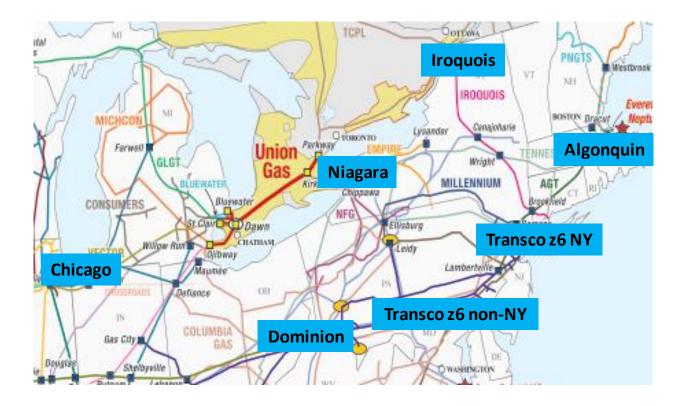
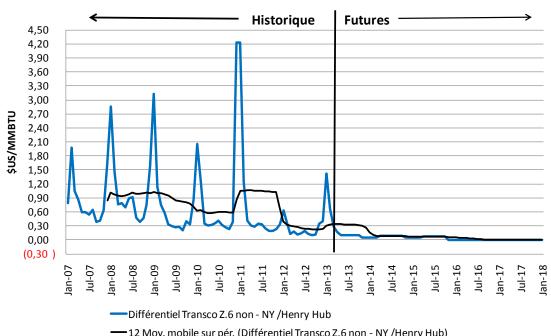
#### PRIX RÉGIONAUX

- 1 Cette annexe présente, sous forme graphique, l'évolution historique et la valeur des « Futures »
- des différentiels de lieu par rapport à Henry Hub pour différents points d'échange du gaz naturel
- dans le nord-est des États-Unis. L'historique de prix porte sur la période janvier 2007 à mars
- 2013 alors que la valeur des « Futures » porte sur la période avril 2013 à janvier 2018. Il est à
- 5 noter que Henry Hub est un carrefour d'échange situé en Louisiane où s'établit le prix des
- 6 contrats « Futures » sur le New York Mercantile Exchange (NYMEX).
- 7 Les différentiels ont été calculés aux points identifiés sur la carte ci-dessous. La base de
- 8 données a été fournie par une tierce partie.

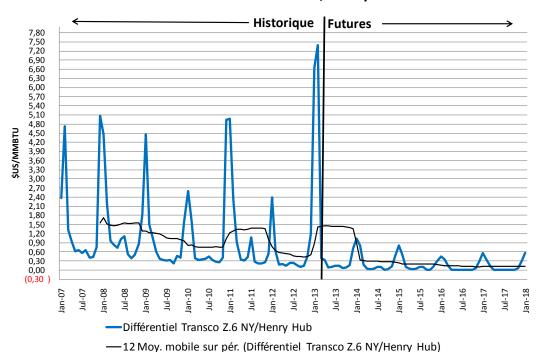


# Différentiel Transco Z.6 non - NY / Henry Hub

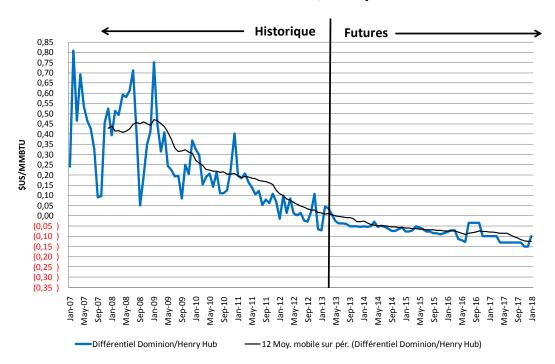


■12 Moy. mobile sur pér. (Différentiel Transco Z.6 non - NY /Henry Hub)

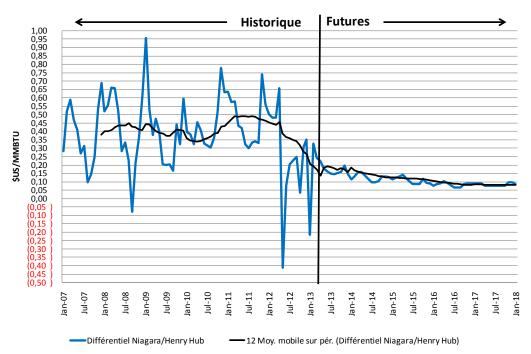
#### Différentiel Transco Z.6 NY / Henry Hub



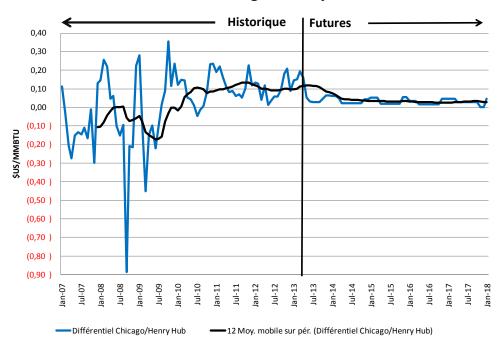
#### **Différentiel Dominion / Henry-Hub**



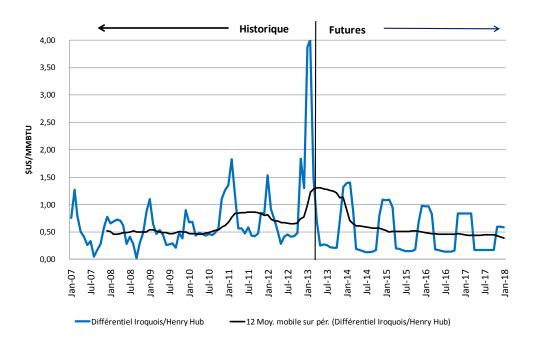
# Différentiel Niagara / Henry-Hub



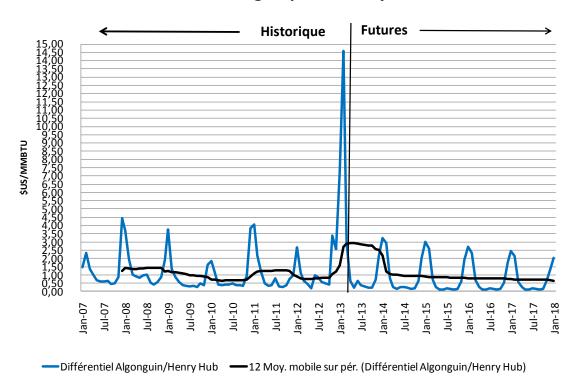
#### **Différentiel Chicago / Henry Hub**



# Différentiel Iroquois / Henry Hub



# Différentiel Algonquin / Henry Hub



#### CONTRATS D'APPROVISIONNEMENT EN FOURNITURE DE GAZ NATUREL

	Point de		Volume	Période	d'achat	Indice	Volume	Total contracté	Total visé
	livraison	Échéance	quotidien ( 10³m³/jour )	Début	Fin	d'achat	annuel ( 10 <sup>6</sup> m³ )	Qté / % du visé ( 10 <sup>6</sup> m³ )	Année 2014 (10 <sup>6</sup> m³)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Empress						0	0	292
	•							0,0%	
2	Dawn	2015-03-31	343	01-déc	31-mars	AECO	42		
3	Dawn	2014-03-31	528	01-déc	31-mars	AECO	64		
4	Dawn	2014-03-31	132	01-déc	31-mars	AECO	16		
5	Dawn	2014-03-31	132	01-déc	31-mars	AECO	16		
6	Dawn	2014-03-31	132	01-déc	31-mars	AECO	16		
7	Dawn	2014-03-31	396	01-déc	31-mars	AECO	48		
8	Dawn	2014-02-28	845	01-janv	28-févr	NYMEX	50		
9	Dawn	2014-02-28	566	01-janv	28-févr	NYMEX	33		
10	Dawn	2014-02-28	278	01-janv	28-févr	NYMEX	16		
11	Dawn	2014-02-28	660	01-déc	28-févr	NYMEX	59	916	1 673
12	Dawn	2014-02-28	396	01-déc	28-févr	NYMEX	36	54,8%	
13	Dawn	2014-02-28	278	01-déc	28-févr	NYMEX	25		
14	Dawn	2014-02-28	528	01-déc	28-févr	NYMEX	48		
15	Dawn	2014-02-28	528	01-déc	28-févr	NYMEX	48		
16	Dawn	2014-02-28	264	01-déc	28-févr	NYMEX	24		
17	Dawn	2014-02-28	381	01-déc	28-févr	NYMEX	34		
18	Dawn	2014-03-31	924	01-déc	31-mars	AECO	112		
19	Dawn	2014-03-31	528	01-déc	31-mars	NYMEX	64		
20	Dawn	2014-03-31	278	01-déc	31-mars	NYMEX	34		
21	Dawn	2014-03-31	540	01-déc	31-mars	NYMEX	65		
22	Dawn	2014-03-31	396	01-déc	31-mars	NYMEX	48		
23	Dawn	2014-03-31	528	01-avr	15-avr	AECO	8		
24	Dawn	2014-04-15	528	01-avr	15-avr	AECO	8		
25	Franchise	2015-10-31	11	01-oct	30-sept		4	4	4
26								100,0%	
27			<u> </u>			Volume total	annuel ( 10 <sup>6</sup> m³ )	: 920	1 968

# Contrats d'approvisionnement existants Transport

	Segment	Transporteur (service)	Débits totaux (10 <sup>6</sup> m³/an)	Débits totaux 2013-11-01 (10³m³/jour)	Échéance	Débit 2013-10-01 (10³m³/jour)	Débit 2013-11-01 (10³m³/jour)	Modalité de renouvellement
	(1)	(2)	(3)	(4)	(5)	(6)	(8)	(9)
1	.,				2014-10-31	4 751	4 751	1
		TCPL (FTLH)	2 880	8 182	2015-10-31	3 431	3 431	2
2					2013-10-31	264	n/a	
	Empress-EDA				2014-10-31	396	396	
3		Tierce partie	180	396	2013-10-31	317	n/a	2
4					2013-10-31	264	n/a	
5					2013-10-31	288	n/a	
6			4.40	40-	2014-10-31	327	327	
7	Empress-NDA	TCPL (FTLH)	148	405	2014-10-31	77	77	1
8					2014-04-15	3 313	3 313	
9		TODI (OTO)	0.000	F 70F	2014-04-15	676	676	4
10	Parkway-EDA	TCPL (STS)	2 082	5 705	2014-10-31	1 188	1 188	1
11					2015-10-31	528	528	
12		TODI (FTOLI)	H) 626	1 715	2017-10-31	1 715	1 715	4
13		TCPL (FTSH)			2025-10-31 <sup>A</sup>	n/a	n/a	1
14	Parkway-NDA	TCPL (FTSH)			2025-10-31 <sup>B</sup>	n/a	n/a	1
15					2016-03-31	1 381	1 381	
16					2016-03-31	605	605	
17			2 745		2016-03-31	2 342	2 342	4
18	Dawn-Parkway	Union (M12)		7 522	2016-10-31	924	924	
19					2027-10-31	1 715	1 715	
20					2016-10-31	555	555	3
21					2025-10-31 <sup>C</sup>	n/a	n/a	4
22	Parkway-Dawn	Union (C1)	963	2 639	2016-03-31	2 639	2 639	4
23					2014-10-31	1 320	1 320	
24	Dawn-EDA	TCPL (FTSH)	1 060	2 903	2014-10-31	528	528	1
25					2015-10-31	1 056	1 056	
26	Transport par échange Dawn-EDA ou Parkway	Tierce partie	723	2 164	2023-10-31	n/a	2 164	2
27	Transport par échange				2015-10-31	660	660	_
28	Empress-EDA ou Dawn	Tierce partie	367	1 004	2015-10-31	344	344	2
29	Transport par échange	Tiorco portio	10	26	2013-10-31	26	n/a	2
30	Empress-NDA ou Dawn	Tierce partie	10	20	2015-10-31	0	26	۷

### MODALITÉ DE RENOUVELLEMENT

- 1. Droit de renouvellement annuel avec préavis de 6 mois
- 2. Pas de modalité de renouvellement
- 3. Préavis de 2 ans pour ne pas renouveler, sinon renouvellement automatique 10 ans
- 4. Préavis de 2 ans pour ne pas renouveler, sinon renouvellement automatique 1 an
- 5. Retour automatique de la capacité à Gaz Métro

# <u>NOTES</u>

- A. "Precedent agreement" avec TCPL, 6 312 103m3/jour au 2015-11-01
- B. "Precedent agreement" avec TCPL, 405 103m3/jour au 2015-11-01
- C. "Precedent agreement" avec Union Gas, 6 803 103m3/jour au 2015-11-01

#### TARIFS DE TRANSPORT : TCPL ET UNION GAS

<u>TCPL</u>			Au 1 <sup>er</sup> juillet 2013	
		\$/10 <sup>3</sup> m <sup>3</sup> /mois	\$/10 <sup>3</sup> m <sup>3</sup>	
		(1)	(2)	
FTLH Zone EST (GMI EDA)		1 993,07		
			•	
	Total		65,5254	Taux à CU 100%
FTLH Zone NORD (GMI NDA)	Prime fixe	1 549,04	50,9273	
	Prime variable		0,000	
	Total		50,9273	Taux à CU 100%
STS	Prime fixe	474,69	15,6062	
	Prime variable		0,0000	
	Total		15,6062	Taux à CU 100%
FTSH (Dawn-GMI EDA)	Prime fixe	608,40	20,0021	
Surcharge point de récept	ion Union Dawn	5,03	0,1654	
	Prime variable		0,0000	
	Total		20,1676	Taux à CU 100%
FTSH (Parkway-GMI EDA)	Prime fixe	474,69	15,6062	
	Prime variable		0,000	
	Total		15,6062	Taux à CU 100%
	FTLH Zone EST (GMI EDA)  FTLH Zone NORD (GMI NDA)  STS  FTSH (Dawn-GMI EDA)  Surcharge point de récept	FTLH Zone EST (GMI EDA) Prime fixe Prime variable Total  FTLH Zone NORD (GMI NDA) Prime fixe Prime variable Total  STS Prime fixe Prime variable Total  FTSH (Dawn-GMI EDA) Surcharge point de réception Union Dawn Prime variable Total  FTSH (Parkway-GMI EDA) Prime fixe Prime variable Total	\$\frac{\\$\\$/10^3 m^3/mois}{(1)}\$  FTLH Zone EST (GMI EDA)  Prime fixe Prime variable Total  FTLH Zone NORD (GMI NDA)  Prime fixe Prime variable Total  STS  Prime fixe Prime variable Total  FTSH (Dawn-GMI EDA)  Surcharge point de réception Union Dawn Prime variable Total  FTSH (Parkway-GMI EDA)  Prime fixe Prime variable Total  FTSH (Parkway-GMI EDA)  Prime fixe Prime variable Prime variable	\$\frac{\\$\\$/10^3\max^3/\mois}{(1)} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \

	<u>UNION GAS</u>		Au	13	
			\$/10 <sup>3</sup> m <sup>3</sup> /mois (1)	\$/10 <sup>3</sup> m <sup>3</sup> (2)	_
17 18	Transport M12 (Dawn à Parkway)  Prime variable	Prime fixe pour excédent	90,25	2,9673 2,9673	Taux à CU 100%
19 20	Transport C1 (Parkway à Dawn)  Prime variable	Prime fixe pour excédent	21,94	0,7213 0,7213	Taux à CU 100%

Original : 2013.06.07 Révisé : 2013.08.29

#### RATIOS DE GAZ DE COMPRESSION

TCPL	
	Projection 2014

1	FTLH Empress-GMI EDA	2,58%
2	FTLH Empress-GMI NDA	1,98%
3	FTLH Empress-Dawn	1,84%
4	FTSH Dawn-GMI EDA	0,79%
5	FTSH Parkway-GMI EDA	0,69%
6	STS Parway-GMI EDA	0,69%

#### **Union Gas**

Original: 2013.06.07

	0111011 0410			
			Tarif M12 Dawn à Parkway	Tarif C1 Parkway à Dawn
	7	Octobre	0,697%	0,268%
	8	Novembre	0,840%	0,153%
	9	Décembre	0,945%	0,153%
1	10	Janvier	1,086%	0,153%
1	11	Février	1,033%	0,153%
1	12	Mars	0,972%	0,153%
1	13	Avril	0,802%	0,153%
1	14	Mai	0,567%	0,153%
1	15	Juin	0,463%	0,268%
1	16	Juillet	0,451%	0,268%
1	17	Août	0,355%	0,268%
1	18	Septembre	0,352%	0,268%

# Contrats d'approvisionnement existants Entreposage

	Fournisseur	Échéance		Capacité	Critère de retrait selon le niveau d'inventaire	Capacité maximale Retrait ( 10³m³/jour )	Critère d'injection selon le niveau d'inventaire	Capacité maximale Injection ( 10³m³/jour )
	(1)	(2)		(3)	(4)	(5)	(6)	(7)
1 2		31/03/2015	Note 1	78 514		942 628		589 393
3 4		31/03/2015	Note 1	154 386		1 853 1 235		1 158 772
5 6		31/03/2017	Note 1	116 126		1 394 929		871 581
7 8	Union	31/03/2019	Note 1	0		1 394 929		871 581
9		31/03/2015	Note 2	0				
10 11		Total		349 026	> 87 256 < 87 256	5 582 3 721	> 261 769 < 261 769	3 489 2 326
12 13		31/03/2019	Note 3	116 126	> 29 031 < 29 031	1 394 929	> 87 094 < 87 094	871 581
14 15	Intragaz PdL *	30/04/2023		22 700	> 15 500 < 15 500	1 200 variable	> 10 000 < 10 000	2 400 variable
16 17 18 19	Intragaz St-Flavien *	30/04/2023		120 000	Décembre Janvier Février Mars	1 200 1 520 1200 / 800 630 / 0	Volume maximal	861
20					Maximum disponible	1 930		
21 22 23 24	LSR *	Capacité totale: Capacité utile: Activité réglementée Client GNL		58 591 56 600 52 218 4 382		5 749	Liquéfaction brute Liquéfaction nette	342 288

<sup>\*</sup> Pouvoir calorifique de 37,76 MJ/m³

Original: 2013.06.07

#### Note

<sup>1</sup> Étant donné l'ajout d'un contrat de capacité de retrait et injection uniquement, le niveau d'inventaire est évalué en fonction de la capacité totale d'entreposage détenue.

<sup>2</sup> Contrat de regroupement des capcités de retrait et d'injection sous un seul contrat "Aggregates Storage Nomination Services - ASN"

<sup>3</sup> Contrat effectif le 1<sup>er</sup> avril 2017, décision D-2013-035 de la Régie de l'énergie

#### TARIFS D'ENTREPOSAGE: UNION GAS ET INTRAGAZ

	_	Αι	ı 1 <sup>er</sup> avril 2013	Au	Au 1 <sup>er</sup> avril 2014	
	UNION GAS	000 \$	\$/10³m³	000 \$	\$/10³m³	
	Prime fixe sur la capacité contractuelle					
1	LST 057		38,269		38,269	
2	LST 064		31,070		31,070	
3	LST 065		31,070		31,070	
4	LST 068	792		792		
5	ASN 001	0	0,000	0	0,000	
6	Prime variable (retrait et injection)		0,265		0,265	
7	Prime variable (retrait et injection excédent	taire)	1,553		1,553	
	Ratio de gaz de compression					
8	Retrait et injection		0,6%		0,6%	
9	Retrait et injection excédentaire		Ratio variable		Ratio variable	

# <u>Au 1 <sup>er</sup> mai 2013</u>

	<u>INTRAGAZ - POINTE-DU-LAC *</u>	\$/10 <sup>3</sup> m <sup>3</sup> /mois \$/10 <sup>3</sup>	m³
10	Tarif E6		
11	Prime de réservation	11,9507 143,4	80
12	Prime de souscription	82,6826 992,1	91
13	Cavalier tarifaire	à être fixé ultérieurement	
14	Gaz de compression maximum	4,0%	

# <u>Au 1 <sup>er</sup> mai 2013</u>

à être fixé ultérieurement

	INTRAGAZ - SAINT-FLAVIEN *	\$/10³m³/mois	\$/10 <sup>3</sup> m <sup>3</sup>
15	Tarif E7		
16	Prime de réservation	8,6237	103,4844
17	Prime variable - injection		1,6849
18	Prime variable - retrait		0,2807

\* Décision D-2013-097

**Cavalier tarifaire** 

Original : 2013.06.07 Révisé : 2013.08.29

# DEMANDE ET SOURCES D'APPROVISIONNEMENT GAZIER ANNÉE 2013-2014

		<b>Hiver</b> (10 <sup>6</sup> m <sup>3</sup> ) (1)	<b>Été</b> (10 <sup>6</sup> m³)	<b>Total</b> (10 <sup>6</sup> m <sup>3</sup> ) (3)
	DEMANDE	(1)	(2)	(3)
1 2 3	Continue * Interruptible Client biogaz en réseau dédié	2 811 378 13	2 093 298 15	4 904 676 28
4	Gaz d'appoint concurrence	17	25	42
5	Sous-Total Demande	3 220	2 432	5 651
6	Gaz perdu, usage de la compagnie et autres	47	27	74
7	Ventes GNL	5	9	15
8	SOUS-TOTAL AVANT INJECTION	3 272	2 468	5 740
	INVENTAIRES INJECTIONS			
9	Union Gas	43	301	344
10	LSR **	10	18	28
11 12	Pointe-du-Lac ** Saint-Flavien **	16 10	3 110	19 119
	,			
13	Échanges de gaz	0	0	0
14	SOUS-TOTAL INJECTIONS & ÉCHANGES	79 	432	511
15	TOTAL DE LA DEMANDE	3 350	2 900	6 251
	APPROVISIONNEMENT			
16	FTLH Empress - GMIT	1 257	1 781	3 038
17	Cessions d'optimisation	60	93	153
18	Transport par échange (EMP - GMIT)	156	247	403
19	Transport fourni par les clients	149	239	387
20	Gaz d'appoint	17	25	42
21	Sous-Total Transports	1 638	2 385	4 023
22	FT non utilisé	0	-29	-29
23	Cessions / ventes de transport	0	0	0
24	Achats dans le territoire	2	2	4
25	Achats à Dawn (GR)	1 214	459	1 673
26	Biogaz	13	15	28
27	Autres réceptions	0	0	0
28	SOUS-TOTAL TRANSPORT	2 866	2 833	5 699
	INVENTAIRES RETRAITS			
29	Union gas	294	50	344
30	LSR **	10	16	27
31	Pointe-du-Lac **	17	2	19
32	Saint-Flavien **	120	0	120
33	Échanges de gaz	0	0	0
34	SOUS-TOTAL RETRAITS & ÉCHANGES	441	68	509
35	TOTAL APPROVISIONNEMENT	3 308	2 900	6 208
36	INTERRUPTIONS BRUTES	-43	0	-43

<sup>\*</sup> Incluant la demande des clients qui fournissent leur propre service de transport.

<sup>\*\*</sup> Un pouvoir calorifique de 37,89 a été utilisé alors que le pouvoir calorifique prévu pour l'année tarifaire 2014 est 37,76 MJ/m³.

#### **DÉFINITION DES RUBRIQUES DE LA PAGE 1**

#### **Demande**

L.1 Continue: Demande projetée pour la clientèle au service continu, présentée au 1 tableau 16 de la pièce Gaz Métro-2, Document 1, excluant la demande du client 2 desservi en biogaz par un réseau dédié. 3 L.2 Interruptible: Demande projetée pour la clientèle au service interruptible sous 4 contrat régulier, présentée au tableau 16 de la pièce Gaz Métro-2, Document 1. 5 L.3 Client biogaz en réseau dédié: Demande projetée pour le client approvisionné en 6 biogaz par un réseau dédié. 7 L.4 Gaz d'appoint concurrence: Demande projetée pour la clientèle au service 8 interruptible sous contrat de gaz d'appoint, présentée au tableau 16 de la pièce 9 Gaz Métro-2, Document 1. 10 L.6 Gaz perdu, usage de la compagnie et autres : Somme des volumes de gaz naturel 11 projetés en gaz perdu, du gaz naturel utilisé par la compagnie dans ses 12 installations, du gaz requis aux fins d'injection dans les sites d'entreposage et du 13 gaz de compression requis pour transporter le gaz sur les différents pipelines 14 (excluant les pipelines longue distance entre Empress et le territoire de Gaz Métro). 15 Au rapport annuel, les éléments suivants s'ajoutent à cette rubrique : l'augmentation 16 du « linepack » du réseau de distribution, les écarts positifs entre les nominations 17 envoyées à TCPL et le mesurage des compteurs dans le territoire de Gaz Métro 18 ainsi que les écarts constatés en fonction du « Load Balancing Agreement - LBA ». 19 L.7 Ventes GNL: Volumes de gaz naturel liquéfié retirés de l'usine LSR pour le client 20 GNL. 21 L.9 à 12 Inventaires injections: Volumes de gaz naturel injectés 22 dans les sites 23 d'entreposage. L.13 Échanges de gaz : Quantités de gaz naturel <u>livrées</u> par Gaz Métro pour les 24 transactions financières d'optimisation réalisées au cours de l'année financière et 25

relatives aux prêts d'espace, aux échanges entre périodes et géographiques ainsi qu'aux cessions de FTSH avec échange pour les quantités utilisées par Gaz Métro.

FTLH Empress - GMIT: Capacités de transport FTLH détenues par Gaz Métro

#### **Approvisionnement**

1

2

3

22

23

L.16

- auprès de TCPL entre Empress et son territoire (GMIT EDA et GMIT NDA). 4 L.17 Cessions d'optimisation : Capacités de transport FTLH détenues par Gaz Métro 5 6 auprès de TCPL entre Empress et son territoire et cédées à des tierces parties, de façon permanente ou temporaire, à des fins purement financières. Ces cessions 7 comportent une clause spécifique où la tierce partie s'engage à remettre dans le territoire de Gaz Métro les quantités livrées par elle à Empress. 9 L.18 Transport par échange (EMP - GMIT): Capacités de transport entre Empress et le 10 territoire de Gaz Métro (ou Dawn en été) requises pour répondre aux besoins 11 opérationnels et contractées sur le marché secondaire sous forme d'échange 12 géographique. 13 L.19 Transport fourni par les clients: Projection des capacités de transport fournies au 14 cours de l'année financière par les clients qui se sont retirés du service de transport 15 de Gaz Métro. 16 L.20 Gaz d'appoint : Capacités de transport déjà contractées ou projetées pour répondre 17 à la demande de gaz d'appoint concurrence. 18 L.22 FTLH non utilisé : Projection des excédents de capacité de transport FTLH au cours 19 de l'année financière. 20 L.23 Cessions/ventes de transport FTLH: Excédents de capacité de transport FTLH 21
- 24 L.24 Achats dans le territoire: Achats de fourniture de gaz naturel par Gaz Métro 25 directement dans son territoire.

effectivement cédés ou vendus sur le marché secondaire au cours de l'année

- 26 L.25 Achats à Dawn (GR): Achats de fourniture de gaz naturel par Gaz Métro à Dawn.
- 27 L.26 *Biogaz*: Approvisionnement fourni par un site d'enfouissement via un réseau dédié relié directement au client.

financière.

1	L.27	Autres réceptions : Somme des éléments suivants utilisés au cours de l'année
2		financière : l'utilisation du « linepack » du réseau de distribution, les écarts négatifs
3		entre les nominations envoyées à TCPL et le mesurage des compteurs dans le
4		territoire de Gaz Métro ainsi que les écarts constatés en fonction du « Load
5		Balancing Agreement - LBA ».
6	L.29 à 32	Inventaires retraits : Volumes de gaz naturel retirés des sites d'entreposage.
7	L.33	Échanges de gaz : Quantités de gaz naturel reçues par Gaz Métro pour les
7 8	L.33	Échanges de gaz : Quantités de gaz naturel reçues par Gaz Métro pour les transactions financières d'optimisation réalisées au cours de l'année financière et
•	L.33	
8	L.33	transactions financières d'optimisation réalisées au cours de l'année financière et

			. 2, 2 ,	PPROVISIONNEMEN	2014 2010					
	2014				2015			2016		
	Hiver	Été	Total	Hiver	Été	Total	Hiver	Été	Total	
DEMANDE (10 6 m³)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Continue	2 811	2 093	4 904	2 836	2 101	4 936	2 861	2 090	4 951	
Interruptible	378	298	676	374	297	671	378	301	678	
Gaz d'appoint	17	25	42	17	25	42	17	25	42	
Client biogaz en réseau dédié	13	15	28	13	15	28	13	15	28	
Sous-total	3 220	2 432	5 651	3 239	2 <b>4</b> 38	5 678	3 269	2 431	5 700	
Interruptions	-43	0	-43	-36	0	-36	-36	0	-36	
Autres	47	27	74	47	28	75	64	42	106	
Ventes GNL	5	9	15	13	22	34	19	26	45	
TOTAL	3 229	2 468	5 697	3 263	2 488	5 751	3 315	2 499	5 815	
APPROVISIONNEMENT (10 <sup>6</sup> m³)										
Transport										
FTLH (primaire & secondaire)	1 316	1 874	3 190	1 356	1 922	3 278	515	792	1 306	
Transport par échange de Empress Transport fourni par les clients	156 149	247 239	403 387	156 143	221 197	376 340	0 144	142 197	142 341	
Transport fourni par les clients Transport gaz d'appoint	149	239 25	42	143	197 25	42	17	197 25	42	
FTLH non utilisé	0	-29	-29	0	-39	-39	0	-266	-266	
Transport Emp-GMI	1 638	2 356	3 994	1 672	2 326	3 998	676	891	1 566	
Achats dans le territoire	2	2	4	2	2	4	0	0	(	
Achats à Dawn (GR)	1 214	459	1 673	1 225	499	1 724	925	188	1 113	
Achats à Dawn (AD)	0	0	0	0	0	0	1 325	1 740	3 065	
Achats à Dawn (client GNL)	0	0	0	0	0	0	19	23	41	
Biogaz Autres	13 0	15 0	28	13 0	15 0	28	13 0	15 0	28	
Retraits - injections	363	-365	-2	352	-355	-3	359	-358	1	
TOTAL	3 229	2 468	5 697	3 263	2 488	5 751	3 315	2 499	5 815	
ENTREPOSAGE		Capacité (PJ)	Capacité (10 <sup>6</sup> m³)		Capacité (PJ)	Capacité (10 <sup>6</sup> m³)		Capacité (PJ)	Capacité (10 <sup>6</sup> m	
			ll l			· · · · · ·				
LSR Pointe-du-Lac		2,0	52,2 22,7		1,8	46,6 22,7		1,8	46,6 22,7	
Saint-Flavien		0,9 3,7	97,0		0,9 3,7	97,0		0,9 3,7	97,0	
Union		13,2	349,0		13,2	349,0		13,2	349,0	
TOTAL		19,7	520,9		19,5	515,3		19,5	515,3	
DÉBIT QUOTIDIEN D'APPROVISIONNEMENT		(TJ/j)	(10³m³/j)		(TJ/j)	(10³m³/j)		(TJ/j)	(10³m³/j)	
Journée de pointe - continue	•	1 194	31 521		1 203	31 748		1 206	31 830	
Besoins hiver extrême		1 163	30 689		1 203 1 174	30 985		1 178	31 091	
Maximum		1 194	31 521		1 203	31 748		1 206	31 830	
Approvisionnements										
FTLH (primaire & secondaire)		210	5 551		210	5 551		210	5 551	
Transport par échange (EMP - GMIT)		39	1 031		39	1 031		0	0	
Achats dans le territoire		0	11		0	11		0	C	
Transport clients & biogaz		40	1 065		39	1 026		39	1 025	
FTSH (Dawn - EDA)		110	2 903		110	2 903		110	2 903	
Transport par échange (Dawn - EDA) FTSH (Parkway - EDA)		82 65	2 164 1 715		82 65	2 164 1 715		82 319	2 164 8 432	
STS		216	5 705		216	5 705		216	5 705	
Pointe-du-Lac *		45	1 196		45	1 196		45	1 196	
Saint-Flavien *		49	1 294		49	1 294		49	1 290	
LSR *		217	5 729		217	5 729		217	5 729	
TOTAL approvisionnements avant achat /	(vente)	1 075	28 363		1 073	28 325		1 288	33 995	
Provision additionnelle avant achat / (ven % du total approvisionnements avant acha (I.45/ I.44)	•	-120 -11,1%	-3 157 -11,1%		-130 -12,1%	-3 424 -12,1%		82 6,4%	2 165 6,4%	
Achat / (vente) de transport a priori		120	3 167		130	3 431		-82	-2 165	
TOTAL approvisionnements après achat /	(vente)	1 195	31 531		1 203	31 756		1 206	31 830	
Provision additionnelle après achat / (ven % du total approvisionnements après acha (1.49/1.48)	te)	0	<b>10</b> 0,0%		0	<b>7</b> 0,0%		0	0,0%	

<sup>\*</sup> Un pouvoir calorifique de 37,89 a été utilisé alors que le pouvoir calorifique prévu pour l'année tarifaire 2014 est 37,76.

