

CENTRA GAS MANITOBA INC.

TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION

RESPONSE TO INFORMATION REQUESTS OF
THE PUBLIC UTILITIES BOARD OF MANITOBA

1 **PUB/CENTRA 1**

2 ***Reference: Tab 1 p. 1 of 6 – Contract Term***

3
4 **(a) Please explain why a seven year contract term was selected including any analysis**
5 **supporting this term.**

6 **(b) Please give Centra's views on whether a shorter term than seven years is more or**
7 **less desirable than the seven year term.**

8
9 Response to parts (a) and (b):

10 Centra targeted an intermediate contract term for the new transportation and storage
11 arrangements. Centra is of the view that a contract term of seven years represents an
12 appropriate balance that provides sufficient flexibility to adjust to future market
13 circumstances while reducing the risk and cost of re-contracting for storage and
14 transportation services on a more frequent basis which would be necessary under shorter
15 contract terms.

16
17 Centra was able to negotiate a package of services that provide valuable service attributes
18 at a very attractive price. In light of this favorable pricing and the discounted rates obtained
19 by Centra, a shorter term is less desirable as it would expose Centra to re-contracting risk.
20 At the end of any term, market conditions could potentially require re-contracting at higher
21 rates, and could potentially require Centra to match a long term bid by another shipper in

1 order to maintain the capacity under ANR's and GLGT's ROFR provisions. Contract terms
2 in the range of 10-20 years are common on ANR and certain services have been sold out
3 at various times in recent years. In a higher-value storage environment, ANR storage and
4 the related transportation that is capped at FERC-regulated tariff rates may be very
5 attractive to other shippers in comparison to the market-based rates offered by ANR's
6 competitors in the region. The seven year term defers this potential renewal risk and
7 secures the discounted rates for Centra (which cannot increase over the seven year term)
8 relative to a shorter term. Centra further notes that since the date of entering into the term
9 sheet with ANR and GLGT, it understands that ANR has sold storage at its maximum tariff
10 rate.

11
12 Within the seven year term of the agreement, Centra also has the flexibility to adapt to
13 changing circumstances by either contracting for more storage and transportation capacity
14 as needed (if capacity is available at that time) or by releasing ANR/GLGT capacity on a
15 seasonal basis if it is determined that the full contract capacity is not required for a given
16 period of time.

17
18 **(c) Assuming continuing uncertainty in relation to TCPL tolls for the foreseeable future,**
19 **please explain why a contract term of three to five years was not selected, since a**
20 **shorter term would give Centra the opportunity to adjust its portfolio sooner.**

21
22 While a shorter contract term may theoretically enable Centra to modify its storage and
23 transportation arrangements earlier, Centra's proposed portfolio is robust, flexible, and
24 diversified enough to respond to changing market conditions while maintaining reliable
25 service and providing for security of supply.
26

Centra can respond to TCPL toll changes or other market circumstances on an annual, seasonal, or monthly basis by adjusting TCPL contract levels. This is an appropriate approach to responding to changing market conditions as there is less re-contracting risk on TCPL than on ANR and GLGT because:

- 1) TCPL is significantly under-contracted;
- 2) An incumbent TCPL FT shipper cannot be outbid with respect to rate or term, as FT rates are established by tariff (cannot be negotiated or discounted) and FT need only be renewed one year at a time; and
- 3) STFT/delivered services are short term services (less than one year) that are employed by Centra on a seasonal or monthly basis.

As noted in the response to parts (a) and (b) above, the seven year term does not in any way impede Centra's ability to contract for additional ANR/GLGT capacity (if available), or to release ANR/GLGT capacity in response to seasonal requirements.

(d) Was the seven year term proposed by Centra or by ANR?

The seven year term was proposed by Centra.

(e) Did ANR propose or offer any alternative contract durations and/or pricing? If so, what were those durations and/or pricing?

At the outset of negotiations, the discussions focused on a five year term. Contract negotiations progressed to a point where Centra asked for improved pricing arrangements and a seven year term. In response, ANR agreed to improved pricing in conjunction with a seven year term.

1
2 **(f) What was the contract term proposed by party B?**

3
4 Centra's discussions regarding the contract term with Party B largely mirrored those with
5 ANR, including consideration of a seven year term.

