

CENTRA GAS MANITOBA INC.

PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
TRANSPORTATION ARRANGEMENTS

RESPONSE TO INFORMATION REQUESTS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA

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1 **PUB/CENTRA 1**

2 ***Reference: Centra's October 28, 2010 Response to Order 55/10 Directive 2***

3

4 **(a) Please confirm whether the timeline of the process for replacing transportation and**

5 **storage assets filed on October 28, 2010 in response to Directive 2 of Order 55/10 is**

6 **still valid. If not confirmed, please update the timeline and milestones.**

7

8 Please see the attached timeline, reflecting minor adjustments to the anticipated

9 completion of some tasks and activities. Please note that the dates indicated on the

10 timeline are estimates that are subject to change if deemed necessary by Centra. The

11 timeline may also be adjusted in due course upon establishment of the regulatory process.

12

13 **(b) Please explain how the current timeline for a NEB order relating to final TCPL tolls**

14 **will affect the timeline.**

15

16 The NEB is expected to rule on final 2011 TCPL Mainline tolls by late August 2011.

17 Finalization of 2011 tolls will not affect Centra's timeline provided in part (a) of this

18 response. There is currently no confirmed timeline related to the finalization of TCPL

19 Mainline tolls for 2012 or beyond. TCPL has committed to the NEB to file part of its

20 application by September 1, 2011 and expects to file the remainder of its application by the

21 end of October. Centra will make its portfolio decisions considering the wide range of

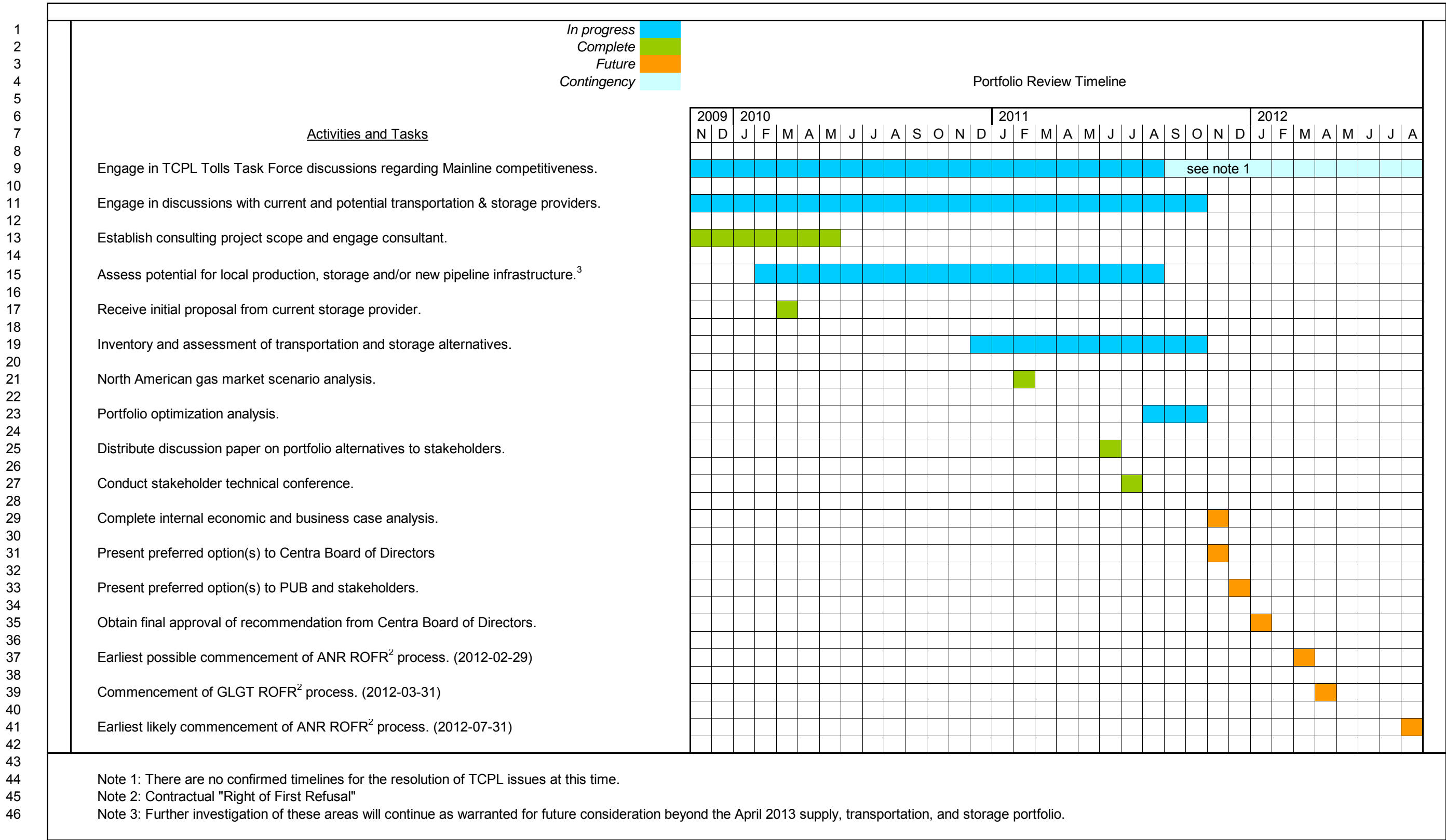
possible TCPL outcomes and the best information available to Centra at any given point in time.

**(c) Please explain Centra's rights of first refusal related to the ANR and GLGT contracts, and describe the ROFR process.**

ANR's tariff calls for notification of shippers holding ROFR capacity (applicable to all of Centra's ANR contracts) to take place no earlier than 8 months, and no later than 7 months prior to contract expiry. The shipper then has 60 days to either match an existing offer for the capacity, or if none, to negotiate with ANR a new or amended agreement. An additional provision in ANR's tariff allows for portfolios as large as Centra's to qualify for notification no earlier than 13 months, and no later than 11 months prior to contract expiry, if ANR has a pending offer for capacity that cannot be met with existing capacity. ANR has never invoked this provision.

GLGT's tariff calls for notification 12 months prior to the expiry of Centra's GLGT contract FT4521 (summer forward haul), which starts a 30 day negotiation period. If no deal is reached, GLGT will post an open season for the capacity for 30 days, after which Centra has the right to match an acceptable offer, or if none, provide an acceptable bid to GLGT. For GLGT contract FT4190 (winter backhaul), Centra does not have a ROFR as the contract is at a discounted rate.

The ROFR matching provisions for both ANR and GLGT require a shipper to match (a) the longest term and (b) the highest rate, up to the maximum rate, that is offered by another party desiring such capacity.



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**PUB/CENTRA 2**

***Reference: PUB/Centra - 2 Reference: ICF Report page 40 of 106***

**(a) Please tabulate the historically forecasted Firm Peak Loads for the past ten years.**

Please see the following table which presents the forecasted firm peak loads for the past six gas years.

Gas Year	Design Firm Peak Day (GJ)
05/06	485,000
06/07	447,400
07/08	439,200
08/09	452,000
09/10	484,000
10/11	481,300

**(b) Please explain whether there has been any methodology changes that may affect the comparability of these numbers.**

In late 2008, a review of the methodology for forecasting the Peak Day Volumes was undertaken. A new algorithm was developed which was an improvement to the previous methodology. Based on the review, it was noted that the values of 447,400, 439,200 and 452,000 in 2006, 2007 and 2008, respectively, were consistently underforecasted compared to the weather and heating value adjusted actual firm peak loads.

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**PUB/CENTRA 3**

***Reference: PUB/Centra - 3 Reference: ICF Report Section 3.2.1 page 51 of 106***

**(a) Please describe the origin or the basis for Centra's current storage volume of 15.5 PJ, i.e. why this volume was selected. Please file any qualitative and quantitative analysis in support of this storage volume. Please detail the pros and cons of increasing or decreasing the level of storage.**

Centra's current storage capacity was derived from analyses that used key inputs such as the relative tolls in place at the time, the market requirement that the assets were forecast to serve and a range of weather scenarios employed to "test" the ability of the assets to serve the market.

Please see the responses to PUB/CENTRA 8(b) and PUB/CENTRA 26 for further discussions of the directional cost impacts of changes to capacity, deliverability, and cyclability.

**(b) Please explain why a cyclability ratio of 1.0 was selected.**

The cyclability ratio of 1.0 (i.e., single cycle) associated with Centra's current storage arrangement is tied to the seasonal nature of its storage contract. In the early 1990s,

1 Centra had a strong incentive to improve its purchase load factor. Seasonal storage was  
2 deemed to be the appropriate solution to meeting Centra's objective in this regard.  
3

4 **(c) Please detail Centra's target for storage volumes (or optimal range if a target has not**  
5 **been decided) as well as the desired deliverability, injection rate, cyclability, and**  
6 **seasonality.**  
7

8 Centra's targets for storage volumes, desired deliverability, injection rate, cyclability and  
9 seasonality have not yet been determined. The upcoming optimization analysis will  
10 provide Centra with the information it needs to establish its preferences.

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**PUB/CENTRA 4**

***Reference: PUB/Centra - 4 Reference: ICF Report Section 3.4.2 page 57 of 106***

**Please explain how TCPL's parking and loan service functions and how Centra could make use of it in lieu of storage or firm transportation capacity.**

TCPL's Parking and Loan Service (PALS) is not intended to be used in lieu of storage or firm transportation capacity. It is a service provided by TCPL primarily to manage imbalances on the pipeline, subject to availability. PALS has a priority lower than any transportation service, including IT. In addition TCPL may, in its sole discretion after having considered other reasonable alternatives upon twenty-four hours notice, recall all or any portion of the capacity allocated for PALS. PALS assists TCPL in managing line pack and assists customers in managing intra-day imbalances and other operational circumstances. There is no defined toll for this service; it is agreed to by individual customers and TransCanada on a case-by-case basis.

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**PUB/CENTRA 5**

***Reference: PUB/Centra - 5 Reference: ICF Report Section 6.1.1 page 75 of 106***

**In modeling the cost to construct a pipeline into Manitoba to bring gas from a storage field or to interconnect with another pipeline system, what is the construction cost per mile of pipeline that Centra is using for its analysis?**

On pages 75 and 76 of the report, ICF references a cost of approximately \$60,000 per diameter-inch-mile of pipeline. However, at this time, Centra has not prepared any estimate of the costs to construct new infrastructure to access natural gas from other pipeline systems or from any new storage locations.



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**PUB/CENTRA 6**

***Reference: ICF Report Section 6.1.5 page 85 of 106; EEA Report January 2007 Section 1.3.1 page 7***

**Please reconcile the statement: “The relationship between commodity prices in the US, and commodity prices in Alberta, is not a critical issue for Centra supply purchased for direct consumption in Manitoba, since the cost of Alberta commodity delivered to Manitoba from Alberta should generally be lower than the cost of natural gas commodity delivered to Manitoba via backhaul from the U.S.” with the recommendation from EEA’s (ICF’s) January 2007 report to Centra on Section 1.3.1 page 7: “As a result, diversification away from a gas supply contract that relies exclusively on AECO prices should be explored completely.”**

**Response provided by ICF:**

The modeling results presented in the January 2007 report indicated that the price of gas acquired at AECO should continue to be below the cost of natural gas commodity delivered to Manitoba via backhaul from the U.S. However, there are inherent uncertainties regarding any projection of future gas prices at different locations. Diversification is a well recognized technique to address the uncertainty. The January 2007 report recommended that Centra should explore other options for possible inclusion in a robust portfolio.

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**PUB/CENTRA 7**

***Reference: ICF Report Section 6.2 page 89 of 106***

**(a) Please file a graph of the historical storage levels similar to that shown in  
PUB/Centra 8 from the 2010/11 Cost of Gas proceeding.**

Please see the attachment to this response.

**(b) Please provide the transportation load factors on TCPL's system on a month-by  
month basis for 2007/08, 2008/09, 2009/10, and 2010/11 to-date. Please show the load  
factor for Primary gas direct to load, total load factor, and total load factor including  
Capacity Management activities.**

Please see the attachment to this response.