				DNNEMENT 2014-2016 L DE TEMPÉRATURE			
		21	D14		015	20	016
			(1)		(2)		(3)
<u>!</u>	<u>DEMANDE (10 <sup>6</sup> m³)</u>						
1	Continue	•	?;5087]	<del>-</del>	l;5119]	-	3;5136]
2	Interruptible	-	; 707 ]		9;700]	-	7 ; 708 ]
3	Gaz d'appoint		42		42		42
4	Client biogaz en réseau dédié		28		28		28
5	Sous-total	[ 5 427	' ; 5 864 ]	[ 5 454	l; 5 890 ]	[ 5 476	6;5914]
6	Interruptions	[ -13	3 ; -99 ]	[ -11	; -93 ]	[ -12	2 ; -95 ]
7	Autres	[ 70	); 77 ]	[ 71	; 77 ]	[ 103	3;109]
8	Ventes GNL	•	15		34		45
9	TOTAL	[ 5 499	; 5 856 ]	[ 5 549	; 5 909 ]	[ 5 612	2 ; 5 974 ]
	APPROVISIONNEMENT (10 6 m³)						
10	Transport						
11	FTLH (primaire & secondaire)	3	190	વ	278	1	306
12	Transport par échange de Empress		190		376		142
13	Transport par echange de Empress  Transport fourni par les clients		387		340		341
13 14	Transport fourni par les clients Transport gaz d'appoint		42		42		42
15	FTLH non utilisé		-29		-39		266
16	Appro total utilisé		; 3 995 ]		998		566
	••	[ 0 004	, 5 555 j	3	1	,	
17	Achats dans le territoire	<u>-</u>	4	<b>-</b>	4	<b>-</b> - :	0
18	Achats à Dawn (GR)	[ 1 475	5 ; 1 831 ]	[ 1 522	2;1882]	<del>-</del>	; 1 264 ]
19	Achats à Dawn (AD)		U		0		026
20	Achats à Dawn (client GNL)		0		0		41
21	Biogaz		28		28		28
22	Autres		0	0		0	
23	Retraits - injections		-2			[0;1]	
24	TOTAL	[ 5 499	; 5 856 ]	[ 5 549	; 5 909 ]	[ 5 612	?;5974]
_	ENTREPOSAGE	Capacité (PJ)	Capacité (10 <sup>6</sup> m³)	Capacité (PJ)	Capacité (10 <sup>6</sup> m³)	Capacité (PJ)	Capacité (10 <sup>6</sup> m³)
25	LSR	2,0	52	1,8	47	1,8	47
26	Pointe-du-Lac	0,9	23	0,9	23	0,9	23
27	Saint-Flavien	3,7	97	3,7	97	3,7	97
28	Union	13,2	349	13,2	349	13,2	349
29	TOTAL	19,7	521	19,5	515	19,5	515
<u> </u>	DÉBIT QUOTIDIEN D'APPROVISIONNEMENT	(TJ/j)	(10³m³/j)	(TJ/j)	(10³m³/j)	(TJ/j)	(10³m³/j)
30	Journée de pointe - continue	1 194	31 521	1 203	31 748	1 206	31 830
31	Besoins hiver extrême	1 163	30 689	1 174	30 985	1 178	31 091
32	Maximum	1 194	31 521	1 203	31 748	1 206	31 830
	Approvisionnements						
33	FTLH (primaire & secondaire)	210	5 551	210	5 551	210	5 551
34	Transport par échange (EMP - GMIT)	39	1 031	39	1 031	0	0
35	Achats dans le territoire	0	11	0	11	0	0
36	Transport clients & biogaz	40	1 065	39	1 026	39	1 025
37	FTSH (Dawn - EDA)	110	2 903	110	2 903	110	2 903
8	Transport par échange (Dawn - EDA)	82	2 164	82	2 164	82	2 164
39	FTSH (Parkway - EDA)	65	1 715	65	1 715	319	8 432
10	STS	216	5 705	216	5 705	216	5 705
11	Pointe-du-Lac *	45	1 196	45	1 196	45	1 196
12	Saint-Flavien *	49	1 294	49	1 294	49	1 290
13	LSR *	217	5 729	217	5 729	217	5 729
4	TOTAL approvisionnements avant achat / (vente)	1 075	28 363	1 073	28 325	1 288	33 995
5	Provision additionnelle avant achat / (vente)	-120	-3 157	-130	-3 424	82	2 165
15	% du total approvisionnements avant achat (vente)	-120 -11,1%	-3 157 -11,1%	-130 -12,1%	-3 424 -12,1%	6,4%	6,4%
16:	(l.45/ l.44)	-11,170	-11,170	-12,170	-12,170	0,470	0,470
16	(1.43/ 1.44)		3 167	130	3 431	-82	-2 165
	Achat / (vente) de transport <i>a priori</i>	120	3 107				
47		120 <b>1 195</b>	31 531	1 203	31 756	1 206	31 830
47 48	Achat / (vente) de transport <i>a priori</i> TOTAL approvisionnements après achat / (vente)	1 195	31 531				
46 47 48 49 50	Achat / (vente) de transport a priori			1 203 0 0,0%	<b>31 756</b> <b>7</b> 0,0%	<b>1 206 0</b> 0,0%	<b>31 830</b> <b>0</b> 0,0%

				VISIONNEMENT 2014-2016 ARIO FAVORABLE	6		
		20	II	201	5	201	6
		(	1)	(2		(3)	)
	<u>DEMANDE (10 <sup>6</sup> m³)</u>						
1	Continue		411	5 63		5 79	
2	Interruptible	6	75	67	2	683	3
3	Gaz d'appoint	4	19	49	9	49	9
4	Client biogaz en réseau dédié	2	28	28	3	28	3
5	Sous-total	6	162	6 38	81	6 <i>5</i> 5	54
^	latery intions	,	24	2		0-	7
6	Interruptions		31	-3		-27	
1	Autres		5	77		112	
8	Ventes GNL	1	5	34		45	
9	TOTAL	6 2	221	6 40	62	6 68	85
	APPROVISIONNEMENT (10 6 m³)						
0	Transport						
1	FTLH (primaire & secondaire)	3 4	454	4 03	34	2 26	62
2	Transport par échange de Empress		44	37		159	
3	Transport par echange de Empress  Transport fourni par les clients		95	62		62	
			95 19				
4 -	Transport gaz d'appoint			49		49	
5	FTLH non utilisé		87	0	II	-74	
3	Transport Emp-GMI	4 8	556	5 08	80	2 34	
7	Achats dans le territoire		4	4		0	
3	Achats à Dawn (GR)	1 6	635	1 3	53	822	
)	Achats à Dawn (AD)		0	0		3 45	50
)	Achats à Dawn (client GNL)		0	0		41	1
	Biogaz		28	28	3	28	3
<u> </u>	Autres		0	0		0	
3	Retraits - injections		2	-4		1	
,  -	TOTAL		221	6 462		6 685	
	<u>ENTREPOSAGE</u>	Capacité (PJ)	Capacité (10 <sup>6</sup> m³)	Capacité (PJ)	Capacité (10 <sup>6</sup> m³)	Capacité (PJ)	Capacité (10 <sup>6</sup> m³)
5	LSR	2,0	52	1,8	47	1,8	47
6	Pointe-du-Lac	0,9	23	0,9	23	0,9	23
7	Saint-Flavien	3,7	97	3,7	97	3,7	97
3	Union	13,2	349	13,2	349	13,2	349
9	TOTAL	19,7	521	19,5	515	19,5	515
	<u>DÉBIT QUOTIDIEN D'APPROVISIONNEMENT</u>	(TJ/j)	(10³m³/j)	(TJ/j)	(10³m³/j)	(TJ/j)	(10³m³/j)
						(10/1)	(10 /)
0	Journée de pointe - continue	1 326	34 983	1 369	36 124	1 401	36 981
	•	1 326		1 369	36 124	1 401	36 981
	Journée de pointe - continue Besoins hiver extrême Maximum		34 983 33 923 34 983				
	Besoins hiver extrême Maximum	1 326 1 285	33 923	1 369 1 323	36 124 34 905	1 401 1 353	36 981 35 712
	Besoins hiver extrême Maximum Approvisionnements	1 326 1 285 1 326	33 923 34 983	1 369 1 323 1 369	36 124 34 905 36 124	1 401 1 353 1 401	36 981 35 712 36 981
	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire)	1 326 1 285 1 326	<b>33 923</b> <b>34 983</b> 5 551	1 369 1 323 1 369	36 124 34 905 36 124 5 551	1 <b>401</b> 1 <b>353</b> 1 <b>401</b>	36 981 35 712 36 981 5 551
	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT)	1 326 1 285 1 326 210 39	33 923 34 983 5 551 1 031	1 369 1 323 1 369 210 39	36 124 34 905 36 124 5 551 1 031	1 401 1 353 1 401 210 0	36 981 35 712 36 981 5 551 0
	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire	1 326 1 285 1 326 210 39 0	33 923 34 983 5 551 1 031 11	1 369 1 323 1 369 210 39 0	36 124 34 905 36 124 5 551 1 031 11	1 401 1 353 1 401 210 0 0	36 981 35 712 36 981 5 551 0
	Besoins hiver extrême Maximum  Approvisionnements  FTLH (primaire & secondaire)  Transport par échange (EMP - GMIT)  Achats dans le territoire  Transport clients & biogaz	1 326 1 285 1 326 210 39 0 130	33 923 34 983 5 551 1 031 11 3 433	1 369 1 323 1 369 210 39 0 126	36 124 34 905 36 124 5 551 1 031 11 3 325	1 401 1 353 1 401 210 0 0 126	36 981 35 712 36 981 5 551 0 0 3 325
	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire Transport clients & biogaz FTSH (Dawn - EDA)	1 326 1 285 1 326 210 39 0 130 110	33 923 34 983 5 551 1 031 11 3 433 2 903	1 369 1 323 1 369 210 39 0 126 110	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903	1 401 1 353 1 401 210 0 0 126 110	36 981 35 712 36 981 5 551 0 0 3 325 2 903
	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire Transport clients & biogaz FTSH (Dawn - EDA) Transport par échange (DAWN - EDA)	1 326 1 285 1 326 210 39 0 130 110 82	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164	1 369 1 323 1 369 210 39 0 126 110 82	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164	1 401 1 353 1 401 210 0 0 126 110 82	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164
	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire Transport clients & biogaz FTSH (Dawn - EDA)	1 326 1 285 1 326 210 39 0 130 110	33 923 34 983 5 551 1 031 11 3 433 2 903	1 369 1 323 1 369 210 39 0 126 110	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903	1 401 1 353 1 401 210 0 0 126 110	36 981 35 712 36 981 5 551 0 0 3 325 2 903
	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire Transport clients & biogaz FTSH (Dawn - EDA) Transport par échange (DAWN - EDA)	1 326 1 285 1 326 210 39 0 130 110 82	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164	1 369 1 323 1 369 210 39 0 126 110 82	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164	1 401 1 353 1 401 210 0 0 126 110 82	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164
	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire Transport clients & biogaz FTSH (Dawn - EDA) Transport par échange (DAWN - EDA) FTSH (Parkway - EDA)	1 326 1 285 1 326 210 39 0 130 110 82 65	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715	1 369 1 323 1 369 210 39 0 126 110 82 65	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164 1 715	1 401 1 353 1 401 210 0 0 126 110 82 319 216	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432
	Besoins hiver extrême Maximum  Approvisionnements  FTLH (primaire & secondaire)  Transport par échange (EMP - GMIT)  Achats dans le territoire  Transport clients & biogaz  FTSH (Dawn - EDA)  Transport par échange (DAWN - EDA)  FTSH (Parkway - EDA)  STS	1 326 1 285 1 326 210 39 0 130 110 82 65 216 45	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715 5 705 1 196	1 369 1 323 1 369 210 39 0 126 110 82 65 216 45	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164 1 715 5 705 1 196	1 401 1 353 1 401 210 0 0 126 110 82 319 216 45	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432 5 705 1 196
	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire Transport clients & biogaz FTSH (Dawn - EDA) Transport par échange (DAWN - EDA) FTSH (Parkway - EDA) STS Pointe-du-Lac * Saint-Flavien *	1 326 1 285 1 326 210 39 0 130 110 82 65 216 45 49	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715 5 705 1 196 1 294	1 369 1 323 1 369 210 39 0 126 110 82 65 216 45	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164 1 715 5 705 1 196 1 294	1 401 1 353 1 401 210 0 0 126 110 82 319 216 45 49	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432 5 705 1 196 1 290
	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire Transport clients & biogaz FTSH (Dawn - EDA) Transport par échange (DAWN - EDA) FTSH (Parkway - EDA) STS Pointe-du-Lac *	1 326 1 285 1 326 210 39 0 130 110 82 65 216 45	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715 5 705 1 196	1 369 1 323 1 369 210 39 0 126 110 82 65 216 45	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164 1 715 5 705 1 196	1 401 1 353 1 401 210 0 0 126 110 82 319 216 45	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432 5 705 1 196
	Besoins hiver extrême Maximum  Approvisionnements  FTLH (primaire & secondaire)  Transport par échange (EMP - GMIT)  Achats dans le territoire  Transport clients & biogaz  FTSH (Dawn - EDA)  Transport par échange (DAWN - EDA)  FTSH (Parkway - EDA)  STS  Pointe-du-Lac *  Saint-Flavien *  LSR *  TOTAL approvisionnements avant achat / (vente)	1 326 1 285 1 326 210 39 0 130 110 82 65 216 45 49 217	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 732	1 369 1 323 1 369 210 39 0 126 110 82 65 216 45 49 217	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 624	1 401 1 353 1 401 210 0 0 126 110 82 319 216 45 49 217	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432 5 705 1 196 1 290 5 729 36 295
1 2 3 4 5 6 6 7 3 9 9 9 1 1 2 3 4 5 1 4 5 7 7 8 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Besoins hiver extrême Maximum  Approvisionnements  FTLH (primaire & secondaire)  Transport par échange (EMP - GMIT)  Achats dans le territoire  Transport clients & biogaz  FTSH (Dawn - EDA)  Transport par échange (DAWN - EDA)  FTSH (Parkway - EDA)  STS  Pointe-du-Lac *  Saint-Flavien *  LSR *  TOTAL approvisionnements avant achat / (vente)	1 326 1 285 1 326 210 39 0 130 110 82 65 216 45 49 217 1 164	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 732 -4 251	1 369 1 323 1 369 210 39 0 126 110 82 65 216 45 49 217 1 160	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 624	1 401 1 353 1 401 210 0 0 126 110 82 319 216 45 49 217	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432 5 705 1 196 1 290 5 729 36 295
1 2 3 4 5 6 6 7 3 9 9 9 1 1 2 3 4 5 1 4 5 7 7 8 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Besoins hiver extrême Maximum  Approvisionnements  FTLH (primaire & secondaire)  Transport par échange (EMP - GMIT)  Achats dans le territoire  Transport clients & biogaz  FTSH (Dawn - EDA)  Transport par échange (DAWN - EDA)  FTSH (Parkway - EDA)  STS  Pointe-du-Lac *  Saint-Flavien *  LSR *  TOTAL approvisionnements avant achat / (vente)	1 326 1 285 1 326 210 39 0 130 110 82 65 216 45 49 217	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 732	1 369 1 323 1 369 210 39 0 126 110 82 65 216 45 49 217	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 624	1 401 1 353 1 401 210 0 0 126 110 82 319 216 45 49 217	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432 5 705 1 196 1 290 5 729 36 295
1 2 3 4 5 6 7 3 9 9 1 1 2 3 4 5 6 6 7 7 8 7 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Besoins hiver extrême Maximum  Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire Transport clients & biogaz FTSH (Dawn - EDA) Transport par échange (DAWN - EDA) FTSH (Parkway - EDA) STS Pointe-du-Lac * Saint-Flavien * LSR *  TOTAL approvisionnements avant achat / (vente) % du total approvisionnements avant achat / (vente)	1 326 1 285 1 326 210 39 0 130 110 82 65 216 45 49 217 1 164	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 732 -4 251	1 369 1 323 1 369 210 39 0 126 110 82 65 216 45 49 217 1 160	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 624	1 401 1 353 1 401 210 0 0 126 110 82 319 216 45 49 217	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432 5 705 1 196 1 290 5 729 36 295
1 2 3 4 5 6 7 8 9 9 1 1 2 3 4 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Besoins hiver extrême Maximum  Approvisionnements  FTLH (primaire & secondaire)  Transport par échange (EMP - GMIT)  Achats dans le territoire  Transport clients & biogaz  FTSH (Dawn - EDA)  Transport par échange (DAWN - EDA)  FTSH (Parkway - EDA)  STS  Pointe-du-Lac *  Saint-Flavien *  LSR *  TOTAL approvisionnements avant achat / (vente)  % du total approvisionnements avant achat / (vente)  (l.45/ l.44)	1 326 1 285 1 326 210 39 0 130 110 82 65 216 45 49 217 1 164 161 13,8%	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 732 -4 251 -13,8%	1 369 1 323 1 369 210 39 0 126 110 82 65 216 45 49 217 1 160 -208 -18,0%	36 124 34 905 36 124 5 551 1 031 11 3 325 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 624 -5 500 -18,0%	1 401 1 353 1 401 210 0 0 126 110 82 319 216 45 49 217 1 375 -26 -1,9%	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432 5 705 1 196 1 290 5 729 36 295 -686 -1,9%
0 1 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 9 0 1 2 3 4 5 6 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire Transport clients & biogaz FTSH (Dawn - EDA) Transport par échange (DAWN - EDA) FTSH (Parkway - EDA) STS Pointe-du-Lac * Saint-Flavien * LSR *  TOTAL approvisionnements avant achat / (vente) % du total approvisionnements avant achat / (vente) (I.45/ I.44)  Achat / (vente) de transport a priori  TOTAL approvisionnements après achat / (vente)	1 326 1 285 1 326 210 39 0 130 110 82 65 216 45 49 217 1 164 -161 -13,8%	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 732 -4 251 -13,8%	1 369 1 323 1 369 210 39 0 126 110 82 65 216 45 49 217 1 160 -208 -18,0%	36 124 34 905 36 124  5 551 1 031 11 3 325 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 624 -5 500 -18,0%	1 401 1 353 1 401 210 0 0 126 110 82 319 216 45 49 217 1 375 -26 -1,9%	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432 5 705 1 196 1 290 5 729 36 295 -686 -1,9%
1 2 3 4 5 6 7 3 9 9 9 1 1 2 3 4 5 6 7 3 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Approvisionnements FTLH (primaire & secondaire) Transport par échange (EMP - GMIT) Achats dans le territoire Transport clients & biogaz FTSH (Dawn - EDA) Transport par échange (DAWN - EDA) FTSH (Parkway - EDA) STS Pointe-du-Lac * Saint-Flavien * LSR *  TOTAL approvisionnements avant achat / (vente) % du total approvisionnements avant achat / (vente) (I.45/I.44)  Achat / (vente) de transport a priori	1 326 1 285 1 326 210 39 0 130 110 82 65 216 45 49 217 1 164 -161 -13,8%	33 923 34 983 5 551 1 031 11 3 433 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 732 -4 251 -13,8% 4 252	1 369 1 323 1 369 210 39 0 126 110 82 65 216 45 49 217 1 160 -208 -18,0%	36 124 34 905 36 124  5 551 1 031 11 3 325 2 903 2 164 1 715 5 705 1 196 1 294 5 729 30 624 -5 500 -18,0%  5 500 36 124	1 401 1 353 1 401 210 0 0 126 110 82 319 216 45 49 217 1 375 -26 -1,9%	36 981 35 712 36 981 5 551 0 0 3 325 2 903 2 164 8 432 5 705 1 196 1 290 5 729 36 295 -686 -1,9%

<sup>\*</sup> Un pouvoir calorifique de 37,89 a été utilisé alors que le pouvoir calorifique prévu pour l'année tarifaire 2014 est 37,76.

				IONNEMENT 2014-2016 DÉFAVORABLE			
			014	20	015	20	
	DEMANDE (40 6 m-3)	1	(1)		(2)	(	3)
4	DEMANDE (10 <sup>6</sup> m³)  Continue	4	285	4	192	4	167
1			200 727		712		18
2	Interruptible	1	1	'	12	,	10
3	Gaz d'appoint Client biogaz en réseau dédié		0		28		1 28
<del>4</del> 5	Sous-total	5	012		933		914
5							
6	Interruptions		-61		62		64
7	Autres		76		73	10	
8	Ventes GNL		15		34		5
9	TOTAL	5	042	4	978	4 9	996
	APPROVISIONNEMENT (10 <sup>6</sup> m³)						
10	Transport						
11	FTLH (primaire & secondaire)	2	282	2	134		22
12	Transport par échange de Empress	4	144	3	376	1	46
13	Transport fourni par les clients	3	353	3	334	3	35
14	Transport gaz d'appoint		1		1		1
15	FTLH non utilisé		0		0		-5
16	Transport Emp-GMI	3	080	2	844	7:	99
17	Achats dans le territoire		4		4		0
18	Achats à Dawn (GR)	1	960		106		661
19	Achats à Dawn (AD)	·	0		0		465
20	Achats à Dawn (client GNL)		0		0		<del>1</del> 1
21	Biogaz		0		28		28
22	Autres		0		0	_	0
23	Retraits - injections		<b>-2</b>		-4		1
24	TOTAL	5	042	4 978		4 996	
	ENTREPOSAGE	Capacité (PJ)	Capacité (10 <sup>6</sup> m³)	Capacité (PJ)	Capacité (10 <sup>6</sup> m³)	Capacité (PJ)	Capacité (10 <sup>6</sup> m³)
25	LSR	2,0	52	1,8	47	1,8	47
25 26	Pointe-du-Lac	0,9	23	0,9	23	0,9	23
27 27	Saint-Flavien	3,7	97	3,7	97	3,7	97
28	Union	13,2	349	13,2	349	13,2	349
29	TOTAL	19,7	521	19,5	515	19,5	515
	<u>DÉBIT QUOTIDIEN D'APPROVISIONNEMENT</u>	(TJ/j)	(10³m³/j)	(TJ/j)	(10³m³/j)	(TJ/j)	(10³m³/j)
30	Journée de pointe - continue	1 099	28 999	1 084	28 601	1 075	28 360
31	Besoins hiver extrême	1 077	28 437	1 070	28 236	1 068	28 181
32	Maximum	1 099	28 999	1 084	28 601	1 075	28 360
_	Approvisionnements	040	5.554	0.40	5 554	0.10	F 554
33	FTLH (primaire & secondaire)	210	5 551	210	5 551	210	5 551
34	Transport par échange (EMP - GMIT)	39	1 031	39	1 031	0	0
35	Achats dans le territoire	0	11	0	11	0	0
86	Transport clients & biogaz	36	960	38	1 008	38	1 008
37	FTSH (Dawn - EDA)	110	2 903	110	2 903	110	2 903
38	Transport par échange (Dawn - EDA)	82	2 164	82	2 164	82	2 164
39	FTSH (Parkway - EDA)	65	1 715	65	1 715	319	8 432
10	STS	216	5 705	216	5 705	216	5 705
41	Pointe-du-Lac *	45	1 196	45	1 196	45	1 196
42	Saint-Flavien *	49	1 294	49	1 294	49	1 290
43	LSR *	217	5 729	217	5 729	217	5 729
14	TOTAL approvisionnements avant achat / (vente)	1 071	28 259	1 073	28 307	1 287	33 978
• •	Provision additionnelle avant achat / (vente)	-28	-740	-11	-294	213	5 618
	Provision additionnelle avant achat / (vente)		-2,6%	-1,0%	-1,0%	16,5%	16,5%
15	% du total approvisionnements avant achat / (vente) (I.45/ I.44)	-2,6%	-2,0 /0				
45 46	% du total approvisionnements avant achat / (vente)	-2,6% 28	742	11	296	-213	-5 617
45 46 47 48	% du total approvisionnements avant achat / (vente) (I.45/ I.44)			11 <b>1 084</b>	296 <b>28 603</b>	-213 <b>1 075</b>	-5 617 <b>28 361</b>
45 46 47	% du total approvisionnements avant achat / (vente) (I.45/ I.44)  Achat / (vente) de transport a priori	28	742				

<sup>\*</sup> Un pouvoir calorifique de 37,89 a été utilisé alors que le pouvoir calorifique prévu pour l'année tarifaire 2014 est 37,76.

#### ÉVOLUTION DE LA DEMANDE PROJETÉE EN JOURNÉE DE POINTE DE LA CAUSE TARIFAIRE 2013 À LA CAUSE TARIFAIRE 2014

	1 - Cause 2013 - Dépôt à la Régie					Commentaire
	Todase 2010 Deportula Regio	Décembre	Janvier	Février	Mars	
	Demande normale projetée (10³m³)	200 520	400 704	270 240	224 420	
1	$D_1$	366 530	429 794	370 310	324 130	
2	D <sub>3</sub> -D <sub>4</sub>	188 780	201 153	185 251	195 380	Autora Orangana and Arita faranta and an anagana
3 4	Autres Client biogaz en réseau dédié	3 118 2 100	3 512 2 700	3 109 2 600	2 927 2 800	Autres : Gaz perdu, gaz utilisé par la compagn
4	Ciletti biogaz errreseau dedie	2 100	2 700	2 000	2 000	
5	Année de régression	2010-2011				Année utilisée à la Cause 2013
6	Paramètres de régression D <sub>1</sub> (10³m³/unité)	Décembre	Janvier	Février	Mars	
7	Base	5 163	5 567	5 472	5 220	
8	DJ t	303	303	303	303	
9	DJ t-1	95	95	95	95	
10	DJxDV	2	2	2	2	Paramètres utilisés à la Cause 2013
11 12	Paramètres journée de pointe DJ t	36,85				Falametres utilises a la Cause 2013
13	DJ t-1	39,50				
14	DJxDV	1 272,35				
	Calcul de la demande en journée de poin	te (10³m³)				
15	Pointe D <sub>1</sub> selon formule de régression	22 868	23 273	23 178	22 926	
16	Ajustement pour la demande 2013	0,960	0,960	0,960	0,960	
17	Pointe D <sub>1</sub>	21 959	22 347	22 257	22 015	
8	Pointe D <sub>3</sub> -D <sub>4</sub>	6 090	6 489	6 616	6 303	Demande mensuelle / # jours du mois
9	Autres	101	113	111	94	Demande mensuelle / # jours du mois
9	Client biogaz en réseau dédié	68	87	93	94	Demande mensuelle / # jours du mois  Demande mensuelle / # jours du mois
21	Journée de pointe = maximum	28 217	29 037	29 077	28 502	<b>,</b>
	2 - Cause 2013 - changement de l'année r	éférence pour	r la régression	n		
2	Année de régression	2011-2012	•			Année utilisée à la Cause 2014
23	Paramètres de régression D <sub>1</sub> (10³m³/unité)	Décembre	Janvier	Février	Mars	
24	Base	4 946	5 507	5 260	4 699	
25	DJ t	309	309	309	309	
26	DJ t-1	92	92	92	92	
27	DJxDV	2	2	2	2	Paramètres utilisés à la Cause 2013
28 29	Paramètres journée de pointe DJ t	36,85				Parametres utilises à la Cause 2013
30	DJ t-1	39,50				
31	DJxDV	1 272,35				
	Calcul de la demande en journée de poin	te (10³m³)				
32	Pointe D <sub>1</sub> selon formule de régression	22 447	23 008	22 762	22 200	
33	Ajustement pour la demande 2013	0,980	0,980	0,980	0,980	
34	Pointe D <sub>1</sub>	22 008	22 558	22 317	21 766	
35	Pointe D <sub>3</sub> -D <sub>4</sub>	6 090	6 489	6 616	6 303	Demande mensuelle / # jours du mois
36	Autres	101	113	111	94	Demande mensuelle / # jours du mois
37	Client biogaz en réseau dédié	68	87	93	90	Demande mensuelle / # jours du mois
88	Journée de pointe = maximum	28 266	29 247	29 137	28 253	
9	Variation de la pointe vs Cause 2013		171			Impact année de régression
_	3 - Cause 2013 - changement de l'année	•	r la régressio	n et des para	mètres de la	
0	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité)	2011-2012	longier	Eás reina	More	Année utilisée à la Cause 2014
1	• • • • • • • • • • • • • • • • • • • •	Décembre	Janvier	Février	Mars	
2	Base DJ t	4 946 309	5 507 309	5 260 309	4 699	
3	DJ t DJ t-1	309 92	309 92	309 92	309 92	
4 5	DJxDV	2	2	2	2	
6	Paramètres journée de pointe	_	_	2	_	Paramètres utilisés à la Cause 2014
7	DJ t	36,80				
8	DJ t-1	39,48				
9	DJxDV	1 268,33				
	Calcul de la demande en journée de poin Pointe D <sub>1</sub> selon formule de régression		20.004	00.705	00.470	
0	· · · · · · · · · · · · · · · · · · ·	22 421	22 981	22 735	22 173	
51	Ajustement pour la demande 2013	0,980	0,980	0,980	0,980	
2	Pointe D <sub>1</sub>	21 982	22 532	22 291	21 740	
3	Pointe D <sub>3</sub> -D <sub>4</sub>	6 090	6 489	6 616	6 303	Demande mensuelle / # jours du mois
	Autres	101	113	111	94	Demande mensuelle / # jours du mois
	Client biogaz en réseau dédié	68	87	93	90	Demande mensuelle / # jours du mois
5		20 240	20.224	20 444	20 227	
54 55 56	Journée de pointe = maximum  Variation de la pointe vs Cause 2013	28 240	29 221 145	29 111	28 227	Impact année de régression et paramètres