6
7 **(g) Please give Centra's view whether the term sheet of the contract could be modified**
8 **to reduce the contract term, and what other changes to the term sheet may be**
9 **required as a result of changing the term.**

10
11 As outlined in Note 1 of Exhibit A to the Term Sheet filed as Attachment 1 to Tab 8 of the
12 Application, the proposed portfolio is a packaged deal and is not severable into individual
13 services. As such, none of the terms of this contract can be changed without renegotiation.

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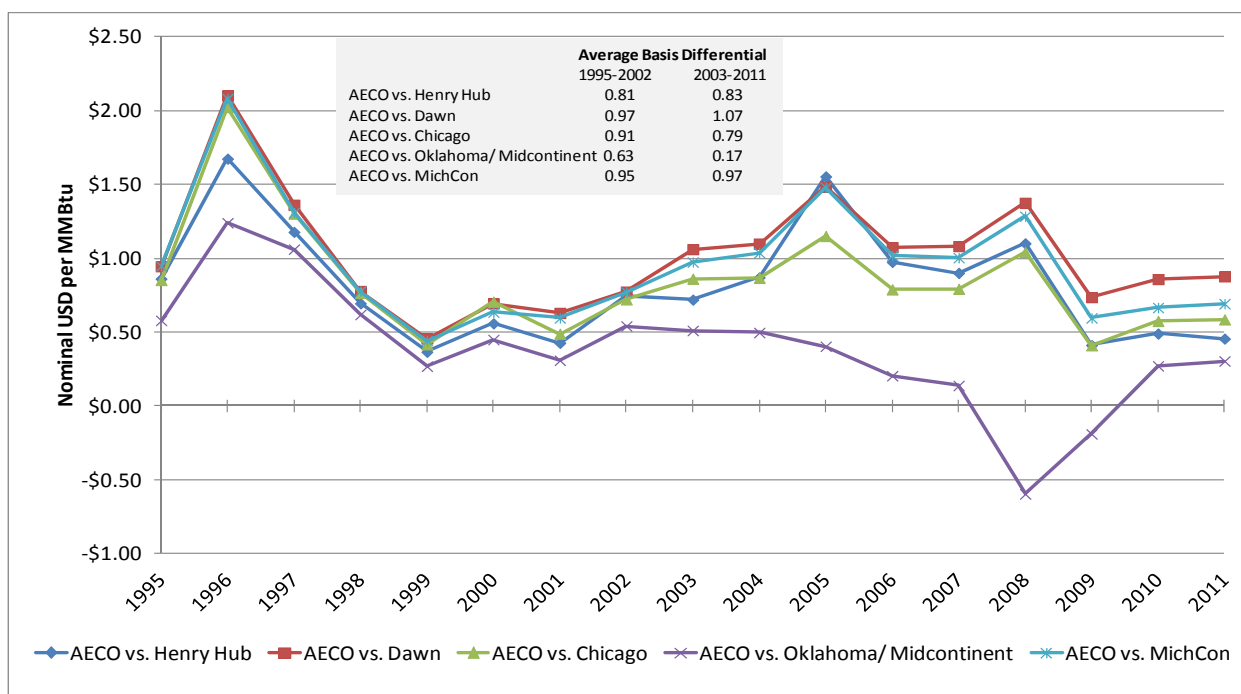
PUB/CENTRA 2

Reference: Tab 4 Attachment 1 p. 35 of 117 – Basis Differentials

Please provide a graph similar to the one shown in ICF's June 2011 report as Figure 13 that shows the historical basis differentials for AECO, Dawn, Henry Hub, Chicago, MichCon, and Oklahoma. Please structure the graph such that all bases are relative to AECO.

Response provided by ICF:

The attached graph shows the historical basis differentials for Dawn, Henry Hub, Chicago, MichCon, and Oklahoma relative to AECO.



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1 **PUB/CENTRA 3**

2 *Reference: Tab 4 Attachment 3 PUB/Centra 18 – Portfolio Selection Framework*

3
4 **Please confirm whether a scorecard evaluating the top portfolio options was prepared,**
5 **and which elements listed in PUB/Centra 18(a) were incorporated. If so, please file the**
6 **scorecard and the results.**

7
8 A scorecard was not used to evaluate the top portfolio options. However all of the elements
9 listed in the above reference were considered in the evaluation process.

