incurred before and subsisting as of termination. The right hereby conferred upon each party shall be in addition to, and not in derogation of or in substitution for, any other right or remedy which the parties respectively at law or in equity shall or may possess.

XIII. AMENDMENT

Subject to Article XV herein and the ability of Union to amend the applicable rate schedules and price schedules, with the approval of the OEB (if required), no amendment or modification of the Contract shall be effective unless the same shall be in writing and signed by each of the Shipper and Union.

XIV. NON-WAIVER AND FUTURE DEFAULT

No waiver of any provision of the Contract shall be effective unless the same shall be in writing and signed by the party entitled to the benefit of such provision and then such waiver shall be effective only in the specific instance and for the specified purpose for which it was given. No failure on the part of Shipper or Union to exercise, and no course of dealing with respect to, and no delay in exercising, any right, power or remedy under the Contract shall operate as a waiver thereof.

XV. LAWS, REGULATIONS AND ORDERS

The Contract and the respective rights and obligations of the parties hereto are subject to all present and future valid laws, orders, rules and regulations of any competent legislative body, or duly constituted authority now or hereafter having jurisdiction and the Contract shall be varied and amended to comply with or conform to any valid order or direction of any board, tribunal or administrative agency which affects any of the provisions of the Contract.

XVI. ALLOCATION OF CAPACITY

1. A potential shipper may request transportation service on Union's system at any time. Any request for C1 transportation service must include: potential shipper's legal name, Receipt Point(s), Delivery Point(s), Commencement Date, Initial Term, Contract Demand, proposed payment, and type of transportation service requested.

2. If requests for firm transportation services cannot be met through existing capacity such that the only way to satisfy the requests for transportation service would require the construction of Expansion Facilities which create new capacity, Union shall allocate any such new capacity by open season, subject to the terms of the open season, and these General Terms and Conditions.

3. If requests for long-term transportation service can be met through existing facilities upon which long-term capacity is becoming available, Union shall allocate such long-term capacity by open season, subject to the terms of the open season, and these General Terms and Conditions. "Long-term", for the purposes of this Article XVI, means, in the case of a transportation service, a service that has a term of one year or greater.

4. Capacity requests received during an open season shall be awarded starting with those bids with the highest economic value. If the economic values of two or more independent bids are equal, then service shall be allocated on a pro-rata basis. The economic value shall be based on the net present value which shall be calculated based on the proposed per-unit rate and the proposed term of the contract and without regard to the proposed Contract Demand ("NPV").

5. Union may at any time allocate capacity to respond to any C1 transportation service request through an open season. If a potential shipper requests C1 transportation service that can be provided through Available Capacity that was previously offered by Union in an open season but was not awarded, then:

   a. Any such request must conform to the requirements of Section 1 of this Article XVI;

   b. Union shall allocate capacity to serve such request pursuant to this Section 5, and subject to these General Terms and Conditions and Union's standard form C1 transportation contract;

   c. Union may reject a request for C1 transportation service for any of the following reasons:

      i) if there is insufficient Available Capacity to fully meet the request, but if that is the only reason for rejecting the request for service, Union must offer to supply the Available Capacity to the potential shipper;

      ii) if the proposed monthly payment is less than Union's Monthly demand charge plus fuel requirements for the applicable service;

      iii) if prior to Union accepting the request for transportation service Union receives a request for transportation service from one or more other potential shippers and there is, as a result, insufficient Available Capacity to service all the requests for service, in which case Union shall follow the procedure in Section 5 d hereof; -

      iv) if Union does not provide the type of transportation service requested; or

v) if all of the conditions precedent specified in Article XXI Sections 1 and 2 herein have not been satisfied or waived.

d. Union will advise the potential shipper in writing whether Union accepts or rejects the request for service, subject to Article XVI 5(c) within 5 calendar days of receiving a request for C1 transportation service. If Union rejects a request for service, Union shall inform the potential shipper of the reasons why its request is being rejected; and

e. If Union has insufficient Available Capacity to service all pending requests for transportation service Union may:

i) Reject all the pending requests for transportation service and conduct an open season; or

ii) Union shall inform all the potential shippers who have submitted a pending request for transportation service that it does not have sufficient capacity to service all pending requests for service, and Union shall provide all such potential shippers with an equal opportunity to submit a revised request for service. Union shall then allocate the Available Capacity to the request for transportation service with the highest economic value to Union. If the economic values of two or more requests are equal, then service shall be allocated on a pro-rata basis. The economic value of any request shall be based on the NPV.