		Décembre	Janvier	Février	Mars	
	Demande normale projetée (10³m³)		40= 044		0.4.0.4.0.0	
8	D <sub>1</sub>	360 364	425 811	364 122	318 498	
9	D <sub>3</sub> -D <sub>4</sub>	221 257	234 870	215 221	223 754	
0	Autres	4 548	5 186	4 570	4 295	Autres : Gaz perdu, gaz utilisé par la compagnie
1	Client biogaz en réseau dédié	2 100	2 700	2 600	2 800	Client biogaz en réseau dédié
2	Année de régression	2011-2012				Année utilisée à la Cause 2014
3	Paramètres de régression D <sub>1</sub> (10³m³/unité)	Décembre	Janvier	Février	Mars	
ļ	Base	4 946	5 507	5 260	4 699	
5	DJ t	309	309	309	309	
3	DJ t-1	92	92	92	92	
	DJxDV	2	2	2	2	Danamaktura utilia (a. ). In Causa 204.4
3	Paramètres journée de pointe DJ t	36,80				Paramètres utilisés à la Cause 2014
)	DJ t-1	39,48				
,	DJxDV	1 268,33				
	Calcul de la demande en journée de poin	te (10³m³)				
2	Pointe D <sub>1</sub> selon formule de régression	22 421	22 981	22 735	22 173	
3	Ajustement pour la demande 2014	0,972	0,972	0,972	0,972	
ļ	Pointe D <sub>1</sub> et Autres	21 787	22 332	22 093	21 547	
5	Pointe D <sub>3</sub> -D <sub>4</sub>	7 137	7 576	7 686	7 218	Demande mensuelle / # jours du mois
3	Client biogaz en réseau dédié	68	87	93	90	Demande mensuelle / # jours du mois
7	Journée de pointe = maximum	28 992	29 995	29 872	28 855	
3	Variation de la pointe vs Cause 2013		919			
)	Variation de la pointe vs Cause 2013 calo	cul 3	774		1	mpact de la variation de la demande 2014 vs 201
0	5 - Cause 2014 - après modification au Dannée de régression	2011-2012				Année utilisée à la Cause 2014
0	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité)	2011-2012 Décembre	Janvier 5 507	Février 5.260	Mars 4 699	Année utilisée à la Cause 2014
1	Année de régression	2011-2012	Janvier 5 507 309	Février 5 260 309	Mars 4 699 309	Année utilisée à la Cause 2014
2	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité) Base	2011-2012 Décembre 4 946	5 507	5 260	4 699	Année utilisée à la Cause 2014
1 2 3	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité) Base DJ t DJ t-1 DJxDV	2011-2012 Décembre 4 946 309 92 2	5 507 309	5 260 309	4 699 309	Année utilisée à la Cause 2014
3	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité) Base DJ t DJ t-1	2011-2012 Décembre 4 946 309 92 2	5 507 309 92 2	5 260 309 92 2	4 699 309 92 2	Année utilisée à la Cause 2014
3 1	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base  DJ t  DJ t-1  DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unité)  Base	2011-2012 Décembre 4 946 309 92 2 é) 4 657	5 507 309 92 2 5 189	5 260 309 92 2 5 136	4 699 309 92 2 5 121	Année utilisée à la Cause 2014
	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base DJ t DJ t-1 DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base DJ t	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20	5 507 309 92 2 5 189 20	5 260 309 92 2 5 136 20	4 699 309 92 2 5 121 20	Année utilisée à la Cause 2014
2 3 4 5 6 7 8 9	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base  DJ t  DJ t-1  DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base  DJ t  DJ t-1	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3	5 507 309 92 2 5 189 20 -0,3	5 260 309 92 2 5 136 20 -0,3	4 699 309 92 2 5 121 20 -0,3	Année utilisée à la Cause 2014
3 4 5 6 7 8 9 9	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base  DJ t  DJ t-1  DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base  DJ t  DJ t-1  DJxDV	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20	5 507 309 92 2 5 189 20	5 260 309 92 2 5 136 20	4 699 309 92 2 5 121 20	
3 4 5 6 7 8	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base  DJ t  DJ t-1  DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base  DJ t  DJ t-1	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3	5 507 309 92 2 5 189 20 -0,3	5 260 309 92 2 5 136 20 -0,3	4 699 309 92 2 5 121 20 -0,3	Année utilisée à la Cause 2014  Paramètres utilisés à la Cause 2014
1 2 3 4 5 6 7 3 9 1 2	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base DJ t DJ t-1 DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base DJ t DJ t-1 DJxDV  Paramètres journée de pointe	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4	5 507 309 92 2 5 189 20 -0,3	5 260 309 92 2 5 136 20 -0,3	4 699 309 92 2 5 121 20 -0,3	
3 1 5 6 7 3 9 1 2 3	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base DJ t DJ t-1 DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base DJ t DJ t-1 DJxDV  Paramètres journée de pointe DJ t	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4	5 507 309 92 2 5 189 20 -0,3	5 260 309 92 2 5 136 20 -0,3	4 699 309 92 2 5 121 20 -0,3	
22334435533344	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base DJ t DJ t-1 DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base DJ t DJ t-1 DJxDV  Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de pointe	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³)	5 507 309 92 2 5 189 20 -0,3 0,4	5 260 309 92 2 5 136 20 -0,3 0,4	4 699 309 92 2 5 121 20 -0,3 0,4	
33 33 33 33 33 33 33 33 33 33 33 33 33	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base DJ t DJ t-1 DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base DJ t DJ t-1 DJxDV  Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point Pointe D <sub>1</sub> selon formule de régression	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421	5 507 309 92 2 5 189 20 -0,3 0,4	5 260 309 92 2 5 136 20 -0,3 0,4	4 699 309 92 2 5 121 20 -0,3 0,4	
1 2 3 3 4 1 3 3 3 4	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base DJ t DJ t-1 DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base DJ t DJ t-1 DJxDV  Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de pointe	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³)	5 507 309 92 2 5 189 20 -0,3 0,4	5 260 309 92 2 5 136 20 -0,3 0,4	4 699 309 92 2 5 121 20 -0,3 0,4	
33 4 5 5 6 7 7 3 3 4 4 5 5 6 6 7 7	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base DJ t DJ t-1 DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base DJ t DJ t-1 DJxDV  Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point Pointe D <sub>1</sub> selon formule de régression  Ajustement pour la demande 2014 Pointe D <sub>1</sub> et autres	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421 0,972 21 787	5 507 309 92 2 5 189 20 -0,3 0,4 22 981 0,972 22 332	5 260 309 92 2 5 136 20 -0,3 0,4 22 735 0,972 22 093	4 699 309 92 2 5 121 20 -0,3 0,4 22 173 0,972 21 547	
33 4 5 5 6 7 3 3	Année de régression  Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base DJ t DJ t-1 DJxDV  Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit  Base DJ t DJ t-1 DJxDV  Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point  Pointe D <sub>1</sub> selon formule de régression  Ajustement pour la demande 2014  Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421 0,972 21 787 5 895	5 507 309 92 2 5 189 20 -0,3 0,4 22 981 0,972 22 332 6 427	5 260 309 92 2 5 136 20 -0,3 0,4 22 735 0,972 22 093 6 374	4 699 309 92 2 5 121 20 -0,3 0,4 22 173 0,972 21 547 6 359	
33 1 5 5 7 3 3 )	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité) Base DJ t DJ t-1 DJxDV Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit Base DJ t DJ t-1 DJxDV Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point Pointe D <sub>1</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421 0,972 21 787 5 895 1,416	5 507 309 92 2 5 189 20 -0,3 0,4 22 981 0,972 22 332 6 427 1,416	5 260 309 92 2 5 136 20 -0,3 0,4 22 735 0,972 22 093 6 374 1,416	4 699 309 92 2 5 121 20 -0,3 0,4 22 173 0,972 21 547 6 359 1,416	Paramètres utilisés à la Cause 2014
	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité) Base DJ t DJ t-1 DJxDV Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit Base DJ t DJ t-1 DJxDV Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point Pointe D <sub>1</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub>	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421 0,972 21 787 5 895 1,416 8 348	5 507 309 92 2 5 189 20 -0,3 0,4 22 981 0,972 22 332 6 427 1,416 9 102	5 260 309 92 2 5 136 20 -0,3 0,4 22 735 0,972 22 093 6 374 1,416 9 027	4 699 309 92 2 5 121 20 -0,3 0,4 22 173 0,972 21 547 6 359	Paramètres utilisés à la Cause 2014 Évaluation suite à une régression
23345567339012334	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité)  Base DJ t DJ t-1 DJxDV Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit Base DJ t DJ t-1 DJxDV Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point Pointe D <sub>1</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> Client biogaz en réseau dédié	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421 0,972 21 787 5 895 1,416 8 348	5 507 309 92 2 5 189 20 -0,3 0,4 22 981 0,972 22 332 6 427 1,416 9 102	5 260 309 92 2 5 136 20 -0,3 0,4 22 735 0,972 22 093 6 374 1,416 9 027 93	4 699 309 92 2 5 121 20 -0,3 0,4 22 173 0,972 21 547 6 359 1,416 9 006	Paramètres utilisés à la Cause 2014
23345567339012334	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité) Base DJ t DJ t-1 DJxDV Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit Base DJ t DJ t-1 DJxDV Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point Pointe D <sub>1</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> Client biogaz en réseau dédié	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421 0,972 21 787 5 895 1,416 8 348	5 507 309 92 2 5 189 20 -0,3 0,4 22 981 0,972 22 332 6 427 1,416 9 102	5 260 309 92 2 5 136 20 -0,3 0,4 22 735 0,972 22 093 6 374 1,416 9 027	4 699 309 92 2 5 121 20 -0,3 0,4 22 173 0,972 21 547 6 359 1,416 9 006 90 30 643	Paramètres utilisés à la Cause 2014 Évaluation suite à une régression
1 2 3 4 4 5 6 7 3 9 0 1 2 3 4 4 5 6 7 7 2	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité) Base DJ t DJ t-1 DJxDV Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit Base DJ t DJ t-1 DJxDV Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point Pointe D <sub>1</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> Client biogaz en réseau dédié Journée de pointe = maximum	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421 0,972 21 787 5 895 1,416 8 348 68 30 203	5 507 309 92 2 5 189 20 -0,3 0,4 22 981 0,972 22 332 6 427 1,416 9 102	5 260 309 92 2 5 136 20 -0,3 0,4 22 735 0,972 22 093 6 374 1,416 9 027 93	4 699 309 92 2 5 121 20 -0,3 0,4 22 173 0,972 21 547 6 359 1,416 9 006 90 30 643	Paramètres utilisés à la Cause 2014  Évaluation suite à une régression  Demande mensuelle / # jours du mois  variation de la demande et
1 2 3 4 5 6 7 3 9 9 1 2 3 3	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité) Base DJ t DJ t-1 DJxDV Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit Base DJ t DJ t-1 DJxDV Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point Pointe D <sub>1</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> Client biogaz en réseau dédié Journée de pointe = maximum  Variation de la pointe vs Cause 2013 (10³	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421 0,972 21 787 5 895 1,416 8 348 68 30 203	5 507 309 92 2 5 189 20 -0,3 0,4 22 981 0,972 22 332 6 427 1,416 9 102 87 31 521	5 260 309 92 2 5 136 20 -0,3 0,4 22 735 0,972 22 093 6 374 1,416 9 027 93	4 699 309 92 2 5 121 20 -0,3 0,4 22 173 0,972 21 547 6 359 1,416 9 006 90 30 643	Paramètres utilisés à la Cause 2014  Évaluation suite à une régression  Demande mensuelle / # jours du mois
1 2 3 4 5 6 7 3 9 0 1 2 3 4	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité) Base DJ t DJ t-1 DJxDV Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit Base DJ t DJ t-1 DJxDV Paramètres journée de pointe DJ t DJ t-1 DJxDV Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point Pointe D <sub>1</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> Client biogaz en réseau dédié Journée de pointe = maximum  Variation de la pointe vs Cause 2013 (10³ Variation de la pointe vs Cause 2014 calculous de la pointe vs Cause 2014 cal	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421 0,972 21 787 5 895 1,416 8 348 68 30 203	5 507 309 92 2 5 189 20 -0,3 0,4 22 981 0,972 22 332 6 427 1,416 9 102 87 31 521 2 444 1 525	5 260 309 92 2 5 136 20 -0,3 0,4 22 735 0,972 22 093 6 374 1,416 9 027 93	4 699 309 92 2 5 121 20 -0,3 0,4 22 173 0,972 21 547 6 359 1,416 9 006 90 30 643	Paramètres utilisés à la Cause 2014  Évaluation suite à une régression  Demande mensuelle / # jours du mois  variation de la demande et
1 2 3 4 5 6 7 8 9 0 0 1 1 1 1 2 1 3 1 4 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Année de régression Paramètres de régression D <sub>1</sub> (10³m³/unité) Base DJ t DJ t-1 DJxDV Paramètres de régression D <sub>3</sub> -D <sub>4</sub> (10³m³/unit Base DJ t DJ t-1 DJxDV Paramètres journée de pointe DJ t DJ t-1 DJxDV  Calcul de la demande en journée de point Pointe D <sub>1</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> selon formule de régression Ajustement pour la demande 2014 Pointe D <sub>3</sub> -D <sub>4</sub> Client biogaz en réseau dédié Journée de pointe = maximum  Variation de la pointe vs Cause 2013 (10³ Variation de la pointe vs Cause 2014 calcul Sommaire des variations (10³m³) Impact année de régression et paramètres	2011-2012 Décembre 4 946 309 92 2 é) 4 657 20 -0,3 0,4 36,80 39,48 1 268,33 te (10³m³) 22 421 0,972 21 787 5 895 1,416 8 348 68 30 203 m³) sul 4 (10³m³)	5 507 309 92 2 5 189 20 -0,3 0,4 22 981 0,972 22 332 6 427 1,416 9 102 87 31 521 2 444	5 260 309 92 2 5 136 20 -0,3 0,4 22 735 0,972 22 093 6 374 1,416 9 027 93	4 699 309 92 2 5 121 20 -0,3 0,4 22 173 0,972 21 547 6 359 1,416 9 006 90 30 643	Paramètres utilisés à la Cause 2014  Évaluation suite à une régression  Demande mensuelle / # jours du mois  variation de la demande et

#### ÉVOLUTION DES BESOINS DE L'HIVER EXTRÊME DE LA CAUSE TARIFAIRE 2013 À LA CAUSE TARIFAIRE 2014

	Données de l'hiver extrême		_	_					
		Cause 2013	Cause 2014	avant modif.	Ca	Cause 2014 après modif.			
		Volume	Volume	var. vs 2013	Volume	var. vs 2013	var. vs 2014 avant modif.		
		(1)	(2)	(3) = (2) - (1)	(4)	(5) = (4) - (1)	(6) = (4) - (2)		
	Demande totale (10 <sup>6</sup> m³)								
1	Continue	2 843	2 979	136	2 989	147	10		
2	Interruptible volet A	300	305	4	305	4	0		
3	Interruptible volet B	102	98	-4	98	-4	0		
4	Total	3 246	3 382	137	3 393	147	10		
	Demande moyenne (10³m³/jour)								
5	Continue	18 827	19 730	903	19 798	971	68		
6	Interruptible volet A	1 990	2 018	28	2 018	28	0		
7	Interruptible volet B	677	652	-25	652	-25	0		
8	Total	21 493	22 400	907	22 468	974	68		
9	Demande maximale (103m3/jour)								
10	Continue	27 995	28 513	518	29 350	1 355	837		
11	Interruptible volet A	3 047	3 044	-3	3 044	-3	0		
12	Interruptible volet B	1 007	1 027	19	1 027	19	0		
13	Total	32 049	32 583	535	33 420	1 372	837		
14	Besoins d'approvisionnement (10³m³/jour)	29 441	30 324	884	30 689	1 248	364		
				Note 1		Note 2	Note 3		

#### Note

- 1 Variation résultant de la fluctuation de la demande 2013 à 2014
- 2 L'augmentation des besoins d'approvisionnement pour l'hiver extrême (1 248 10³m³) se situe entre la variation de la valeur moyenne (974 10³m³) et celle de la valeur maximale (1 372 10³m³) de la demande continue.
- 3 Variation résultant de la modification à la projection de la demande 2014 en considérant l'effet climatique aux clients des tarifs D<sub>3</sub> et D<sub>4</sub>.

# COMPARAISON DES PRÉVISIONS DES VENTES ANNUELLES AVEC LES DONNÉES RÉELLES (Volumes normalisés)

		Livraisons globales (avant interruptions)												
Dossier	L	ivraisons prévue	S		Livraisons réelles			Variation						
tarifaire	Service	Service	Total	Service	Service	Total	Service	Service	То	tal				
(1)	<b>continu</b> 10 <sup>6</sup> m³ (2)	interruptible 10 <sup>6</sup> m³ (3)	10 <sup>6</sup> m³ (4)	<b>continu</b> 10 <sup>6</sup> m³ (5)	interruptible 10 <sup>6</sup> m³ (6)	10 <sup>6</sup> m³ (7)	<b>continu</b> 10 <sup>6</sup> m³ (8)	interruptible 10 <sup>6</sup> m³ (9)	10 <sup>6</sup> m³ (10)	% (11)				
2003	4 378	895	5 272	4 366	1 147	5 513	-11	252	241	4,56				
2004	4 490	898	5 388	4 516	1 042	5 558	27	144	170	3,16				
2005	4 816	801	5 617	4 496	848	5 344	-320	47	-273	-4,86				
2006	4 953	769	5 722	4 480	1 011	5 491	-473	242	-231	-4,04				
2007	5 236	627	5 863	5 307	979	6 286	71	352	423	7,22				
2008	5 191	704	5 895	4 634	1 195	5 829	-557	491	-66	-1,13				
2009	4 453	802	5 255	4 112	1 037	5 149	-341	235	-106	-2,02				
2010	4 046	739	4 785	4 205	1 243	5 449	159	505	663	13,87				
2011	4 100	988	5 088	4 251	1 209	5 459	151	221	371	7,30				
2012	4 090	1 253	5 343	4 341	1 074	5 415	250	-179	72	1,34				
2013*	4 633	871	5 504	4 659	867	5 526	26	-4	22	0,40				

<sup>\*</sup> Les livraisons réelles pour l'année 2013 sont basées sur la révision budgétaire 5/7.

#### COMPARAISON DES PRÉVISIONS DE LA JOURNÉE DE POINTE AVEC LES DONNÉES RÉELLES

	Demande clientèle continue												
Dossier	Journée de pointe prévue				Observa	ation réelle		Volume estimé					
tarifaire	Facteur base	Facteur calorifique		Volume réel de pointe		Date	Degrés-jours réels	Variation de DJ	Ajustement de volume	Volume estimé à 44 DJ	Écart		
(1)	10³m³/jour (2)	10³m³/DJ/jour (3)	10³m³/jour (4)	10³m³/jour (5)	(6)	(7)	Dj (8)	Dj (9)	10³m³/jour (10)	10³m³/jour (11)	10³m³/jour (12)		
Base de référence 18													
2003	7 026	479	28 089	26 915	Mardi	2003-01-21	40,50	3,50	1 677	28 593	504		
2004	6 987	485	28 309	28 940	Jeudi	2004-01-15	42,23	1,77	859	29 799	1 490		
2005	7 606	515	30 279	27 337	Mardi	2005-01-18	38,92	5,08	2 615	29 953	-327		
2006	8 359	489	29 883										
2006 ajustée <sup>(1)</sup>	7 544	522	30 524	22 638	Lundi	2006-02-27	31,37	12,63	6 594	29 233	-1 291		
2007	9 013	510	31 457	28 526	Lundi	2007-02-05	35,77	8,23	4 199	32 725	1 268		
2008	9 074	485	30 428	24 767	Mardi	2007-12-18	29,93	14,07	6 828	31 595	1 168		
2008 ajustée <sup>(2)</sup>	6 573	485	27 927	23 929	Jeudi	2008-01-24	34,20	9,80	4 756	28 685	758		
2009	6 844	503	28 970	26 620	Jeudi	2009-01-15	42,02	1,98	998	27 618	-1 353		
2010	6 821	462	27 160	24 207	Vendredi	2010-01-29	37,16	6,84	3 161	27 368	207		

Dossier tarifaire	Paramètre de régression	Paramètre d'évaluation	<b>Pointe</b> 10³m³/jour	Volume réel de pointe 10 <sup>3</sup> m <sup>3</sup> /jour	ī	Date	Paramètre réels	Variation des paramètres	Ajustement de volume 10 <sup>3</sup> m³/jour	Volume estimé 10³m³/jour	Écart vs prévision 10³m³/jour
Base de référence 13 avec	c effet croisé	du vent	10 111 7 30 41	10 111 7 30 41					10 III rjoui	10 1117,001	10 111 / jour
2011			27 628	24 986	Lundi	2011-01-24			3 612	28 598	971
Base (10³m³/jour) DJ t (10³m³/DJ) DJ t-1 (10³m³/DJ) DJ x V (10³m³/DJxkm/h) 2012 Base (10³m³/jour) DJ t (10³m³/DJ) DJ t (10³m³/DJ) DJ t (10³m³/DJ) DJ x V (10³m³/DJxkm/h)	294,44 91,72 2,36 10 008,43 300,08 104,58	36,93 39,64 1273,74 36,88 39,52 1272,40	27 489	24 153	 Dimanchε	2012-01-15	32,51 36,89 400,46 30,68 33,07 423,45	4,42 2,75 873,28 6,20 6,45 848,94	4 056	 28 209	 720
2013  Base (10³m³/jour)  DJ t (10³m³/DJ)  DJ t-1 (10³m³/DJ)  DJ x V (10³m³/DJxkm/h)	12 074,88 291,20 91,38	36,85 39,50 1272,35	29 077	28 917	Mercredi	2013-01-23	36,64 34,63 756,70	0,21 4,87 515,65	1 584	30 501	1 424

<sup>(1)</sup> Ajustement pour refléter la mise en production en avril 2006 de TCE

Original : 2013.06.07 Révisé : 2013.08.29

<sup>(2)</sup> Ajustement pour exclure TCE qui a baissé sa production à compter du 1 er janvier 2008

# HISTORIQUE DES ACHATS RÉELS DE GAZ MÉTRO À DAWN

Mata	Ac	hats réels à Da	wn	Prix moyen	Indice NGX	Écart	de prix
Mois	d'avance	spot	totaux	des achats	à Dawn		
(1)	10³m³ (2)	10 <sup>3</sup> m <sup>3</sup> (3)	10³m³ (4)	¢/m³ (5)	¢/m³ (6)	¢/m³ (7)=(5)-(6)	000 \$ (8)=(4) x (7)
nov-07	0	35 497	35 497	0,000	25,669	-25,669	-9112
déc-07	127 633	40 548	168 180	27,810	27,002	0,808	1359
janv-08	165 268	0	165 268	30,470	29,583	0,888	1467
févr-08	169 913	35 497	205 410	32,628	31,721	0,908	1864
mars-08	156 268	76 537	232 805	35,137	35,496	-0,359	-837
avr-08	72 842	6 598	79 440	37,410	38,861	-1,451	-1153
mai-08	16 363	0	16 363	41,779	41,941	-0,162	-26
juin-08	15 835	0	15 835	45,981	46,836	-0,855	-135
juil-08	0	0	0	0,000	41,932	-41,932	0
août-08	0	1 584	1 584	33,154	31,803	1,351	21
sept-08	0	9 765	9 765	28,683	28,592	0,091	9
2007-2008	724 122	206 027	930 149	31,512	32,216	-0,703	-6 543
oct-08	0	0	0	0,000	29,252	-29,252	0
nov-08	0	0	0	0,000	29,822	-29,822	0
déc-08	124 360	0	124 360	28,571	27,802	0,769	956
janv-09	157 086	0	157 086	25,967	25,915	0,051	81
févr-09	141 884	20 190	162 074	23,013	21,951	1,061	1720
mars-09	140 723	20 322	161 045	20,150	19,296	0,854	1376
avr-09	55 424	0	55 424	18,720	17,106	1,613	894
mai-09	0	0	0	0,000	17,081	-17,081	0
juin-09	0	0	0	0,000	15,979	-15,979	0
juil-09	0	1 320	1 320	14,065	14,384	-0,320	-4
août-09	0	13 566	13 566	13,552	12,818	0,734	100
sept-09	0	26 128	26 128	13,536	11,812	1,724	450
2008-2009	619 477	81 525	701 003	23,111	22,316	0,795	5 572
oct-09	7 918	0	7 918	22,971	16,570	6,401	507
nov-09	0	21 906	21 906	16,501	14,632	1,869	410
déc-09	119 451	0	119 451	24,087	21,815	2,272	2714
janv-10	161 177	10 908	172 085	24,278	22,532	1,746	3004
févr-10	145 579	0	145 579	23,028	21,168	1,860	2708
mars-10	139 905	0	139 905	18,947	16,954	1,993	2788
avr-10	31 671	0	31 671	17,931	15,877	2,054	650
mai-10	0	0	0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	16,770	,,,,,,,	
juin-10	0	0	0		19,016		
juil-10	0	0	0		18,227		
août-10	0	0	0		17,287		
sept-10	0	6 598	6 598	15,478	15,892	-0,414	-27
2009-2010	605 701	39 412	645 112	22,122	20,146	1,977	12 753

	Ac	hats réels à Da	wn	Prix moyen	Indice NGX	Écart de prix		
<b>Mois</b> (1)	<b>d'avance</b> 10³m³ (2)	<b>spot</b> 10³m³ (3)	<b>totaux</b> 10³m³ (4)	des achats ¢/m³ (5)	<b>à Dawn</b> ¢/m³ (6)	¢/m³ (7)=(5)-(6)	000 \$ (8)=(4) × (7)	
oct-10	0	0	0		14,343			
nov-10	0	16 546	16 546	16,489	16,051	0,438	72	
déc-10	166 495	0	166 495	17,585	16,833	0,752	1252	
janv-11	210 676	13 156	223 831	17,597	17,379	0,218	488	
févr-11	171 074	28 240	199 314	16,597	16,009	0,588	1172	
mars-11	190 222	43 547	233 769	16,579	15,601	0,979	2288	
avr-11	62 549	80 364	142 914	16,069	15,833	0,236	337	
mai-11	48 271	42 650	90 921	16,752	16,258	0,494	449	
juin-11	30 879	33 386	64 265	17,590	16,924	0,665	428	
juil-11	31 908	14 252	46 160	16,398	15,951	0,447	206	
août-11	16 363	6 070	22 433	15,727	15,353	0,373	84	
sept-11	0	0	0		15,121			
2010-2011	928 438	278 210	1 206 648	16,892	16,330	0,562	6 776	
oct-11	0	0	0		14,028			
nov-11	0	0	0		14,299			
déc-11	214 357	0	214 357	14,245	13,316	0,930	1993	
janv-12	249 129	0	249 129	12,600	11,277	1,323	3295	
févr-12	233 056	0	233 056	11,464	10,657	0,807	1882	
mars-12	218 448	0	218 448	10,211	9,169	1,042	2276	
avr-12	106 888	0	106 888	9,447	8,181	1,266	1353	
mai-12	77 725	26 656	104 381	10,496	9,527	0,970	1012	
juin-12	75 218	0	75 218	10,505	9,531	0,974	733	
juil-12	77 725	0	77 725	11,917	11,359	0,558	434	
août-12	32 726	0	32 726	11,306	10,944	0,362	118	
sept-12	0	4 223	4 223	11,031	10,960	0,071	3	
2011-2012	1 285 273	30 879	1 316 152	11,650	10,655	0,995	13 099	

Note : L'indice Platts à Dawn utilisé l'année dernière a été remplacé par l'indice NGX étant un indice Dawn plus utilisé qui sera potentiellement appliqué dans certains achats contractés d'avance à Dawn.

# Review of Natural Gas Pipeline Market Activity around the Dawn Hub

ICF

**May 2013** 

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Original: 2013.06.07

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# 1 Introduction and Summary of Conclusions

Gaz Métro retained ICF to conduct a study of natural gas market changes in and around the Dawn Hub. The objective of the study is to determine whether the Dawn Hub would remain a viable and attractive source of natural gas supply for Gaz Métro for the foreseeable future in view of the requirements of Gaz Métro for reliable gas supply and the recent and continuing changes in North American natural gas markets. To complete this study, ICF conducted a detailed review of natural gas pipeline flows in and around the Dawn Hub and Ontario, projected future pipeline expansions, and future pipeline flows for the region through 2025.

## 1.1 Overview of Shifting Natural Gas Markets

Gaz Métro's location in Quebec is the defining factor influencing natural gas supply options. There is no significant local natural gas production or storage located in Quebec. While there are some shale deposits associated with the Utica shale located in Quebec, currently there is significant public opposition to the use of exploration and production technologies, most notably high volume multi-stage hydraulic fracturing, that constrain access to the resources in the province.<sup>1</sup>

Traditionally, the majority of natural gas supplies delivered to Quebec were sourced from the Western Canadian Sedimentary Basin (WCSB), and transported through Ontario to Quebec on the TransCanada Pipeline (TCPL) and Trans Quebec and Maritime (TQM) pipeline. Gaz Métro has also purchased natural gas at Dawn.<sup>2</sup> The gas purchased at Dawn is typically transported to Quebec via Union Gas and TransCanada Pipelines.

However, two major natural gas market trends are changing this pattern. The first major trend is the declining availability of natural gas available from the WCSB. The second is the rapid growth in natural gas production in the Eastern U.S. from the Marcellus and Utica shale formations.

The conventional gas formations in Western Canada that have provided the majority of gas production transported into Quebec are maturing and incapable of maintaining the production levels of the last decade. In addition, the development of unconventional resources in Western Canada has lagged compared to the development of unconventional resources in other locations including those in the Eastern United States. Moreover, the development of these resources is increasingly tied to the growth in gas requirements in other markets, notably the growing requirements in Western Canada, including the requirements for oil sands projects and the market for LNG produced in Canada and sold into the Pacific Rim markets. The decline in flows on the TransCanada Mainline system has also led to increases in the cost of shipping gas

<sup>&</sup>lt;sup>1</sup> While two LNG import terminals have been proposed for locations in Quebec, changes in the North American natural gas market environment make it extremely unlikely that either facility will be completed in the near future.

<sup>&</sup>lt;sup>2</sup> The natural gas available for purchase at Dawn includes gas originally produced in Canada, as well as the Gulf Coast, Rocky Mountains, Marcellus shale, and other sources in the U.S.



from Western Canada to markets in Quebec, which has further reduced flows on the TransCanada Mainline to Eastern markets.

The second major trend has been the increase in unconventional natural gas production in the U.S. due to improvements in shale gas recovery technologies. In the last four years, the Marcellus shale gas basin in the Eastern U.S. has become the largest natural gas producing region in the U.S., with more than 7 billion cubic feet per day (Bcf per day) of natural gas production in 2012. Natural gas produced from the Marcellus is displacing natural gas from the WCSB, as well as natural gas from the Gulf Coast, Mid-continent, Rocky Mountains and other traditional supply basins in Eastern U.S. and Central Canadian markets. The unprecedented growth in gas production in the eastern United States in the Marcellus and other formations has also moderated expectations for future gas commodity prices throughout North America, reducing economic incentives to develop conventional natural gas resources.

The combined impact of these shifts can be seen in the examination of the movement of gas on the TransCanada Mainline. In the past four years, the amount of natural gas flowing east from Alberta on the TransCanada Mainline has dropped precipitously (Exhibit 1). ICF is expecting this decline to continue through 2014 before leveling off between 2015 and 2019 (Exhibit 2).

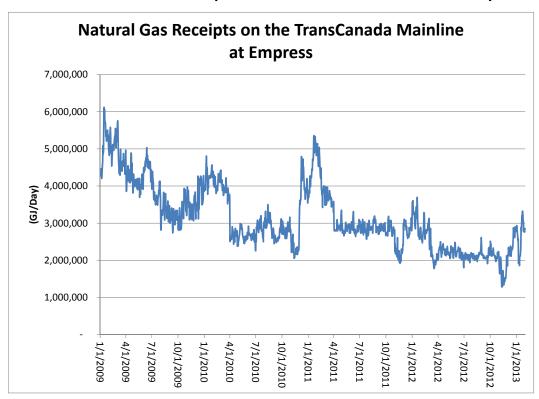


Exhibit 1: Natural Gas Receipts on the TransCanada Mainline at Empress



| ICF Forecast of Natural Gas Receipts on the TransCanada Mainline at Empress | 4,500,000 | 4,000,000 | 3,500,000 | 3,500,000 | 2,500,000 | 2,000,000 | 1,500,000 | 1,000,000 | 500,000 | 500,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,

Exhibit 2: ICF Forecast of Natural Gas Receipts on the TransCanada Mainline at Empress

During the period from 2015 through 2019, growth in WCSB production, driven by higher prices and development of new shale gas resources, is expected to be greater than growth in Western Canadian natural gas demand, including initial LNG exports from Kitimat. After 2019, growth in LNG exports from British Columbia and other Western Canadian demand is expected to exceed growth in WCSB natural gas production, leading to a long-term decline in TransCanada receipts at Empress. The decline in flows on the TransCanada Mainline will be offset by continued growth in production from the Marcellus and Utica shales in the Northeastern United States (Exhibit 3).<sup>3</sup>

The decline in available natural gas supplies from the WCSB, combined with growth in alternative sources of natural gas in the Northeastern U.S. represents a fundamental shift in natural gas markets, leading to a reassessment of future natural gas supply plans by the utilities that have in the past relied on natural gas sourced from the WCSB.

<sup>&</sup>lt;sup>3</sup> In Exhibit 3, WCSB production available for pipeline export includes all WCSB production that is not consumed in Alberta, British Columbia, and Saskatchewan, or exported by LNG from British Columbia.



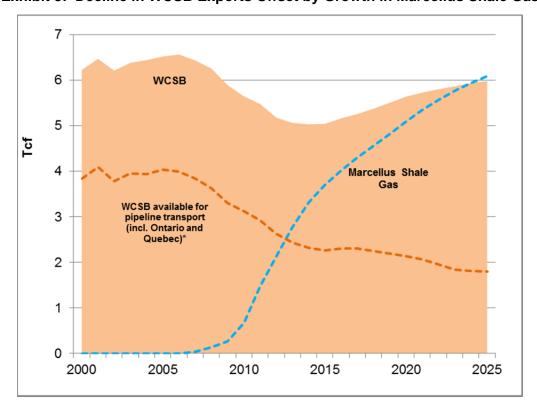


Exhibit 3: Decline in WCSB Exports Offset by Growth in Marcellus Shale Gas

#### 1.2 Summary of Conclusions

Based on our review of the expected changes in natural gas markets between 2012 and 2025, ICF expects the Dawn Hub to continue to be a major natural gas market center, with sufficient supply availability and market liquidity to ensure its viability as a reliable source of natural gas supply.

For the past few years, the total volume of natural gas supply utilizing the Dawn Hub has been declining due to the decrease in flows through Ontario, including the decline in supply from the WCSB and the decline in exports to the Northeastern U.S. However, any future declines in exports from Central Canada to U.S. markets will be offset by growth in demand in Ontario and Quebec, and the decline in WCSB gas supply will be offset by imports from the Marcellus via Niagara and Dawn, leading to slow growth in natural gas market activity around the Dawn hub.

The impact of the decline in annual volumes has been offset by an increase in the seasonality of the gas market activity around the Dawn Hub, leading to continuing utilization of the Ontario storage facilities tied into the Dawn Hub. Going forward, imports of Marcellus gas from Niagara will be concentrated during the summer, while exports on Iroquois and PNGTS will become increasingly concentrated in the peak winter months. The change in seasonality is expected to lead to a continuation of high utilization of existing storage facilities around Dawn, as well as moderate growth in future storage capacity and storage capacity utilization around Dawn.



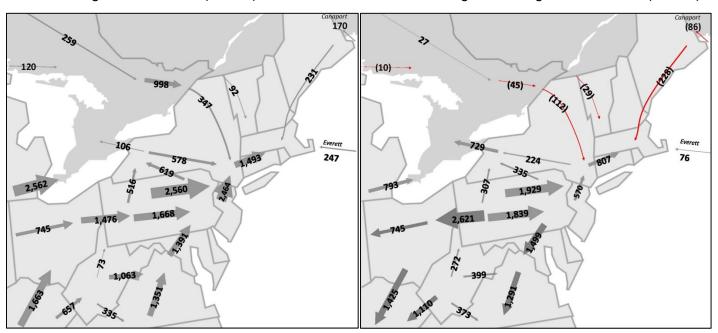
The ICF conclusion concerning the Dawn Hub is based on our assessment of the impact of the changes in natural gas markets on activity in and around the Dawn Hub. As shown in Exhibit 4, ICF is projecting annual flows into Dawn from Michigan to increase by 793 million cubic feet per day (MMcfd) from 2562 MMcfd in 2012 to 3,355 MMcfd in 2025. The Dawn Hub will also benefit from the increase in annual flows into Ontario from New York. Annual flows into Ontario along this path are projected to increase by 729 MMcfd, from 106 MMcfd in 2012 to 835 MMcfd in 2025.

Along both paths to Dawn, the majority of the incremental gas supply is expected to come from growth in Marcellus and Utica production. However, ICF also projects an increase in gas flowing into Dawn along the Vector Pipeline corridor, as Marcellus production displaces natural gas from the Mid-continent and Gulf Coast supply basins into East Coast markets, increasing gas supply availability into the Chicago market.