10
11 As described in Tab 7 of the application and in PUB/Centra 9, Centra shortlisted the top two
12 options and conducted detailed modeling of the ANR and Option B portfolios. While very close
13 on a modeled total cost basis, the ANR portfolio was evaluated as providing greater reliability,
14 diversity, and flexibility to adapt to changing market conditions.

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1 **PUB/CENTRA 4**

2 ***Reference: Tab 4 Attachment 3 PUB/Centra 21 – ICF Forecasted Pricing***

3
4 **(a) Please file an update to the table in PUB/Centra 21 reflecting the latest ICF price**
5 **forecast provided to Centra.**

6
7 Response provided by ICF:

8 The most recent ICF price forecast provided to Centra is the ICF October 2011 Base Case.

9 The table in PUB/Centra 21 has been updated to add the ICF price forecast for AECO and

10 Henry Hub from the October 2011 Base Case.

**ICF Base Case Price Forecast
at Henry Hub (Real \$/MMBtu)**

	November 2008	April 2011	October 2011
2001	4.79		
2002	3.92		
2003	6.24		
2004	6.53		
2005	9.56		
2006	7.17		
2007	7.20		
2008	9.02	9.02	
2009	5.40	3.98	
2010	7.31	4.38	4.38
2011	6.84	4.59	4.28
2012	7.30	4.71	3.97
2013	7.04	4.60	3.68
2014	7.73	5.51	3.90
2015	7.61	5.40	4.43
2016	7.46	5.23	4.82
2017	7.66	5.36	5.35
2018	7.85	5.35	4.71
2019	7.93	5.48	4.92
2020	8.22	5.80	5.87
2021	7.34	5.99	6.08
2022	8.16	6.20	6.05
2023	8.14	6.11	6.25
2024	7.98	6.34	5.88
2025	8.20	6.14	5.93
2026	8.66	6.22	5.98
2027	8.68	6.14	6.19
2028	9.12	6.52	6.16
2029	9.00	6.27	6.25
2030	9.49	6.61	6.51

**ICF Base Case Price Forecast
at AECO (Real \$/MMBtu)**

	November 2008	April 2011	October 2011
2001	4.23		
2002	3.01		
2003	5.35		
2004	5.49		
2005	7.78		
2006	6.05		
2007	6.19		
2008	7.81	7.89	
2009	4.18	3.56	
2010	6.73	3.89	3.88
2011	6.18	3.86	3.84
2012	6.69	3.87	3.32
2013	6.47	3.79	3.06
2014	7.16	4.65	3.32
2015	6.99	4.64	3.90
2016	6.53	4.49	4.29
2017	6.82	4.64	4.86
2018	7.04	4.60	4.23
2019	7.17	4.74	4.41
2020	7.41	5.06	5.40
2021	5.93	5.28	5.60
2022	7.00	5.51	5.60
2023	6.93	5.46	5.82
2024	6.49	5.71	5.49
2025	6.87	5.52	5.59
2026	7.39	5.65	5.66
2027	7.43	5.56	5.84
2028	7.96	5.95	5.83
2029	7.82	5.70	5.94
2030	8.35	6.08	6.22

(b) Please file all ICF reports provided to Centra since the June 2011 report that have not been already been filed.

The ICF report provided to Centra since the June 2011 report can be found in Tab 7 of Centra's Transportation and Storage Portfolio Application as Attachment 1 titled

- 1 "Conclusions of Supply Portfolio Optimization Analysis Conducted for Centra Manitoba by
- 2 ICF International, February 2012".