**(c) Please estimate Centra's transportation load factors on the TCPL Mainline and for its  
Storage Transportation Service in the years 1991-1995 (i.e. immediately before and  
after the current ANR storage arrangement was implemented).**

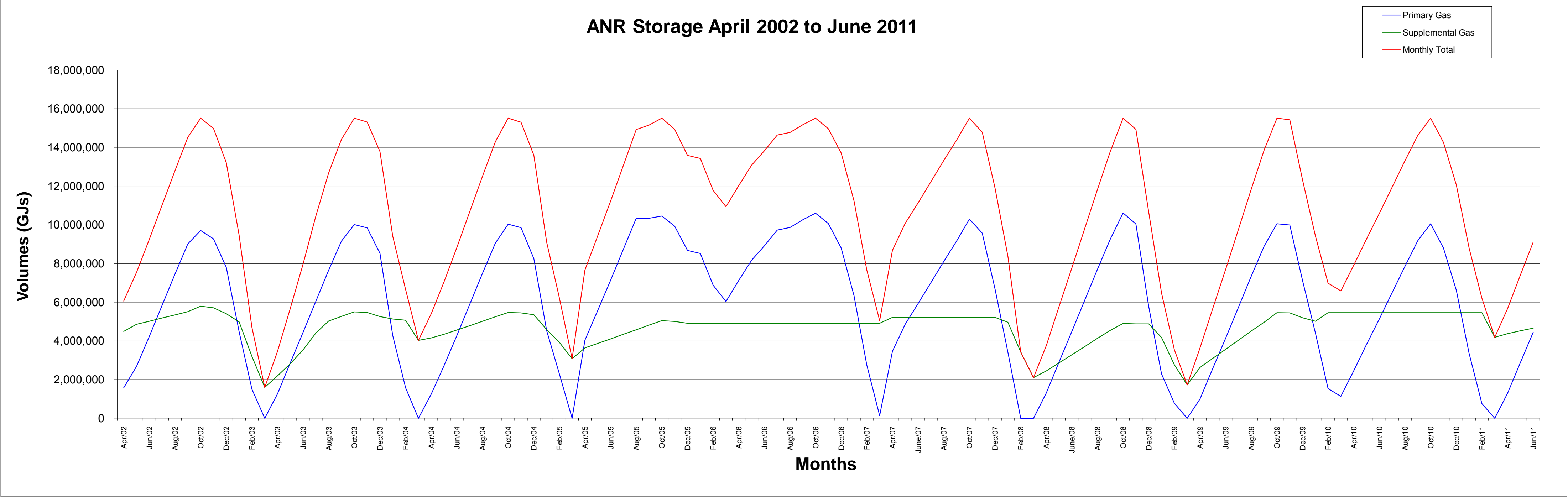
Centra's purchase load factor under the Company's gas supply contract was 49.7% for the 1990 normal year and 50.4% for the 1991 normal year. Immediately after the ANR storage arrangement was implemented, Centra's purchase load factor improved to 76%

**(d) In the absence of storage and Centra's current storage and transportation contracts, please quantify the transportation demand charges required to hold firm capacity to serve Centra's load, and compare these charges with the current storage and transportation costs.**

The best comparator to use for this analysis is the TransCanada Mainline short-term firm transportation service ("STFT") from Empress to the Centra MDA, for which the interim toll effective March 1, 2011 is \$0.6802/GJ/day. The equivalent winter deliverability currently provided by ANR storage of up to 208,591 GJ/day, using the above-noted \$0.6802/GJ/day interim toll for STFT service would cost \$21.4 million for the five winter months.

By comparison, ANR and Great Lakes annual storage and transport demand costs are currently USD\$17.0 million and TransCanada STS costs are CAD\$2.9 million.

It is important to note that the elimination of storage would result in losing the benefits associated with access to storage as detailed in Sections 6.2 and 6.3.9 of the ICF Report.



Centra Gas Manitoba Inc.  
Process for Review of Gas Supply, Storage and Transportation Arrangements  
TransCanada Transportation  
2006/2007 Actual Load Factors

PUB/Centra 7(b)  
Attachment  
Page 1 of 5  
August 15, 2011

	Actual Nov	Actual Dec	Actual Jan	Actual Feb	Actual Mar	Actual Apr	Actual May	Actual June	Actual July	Actual Aug	Actual Sept	Actual Oct	Actual Total
1	30	31	31	28	31	30	31	30	31	31	30	31	
2													
3 MDA/SSDA MDQ	203,600	203,600	203,600	203,600	203,600	203,600	203,600	203,600	203,600	203,600	203,600	203,600	
4 Total Capacity MDA/SSDA	6,108,000	6,311,600	6,311,600	5,700,800	6,311,600	6,108,000	6,311,600	6,108,000	6,311,600	6,311,600	6,108,000	6,311,600	74,314,000
5													
6 STS MDQ						54,418	54,418	54,418	54,418	54,418	54,418	54,418	
7 STS Capacity Available						1,632,540	1,686,958	1,632,540	1,686,958	1,686,958	1,632,540	1,686,958	11,645,452
8													
9 To MDA/SSDA	5,677,268	6,303,100	6,265,352	5,700,800	5,874,095	3,277,187	1,766,701	1,090,960	901,355	967,355	1,419,098	3,100,008	42,343,279
10 To Storage	0	0	0	0	0	1,395,062	1,674,465	1,620,480	1,674,403	1,674,620	1,620,270	649,111	10,308,411
11 Capacity Management	430,363	5,500	46,232	0	0	1,435,642	2,870,434	3,389,452	3,728,913	3,669,459	3,066,805	2,090,295	20,733,095
12 Total MDA/SSDA Transport	6,107,631	6,308,600	6,311,584	5,700,800	5,874,095	6,107,891	6,311,600	6,100,892	6,304,671	6,311,434	6,106,173	5,839,414	73,384,785
13													
14 Load factor - MDA/SSDA	92.9%	99.9%	99.3%	100.0%	93.1%	53.7%	28.0%	17.9%	14.3%	15.3%	23.2%	49.1%	57.0%
15 Load factor - MDA/SSDA/Storage						76.5%	54.5%	44.4%	40.8%	41.9%	49.8%	59.4%	70.9%
16 MDA/SSDA Total Load factor	100.0%	100.0%	100.0%	100.0%	93.1%	100.0%	100.0%	99.9%	99.9%	100.0%	100.0%	92.5%	98.7%
17													
18 TransCanada STS - Inventory	0	0	0	0	0	1,395,062	1,674,465	1,620,480	1,674,403	1,674,620	1,620,270	649,111	10,308,411
19 Capacity Management (C.M.)	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Total STS Used	0	0	0	0	0	1,395,062	1,674,465	1,620,480	1,674,403	1,674,620	1,620,270	649,111	10,308,411
21													
22 STS Load factor - excl. C.M.						85.5%	99.3%	99.3%	99.3%	99.3%	99.2%	38.5%	88.5%
23 STS Load factor						85.5%	99.3%	99.3%	99.3%	99.3%	99.2%	38.5%	88.5%

Centra Gas Manitoba Inc.  
Process for Review of Gas Supply, Storage and Transportation Arrangements  
TransCanada Transportation  
2007/2008 Actual Load Factors

PUB/Centra 7(b)  
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August 15, 2011

	Actual Nov	Actual Dec	Actual Jan	Actual Feb	Actual Mar	Actual Apr	Actual May	Actual June	Actual July	Actual Aug	Actual Sept	Actual Oct	Actual Total
1	30	31	31	29	31	30	31	30	31	31	30	31	
2													
3 MDA/SSDA MDQ	203,600	203,600	203,600	203,600	203,600	203,600	203,600	203,600	203,600	203,600	203,600	203,600	
4 Total Capacity MDA/SSDA	6,108,000	6,311,600	6,311,600	5,904,400	6,311,600	6,108,000	6,311,600	6,108,000	6,311,600	6,311,600	6,108,000	6,311,600	74,517,600
5													
6 STS MDQ						54,000	54,000	54,000	54,000	54,000	54,000	54,000	
7 STS Capacity Available						1,620,000	1,674,000	1,620,000	1,674,000	1,674,000	1,620,000	1,674,000	11,556,000
8													
9 To MDA/SSDA	5,417,566	6,311,600	6,310,001	5,904,400	6,207,288	4,096,048	2,298,299	1,198,212	1,009,948	942,434	1,282,637	3,051,699	44,030,132
10 To Storage	0	0	0	0	0	1,324,240	1,663,739	1,610,460	1,666,529	1,666,250	1,612,680	1,408,453	10,952,351
11 Capacity Management	690,434	0	0	0	104,311	681,219	2,348,841	3,269,645	3,634,907	3,696,692	3,212,614	1,832,333	19,470,996
12 Total MDA/SSDA Transport	6,108,000	6,311,600	6,310,001	5,904,400	6,311,599	6,101,507	6,310,879	6,078,317	6,311,384	6,305,376	6,107,931	6,292,485	74,453,479
13													
14 Load factor - MDA/SSDA	88.7%	100.0%	100.0%	100.0%	98.3%	67.1%	36.4%	19.6%	16.0%	14.9%	21.0%	48.4%	59.1%
15 Load factor - MDA/SSDA/Storage						88.7%	62.8%	46.0%	42.4%	41.3%	47.4%	70.7%	73.8%
16 MDA/SSDA Total Load factor	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	100.0%	99.5%	100.0%	99.9%	100.0%	99.7%	99.9%
17													
18 TransCanada STS - Inventory	0	0	0	0	0	1,324,240	1,663,739	1,610,460	1,666,529	1,666,250	1,612,680	1,408,453	10,952,351
19 Capacity Management (C.M.)	0	0	0	0	0	292,968	10,261	9,432	7,470	7,728	7,320	262,252	597,431
20 Total STS Used	0	0	0	0	0	1,617,208	1,674,000	1,619,892	1,673,999	1,673,978	1,620,000	1,670,705	11,549,782
21													
22 STS Load factor - excl. C.M.						81.7%	99.4%	99.4%	99.6%	99.5%	99.5%	84.1%	94.8%
23 STS Load factor						99.8%	100.0%	100.0%	100.0%	100.0%	100.0%	99.8%	99.9%

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TransCanada Transportation  
2008/2009 Actual Load Factors

PUB/Centra 7(b)  
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August 15, 2011

	Actual Nov	Actual Dec	Actual Jan	Actual Feb	Actual Mar	Actual Apr	Actual May	Actual June	Actual July	Actual Aug	Actual Sept	Actual Oct	Actual Total
1	30	31	31	28	31	30	31	30	31	31	30	31	
2													
3 MDA/SSDA MDQ	163,600	163,600	163,600	163,600	163,600	163,600	163,600	163,600	163,600	163,600	163,600	163,600	
4 Total Capacity MDA/SSDA	4,908,000	5,071,600	5,071,600	4,580,800	5,071,600	4,908,000	5,071,600	4,908,000	5,071,600	5,071,600	4,908,000	5,071,600	59,714,000
5													
6 STS MDQ						54,000	54,000	54,000	54,000	54,000	54,000	54,000	
7 STS Capacity Available						1,620,000	1,674,000	1,620,000	1,674,000	1,674,000	1,620,000	1,674,000	11,556,000
8													
9 To MDA/SSDA	4,344,508	5,071,600	5,071,600	4,569,040	4,912,908	3,371,375	1,983,582	1,557,224	1,256,371	1,241,044	1,326,820	3,215,484	37,921,556
10 To Storage	0	0	0	0	0	1,040,380	1,643,276	1,612,020	1,666,994	1,653,385	1,591,560	1,191,087	10,398,702
11 Capacity Management	562,217	0	0	11,760	158,257	495,583	1,442,434	1,738,756	2,144,424	2,175,448	1,955,994	568,312	11,253,185
12 Total MDA/SSDA Transport	4,906,725	5,071,600	5,071,600	4,580,800	5,071,165	4,907,338	5,069,292	4,908,000	5,067,789	5,069,877	4,874,374	4,974,883	59,573,443
13													
14 Load factor - MDA/SSDA	88.5%	100.0%	100.0%	99.7%	96.9%	68.7%	39.1%	31.7%	24.8%	24.5%	27.0%	63.4%	63.5%
15 Load factor - MDA/SSDA/Storage						89.9%	71.5%	64.6%	57.6%	57.1%	59.5%	86.9%	80.9%
16 MDA/SSDA Total Load factor	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	100.0%	99.3%	98.1%	99.8%
17													
18 TransCanada STS - Inventory	0	0	0	0	0	1,040,380	1,643,276	1,612,020	1,666,994	1,653,385	1,591,560	1,191,087	10,398,702
19 Capacity Management (C.M.)	0	0	0	0	0	578,658	30,675	7,980	6,986	20,590	27,962	412,679	1,085,530
20 Total STS Used	0	0	0	0	0	1,619,038	1,673,951	1,620,000	1,673,980	1,673,975	1,619,522	1,603,766	11,484,232
21													
22 STS Load factor - excl. C.M.						64.2%	98.2%	99.5%	99.6%	98.8%	98.2%	71.2%	90.0%
23 STS Load factor						99.9%	100.0%	100.0%	100.0%	100.0%	100.0%	95.8%	99.4%