XVII. RENEWALS

1. Initial Term: Subject to Article XVII, Section 3 herein, Contracts with an Initial Term of five (5) years or greater, with Receipt Points and Delivery Points of Parkway or Kirkwall or Dawn (Facilities), will continue in full force and effect beyond the Initial Term, automatically renewing for a period of one (1) year, and every one (1) year thereafter. Shipper may reduce the Contract Demand or terminate the Contract with notice in writing by Shipper at least two (2) years prior to the expiration thereof.

For all other contracts, the Contract will continue in full force and effect until the end of the Initial Term, but shall not renew.

2. Expansion Facilities: If at any time Union determines, acting reasonably, that:

i) Expansion Facilities are required to increase the capacity or capabilities of flow on Union's pipeline system; and

ii) the estimated cost of such Expansion Facilities will exceed $20 million;

Union will provide a Term-Up Notice to Shipper if Union determines Shipper's Contract, which contains a right of renewal pursuant to Section 1 immediately above, may impact the design of the Expansion Facilities.

3. Term-Up Notice: Upon receipt of the Term-Up Notice, Shipper may elect, within sixty (60) days of receipt of the Term-Up Notice, to extend the existing term of the Contract for all or a portion of the Contract Demand for an additional period such that the new termination date of the Contract shall not be less than five (5) years after the expected in-service date of the Expansion Facilities. If Shipper does not elect to extend the existing term of the Contract within such sixty (60) day period, Shipper shall not be entitled to renew the Contract pursuant to Article XVII, Section 1 herein and the Contract shall expire at the end of the existing term.

XVIII. SERVICE CURTAILMENT

1. Union shall have the right to curtail or not to schedule part or all of Transportation Services, in whole or in part, on all or a portion of its pipeline system at any time for reasons of Force Majeure or when, in Union sole discretion, acting reasonably, capacity or operating conditions so require or it is desirable or necessary to make modifications, repairs or operating changes to its pipeline system. Union shall provide Shipper such notice of such curtailment as is reasonable under the circumstances. If due to any cause whatsoever Union is unable to receive or deliver the quantities of Gas which Shipper has requested, then Union shall order curtailment by all Shippers affected and to the extent necessary to remove the effect of the disability. Union has a priority of service policy to determine the order of service curtailment. In order to place

services on the priority of service list, Union considers the following business principles: appropriate level of access to core services, customer commitment, encouraging appropriate contracting, materiality, price and term, and promoting and enabling in-franchise consumption.

The Priority ranking for all services utilizing Union Gas' storage, transmission and distribution system as applied to both in-franchise and ex-franchise services are as follows; with number 1 having the highest priority and the last interrupted.

1. Firm In-franchise Transportation and Distribution services and firm Ex-franchise services (Note 1)
2. In-franchise Interruptible Distribution services
3. C1/M12 IT Transport and IT Exchanges with Take or Pay rates
4. Balancing (Hub Activity) < = 100 GJ/d; Balancing (Direct Purchase) < = 500 GJ/d; In-franchise distribution authorized overrun (Note 3)
5. C1/M12 IT Transport and IT Exchanges at premium rates
6. C1/M12 Overrun < = 20% of CD (Note 4)
7. Balancing (Direct Purchase) > 500 GJ/d
8. Balancing (Hub Activity) > 100 GJ/d; C1/M12 IT Transport and IT Exchanges
9. C1/M12 Overrun > 20% of CD
10. C1/M12 IT Transport and IT Exchanges at a discount
11. Late Nominations

Notes:

1. Nominated services must be nominated on the NAESB Timely Nomination Cycle otherwise they are considered to be late nomination and are therefore interruptible.
2. Higher value or more reliable IT is contemplated in the service and contract, when purchase at market competitive prices.
3. Captures the majority of customers that use Direct Purchase balancing transactions.
4. Captures the majority of customers that use overrun.