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1 **PUB/CENTRA 5**

2 ***Reference: Tab 4 Attachment 3 PUB/Centra 2; Tab 6 p. 5 of 5; Tab 8 p. 4 of 8 – Peak Day***

3
4 **(a) Please update PUB/Centra 2 (a) with the peak day forecast for 2011/12 and 2012/13, if**
5 **available.**

6
7 Please see the following table which presents the forecasted firm peak loads for the past
8 seven 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
11/12	470,100

9 The design firm peak day forecast for the 2012/13 gas year is not yet available.

10
11 **(b) Please explain the large drop in Centra's forecasted peak day between 2010/11 and**
12 **2011/12.**

13
14 The 2.4% decrease in the Design Firm Peak Day from 2010/11 to 2011/12 is attributable to
15 a combination of an historical annual weather normalized consumption reduction and the

incorporation of a forecast annual conservation factor in the determination of the 2011/12 coefficients which are used to produce the Design Firm Peak Day forecast. The forecast conservation factor stems from the expected future annual efficiency improvements of furnaces and also reflects the anticipated continued load switching from natural gas water heaters to electric water heaters. The net effect of incorporating the forecast conservation factor on the Design Firm Peak Day was a decrease of 0.6%. The remaining decrease comes from the drop in weather normalized consumption experienced during 2010/11 relative to the original forecast.

(c) Please list the supplies that will provide the peak day requirements for the 2011/12 and 2012/13 gas years if the proposed storage and transportation portfolio is approved. Please also show these portfolios graphically similar to that shown on Tab 6 page 5.

The 2011/12 peak day supply stack has already been established and will not change.

Centra's design firm peak day and the supply plan for the 2012/13 gas year has not yet been finalized, however it is not anticipated to change materially from the established 2011/12 supply stack as a result of the approval of the proposed portfolio. Centra establishes its final plan when the annual load forecast information is available later in the summer and prior to the start of a gas year which enables Centra to optimize the supply plan based on the most current information.

Further information related to the 2011/12 and 2012/13 peak day supply stack will be made available as part of the upcoming General Rate Application.

1
2 **(d) Please state the contracted capacities for TCPL Firm Service to the Manitoba and**
3 **Southern Saskatchewan Delivery Areas for the 2011/12 and 2012/13 gas years.**
4

5 TCPL Firm Service contract demand for the 2011/12 gas year to the MDA was 110,000
6 GJ/d; and to the SSDA was 1,200 GJ/d. Centra will continue to evaluate its contract
7 demand for TCPL Firm Service to the MDA and SSDA for the 2012/13 gas year and will
8 finalize the contracted demand prior to the commencement of the gas year using the most
9 current information available at that time.

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1 **PUB/CENTRA 6**

2 ***Reference: Tab 4 Attachment 3 PUB/Centra 16 – TCPL Tolls and Business Services***
3 ***Restructuring Application***

4
5 **(a) Please provide links to all correspondence and evidence filed by Centra subsequent**
6 **to its May 16, 2011 letter in respect of TCPL's Applications to the National Energy**
7 **Board for Mainline tolls and business restructuring.**

8
9 Please find below a link which contains Centra's correspondence and evidence filed with
10 the National Energy Board ("NEB") to date with respect to TCPL's Application for Approval
11 of the Business and Services Restructuring Proposal and Mainline Final Tolls for 2012 and
12 2013 (the "Application").

13 www.neb.gc.ca/ll-eng/livelink.exe?func=ll&objId=736207&objAction=browse&sort=name
14

15 **(b) If TCPL has proposed tolls for NIT to the new receipt point on the Mainline at the**
16 **Manitoba-Saskatchewan border, please provide them and compare them to the**
17 **current NIT to Empress tolls.**

18
19 The proposed Alberta System Toll from NIT to the Manitoba – Saskatchewan border
20 ("SMB") is \$0.34/GJ. The current Alberta System 2012 Interim Toll from NIT to Empress is
21 \$0.174/GJ.

1
2 **(c) If the price of swing service, as currently provided under Centra's Primary Gas**
3 **supply contract, were to dramatically increase or become unavailable, please**
4 **discuss Centra's alternatives, both with the proposed U.S. storage and**
5 **transportation arrangements and with alternatives to the proposed arrangements.**
6

7 The existing portfolio serves to mitigate reliance on swing service under Centra's Primary
8 Gas supply contract. The proposed portfolio provides additional storage deliverability and
9 flexibility to further mitigate Centra's reliance on swing service from Western Canada. In
10 the event that swing service from the WCSB becomes dramatically more costly, Centra
11 would pursue increased transportation and storage levels from U.S. service providers.
12

13 **(d) Please estimate the cost implications for Centra of the proposed elimination of FT-**
14 **RAM.**
15

16 Centra cannot reliably estimate the cost implications of the proposed elimination of FT-
17 RAM as the extent of FT-RAM credits earned by Centra are determined by the weather,
18 the corresponding Manitoba load, and operational requirements. FT-RAM revenues are
19 ultimately determined by the market value of the service (interruptible transportation) that
20 Centra may be able to provide. This value is determined by supply and demand
21 fundamentals in various markets that are not within Centra's control.