Centra Gas Manitoba Inc.  
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TransCanada Transportation  
2009/2010 Actual Load Factors

PUB/Centra 7(b)  
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August 15, 2011

	Actual Nov	Actual Dec	Actual Jan	Actual Feb	Actual Mar	Actual Apr	Actual May	Actual June	Actual July	Actual Aug	Actual Sept	Actual Oct	Actual Total
1	30	31	31	28	31	30	31	30	31	31	30	31	
2													
3 MDA/SSDA MDQ	163,600	163,600	163,600	163,600	163,600	163,600	163,600	163,600	163,600	163,600	163,600	163,600	
4 Total Capacity MDA/SSDA	4,908,000	5,071,600	5,071,600	4,580,800	5,071,600	4,908,000	5,071,600	4,908,000	5,071,600	5,071,600	4,908,000	5,071,600	59,714,000
5													
6 STS MDQ						54,000	54,000	54,000	54,000	54,000	54,000	54,000	
7 STS Capacity Available						1,620,000	1,674,000	1,620,000	1,674,000	1,674,000	1,620,000	1,674,000	11,556,000
8													
9 To MDA/SSDA	3,444,112	5,053,000	5,010,094	4,564,000	4,192,069	2,106,269	1,530,660	1,335,301	1,131,134	1,199,957	1,692,894	2,155,685	33,415,175
10 To Storage	0	0	0	0	0	1,360,776	1,398,101	1,358,760	1,405,168	1,409,911	1,365,120	912,071	9,209,907
11 Capacity Management	1,459,149	18,600	61,465	16,800	879,531	1,432,132	2,096,854	2,211,677	2,531,033	2,458,404	1,849,516	1,912,118	16,927,279
12 Total MDA/SSDA Transport	4,903,261	5,071,600	5,071,559	4,580,800	5,071,600	4,899,177	5,025,615	4,905,738	5,067,335	5,068,272	4,907,530	4,979,874	59,552,361
13													
14 Load factor - MDA/SSDA	70.2%	99.6%	98.8%	99.6%	82.7%	42.9%	30.2%	27.2%	22.3%	23.7%	34.5%	42.5%	56.0%
15 Load factor - MDA/SSDA/Storage						70.6%	57.7%	54.9%	50.0%	51.5%	62.3%	60.5%	71.4%
16 MDA/SSDA Total Load factor	99.9%	100.0%	100.0%	100.0%	100.0%	99.8%	99.1%	100.0%	99.9%	99.9%	100.0%	98.2%	99.7%
17													
18 TransCanada STS - Inventory	0	0	0	0	0	1,360,776	1,398,101	1,358,760	1,405,168	1,409,911	1,365,120	912,071	9,209,907
19 Capacity Management (C.M.)	0	0	0	0	0	257,618	269,930	260,970	268,174	263,561	254,815	726,743	2,301,811
20 Total STS Used	0	0	0	0	0	1,618,394	1,668,031	1,619,730	1,673,342	1,673,472	1,619,935	1,638,814	11,511,718
21													
22 STS Load factor - excl. C.M.						84.0%	83.5%	83.9%	83.9%	84.2%	84.3%	54.5%	79.7%
23 STS Load factor						99.9%	99.6%	100.0%	100.0%	100.0%	100.0%	97.9%	99.6%



**Centra Gas Manitoba Inc.**  
**Process for Review of Gas Supply, Storage and Transportation Arrangements**  
**TransCanada Transportation**  
**2010/2011 Actual Load Factors**

PUB/Centra 7(b)  
Attachment  
Page 5 of 5  
August 15, 2011

	Actual Nov	Actual Dec	Actual Jan	Actual Feb	Actual Mar	Actual Apr	Actual May	Actual June	Actual Total
1	30	31	31	28	31	30	31	30	
2									
3 MDA/SSDA MDQ	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	
4 Total Capacity MDA/SSDA	4,116,000	4,253,200	4,253,200	3,841,600	4,253,200	4,116,000	4,253,200	4,116,000	33,202,400
5									
6 STS MDQ						54,000	54,000	54,000	
7 STS Capacity Available						1,620,000	1,674,000	1,620,000	4,914,000
8									
9 To MDA/SSDA	3,534,999	4,253,200	4,222,160	2,978,796	4,190,625	2,578,651	1,434,518	899,117	24,092,066
10 To Storage	0	0	0	0	0	1,028,265	1,012,612	1,296,630	3,337,507
11 Capacity Management	580,836	0	31,034	862,795	59,441	423,865	1,788,328	1,912,668	5,658,967
12 Total MDA/SSDA Transport	4,115,835	4,253,200	4,253,194	3,841,591	4,250,066	4,030,781	4,235,458	4,108,415	33,088,540
13									
14 Load factor - MDA/SSDA	85.9%	100.0%	99.3%	77.5%	98.5%	62.6%	33.7%	21.8%	72.6%
15 Load factor - MDA/SSDA/Storage						87.6%	57.5%	53.3%	82.6%
16 MDA/SSDA Total Load factor	100.0%	100.0%	100.0%	100.0%	99.9%	97.9%	99.6%	99.8%	99.7%
17									
18 TransCanada STS - Inventory	0	0	0	0	0	1,028,265	1,012,612	1,296,630	3,337,507
19 Capacity Management (C.M.)	0	0	0	0	0	492,677	654,886	322,095	1,469,658
20 Total STS Used	0	0	0	0	0	1,520,942	1,667,498	1,618,725	4,807,165
21									
22 STS Load factor - excl. C.M.						63.5%	60.5%	80.0%	67.9%
23 STS Load factor						93.9%	99.6%	99.9%	97.8%

**CENTRA GAS MANITOBA INC.**

**PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
TRANSPORTATION ARRANGEMENTS**

**RESPONSE TO INFORMATION REQUESTS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA**

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**PUB/CENTRA 8**

***Reference: ICF Report Section 6.2.1 pages 90 and 91 of 106***

**(a) Please explain whether Centra is considering altering the amount of storage held, or other changes to the deliverability and cyclability of its storage.**

Centra is considering options with respect to storage capacity, deliverability, and cyclability to achieve the most appropriate mix of these storage attributes for its supply, transportation, and storage portfolio.

**(b) If confirmed, please explain how increases or decreases in capacity, deliverability, and cyclability may affect transportation tolls and supply requirements.**

An increase in storage capacity may increase fixed storage costs and require increased summer transportation capacity and summer supply purchases to fill storage, while a decrease in storage capacity may have the opposite effect. An increase in deliverability may increase fixed storage costs and require increased winter transportation capacity from storage to accommodate increased storage deliverability, while a decrease in deliverability may have the opposite effect. An increase in storage cyclability may increase fixed storage costs for this attribute, which may be offset by a decrease in fixed storage costs if matched

- 1 with decreased storage capacity; in this case, increased winter supply purchases to
- 2 maintain storage levels may be required under some winter weather scenarios.

**CENTRA GAS MANITOBA INC.**

**PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
TRANSPORTATION ARRANGEMENTS**

**RESPONSE TO INFORMATION REQUESTS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA**

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**PUB/CENTRA 9**

***Reference: ICF Report pages 74 and 79 of 106***

The province of Manitoba has solution gas available resulting from the increase in oil exploration. Solution gas plants have been studied, for construction in Manitoba, to clean solution gas, the output of which could be used for Manitoba consumption in the natural gas system.

**(a) Please provide any updated solution gas production volumes anticipated, the status of proposed solution gas plants, approximate costs to ensure the solution gas can be delivered to distribution line specification, status of any negotiations between Centra and solution gas providers, and a summary of any capital costs that may be required by Centra to incorporate solution gas into the distribution system.**

Updated solution gas production volume estimates for 2011 are not yet available from the Manitoba Government Petroleum Branch. Centra understands that an application for the construction of a gas processing facility has been made to the Petroleum Branch by a producer to process solution gas from two of its oil batteries in southwest Manitoba. The facility would strip natural gas liquids (NGL) from the solution gas, with the intention of marketing the NGL while flaring the residual gas. Centra further understands that this process does not render the residual gas as distribution pipeline quality gas, and that the

1 applicant ultimately intends to ship the residual gas via a new pipeline likely to be built to  
2 an existing extra-provincial facility for further processing and sales. While the costs related  
3 to this proposed facility are not publicly available, one midstream operator that builds and  
4 operates processing facilities estimated the construction cost of a small-volume gas  
5 processing plant that would provide distribution pipeline quality gas to be approximately  
6 \$30 million, while gathering lines that would bring solution gas to the facility would cost  
7 approximately \$80,000 to \$100,000 per kilometer. There are no current negotiations being  
8 held between Centra and local producers. Given the widely dispersed locations of oil  
9 batteries, the relatively small volumes of solution gas currently being produced, and the  
10 lack of gathering and processing infrastructure in Manitoba, there is no value in completing  
11 a capital cost summary related to incorporating this gas into Centra's distribution system.

12  
13 **(b) Please comment whether a solution gas processing facility could also be used to**  
14 **process a gas supply from the Alliance Pipeline.**

15  
16 It is Centra's understanding that Alliance is obligated to deliver natural gas liquids to the  
17 Aux Sable processing facility near Chicago. Therefore, that contractual obligation  
18 precludes the processing of natural gas from the Alliance Pipeline at a Manitoba  
19 processing facility.

**CENTRA GAS MANITOBA INC.**

**PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
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**PUB/CENTRA 10**

***Reference: PUB/Centra - 10 ICF Report Section 6.3.3 page 97 of 106***

**Centra has made increased use of Delivered Services in its most recent restructuring of its gas supply, storage, and transportation portfolio as an alternative to Firm Service on the TCPL Mainline. ICF states on page 97 that “Centra could increase its reliance on delivered services from marketers...” Given the recent escalation in TCPL tolls, what is ICF’s view of the continued availability of these discounted delivered services?**

**Response provided by ICF:**

**ICF anticipates that delivered service will continue to be available. The pricing of these services in the future will likely reflect the increases in TCPL tolls. In the report and analysis, ICF did not reach any conclusions as to whether these services in the future will reflect any discount.**

**CENTRA GAS MANITOBA INC.**

**PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
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**RESPONSE TO INFORMATION REQUESTS OF  
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**PUB/CENTRA 11**

***Reference: PUB/Centra - 10 ICF Report Section 6.3.6 page 99 of 106***

**(a) Please compare the current unit rates for Centra's ANR storage as well as GLGT and ANR transportation with the currently approved FERC-regulated rates.**

Current ANR and Great Lakes storage and transportation costs are USD\$17,031,556 which compares to a FERC-regulated maximum rate total of USD\$31,437,345, based on the rates in the table below.

<b>Summer Service</b>	<b>MAX</b>	<b>Current</b>	<b>Quantity</b>	
ANR Transport (Crystal Falls to Storage)	\$4.250	\$4.000	49,711	Dth/day
ANR Transport (SE to Storage)	\$9.750	\$9.750	21,212	Dth/day
ANR SE Gathering	\$1.250	\$0.000	21,212	Dth/day
ANR Transport (SW to Storage)	\$9.250	\$5.600	7,450	Dth/day
Storage Deliverability	\$2.040	\$1.916	200,310	Dth/day
Storage Capacity Reservation	\$0.400	\$0.400	14,700,000	Dth
GLGT Emerson to Crystal Falls	\$5.298	\$5.298	50,567	Dth/day
<b>Winter Service</b>	<b>MAX</b>	<b>Current</b>	<b>Quantity</b>	
ANR Transport (SW to GLGT)	\$9.250	\$5.600	7,450	Dth/day
ANR Transport (Storage to GLGT)	\$4.250	\$0.300	197,706	Dth/day
Storage Deliverability	\$2.040	\$1.916	200,310	Dth/day
Storage Capacity Reservation	\$0.400	\$0.400	14,700,000	Dth
GLGT Backhaul	\$9.456	\$0.919	225,000	Dth/day

1       **(b) Please explain whether Centra expects to be able to secure storage and**  
2       **transportation at rates that are more or less than these FERC-regulated rates, if**  
3       **Centra chooses to continue to use the ANR and GLGT arrangements.**

4  
5       Should Centra choose to continue to use ANR and GLGT as service providers, Centra  
6       would expect to secure rates at or below the FERC-regulated maximum rates listed in part  
7       (a) of this response. Any discounted rates are subject to negotiation and have not been  
8       confirmed at this time.