**Exhibit 4: Change in Regional Marcellus Production Growth Impact** 

2012 Average Annual Flows (MMcfd)

2012-2025 Change in Average Annual Flows (MMcfd)



Source: ICF GMM® Jan 2013

The increase in flows from Marcellus into Ontario, both via Niagara and Michigan are expected to be seasonal in nature, peaking during the summer. The regional demand markets in the U.S Northeast and Middle Atlantic are highly seasonal, with demand peaking in the winter. Marcellus production will directly serve much of this regional demand. As a result, the end-use market for Marcellus production will drop substantially during the remainder of the year, and the demand for storage capacity with pipeline access to the Marcellus is expected to remain robust. Producers and consumers are expected to continue to utilize the storage capacity in and around Dawn to take advantage of the seasonal gas supplies.



The expected growth in readily available natural gas supply, access to a wide and increasing variety of both upstream and downstream markets, and the availability of significant natural gas storage capacity in a storage-constrained market is expected to lead to continuing health of the natural gas market at Dawn, and Dawn should continue to provide sufficient liquidity to provide the required level of reliability for Gaz Métro.

However, continued growth of the Dawn market is contingent on continuing investment in the natural gas transportation system to increase capacity to Dawn from the Marcellus and Utica basins, and to address pipeline constraints downstream of Dawn, including the Parkway-to-Maple constraint on the TCPL system.

TCPL is expanding capacity from Parkway to Maple, including both pipeline looping and compression projects to meet contracted demand. TCPL can also move gas "around the horn" from Dawn back along the Great Lakes Gas Transmission (GLGT) line to Emerson, and then along the Northern Mainline system to Maple to bypass the Parkway to Maple constraint as an alternative to flowing gas from the Dawn Hub to Maple. However, ICF is projecting that growth in gas supply into Dawn will exceed the available capacity to transport gas from Dawn to Quebec via the TCPL Northern Mainline if the capacity on the TransCanada system from Parkway to Maple is not further expanded.

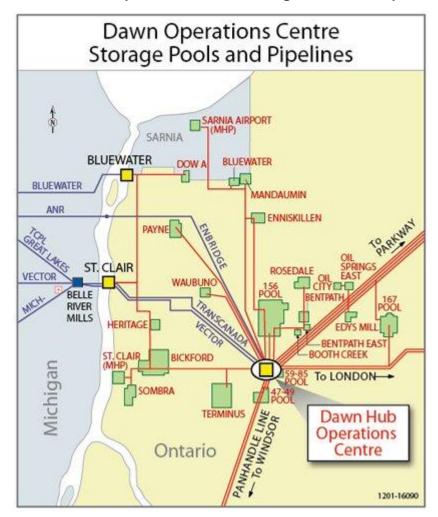
In addition, major pipeline projects from the Marcellus to Dawn via both Michigan and New York at Niagara will be required to achieve the expected level of activity at Dawn.



# 2 Role of the Dawn Hub in Central Canadian Natural Gas Markets

#### 2.1 Overview of the Dawn Hub

The facilities at Dawn (Exhibit 5) are well integrated into the North American supply and transportation system. Ten major pipelines have interconnections in the Dawn area, providing upstream access to most of the major supply basins in North America. The major pipelines and interconnects providing natural gas supply to Ontario and the Dawn Hub are shown in Exhibit 6 below.



**Exhibit 5: Dawn Operations Center Storage Pools and Pipelines** 

The Dawn Hub is built around a series of major storage facilities. Storage fields in Ontario directly tied into the Dawn Hub provide 293 PJs of physical storage with more than 6 PJs per day of peak deliverability. More than 600 PJ's of physical storage capacity in Michigan is also accessible from the Dawn Hub.



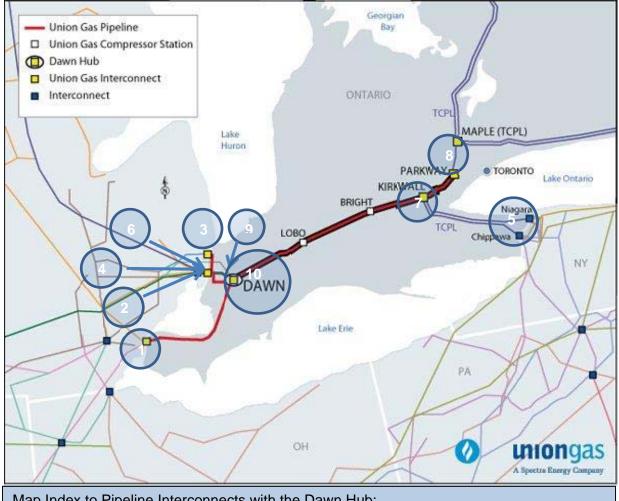


Exhibit 6: Major Pipeline Interconnects with the Dawn Hub

Map Index to Pipeline Interconnects with the Dawn Hub:

- 1) Panhandle Eastern Pipeline at Ojibway
- 2) MichCon at St-Clair
- 3) Bluewater Gas at Bluewater
- 4) Vector
- 5) TCPL at Niagara and Chippawa (TGP, NFGSC, Empire)
- 6) Great Lakes Gas Transmission
- 7) TCPL at Kirkwall
- 8) TCPL at Parkway
- 9) Enbridge at Dawn (Tecumseh) and Dawn (TSLE)
- 10) Dawn Hub/Union Gas Storage

The Dawn Hub and Union Gas system is integrally linked to the TransCanada Eastern System for both receipts and deliveries. TransCanada delivers gas transported from the WCSB to the Union system at Parkway, and gas transported from the U.S. at Niagara at Kirkwall. During the



summer, much of this gas flows south on the Union System from Parkway/Kirkwall to Dawn for injection into storage. During the winter months, gas is withdrawn from storage at Dawn and delivered to the TransCanada Eastern System at Parkway, or transported through Michigan back to Emerson and then on the TransCanada Mainline system to Maple for delivery to consumers in Ontario and Quebec as well as exports to U.S. consumers. In addition, gas purchased at the Dawn Hub for transport to markets downstream of Ontario is delivered to TransCanada at Parkway or Kirkwall.



**Exhibit 7: Eastern Zone of TransCanada Mainline System** 

Source: TransCanada Pipelines Limited. "Mainline System – Sales & Marketing Map / Tariffs." TransCanada, 2012: Calgary, Alberta. http://www.transcanada.com/customerexpress/docs/ml\_system\_maps/delivery\_export.pdf

#### 2.1.1 Historical and Projected Data on Pipeline Flows and Storage Capacity

ICF has evaluated the pipeline capacity and pipeline flows on the pipelines flowing into and out of Ontario and the Dawn Hub using publicly available data. The evaluation includes a comparison of pipeline load factor over the historical time period starting January 2009, subject to availability of public data. The historical flow data on pipeline imports from the U.S. to Canada on the major interstate pipelines and on TransCanada is available for the full time



period. Flows on pipelines into and out of the Dawn Hub are generally available starting in June of 2010. Flow data on pipelines within the Dawn Hub, including Enbridge at Dawn (Tecumseh) and Dawn (TSLE), and Union from storage site at Dawn are not generally available. Where data is not publicly available, ICF has estimated flows and capacity based on publicly available aggregate data, and on ICF's analysis of gas market activity.

ICF then evaluated the expected impact of changes in natural gas market conditions on each pipeline for the period from 2013 through 2025, and projected pipeline flows on each major pipeline corridor. On certain corridors, where ICF's gas market model aggregates more than one pipeline, the projections capture the major regional flows, rather than flows at the specific points. For example, the ICF forecast of flows between Ontario and New York at Niagara reflect total flows on Tennessee Gas Pipeline and National Fuel Gas Supply Corporation through Niagara, and Empire Gas Transmission flows at Chippawa.

The pipeline flow and capacity data is described further in Appendix A.

# 2.1.2 Sources of Supply at the Dawn Hub

Gas flowing through the Dawn Hub serves end-use markets in Ontario and Quebec, as well as U.S. markets in the Northeastern U.S. As shown in Exhibit 8, annual exports to U.S. Markets in the Northeastern U.S. have been declining, although peak period exports have remained relatively constant for the past four years.

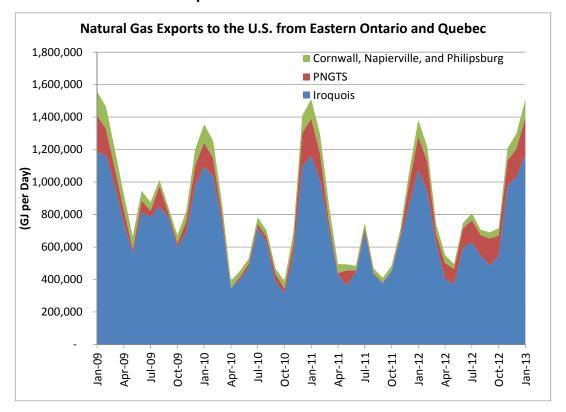
# 2.2 Pipeline Capacity and Natural Gas Flows Into and Out of the Dawn Hub

Currently, there is no significant natural gas production in Central Canada. The Central Canada natural gas markets, including both Ontario and Quebec are served by three major sources of natural gas supply. Historically, the majority of natural gas delivered to Ontario has been transported from the Western Canadian Supply Basin (WCSB) to Ontario on the TransCanada Pipeline System. In addition, several pipelines deliver Canadian WCSB and U.S. natural gas supplies to Central Canada through Michigan into the Dawn market hub in Ontario. Since November of 2012, significant quantities of natural gas produced from Marcellus and Utica shales in the Northeastern U.S. have been delivered to Ontario via Niagara.

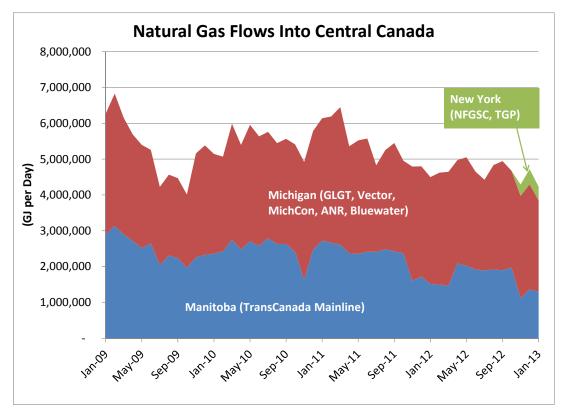
Exhibit 9 shows the changes in natural gas flows into Central Canada along each of the three paths for the last four years. As indicated in this exhibit, total flows into Central Canada have been declining as exports to the U.S. Northeast have been displaced by Marcellus production. The decline in flows has been concentrated on the TransCanada Mainline. Flows into Ontario from Michigan through the Dawn Hub have been increasing slowly. Imports from New York through Niagara, which started in November of 2012, are expected to continue to grow over time.



Exhibit 8: Natural Gas Exports to the U.S. from Eastern Ontario and Quebec



**Exhibit 9: Natural Gas Flows into Central Canada** 





Pipeline capacity, flow, and capacity utilization for the major pipeline interconnects for 2012 are shown in Exhibit 10. The location, capacity, sources of supply and historical flows along each of these pipelines are discussed below.

**Exhibit 10: Pipeline Interconnects Around Dawn** 

	2012 Average Flows into Ontario (GJ/Day)	2012 Capacity into Ontario (GJ/Day)	2012 Peak Month Flows into Ontario (GJ/Day)	2012 Peak Month Capacity Utilization (%)
Trans Canada Mainline	1,722,665	4,213,894	2,063,566	49.0%
Pipelines Into Dawn From Michigan				
Panhandle Eastern Pipeline at Ojibway	147,304	160,778	176,180	99.5%
MichCon at St-Clair	212,586	298,530	350,219	87.5%
Bluewater Gas at Bluewater	72,154	222,843	206,077	92.0%
Vector at St-Clair	1,429,728	1,646,626	1,664,362	101.1%
Great Lakes at St. Clair	662,433	3,063,883	1,030,218	33.6%
ANR at Corunna	na	215,231	na	na
Pipelines Into Ontario From New York				
TransCanada Receipts at Niagara	59,803	439,000	410,950	93.6%
NFGS Deliveries to TransCanada at Niaga	nra	370,981		
TGP Deliveries to TransCanada at Niagara	l	477,392		

# 2.2.1 TransCanada Mainline Pipeline

Historically, the TransCanada Mainline has been the largest source of natural gas supply into Ontario. TransCanada mainline capacity exceeds 7,000,000 GJ per day at Empress, with 4,213,894 GJ per day of capacity into Ontario and 1,311,701 GJ per day of capacity at the Northern Ontario flow-in at Barrie.<sup>4</sup> Natural gas flows on the Mainline into Ontario have been declining over time due to decline in natural gas shipments on the Mainline from Empress.

powered by perspective

<sup>&</sup>lt;sup>4</sup> Section 3.0: Economics: Supply, Market and Alternatives, Appendix 3-4, 2012 Eastern Mainline Expansion s.58 Application, TransCanada Pipelines Limited, November 1, 2011.



Exhibit 11: Natural Gas Flows East on the TransCanada Mainline from North Bay

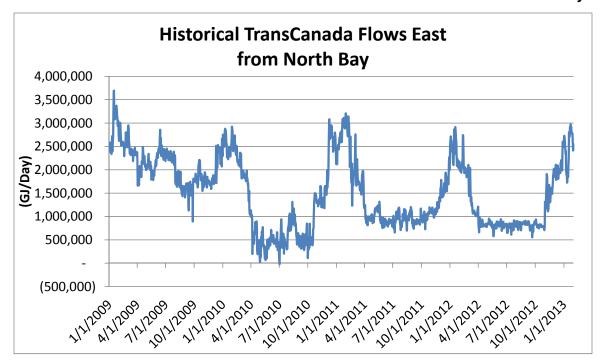
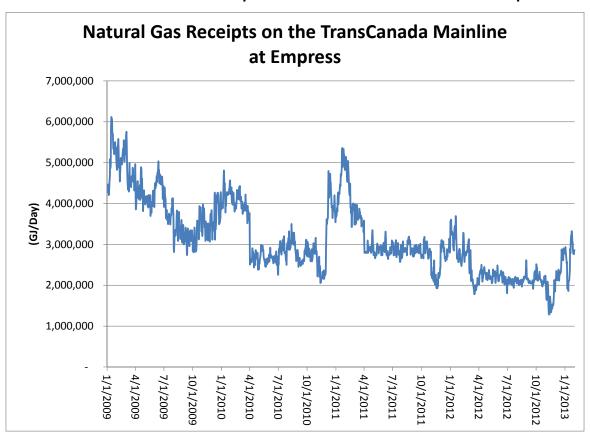


Exhibit 12: Natural Gas Receipts on the TransCanada Mainline at Empress





# 2.2.2 Panhandle Eastern Pipeline

The Panhandle Eastern Pipeline enters Ontario at Ojibway, where it interconnects with the Union Gas system. Panhandle Eastern provides access to Mid-continent natural gas supplies from Oklahoma and Northwestern Texas. The Panhandle Eastern capacity into Ontario is currently highly utilized, with peak month flows exceeding 99 percent of operational capacity.

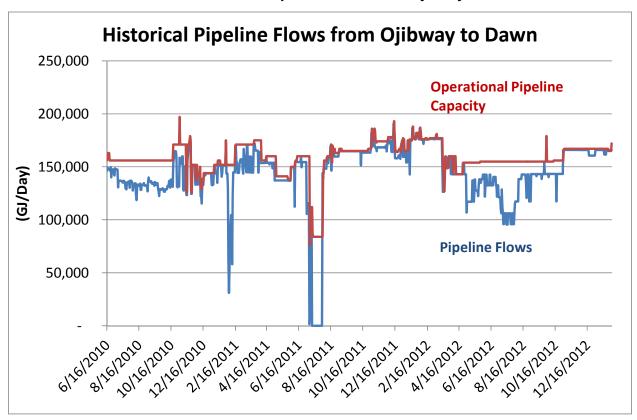


Exhibit 13: Historical Pipeline Flows from Ojibway to Dawn



#### 2.2.3 MichCon at St. Clair

The Belle River to St. Clair Pipeline, owned by MichCon Gas, connects the MichCon system in Michigan to the Union Gas system just west of Dawn at the St. Clair river crossing. During 2012, this pipeline interconnect provided nearly 300,000 GJ per day of pipeline capacity into Ontario. The capacity is highly utilized with peak month capacity utilization exceeding 87 percent of operational capacity.

The MichCon system connects with more than 124 Bcf (131 PJ) of working storage gas capacity owned by MichCon/DTE, as well as ANR Pipeline, Panhandle Pipeline, Great Lakes Gas Transmission, Consumers Energy, Union Gas, Vector Pipeline, Washington 10, and Blue Water Gas Storage, providing access to natural gas sourced from a variety of locations including the U.S. Mid-continent, Gulf Coast, U.S. Rocky Mountains, and the Western Canadian Supply Basin in Canada.

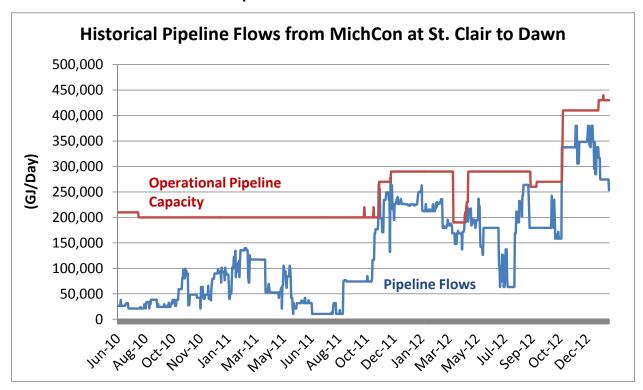
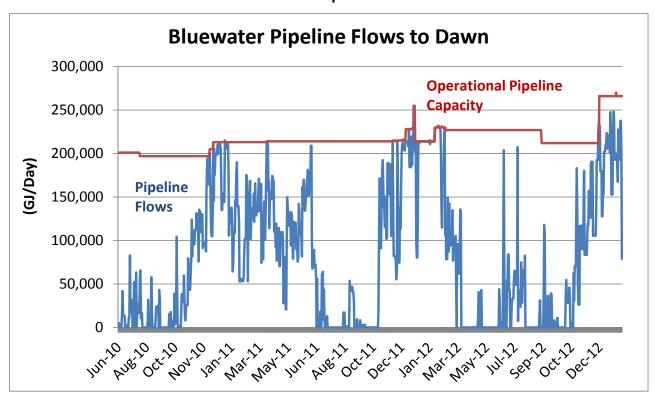


Exhibit 14: Historical Pipeline Flows from MichCon at St. Clair to Dawn



#### 2.2.4 Bluewater Gas

Bluewater Gas Storage owns the Bluewater pipeline header system that connects with the Union Gas system near Marysville, Ontario. The Bluewater system provides more than 220,000 GJ per day of pipeline capacity from Michigan into Ontario, as well as providing access to 26 Bcf (27 PJ) of natural gas storage. Flows into Ontario from Bluewater are highly seasonal, with peak flows approaching 100 percent of capacity.



**Exhibit 15: Bluewater Pipeline Flows to Dawn** 



### 2.2.5 Vector Pipeline

The Vector Pipeline provides a major natural gas transportation link between the Union Gas Hub at Dawn and the Chicago natural gas markets. Vector currently has capacity to deliver more than 1,600,000 GJ per day of natural gas into Ontario, and operates at about 85 percent annual capacity utilization, and near to 100 percent of operational capacity during the winter. The reported operational capacity on the Vector system often exceeds design capacity. While firm capacity is limited by the design capacity, changes in pipeline receipt and delivery points nominated by firm customers, as well as availability of gas delivered at higher than design pressure, and additional compression capacity above design compression capacity allows the pipeline to offer non-firm service above the design capacity of the pipeline. The Vector Pipeline provides Ontario access to natural gas delivered to Chicago from a variety of sources including the U.S. mid-continent, Rocky Mountains, and the Canadian WCSB via Alliance and Northern Border Pipelines.

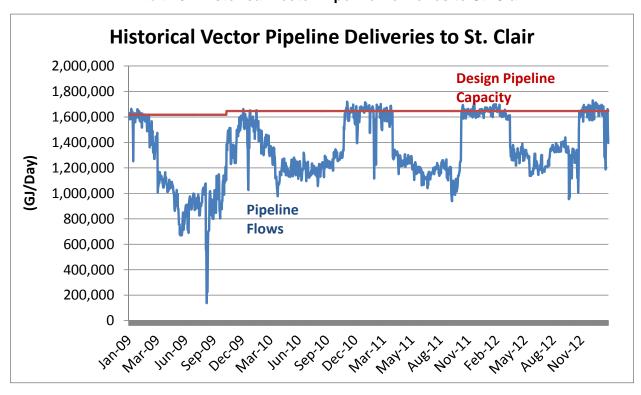


Exhibit 16: Historical Vector Pipeline Deliveries to St. Clair



#### 2.2.6 Great Lakes Gas Transmission

GLGT system extends from an interconnection with TransCanada Pipelines Limited at the Manitoba/Minnesota border, and traverses northern Minnesota and northern Wisconsin, and the upper and lower peninsulas of Michigan to reconnect with TransCanada at St. Clair, Michigan. The TransCanada system at St. Clair interconnects directly with the Union Gas system at the Dawn Hub. GLGT capacity at the border is more than 3,000,000 GJ per day. GLGT provides direct access to Ontario for WCSB gas delivered to GLGT at Emerson at the Manitoba/ Minnesota border, as well as access to additional storage capacity in Michigan, and U.S. sources of natural gas supply.

GLGT both delivers natural gas to TransCanada and takes receipt of natural gas from TransCanada. Prior to the 2012/2013 winter, deliveries exceeded receipts, and GLGT was a net exporter of natural gas from Michigan to Ontario. During the 2012/2013 winter, GLGT reversed flow and transported natural gas from the Ontario border back to Emerson. GLGT delivery capacity to Emerson is 707,000 GJ per day.

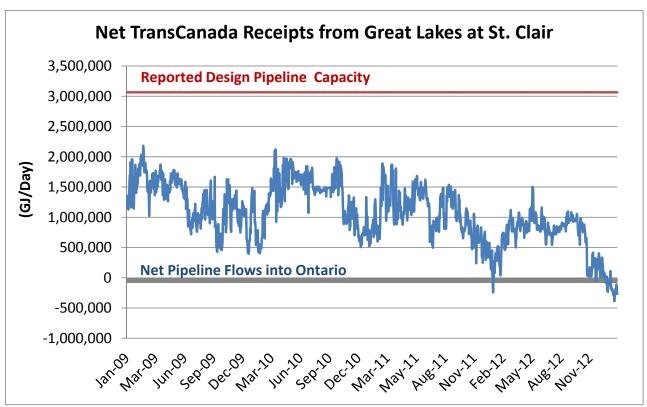


Exhibit 17: Net TransCanada Receipts from Great Lakes at St. Clair



Exhibit 18: Projected Net TransCanada Receipts from Great Lakes at St. Clair

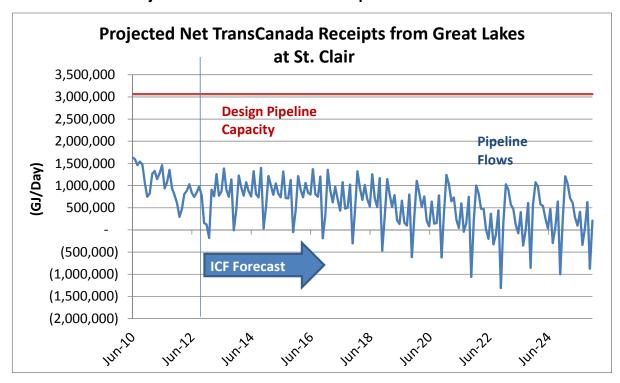
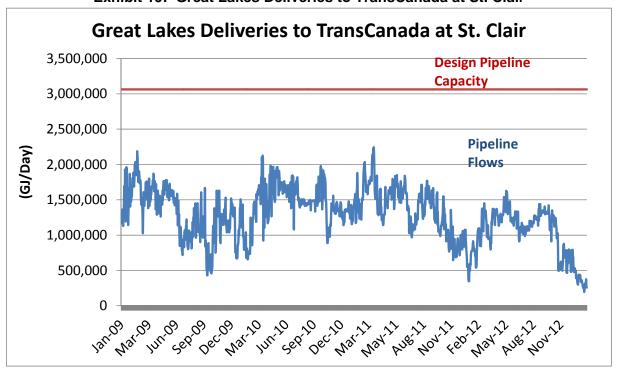


Exhibit 19: Great Lakes Deliveries to TransCanada at St. Clair





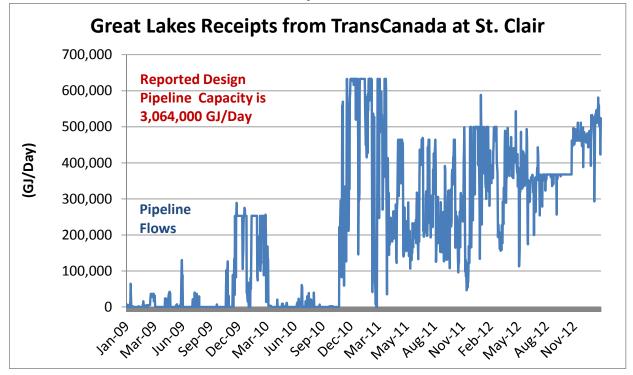


Exhibit 20: Great Lakes Receipts from TransCanada at St. Clair

#### 2.2.7 ANR

The ANR Pipeline delivers natural gas to Ontario at the interconnect with Niagara Gas Link Pipeline at Corunna, just north of the St. Clair Pipeline crossing. ANR has 215,000 GJ per day of pipeline delivery capacity to the border at Corunna. Niagara Gas Link, a wholly owned subsidiary of Enbridge Gas Transmission, runs from the international border to the Enbridge storage facilities at Tecumseh. The Enbridge Tecumseh storage facilities interconnect directly with the Union Gas system at Dawn. ANR delivery capacity to Corunna provides access to gas from the WCSB as well as U.S. natural gas sources from the Mid-continent for the Enbridge storage facilities at Tecumseh. The design maximum deliverability from Enbridge Tecumseh storage to Dawn is about 2,700,000 GJ per day. Average flows from Tecumseh storage to Dawn exceeded 900,000 GJ per day in January of 2010. Great Lakes Gas Transmission LP has proposed a system expansion that would allow GLGT shippers to deliver gas to Niagara Gas Transmission.

# 2.2.8 Pipeline Flows between Ontario and New York on the Niagara Peninsula

Currently, there are three pipeline interconnects between the U.S. and Ontario on the Niagara Peninsula. TransCanada connects with Tennessee Gas Pipeline and National Fuel Gas Supply at Niagara, and with the Empire Pipeline at Chippawa. Historically, each of these interconnects was designed to export natural gas from Ontario to New York State. However, exports from Ontario have dropped rapidly as growth in Marcellus gas supply has displaced imports from



Ontario in much of the Northeastern U.S. In 2012, TransCanada spent \$130 million to reverse and expand the pipelines running from the Niagara interconnect with TGP and NFGSC to the Union Gas system at Kirkwall and Union Gas/TransCanada interconnect at Parkway. The project created capacity of 439,000 GJ per day to flow from the New York and Ontario border at Niagara into Ontario on the TransCanada system with 418,000 GJ per day flow to Kirkwall. TGP has 477,000 GJ per day of capacity to Niagara and NFGSC has 371,000 GJ per day of capacity to Niagara. The available pipeline capacity into the Niagara region, and the TransCanada facilities between Kirkwall and Niagara are sufficient to support significant additional growth in system capacity from Niagara into Ontario with modest additional investments.

TransCanada also interconnects with the Empire Pipeline at Chippawa, just south of Niagara. Currently, the Chippawa interconnect does not allow physical flows from New York to Ontario, although Empire Gas Pipeline offers 40,000 GJ per day of delivery to Chippawa on a backhaul contractual basis that would be served by displacement as long as up to 40,000 GJ per day is contracted for delivery from Ontario to the Empire Pipeline at Chippawa.

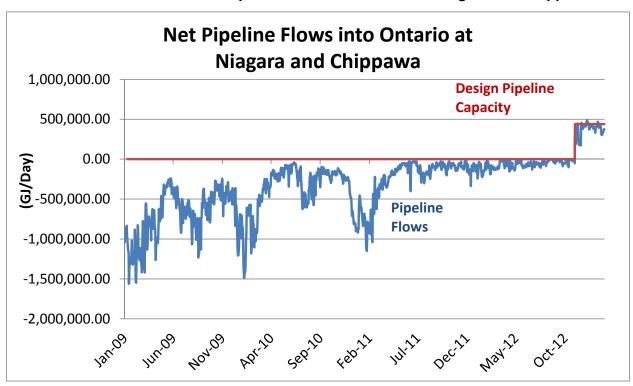


Exhibit 21: Historical Net Pipeline Flows into Ontario at Niagara and Chippawa

## 2.3 Natural Gas Storage around Dawn

The Central Canadian natural gas market relies heavily on the use of natural gas storage facilities located around the Dawn Hub. During the summer months, much of the natural gas flowing into Ontario is put into storage. During the winter months, much of the gas supply for



Central Canada is withdrawn from these storage facilities. The facilities include storage facilities owned and operated by Union Gas, and Enbridge, as well as several small independently operated storage fields, including St. Clair Storage, Airport Storage, and Tipperary Storage. 

1 ICF is projecting total growth in storage working gas capacity in Ontario of about 32 PJ's between 2012 and 2025.

**Exhibit 22: Ontario Storage Connected to the Dawn Hub** 

Region	Working Gas Capacity (GJ)	Design Day Withdrawal Capability (GJ per day)	Design Day Injection Capability (GJ per day)
Union Gas	166,000,000	3,245,000	1,230,000
Enbridge Tecumseh	117,390,000	2,700,000	1,600,000
SASLP (Airport)	5,600,000	56,000	42,000
MHP (St. Clair)	1,285,000	12,000	9,000
HTLP (Tipperary)	3,100,000	25,000	18,750
Total	293,375,000	6,038,000	2,899,750

Source: OEB Storage and Transportation Access Rule ("STAR") reports from each storage provider.

Neither Union Gas, nor Enbridge publish daily injection or withdrawal data for their storage fields. However, all of the storage facilities in Ontario are required by the Ontario Energy Board to publish monthly storage inventory reports, as well as biannual storage capacity reports. We have used this data to estimate monthly average storage injections and withdrawals for Union Gas storage and for Enbridge Tecumseh storage. Exhibit 23 and Exhibit 24 below show the monthly average injection and withdrawals from storage for Union Gas and Enbridge Tecumseh. It is important to note that the monthly averages mask large daily swings in storage activities at these facilities.

<sup>&</sup>lt;sup>5</sup> The St. Clair and Sarnia Airport storage pools are owned by Market Hub Partners, which is a subsidiary of Spectra Energy, which also owns Union Gas. The Tipperary storage pool is owned by the Huron Tipperary Limited Partnership, which is jointly owned by Union Gas Limited and Tribute Resources Inc.



Exhibit 23: Average Monthly Withdrawals / (Injections) from Union Gas Storage at Dawn

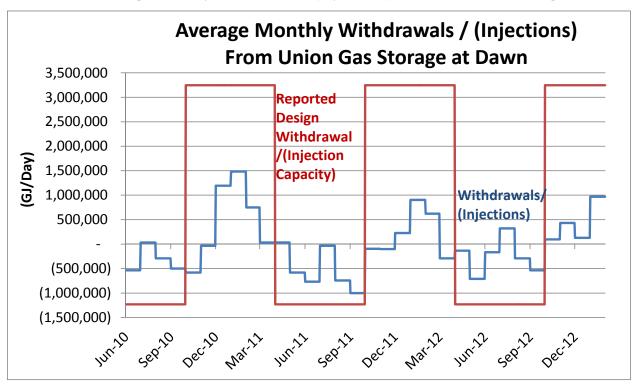
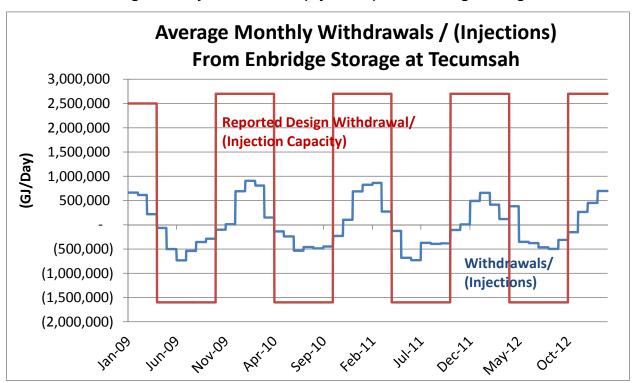


Exhibit 24: Average Monthly Withdrawals / (Injections) from Enbridge Storage at Tecumseh





# 2.3.1 Independent Storage Pools

In addition to the Union Gas and Enbridge storage facilities around Dawn, there are several smaller storage fields, including St. Clair Storage, Airport Storage, Tipperary Storage, and Chatham Storage. The daily flows between Dawn and St. Clair Storage, Airport Storage, Tipperary Storage, and Chatham storage are shown in Exhibit 25 below. ICF is not currently projecting any new independent storage pools to be developed in Ontario before 2025.