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1 **PUB/CENTRA 7**

2 ***Reference: Tab 7 p. 3 to 6 of 16 – Manitoba Storage***

3

4 **(a) Please explain the reasons Manitoba storage options were not selected, and whether**
5 **these options will continue to be considered in the future.**

6

7 There are currently no storage facilities in operation in Manitoba and the development
8 timeline for Manitoba storage would extend a number of years beyond the March 31, 2013
9 expiry of Centra's current ANR and GLGT contracts. Manitoba storage options may be
10 considered in the future if they are determined to be technically feasible and economic.

11

12 **(b) Please provide any reports in respect of investigations into Manitoba storage that**
13 **have been contracted by Centra or Manitoba Hydro within the past five years.**

14

15 In 2011, Centra contracted a consultant to provide a report on specific potential storage
16 sites in Manitoba. As the report identifies specific potential storage sites of interest, Centra
17 views the report as commercially sensitive and therefore inappropriate to provide in a
18 public forum that can be accessed by other parties with potentially competing commercial
19 interests.

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PUB/CENTRA 8

Reference: Tab 7 p. 7 to 10 of 16 – SENDOUT

(a) Please elaborate on the training that Centra staff received in the use of SENDOUT and their qualifications to effectively use this software.

Centra staff received full day training sessions in the use of SENDOUT on June 22 and 23, 2010; and August 16 and 17, 2011. Following each of the classroom-style training sessions, web-based training sessions and teleconferences were conducted for ongoing training purposes and for the discussion of model set-up and results.

The Centra staff involved in using SENDOUT have significant direct experience in supply, transportation, and storage operations, gas buying, gas trading, gas scheduling, daily load forecasting, gas market analysis, gas accounting and gas budgeting. As such, they are experienced staff that are well qualified to utilize such software in support of gas supply decision making.

(b) Please discuss how Centra verified the output of the model. Please describe any peer review of the model and the results.

Centra reviewed the set-up of the SENDOUT model and various outputs with Ventyx staff in person and through on-line conferencing sessions and teleconferences. Once the set-up of the model was confirmed, Centra staff then adjusted variables for different scenarios to produce model outputs.

ICF's independent analysis of gas portfolio matters provided additional validation for Centra's portfolio modeling. After using its own proprietary natural gas market forecasting and optimization models to conduct its analysis, ICF agreed with Centra's conclusion that the ANR storage option presents better value than storage option B.

(c) Please provide the external cost of the SENDOUT software, the costs of the training, the costs of performing the modeling, and the peer review costs, and explain how these costs have been accounted for.

The annual maintenance fee for the SENDOUT software is approximately \$28,000 USD. This cost includes the provision for two days of training for up to five participants exclusive of Ventyx' travel-related expenses. Centra paid \$5,900 USD for the June 2010 training referenced in part (a) above, which included related travel and accommodation expenses incurred by Ventyx representatives.

Centra's internal efforts to perform modeling have not been tracked separately as use of SENDOUT is part of Centra's day-to-day operations and therefore all SENDOUT-related costs and internal time are accounted for in the annual operating budget.

ICF's independent portfolio analysis was undertaken as part of its engagement with Centra to perform a supply portfolio optimization analysis of future natural gas supply,

1 transportation and storage options. The costs associated with ICF's engagement are
2 discussed in the response to CAC/Centra 2(b).