**CENTRA GAS MANITOBA INC.**

**PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
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**PUB/CENTRA 12**

***Reference: Technical Conference Presentation by ICF slide 19***

**How does ICF's gas price forecast or its conclusions change if the assumption that nuclear generating stations receive one license extension is not correct (i.e. that no license extensions are granted)?**

**Response provided by ICF:**

As noted in the question itself, ICF includes in the Base Case an assumption that, with the exception of plants already scheduled for de-commissioning, nuclear generating stations receive a license extension for an additional 20 years of operation. ICF has not performed alternative scenarios in this engagement where this particular assumption was altered.

Directionally, the retirement of nuclear generation at the end of the original license period would create a need for the construction of generation capacity to replace the nuclear plants. Natural gas would undoubtedly capture some portion of the incremental capacity requirement, creating additional demand for gas.

The price impact of this additional gas demand would depend on the pattern of the growth in gas generation. ICF would expect that, directionally, the additional demand would result in

- 1 overall higher gas prices. Without specific modeling analysis, ICF does not have the analytical
- 2 basis to quantify the extent of the increase.

**CENTRA GAS MANITOBA INC.**

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**PUB/CENTRA 13**

***Reference: Daly Gas Storage***

**Please explain whether Centra is considering the Daly Gas Storage field (~17km west of Virden) for Manitoba gas storage. If not, please explain why not.**

The Daly field is being given consideration, however given the early stage of Centra's investigation of Manitoba storage, no conclusions have been reached.

CENTRA GAS MANITOBA INC.

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1     **PUB/CENTRA 14**

2     *Reference: Review of Potential for the Development of Natural Gas Salt Cavern Storage*  
3     *Facilities, July 2005, page 3 of 26 (2006/07 Cost of Gas Proceeding, Tab 8 Attachment 1);*  
4     *PUB/Centra 4(c) from the 2010/11 Cost of Gas proceeding*

5  
6     In Centra's report on salt cavern storage of 2005, Centra states: "With respect to security  
7     of supply, Centra currently has an under-contracted capacity of approximately 44 000  
8     gigajoules (GJ) per day relative to a forecasted firm peak day requirement of  
9     approximately 465,000 GJ."

10  
11    In PUB/Centra 4(c) from the 2010/11 Cost of Gas proceeding, Centra states that it:  
12    "...does not have any uncontracted capacity relative to the design firm peak day."

13  
14    (a) Recognizing that these statements refer to different gas years, since the inception of  
15       the current ANR storage and transportation arrangements, please explain whether  
16       Centra has maintained contracted capacity sufficient to serve the peak firm load.

17  
18       For a period of time since the inception of the current ANR storage and transportation  
19       arrangements, Centra's perspective was that given the availability of uncontracted capacity  
20       on the TCPL system, the risk of failing to obtain sufficient supplies was minimal. Centra  
21       recognized that the cost to purchase such supplies could be substantial, especially if cold

1 weather was coincident in eastern markets. This operating philosophy was based on the  
2 premise that the one in twenty year occurrence of significant Supplemental Gas costs  
3 would be more than offset by the avoided fixed costs which Centra would incur to contract  
4 for additional pipeline and/or transportation capacity to satisfy the firm peak day  
5 requirement.

6  
7 IGC conducted a review of Centra's supply, storage and transportation portfolio in 2003.  
8 One conclusion that IGC reached was that Centra's portfolio could be strengthened by  
9 providing for a full firm assurance of gas supply availability for the entire forecast peak  
10 load. IGC identified that in its experience, "LDCs rarely leave any significant portion of their  
11 firm demand uncovered." Following receipt of this report, Centra increased its use of  
12 Capacity Management transactions and/or peaking delivered services to fill the gap  
13 between its firm assets and its firm peak demand. Given the cost effectiveness of these  
14 arrangements, this was deemed to be the most appropriate way to respond to IGC's  
15 recommendation.

16  
17 Since the 2004/05 fiscal year, Centra has continued to use Capacity Management  
18 transactions and/or peaking delivered services to ensure that it has its firm peak market  
19 requirement covered heading into the heating season.

20  
21 **(b) If not, please indicate the periods of time when Centra has not maintained**  
22 **contracted capacity sufficient to serve the peak firm load; what Centra's plan was to**  
23 **meet such peak; and why Centra now maintains fully contracted capacity to serve**  
24 **the firm peak load.**

25  
26 Please see the response to part (a) above.

**CENTRA GAS MANITOBA INC.**

**PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
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**RESPONSE TO INFORMATION REQUESTS OF  
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**PUB/CENTRA 15**

***Reference: ICF Report Page 61 of 106 – Impact on TCPL Tolls; Order 65/11 Directive 14***

Regarding changes to Centra's rate design, and the potential amalgamation of Primary Gas and Supplemental Gas into a single commodity rate, Centra responded to the Board on May 19, 2011 indicating that it will be reviewing this matter in the future and it will be discussed during the next Cost of Gas or General Rate Application proceeding.

(a) Please explain whether any decisions, contracts, or other obligations arising out of the current proceeding for the replacement of storage and transportation assets will restrict the options available for designing an optimal rate structure.

(b) If confirmed, please identify the restrictions or considerations and the extent that they may impact changes to the current rate design.

(c) With the projected changes in the marketplace and the role of delivered gas service and other gas delivery options, how might this impact the current definitions of Primary Gas and Supplementary Gas?

Response to parts (a), (b) and (c):

The current review of natural gas supply, storage and transportation arrangements is being undertaken to determine the combination of assets that will provide the most cost-effective approach to providing reliable and secure supply to meet the needs of the Manitoba market. To the extent that such an examination results in a new combination of assets that differ from the current configuration, and if the current commodity rate design cannot reasonably reflect the nature of those assets, then Centra will consider examining an appropriate rate design that is reflective of the new combination of assets.

The current commodity rate structure and the role of Primary Gas and Supplemental Gas were established in the late 1990's as Centra prepared to implement Western Transportation Service to facilitate the operation of gas marketers in the retail market. It is premature to determine what final rate design changes may be required, if any, until the evaluation of gas supply options has been completed and the preferred portfolio design has been identified.

**CENTRA GAS MANITOBA INC.**

**PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
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**RESPONSE TO INFORMATION REQUESTS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA**

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**PUB/CENTRA 16**

***Reference: TCPL Application for Approval of Mainline Final 2011 Tolls to NEB***

**(a) Please file any submissions made or to be made by Centra in the TCPL toll proceeding currently before the NEB.**

Please find attached two letters from Centra to the National Energy Board ("NEB") re: Mainline 2011 tolls, one dated February 2, 2011 (Attachment 1) and one dated May 16, 2011 (Attachment 2). As outlined in the response to PUB/Centra 1 (b), the NEB is expected to rule on final 2011 TCPL Mainline tolls by late August 2011 and there is currently no confirmed timeline related to the finalization of TCPL Mainline tolls for 2012 or beyond.

**(b) Please summarize (and quantify the impacts of) Centra's position related to TCPL's application in the current toll proceeding.**

Centra's primary concern with TCPL's settlement proposals was that they didn't represent a long-term solution; although throughput may have stabilized at or near current levels as a result of the proposals, the issue of underutilized or stranded capacity was not addressed. Centra was also concerned with the ongoing deferral of significant costs and the extension of economic planning horizons for an asset that is currently not competitive or viable in its



1 business model. Finally, Centra was not supportive of TCPL's assertion that the 2007-  
2 2011 Mainline Settlement must be relied upon for the calculation of tolls for 2011.

3  
4 Centra also encouraged the NEB to "set forth a rigid deadline for addressing the problem of  
5 underutilized capacity on the mainline and to direct TCPL to work with all stakeholders in  
6 developing a long-term and enduring solution for the mainline".

7  
8 Centra's position is conceptual in nature and therefore it is not possible to calculate any  
9 financial impact that may result. Centra is awaiting TCPL's September 1, 2011 application  
10 which Centra understands will include a comprehensive suite of business model, toll  
11 design and service changes.



*from the Office of the Vice-President*

2011 02 02

Ms. Anne-Marie Erickson  
Secretary of the Board  
National Energy Board  
444 Seventh Ave S.W.  
Calgary, AB  
T2P 0X8

Dear Ms. Erickson:

**Re: Trans Canada PipeLines Limited ("TCPL")**  
**Application for Approval of Revised Mainline Interim 2011 Tolls ("Application")**

Centra Gas Manitoba Inc. ("Centra") has a significant interest in the TCPL Application and the long-term competitiveness and viability of the Mainline. In 2010, Centra was the sixth largest Firm Transport holder on the Mainline and all of Centra's transportation and storage contracts are currently with TransCanada – on the Canadian Mainline; on Great Lakes Gas Transmission Company and with ANR Pipeline Company in the United States.

Centra has been an active and long time participant in the Mainline Tolls Task Force ("TTF"). On December 7, 2010, Centra "soft opposed" TCPL's proposed 2011-13 Mainline Settlement (the "Settlement"). Centra could not support the Settlement primarily because of concerns that it did not present a long-term solution. It may have stabilized throughput at or near current levels but significant capacity would remain underutilized and stranded. In Centra's opinion, the deferral of significant costs and extension of economic planning horizons for an asset that is no longer competitive or viable in its current business model has the real potential to exacerbate the current situation. Centra has concerns about the exposure of long-term shippers to this high degree of risk going forward.

Centra believes that Board Order TGI-04-2010 dated December 22, 2010 setting interim tolls for the Mainline at the 2010 final toll level (EZT of \$1.64/GJ) was the appropriate decision in the circumstances. The EZT, the benchmark toll on the Mainline, increased by 38% in 2010 and is now proposed by TCPL to increase by another 36.5% on an interim basis in 2011. It is difficult to support TCPL's assertion that the proposed revised interim 2011 tolls are in the public interest. Unfortunately, TCPL's Application has not provided sufficient information or justification to

Ms. Anne-Marie Erickson  
2011 02 02  
Page 2

adequately demonstrate why an increase of this magnitude is in the public interest. The logic that the proposed toll increase is needed to prevent rate shock is counter-intuitive as shippers on the Mainline have been experiencing rate shock since tolls increased in 2010.

The other matter of concern is the material departure that the proposed revised interim 2011 EZT toll of \$2.24 represents relative to the indicative tolls provided to shippers at the time of the vote on the 2007-2011 Mainline Settlement, as follow:

	<u>Eastern Zone Firm Transport Toll (\$/GJ/Day)</u>
Proposed Test Year 2007	\$1.019
Test Year 2008	1.017
Test Year 2009	1.025
Test Year 2010	1.042
<u>Test Year 2011</u>	<u>1.059</u>
5 Year Average	\$1.032

TCPL's position is that the 2007-2011 Mainline Settlement is currently the governing and approved methodology for calculation of tolls for 2011 yet TCPL itself is proposing to deviate from the strict application of the approved methodology associated with this settlement. In Centra's opinion, this demonstrates that the 2007-2011 Mainline Settlement no longer works. The spirit and intent of this settlement is broken given the vast difference between what was represented at the time the settlement was voted and the current reality.

Centra has concerns that approving the Application thus embedding a 2011 Mainline interim toll at \$2.24 EZT/GJ as a new benchmark for transport on the Mainline may serve to mask the serious issues the Mainline and its stakeholders currently face and lessen the urgency of resolving these in a long-term, sustainable way. There certainly is a question as to the impact on the ability of the Mainline to earn discretionary revenues to support its forecast of same if the Application is approved.

The challenges that the Mainline is facing have been accumulating for a number of years. Recent industry developments such as the proliferation of economically recoverable shale gas resources in locations in closer proximity to gas markets in Eastern Canada and the Northeast United States are intensifying the problem but the crux of the matter has existed for some time.

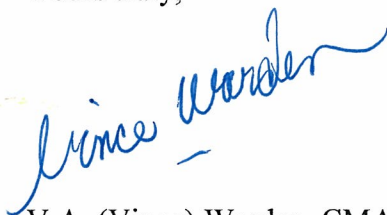
Over the last decade, as shippers abandoned firm long-haul commitments on the Mainline, Centra has consistently encouraged TCPL to propose a "long term and enduring solution". Since December 7, 2010 TCPL has filed two applications for Mainline interim tolls with the National Energy Board (the "Board") without any meeting or consultation with the TTF contrary to past and well established practice. Centra appreciates TCPL's right to proceed to make any application to the Board on its own volition (without stakeholder consultation through the TTF or otherwise).

Ms. Anne-Marie Erickson  
2011 02 02  
Page 3

However, proceeding in this fashion has left Centra, and other stakeholders, in the situation of having to react in an expeditious fashion to an issue of magnitude without due process to receive sufficient information to better understand the numerous consequences if such an Application is approved - even considering it is on an interim basis. In these circumstances, Centra submits that the Board should give due consideration to procedural fairness when deliberating upon whether or not the Application is in the public interest.