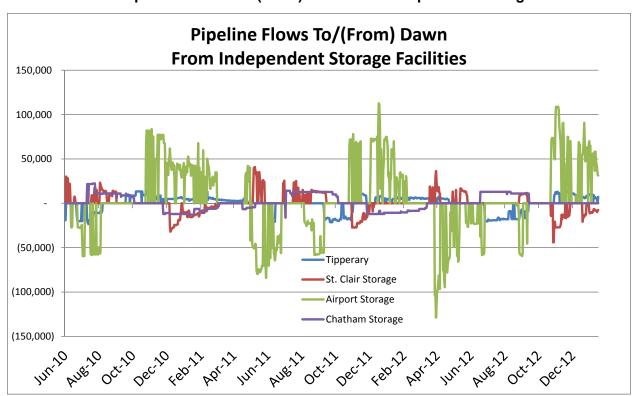


Exhibit 25: Pipeline Flows To / (From) Dawn from Independent Storage Facilities

## 2.4 Ontario Export Paths

Ontario has also been a major exporter of natural gas to the U.S. at a variety of points including:

- 1) Exports to Michigan from Dawn
- 2) Exports to New York State at Niagara and Chippawa
- 3) Deliveries to the Iroquois Pipeline at Waddington
- 4) Deliveries to PNGTS at East Hereford
- 5) Deliveries to several small U.S pipelines serving local markets in New York and Vermont, including:
  - a. Deliveries from Niagara Gas Transmission to St. Lawrence Gas Company near Cornwall, Ontario



- b. Deliveries to Vermont Gas Systems at Philipsburg
- c. Deliveries to North Country Pipeline at Napierville

With the exception of the Great Lakes Gas Transmission system, the exports to Michigan from Dawn are seasonal in nature and generally act to improve the efficiency of the Dawn Hub and the storage facilities in Ontario and Michigan rather than serving demand in the United States. Since November 1, 2011, TransCanada has delivered significant flows of natural gas to GLGT. TransCanada is using GLGT to transport natural gas from Dawn to the TransCanada system at Emerson, and then to eastern markets along the Northern Mainline in order to move around the Parkway to Maple constraint. Prior to November 1, 2012, forward haul deliveries from GLGT to TransCanada at the Ontario Michigan border exceeded the deliveries from TransCanada to GLGT, hence these flows represented contractual backhaul flows rather than physical flows. Starting November 1, 2012, GLGT receipts from TransCanada have regularly exceeded TransCanada receipts from GLGT, and physical pipeline flows on the GLGT system have reversed all the way to Emerson, with average January 2013 TransCanada receipts at Emerson from GLGT exceeding 500,000 GJ per day.

The other export points, including TCPL deliveries to the Iroquois Pipeline at Waddington, TCPL deliveries to PNGTS at East Hereford, and TCPL deliveries at Cornwall, Napierville and Phillipsburg to other smaller pipelines continue to serve U.S. demand. However, exports have become increasingly seasonal. Peak exports on these pipelines during the winter are often at the operational capacity of the pipelines. During January 2013, Iroquois Pipeline receipts at Waddington (Exhibit 26) were at 93 percent of pipeline design capacity, and PNGTS receipts at East Hereford (Exhibit 27) averaged 128 percent of the design capacity of the pipeline.



Exhibit 26: TransCanada Deliveries to Iroquois at Waddington

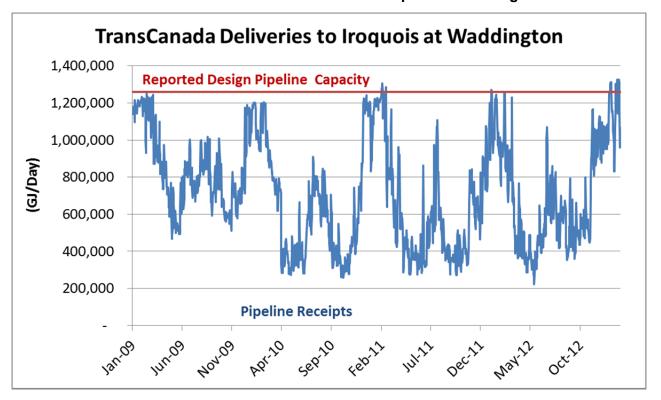
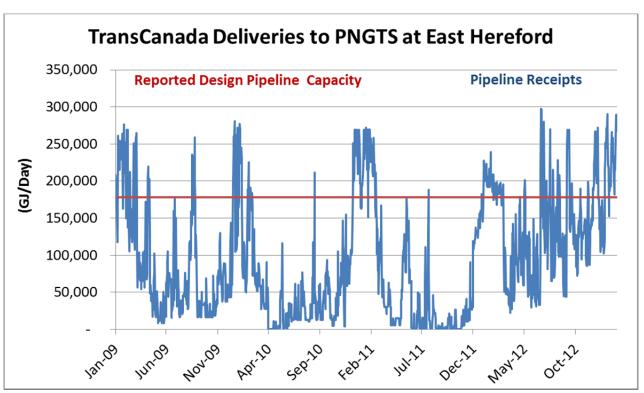


Exhibit 27: TransCanada Deliveries to PNGTS at East Hereford





# 2.5 Pipeline Flows, Receipts and Deliveries at points inside of Ontario

The change in natural gas market flows into and out of Ontario is also changing the operational characteristics of the pipeline systems within the province. The change from exports to imports at Niagara has shifted TransCanada receipts and deliveries at both Kirkwall and Parkway, (Exhibit 28 through Exhibit 31), as well as activity on the Union Gas system (Exhibit 32 and Exhibit 33).

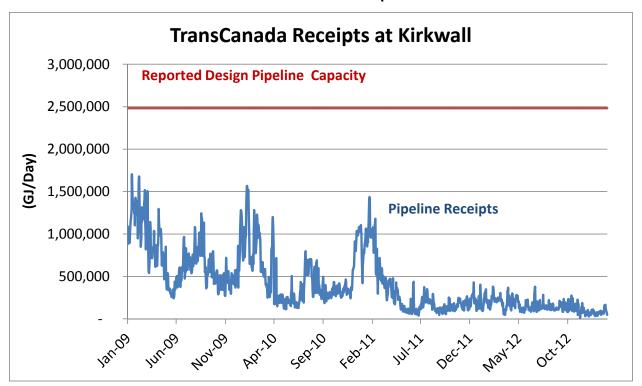


Exhibit 28: TransCanada Receipts at Kirkwall



Exhibit 29: TransCanada Deliveries at Kirkwall

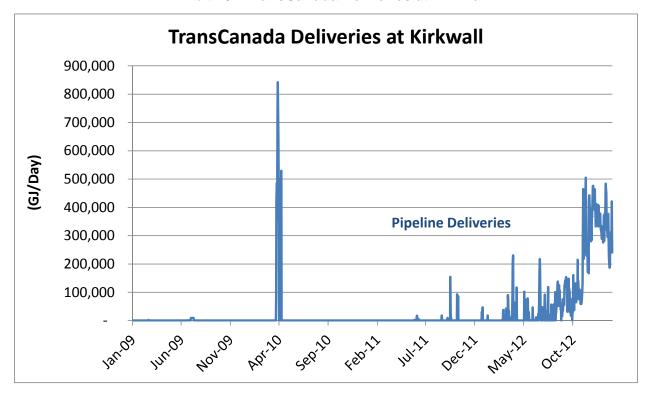


Exhibit 30: TransCanada Receipts at Parkway

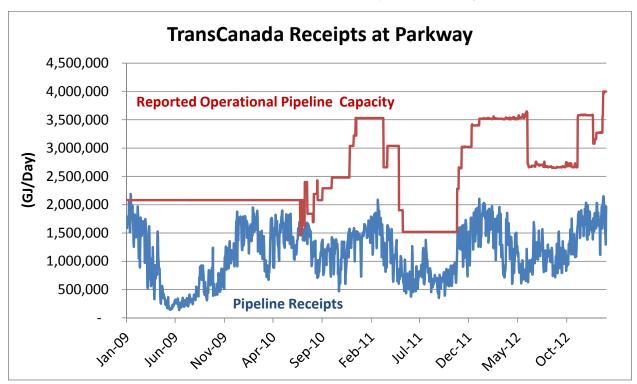




Exhibit 31: TransCanada Deliveries at Parkway

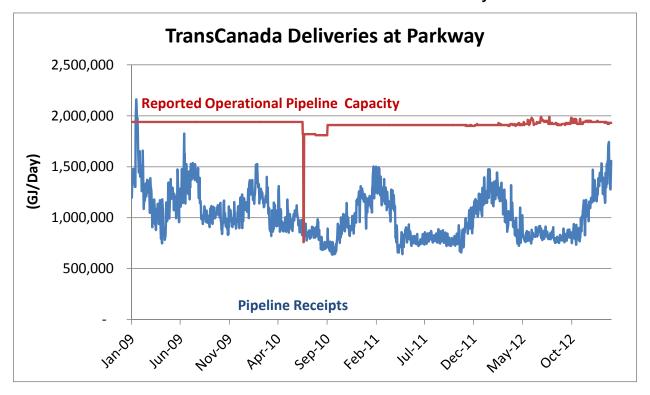


Exhibit 32: Pipeline Flows from Dawn to Parkway on the Union System

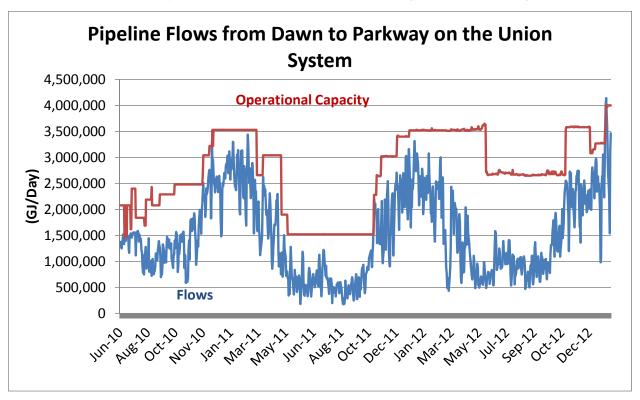
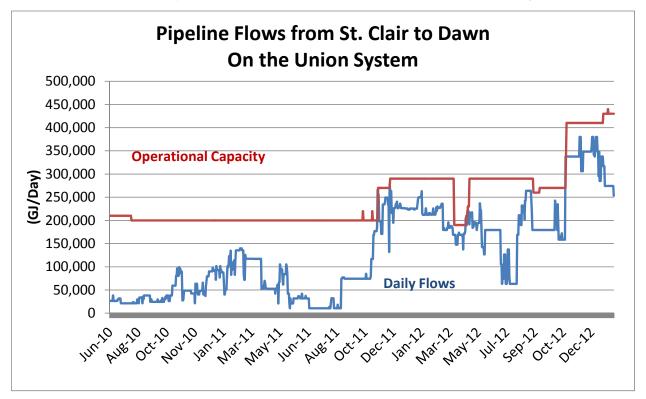




Exhibit 33: Pipeline Flows from St. Clair to Dawn on the Union System





# 3 Review of Pipeline Expansion Proposals Likely to Impact the Dawn Hub and Central Canadian Gas Markets

The changes in natural gas supply, particularly the growth in natural gas production from the Marcellus and Utica shales in the Northeastern United States will have a major impact on natural gas transportation patterns, leading to development of new pipelines, the expansion of existing pipelines in some markets, and the under-utilization of pipeline capacity in some traditional transportation corridors. We used the ICF Gas Markets Model (GMM) to forecast the changes in natural gas flows and associated changes in natural gas pipeline requirements. This section of the report provides an assessment of the pipeline capacity additions that will be required to meet the changing market needs.

# 3.1 Changes in North American Pipeline Flows

The changes in the location of natural gas production, particularly the growth in production from the Marcellus and Utica supply basins will result in significant changes in interregional pipeline flows. Exhibit 34 shows the projected changes in interregional pipeline flows from 2012 to 2025 projected by ICF in the January 2013 ICF Base Case. The arrows show the changes in gas flows over the pipeline corridors between regions; the gray arrows indicate increases in flows and red arrows indicate decreases. The blue lines indicate changes in LNG flows.

This map illustrates in broad terms how gas supply developments will drive major changes in North American gas flows. Of particular importance to Gaz Métro, the growth in Marcellus Shale gas production in the Middle Atlantic region will displace gas that once was imported into that region from other regions, hence the red arrows entering the Middle Atlantic Region from points north (Canada), Midwest (Ohio), and South Atlantic (North Carolina). In effect, the Middle Atlantic region becomes a major producer of gas and supplies gas to consumers throughout the East Coast. The flow of natural gas from Alberta through eastern Canada to the eastern U.S. will decline as Marcellus production displaces both imports from Canada and flow from the U.S. Gulf Coast.

Marcellus natural gas developments are expected to increase gas supply at Dawn along two different paths. ICF expects continuing growth in Marcellus gas imports to Ontario through Niagara. In addition, we expect Marcellus gas to displace gas flows into the Middle Atlantic from the Gulf Coast, Mid-continent and Rocky Mountains, leading to additional natural gas supply into the Midwest and then to Dawn.



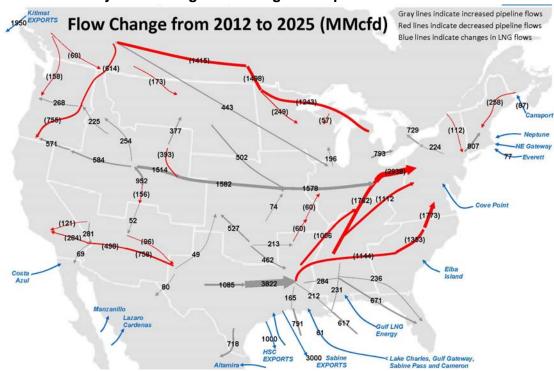


Exhibit 34: Projected Change in Interregional Pipeline Flows from 2012 to 2025

Source: ICF GMM® Jan 2013

Other developments will decrease natural gas available to flow into Dawn. Gas flows out of Western Canada are projected to decrease. Growth in production from shale gas resources in BC and Alberta will be more than offset by declines in conventional gas production in Alberta, as well as growth in natural gas demand in Western Canada. Strong industrial demand growth in Western Canadian for producing oil from oil sands will keep more gas in the western provinces. The planned LNG export terminals in British Columbia also will draw off gas supply once exports of LNG begin. The combination of declining conventional WCSB production and Western Canadian demand sources such as LNG exports and oil sands development will mean declining supply access for Dawn.

ICF also projects that a total of five North American LNG export facilities will be built during the period of 2016 and 2021. Two of these facilities will be in Canada (Kitimat and BC LNG) and three facilities will be along the Gulf Coast. By 2020 North American LNG exports will total to 5 Bcf per day. Changes in LNG imports into the Gulf Coast, as well as into Cove Point, Maryland; Elba Island, Georgia; and New England will also change gas flow patterns. Declining LNG imports into Cove Point, Maryland, as well as increasing gas-fired power generation in New England, will put increasing demands on Marcellus production, limiting flows out of the region (to Dawn, among other locations).



#### 3.2 Overview of Recent Natural Gas Pipeline Expansions in the Northeast and Midwest

Gas pipeline expansions in the northeast US have been driven over the past several years by the desire to connect and deliver increased natural gas production from Marcellus Shale development in Pennsylvania and West Virginia. The drivers for the construction of new pipe and the need to reconfigure and modify existing pipelines to handle changing sources of supply are expected to continue over the coming years.

Market demand growth has also driven the need for pipeline expansions, but this has been a secondary factor. Increased gas-fired power generation has been the primary source of gas demand growth over the past decade. In the Northeast United States, however, generators have largely limited the contract support for construction of new infrastructure to the laterals to bring gas from the mainline to the plant.

Exhibit 35 and Exhibit 36 present a list of the projects completed in 2011 and 2012 respectively in the Northeast United Sates, which are affecting the supply dynamics in eastern Canada.

The Following Projects Went Into Service in 2011 Northeast US Planned Expansions Capacity Planned In Pipeline - Expansion Name Service **Status** Area Oakford PA to Transco Texas Eastern - TIME III 60 Nov-11 In-Service Texas Eastern - TEMAX Clarington to Transco 395 Nov-11 In-Service National Fuel - Line N Expansion Along Western PA border 160 Sep-11 In-Service National Fuel/Empire - Tioga County Extension Tioga PA to Corning NY 350 Nov-11 In-Service Tennessee Gas Pipeline - Line 300 Line Upgrade Line 300 across northern PA & NJ 350 Nov-11 In-Service Columbia Gas Transmission - Line 1570/Line K Replacement Northeast Pennsylvania and Eastern New York 0 Oct-11 In-Service Tioga NY (Millennium) to Bradford PA Inergy Midstream - North-South Project (Tenn/Transco) 325 Nov-11 Completed Laser Marcellus Midstream - Marcellus Gathering Susquehanna PA to Millennium (NY) 1300 2011 In-Service Williams / Cabot Oil - Susquehanna Gathering Susquehanna PA to Luzerne PA (Transco) 33.5 Springville Pipeline miles of 24" 300 Nov-11 In-Service PVR Midstream - AMI Gathering Lycoming PA, Tioga PA, and Bradford PA 700 Nov-10 In-Service National Fuel Gas Supply - Covington Gathering Tioga Co PA 75 Nov-11 In-Service Expansion

Exhibit 35: Projects Going into Service in 2011

These pipeline expansion projects have predominantly been "supply access" projects, with significant contractual support coming from producers that want to ensure that growth production is not "bottleneck" into the supply region. When such "bottlenecks" are created by such growth, the entire amount of production, not just the incremental growth in production, is subjected to pressure that reduces the "net back" price received by the producers. As a result, these projects are often designed to move gas into a broader market area, but are not directly designed to bring gas to a particular market destination. From the producer's perspective, a pipeline path has less optionality when the path targets a specific end use market. In general, the producer looks to minimize the long-term pipeline commitments to those that are needed to debottleneck the local supply area constraints rather than extend pipeline expansions to markets, such as New England, where the need for additional market area pipeline capacity is evident.



Exhibit 36: Projects Going into Service in 2012

Northeast US Planned Expansions		Capacity	Planned In	
Pipeline - Expansion Name	Area	(MMcfd)	Service	Status
	14" lateral and conversion of a pipeline to the power			
Williams Transcontinental - Bayonne Lateral	plant from oil to gas	250	Apr-12	In-Service
National Fuel - Northern Access	Potter Co PA to Niagara	320	Dec-12	In-Service
Dominion Transmission - Northeast Expansion	SW PA to Leidy	200	Sep-12	In-Service
Dominion Transmission (For Tenn NSD Project) -				
Ellisburg-to-Craigs	Ellisburg PA to Craigs NY	150	Nov-12	In-Service
Central New York Oil & Gas - Marc I Hub Line	Bradford PA (Tenn) to Lycoming Co PA (Transco)	550	Nov-12	In-Service
Dominion Transmission - Appalachia Gateway	West Virginia to Oakford PA	484	Sep-12	In-Service
Texas Eastern - TEAM2012	Interconnects OH, WV, PA	200	Nov-12	In-Service
National Fuel - Northern Access	Potter Co PA to Niagara	320	Nov-12	In-Service
National Fuel - Line N 2012 Expansion	Along Western PA border	163	Oct-12	In-Service
National Fuel Gas Supply - Trout Run Gathering	Lycoming Co PA	466	Jun-12	In-Service
Tennessee Gas Pipeline - Northeast Supply				
Diversification	Lycoming Co PA	466	Jun-12	In-Service
TransCanada - Eastern Mainline Expansion	Niagara to Kirk wall Flow Reversal	439 PJ	Nov-12	In-Service

Examining the projects that have been completed in the past two years indicates that projects that are successfully brought to market are generally those that can leverage existing facilities and right of ways in the design of the projects. This is particularly important in the Northeast United States, where population densities are relatively high and siting of "green field" project is difficult. In addition, the practice of allowing for the "re-purposing" of some existing assets can reduce costs and create a competitive advantage over competing projects. Finally, the supply area projects that have been constructed can be integrated in a successful manner with the required gas processing requirements for the "liquid rich" gas streams that provide superior economics for producers in the current environment.

The concentration of projects that originate in Pennsylvania is important and understandable. The performance of the Marcellus formation in terms of the growth in gas production has been remarkable, particularly with the low gas price environment that has existed for the last several years. By the end of 2012, production increased to more than 7 Bcf per day. Importantly, ICF analysis of this data indicates that the growth in deliverability can continue with relatively few (less than 150) well completions per year.

#### 3.3 Review of Major Planned Gas Pipeline Expansion Projects

Exhibit 37 and Exhibit 38 provide lists of projects that have been announced in the northeastern United States and Canada. Exhibit 37 lists the projects that would be expected to directly or indirectly impact the amount of capacity available to users of the Dawn Hub, while Exhibit 38 lists other projects that are designed to increase capacity to east coast or more southern markets. ICF identifies the projects listed are in a variety of stages varying from "Announced" to "Under Construction". ICF does not believe that all of the projects listed will ultimately be constructed. In some cases, two or more projects are competing to fill the same market need. The list of potential and proposed projects, nevertheless, shows the degree of project development activity that is underway.



**Exhibit 37: Western Marcellus/Utica/Ontario Planned Expansions** 

Western Marcellus/Utica/Ontario				
Planned Expansions		Capacity	Planned In	
Pipeline - Expansion Name	Route	(MMcfd)	Service	Status
	Parkway Project - 42" Loops at Brampton and			
TransCanada - Eastern Mainline Expansion 2012	Vaughan in Central Ontario	286 PJ	Jun-13	Under Construction
TransCanada - Eastern Mainline Expansion2013	Maple Compression	130 PJ	Nov-13	Announced
				Plant Under
Dominion Transmission - Marcellus 404 Project	West Virginia	300	Mar-13	Construction
Dominion Transmission - Tioga Area Expansion	Tioga, Potter, Clinton, and Greene Counties	270	Nov-13	Filed with FERC
Dominion Transmission - Sabinsville-to-Morrisville				
Project	Expand Sabinsville interconnect w/ Tennessee	92	Jun-14	Announced
Texas Eastern - Ohio Pipeline Energy Network				
(OPEN)	Utica shale and backhaul to Ohio.	1000	Nov-15	Potential Expansion
Spectra - NEXUS Gas Transmission	NE Ohio to Michigan and Ontario	1000+	Nov-16	Potential Expansion
National Fuel - Mercer Expansion Project	Deliveries to Tennessee Pipeline in western PA	105	Sep-13	Announced
National Fuel - West Side Expansion	Production receipts in western PA	95	~2014	Announced
Empire Pipeline - Central Tioga County or (TCE2)	Tioga PA Interconnect to TGP	260	Sep-15	Potential Expansion
National Fuel - West to East Phase 1 & 2	Overbeck PA to Leidy	425	~2015	Filed with FERC
Tennessee Gas Pipeline - Rose Lake Expansion	·			Pre-File w Open
Project	Line 300 Reverse flow back to St. 313	230	Nov-14	Season
Columbia Gulf Transmission - West Side Exp -				
Columbia Gulf Bi-Directional	Leach KY to Rayne LA	540	Apr-13	Planned Expanson

Exhibit 38 lists projects proposed by pipeline transmission operators to expand pipeline capacity in the areas which include western New York, western Pennsylvania, West Virginia, Ohio, Michigan, and Ontario. Most of those listed are projects to expand existing corridors, but others like the NEXUS project by Spectra would build a new "green field" pipeline.



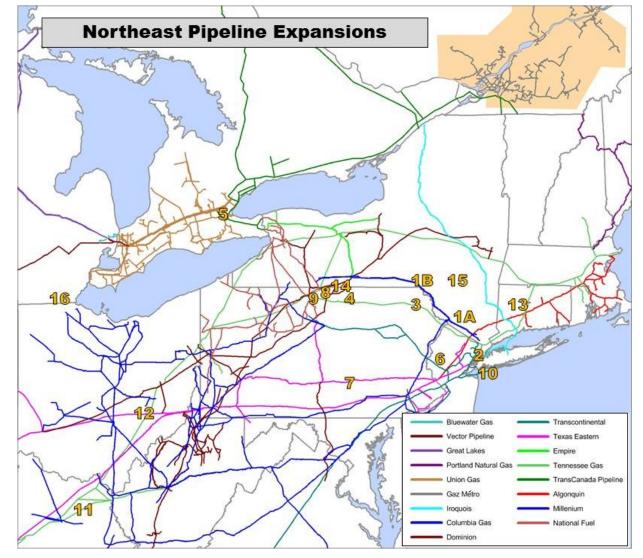
**Exhibit 38: Other Northeast Planned Expansions** 

Other Northeast Planned Expansions		Capacity	Planned In	
Pipeline - Expansion Name	Route	(MMcfd)	Service	Status
	WV Gas Plant and upgraded interconnect with			
Dominion Transmission - Natrium-to-Market	TETCO in Greene Co PA	185	Jun-14	Announced
	Linden NJ to Staten Island NY and new connection			
Spectra -TETCO - Algonquin - NJ-NY Expansion	to ConEd in Manhattan	800	Nov-13	Under Construction
Texas Eastern - TEAM2014	OH, WV, PA Looping & Compression	600	Nov-14	Pre-File Review
Algonquin - AIM Project	Algonquin compression	TBD	Nov-16	Potential Expansion
Tennessee Gas Pipeline - MPP Project	Z4 with backhaul to Z1-Z3	240	Nov-13	FERC Approved
Tennessee Gas Pipeline - Northeast Upgrade				
Project	Line 300 to Interconnects with NJ Pipelines	636	Nov-13	FERC Approved
Iroquois Gas Transmission - Wright Interconnect	Expand Wright Interconnect to accomdate			
Project	Consitution Pipeline	650	Mar-15	Announced
Columbia Gas Transmission - West Side Exp -				
Smithfield III	Waynesburg PA and Smithfield WV to Leach KY	444	Nov-14	Planned Expanson
	Increased receipt capacity in NY from Millenium			
Columbia Gas Transmission - East Side Exp	and NJ from Tennessee	310	Dec-15	Announced
Columbia Gas Transmission - Quick Link	Utica Shale connections in East Ohio	500	Nov-15	Announced
Millennium Pipeline - Minisink Compression	Corning to Ramapo mainline	120	Jan-13	Under Construction
Millennium Pipeline - Hancock Compression	Corning to Ramapo mainline	150	Nov-13	FERC Approved
Millennium Pipeline - Neversink Compression				
Replacement	Corning to Ramapo mainline	525	~2014	Potential Expansion
	St195 SE PA to Rockaway Deliv Lateral - National			
Williams Transcontinental - Northeast Connector	Grid NYC	100/647*	2014	Waiting FERC
	Northern NJ and Leidy Line looping and			
Williams Transcontinental - Northeast Supply Link	compression	250	Nov-13	Under Construction
Williams - Atlantic Access	SW PA Marcellus to Transco St195	1800	Dec-15	Potential Expansion
	Looping and compression along Leidy line with			
Williams Transcontinental - Leidy Southeast	backhual along Transco mainline to Alabama	800	Dec-15	Potential Expansion
Williams/Cabot Oil/Piedmont Nat Gas -				
Constitution Pipeline	Susquehanna PA to Schoharie NY	650	Mar-15	Potential Expansion
Williams Transcontinental - Virginia Southside				
Expanison	Backhaul to VA	TBD	Sep-15	Potential Expansion
Commonwealth Pipeline - Inergy Midstream, UGI,				
and WGL	Lycoming Co PA to Charles Co MD	1200	Dec-15	Potential Expansion

Exhibit 38 lists projects for the Northeast with a strong Marcellus eastward focus, eastern market hub connection, or gulf coast "backhaul" or reverse flow capacity targeting southern and southeastern markets. This again includes a mix of proposed new pipeline or existing pipeline expansions.

Exhibit 39 presents a map identifying planned expansions for the northeast U.S. and Canada over the next four years. The orange numbers show the approximate locations for planned pipeline expansion projects. Each of the identified projects is discussed in the next section of this report.





**Exhibit 39: Northeast Pipeline Expansions Map** 

Source: ICF using Ventyx software.

#### 3.3.1 Pipeline Expansion Projects in Ontario

### TransCanada Pipeline – 2012 Eastern Mainline Expansion (5)

The TransCanada Eastern Mainline Expansion Project is designed to allow increased flow of gas from the Union Gas system to the TransCanada Eastern Mainline by increasing capacity on the southern Ontario system between Parkway and Maple, as well as enabling TransCanada to transport imports of Marcellus gas through Niagara to the Union Gas system at Kirkwall.



The flow reversal on the Kirkwall to Niagara section of the pipeline included modifications at several compressor and metering stations to provide bidirectional flow. This component of the expansion project was completed and in-service on November 1, 2012.

As part of the 2012 Eastern Mainline Expansion Project, TransCanada also received approval from the NEB to increase TransCanada pipeline capacity on the Eastern Mainline from Parkway to Maple. The project includes a partial looping of this pipeline section, including looping 12.9 km of the existing pipeline between these two points with new NPS 42 inch pipeline. The project will enable TransCanada to increase winter design day capacity from Parkway to Maple by 286,000 GJ per day, from 2,046,000 GJ per day to 2,332,000 GJ per day to meet incremental pipeline capacity contracts. The additional capacity is expected to be in service by June 2013.

#### TransCanada Pipeline – 2013 Eastern Mainline Expansion (5)

TransCanada has proposed an additional \$65 million project to add pipeline compression at the Maple Station in order to meet incremental firm service transportation contracts of approximately 130,000 GJ per day. Without the proposed modifications, there would be a capacity shortfall during a design day of 152,000 GJ per day. The additional capacity is expected to be in-service by November 1, 2013.

#### **Future TransCanada Eastern Mainline Expansion**

ICF is projecting that growth in Marcellus gas production will continue to create additional demand for transportation services on the TransCanada Mainline, including additional capacity from Parkway to Maple.

TransCanada has two alternative approaches to providing the increased service. The most direct approach is to continue to loop the existing pipeline capacity from Parkway to the Maple compressor station. This expansion represents a relatively expensive project due to the proximity of the construction project to through a densely populated region in the greater Toronto area.

The TransCanada Parkway Project TransCanada has discussed building such facilities, but also has the option of shipping additional gas supplies west from Dawn on Great Lakes Gas Transmission to Emerson, and then bringing the gas eastward on the TransCanada mainline and then south at North Bay Junction to Toronto to bypass the Parkway to Maple constraint. This "around the horn" approach results in gas transportation of more than 2500 kilometers as opposed to the very short distance from Parkway to Maple. The "around the horn" approach has raised significant concerns from TransCanada shippers due to concerns about the allocation of fuel costs and access to backhaul capacity.

ICF expects that TransCanada will delay additional physical expansion of the system from Parkway to Maple as long as expansions of "around the horn" capacity remain feasible, but that TransCanada will eventually be forced to make the physical pipeline expansion, either due to



competitive threat from Union Gas or other pipelines, or due to constraints on around the horn capacity, including potential conversion of mainline pipeline capacity from natural gas to crude oil. The date for additional physical expansion is uncertain, and will depend in part on the market for new services. Based on continuing growth in Marcellus supply, we expect annual growth in the requests for service on this section of the TransCanada system. As a result, additional expansion may occur as early as 2014.

#### **Union Gas Extension – Parkway to Maple Loop (5)**

Union Gas has proposed to extend the Union Gas system from Parkway to Maple to relieve the constraint on TransCanada pipeline capacity from Parkway to Maple. This proposal was withdrawn after TransCanada agreed to provide additional pipeline services from Parkway to Maple. Union Gas may propose this project in the future if TransCanada does not build additional capacity on this section of the TransCanada system.

#### Enbridge Gas Distribution (EGD) - Greater Toronto Area (GTA) Reinforcement Project

The GTA reinforcement project has an estimated capital budget of approximately \$600 million (Cd). The project is designed to address the growing requirements with EGD's Toronto service territory. It represents the first major expansion of the EGD infrastructure within the GTA in approximately 20 years.

The project includes approximately 48 KM of 36 inch pipe operating at transmission pressure and related facilities. The project includes an interconnection with Union Gas facilities at Parkway. As described by EGD, the project will allow service to a growing customer base, enhance system reliability and provide for additional flexibility in terms of sourcing gas supplies.

The project is divided into eastern and western sections. The eastern portion of the project is planned to be in-service in 2014 while the western section anticipates an in-service date in 2015.

# 3.3.2 Pipeline Expansion Projects In the U.S. that Would/Could Increase Market Activity in Ontario and at Dawn

The growth in Marcellus production is creating significant demand for new pipeline services, including a variety of projects that provide the opportunity to move gas through Ontario and the Dawn Hub. These projects include major new pipelines to transport gas from Appalachia to the Dawn Hub through Ohio and Michigan, as well as projects that will increase capacity to deliver Marcellus gas to Ontario through Niagara. These projects are summarized below.

#### Texas Eastern - TEAM 2014 (7)

The Texas Eastern Appalachia to Market (TEAM) 2014 expansion will expand capacity on the TETCO pipeline across Pennsylvania by 600 MMcfd, and also allow for gas flow westward out of southeast PA with possible backhauls to the Midwest and Gulf Coast. This will be achieved by 34 miles of 36" pipeline loops and 80,000 HP of compression additions. The project has been pre-filed with FERC with plans for early 2014 construction. This project could positively



impact the Dawn Hub by allowing more Marcellus gas to flow westward and reach Ontario through Ohio and Michigan.

#### **Dominion - Tioga Area Expansion (8)**

The Tioga Area Expansion calls for the construction of 15 miles of 24-inch diameter pipeline in Tioga County, PA, and minor modifications to several existing Dominion facilities to provide a total of up to 270 MMcfd of capacity for new production into the Leidy storage area and a new interconnect with Texas Eastern at Dominion's Crayne Compressor Station in Greene County, PA, south of Pittsburgh. The project has a favorable environmental assessment from FERC and could begin construction by the spring of 2013 with completion by the end of 2013. This project could indirectly impact the Dawn Hub as it increases the interconnect ability of Dominion Transmission in western Pennsylvania and provides increased flexibility to supply other projects that seek to move Marcellus gas westward to Ohio, Michigan, and Ontario.