3
4 **(d) Who are the developers of SENDOUT? Briefly detail their background and**
5 **experience.**

6
7 Response provided by Ventyx:

8 SENDOUT is developed and supported by Ventyx, an ABB Company. Ventyx, an ABB
9 company, is the world's leading supplier of enterprise software and services for essential
10 industries such as energy, mining, public infrastructure and transportation. Ventyx was
11 acquired in 2010 by ABB, a global leader in power and automation technologies, for its
12 broad range of IT solutions for energy and communications companies. In 2012, Ventyx
13 joined forces with Mincom, a pioneering leader in Enterprise Asset Management (EAM)
14 and Enterprise Resource Planning (ERP) software for mining, transportation and defense.
15 Pairing the market-leading strengths of both companies under ABB, the combined portfolio
16 offers an unparalleled range of innovative solutions that minimize risk, optimize operations
17 to enhance financial performance and empower clients in dynamic industries to evolve in
18 smart new ways.

19
20 SENDOUT was originally introduced to the energy market in 1985 and has been
21 continually enhanced to satisfy the dynamic portfolio planning requirements of the natural
22 gas industry participants.

23
24 **(e) Is the SENDOUT model purchased or leased?**

25
26 The SENDOUT model is leased from Ventyx Software Inc.

1
2 **(f) Please provide the number of natural gas utilities that use the SENDOUT model and**
3 **please identify where the utilities are geographically located i.e. Canada, USA, or**
4 **beyond.**

5
6 Response provided by Ventyx:

7 SENDOUT is licensed by approximately 70 natural gas distribution companies in North
8 America.

9
10 **(g) Please provide any promotional documentation or brochures describing the features**
11 **available in SENDOUT.**

12
13 Please see the attachment to this response.

14
15 **(h) Please discuss the options and features of SENDOUT and indicate which features**
16 **are being utilized by Centra.**

17
18 Please refer to part (g) of this question which describes the options and features of
19 SENDOUT.

20
21 Centra utilizes the optimization module of SENDOUT, including the Demand,
22 Transportation and Storage components of the product.

23
24 **(i) Please confirm whether there are other network optimization models which Centra**
25 **reviewed and/or considered.**
26

1 At the time of Centra's acquisition of SENDOUT, optimization software from another
2 vendor was considered. However, that organization was in its infancy at the time, thus
3 Centra focused its evaluation on the SENDOUT product.
4

5 **(j) If Centra considered other network optimization tools, did Centra undertake a**
6 **comparative analysis of the different tools? If so, please provide the analysis**
7 **supporting its decision to select SENDOUT.**

8
9 A formal comparative analysis was not compiled by Centra at that time.
10

11 **(k) Does Centra plan to continue to use SENDOUT in its day-to-day gas supply**
12 **operations?**
13

14 Centra plans to use SENDOUT to assist with seasonal planning including the development
15 of Centra's peaking requirements.

Product Overview

SENDOUT



SENDOUT provides detailed dispatch optimization and assesses gas portfolio cost, revenue, and reliability while considering operational constraints and economic parameters.

Overview

SENDOUT® is used by energy companies as the foundation for gas supply planning and portfolio optimization processes. Ventyx's gas analytics solution set includes a detailed supply portfolio optimization module, which incorporates scenario and stochastic analysis and an asset valuation module, which simulates forward curves and related trading behavior.

The software suite provides an assessment of gas portfolio costs, reliability, risks, and opportunities, revealing the impact of potential operating, weather, and price conditions.

Ultimately, SENDOUT is an integrated platform for short-term through long-term portfolio optimization, decision evaluation, and asset valuation. SENDOUT supports an industry proven, comprehensive, defensible, and prudent gas supply planning and asset valuation analytical process.

The solution is comprised of two integrated components:

- **Optimization Module** – provides gas supply portfolio optimization, contract sizing, and scenario analysis
- **Asset Valuation Module** – simulates market trading behavior and determines intrinsic/extrinsic value of gas assets Gas portfolio network model

Optimization Module

The SENDOUT model harnesses powerful linear programming and mixed integer programming (LP/ MIP) engines for scenario analysis and physical portfolio dispatch optimization. The objective function seeks to minimize total gas supply system costs, while simultaneously maximizing revenue opportunities associated with incremental markets, capacity release, and off-system sales transactions. SENDOUT simultaneously evaluates thousands of time-dependent economic and operational constraints across the study period.