2. Union reserves the right to change its procedures for sharing interruptible capacity and will provide Shipper with two (2) months prior notice of any such change.

3. Maintenance: Union's facilities from time to time may require maintenance or construction. If such maintenance or construction is required, and in Union's sole opinion, acting reasonably, such maintenance or construction may impact Union's ability to meet Shipper's requirements, Union shall provide at least ten (10) days notice to Shipper, except in the case of an emergency. In the event the maintenance impacts on Union's ability to meet Shipper's requirements, Union shall not be liable for any damages and shall not be deemed in breach of the Contract. To the extent that Union's ability to accept and/or deliver Shipper's gas is impaired, the Monthly demand charge shall be reduced in accordance with Article XI Section 8 and available capacity allocated in accordance with Article XI Section 9 herein.

Union shall use reasonable efforts to determine a mutually acceptable period during which such maintenance or construction will occur and also to limit the extent and duration of any impairments. Union will endeavour to schedule and complete the maintenance and construction, which would normally be expected to impact on Union's ability to meet Shipper's requirements, during the period from April 1 through to November 1.

XIX. SHIPPER'S REPRESENTATIONS AND WARRANTIES

1. Shipper's Warranty: Shipper warrants that it will, if required, maintain, or have maintained on its behalf, all external approvals including the governmental, regulatory, import/export permits and other approvals or authorizations that are required from any federal, state or provincial authorities for the gas quantities to be handled under the Contract. Shipper further warrants that it shall maintain in effect the Facilitating Agreements.

2. Financial Representations: Shipper represents and warrants that the financial assurances (including the Initial Financial Assurances and Security) (if any) shall remain in place throughout the term hereof, unless Shipper and Union agree otherwise. Shipper shall notify Union in the event of any change to the financial assurances throughout the term hereof. Should Union have reasonable grounds to believe that Shipper will not be able to perform or continue to perform any of its obligations under the Contract as a result of one of the following events ("Material Event");

a. Shipper is in default, which default has not been remedied, of the Contract or is in default of any other material contract with Union or another party; or,

b. Shipper's corporate or debt rating falls below investment grade according to at least one nationally recognized rating agency; or,

c. Shipper ceases to be rated by a nationally recognized agency; or,

d. Shipper has exceeded credit available as determined by Union from time to time,

then Shipper shall within fourteen (14) days of receipt of written notice by Union, obtain and provide to Union a letter of credit or other security in the form and amount reasonably required by Union (the "Security"). The Security plus the Initial Financial Assurances shall not exceed twelve (12) months of Monthly demand charges (in accordance with Article IX herein) multiplied by Contract Demand. In the event that Shipper does not provide to Union such Security within such fourteen (14) day period, Union may deem a default under the Default and Termination provisions of Article XII herein.

In the event that Shipper in good faith, reasonably believes that it should be entitled to reduce the amount of or value of the Security previously provided, it may request such a reduction from Union and to the extent that the Material Event has been mitigated or eliminated, Union shall return all or a portion of the Security to Shipper within fourteen (14) Business Days after receipt of the request.

XX. MISCELLANEOUS PROVISIONS

1. Permanent Assignment: Shipper may assign the Contract to a third party ("Assignee"), up to the Contract Demand, (the "Capacity Assigned"). Such assignment shall require the prior written consent of Union and release of obligations by Union for the Capacity Assigned from the date of assignment. Such consent and release shall not be unreasonably withheld and shall be conditional upon the Assignee providing, amongst other things, financial assurances as per Article XXI herein. Any such assignment will be for the full rights, obligations and remaining term of the Contract as relates to the Capacity Assigned.

2. Temporary Assignment: Shipper may, upon notice to Union, assign all or a part of its service entitlement under the Contract (the "Assigned Quantity") and the corresponding rights and obligations to an Assignee on a temporary basis for not less than one calendar month. Such assignment shall not be unreasonably withheld and shall be conditional upon the Assignee executing the Facilitating Agreement as per Article XXI herein. Notwithstanding such assignment, Shipper shall remain obligated to Union to perform and observe the covenants and obligations contained herein in regard to the Assigned Quantity to the extent that Assignee fails to do so.