Centra supports the collaborative process in principle and practice and will work cooperatively with TCPL and all stakeholders attempting to find a concrete "long term and enduring solution" for the Mainline which includes addressing the problem of underutilized capacity. However, Centra urges the Board, as part of its Order with respect to this Application, to set forth a rigid deadline for this to occur and, failing which, for the Board to set forth a timely regulatory process and related proceeding to examine the competitiveness and viability of the Mainline going forward. This may well be the time to broadly gather the opinions and intelligence of the array of stakeholders with an interest in this matter and to work together, with the Board, to come up with an equitable long-term solution.

Yours truly,



V.A. (Vince) Warden, CMA, FCMA  
Senior Vice-President  
Finance & Administration  
and Chief Financial Officer

VAW/mm





*from the Office of the Vice-President*

2011 05 16

Ms. Anne-Marie Erickson  
Secretary of the Board  
National Energy Board  
444 Seventh Ave. S.W.  
Calgary, AB T2P 0X8

Dear Ms. Erickson:

**Re: TransCanada Pipelines Application for Approval of Mainline Final 2011 Tolls**

Centra Gas Manitoba Inc. ("Centra") has a significant interest in TransCanada Pipelines ("TCPL") Application for Approval of Mainline Final 2011 Tolls (the "Application"). In 2010, Centra was the sixth largest Firm Transport (FT) holder on the Mainline, and all of Centra's transportation and storage contracts are currently with TransCanada. The long-term competitiveness and viability of the Mainline is critical to Centra and its ratepayers

Centra notes that in Order AO-1-TGI-04-2010, the NEB expressed significant concern with the continuing uncertainty around the Mainline. Yet the Application defers again any process, plan or action that may result in an acceptable resolution of the problem. TCPL indicated in the Application that it intends to file another application with respect to 2012 and 2013 tolls by October 31, 2011, acknowledging that a settlement amongst shippers is unlikely for 2011.

As stated in earlier correspondence with the Board, Centra encourages the Board as part of its Order with respect to this Application, to set forth a rigid deadline for addressing the problem of underutilized capacity on the mainline and to direct TCPL to work with all stakeholders in developing a long-term and enduring solution for the mainline. This matter is urgent and of great concern to Centra and its ratepayers.

Thank you for your consideration.

Yours truly,

A handwritten signature in blue ink that reads 'Vince Warden'.

V.A. Warden, CMA, FCMA  
Senior Vice-President  
Finance & Administration  
and Chief Financial Officer

VAW/mm

**CENTRA GAS MANITOBA INC.**

**PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
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**RESPONSE TO INFORMATION REQUESTS OF  
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**PUB/CENTRA 17**

***Reference: Western Transportation Service***

**(a) Please explain if and how marketers utilizing Centra's Western Transportation Service will be impacted by any potential changes in Centra's storage and transportation assets.**

**(b) Is there expected to be any change in the gas loan mechanism or the magnitude of the gas loans provided by Centra to marketers as a result of any new storage and transportation arrangements?**

**(c) Is Centra considering any changes to the daily or monthly nomination processes that would impact marketers in Manitoba? If so, please describe these changes.**

**Response to parts (a), (b) and (c):**

The current review of natural gas supply, storage and transportation arrangements is being undertaken to determine the combination of assets that will provide the most cost-effective approach to providing reliable and secure supply to meet the needs of the Manitoba market, post April 2013.

1 To the extent that such an examination results in a new combination of assets that differ  
2 from the current configuration, and if the operation of direct purchase supply is affected,  
3 then Centra will consider modifications to the current marketer supply processes under  
4 WTS/ABC Service that is reflective of the new combination of assets.

5  
6 It is premature to determine what modifications to direct purchase supply operations may  
7 be required, if any, until the evaluation of gas supply options has been completed and the  
8 preferred portfolio design has been identified.

**CENTRA GAS MANITOBA INC.**

**PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
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**PUB/CENTRA 18**

***Reference: Portfolio Selection Framework***

**(a) Please provide a description of the scoring framework being utilized to evaluate each storage and transportation option.**

Factors that will be considered in evaluating supply, storage and transportation portfolio options are listed below in no particular order:

- i. Operational reliability;
- ii. Access to liquid supply;
- iii. Portfolio cost, including:
  - Landed cost of supply to storage and to the Manitoba market
  - Cost of storage and transportation services
  - Ability to mitigate pipeline balancing fees
- iv. Nomination flexibility and firmness, including intra-day nominations;
- v. Exposure to TCPL uncertainties;
- vi. Flexibility to adjust the portfolio under changing market circumstances;
- vii. Supply diversity;
- viii. Availability of transportation and storage capacity;
- ix. Transportation and storage capacity renewal rights and parameters;
- x. Credit and financial substantiation of service providers;



xi. Service provider quality and stability (permanence, commercial outlook); and

xii. Portfolio complexity.

The scoring framework has not been completed at this time and may include additional factors not listed above.

**(b) Please indicate what form of quantitative cost-benefit analysis is being employed in the evaluation of options. Please provide an example of the analysis being undertaken.**

From a quantitative perspective, Centra intends to evaluate a variety of costs in the upcoming portfolio optimization analysis, including storage capacity, deliverability, and cyclability, transportation capacity, and sources of supply across various weather and market scenarios. Centra intends to consider the impacts on rate payers using both present value and annualized cost methodologies as appropriate.

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**PUB/CENTRA 19**

***Reference: Transcript Page 236 - Discounted Options***

**Please indicate which options set out in ICF's report are not considered viable options.**

Centra is not formally ruling out any options at this stage but will focus its efforts on the more plausible options.

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**PUB/CENTRA 20**

***Reference: PUB/Centra - 20 ICF Report Page 68 of 106: Portfolio Flexibility***

**Please discuss the cost versus benefit trade-off of retaining flexibility to adjust the portfolio.**

Portfolio flexibility may be retained in ways that could impact the cost of the portfolio. One example is entering into short-term storage and transportation arrangements, which may attract different pricing (higher or lower) from service providers than long-term arrangements. In principle though, greater flexibility or optionality typically comes at a greater expected cost.

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**PUB/CENTRA 21**

***Reference: ICF Report page 29 of 106 Figure 18 - ICF Forecast of Henry Hub & AECO  
Price***

**Please provide a table with the data points of the forecasted Henry Hub and AECO prices  
for the November 2008 and April 2011 base cases. Please indicate how each of the  
assumptions in the underlying basis for the price forecast have changed.**

**Response provided by ICF:**

There are a large number of data elements that are involved in the preparation of each forecast,  
and it is not feasible to provide specific details as to the changes in each data element.  
However, in general, there are differences between forecasts related to:

- An increase in the natural gas resource base, particularly in shale gas and unconventional gas resources.
- Reductions in the cost of exploration and production driven by improvements in technology.
- Increases in the estimates of ultimate recovery per well driven by improvements in technology, and based upon the additional historical data available since the 2008 forecast was prepared.
- A decrease in economic activity in the short term driven by the recession and the slow rebound in economic growth.

- 1           • Changes in the assumptions regarding the timing and nature of environmental regulation
- 2           for GHG compliance and other air regulation affecting power generation.

ICF Base Case Price Forecast at Henry Hub (Real \$/MMBtu)				ICF Base Case Price Forecast at AECO (Real \$/MMBtu)			
		November 2008	April 2011		November 2008	April 2011	
1							
2	2001	4.79		2001	4.23		
3	2002	3.92		2002	3.01		
4	2003	6.24		2003	5.35		
5	2004	6.53		2004	5.49		
6	2005	9.56		2005	7.78		
7	2006	7.17		2006	6.05		
8	2007	7.20		2007	6.19		
9	2008	9.02	9.02	2008	7.81	7.89	
10	2009	5.40	3.98	2009	4.18	3.56	
11	2010	7.31	4.38	2010	6.73	3.89	
12	2011	6.84	4.59	2011	6.18	3.86	
13	2012	7.30	4.71	2012	6.69	3.87	
14	2013	7.04	4.60	2013	6.47	3.79	
15	2014	7.73	5.51	2014	7.16	4.65	
16	2015	7.61	5.40	2015	6.99	4.64	
17	2016	7.46	5.23	2016	6.53	4.49	
18	2017	7.66	5.36	2017	6.82	4.64	
19	2018	7.85	5.35	2018	7.04	4.60	
20	2019	7.93	5.48	2019	7.17	4.74	
21	2020	8.22	5.80	2020	7.41	5.06	
22	2021	7.34	5.99	2021	5.93	5.28	
23	2022	8.16	6.20	2022	7.00	5.51	
24	2023	8.14	6.11	2023	6.93	5.46	
25	2024	7.98	6.34	2024	6.49	5.71	
26	2025	8.20	6.14	2025	6.87	5.52	
27	2026	8.66	6.22	2026	7.39	5.65	
28	2027	8.68	6.14	2027	7.43	5.56	
29	2028	9.12	6.52	2028	7.96	5.95	
30	2029	9.00	6.27	2029	7.82	5.70	
31	2030	9.49	6.61	2030	8.35	6.08	

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1 **PUB/CENTRA 22**

2 ***Reference: ICF Report page 33 of 106 Figure 19 - Natural Gas Supply Price Forecast -***  
3 ***Alternative Marcellus Shale Production Scenarios***

4  
5 **Please indicate how the natural gas price forecast through 2035 varies based on the high**  
6 **and low Marcellus Production Scenario from the Base Case.**

7  
8 **Response provided by ICF:**

9 The ICF scenarios developed for Centra combined several different areas of market uncertainty  
10 into each scenario, and the high and low Marcellus Production Scenarios were not evaluated  
11 independent of the other areas of market uncertainty. As a result, forecasts showing the price  
12 impacts of the high and low Marcellus Production scenarios are not available. The High  
13 Marcellus Production scenario was included in the "TCPL Pessimistic Scenario", and the low  
14 Marcellus Production scenario was included in the "TCPL Optimistic Scenario" and the "Tight  
15 Gas Markets Scenario". The price forecast for each of these scenarios, as well as for the ICF  
16 Base Case, is provided in response to PUB/CENTRA 39.

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**PUB/CENTRA 23**

***Reference: Centra Portfolio Options - Approach to Building a Portfolio***

- (a) Please explain how Centra has incorporated the recognition of uncertainty related to TCPL and Shale Gas in its evaluation analysis.**

The TCPL situation and the proliferation of shale gas are areas of market uncertainty that will be considered by Centra in determining its preferred portfolio design for April 2013. These areas have been considered in the market scenario analysis and TCPL toll sensitivity analysis performed by ICF, described in sections 2.3 and 4.2 of the ICF report, *Review of Natural Gas Supply Portfolio Options for Centra Gas* (June 2011). Market scenarios and TCPL tolls will also be considered in the upcoming portfolio optimization analysis. Centra will also continue to monitor and consider all TCPL and NEB developments in making its portfolio decisions.

- (b) Please explain how Centra plans to value the flexibility in developing business cases around the various options.**

As noted in PUB/CENTRA 18, Centra will use various criteria in considering portfolio options, including the flexibility to adjust the portfolio under changing market



- 1 circumstances, and will value all factors including flexibility when completing the evaluation
- 2 matrix.

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**PUB/CENTRA 24**

***Reference: Physical vs. Notional Delivery***

**In terms of reliability of supply, please discuss the implications of moving away from receiving gas from the WCSB versus receiving gas on a notional basis (backhaul) from an alternative supply.**

Pipelines that offer backhauls by displacement (“notional” backhauls) may offer such backhauls under “firm” transportation contracts, which, unless otherwise specified by the pipeline, is deemed to be of the same priority of service as firm forward-haul transportation service. In some cases, a pipeline may offer “firm” notional backhaul service that is only deemed firm provided there is sufficient physical forward-haul of gas occurring on the pipeline; in other words, a shipper’s backhaul nomination will be rejected by the pipeline under conditions of insufficient physical forward-haul. Some pipelines, such as GLGT, have the physical ability to reverse flows on its system, thus ensuring firm backhaul service by way of either notional or physical flows. TCPL has also implemented bi-directional capabilities at Emerson, enabling gas to physically flow north or south at this point.

Any implications for reliability of supply will ultimately depend upon the characteristics of the pipeline(s) on the transportation path in question.