#### Tennessee Gas Pipeline - Rose Lake Expansion (9)

The Rose Lake Expansion on Tennessee Gas Pipeline is similar to the Tennessee MPP in that it will add capacity for growing Marcellus production to back flow along Line 300 from Bradford County, PA to interconnections with other pipelines, such as National Fuel Gas Supply at Station 313 Rose Lake. Three compressor stations will undergo significant modifications to provide 230 MMcfd of incremental capacity for pipeline deliveries around Rose Lake in Tioga County, PA. This project has a late 2014 target in-service date. This project will indirectly impact the Dawn Hub by increasing gas supply available to National Fuel Gas. A portion of the increase in supply is likely to flow into Ontario and the Dawn Hub through the National Fuel Gas interconnect with TransCanada at Niagara.

#### Texas Eastern – Ohio Pipeline Energy Network (12)

The Ohio Pipeline Energy Network (OPEN) project on Texas Eastern Transmission proposes providing additional receipt and delivery capacity in Ohio for Utica shale producers and for AEP subsidiary Ohio Power Company. The project proposes adding 1 Bcf per day of capacity in Ohio, but details are yet to be determined. The OPEN Project is targeting a 2015 in-service date. This project likely would increase market activity at the Dawn Hub by providing interconnects for Utica producers who may be interested in reaching storage fields in Michigan and Ontario in addition to delivering to Ohio power providers.

#### **NEXUS Gas Transmission (16)**

Spectra Energy is teaming with DTE Energy and Enbridge to develop a major new pipeline project that would increase pipeline capacity from Appalachia to Dawn by more than 1 Bcf per day. The NEXUS project would include a new 250 mile long pipeline from northeastern Ohio into Michigan that connects to the Vector pipeline delivering gas into Michigan and Ontario. The



results of the late 2012 open season have not been released, and the exact details of the size and cost of the project have not been announced. The current plan proposes construction of the pipeline with an in-service date of November 2016. This project likely would lead to a substantial expansion of capacity into the Dawn Hub, and provide a new path for Marcellus gas to reach Ontario.

#### 3.3.3 Other Pipeline Expansion Projects in the U.S. Northeast that Impact Gas at Dawn

The growth in Marcellus production is creating significant demand for new pipeline services, including a variety of projects that provide the opportunity to move gas to alternative markets. By accessing alternative markets, these projects have the potential to divert Marcellus gas that otherwise might flow through the Dawn Hub. The current pipeline proposals are summarized below.

### Millennium Pipeline Expansions – Minisink and Hancock Compression (1)<sup>6</sup>

The Millennium Pipeline which runs across southern New York from Corning, NY to Ramapo, NY was put into service in 2008 to transport gas from Ontario to the downstate New York market. Upon startup Millennium received gas from the Empire Pipeline. The Empire Pipeline receives gas from TransCanada at the Canadian border at Chippawa, near Niagara.

The role of Millennium Pipeline has changed with rapid Marcellus shale growth in central New York and northeast Pennsylvania. The pipeline now transports primarily Marcellus gas, and since late 2011 has delivered gas to, rather than received gas from, the Empire Pipeline. Millennium is expanding the original 30 inch mainline by adding two new compressor stations near the towns of Minisink and Hancock in New York. Despite protests by local Minisink residents the first project is expected to enter service in early 2013 and add 120 MMcfd to the mainline capacity. The applied, but not yet approved, Hancock Project is expected to enter service by the end of 2013 and add an additional 150 MMcfd to Millennium mainline capacity. The focus of these expansions it to push more gas eastward from the Marc I hub which connects in south central New York. These two projects do not directly impact the Dawn Hub, but may facilitate future projects on Millennium that would send northeast Pennsylvania gas westward.

#### Texas Eastern Transmission & Algonquin Gas Transmission – NY-NJ Expansion (2)

This project, currently under construction by Spectra Energy, will add a new pipeline connection into New York City. Texas Eastern Transmission has an existing connection into NYC utility Brooklyn Union d/b/a National Grid on Staten Island. This project will add a new connection to utility Consolidated Edison in Manhattan as well as adding connections in Hudson County, NJ

<sup>&</sup>lt;sup>6</sup> Following each project name, the numbers in parentheses reference the numbered project locations in the Northeast Planned Expansion map.



around Bayonne and Jersey City, NJ. The project adds 800 MMcfd of capacity from 20 miles of new 30" and 42" pipes requiring at least 7 different directional drills. The project appears to be on schedule to be completed by the end of 2013. The NY-NJ project also includes a compressor station modification on Algonquin Gas Transmission to flow gas southward into New Jersey. This project does not directly impact the Dawn Hub, although it facilitates flows of Marcellus gas to east coast U.S. markets without increasing utilization of the Dawn Hub.

#### **Tennessee Gas Pipeline- Northeast Upgrade Project (3)**

The Northeast Upgrade project by Tennessee Gas Pipeline will expand TGP Line 300 across northeastern Pennsylvania through the addition of five looping segments of 30" pipeline totaling about 40 miles. The project will add 636 MMcfd along Line 300 from Bradford County, PA into New Jersey where Tennessee interconnects with other pipelines. This project has received FERC approval and construction is expected in 2013. This project does not directly impact the Dawn Hub, although it facilitates flows of Marcellus gas to east coast U.S. markets without increasing utilization of the Dawn Hub.

#### Tennessee Gas Pipeline - MPP Project (4)

Tennessee Gas Pipeline is implementing compressor station modifications and adding new pipe to transport Marcellus gas produced and delivered into Zone 4 on Tennessee Line 300 and backhaul it along the TGP mainline to Zones 1, 2, and 3. Zone 1 includes delivery points in Mississippi, Alabama, and Tennessee. This project will add 240 MMcfd of reverse capacity on Line 300 which could potentially be delivered anywhere in Zones 1 to 3 via gas exchange. This project should be completed by the end of 2013. This project does not directly impact the Dawn Hub. However, any reverse capacity on Tennessee Line 300 would reduce the amount of Marcellus gas that might otherwise flow through Dawn.

#### Transcontinental Pipeline - Northeast Supply Link (6)

The Northeast Supply Link project by Williams Transcontinental Pipeline will expand the Transco Leidy Line and Transco Mainline in Pennsylvania and New Jersey and increase capacity from central Pennsylvania into the NYC area by 250 MMcfd. The project involves 12 miles of looping pipe and a new 25,000 HP compression station in Essex County NJ. The project has a planned in-service date at the end of 2013. This project does not directly impact the Dawn Hub.

#### Transco Northeast Connector w/Rockaway Delivery Lateral (10)

This project involving both the Williams Transcontinental Pipeline and NYC utility Brooklyn Union d/b/a National Grid would add a new connection to the distribution company that will deliver gas from the 26" Lower NY Bay Lateral and passes through Jacob Riis Park. The 30" connection pipe is already under construction by National Grid, but the project was delayed as



environmental groups attempted to block it in Congress as the pipe would cross national park land. Congress gave go ahead on the project in November 2012 and it has been signed by President Obama, and is now waiting for final FERC approval. The project would add a 647 MMcfd city gate for National Grid but would share capacity going to Long Island on the Lower NY Bay Lateral. The project is expected to add incremental capacity of about 100 MMcfd to NYC through a compressor modification upstream of the lateral. If approved, the Northeast Connector project could begin construction by late 2013 with completion in early 2014. This project does not impact the Dawn Hub.

#### **NiSource Columbia - West Side Expansions (11)**

The Columbia Pipeline Group which consists of Columbia Gas Transmission (TCO) and Columbia Gulf Transmission (CGT) are expanding the capability of the pipelines to move Marcellus gas production from southeast Pennsylvania and West Virginia to the Gulf coast. Bidirectional or southward flow from Leach, KY on CGT of 540 MMcfd is planned for mid-2013 start. Southward flow from Waynesburg, PA to Leach, KY of 444 MMcfd is planned for a late 2014 in-service date. This project does not impact the Dawn Hub positively, but may impact it negatively as it provides a route for Marcellus shale gas to move southward from southwestern Pennsylvania.

#### Algonquin – Algonquin Incremental Market Project (13)

The Algonquin Incremental Market (AIM) expansion is a Spectra Energy project created to expand capacity into New England markets on Algonquin Gas Transmission. The AIM open season has been listed for a year, but there have been no subsequent announcements of shipper commitments. The project's start date is now listed as late 2016, but there have been no announcements of how much capacity would be added or how the pipeline's capacity would be expanded. Spectra investor documents list the company as planning to spend over \$2 billion on this project. This fact suggests a major looping or parallel line for AGT. This project does not appear to impact the Dawn Hub, but could have potential negative impacts to Ontario by adding capacity to move gas east to the gas hungry New England market.

#### **Empire Pipeline - Central Tioga Extension (14)**

This proposed project by Empire Pipeline would further extend the pipeline's southernmost receipt point from the NY/PA border another 25 miles into Tioga County, PA to a new interconnection with Tennessee Gas Pipeline. This expansion further allows the pipeline to offer Marcellus production as an alternate source of gas supply and a possible substitute for imported gas from Canada. This project has not yet been filed with the FERC and has a late 2015 expected start date.

#### **Constitution Pipeline (15)**

Constitution Pipeline is a new green field transmission line to receive Marcellus gas produced in northeast Pennsylvania around Susquehanna County and deliver it to interconnections with



Iroquois Gas Transmission and Tennessee Gas Pipeline in Schoharie, NY. The project will be funded by Williams Partners, Cabot Oil, and Piedmont Natural Gas using a Williams affiliate to build and operate the new 121 mile, 30 inch pipeline. Constitution Pipeline will have a capacity of 650 MMcfd, and a planned start date of March 2015. This project appears to have replaced other projects such as Iroquois NYMarc, which proposed transporting natural gas across eastern New York. This project is considered active in the current GMM build stack as the most likely to move forward. This project does not appear to impact the Dawn Hub, but could have indirect impact by providing an alternate delivery source to Iroquois Gas Transmission which brings gas south from Ontario though an interconnect with TransCanada at Waddington.

#### 3.4 Pipeline Projects Included in the ICF Base Case Forecast

ICF regularly reviews gas pipeline projects planned for the US and Canada for inclusion into the ICF Base Case Forecast. Not all of the projects that have been proposed by the various pipeline companies will be developed. Certain projects represent competing options proposed by different companies to serve the same shipper requirements. Some of these projects will be merged with other projects, or dropped if the market determines the competing option to be more attractive. Other projects may not receive sufficient market support to justify continued development.

The ICF Base Case Forecast includes the projects that we believe will be developed. ICF includes specific projects in the forecast after project development has advanced to the point where the specific project has received the request for contractual support or momentum to receive a Certificate from the FERC. If multiple projects are proposed that target the same market with similar size and path, and if ICF concludes that sufficient market support will exist to support one or more of the projects, ICF will include a "generic" project in the forecast, rather than pick a "winner" from the various competing projects. Similarly, in for the period that is four or more years in the future, ICF will examine the likely developments that may support projects that have not yet been announced. ICF will include pipeline expansions when demand for additional pipeline capacity indicates that expansion would be economic.

The named projects included in the ICF Base Case natural gas market forecast are listed below by expected year of completion:

Projects expected to be completed and likely enter service in 2013 include:

- Millennium Pipeline Minisink Compression (1A) and Hancock Compression (1B)
- Texas Eastern & Algonquin NY-NJ Expansion (2)
- Tennessee Gas Pipeline Northeast Upgrade Project (3)
- Tennessee Gas Pipeline MPP Project (4)
- TransCanada Pipeline Eastern Mainline Expansion –Parkway Project Loops (5)



- Transcontinental Pipeline Northeast Supply Link (6)
- Dominion Tioga Area Expansion (8)

Projected expected to be completed and likely enter service in 2014 include:

- Texas Eastern Transmission TEAM 2014 (7)
- Tennessee Gas Pipeline Rose Lake Expansion (9)
- Transcontinental Pipeline Northeast Connector w/Rockaway Delivery Lateral (10)
- NiSource companies Columbia Gas and Columbia Gulf West Side Expansions (11)

Projects expected to be completed and likely enter service in 2015 include:

• Constitution Pipeline (15)

Beyond 2014, ICF also includes a number of generic pipeline projects in our Base Case forecast. Generic projects include pipeline expansions in markets where more than one proposal is currently active and it is not possible to determine which project will proceed, as well as in markets where our projections indicate that new pipeline capacity will be required, but the time frame is too far into the future for companies to have developed any specific project proposals. The generic projects often resemble actual proposed projects that have yet to receive construction approval.

The following exhibit lists generic expansions included in the ICF January 2013 Base Case that are likely to impact gas markets at the Dawn Hub and in Ontario and Quebec.

Exhibit 40: Northeast and Midwest U.S. Generic Expansions
theast and Midwest US Generic Expansions

Northeast and Midwest US Generic Expansions		Capacity	Planned In
Pipeline - Expansion Name	Area	(MMcfd)	Service
Generic - Marcellus/Utica to Midwest	Marcellus/Utica to Lower Midwest	350	Nov-15
Generic - Marcellus to South Atlantic	Marcellus/Utica to South Atl (Western Route)	650	Nov-15
Generic - Marcellus to Ontario	Marcellus/Utica to Upper Midwest and Ontario	1000	Nov-16
Generic - Marcellus to South Atlantic	Marcellus to South Atl (Eastern Route)	700	Nov-17
Generic - Chicago-Michigan-Dawn	Vector Corridor - Chicago through Michigan to Dawn	500	Nov-18
Generic - Marcellus to Mid-Atlantic	Marcellus WV to Mid-Atlantic	200	Jun-20
Generic - Chicago-Michigan-Dawn	Vector Corridor - Chicago through Michigan to Dawn	500	Nov-21
Generic - Marcellus to Mid-Atlantic	Marcellus WV to Mid-Atlantic	500	Jan-25

The generic pipeline expansion projects included in the ICF Base Case include several pipelines to provide backhaul capacity or new pipe to deliver Marcellus and Utica gas from western Pennsylvania and eastern Ohio to markets in Ohio and Indiana. The Marcellus to Lower Midwest Generic project represents projects like Spectra's OPEN project or Quick Link by NiSource.

Marcellus gas is also expected to replace gulf supplies in the south Atlantic markets around Virginia and the Carolinas. Projects like Commonwealth Pipeline, Atlantic Access and Virginia



Southside by Williams, and the Columbia's East Side Expansion are all seeking to move eastern Pennsylvania gas southward.

Gas produced in the Marcellus and Utica formations is also projected to move northward out of Ohio through Michigan to Ontario. The ICF Base Case includes construction in 2016 of a generic project similar to the proposed Spectra NEXUS project to transport gas from Ohio to Toronto. The Marcellus to Ontario generic project is built as a 1 Bcf per day of capacity from Ohio to Michigan and a 500 MMcfd of capacity into Ontario.

The current ICF Base Case also includes two generic expansions across Michigan from Chicago to Ontario in 2018 and 2021 of 500 MMcfd each. These expansions facilitate movement of gas coming to Chicago from the northern Rockies or Western Canada shale formations, as well as mid-continent gas displaced from eastern markets by Marcellus projection, to markets further downstream in Ontario or Quebec. These projects will increase capacity into Ontario in addition to what is planned coming from Ohio.

The ICF Base Case also includes construction of sufficient additional capacity between Parkway and Maple by TransCanada to match the increase in demand facilitated by the additional capacity into Dawn from these projects as well as expansion of receipt point capacity and other associated facilities needed to increase capacity on the TransCanada system from Niagara to Kirkwall sufficient to meet demand.



# 4 Outlook for Future Gas Market Activity around the Dawn Hub

Traditionally, the majority of natural gas supplies delivered to Quebec were sourced from the Western Canadian Sedimentary Basin, and transported through Ontario to Quebec on the TransCanada Pipeline and TQM pipeline. Gaz Métro has also purchased natural gas at Dawn. Gas purchased at Dawn includes a mix of gas originally produced in Canada as well as locations in the United States, including gas from the Gulf Coast, Rocky Mountains, Marcellus shale and other sources. The gas purchased at Dawn is typically transported to Quebec via Union Gas and TransCanada Pipelines.

However, two major natural gas market trends are changing this pattern. The first major trend is the declining availability of natural gas available from the Western Canadian Sedimentary Basin. The second is the rapid growth in natural gas production in the Eastern U.S. from the Marcellus and Utica shale formations.

The conventional gas formations Western Canada that have provided the majority of gas production transported into Quebec are maturing and incapable of maintaining the production levels of the last decade. In addition, the development of unconventional resources in Western Canada has lagged compared to the development of unconventional resources in other locations including those in the Eastern United States. Moreover, the development of these resources is increasingly tied to the growth in gas requirements in other markets, notably the growing requirements in Western Canada, including the requirements for oil sands projects and the market for LNG produced in Canada and sold into the Pacific Rim markets. The decline in flows on the TransCanada system has also led to increases in the cost of shipping gas from Western Canada to markets in Quebec, which has further reduced flows on the TransCanada Mainline to Eastern markets.

The second major trend has been the increase in unconventional natural gas production in the U.S. due to improvements in shale gas recovery technologies. In the last four years, the Marcellus shale gas basin in the Eastern U.S. has become the largest natural gas producing region in the U.S., with more than 7 Bcf per day of natural gas production in 2012. Natural gas produced from the Marcellus is displacing natural gas from the WCSB as well as natural gas from the Gulf Coast, Mid-continent, Rocky Mountains and other traditional supply basins in Eastern U.S. and Central Canadian markets. The unprecedented growth in gas production in the eastern United States in the Marcellus and other formations has also moderated expectations for future gas commodity prices throughout North America, reducing economic incentives to develop conventional natural gas resources.

The combined impact of these shifts can be seen in the examination of the movement of gas on the TransCanada Mainline. In the past four years, the amount of natural gas flowing east from Alberta on the TransCanada Mainline has dropped precipitously. ICF is expecting this decline to continue through 2014 before leveling off between 2015 and 2019 (Exhibit 41).



| CF Forecast of Natural Gas Flows on the TransCanada Mainline to Ontario | 4,500,000 | 4,000,000 | 3,500,000 | 3,500,000 | 3,500,000 | 1,500,000 | 1,500,000 | 1,500,000 | 1,000,000 | 500,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,00

Exhibit 41: ICF Forecast of Natural Gas Flows on the TransCanada Mainline to Ontario

During the period from 2015 through 2019, growth in WCSB production, driven by higher prices and development of new shale gas resources, is expected to be greater than growth in Western Canadian natural gas demand, including initial LNG exports from Kitimat.

After 2019, growth in LNG exports from British Columbia and Western Canadian demand is expected to exceed growth in WCSB natural gas production, leading to a long term decline in TransCanada receipts at Empress.

The decline in flows on the TransCanada mainline will be offset in part by continuing growth in production from the Marcellus and Utica shales in the northeastern United States, leading to a short term increase in imports from New York through Niagara (Exhibit 42), and a longer term increase in imports from Michigan through Dawn (Exhibit 43).



Exhibit 42: ICF Forecast of Natural Gas Flows from New York to Ontario

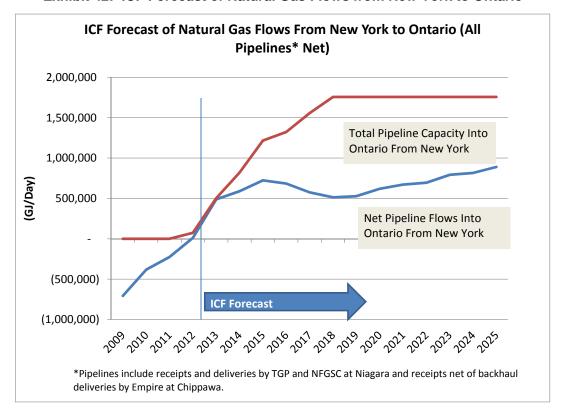
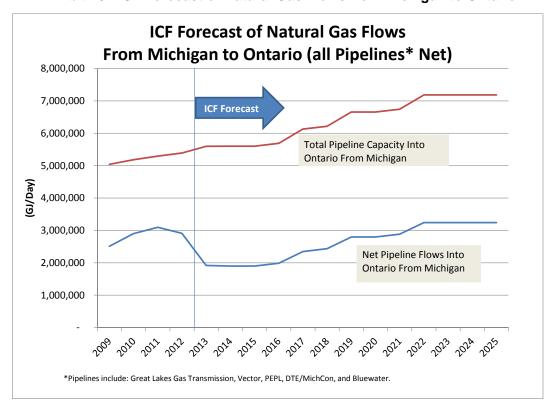


Exhibit 43: ICF Forecast of Natural Gas Flows from Michigan to Ontario





The decline in available natural gas supplies from the WCSB, combined with growth in alternative sources of natural gas in the Northeastern U.S. represents a shift in natural gas markets, leading to a reassessment of future natural gas supply plans by the utilities that have in the past relied on natural gas sourced from the WCSB.

Overall, the decrease in flows to Ontario from the WCSB will be greater than the increase in flows into Ontario from the Marcellus and other sources of U.S. supply, leading to a moderate decline in annual natural gas market flows and activity in Ontario and around the Dawn Hub.

In addition, the flows to Ontario from the WCSB will be impacted by any potential changes to the rates and tariffs on the TransCanada system. However, the nature of any potential changes remain uncertain. On March 27, 2013 the National Energy Board of Canada (NEB) issued the Reasons for Decision in docket RH-003-2011, TransCanada Pipeline's (TCPL) Business and Services Restructuring Proposal and Mainline Final Tolls for 2012 and 2013. The order outlines a fundamental change to the toll setting process for establishing tolls by creating a multi-year fixed toll for service on the mainline. As part of the order, the NEB required TCPL to submit a Compliance Filing by May 1, 2013. TCPL's compliance filing consisted of a Compliance Filing and Application for Review and Variance of the NEB decision (CFARV).

At this time, there is still considerable uncertainty regarding the tolls on TCPL for the next 5 years and beyond. The NEB has been presented with a number of issues within the CFARV. It is not possible at this time to accurately anticipate the decision of the NEB or the outcome of future proceedings and market response to the changes in the regulatory framework. That said, ICF believes that the projections and analysis presented in this report remain an accurate depiction of the gas market fundamentals and options available to meet gas requirement in Québec and Ontario.

#### 4.1 Ontario and Quebec Natural Gas Market Outlook

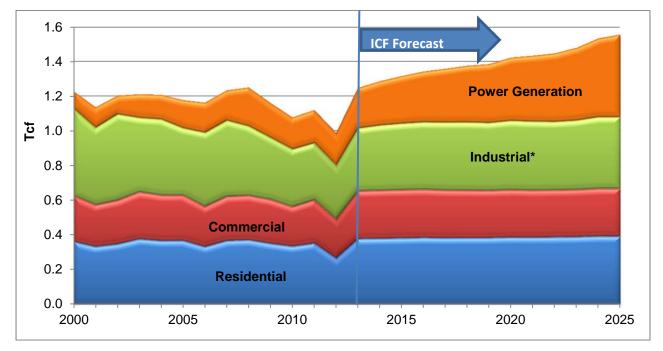
In 2012, about 77 percent of the total natural gas supply entering Central Canada is consumed in Ontario and Quebec (as well as another 9 percent for storage injections), and continuing growth in Ontario and Quebec natural gas demand is expected to support natural gas market activity at Dawn.

Most of the growth is expected to occur in the Ontario power sector (Exhibit 44). Ontario electricity prices are expected to see a rise over the coming decade, adversely impacting the region's energy-intensive industry, but driving some additional growth in natural gas demand, primarily in the industrial sector.<sup>7</sup> Growth in other market areas is modest as demand growth

<sup>&</sup>lt;sup>7</sup> The Conference Board of Canada. "The Role of Natural Gas in Powering Canada's Economy." December 2012: Ottawa, Ontario. P. 7.



from growth in GDP and growth in the number of residential households using natural gas is offset by improvements in equipment efficiency.



**Exhibit 44: Central Canadian Natural Gas Consumption by End Use** 

Source: ICF GMM® Jan 2013

#### 4.2 Changes in Natural Gas Prices

The Dawn Hub is also expected to benefit from changes in North American natural gas price relationships. Prices at Dawn are expected to average \$0.39/MMBtu higher prices than those seen at Henry Hub (in real prices) between 2012 and 2025. This price differential is expected to peak in 2015 at \$0.51/MMBtu, stabilizing at around \$0.30-\$0.33/MMBtu) in the early 2020s. These price differentials reflect declining prices around Henry Hub as Marcellus gas displaces Gulf Coast gas in Northeastern and Mid-Atlantic markets. As infrastructure development into Dawn catches up to recent supply gains, the Dawn price differential with Henry Hub and other hubs will stabilize (Exhibit 45).

<sup>\*</sup> Includes lease & plant and pipeline fuel



\$7.00
\$6.00

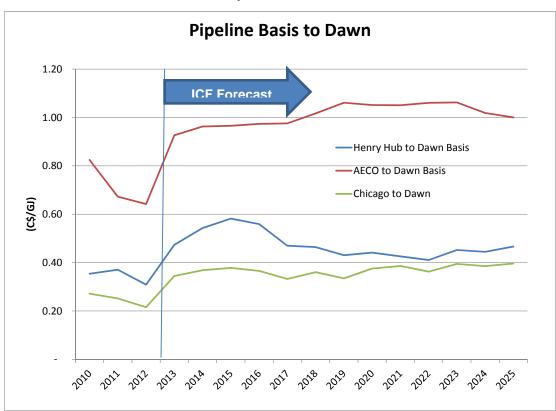
\$5.00
\$4.00
\$1.00
\$0.00

\$1.00
\$0.00

Henry Hub
AECO
Chicago

**Exhibit 45: Average Annual Natural Gas Prices** 

Source: ICF GMM® Jan 2013



**Exhibit 46: Pipeline Basis to Dawn** 

Source: ICF GMM® Jan 2013



The decline in U.S. Northeast prices, due to Marcellus production, is expected to be reflected in Dawn Canadian prices, as well. As a result Marcellus shale gas will remain cheaper than importing from Alberta, given the market prices in different regions and the transportation costs associated with moving natural gas from the production region into Central Canada. In addition, the region's ability to improve access to Marcellus product will limit price fluctuations.

#### 4.3 Changes in Natural Gas Supply to the Dawn Hub for Key Pipelines

The projected decline in natural gas flows into the Dawn Hub is concentrated on the TransCanada Mainline (Exhibit 47). In the longer term, after completion of pipeline expansion projects to bring Marcellus gas to Dawn, and to expand capacity along the Vector pipeline corridor, ICF is also projecting a moderate decline in flows on GLGT (Exhibit 48 through Exhibit 50).

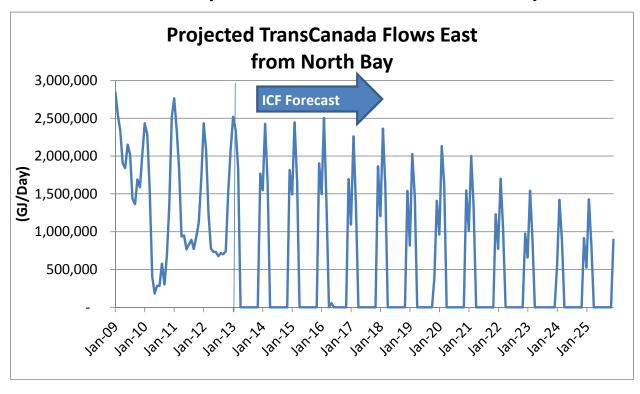


Exhibit 47: Projected TransCanada Flows East from North Bay



Exhibit 48: Projected Net TransCanada Receipts from Great Lakes at St. Clair

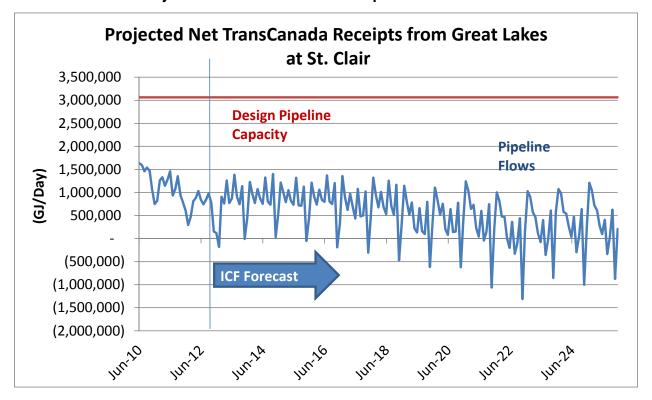
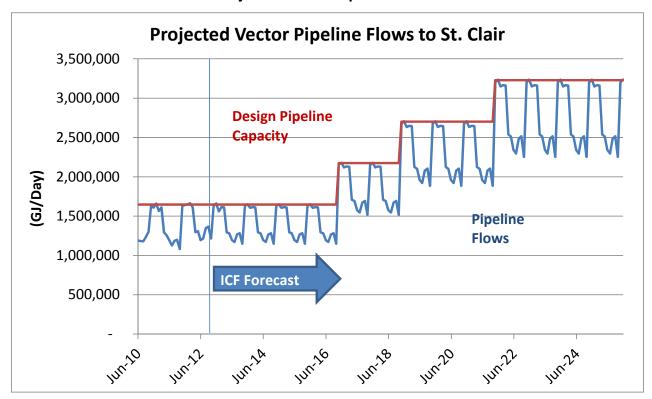


Exhibit 49: Projected Vector Pipeline Flows to St. Clair





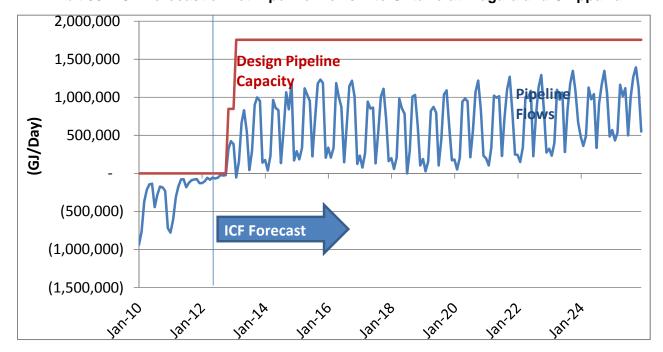


Exhibit 50: ICF Forecast of Net Pipeline Flows into Ontario at Niagara and Chippawa

#### 4.4 Natural Gas Exports to the United States

Prior to 2007, about 40 percent of the total natural gas delivered to Ontario was exported to the U.S. Northeast. However, as conventional natural gas production in Western Canada has declined, and as natural as production in the Northeastern U.S. has increased, exports have declined substantially. The majority of the decline in exports has been seasonal. Peak winter flows have not changed significantly.

ICF is projecting these trends to continue. The total volume of exports on both Iroquois and PNGTS is expected to continue to decline. However, peak period exports on PNGTS are expected to remain at capacity. Exports on the Iroquois pipeline during peak periods are expected to decline somewhat as pipeline capacity expansions from the Marcellus interconnect with the Iroquois Pipeline downstream of the international border at Waddington, reducing effective export capacity. For both pipelines, exports will become more seasonal, with only limited flows during the summer.

ICF is forecasting no export volumes through Niagara in the future. Instead, net imports to Ontario through Niagara will continue to increase over time as Marcellus production increases and new pipeline capacity additions increase the ability to move gas from the Marcellus to Niagara. The imports through Niagara are expected to be highly seasonal, peaking in the summer due to limited demand for Marcellus gas exists in the Northeast and when storage capacity is available in Ontario.



Exhibit 51: ICF Forecast of TransCanada Deliveries to Iroquois

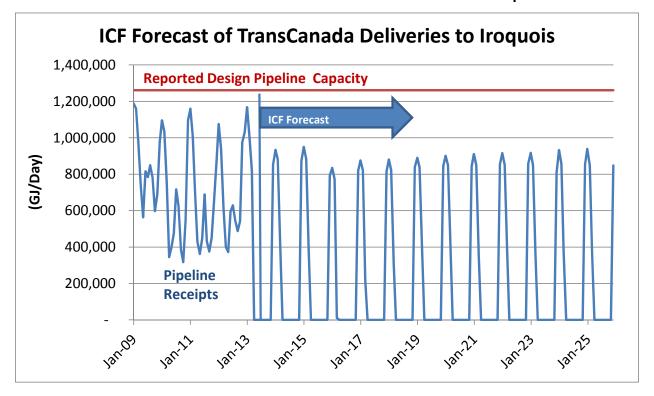
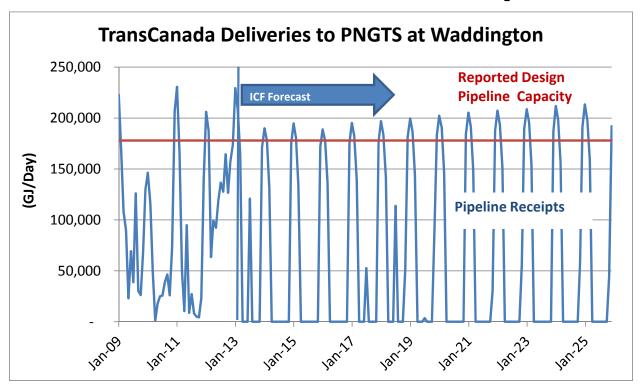


Exhibit 52: TransCanada Deliveries to PNGTS at Waddington

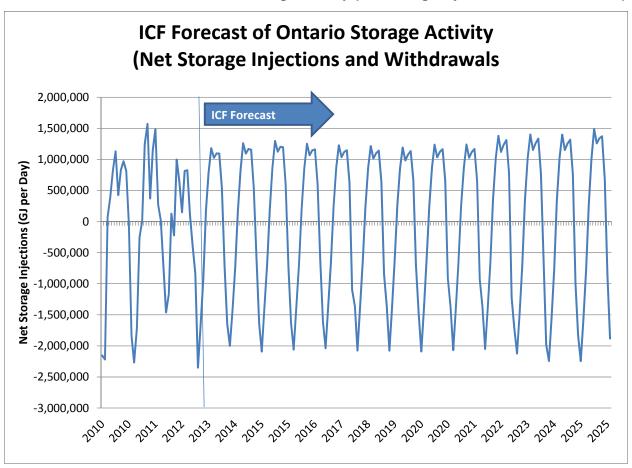




#### 4.5 Ontario Natural Gas Storage Activity

The natural gas storage capacity located in and around the Dawn Hub is one of the defining characteristics of the Dawn market. The decline in flows into Ontario from the WCSB has not significantly affected natural gas storage activity in the province. The impact of the decline in annual volumes has been offset by an increase in the seasonality of the gas market activity around the Dawn Hub, leading to continuing utilization of the Ontario storage facilities tied into the Dawn Hub. In addition, imports of Marcellus gas from Niagara will be concentrated during the summer, while exports on Iroquois and PNGTS will become increasingly concentrated in the peak winter months. The change in seasonality is expected to lead to a continuation of high utilization of existing storage facilities around Dawn, as well as moderate growth in future storage capacity and storage capacity utilization around Dawn.