3. Title to Gas: Shipper represents and warrants to Union that Shipper shall have good and marketable title to, or legal authority to deliver to Union, all gas delivered to Union hereunder. Furthermore, Shipper hereby agrees to indemnify and save Union harmless from all suits, actions, debts, accounts, damages, costs, losses and expenses arising from or out of claims of any or all third parties to such gas or on account of Taxes, or other charges thereon.

XXI. PRECONDITIONS TO TRANSPORTATION SERVICES

1. The obligations of Union to provide Transportation Services hereunder are subject to the following conditions precedent, which are for the sole benefit of Union and which may be waived or extended in whole or in part in the manner provided in the Contract:

   a. Union shall have obtained, in form and substance satisfactory to Union, and all conditions shall have been satisfied under, all governmental, regulatory and other third party approvals, consents, orders and authorizations, that are required to provide the Transportation Services; and,

b. Union shall have obtained all internal approvals that are necessary or appropriate to provide the Transportation Services; and,

c. Union shall have received from Shipper the requisite financial assurances reasonably necessary to ensure Shipper's ability to honour the provisions of the Contract (the "Initial Financial Assurances"). The Initial Financial Assurances, if required, will be as determined solely by Union; and,

d. Shipper and Union shall have entered into the Interruptible Service HUB Contract or equivalent (the "Facilitating Agreement") with Union.

2. The obligations of Shipper hereunder are subject to the following conditions precedent, which are for the sole benefit of Shipper and which may be waived or extended in whole or in part in the manner provided in the Contract:

a. Shipper shall, as required, have entered into the necessary contracts with Union and/or others to facilitate the Transportation Services contemplated herein, including contracts for upstream and downstream transportation, and shall specifically have an executed and valid Facilitating Agreement; and shall, as required, have entered into the necessary contracts to purchase the gas quantities handled under the Contract; and,

b. Shipper shall have obtained, in form and substance satisfactory to Shipper, and all conditions shall have been satisfied under, all governmental, regulatory and other third party approvals, consents, orders and authorizations, that are required from federal, state, or provincial authorities for the gas quantities handled under the Contract; and,

c. Shipper shall have obtained all internal approvals that are necessary or appropriate for the Shipper to execute the Contract.

3. Union and Shipper shall each use due diligence and reasonable efforts to satisfy and fulfil the conditions precedent specified in this Article XXI Section 1 a, c, and d and Section 2 a and b. Each party shall notify the other forthwith in writing of the satisfaction or waiver of each condition precedent for such party's benefit. If a party concludes that it will not be able to satisfy a condition precedent that is for its benefit, such party may, upon written notice to the other party, terminate the Contract and upon the giving of such notice, the Contract shall be of no further force and effect and each of the parties shall be released from all further obligations thereunder.

4. If any of the conditions precedent in this Article XXI Section 1 c or Section 2 are not satisfied or waived by the party entitled to the benefit of that condition by the Conditions Date as such term is defined in the Contract, then either party may, upon written notice to the other party, terminate the Contract and upon the giving of such notice, the Contract shall be of no further force and effect and each of the parties shall be released from all further obligations hereunder, provided that any rights or remedies that a party may have for breaches of the Contract prior to such termination and any liability a party may have incurred before such termination shall not thereby be released.

PROPOSED FACILITIES

This section describes the three planned compressor additions: Dawn H, Lobo D and Bright C.

Proposed Facilities (Dawn H, Lobo D and Bright C Compressors)

The three proposed compressors will follow Union's standard compressor design and include a gas turbine driven centrifugal compressor package with an ISO rating of 44,500 HP, complete with all ancillary support systems, such as fuel gas, lubricating oil and seal gas. Each compressor will also include all main gas piping and equipment, auxiliary support systems, and safety systems required for a facility of this nature and scope. Critical operating equipment will be housed in metal or pre-cast concrete buildings.

The main gas piping system will include additional equipment such as a gas scrubber, gas aftercoolers, and compressor surge and recycle valves.