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**PUB/CENTRA 25**

***Reference: ICF Report Page 75 of 106 - Alliance Pipeline Supply Option***

**(a) Please provide an estimate of the cost of building an interconnection in Regina to TCPL.**

**(b) Given the current toll structure on TCPL, please indicate to what extent TCPL tolls may be reduced from this option.**

**(c) To what extent could a pipeline interconnect with Alliance reduce Centra's dependence on TCPL?**

**(d) Please provide a high level estimate of the cost of a new pipeline that would interconnect with Alliance and bring gas into Manitoba without using TCPL's Mainline.**

**(e) Please indicate the source of the illustrative pipeline construction cost range of \$1.0 and \$1.5 million per mile.**

**Response to parts (a) through (e):**

**Please see the response to PUB/CENTRA 5.**

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**PUB/CENTRA 26**

***Reference: ICF Report Page 91 of 106 - Optimal Level of Storage***

**Please provide a description of the interrelationship of higher deliverability and cyclability with contracted storage levels and explain implications on costs, operations and reliability.**

For illustrative purposes only, take Centra's current ANR storage capacity of 14.7 million Dth (expressed in U.S. dekatherm units, where 1 Dth = 1.055056 GJ) and deliverability of 197,706 Dth/day (net of fuel). This storage is seasonal (restricted to summer injections and winter withdrawals), single-cycle storage (cyclability of 1.0). Hypothetically, while maintaining the same ability to withdraw up to 14.7 million Dth from storage in winter, Centra could reduce its storage capacity to 10.4 million Dth, as ANR offers storage cyclability up to 1.42 (14.7 million Dth divided by 1.42 = 10.4 million Dth). This storage would be considered annual, with the ability to inject and withdraw at any time of the year, allowing Centra to inject in winter to enable withdrawal of up to 14.7 million Dth, even though physical capacity is only 10.4 million Dth. Centra could match this reduced storage capacity with the same deliverability of 197,706 Dth/day (although the deliverability has not changed with respect to Dth per day, it may be thought of as higher deliverability storage relative to the reduced storage capacity). Using ANR's FERC-regulated maximum rates for storage capacity and for annual, cyclable storage service (reflected in the deliverability rate), fixed storage cost implications would be as follows:

1

Storage	Seasonal	Annual
Cycles	1.00	1.42
Capacity (Dth)	14,700,000	10,352,113
Capacity rate (USD/Dth)	0.40	0.40
Capacity cost (USD)	5,880,000	4,140,845
Deliverability (Dth/day)	197,706	197,706
Deliverability rate (USD/Dth)	2.04	2.45
Deliverability cost (USD)	4,839,843	5,812,556
Annual fixed storage cost (USD)	10,719,843	9,953,401

2

3 For storage operators offering market-based rates, the cost of these storage attributes are  
 4 negotiable and are not subject to FERC-regulated maximum rates.

5

6 In addition to the difference in the contractual costs of storage, the actual supply costs of the  
 7 storage gas must be considered in this analysis. For example, a reduction in storage capacity  
 8 that is made possible with cyclable storage may require increased gas purchases in winter to  
 9 maintain storage levels under some cold winter weather scenarios. Less summer gas  
 10 purchases to fill storage combined with the potential for increased winter gas purchases have  
 11 implications for the cost of supply. In effect, Centra would be physically hedging less gas with a  
 12 reduction in storage capacity and reduced summer gas purchases for withdrawal in winter.  
 13 However, in a normal or warm year, overall gas volumes purchased may be reduced.

1  
2 Centra intends to evaluate a variety of factors in the upcoming portfolio optimization analysis,  
3 including storage capacity, deliverability, and cyclability, and sources and cost of supply across  
4 various weather and market scenarios.

5  
6 Operationally, Centra would need to consider how storage could be filled in winter with respect  
7 to source of supply and supply liquidity. Provided the storage service is a firm service and  
8 Centra can acquire winter supply reliably for injection, changes in storage attributes should not  
9 impact reliability.

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**PUB/CENTRA 27**

***Reference: ICF Report Page 98 of 106 - Manitoba Storage Development***

**(a) Please elaborate on any analysis or studies undertaken by Centra on the development of Manitoba Storage.**

Centra has retained a storage consultant to assist in a review of the potential for developing specific storage sites of interest to Centra. The review is currently in progress, and will consider geological characteristics and suitability, and provide high-level estimated capital and operating costs. This early-stage level of analysis is intended to provide sufficient information to determine whether further analysis is warranted.

**(b) Please elaborate on what would represent “appropriate market conditions” to make a decision on Manitoba storage development and compare with the current market conditions.**

Shippers on the TCPL Mainline are currently facing significant uncertainty with respect to TCPL tolls levels, business model, toll design, and services. The North American natural gas market continues to undergo changes related to the proliferation of shale gas, impacting basis differentials, transportation patterns, and the market value of storage. TCPL’s business model, tolls, and services could potentially impact how local storage

1 would be operated, and the market value of storage and related transportation may impact  
2 the relative attractiveness of remote storage in comparison to local storage.  
3

4 **(c) Please indicate what cost estimate has been utilized for the analysis of Manitoba**  
5 **storage development. Please provide an update to the cost estimates for Manitoba**  
6 **“greenfield” development.**  
7

8 Please see parts (a) and (b) of this response.



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**PUB/CENTRA 28**

***Reference: ICF Report Page 102 of 106 - Virtual Storage***

**(a) Please indicate the companies that offer virtual storage services, a description of the services being currently being offered, and the cost of such services. Please indicate the order of magnitude of costs savings (or additions) from the current ANR arrangement that may be realized by replacing the current service.**

Virtual storage services may be offered by a wide range of gas marketers. These services are individually negotiated and may take a variety of forms that are mutually agreeable to the respective parties. These services may emulate a storage service at a particular point. Centra is currently considering proposals for a virtual storage service at Emerson that would involve “injecting” gas with a marketer during the summer months, and “withdrawing” gas from a marketer in the winter months. The cost of such services and any potential cost savings or additions are subject to further negotiations and analysis, and have not been confirmed at this time.

**(b) What portion of virtual storage should Centra consider given concerns raised on control of the physical assets?**

1 If the analysis of a virtual storage service suggests that it may provide cost savings over  
2 other options, Centra would need to evaluate the magnitude of savings relative to the risks  
3 associated with the service, in addition to any operational considerations. Risks may  
4 include credit and counterparty risk, as well as re-contracting risk associated with the  
5 potential that a marketer may no longer be willing or able to provide the virtual storage  
6 service at the end of the contract term (this risk is lower with physical storage operators  
7 that have greater “permanence” and a greater ongoing need to sell storage services).  
8 Operational considerations may include nomination flexibility and firmness. For example, if  
9 the virtual storage service only provides firm day-ahead nominations as opposed to firm  
10 intra-day nominations, this will impact Centra’s ability to respond to weather-driven load  
11 swings and the ability to mitigate pipeline balancing fees. Given these potential risks and  
12 considerations, Centra may only entertain a virtual storage service for a small portion of its  
13 storage portfolio.

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**PUB/CENTRA 29**

***Reference: ICF Report Page 94 Section 6.4.2 LNG Gas Peaking Plant***

**(a) Please estimate the cost of a LNG Peaking Plant that would meet the needs of  
Centra.**

**(b) Based on that cost estimate, compare the costs with STFT capacity or the other  
peaking services currently available to Centra.**

**Response to parts (a) and (b):**

On page 104 in Section 6.4.2, with regard to the utilization of a LNG Gas Peaking Plant, ICF notes that “the costs are not competitive with STFT capacity, or the peaking services currently available to and utilized by Centra”.

Given that LNG Peaking Plant costs are not competitive with the options currently available to Centra, and the extensive cost and effort required to prepare an estimate of the construction and operational costs of an LNG Peaking Plant, no such analysis has been undertaken.

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**PUB/CENTRA 30**

***Reference: ICF Report - Terms of Reference***

**Please summarize ICF's current and future role related to the Gas Storage and  
Transportation Portfolio Review.**

ICF's role in relation to the storage and transportation review is to provide analysis of the North American natural gas market, to construct and analyze a number of market scenarios relevant to Centra with particular focus on the TCPL Mainline situation, to assist in the identification of portfolio options, and to perform an optimization analysis of leading portfolio options. ICF's analysis will be considered by Centra in determining the appropriate portfolio for April 2013.

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**PUB/CENTRA 31**

***Reference: ICF Report Page 60 of 106 - Impact on TCPL Tolls***

**(a) Please describe the nature of a “settlement” or the terms of a “regulatory solution”  
that could be reached leading to stable or declining rates.**

**(b) What sort of regulatory solution would result in stable or declining rates?**

**Response to parts (a) and (b):**

Given that TCPL is expected to file an application with the National Energy Board (“NEB”) on September 1, 2011, which will include a comprehensive suite of business model, toll design and service changes, Centra is reluctant to speculate on the variety of possible outcomes that may be considered by the NEB to be in the public interest when reviewing this application.

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**PUB/CENTRA 32**

***Reference: ICF Report Page 63 of 106 – The Current Challenge***

**(a) ICF refers to the mainline system and resulting tolls as an impending crisis. Have other Canadian shippers defined this situation as a crisis?**

**(b) What constitutes the conclusion that this is a crisis?**

**(c) Have governments from other Canadian jurisdictions indicated that this situation is a “crisis” and have any governments offered to examine policy options to manage this “crisis”?**

**Response to parts (a), (b) and (c):**

While ICF or Centra have not canvassed other Canadian shippers or government officials as to their respective definition of the TCPL situation, a general consensus exists among industry participants that the challenges facing TCPL are indeed extremely serious.

ICF discusses the TCPL situation in Section 4 of the ICF Report, and provides its assessment as to why it can be considered a “crisis”.

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**PUB/CENTRA 33**

***Reference: ICF Report Page 64 of 106 – The Current Challenge***

**(a) Please define what sort of regulatory framework changes have been contemplated for TCPL and why ICF concludes they are likely insufficient to resolve the problem?**

**(b) Would ICF have other regulatory suggestions that should be considered that could mitigate the problem?**

**Response to parts (a) and (b):**

**Please see the response to PUB/CENTRA 31.**

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**PUB/CENTRA 34**

***Reference: Page 1 & 2 ICF Report***

**(a) Have gas distribution companies generally obtained interruptible transmission capacity to serve firm utility customers given the changes in the gas marketplace and resulting transmission tolls?**

Response provided by ICF:

Gas distribution companies have not generally obtained interruptible transmission capacity to serve firm utility customers.

**(b) What are the existing and proposed TCPL interruptible transportation rates for the Manitoba Zone in 2011?**

The Interruptible Transportation (IT) bid floor rates are 110% of the approved Firm Transportation (FT) Toll. The approved 2011 interim IT toll from Empress to the MDA is \$.7482/GJ. TCPL is proposing a 2011 final annualized IT toll of \$.82302/GJ; the NEB is expected to rule on final 2011 TCPL Mainline tolls by late August 2011.

There is currently no confirmed timeline related to the finalization of TCPL Mainline tolls for 2012 or beyond.



1  
2 **(c) Please provide a detailed explanation regarding the potential for a decline in the**  
3 **availability of highly discounted backhaul capacity from ANR storage on Great**  
4 **Lakes?**

5  
6 Response provided by ICF:

7 Along with the decline in the amount of flow on the TCPL mainline "over the top" into  
8 Ontario, the volume of gas transported in a traditional forward haul on Great Lakes has  
9 decreased. The decrease, which may continue into the future, reduces the availability of  
10 firm backhaul service. As with any other product, all other things equal, a decrease in  
11 supply results in an increase in price. The only certain restraint to the potential increase is  
12 the maximum regulated rate without any discount.

13  
14 **(d) As midstream marketers have existed for a number of decades providing a wide**  
15 **variety of services, what are the changes in the last ten years in market structure**  
16 **that increased the importance of midstream gas marketers regarding the**  
17 **development of reliable delivered gas services?**

18  
19 Response provided by ICF:

20 The question is quite broad in that almost all of the changes in the industry have had some  
21 effect, sometime enhancing the availability of reliable delivered service, and sometimes  
22 reducing the availability of these services. That said, several of the important factors  
23 include:

- 24 • Reductions in the amount of long haul firm pipeline capacity held by shippers in favor  
25 of short haul service;
- 26 • The development of liquidity gas markets at more trading locations; and

- The development of electronic trading platforms (e.g., ICE, NGX, etc.).

**(e) Please provide a more detailed explanation as to why changes in market structure can now enable Centra to more readily purchase natural gas at the Centra citygate on both a seasonal and peak day basis?**

Response provided by ICF:

With unsubscribed capacity on the TCPL, a marketer will have less difficulty in arranging for transportation to the Centra delivery locations on a seasonal and peak day basis.