**Exhibit 53: ICF Forecast of Ontario Storage Activity (Net Storage Injections and Withdrawals)** 





# 5 Supply Uncertainties Potentially Impacting Gas Market Activity and Liquidity at the Dawn Hub

This chapter discusses the various uncertainties associated with gas supply availability and liquidity at the Dawn Hub. These uncertainties include WCSB production as well as competing demand sources, such as oil sands development and LNG exports in Western Canada. In addition, changes in tolling and movements on the TCPL Mainline, as well as potential Parkway-Maple obstructions, and New England natural gas demand and infrastructure development have the potential to impact gas markets served by the Dawn Hub, including Gaz Métro.

#### 5.1 TransCanada Mainline Uncertainties

#### 5.1.1 Parkway-Maple Pipeline Capacity Constraints

The NEB recently approved TransCanada to expand the eastern Mainline from Parkway to Maple. The project which includes additional compressor capacity at Maple, as well as a partial looping of the Parkway to Maple pipeline adds sufficient capacity to meet near term requirements. However, additional capacity from Parkway to Maple is expected to be required in the future to meet growing market requirements. A complete looping of the Parkway to Maple pipeline is a difficult construction project, with a construction needed near downtown Toronto. Citing these construction difficulties, TransCanada has proposed that it obtain Marcellus gas supplies, then ship them westward from Dawn to Winnipeg, Manitoba before shipping eastward to Central Canadian markets on the Mainline as an alternative to construction if required to meet requirements.

However, ICF's projections indicate that the "around –the-horn" option will be insufficient to meet future market growth, particularly if TransCanada converts some mainline pipeline assets from natural gas to crude oil transportation as has been proposed by the Company. Failure to increase Parkway to Maple capacity likely would constrain future market growth at Dawn.

#### 5.1.2 TransCanada Response to Market Changes

The projected declines in mainline throughput create significant challenges for TCPL and shippers on the pipeline. In the past three years, TCPL Mainline tolls have almost doubled, from \$1.19 per GJ to \$2.24 per GJ 100-percent load factor rate for transportation from Empress to the Eastern Delivery Zone. Over this period, TCPL and its shippers have participated in an intensive effort to develop acceptable tolls that address the threat that TCPL service is not competitive. Despite this effort, a settlement has not yet been reached. On September 1, 2011, TCPL proposed modifications in the toll structure to increase the competitiveness of gas transported east on the Mainline. The modifications proposed by TransCanada included deferral of costs and adjustment of depreciation in order to attempt to restrain the toll increases that accompany reductions in contract and throughput volumes. TransCanada also proposed to extend the Alberta System to the east, effectively shifting some of the costs of the mainline



pipeline system to the Alberta System, and increasing rates to Alberta shippers and customers on the NGTL system.

TransCanada policies designed to maintain Mainline flows could increase the difficulty of market transactions at Dawn, reducing liquidity and market activity.

#### 5.1.3 Impact of TCPL Mainline Tolls on Producers

The resolution of the issue of the TCPL Mainline tolls is a critical uncertainty that will affect the balance of supply and demand in Alberta and British Columbia, including production levels and the amount of gas available to be transported via TCPL and other pipelines to markets outside of the province.

Lower tolls on the TCPL Mainline would result in a higher "netback" price for gas production in the WCSB, making development of the Canadian shale resource more economic. Conversely, if a resolution to the TCPL tolls proceeding does not result in sustainable and competitive tolls, prices in Alberta can be expected to decrease relative to prices in other North American supply basins, leading to lower overall production levels.

Higher tolls on the TransCanada Mainline will also increase the incentive for producers to look for markets that do not rely on the TransCanada Mainline system, including Alliance Pipeline, and world LNG markets through exports from the Pacific coast.

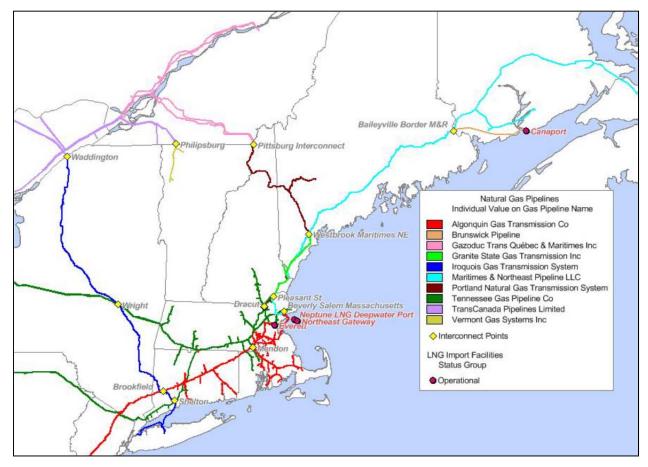
#### 5.2 Natural Gas Pipeline Capacity into New England

New England receives pipeline imports from the U.S. Gulf Coast and more recently the neighboring Marcellus Shale via the Algonquin Gas Transmission (AGT) and Tennessee Gas Pipelines (TGP) (see exhibit below). In addition, the region also depends on pipeline gas imports from Canada on the Iroquois Gas Transmission (IGT), the Portland Natural Gas Transmission (PNGTS), and the Maritime Northeast Pipeline (M&N).<sup>8</sup>

While New England has maintained pipeline imports from Canada through the PNGTS and Iroquois pipelines, the region's supply access issues have been compounded by the decline in offshore Sable Island production (connected to the M&N pipeline), as well as the continued delays in Encana's Deep Panuke gas project off the coast of Nova Scotia.

<sup>&</sup>lt;sup>8</sup> Flows on the M&N Pipeline are partially dependent on imports into the Canaport LNG import facility.





**Exhibit 54: Natural Gas Delivery into New England** 

Source: Assessment of New England's Natural Gas Pipeline Capacity to Satisfy Short and Near-Term Electric Generation Needs, ICF

Although the U.S. Northeast is seeing tremendous growth in gas supply, due largely to the Marcellus and Utica shales, the region remains short of power generation capacity, despite the recent and forecasted significant growth. Even including all pipeline capacity on the Iroquois pipeline and the Portland (PNGTS) transmission system, the market in New England does not have sufficient capacity to meet the simultaneous requirements of the local gas distribution companies (LDCs) and the gas-fired generators in the New England states. There will be tremendous competitive pressure to draw gas supply into New England during peak periods, which has the potential to draw gas from Ontario and Quebec and increase gas prices in the region.

Because of structure of the electric market in the New England Independent System Operator (ISO-NE), the electric generators on peak/constrained day have been willing to pay extremely high prices (up to \$74/MMBtu). To the extent that Central Canada accesses more gas supply to deliver through PNGTS and Iroquois, the pipelines in eastern Canada (i.e., TCPL – TQM system extension), could achieve higher utilization rates. With higher utilization, the rates paid by Central Canadian consumers could decrease.



The alternative for New England would be new pipeline capacity directly from Marcellus. In this instance, the throughput on TCPL in the eastern zone and TQM would decline further, placing even greater upward pressure on the tolls.

In addition, given the high volatility in New England's gas prices, as well as precarious nature of current supply, coal, oil, and hydro imports are seen during peak-shaving times to reduce the amount of gas-fired generation needed, in an effort to keep gas prices low. Even with these load-shedding mechanisms, gas prices remain high in the region. While these gas prices reflect the need for additional pipeline capacity, paradoxically, the high gas prices have led to an underutilization in pipelines such as PNGTS, which in turn affect prices at Dawn (and in turn, Gaz Métro).

#### 5.3 Economic Pressure to Maintain U.S. Gas Production

Dry gas production in the Marcellus Shale has grown exponentially since the mid-2000s, a trend that ICF expects will continue over the foreseeable future. Indeed, ICF's own projections for Marcellus dry gas production for 2025 was raised over 50 percent the third and fourth quarters of 2012, illustrating the uncertain yet increasing trend in shale gas production forecasts. Although unconventional gas production is still an emerging industry, there is a growing understanding that Marcellus natural gas will displace gas flowing from other locations (such as the declining conventional WCSB production areas) into both Central Canada and the U.S. Northeast.

Despite the tremendous growth in Marcellus production over the past five years, however, some uncertainty remains as to actual production rates over the next decade. The timing of the development of the infrastructure, including gas processing and natural gas liquids pipelines, are the factor rate at which dry gas production continues to grow.

While high Marcellus production would lead to greater potential flows to Central Canada, thereby backing out supply sources from other areas (such as WCSB), an increase in Marcellus flows also would result in lower volumes on the TransCanada Mainline, accelerating a potential "toll spiral" that would increase pipeline costs to consumers and decrease the competitiveness of gas supplies from Western Canada.

#### 5.4 Environmental Concerns and Impact on Natural Gas Supply

Environmental concerns related to unconventional natural gas production techniques (i.e., hydraulic fracturing, horizontal drilling) add to the natural gas supply uncertainty from all unconventional gas supplies, including resources in Western Canada.

Unconventional production technologies are now widely applied and allow wells to follow the shale beds, allowing greater contact with the shale rock layers. Horizontal drilling allows the



well bore to access thousands of feet of gas-producing rock. Advanced techniques for hydraulic fracturing of the shale create pathways for the gas to migrate to the well bore. Sand, along with small amounts of chemicals added to in the fracturing water help to facilitate the flow of gas into the well bore. When combined, these technologies can produce extremely large volumes of gas from a single well.

The main contention is related to water issues, including groundwater protection, fracking fluids content, chemical use, and disclosure in fracking fluids, as well as air emissions and seismic activity (of underground wastewater disposal, rather than fracking itself). There is fairly widespread public concern that shale gas production lacks effective environmental regulation. While shale gas production will continue to see additional governmental oversight as regulation catches up with the nascent technology, shale gas is still subject to the legislation and regulations governing conventional oil and gas production. The most stringent shale-specific regulations will likely be adopted at the provincial level first, given the region-specific nature of shale gas drilling. While regulatory action may result in some limitations on drilling in some sensitive areas and added costs of production in certain areas, these effects are factored into the GMM baseline.

The environmental uncertainty related to shale gas development creates several different types of uncertainty in the market. A potential ban on drilling in Pennsylvania would dramatically reduce natural gas availability from the Marcellus, leading to higher gas prices and additional supply uncertainty for Central Canadian consumers. While such an event is unlikely, given the relatively new stage of shale gas production, concerns over the production technique and long-term implications persist, limiting production in such areas as New York and Quebec, among others.

A more likely outcome will be stronger shale-specific regulatory measures to address these environmental concerns. These regulations may increase production costs, though not prohibitively (according to ICF's estimates). As the public learns more about the shale gas development process, it is also possible that the bans in New York and Quebec may be lifted, leading to an increase in natural gas supply and lower prices.



## 6 Conclusions

Based on our review of the expected changes in natural gas markets between 2012 and 2025, ICF expects the Dawn Hub to continue to be a major natural gas market center, with sufficient supply availability and market liquidity to ensure its viability as a reliable source of natural gas supply.

For the past few years, the total volume of natural gas supply utilizing the Dawn Hub has been declining due to the decrease in flows through the Province, including the decline in supply from the WCSB and the decline in exports to the Northeastern U.S. However, any future declines in exports from Central Canada to U.S. markets will be offset by growth in demand in Ontario and Quebec, and the decline in WCSB gas supply will be offset by imports from the Marcellus via Niagara and Dawn, leading to slow growth in natural gas market activity around the Dawn hub.

The impact of the decline in annual volumes has been offset by an increase in the seasonality of the gas market activity around the Dawn Hub, leading to continuing utilization of the Ontario storage facilities tied into the Dawn Hub. Going forward, imports of Marcellus gas from Niagara will be concentrated during the summer, while exports on Iroquois and PNGTS will become increasingly concentrated in the peak winter months. The change in seasonality is expected to lead to a continuation of high utilization of existing storage facilities around Dawn, as well as moderate growth in future storage capacity and storage capacity utilization around Dawn.

The ICF conclusion concerning the Dawn Hub is based on our assessment of the impact of the changes in natural gas markets on activity in and around the Dawn Hub. As shown in Exhibit 55, ICF is projecting annual flows into Dawn from Michigan to increase by 793 MMcfd from 2,562 MMcfd in 2012 to 3,355 MMcfd in 2015. The Dawn Hub will also benefit from the increase in annual flows into Ontario from New York. Annual flows into Ontario along this path are projected to increase by 729 MMcfd, from 106 MMcfd in 2012 to 835 MMcfd in 2025.

Along both paths to Dawn, the majority of the incremental gas supply is expected to come from growth in Marcellus and Utica production. However, ICF also projects an increase in gas flowing into Dawn along the Vector Pipeline corridor, as Marcellus production displaces natural gas from the Mid-continent and Gulf Coast supply basins into East Coast markets, increasing gas supply availability into the Chicago market.

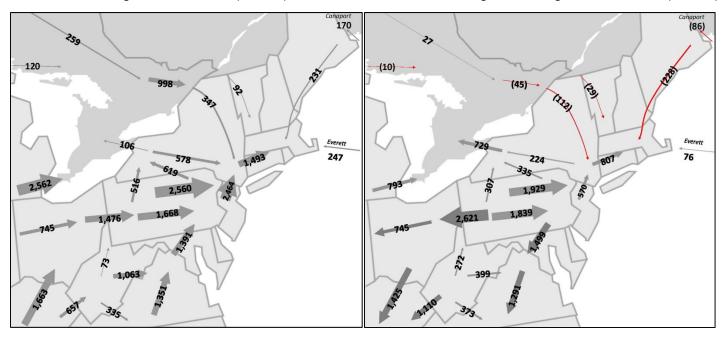
The increase in flows from the Marcellus into Ontario, both via Niagara and Michigan are expected to be seasonal in nature, peaking during the summer. The regional demand markets in the U.S Northeast and Middle Atlantic are highly seasonal, with demand peaking in the winter. Marcellus production will directly serve much of this regional demand. As a result, the end-use market for Marcellus production will drop substantially during the remainder of the year, and the demand for storage capacity with pipeline access to the Marcellus is expected to remain very robust. Producers and consumers are expected to continue to utilize the storage capacity in and around Dawn to take advantage of the seasonal gas supplies.



**Exhibit 55: Change in Regional Marcellus Production Growth Impact** 

2012 Average Annual Flows (MMcfd)

2012-2025 Change in Average Annual Flows (MMcfd)



Source: ICF GMM® Jan 2013

The expected growth in readily available natural gas supply, access to a wide and increasing variety of both upstream and downstream markets, and the availability of significant natural gas storage capacity in a storage-constrained market is expected to lead to continuing health of the natural gas market at Dawn, and Dawn should continue to provide sufficient liquidity to provide the required level of reliability for Gaz Métro.

As increasing volumes of Marcellus gas and other sources of unconventional gas are made available to the market, shippers will review and may adjust contract portfolios to access these supplies. Some of the pattern changes have already taken place, a trend that will likely continue. With these changing patterns, it is highly likely that shippers will continue to make adjustments in transportation contract portfolios as current contract obligations expire.

However, continued growth of the Dawn market is contingent on continued investment in the natural gas transportation system needed to increase capacity to Dawn from the Marcellus and Utica basins, and to address pipeline constraints downstream of Dawn, including the Parkway-to-Maple constraint on the TCPL system.

TCPL is expanding capacity from Parkway to Maple, including both pipeline looping and compression projects to meet contracted demand. TCPL can also move gas "around the horn" from Dawn back along GLGT to Emerson, and then along the Northern Mainline system to Maple to bypass the Parkway-to-Maple constraint as an alternative to flowing gas from the Dawn Hub to Maple. However, ICF is projecting that growth in gas supply into Dawn will exceed the available capacity to transport gas from Dawn to Quebec via the TCPL Northern



Mainline if the capacity on the TransCanada system from Parkway to Maple is not further expanded. Failure by TransCanada to address the Maple constraint would significantly limit the expected growth in the value of Dawn as a gas market center to consumers downstream of the constraint.

In addition, New England's gas delivery system has not yet caught up to the region's supply, meaning that New England will see continued price volatility, particularly in the power sector, over the next several years. This volatility will reverberate through the gas network, affecting prices at Dawn and other markets, as well.

Other uncertainties around ongoing environmental concerns associated with hydraulic fracturing and economic pressures in the U.S. to maintain low gas prices and supply could mean less access to U.S. natural gas supplies for Central Canada.



# **Appendix A: Pipeline Capacity and Flow Data**

ICF has evaluated the pipeline capacity and pipeline flows on the pipelines flowing into and out of Ontario and the Dawn Hub using publicly available data. These pipelines include:

- 1) Panhandle Eastern Pipeline at Ojibway
- 2) MichCon at St-Clair
- 3) Bluewater Gas at Bluewater
- 4) Vector
- 5) TCPL at Niagara and Chippawa (TGP, NFGSC, Empire)
- 6) Great Lakes
- 7) TCPL at Kirkwall
- 8) TCPL at Parkway
- 9) Enbridge at Dawn (Tecumseh) and Dawn (TSLE)
- 10) Union from storage site at Dawn

The evaluation includes a comparison of pipeline load factor over the historical time period starting January 2009, subject to availability of public data. The historical flow data on pipeline imports from the U.S. to Canada on the major interstate pipelines and on TransCanada is available for the full time period. Flows on pipelines into and out of the Dawn Hub are generally available starting in June of 2010. Flow data on pipelines within the Dawn Hub, including Enbridge at Dawn (Tecumseh) and Dawn (TSLE), and Union from storage site at Dawn are not generally available. Where data is not publicly available, ICF has estimated flows and capacity based on publicly available aggregate data, and on ICF's analysis of gas market activity.

ICF then evaluated the expected impact of changes in natural gas market conditions on each pipeline for the period from 2013 through 2025, and projected pipeline flows on each major pipeline corridor. On certain corridors, where ICF's gas market model aggregates more than one pipeline, the projections capture the major regional flows, rather than flows at the specific points. For example, the ICF forecast of flows between Ontario and New York at Niagara reflect total flows on Tennessee Gas Pipeline and National Fuel Gas Supply Corporation through Niagara, and Empire Gas Transmission flows at Chippawa.

We have also included storage inventory and storage capacity data for all of the Ontario storage companies including Union Gas and Enbridge. This data is publicly available in response to the OEB STAR proceeding on a monthly basis. The monthly storage inventory data has been used to estimate average daily storage injections and withdrawals on a monthly basis.



#### A-1 Overview of Pipeline and Storage Capacity and Flow Data

#### **General Notes**

- Except where noted, all flow and capacity data included in this report is publicly available from the pipeline bulletin boards on a daily basis and was collected by ICF, or is based on ICF forecasts of pipeline capacity and flows from the ICF January 2013 Base Case gas market forecast.
- 2) Where no public pipeline flow data is available, ICF has estimated pipeline flow and capacity data based on available information. Estimated flow data is based on available flow data from other periods and ICF forecasts of flows using the ICF GMM. Estimated capacity data is based on industry presentations, open season announcements, and ICF evaluation of pipeline flows.
- 3) Where multiple sources of data exist, (for example, Great Lakes receipts and deliveries at St. Clair are reported by both GLGT and TransCanada), we have compared the available data to ensure consistency.
- 4) Where multiple sources of data exist, we have used the data source that ICF deemed as being most consistent with the rest of the data in order to minimize data inconsistencies and data conversion issues.
  - a. If TransCanada reports the data series, we have used the TransCanada data.
  - **b.** Otherwise if Union reports the data series, we have used the Union Gas data.

#### Notes on Key Data Series

- Panhandle Eastern Pipeline Deliveries at Ojibway: We have used Union Gas Pipeline receipt data and capacity data at Ojibway. This data is available from June 16, 2010 through the end of the assessment period.
- 2) <u>MichCon Deliveries at St. Clair</u>: We have used Union Gas Pipeline receipt data and capacity data for receipts from MichCon at St. Clair. MichCon deliveries at St. Clair are reported only by Union Gas, and are available only since June 16, 2010. The Union Gas series is labeled "St. Clair to Dawn" and reflects DTE flows from Bell River Mills delivered to Dawn.
- 3) <u>Bluewater Gas at Bluewater</u>: We have used Union Gas Pipeline receipt data and capacity data for receipts from Bluewater at Dawn. This data is available from June 16, 2010 through the end of the assessment period.
- 4) <u>Vector Pipeline Deliveries to St. Clair</u>: Vector pipeline deliveries and capacity to St. Clair are reported by Vector Pipeline and are converted from MMBtu to GJ. Vector



Pipeline reports both operational and design capacity values. Operational capacity generally exceeds design capacity.

- 5) Niagara: Three pipelines provide service between Ontario and New York in the region around Niagara. These include the Tennessee Gas Pipeline (TGP) interconnect with TransCanada at Niagara, the National Fuel Gas Supply Corporation (NFGSC) interconnect with TransCanada at Niagara, and the Empire Gas Transmission (Empire) interconnect with TransCanada at Chippawa. We have used TransCanada Pipeline receipt and delivery for each of these three interconnects. Capacity data is from the operational capacity postings for the points by TGP, NFGSC, and Empire. Until November of 2012, the Niagara interconnect between TCPL and TGP and NFGSC was used primarily to export natural gas from Ontario to New York. New facilities brought online in November 2012 allowed up to 482,000 GJ per day of natural gas to be imported to Ontario from New York at Niagara from TGP and 371,000 GJ per day of natural gas to be imported to Ontario from New York at Niagara from NFGSC.
- 6) Great Lakes Gas Transmission (GLGT) at St. Clair: We have used TransCanada Pipeline flow data and GLGT capacity data for receipts and deliveries of natural gas between GLGT and TCPL at St. Clair. TransCanada began delivering significant volumes of natural gas to GLGT at St. Clair in November of 2011. GLGT reports the same capacity at St. Clair for both receipts and deliveries.
- 7) <u>TCPL at Kirkwall</u>: TCPL at Kirkwall flows are based on TransCanada receipt and delivery data for Kirkwall. TransCanada does not report pipeline capacity.
- 8) TCPL at Parkway: TCPL at Parkway flows are based on TransCanada receipt and delivery data for Parkway. TransCanada does not report pipeline capacity. We have used Dawn to Parkway capacity reported by Union Gas for the period from June 16, 2010 through January 31, 2013. The June 16, 2010 capacity reported by Union Gas is used as a proxy for capacity between January 1, 2009 and June 15, 2010.
- 9) Enbridge at Dawn (Tecumseh) and Dawn (TSLE): No data on pipeline flows or capacity for Enbridge at Dawn (Tecumseh) and Dawn (TSLE) is publicly available. ICF has used data on storage inventories posted by Enbridge to meet Ontario Energy Board STAR requirements to calculate monthly storage injections and withdrawals from Enbridge Tecumseh storage at Dawn.
- 10) <u>Union From storage site at Dawn</u>: No comprehensive data on pipeline flows or capacity from the storage sites at Dawn is publicly available. ICF has used data on monthly storage inventories posted by Union Gas to meet Ontario Energy Board STAR requirements to calculate monthly storage injections and withdrawals from Union Gas storage facilities at Dawn.



Union does provide flow and capacity data for flows to/from Dawn from several independent storage facilities, including St. Clair Storage, Bluewater Storage, Airport Storage, and Tipperary Storage. The Union flow and capacity data for these interconnects are included in the Flow and Capacity database provided to Gaz Métro.

Contract No. ASN001

AGGREGATED STORAGE NOMINATION SERVICES CONTRACT dated as of the 21st day of March, 2013,

UNION GAS LIMITED, a company existing under the laws of the Province of Ontario, (hereinafter referred to as "Union")

- and -

GAZ MÉTRO LIMITED PARTNERSHIP, a limited partnership organized under the laws of the Province of Quebec, acting by its General Partner, Gaz Métro Inc., (hereinafter referred to as "Shipper")

WHEREAS, Union owns and operates a natural gas storage system in south-western Ontario, through which Union offers storage services;

AND WHEREAS Shipper has entered into, and may enter into, one or more long term storage contracts with Union;

AND WHEREAS Shipper wishes to aggregate Storage Accounts with respect to the Participating Storage Contracts into one storage account for the purposes of simplified nominations (the "Aggregated Storage Nomination Services") as defined in Article II herein;

AND WHEREAS, Shipper wishes to retain Union to provide such Aggregated Storage Nomination Services, as set out herein, and Union has agreed, subject to the terms and conditions of this Contract, to provide the Aggregated Storage Nomination Services requested;

NOW THEREFORE, this Contract witnesses that, in consideration of the mutual covenants and agreements herein contained and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereby agree as follows:

#### ARTICLE I - INTERPRETATION AND DEFINITIONS

- 1.01 Divisions, Headings and Index: The division of this Contract into Articles, Sections and Subsections, and the insertion of headings and any table of contents or index provided are for convenience of reference only, and shall not affect the construction or interpretation hereof.
- 1.02 Industry Usage: Words, phrases or expressions which are not defined herein and which, in the usage or custom of the business of the transportation, storage, and distribution or sale of natural gas have an accepted meaning shall have that meaning.



- 1.03 Extended Meaning: Unless the context otherwise requires, words importing the singular include the plural and vice versa, and words importing gender include all genders. The words "herein" and "hereunder" and words of similar import refer to the entirety of this Contract, including the Schedules incorporated into this Contract, and not only to the Section in which such use occurs.
- 1.04 Conflict: In the event of any conflict between the provisions of this Contract (including Schedule 1 and 2) and those of the MPSS, the provisions of this Contract shall prevail over the MPSS. In the event of any conflict between the provisions of this Contract and any of the Participating Storage Contracts, this Contract will prevail.
- 1.05 Currency: All reference to dollars in this Contract shall mean Canadian dollars.
- 1.06 Schedules: Refers to the schedules attached hereto which are specifically included as part of this Contract, and include:

Schedule 1 - Contract Parameters Schedule 2 - Pricing Provisions

- 1.07 Measurements: Units set out in SI (metric) measurement are the governing units for the purpose of this Contract. Units set out in Imperial measurement in parentheses beside their SI (metric) equivalent are for reference only and in the event of a conflict between SI (metric) and Imperial measurement herein, SI (metric) shall prevail.
- 1.08 Price Schedules: "Market Price Service Schedule" or "Union's MPSS" or "MPSS" shall mean Union's Market Price Service Schedule, including the Market Price Service Schedule prices, Schedule "A" (General Terms and Conditions) and Schedule "B" (Nominations), or such other replacement schedule as last adopted by Union and posted to Union's website with at least 30 days prior notice, and shall apply hereto, as amended from time to time, as if incorporated into this Contract.
- 1.09 Definitions: Capitalized terms and certain other terms used in this Contract and not specifically defined shall have the meaning set forth in the MPSS or the Participating Storage Contract unless the context hereof otherwise clearly requires. In the event of any conflict between capitalized terms in this Contract and capitalized terms in any of the Participating Storage Contracts, the definition given to the capitalized terms in this Contract shall govern. In the event of any conflict between capitalized terms in this Contract and capitalized terms in the MPSS, the definition given to the capitalized terms in this Contract shall govern. The following definitions apply to this Contract:
  - (a) "ASN Storage Account" means, on any Day, the sum of all gas balances held by Union for Shipper under the Participating Storage Contracts and shall equal the total quantity of gas received by Union for Shipper's accounts pursuant to the Participating Storage Contracts minus the total quantity of gas delivered to Shipper by Union pursuant to the Participating Storage Contracts. Where the ASN Storage Account is zero or a positive number, Union is deemed to be providing Storage Services to Shipper.
  - (b) "Daily Firm Quantity" shall, on any Day, mean the firm portion of the ASN Maximum Daily Injection Demand if Shipper has nominated injections into the ASN Storage Account for that Day, or the firm portion of the ASN Maximum Daily Withdrawal Demand if Shipper has nominated withdrawals from the ASN Storage Account for that Day.
  - (c) "Participating Storage Contracts" means all long term storage contracts that Shipper:



- i. holds as at the Commencement Date with Union; and
- ii. enters into with Union after the Commencement Date during the duration of the term of this Contract, that both Union and Shipper agree, in their sole discretion, shall be subject to the terms of this Contract.

## ARTICLE II - AGGREGATED STORAGE NOMINATION SERVICES

- Aggregated Storage Nomination Services: For the duration of this Contract, Union and Shipper 2.01 agree that all Shipper's rights considering the Storage Services and nominations with respect to the Storage Accounts under the Participating Storage Contracts shall be suspended and that all of Shipper's other rights and obligations, and Union's rights and obligations, under each of the Participating Storage Contracts shall continue, including Shipper's obligation to pay the Monthly Demand Charge under each of the Participating Storage Agreements. Shipper shall not be able to nominate injection or withdrawal of gas into or from the applicable Storage Account under any of the Participating Storage Contracts for the duration of this Contract. Instead, as at the Commencement Date, all inventory under each Participating Storage Contract shall be deemed to have been transferred to the ASN Storage Account, without incurring any Variable Storage Charges, and Shipper shall nominate, and shall receive, its Storage Services pursuant to this Contract. For greater certainty, the existence of this Contract shall not operate to extend the term of any Participating Storage Contract and upon expiry of a Participating Storage Contract, such contract shall no longer be subject to this Contract. Shipper agrees to the terms and conditions set out herein upon nomination to Union for the provision of the following services (collectively, the "Storage Services"):
  - (a) ASN Maximum Storage Balance, ASN Late Season Balance, ASN Early Season Balance, ASN Maximum Daily Injection Demand, ASN Maximum Daily Withdrawal Demand, Receipt Points and Delivery Points and Fuel Requirements shall be as set out in Schedule 1.
  - (b) Gas Stored by Union:
    - i) Union agrees, on any Day to either receive a quantity of gas from Shipper at the Receipt Point and credit the ASN Storage Account, or to deliver a quantity of gas to Shipper at the Delivery Point and debit the ASN Storage Account, such quantity of gas as Shipper may nominate and Union has authorized for Storage Services; and,
    - ii) Under no circumstances shall Union be obligated to receive a quantity of gas in excess of the ASN Maximum Daily Injection Demand; and Union agrees that it shall, upon the request of Shipper, use reasonable efforts to accept receipt of greater daily quantities, on an interruptible basis, if present or possible future operating conditions permit in Union's sole discretion; and
    - iii) Union shall under no circumstances be obligated to deliver a quantity of gas in excess of the ASN Maximum Daily Withdrawal Demand; and Union agrees that it shall, upon the request of Shipper, use reasonable efforts to deliver greater daily quantities, on an interruptible basis, if present or possible future operating conditions permit in Union's sole discretion.
- 2.02 Accounting for Storage Services: All quantities of gas handled by Union shall be accounted for on a daily basis.



- 2.03 Commingling: Union shall have the right to commingle the quantity of gas referenced herein with gas owned by Union or gas being stored and/or transported by Union for third parties.
- 2.04 Termination: The ASN Storage Account shall be zero as of the date the Contract terminates (the "Termination Date"). If Shipper has more than one Participating Storage Contract that continues beyond the Termination Date, Shipper shall provide notice to Union no later than ten (10) days before the Termination Date as to how to re-allocate the remaining inventory in the ASN Storage Account to the various remaining Participating Storage Contracts. If Shipper has more than one Participating Storage Contract that continues beyond the Termination Date and Shipper fails to provide notice to Union as to how to re-allocate the remaining inventory, then Union shall allocate any remaining quantities to the Participating Storage Contracts in proportion to their respective Maximum Storage Balances. The re-allocation of inventory to any Participating Storage Contract will not result in any Variable Storage Charges. If Shipper does not have a Participating Storage Contract that continues beyond the Termination Date, then any gas remaining in the ASN Storage Account as of the Termination Date shall be immediately forfeited to Union without further recourse, unless transferred to an additional storage service that Shipper has contracted for with Union.

## ARTICLE III - CHARGES AND RATES

Except as otherwise stated herein, the charges to be billed by Union and paid by Shipper for the Storage Services will be those specified in Schedule 2, plus applicable Taxes.