In addition to the main gas system, auxiliary systems such as compressed air, fuel gas, HVAC, and power gas are necessary to support the overall operation of the plants. Operating equipment for some of these auxiliary systems, the compressor package control system and power distribution equipment will be installed inside combined control/auxiliary buildings.

Safety systems, including gas and fire detection, and fire suppression will be installed inside the gas turbine enclosures, compressor buildings, and other critical locations to ensure safe operation

of the plants and protection of the assets.

Standardized design will be utilized for compressor, auxiliary and control building layouts for all three compressor stations. Design and material procurement activities for all three plants will be done concurrently and use of standardized designs will allow the significant amount of design and procurement activities to be completed within project schedules.

With the addition of the three new compressors, Union will have nine similar plants across the Dawn Parkway System. A spare RB211 gas generator turbine engine will be purchased to support these nine plants.

To accommodate system growth, various amounts of piping modifications, compressor aero replacements and tie-ins will be required at each of the three plants to fully integrate new plants with existing facilities. Further description and design details specific to each of the three compressors are outlined in separate sections below.

Dawn H Compressor

The Dawn H Compressor is planned to be installed at Lot 27, Concession 2, Township of Dawn-Euphemia at Union's Dawn Compressor Station. The site is adjacent to the Dawn North yard. The Dawn North yard consists of six compressors tied into a series of short pipelines or headers which link incoming gas to the compressors and provide a gas path to the Dawn Parkway System.

Dawn H:

The compressor plant main gas piping will include NPS 48, NPS 42 and NPS 36 suction and discharge piping, with valve connections into new NPS 48 station headers.

Dawn North Header Expansion:

New NPS 48 station headers and valves are required to allow the Dawn H compressor to compress gas from the west side of Dawn and discharge it to the Dawn Parkway System. In addition to providing new headers to create capacity for the new Dawn H Compressor, the Dawn North yard headers must be modified to accommodate the additional capacity associated with the Dawn H Compressor in case of an outage. In this scenario, compression service normally provided by the new Dawn H Compressor would be provided by the Dawn LCU plant (Plant G) which is designed to provide back-up compression to Dawn. As such, existing yard headers must be used to move the incremental flows through Dawn. To this end, additional NPS 42 piping and valves must be added in the Dawn North yard.

Plant B Retirement and Removal:

The scope of the Dawn H Compressor installation includes retirement and removal of the existing Plant B compressor as discussed in Exhibit A, Tab 7 of this evidence. The scope of retirement and removal includes decommissioning the compressors and removal of piping, building and all other auxiliary facilities.

Dawn Parkway System Measurement:

New measurement is required to measure Dawn to Parkway transmission gas flows leaving the Dawn facility. The new measurement is necessary because the increased flows exceed the capacity of the current orifice plate meters. The new metering site will be located east of the new Dawn H Compressor site at the inlet to the Dawn Parkway System. New ultrasonic meters and maintenance isolation valves will be installed on each of the four Dawn Parkway System pipelines. Installation of the new meters will reduce the pressure drop which will increase the overall efficiency of Dawn operations.

Lobo D Compressor Addition and Related Lobo A and B Compressor Plant Modifications

The Lobo Compressor Station is located at 11025 Ivan Drive, RR 1, Ilderton, Ontario and currently consists of three existing compressor plants: A1, A2 and B. A fourth compressor facility, Lobo C is under construction as part of Union's 2016 Dawn Parkway Expansion Project (EB-2014-0261). Piping for the four plants are currently configured to operate in a parallel mode. The scope of 2017 projects includes addition of a new Lobo D Compressor and compressor aero replacements for the existing plants A1, A2 and B. Lobo C will not require any modifications. The Lobo D Compressor will be incorporated into the existing site to operate in parallel with all of the existing plants.

Lobo D Compressor

The proposed Lobo D Compressor plant main gas piping will include NPS 42 suction and discharge piping and valves, with connections with common NPS 48 station suction and discharger header crossovers.

Proposed Lobo A1, A2 and B Compressor Plant Modifications:

The proposed Lobo A1, A2 and B Compressor Plant modifications will consist of installing new 2-stage aero assemblies in each of the existing compressors. These assemblies are necessary to allow for the increased difference between compressor suction and discharge pressures and match operating pressures of the new Lobo D Compressor.