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**PUB/CENTRA 35**

***Reference: Page 15 Section 2.1.8 Projected Natural Gas Movements and Prices***

- (a) Has ICF undertaken any recent discussions/communications with proponents of the Mackenzie project to determine their opinion as to whether they agree with ICF's conclusion that Mackenzie will not be built in the forecast timeframe (2035)?**

**Response provided by ICF:**

In the course of providing consulting services, employees of ICF have routine discussions/communications with a wide range of stakeholders in the natural gas, energy and environmental communities as well as government representatives. Some of these may be considered proponents of the Mackenzie project. ICF's conclusion, however, regarding the project are based solely upon independent analysis.

- (b) Is it ICF's opinion that potential gas development in the Arctic is solely dependent upon the competitive netback price to producers and if not provide a detailed response as to reasons, why or why not, the Arctic may or may not be developed based upon other criteria?**

1        Response provided by ICF:

2        In addition to the competitive netback price to producers, ICF considers the magnitude of  
3        the capital at risk and the inability to manage that risk with long-term binding precedent  
4        agreements or contract for firm transportation service an impediment to the construction of  
5        Arctic gas pipeline projects sufficient to a decision to exclude such projects from the ICF  
6        GMM Base Case.

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**PUB/CENTRA 36**

***Reference: Page 20 Section 2.2.1 Key Areas of Forecasting Uncertainty (Economic Growth)***

**What scenarios has ICF presented to Centra regarding variations in economic growth and can ICF provide the results to the Board?**

**Response provided by ICF:**

ICF did not perform any scenarios in which the only change was economic activity. However, in the "Tight Gas Market Scenario" ICF used a more rapid economic recovery as one of several inputs that resulted in increased demand for natural gas throughout North America. The attachment to the response to PUB/CENTRA 39 presents a summary of the results of the scenarios that were performed.

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1 **PUB/CENTRA 37**

2 ***Reference: Page 20 Section 2.2.1 Key Areas of Forecasting Uncertainty (Environmental***  
3 ***Policy)***

4  
5 **(a) Respecting the high and low demand cases what are the specific analytical variables**  
6 **regarding the various “clean energy” issues outlined in ICF’s report?**

7  
8 **Response provided by ICF:**

9 In all of the cases, ICF implicitly and explicitly includes assumptions regarding the impact of  
10 environmental regulation such as air quality regulations, renewable portfolio standards,  
11 permitting requirements and restrictions. The complete details of these assumptions and  
12 the cost implications of the restrictions are a commercial product sold by ICF to clients.  
13 The disseminations of details of these assumptions and the analysis beyond the  
14 descriptions included in the ICF Report were not included in this engagement with Centra.  
15

16 **(b) With the recent concerns respecting potential problems with nuclear power plants in**  
17 **Japan, eliminating nuclear power plants in Germany and recent potential wild fire**  
18 **and flooding damage in the US, is there an increase in concerns in the US**  
19 **respecting ongoing and future nuclear power and if so how has ICF measured such**  
20 **concerns in its recent and future GMM results?**

Response provided by ICF:

See response to PUB/CENTRA 12

**(c) Has ICF measured the changes in future gas flows resulting in the Province of Ontario's decision to shut down its coal generating facilities and use natural gas? If so what are the anticipated gas supply sources and what are the specific gas flow changes on the TCPL system?**

Response provided by ICF:

In the Base Case, ICF does incorporate the assumption that the coal generation of electricity is displaced with natural gas. This displacement is responsible for a significant portion of the increase in natural gas demand in the province.

Gas supply in Ontario comes into the province from a number of sources including the TCPL Mainline, from Michigan, and from pipelines that receive gas from the Marcellus shale.

ICF did not perform any scenario analysis that examined scenarios that made different assumptions regarding the displacement of coal generation in Ontario that would be necessary to show the changes in flow that result from that particular assumption in this engagement.

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1 **PUB/CENTRA 38**

2 ***Reference: Page 20 to 23 Section 2.2.1 Key Areas of Forecasting Uncertainty (Natural***  
3 ***Gas Resources and Production Technologies)***

4  
5 **(a) Regarding the Marcellus shale sites, what are the forecasted production decline**  
6 **rates used by ICF's GMM June report?**

7  
8 **Response provided by ICF:**

9 ICF produces detailed decline curves for each natural gas resource throughout North  
10 America and sells the results in a Vintage Production product. The details and disclosure  
11 of these projections, beyond the discussion in the ICF Report, were not included in this  
12 engagement with Centra.

13  
14 **(b) If the Marcellus shale decline rates are greater than those in ICF's GMM, would this**  
15 **change increase the production costs due to the need for additional fracking?**

16  
17 **Response provided by ICF:**

18 ICF is confident that the assumptions regarding shale gas production decline rates, which  
19 are much steeper than conventional gas decline rates, are appropriate. If an alternative  
20 assumption were made, additional drilling and/or recompletion activity including hydraulic  
21 fracturing would be required to achieve the projected production levels



1  
2 **(c) Has ICF measured, or does ICF know, what are the full-cycle production costs**  
3 **(defined as the totality of land costs, finding and development, operating, admin,**  
4 **royalties, income and other taxes, return on equity and debt costs less revenue from**  
5 **associated liquid production) for Marcellus Shale gas and does ICF's GMM include**  
6 **these costs its June 2011 report results?**

7  
8 Response provided by ICF:

9 The premise of the question, specifically that there is a single full cycle production cost that  
10 accurately reflects all of the gas resource in the Marcellus (or any other gas resource)  
11 reflects a fundamental misunderstanding of gas resource economics. In any formation,  
12 there is an extremely large distribution for full-cycle production costs, which determines  
13 how much of the resource will be developed at various levels of natural gas prices.

14  
15 Slide 21 in the ICF presentation to the technical conference presents the distribution of  
16 these costs for various types of North American resource. The details and disclosure of  
17 these projections, beyond the discussion in the ICF Report and the proprietary material  
18 presented at the Technical Conference, were not included in this engagement with Centra.

19  
20 **(d) How do the full-cycle Marcellus production costs compare with the net-back prices**  
21 **for Marcellus Shale?**

22  
23 Response provided by ICF:

24 Please see the response to part (c).  
25

1 **(e) If ICF's GMM does not use full-cycle production costs, what cost basis does ICF's**  
2 **GMM use to determine the economic viability for various production regions and the**  
3 **level of reinvestments for particular production basins?**

4  
5 Response provided by ICF:

6 ICF uses a full distribution of the full-cycle costs of all of the various North American  
7 resources to consider the volume of gas resource that will be developed at various price  
8 levels.

9  
10 **(f) Have production decline rates for shale gas formations in the United States by**  
11 **specific regions changed in the past several years either upward or downward?**

12  
13 Response provided by ICF:

14 Yes. In some regions they have increased, in other regions, they have decreased.

15  
16 **(g) Are the forecasted production decline rates used by ICF's GMM consistent with the**  
17 **forecasts of other economic or engineering firms that forecast such rates?**

18  
19 Response provided by ICF:

20 ICF reviews all available public information as well as proprietary information in the process  
21 of developing decline curves. In general terms, the ICF rates are similar, although in some  
22 regions, there are differences.

23  
24 **(h) What is the current status in Quebec regarding exploration and development of the**  
25 **Utica Shale and in the other Eastern Canada provinces?**

Response provided by ICF:

The Utica production in the ICF Base Case is exclusively in Ohio. All of that gas is associated with oil production, growing to 750 MMcfd by 2035. There is limited drilling activity in Quebec and the activity is insufficient to project production in the ICF Base Case. Generally the resource in Quebec is relatively deep and mostly dry gas with little oil and NGLs, to support exploration in deeper formations.

- (i) Please provide a detailed listing, and ICF's views, regarding the significant uncertainties in the outlook for production from MidContinent and Gulf Coast shales, including the Barnett and Woodfords shales as well as Eagleford and other plays?**

Response provided by ICF:

The details and disclosure of these projections, beyond the discussion in the ICF Report and the proprietary material presented at the Technical Conference, were not included in this engagement with Centra.

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1     **PUB/CENTRA 39**

2     ***Reference: Page 25 to 26 Section 2.3.1 Alternative Natural Gas Market Scenarios***

3

4     **(a) Please provide comparative summaries of the major results (gas prices, demand,**  
5         **supply sources, inter-regional pipeline flows, etc) for the Base case and 3**  
6         **alternatives that are discussed in ICF's report?**

7

8         Response provided by ICF:

9         Please see the attachment to this response.

10

11     **(b) In addition to the base case and the 3 natural gas scenarios outlined in ICF's report,**  
12         **has ICF undertaken and provided Centra with any other scenarios and if so can ICF**  
13         **provide a summary and results of those scenarios?**

14

15         Response provided by ICF:

16         No additional scenarios were performed.

Results From ICF Analysis of Centra Gas Scenarios

1	<b>Price at AECO (2010 \$/MMBtu)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
2	ICF Base Case	3.91	3.53	3.99	4.15	4.78	4.21	5.24	5.60	5.53	5.90	6.37
3	Tight Gas Market	3.91	3.63	4.37	4.36	4.89	4.94	5.15	5.63	6.15	6.50	6.97
4	TCPL Optimistic	3.91	3.54	4.03	4.18	4.45	4.21	5.10	5.33	5.40	5.85	6.30
5	TCPL Pessimistic	3.91	3.52	3.95	4.10	4.79	4.27	5.19	5.56	5.53	5.93	6.41
6												
7	<b>Price at Dawn (2010 \$/MMBtu)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
8	ICF Base Case	4.89	4.66	5.10	5.26	5.89	5.30	6.31	6.70	6.61	6.97	7.43
9	Tight Gas Market	4.89	4.77	5.49	5.50	6.00	6.05	6.25	6.72	7.24	7.60	8.06
10	TCPL Optimistic	4.89	4.67	5.14	5.30	5.56	5.29	6.17	6.41	6.46	6.92	7.37
11	TCPL Pessimistic	4.89	4.65	5.06	5.22	5.90	5.38	6.26	6.67	6.62	7.01	7.51
12												
13	<b>Price at Henry Hub (2010 \$/MMBtu)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
14	ICF Base Case	4.52	4.19	4.63	4.78	5.35	4.80	5.75	6.10	6.01	6.37	6.82
15	Tight Gas Market	4.52	4.30	5.02	5.00	5.46	5.51	5.69	6.13	6.64	6.99	7.43
16	TCPL Optimistic	4.52	4.20	4.68	4.83	5.09	4.86	5.70	5.92	5.98	6.43	6.87
17	TCPL Pessimistic	4.52	4.18	4.58	4.71	5.33	4.81	5.64	5.99	5.93	6.30	6.75
18												
19	<b>Price at Chicago (2010 \$/MMBtu)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
20	ICF Base Case	4.59	4.24	4.69	4.84	5.44	4.87	5.86	6.24	6.15	6.52	7.00
21	Tight Gas Market	4.59	4.35	5.08	5.08	5.56	5.61	5.81	6.27	6.80	7.17	7.65
22	TCPL Optimistic	4.59	4.25	4.74	4.90	5.16	4.91	5.79	6.03	6.08	6.55	7.02
23	TCPL Pessimistic	4.59	4.23	4.64	4.78	5.43	4.90	5.77	6.14	6.08	6.47	6.95
24												
25	<b>Michigan to Dawn Annual Flows (Bcfd)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
26	ICF Base Case	2.79	3.46	3.44	3.40	3.47	3.42	3.46	3.42	3.41	3.34	3.26
27	Tight Gas Market	2.79	3.45	3.44	3.40	3.46	3.41	3.43	3.42	3.37	3.28	3.20
28	TCPL Optimistic	2.79	3.45	3.42	3.37	3.36	3.31	3.33	3.29	3.27	3.20	3.11
29	TCPL Pessimistic	2.79	3.47	3.46	3.45	3.51	3.51	3.55	3.52	3.51	3.46	3.37
30												
31	<b>TCPL Mainline Annual Flows into Ontario (Bcfd)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
32	ICF Base Case	2.04	1.30	1.12	1.20	1.04	1.15	0.95	1.01	1.06	1.16	1.29
33	Tight Gas Market	2.04	1.32	1.17	1.35	1.12	1.29	1.29	1.25	1.37	1.53	1.67
34	TCPL Optimistic	2.04	1.34	1.22	1.40	1.54	1.64	1.50	1.73	1.80	1.96	2.18
35	TCPL Pessimistic	2.04	1.26	1.03	0.99	0.78	0.80	0.65	0.63	0.65	0.68	0.73
36												
37	<b>TCPL Annual Flows from Empress East (Bcfd)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
38	ICF Base Case	3.68	3.67	3.45	3.47	3.09	3.26	3.01	2.85	2.93	3.04	3.22
39	Tight Gas Market	3.68	3.69	3.50	3.61	3.21	3.39	3.34	3.14	3.26	3.42	3.60
40	TCPL Optimistic	3.68	3.72	3.61	3.75	3.84	4.04	3.93	4.03	4.17	4.38	4.68
41	TCPL Pessimistic	3.68	3.61	3.29	3.19	2.71	2.75	2.49	2.26	2.27	2.30	2.37
42												
43	<b>WCSB Production (Bcfd)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
44	ICF Base Case	16.07	16.24	16.12	16.04	16.04	16.10	16.01	16.07	16.27	16.45	16.71
45	Tight Gas Market	16.07	16.26	16.16	16.11	16.11	16.19	16.29	16.34	16.53	16.77	17.06
46	TCPL Optimistic	16.07	16.29	16.26	16.26	16.33	16.40	16.42	16.54	16.75	17.00	17.34
47	TCPL Pessimistic	16.07	16.19	15.99	15.81	15.72	15.70	15.53	15.51	15.63	15.73	15.92
48												
49	<b>North American and Canadian Consumption (Annual Bcf)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
50	ICF Base Case	26,755	27,499	28,229	28,715	29,187	29,890	30,337	30,701	31,433	32,082	33,023
51	Tight Gas Market	26,755	27,497	28,186	28,717	29,267	29,793	30,485	31,029	31,714	32,441	33,472
52	TCPL Optimistic	26,755	27,491	28,209	28,688	29,206	29,886	30,295	30,682	31,378	31,988	32,921
53	TCPL Pessimistic	26,756	27,508	28,236	28,764	29,223	29,917	30,394	30,794	31,529	32,188	33,144