#### ARTICLE IV - PRESSURES

- 4.01 All gas tendered by or on behalf of Shipper to Union shall be tendered at the Receipt Point(s) at Union's prevailing pressure at that Receipt Point, or at such pressure as per operating agreements between Union and the applicable Interconnecting Pipeline as amended or restated from time to time.
- 4.02 All gas tendered by or on behalf of Union to Shipper shall be tendered at the Delivery Point(s) at Union's prevailing pressure at that Delivery Point or at such pressure as per agreements between Union and the applicable Interconnecting Pipeline as amended or restated from time to time.
- 4.03 Under no circumstances shall Union be obligated to receive or deliver gas hereunder at pressures exceeding the maximum allowable operating pressures prescribed under any applicable governmental regulations; nor shall Union be required to make any physical deliveries or to accept any physical receipts which its existing facilities cannot accommodate.

#### ARTICLE V - NOMINATIONS

5.01 Services provided hereunder shall be in accordance with the prescribed nominations procedure set out in Schedule "B" of Union's MPSS.

## **ARTICLE VI - CONDITIONS PRECEDENT**

Intentionally blank.



## **ARTICLE VII - MISCELLANEOUS PROVISIONS**

- 7.01 Assignment: Shipper may not assign this Contract unless:
  - (a) all of the Participating Storage Contracts are assigned concurrently to the same party taking assignment of this Contract;
  - (b) the written consent of Union is obtained, such consent not to be unreasonably delayed or withheld; and
  - (c) any financial assurances as required by Union are provided to Union.
- Notices: All communications provided for or permitted hereunder shall be in writing, personally delivered to an officer or other responsible employee of the addressee or sent by registered mail, charges prepaid, or by facsimile or other means of recorded electronic communication, charges prepaid, to the applicable address or to such other address as either party hereto may from time to time designate to the other in such manner, provided that no communication shall be sent by mail pending any threatened, or during any actual, postal strike or other disruption of the postal service. Shipper contact information, as provided to Union, shall be found on the secured portion of Union's website (the secured portion of Union's website is known as "Unionline"). Union's contact information shall be displayed on the unsecured portion of Union's website. Any communication personally delivered shall be deemed to have been validly and effectively received on the date of such delivery. Any communication so sent by facsimile or other means of electronic communication shall be deemed to have been validly and effectively received on the Business Day following the day on which it is sent. Any communication so sent by mail shall be deemed to have been validly and effectively received on the seventh Business Day following the day on which it is postmarked.

Notwithstanding the above, nominations shall be made by facsimile or other recorded electronic means, subject to execution of an agreement for use of *Unionline*, or such other agreement, satisfactory to Union, and will be deemed to be received on the same Day and same time as sent. Each party may from time to time change its address for the purpose of this Section by giving notice of such change to the other party in accordance with this Section.

- 7.03 Law of Contract: Union and Shipper agree that this Contract is made in the Province of Ontario and that, subject to Article X of Schedule "A" of the MPSS, the courts of the Province of Ontario shall have exclusive jurisdiction in all matters contained herein. The parties further agree this Contract shall be construed exclusively in accordance with the laws of the Province of Ontario.
- 7.04 Entire Contract: This Contract (including Schedule 1 and Schedule 2), all applicable rate schedules and price schedules and the Participating Storage Contracts constitutes the entire agreement between the parties hereto pertaining to the subject matter hereof. This Contract supersedes any prior or contemporaneous agreements, understandings, negotiations or discussions, whether oral or written, of the parties in respect of the subject matter hereof.
- 7.05 Time of Essence: Time shall be of the essence hereof.
- 7.06 Counterparts: This Contract may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original but all of which together shall constitute one and the same agreement. This Contract may be executed by facsimile or other electronic communication and this procedure shall be as effective as signing and delivering an original copy.



- 7.07 Severability: If any provision hereof is invalid or unenforceable in any jurisdiction, to the fullest extent permitted by law: (a) the other provisions hereof shall remain in full force and effect in such jurisdiction and shall be construed in order to carry out the intention of the parties as nearly as possible and (b) the invalidity or unenforceability of any provision hereof in any jurisdiction shall not affect the validity or enforceability of any provision in any other jurisdiction.
- 7.08 General Liability: The liability of the parties hereunder is limited to direct damages only and all other remedies or damages are waived. In no event shall either party be liable for consequential, incidental, punitive, or indirect damages, in tort, contract or otherwise.

[signature page follows]



THIS CONTRACT SHALL BE BINDING UPON and shall enure to the benefit of the parties hereto and their respective successors and permitted and lawful assigns.

IN WITNESS WHEREOF this Contract has been properly executed by the parties hereto by their duly authorized officers as of the date first above written.

UNION GAS LIMITED

Authorized Signatory

Mark J. Isherwood

Vice-President, Business Development, Storage & Transmission

GAZ MÉTRO LIMITED PARTNERSHIP, acting by its General Partner, Gaz Métro Inc.

Per: \_\_\_\_

Authorized Signatory

Authorized Signatory

GazMétro

Initiales

No. Dossier



## **CONTRACT PARAMETERS**

## **ASN Maximum Storage Balance**

- (a) The quantity of gas in the ASN Storage Account shall not exceed the sum of the Maximum Storage Balances of all Participating Storage Contracts (the "ASN Maximum Storage Balance"); and
- (b) On or between October 1<sup>st</sup> and November 1<sup>st</sup> of each year, the quantity of gas in the ASN Storage Account must be at or above 75% of the ASN Maximum Storage Balance at the end of at least one Day (the highest balance in the ASN Storage Account on any Day during such period to be referred to as the "ASN Late Season Balance"); and
- (c) On or between March 31<sup>st</sup> and April 30<sup>th</sup> of each year, the quantity of gas in the ASN Storage Account must be at or below 45% of the ASN Maximum Storage Balance at the end of at least one Day (the lowest balance in the ASN Storage Account on any Day during such period to be referred to as the "ASN Early Season Balance").

#### **ASN Maximum Daily Injection Demand**

The ASN Maximum Daily Injection Demand means, on any Day, the sum of the Maximum Daily Injection Demands of all Participating Storage Contracts on such Day.

In addition to the ASN Maximum Daily Injection Demand, from October 1 through and including November 30, Shipper shall be entitled to nominate for injection, on an interruptible basis, a daily quantity equal to the aggregate of the interruptible amounts provided under the Participating Storage Contracts.

## ASN Maximum Daily Withdrawal Demand

The ASN Maximum Daily Withdrawal Demand means, on any Day, the sum of the Maximum Daily Withdrawal Demands of all Participating Storage Contracts on such Day.

In addition to the ASN Maximum Daily Withdrawal Demand, Shipper shall be entitled to nominate for withdrawal, on an interruptible basis:

- (a) from April 1 through and including May 31, a daily quantity equal to the aggregate of the interruptible amounts provided under the Participating Storage Contracts for those dates; and
- (b) from June 1 through and including March 31, and provided that the current balance in the ASN Storage Account is less than 25% of the ASN Maximum Storage Balance, a daily quantity equal to the aggregate of the interruptible amounts provided under the Participating Storage Contracts for those dates.



## **Receipt Points and Delivery Points**

- (a) A "Receipt Point" shall mean the point(s) where Union shall receive gas from Shipper as follows:
  - Dawn (Facilities)
  - Dawn (TCPL)

which points are more particularly described below.

- (b) A "Delivery Point" shall mean the point(s) where Union shall deliver gas to Shipper as follows:
  - Dawn (Facilities)

which point is more particularly described below.

DAWN (Facilities):

Union's Compressor Station site situated in the northwest corner of Lot Twenty-Five (25), Concession II, in the Township of Dawn-Euphemia, in the County of Lambton. This point is applicable for quantities of gas that have been previously transported or stored under other contracts that Shipper may have in place with Union.

DAWN (TCPL):

At the junction of Union's and TCPL's facilities, at or adjacent to Dawn (Facilities).

#### F24-S Service

Intentionally blank.

#### **Fuel Requirements**

Fuel charges shall be as per Schedule 2 Pricing Provisions.

#### Term

This Contract shall be effective as of the date of execution hereof; however, the Storage Services obligations, terms, and conditions hereunder shall commence April 1, 2013 (the "Commencement Date") and shall continue in full force and effect until March 31, 2015 (the "Initial Term") and 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, subject to notice in writing by Shipper or Union of termination at least two (2) months prior to the expiration of the then current term of this Contract.

Without limiting the generality of the foregoing, this Contract may be terminated in accordance with Article XII of Schedule "A" of the MPSS.

#### **Conditions Date**

Intentionally blank.

#### **Special Provisions**

Intentionally blank.



#### PRICING PROVISIONS

Shipper agrees to pay Union the following for the Storage Services:

- (a) Monthly Demand Charge: \$0.00. For greater certainty, Shipper shall continue to pay the Monthly Demand Charge under each Participating Storage Contract as invoiced by Union.
- (b) Demand Charge Escalation: Intentionally blank.
- (c) Variable Storage Charges:
  - (i) Firm: For each GJ of gas withdrawn from or injected into the ASN Storage Account on a firm basis, a charge equal to a "Commodity Charge" of \$0.007/GJ;
  - (ii) <u>Interruptible</u>: For each GJ of gas withdrawn from or injected into the ASN Storage Account on an interruptible basis, a charge equal to the price set out under the heading 'Commodity Charge Price/GJ' in the 'Authorized Overrun' section of the MPSS;
  - (iii) <u>Authorized Overrun</u>: For each GJ of gas withdrawn from or injected into the ASN Storage Account on an authorized overrun basis, a charge equal to the price set out under the heading 'Commodity Charge Price/GJ' in the 'Authorized Overrun' section of the MPSS; and
  - (iv) Dehydration: Not Applicable.
- (d) Fuel:
- (i) <u>Firm and Interruptible:</u> For each GJ of gas withdrawn from or injected into the ASN Storage Account on a firm or interruptible basis, an amount of fuel in kind equal to the fuel ratio set out under the heading 'If Shipper supplies fuel', in the 'Storage Service' section of the MPSS.
- (ii) <u>Authorized Overrun:</u> For each GJ of gas withdrawn from or injected into the ASN Storage Account on an authorized overrun basis, an amount of fuel in kind equal to the fuel ratio set out under the heading 'If Shipper supplies fuel', in the 'Authorized Overrun' section of the MPSS.
- (e) ASN Late Season Balance Charge and ASN Early Season Balance Charge:

For each period between October 1 and November 1 of each year, for each GJ by which the ASN Late Season Balance is less than 75% of the ASN Maximum Storage Balance, a charge equivalent to the price payable for a Drafted Storage Balance, excluding Extension Period charges, as per the MPSS shall apply.

For each period between March 31 and April 30 of each year, for each GJ by which the ASN Early Season Balance exceeds 45% of the ASN Maximum Storage Balance, a charge equivalent to the



SCHEDULE 2 Page 2 of 2 Contract No. ASN001

price payable for Overrun of Maximum Storage Balance, excluding Extension Period charges, as per the MPSS shall apply.

- (f) Shortfall Charge: Intentionally blank.
- (g) Other Charges: Any and all other charges as may be set out in this Contract, and any charges relating to Unauthorized Overrun, Drafted Storage Balance and Overrun of Maximum Storage Balance as set out in the MPSS.



## ENHANCED INJECTION AND WITHDRAWAL STORAGE CONTRACT

## **BETWEEN**

UNION GAS LIMITED

AND

GAZ MÉTRO LIMITED PARTNERSHIP

DATED March 21, 2013

Schedule 1 Pricing Provisions



#### STORAGE CONTRACT

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Intentionally blank

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SCHEDULE 1

PRICING PROVISIONS



THIS ENHANCED INJECTION AND WITHDRAWAL STORAGE CONTRACT dated as of the 21st day of March, 2013,

BETWEEN:

UNION GAS LIMITED, a company existing under the laws of the Province of Ontario, (hereinafter referred to as "Union")

- and -

GAZ MÉTRO LIMITED PARTNERSHIP, a limited partnership organized under the laws of the Province of Québec, and acting by its General Partner, Gaz Métro Inc. (hereinafter referred to as "Shipper")

WHEREAS, Union owns and operates a natural gas storage system in south-western Ontario;

AND WHEREAS, Union and Shipper have entered into various Storage Agreements;

AND WHEREAS, Union and Shipper wish to provide for revised Maximum Daily Injection Demand and Maximum Daily Withdrawal Demand under specified Storage Agreements as provided herein (the "Storage Services");

AND WHEREAS, Shipper wishes to retain Union to provide such Storage Services, as set out herein, and Union has agreed, subject to the terms and conditions of this Contract, to provide the Storage Services requested;

NOW THEREFORE, this Contract witnesses that, in consideration of the mutual covenants and agreements herein contained and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereby agree as follows:

#### ARTICLE I - INTERPRETATION AND DEFINITIONS

- 1.01 Divisions, Headings and Index: The division of this Contract into Articles, Sections and Subsections, and the insertion of headings and any table of contents or index provided are for convenience of reference only, and shall not affect the construction or interpretation hereof.
- 1.02 Industry Usage: Words, phrases or expressions which are not defined herein and which, in the usage or custom of the business of the transportation, storage, and distribution or sale of natural gas, have an accepted meaning shall have that meaning.



- 1.03 Extended Meaning: Unless the context otherwise requires, words importing the singular include the plural and vice versa, and words importing gender include all genders. The words "herein" and "hereunder" and words of similar import refer to the entirety of this Contract, including the Schedules and MPSS incorporated into this Contract, and not only to the Section in which such use occurs.
- 1.04 Conflict: In the event of any conflict between the provisions of this Contract and those of the MPSS, the provisions of this Contract shall prevail over the MPSS.
- 1.05 Measurements: Units set out in SI (metric) measurement are the governing units for the purpose of this Contract. Units set out in Imperial measurement in parentheses beside their SI (metric) equivalent are for reference only and in the event of a conflict between SI (metric) and Imperial measurement herein, SI (metric) shall prevail.
- 1.06 Currency: All reference to dollars in this Contract shall mean Canadian dollars, unless stated otherwise.
- 1.07 Schedules: Refers to the schedules attached hereto which are specifically included as part of this Contract, and include:

## Schedule 1 Pricing Provisions

- 1.08 Price Schedule: "MPSS" shall mean Union's Market Price Service Schedule, including Schedule "A" (General Terms and Conditions) and Schedule "B" (Nominations), as last adopted by Union from time to time and posted to Union's website with at least 30 days' prior notice. The MPSS shall apply hereto as amended from time to time, as if incorporated into this Contract.
- 1.09 Definitions: Capitalized terms and certain other terms used in this Contract and not specifically defined shall have the meaning set forth in the MPSS unless the context hereof otherwise clearly requires. The following definitions shall be read and interpreted as though included in the aforementioned:
  - (a) "Storage Agreement" means all long term storage contracts that Shipper:
    - i. holds with Union (except for the Facilitating Agreement) as at the Commencement Date; and
    - ii. enters into with Union after the Commencement Date during the duration of the term of this Contract, that both Shipper and Union agree, in their sole discretion, shall be subject to the terms of this Contract.

#### ARTICLE II - Intentionally blank

#### ARTICLE III - CONDITIONS PRECEDENT

- 3.01 The obligations of Union to provide Storage 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 for in this Contract:
  - (a) Union shall have received from Shipper the requisite financial assurances reasonably necessary to ensure Shipper's ability to honour the provisions of this Contract (the "Initial Financial Assurances"). The Initial Financial Assurances, if required, will be



- as determined solely by Union and will be up to a maximum of 12 times the Monthly Demand Charge (as such term is defined in Schedule 1); and,
- (b) Shipper and Union shall have entered into an Interruptible HUB Service Contract (the "Facilitating Agreement") with Union.
- 3.02 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 this Contract:
  - (a) Shipper shall have obtained, in form and substance satisfactory to Shipper, the approval from the Régie de l'Énergie du Québec to enter into the Storage Services under this Contract.
- Union and Shipper shall each use due diligence and reasonable efforts to satisfy and fulfil the conditions precedent specified in Section 3.01. Shipper shall use due diligence and reasonable efforts to satisfy and fulfil the conditions precedent specified in Section 3.02. 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 that party may, upon written notice to the other party, terminate this Contract and upon the giving of such notice, this 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 this Contract prior to such termination and any liability a party may have incurred before such termination shall not thereby be released.
- 3.04 If any of the conditions precedent in Section 3.01 are not satisfied or waived by the party entitled to the benefit of such condition, by March 31, 2013, (or if any of the conditions precedent in Section 3.02 are not satisfied or waived by the party entitled to the benefit of such condition, by March 31, 2013), then either party may, upon written notice to the other party, terminate this Contract and upon the giving of such notice, this 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 this Contract prior to such termination and any liability a party may have incurred before such termination shall not thereby be released.

## ARTICLE IV - TERM OF CONTRACT

- 4.01 h This Contract shall be effective as of the date of execution hereof; however, the Storage Service obligations, terms, and conditions hereunder shall commence on the later of
  - (a) April 1, 2013 (the "Reference Date"); and
  - (b) the day following the date that all of the conditions precedent set out in Article III have been satisfied or waived by the party entitled to the benefit thereof;

(such later date being referred to as the "Commencement Date") and shall continue in full force and effect until March 31, 2019 (the "Termination Date"). For greater certainty, this Contract shall not operate to extend the term of any Storage Agreement.

4.02 Without limiting the generality of the foregoing, this Contract may be terminated in accordance with Article XII of Schedule "A" of the MPSS. For greater certainty, in the event that this Contract is terminated for any reason, the rights granted to Shipper pursuant to this Contract, including but not



limited to providing for Injection Allocation Amounts and Withdrawal Allocation Amounts to be applied to Storage Agreements, shall also terminate at the time of termination of this Contract. The existence of this Contract will not operate to extend the term of any Storage Agreement.

## **ARTICLE V - STORAGE SERVICES**

5.01 Services: Shipper agrees to the terms and conditions set out herein for the provision of the following services (collectively, the "Storage Services"):

A/ Subject to Sections 5.01 B/ and 5.01 C/ below, Shipper may increase its Maximum Daily Injection Demand, up to a cumulative maximum of 33,000 GJ/day, and may increase its Maximum Daily Withdrawal Demand, up to a cumulative maximum of 52,800 GJ/day, under any or all of its Storage Contracts, on an annual basis (from April 1 to March 31), by providing notice to Union in writing, on or before March 15 of each year, of the amount it wishes to increase its Maximum Daily Injection Demand and Maximum Daily Withdrawal Demand under any or all of its Storage Contracts. In the event that Shipper does not provide Union with such notice, Union shall increase, for that year, the Maximum Daily Injection Demand and Maximum Daily Withdrawal Demand under each of Shipper's Storage Agreements on a pro-rata basis, based on the Maximum Storage Balance amounts in each of Shipper's Storage Agreements.

For greater certainty, the Receipt Point(s) provided in the applicable Storage Agreement shall be the only point(s) at which the Injection Allocation Amount (as defined below) shall be received from Shipper by Union and the Delivery Point(s) provided in the applicable Storage Agreement shall be the only point(s) at which the Withdrawal Allocation Amount (as defined below) shall be delivered by Shipper to Union.

B/Maximum Daily Injection Demand:

#### Firm Maximum Daily Injection Demand:

Subject to subsections (a) and (b) below, the firm Maximum Daily Injection Demand under Section 5.01 B/ (b) of any Storage Agreement may be increased by Shipper allocating, among any or all of its Storage Agreements, up to a cumulative maximum of 33,000 GJ/day (each amount individually allocated to a Storage Agreement an "Injection Allocation Amount").

- (a) For each Storage Agreement for which Shipper has elected an Injection Allocation Amount, for the period from December 1 through and including September 30, if the current balance in that Storage Account is less than 75% of the Maximum Storage Balance, the firm Maximum Daily Injection Demand under that Storage Agreement shall be increased by the applicable Injection Allocation Amount.
- (b) For each Storage Agreement for which Shipper has elected an Injection Allocation Amount, for the period from December 1 through and including September 30, if the current balance in that Storage Account is greater than or equal to 75% of the Maximum Storage Balance, the firm Maximum Daily Injection Demand under that Storage Agreement shall be increased by two-thirds (2/3) of the applicable Injection Allocation Amount.

#### Interruptible Maximum Daily Injection Demand:

(c) For each Storage Agreement for which Shipper has elected an Injection Allocation Amount, the interruptible Maximum Daily Injection Demand under Section 5.01 B/



(a) of any Storage Agreement shall, for the period from October 1 through and including November 30, be increased by two-thirds (2/3) of the applicable Injection Allocation Amount.

C/Maximum Daily Withdrawal Demand:

## Firm Maximum Daily Withdrawal Demand:

Subject to subsections (a) and (b) below, the firm Maximum Daily Withdrawal Demand under Section 5.01 C/ (b) and (c) of any Storage Agreement may be increased by Shipper allocating, among any or all of its Storage Agreements, up to a cumulative maximum of 52,800 GJ/day (each amount individually allocated to a Storage Agreement an "Withdrawal Allocation Amount").

- (a) For each Storage Agreement for which Shipper has elected a Withdrawal Allocation Amount, for the period from June 1 through and including March 31, if the current balance in that Storage Account is less than 25% of the Maximum Storage Balance, the firm Maximum Daily Withdrawal Demand under Section 5.01C/ (b) of that Storage Agreement shall be increased by two-thirds (2/3) of the applicable Withdrawal Allocation Amount.
- (b) For each Storage Agreement for which Shipper has elected a Withdrawal Allocation Amount, for the period from June 1 through and including March 31, if the current balance in that Storage Account is greater than or equal to 25% of the Maximum Storage Balance, the firm Maximum Daily Withdrawal Demand under Section 5.01C/(c) of that Storage Agreement shall be increased by the applicable Withdrawal Allocation Amount.

## Interruptible Maximum Daily Withdrawal Demand:

- (c) For each Storage Agreement for which Shipper has elected Withdrawal Allocation Amount, the interruptible Maximum Daily Withdrawal Demand under Section 5.01 C/ (a) of any Storage Agreement shall, for the period from April 1 through and including May 31, be increased by the applicable Withdrawal Allocation Amount.
- (d) For each Storage Agreement for which Shipper has elected Withdrawal Allocation Amount, the interruptible Maximum Daily Withdrawal Demand under Section 5.01 C/ (b) of any Storage Agreement shall, for the period from June 1 through and including March 31, be increased by one-third (1/3) of the applicable Withdrawal Allocation Amount; provided that the current balance in that Storage Account is less than 25% of the Maximum Storage Balance.

#### ARTICLE VI - FORCE MAJEURE

- 6.01 An event of force majeure on Union's system, as defined in Article XI of Schedule "A" of the MPSS, 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.
- 6.02 If: (i) Union is prevented by reason of an event of force majeure on Union's system from receiving or delivering the Shipper Quantity; and (ii) Shipper agrees to accept delayed receipts or



deliveries as contemplated by this Section; then Union shall make all reasonable efforts to receive or deliver the Shipper Quantity as soon as practicable and on such day or days as are agreed to by Shipper and Union. To the extent that Union receives or delivers the Shipper Quantity on this basis, Shipper shall not receive any demand charge relief as contemplated in Section 6.03.

- 6.03 Subject to Section 6.02, if on any gas day Union fails to receive or deliver the Shipper Quantity by reason of force majeure on Union's system, then for that gas day Union shall credit to Shipper's invoice an amount equal to one-half of the applicable Daily Demand Rate, as defined in this Section, divided by the Daily Firm Quantity, and multiplied by the difference between the Shipper Quantity and (i) the amount by which the Storage Account increased that gas day if Shipper nominated receipts into the Storage Account, or (ii) the amount by which the Storage Account decreased that gas day if Shipper nominated deliveries from the Storage Account. In no event shall Shipper be entitled to a credit in any month that exceeds one-half of the Monthly Demand Charge for that month. The term "Daily Demand Rate" shall mean the Monthly Demand Charge divided by the number of days in the month for which such rate is being calculated.
- 6.04 An event of force majeure upstream or downstream of Union's system shall not relieve Shipper of any payment obligations.

## ARTICLE VII - SERVICE CURTAILMENT

- 7.01 Capacity Sharing: Where requests for interruptible service hereunder exceed the capacity available for such Storage Service, Union will authorize nominations from shippers and allocate capacity as per Union's procedures and policies and shippers shall be so advised. Any interruptible service provided herein is subordinate to any and all firm services supplied by Union and subordinate to Union's own operational or system requirements.
- 7.02 Capacity Procedures: Union reserves the right to change its procedures for allocating interruptible services capacity and will provide Shipper with two (2) months' prior notice of any such change.
- 7.03 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 Union's ability to meet Shipper's requirements, Union shall not be liable for any damages and shall not be deemed in breach of this Contract.

To the extent that Union's ability to receive or deliver gas is impaired, the Monthly Demand Charge shall be reduced in accordance with Sections 6.02 and 6.03.

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.

#### ARTICLE VIII - CHARGES AND RATES

8.01 Except as otherwise stated herein, the charges to be billed by Union and paid by Shipper for the Storage Services will be those specified in Schedule1 hereto, plus applicable Taxes. For greater certainty,



Shipper shall also pay the charges applicable, pursuant to the terms of each Storage Agreement, for the application of the Injection Allocation Amount and the application of the Withdrawal Allocation Amount to such Storage Agreement when Shipper has elected an Injection Allocation Amount and/or a Withdrawal Allocation Amount to be applied to such Storage Contract.

- 8.02 Prices exclude, and Shipper shall pay, any applicable Goods and Services Tax, Harmonized Sales Tax, or other taxes, royalties, charges, duties or levies, (including but not limited to charges under any form of cap and trade, carbon tax, or similar system) imposed currently or subsequent to the execution of the Contract by any legal authority having jurisdiction.
- 8.03 Set Off: If either party shall, at any time, be in arrears under any of its payment obligations to the other party, 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 this Contract and any enhancements to this Contract, which shall be deemed to have been assigned to Union, to reduce such arrears or other indebtedness to Union. For each GJ of Shipper's gas that is deemed to be assigned to Union, the value shall be determined as the lowest weighted average price, for NGX Union-Dawn Day Ahead Index, as published on the NGX website (currently located at www. ngx.com), or a successor publication acceptable to Union, for the day of, day prior, and day after the date the gas is deemed assigned to Union.

#### ARTICLE IX - Intentionally blank

#### ARTICLE X – QUALITY AND MEASUREMENT

- 10.01 For Storage Services provided pursuant to Article V hereof:
  - (a) The quality of the gas and the measurement of the gas to be received by Union hereunder is to be of a merchantable quality and in accordance with the quality standards and measurement standards as set out by Union in the MPSS, 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 the MPSS.
  - (b) 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.
- 10.02 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.



#### **ARTICLE XI - NOMINATIONS**

11.01 Services provided hereunder shall be in accordance with the prescribed nominations procedure set out in Schedule "B" of the MPSS.

#### ARTICLE XII - SHIPPER'S REPRESENTATIONS AND WARRANTIES

- 12.01 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 this Contract. Shipper further warrants that it shall maintain in effect the Facilitating Agreements.
- 12.02 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 changes 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 this Contract as a result of one of the following events ("Material Event"):
  - (a) Shipper is in default, which default has not been remedied, of this 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 such 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) times the Monthly Demand Charges. In the event that Shipper does not provide to Union such Security within such fourteen (14) day period, Union may deem a default under Article XII of Schedule "A" of the MPSS.

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.

#### **ARTICLE XIII - MISCELLANEOUS PROVISIONS**

- 13.01 Assignment: Shipper may not assign this Contract unless:
  - (a) the written consent of Union is obtained, such consent not to be unreasonably delayed or withheld; and
  - (b) any financial assurances as required by Union are provided to Union.
- 13.02 Notices: All communications provided for or permitted hereunder shall be in writing, personally delivered to an officer or other responsible employee of the addressee or sent by registered mail, charges



prepaid, or by facsimile or other means of recorded electronic communication, charges prepaid, to the applicable address or to such other address as either party hereto may from time to time designate to the other in such manner, provided that no communication shall be sent by mail pending any threatened, or during any actual, postal strike or other disruption of the postal service. Shipper contact information, as provided to Union, shall be found on the secured portion of Union's website (the secured portion of Union's website is known as "Union!ine"). Union's contact information shall be displayed on the unsecured portion of Union's website. Any communication personally delivered shall be deemed to have been validly and effectively received on the date of such delivery. Any communication so sent by facsimile or other means of electronic communication shall be deemed to have been validly and effectively received on the Business Day following the day on which it is sent. Any communication so sent by mail shall be deemed to have been validly and effectively received on the seventh Business Day following the day on which it is postmarked.

Notwithstanding the above, nominations shall be made by facsimile or other recorded electronic means, subject to execution of an agreement for use of *Unionline*, or such other agreement, satisfactory to Union, and will be deemed to be received on the same Day and same time as sent. Each party may from time to time change its address for the purpose of this Section by giving notice of such change to the other party in accordance with this Section.

13.03 Law of Contract: Union and Shipper agree that this Contract is made in the Province of Ontario and that, subject to Article X of Schedule "A" of the MPSS, the courts of the Province of Ontario shall have exclusive jurisdiction in all matters contained herein. The parties further agree this Contract shall be construed exclusively in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

#### 13.04 Possession of Gas:

1.

- (a) 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. Title to the gas shall not transfer to Union when it takes possession of the gas, or at any other time, unless the parties specifically agree otherwise, such as, including without limitation, under section 8.03 of the Contract.
- (b) 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 by Union's negligence or wilful misconduct.
- 13.05 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 royalties, taxes, license fees, or other charges thereon.
- 13.06 Entire Contract: This Contract (including Schedule 1 and the MPSS), the Storage Agreements and all applicable rate schedules and price schedules constitute the entire agreement between the parties hereto pertaining to the subject matter hereof and supersede any prior or contemporaneous agreements, understandings, negotiations or discussions, whether oral or written, of the parties in respect of the subject matter hereof.



- 13.07 Time of Essence: Time shall be of the essence hereof.
- 13.08 Counterparts: This Contract may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original but all of which together shall constitute one and the same agreement. This Contract may be executed by facsimile or other electronic communication and this procedure shall be as effective as signing and delivering an original copy.
- 13.09 Amendments and Waivers: Subject to Article XV of Schedule "A" of the MPSS, and the ability of Union to amend the MPSS as contemplated by Section 1.08, no amendment or modification of this Contract shall be effective unless the same shall be in writing and signed by each of the Shipper and Union. No waiver of any provision of this 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 this Contract shall operate as a waiver thereof.

Despite Section 1.04, 13.09 and any other provision of this Contract, any of the Sections of this Contract (other than Sections 3.01, 4.01 and 5.01) or any portions thereof (the "Contract Transition Provisions") shall be deemed to be superseded and deleted if a provision dealing with substantially the same matter is added to Union's Market Price Service Schedule (including any schedule thereof) in accordance with Section 1.08 and such provision is expressed to supersede and replace the Contract Transition Provisions, all without the necessity of any further notice, action or documentation.

- 13.10 Severability: If any provision hereof is invalid or unenforceable in any jurisdiction, to the fullest extent permitted by law, (a) the other provisions hereof shall remain in full force and effect in such jurisdiction and shall be construed in order to carry out the intention of the parties as nearly as possible and (b) the invalidity or unenforceability of any provision hereof in any jurisdiction shall not affect the validity or enforceability of any provision in any other jurisdiction.
- 13.11 General Liability: The liability of the parties hereunder is limited to direct damages only and all other remedies or damages are waived. In no event shall either party be liable for consequential, incidental, punitive, or indirect damages, in tort, contract or otherwise.

[signature page follows]



THIS CONTRACT SHALL BE BINDING UPON and shall enure to the benefit of the parties hereto and their respective successors and permitted and lawful assigns.

IN WITNESS WHEREOF the parties hereto have caused this Contract to be executed by their respective, duly authorized officers.

UNION GAS LIMITED

Mark J. Isherwood

Date:

Vice-President, Business Development, Storage & Transmission

GAZ MÉTRO LIMITED PARTNERSHIP and acting

by its General Partner, Gaz Métro Inc.

540-00251 No. Dossier





SCHEDULE 1 Page 1 of 1

# PRICING PROVISIONS STORAGE SERVICES

Shipper agrees to pay Union the following for the Storage Services:

(a) Monthly Demand Charge: A monthly demand charge of C\$66,000.00 per month.





April 29, 2013

Gaz Metro Limited Partnership 1717 Rue du Havre Montreal, Quebec H2K 2X3

Attention:

Frederic Morel,

Director of Gas Supply

TransCanada PipeLines Limited 200 Bay Street, South Tower Toronto, Ontario M5J 2J1

tel 416.869.2191 fax 416.869.2119 email don\_bell@transcanada.com web www.transcanada.com

Dear Frederic,

Reference:

Precedent Agreement between TransCanada PipeLines Limited ("TransCanada") and Gaz Metro Limited Partnership dated October 2, 2012 (the "Precedent Agreement") for 239,148 GJ/d from Parkway to GMI EDA

Please be advised that the Board of Directors of TransCanada has not approved the Eastern Mainline Expansion projects for 2015 in light of the recent NEB Decision for RH-003-2011. The Eastern Mainline 2015 Expansion project included the transaction contemplated in the above noted Precedent Agreements. As such we hereby notify you that the Condition Precedent, as such term is defined in the Precedent Agreement under Paragraph 29 (a), has not been satisfied.

Notwithstanding the suspension of the 2015 Eastern Mainline Expansion, TransCanada would like to work with you to explore what solutions or alternatives maybe available to move these initiatives ahead given the NEB RH-003-2011 Decision.

///

Sincerely

Director, Mainline East Commercial East