Bright C Compressor Addition and Related Bright A and B Compressor Plant Modifications

The Bright Compressor Station is located at RR 3, Lot 3, Concession 10, Blandford Township, Bright, Ontario and consists of three existing compressor plants: A1, A2 and B. The Project includes the addition of the Bright C Compressor, piping modifications and compressor aero replacements at the existing plants A1, A2 and B. The three Bright plants are currently configured to operate in a parallel mode. The Bright C Compressor will also operate in parallel mode along with each of the three existing plants. The proposed expansion also includes building upgrades to the on-site administration and operations building.

Bright C Compressor

The proposed Bright C Compressor consists of NPS 42 suction and discharge piping as well as connections into the NPS 26, NPS 34, NPS 42 and NPS 48 Dawn Parkway System pipelines.

Proposed Bright A1, A2 and B Compressor Plant Modifications

The Bright A1, A2 and B Compressor Plants will require compressor aero replacements with new two-stage compressor assemblies. Replacement of compressor aeros will allow for the increased difference between compressor suction and discharge pressures and match operating pressures of the new Bright C Compressor. In addition, the A1 and A2 compressors will have to be converted from over-hung to beam style compressor configuration. This conversion is required in order to accommodate the new two-stage aeros. Modifications to the compressor internal components and various ancillary support systems will be required to accommodate the new two-stage aero assemblies.

Gas compression with new two-stage compressor aero assemblies will result in higher gas discharge temperatures. To address this, a new gas aftercooler will be added to Bright A1 and A2 gas discharge piping and the existing Bright Plant B aftercooler will be expanded due to higher gas cooling requirements to operate solely with the Bright Plant B. Addition of new aftercoolers and expansion of existing aftercoolers is required to reduce gas temperatures to allowable limits before discharging into the Dawn Parkway System pipelines. Reconfiguration of

the existing high pressure piping and various auxiliary systems within the Bright Compressor Station will be required to accommodate the addition and expansion of gas aftercoolers. All design, installation and testing of the natural gas pipeline and station facilities is in accordance with the requirements of Ontario Regulation 210/01, Oil and Gas Pipeline Systems under the Technical Standards and Safety Act 2000. Design meets or exceeds the requirements of CSA Z662-11 Standard in accordance with the Code Adoption document under the Ontario Regulations. Design may be revised if updates to the regulations are made prior to the implementation of the Project. Other codes and standards will apply to various portions of the proposed scope of the compressors, including the ASME piping and pressure vessel standards, the Ontario Electrical Safety Code and the Ontario Building Code. The work will meet or exceed the most recent adopted version of all applicable codes.

Timeline for Construction (Dawn H, Lobo D and Bright C Compressors)

The project schedule for the 2017 Dawn Parkway Project is provided at Exhibit A, Tab 11, Schedule 1 and it defines major milestones for the Project. The project schedule also shows that due to the long lead times for some significant components of the proposed compressors, Union placed orders for these components in May, 2015.

As shown on the project schedule, construction of the three compressors will start in April 2016 and will be completed in time for in-service. Dawn Plant B will be retired once the Dawn H Compressor is commissioned and will be removed in 2018 along with clean-up activities.

The project schedule also shows that at Dawn and Bright Compressor Stations, a portion of newly installed facilities are scheduled to in-service by November 1, 2016. The following facilities will need to be in-service November 1, 2016:

Bright Compressor Station:

- Dawn Parkway System pipeline tie-ins
- Plant A aftercooler addition and Plan B aftercoolers expansion
- Plant A auxiliary building installation

Dawn Compresssor Station:

- Dawn Header Expansion tie-ins and piping modifications
- Dawn Parkway System transmission measurement

The requirement for an early completion date is related to facility operations and construction schedules. Dawn Compressor Station, Dawn Parkway System pipelines and Bright Compressor Station are essential and need to be in-service for the 2016/2017 winter operating season (November to April). System isolations during the winter operating period are not possible and construction on existing facilities cannot take place during this period. The scope of work on Dawn Parkway System pipelines as well as overall plant modifications and tie-ins at Dawn and Bright Compressor Stations are significant. They cannot be completed in 2017 during the period between April to July before the start of commission of the newly installed Dawn H and Bright C Compressors.