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**PUB/CENTRA 40**

***Reference: Page 30 Figure 22 Forecast of Manitoba Demand***

**Was the forecast of Centra's natural gas demand done independent of Centra and if so what are Centra's views of ICF's demand forecast?**

ICF's forecast of Manitoba demand was prepared independently. In Centra's view, the forecast appears to be reasonable.

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1 **PUB/CENTRA 41**

2 ***Reference: Page 53 Section 4 Issues Affecting TransCanada***

3

4 **(a) Is ICF's view that TCPL mainline is in "crisis" over the next ten years principally due**  
5 **to the potential inability to increase contracted capacity on its system?**

6

7 Response provided by ICF:

8 The current tolls and the possibility of additional toll increases make gas produced in the  
9 WSCB and transported on TCPL to eastern Canadian provinces and the Northeast United  
10 States expensive relative to other options. These conditions place downward pressure on  
11 gas prices in the WSCB, which in turn reduces the volume of gas developed and available  
12 for transport.

13

14 **(b) Has ICF had any discussions with TCPL regarding ICF's views that TCPL's mainline**  
15 **is in crisis? If so, can ICF provide TCPL's response to ICF's views?**

16

17 Response provided by ICF:

18 No.

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**PUB/CENTRA 42**

***Reference: Page 56 Netbacks for the proposed Kitimat LNG will be higher than the netback from gas moved on the TCPL mainline.***

**Please provide a detailed comparison between producer netbacks via the proposed Kitimat LNG project and from the TCPL mainline indicating all detailed calculations?**

Centra respectfully declines to provide a response to this question on the basis that the requested information is not relevant to the overall review of Centra's natural gas supply, storage and transportation portfolio.



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**PUB/CENTRA 43**

***Reference: Page 57 Figure 34 Impact of TCPL Rate Structure on Basis***

**(a) Please provide a detailed description of the methodology used in ICF's GMM to determine the various specific 'Basis'?**

**(b) What is the mathematical relationship between TCPL tolls and the Basis in ICF's GMM?**

**(c) Please provide the underlining detailed calculations supporting the various Basis results outlined in all the charts for Figure 34?**

**Response to parts (a) through (c):**

Centra respectfully declines to provide the requested information as the methodology and calculations prepared by ICF are proprietary to ICF and considered to be commercially sensitive information.

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**PUB/CENTRA 44**

***Reference: Page 60 Section 5.3 Analytical Tools (ICF Forecasts of Gas Prices, Basis,  
Transportation Flows)***

**(a) To better understand ICF's Gas Market Model "GMM" and Gas Storage Valuation  
Model "GSVM". Please provide a detailed listing of the key input variables (such as  
oil price, coal price, annual inflation, etc.) that ICF or its clients would be able to  
change in order to undertake scenarios using the GMM and GSVM?**

**(b) What are the key input variable values used by ICF for its Base Case presented in  
the June 27, 2011 report?**

**Response to parts (a) and (b):**

**Please see the response to PUB/CENTRA 43.**

**(c) What overall level(s) of economic growth has ICF assumed in its GMM base level  
forecast model, for the US and Canada, as presented in ICF's report?**

**i. What is ICF's assumption for Canadian GDP growth?**

Response provided by ICF:

2.8% annual growth.

**ii. What is ICF's assumption for the US GDP growth?**

Response provided by ICF:

2.8% annual growth.

**(d) Does ICF measure producer's full-cycle production costs or marginal production costs in ICF's GMM by production areas and what are ICF's forecasted production costs in its June report?**

Response provided by ICF:

Please see the response to PUB/CENTRA 38 (c) and (d).

**(e) Please provide ICF Base Case Forecasts by quarter for 2009, 2010 and 2011 regarding gas price, basis and inter-regional pipeline flows as well as any specific comments by ICF in support of these forecasts?**

The requested information is only provided by ICF to clients as a paid service. Furthermore, Centra respectfully declines to provide a response to this question on the basis that the requested information is not relevant to the overall review of Centra's natural gas supply, storage and transportation portfolio.

**(f) Please provide ICF's opinion, with a detailed explanation, as to whether gas rig activity or gas well completion is a better measurement of future gas production in Western Canada and which measure measurement does ICF use in its GMM?**

Response provided by ICF:

To generate the estimates of future gas production in Western Canada, the GMM generates projections of well completions that differentiate by the type of resource and future Estimated Ultimate Recovery per well. It is ICF's opinion that estimates based on rig counts that do not differentiate between the type of well (e.g., vertical, horizontal) or the characteristics of the resource would not produce results as reliable of as those from the GMM.

**(g) Does the GMM measure the dependency of Canadian natural gas production on US and Canadian economic growth and if so what is the percentage of Canadian natural gas production dependent upon US economic growth versus Canadian economic growth in ICF's base case June 2011 report?**

Response provided by ICF:

Economic activity in Canada and the United States are important variables that are used in the development of GMM Base Case and alternative scenario results. However, ICF has not performed the type of sensitivity analysis that would be required to answer the question as stated.

**(h) When is the next client quarterly report to be presented to ICF's clients and will ICF's final report (Phase 2) include ICF's updated quarterly reports results similar to this June report?**

1

2           Please see the response to part (e).

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**PUB/CENTRA 45**

***Reference: Page 9 Chart of Gas Production and Deliverability, Bcf/d***

**Please provide a similar chart for Canada on a stand-a-lone basis?**

Centra respectfully declines to provide the requested information, as the information provided by ICF to Centra examines the North American natural gas market on an integrated basis, reflective of the integrated and interactive nature of continental supply and demand factors at play.

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**PUB/CENTRA 46**

***Reference: Page 14 Monthly Average Spot Prices***

**Please provide a similar chart of monthly average spot prices, but for AECO C on a \$/GJ basis as shown on page 14 for Henry Hub?**

Please refer to the following hyperlink as found on Manitoba Hydro's website:

<http://www.ngx.com/statsummary/NGXIANMIDX.html>

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**PUB/CENTRA 47**

***Reference: Page 21 Chart Total US and Canada Gas Supply Curves***

**(a) Please provide separate charts for the US and Canada regarding each of the specific gas supply curves?**

Please see the response to PUB/CENTRA 45.

**(b) Similar to the requested charts in Question 46 (A), does ICF have gas supply curves for Wet Gas Resources? If so please provide them?**

Please see the response to PUB/CENTRA 45.

**(c) Does ICF include, in its total costs of development of a new resource, upfront land acquisition costs which is common in Western Canada? If not provide a detailed explanation as to why ICF does not include such costs?**

**Response provided by ICF:**

For all natural gas plays in the U.S. and Canada, ICF assumes a minimum land acquisition cost (also known as a lease bonus) of US\$200 per acre in estimating the "resource cost" (also known as a minimum acceptable selling price) that ICF uses to develop the resource



1 supply curves. When the forecasted natural gas price exceeds the resource cost for any  
2 particular unit of natural gas in the gas supply curve, it is assumed that additional land  
3 acquisition costs may be paid to landowners by gas producers as the economic rent is split  
4 among various parties based on market conditions for land rights and drilling services.

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1     **PUB/CENTRA 48**

2     ***Reference: Page 27 US and Canada Regional Gas Consumption***

3

4     **What are the primary reasons for the demand growth in Eastern Canada by province?**

5

6     Response provided by ICF:

7     The primary driver of growth is the volume of gas required for gas-fired power generation.

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**PUB/CENTRA 49**

***Reference: Page 33 and 34 Inter-regional Pipeline Flows***

**Can intra-regional shifts for the Northeast be depicted on regional flow maps?**

**Response provided by ICF:**

Yes, however, the details and disclosure of these results, beyond the discussion in the ICF Report and the proprietary material presented at the Technical Conference, are of commercial value and were not included in this engagement with Centra. Nor are the specifics directly relevant to the understanding of the dynamic conditions facing Centra in Manitoba.

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1     **PUB/CENTRA 50**

2     ***Reference: Slides Synopsis of Recent TCPL and Stakeholder Activity***

3

4     **(a) What is the difference between the Mainline Advisory Council (MAC) and the TCPL's**  
5     **Tolls and Tariff Task Force (T&T)?**

6

7     As the regulatory process transitioned from annual toll hearings to longer term negotiated  
8     settlements, the Tolls and Tariff Task Force ("TTF") was created to seek consensus on  
9     issues related to the tolls, tariffs, and operations of TCPL in the context of TransCanada's  
10    Tolls Applications. The MAC was created in 2008 as a vehicle to get feedback from  
11    industry at the senior executive level on the issues facing the Mainline and its  
12    competitiveness.

13

14    **(b) What are the qualifications to be a member of TCPL's MAC and T&T?**

15

16    MAC is comprised of Senior and/or Executive management of TTF member organizations.  
17    Participation at the TTF is open to any party having a discernible interest in or affected by  
18    toll, tariff and operational matters, such as shippers, industry associations and  
19    governments of consuming and producing provinces. An interested party may participate  
20    actively as a Task Force Member or passively as a Task Force Observer.

1       **(c) Is the membership list of TCPL's MAC and T&T a public document (companies and**  
2       **organizations rather than individuals) and if so please provide the list of members?**

3  
4       The membership, and corresponding membership list, of both the MAC and the TTF are  
5       confidential, and not in the public domain.

6  
7       **(d) If the membership is confidential, are there members of TCPL's MAC whom are not**  
8       **shippers on the TCPL's Mainline?**

9  
10       MAC participants are the Senior and Executive level of organizations participating at the  
11       TTF; therefore they are not exclusively shippers on the Mainline but industry stakeholders  
12       as well. There are some MAC participants who are also the representatives at the TTF.

13  
14       **(e) Regarding the April 15, 2011 bullet point. Were there any stakeholders in support of**  
15       **TCPL's settlement proposal? Is the list public and if so can Centra please provide a**  
16       **summary of the stakeholders who supported or opposed TCPL's settlement**  
17       **proposal?**

18  
19       The April 15, 2011 bullet point was in reference to a proposal that was presented to the  
20       TTF but, ultimately, not filed with the NEB. Therefore, the proposal and stakeholder  
21       positions on same are considered confidential. Any discussions and/or communication at  
22       TTF meetings are "without prejudice" and any communications not already in the public  
23       domain, written or oral that are created or made as part of the Task Force processes are  
24       considered privileged and confidential.

**CENTRA GAS MANITOBA INC.**

**PROCESS FOR REVIEW OF GAS SUPPLY, STORAGE AND  
TRANSPORTATION ARRANGEMENTS**

**RESPONSE TO INFORMATION REQUESTS OF  
THE PUBLIC UTILITIES BOARD OF MANITOBA**

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1     **PUB/CENTRA 51**

2     ***Reference: General Question***

3

4     **Please provide a detailed description of the role/mandate for ICF regarding Centra's**

5     **determination of an appropriate gas supply portfolio?**

6

7     Please see the response to PUB/CENTRA 30.