Completing work on Dawn Parkway System pipeline tie-ins and Dawn and Bright Compressor Station piping modifications in 2016 will allow the commissioning of new facilities to start and safely proceed without any disruptions to overall system operations. Please see Exhibit A, Tab 9 for the in-service costs of the facilities for each year.

All necessary permits, approvals and authorizations will be obtained in a timely manner. Union will continue to work with the affected municipalities and comply with the intent of various by-laws and permits to the extent possible. Union will ensure that all permits are complied with. Union's construction procedures have been continually updated and refined to minimize potential environmental impacts.

No new permanent or temporary land rights are required for this project.

Environmental matters

There will be no long-term significant environmental concerns that cannot be mitigated. There are no significant cumulative impacts associated with this Project. Other environmental considerations include:

i. Environmental Surveys

Union's consultants have and will continue to assess the station expansion area for each facility for species at risk and will work closely with the Ministry of Natural Resources to develop, as appropriate, any mitigation measures necessary to protect species at risk.

ii. Municipal Process

All three new compressor stations and associated facilities will be subject to approval under the *Planning Act* and will require either a Site Plan Agreement or Site Plan Amendment and associated building permits. Union has met with and will continue to meet with all municipalities associated with the Project and will obtain all necessary permits.

iii. Lighting

All three new compressor stations and associated facilities will require additional lighting which will be designed to minimize lighting impacts. Union will complete a light illumination plan which will be reviewed by the municipality as part of the Site Plan Approval process. Union also intends to review the lighting within the existing Lobo and Bright Compressor Stations to identify opportunities to reduce overall illumination.

iv. Noise

All three new compressor stations will require an amendment to Union's province-wide Environmental Compliance Approval ("ECA") issued by the Ministry of Environment and Climate Change ("MOECC"). The ECA approval process will confirm that the facility operates within limits that meet MOECC criteria for sound levels. This application will include a formal Acoustic Assessment Report to demonstrate compliance with the MOECC guidelines.

v. Air

All three new compressor stations will require an amendment to Union's province-wide ECA issued by the MOECC. The ECA approval process will confirm that the facility operates within limits that meet MOECC criteria for air emissions. This application will include a formal Emission Summary and Dispersion Modelling Report to demonstrate compliance with the MOECC guidelines.

vi. Water

All three new compressor stations will require an ECA issued by the MOECC. The ECA approval process will confirm that the facility operates within MOECC requirements for storm-water management. This application will include a complete storm-water management plan.

Union conducted a letter mailing and held public information sessions to engage with the public and solicit input with respect to the proposed compressor facilities. The consultation completed for the Project was as follows:

Lobo D Compressor	Notification of additional expansion by mail, February 23, 2015
Bright C Compressor	Information Session – April 1, 2015 in Plattsville, Ontario
Dawn H Compressor	Information Session – April 29, 2015 in Wilkesport, Ontario

First Nations and Métis Consultation

Union has a long standing practice of consulting with Métis and First Nations, and has programs in place to ensure Métis and First Nations are aware of Union's projects and have the opportunity to participate in both the planning and construction phases of its projects.

Union has an extensive data-base and knowledge of First Nations and Métis organizations in Ontario and consults with the Tribal organizations and the data bases of the Ministry of Natural Resources and Forestry, Ministry of Aboriginal Affairs, Ministry of Energy and, Aboriginal Affairs and Northern Development Canada to ensure consultation is carried out with the most appropriate groups.

Union has signed a General Relationship Agreement with the Métis Nation of Ontario which describes Union's commitments to the Métis when planning and constructing pipeline projects. Figure 11-1 identifies the First Nations and Métis that were notified by letter and a follow-up meeting regarding the Project.

Figure 11-1

Chief Ava Hill	Six Nations of the Grand River First Nation
Lonny Bomberry	Director of Lands Resources and Consultation Six Nations of the Grand River First Nation
Chief Bryan LaForme	Mississaugas of the New Credit First Nation

Mark LaForme	Director of Consultation Mississaugas of the New Credit First Nation
Chief Joe Miskokomon	Chippewa of the Thames First Nation
Rolanda Elijah	Consultation Manager Chippewa of the Thames First Nation
Chief Roger Thomas	Munsee Delaware First Nation
Chief Sherri Doxtator	Oneida First Nation
Chief Dan Miskokomon	Walpole Island First Nation
Dean Jacobs	Consultation Manager Walpole Island First Nation
Chief Chris Plain	Aamjiwnaang First Nation
Sharilyn Johnston	Environmental Coordinator Aamjiwnaang First Nation
Chief Louise Hillier	Caldwell First Nation
Chief Tom Bressette	Kettle and Stony Point First Nation
Lorraine George	Band Administrator Kettle and Stony Point First Nation
Aly Alibhai	Director of Lands Resources and Consultation Métis Nation of Ontario

The notifications and meetings included:

- December 8, 2014: emailed notification to each person on the above distribution list requesting a meeting date to present information on the upcoming Project.
- January 8, 2015 to January 16, 2016: conducted meetings in each First Nation community and Métis Nation office in Toronto to provide information on the Project and discuss Capacity Funding and Consultation requirements going forward.
- January 26, 2015: sent letters to each person on above distribution list regarding the start of the Environmental Review process and requesting any available information they may be able to share.
- February 19, 2015: sent an email update on the status of the Project to each person on the distribution list.
- February 20, 2015: follow up by phone with Kettle and Stony Point First Nation to arrange a future consultation meeting.
- March 16, 2015: notification letters sent out for Bright C Compressor open house on April 2, 2015.
- March 20, 2015: followed up with Chief Miskokomon of Chippewa of the Thames by phone to further discuss the Project.
- April 1, 2015: met with Chief Miskokomon and Greg Plain of the Chippewa of the Thames to discuss the Project.
- April 14, 2015: invitation letters sent out for Dawn H Compressor open house on April 29, 2015.

- April 23, 2015: Update letters sent to First Nations and Métis Nation on the Project status.
- June 1, 2015: Invitations to schedule further consultations sent to Kettle and Stony Point First Nation and Chippewa of the Thames First Nation.
- June 3, 2015: Update sent to Chippewa of the Thames First Nation on Dawn Parkway Project and other Union projects in progress.

Relative to this Project, participants made the following requests as part of the consultation process:

- Mississaugas of the New Credit, a request to be involved in any survey work specific to the Bright C Compressor.
- Kettle and Stony Point and Chippewa of the Thames, a request for a full consultation on the Project facilities located in their traditional territory.
- Walpole Island First Nation, a request for further information on the pipeline system in the Dawn Plant area of the Project.
- Caldwell First Nation, Aamjiwnaang, Chippewa of the Thames, Kettle and Stony Point and Walpole Island First Nations, a request to be involved in any survey work specific to the Lobo D and Dawn H Compressors.

Union proposed to address these requests in the following manner:

- Union instructed its Archeology and Environmental Consultants to contact the First Nations to engage them in survey work.

- Union agreed to compensate the First Nations monitors for time spent attending site surveys.
- Union executed a Field Liaison Representative Agreement with the Mississaugas of the New Credit specific for their monitoring work.
- Union executed a Monitoring Agreement with Aamjiwnaang First Nation specific to their monitoring work.
- Union provided a presentation and overview of the Dawn area pipeline system and the North American natural gas market to the Walpole Island Community Consultation committee on March 23, 2015.
- Union is scheduling future consultation meetings with Kettle and Stony Point and Chippewa of the Thames First Nations.

Upon completion of the necessary archaeological assessments for the Project, Union will make the assessment available to any First Nations or Métis organizations that request a copy and will undertake any construction in accordance with any mitigation measures recommended in the assessments.

During construction, Union will have inspectors in the field who are available to First Nations and Métis organizations as a primary contact to discuss and review any issues that may arise.

2017 DAWN PARKWAY GROWTH - PROJECT SCHEDULE

June 18 2015 revision