This assures that short-term dispatch decisions are consistent with out-term requirements and targets, such as storage inventory targets, ratchets, and contract minimum take requirements.

Key Benefits

- Supports a proven and defensible resource planning process
- Evaluates multiple decision criterion simultaneously
- Provides optimization of portfolio utilization and costs within operating constraints
- Maximizes financial results by managing weather and price risks
- Increases revenues by assessing capacity release and sales opportunities
- Reduces regulatory costs through improved compliance and procedures
- Helps sustain a consistent and repeatable planning methodology
- Compares multiple scenario results and dispatch decisions side-by-side
- Improves analytical quality with a sophisticated, comprehensive, and flexible approach to gas supply planning

SENDOUT Process Flow

The Optimization Module provides two optimization types:

- **Standard Optimization** - determines the optimal use of the existing portfolio of resources to meet projected load requirements in a least cost manner based on variable costs only (considers fixed costs sunk).
- **Resource Mix Optimization** - evaluates and optimally sizes potential contracts and sales opportunities, while meeting load requirements in a least cost manner based on the fixed and variable costs associated with optional resources.

Ventyx's comprehensive gas planning solution differs from traditional portfolio analysis. Traditional analysis typically relies on a few scenarios as a proxy to support important decisions.

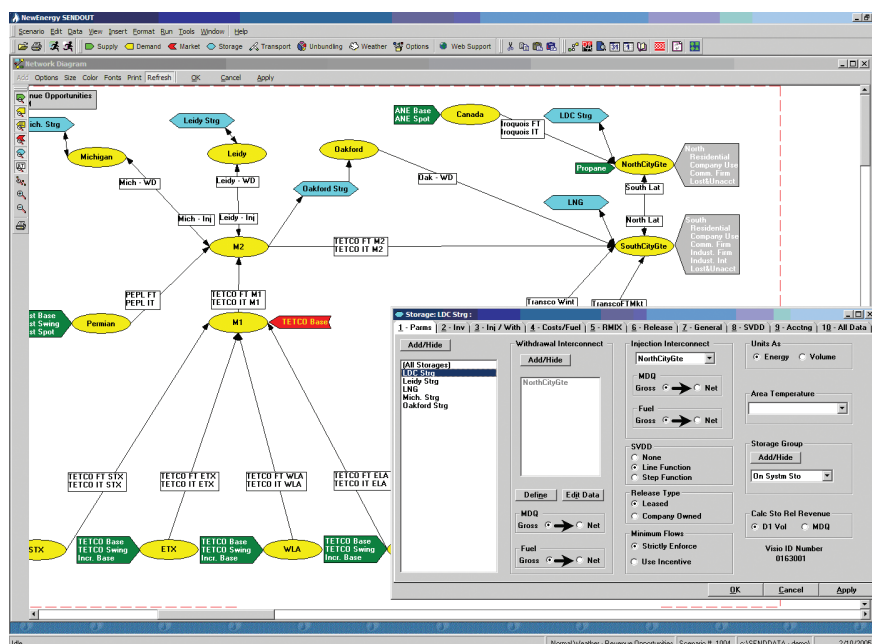
For example, with respect to weather (demand), relying on normal, design cold, and design warm provides a limited view of the portfolio under those specific conditions. In contrast, our solution not only supports deterministic scenario analysis, but also considers the probability and implications of a distribution of weather and price conditions, which may fall between and outside the range of the typical planning scenarios.

The probabilistic approach provides additional risk metrics for better resource decisions, including expected value, variability, and probability.

Asset Valuation Module

Asset Valuation determines the potential market value or liability associated with a gas asset, typically storage. SENDOUT determines the intrinsic and extrinsic value of an asset by leveraging Principal Component Analysis and Rolling Intrinsic Optimization. SENDOUT simulates day-to-day trading and scheduling behavior to evaluate arbitrage opportunities between futures, term, and take-or-pay contracts, spot and balance of month procurement decisions.

Daily transactions are executed without perfect knowledge of future price strips. Thus, each day new transactions are executed considering previously executed positions, which may be committed or unwound to take advantage of new price arbitrage opportunities. Market prices and related transactions are simulated daily and discounted cash flows are calculated to represent the value of the asset(s).



SENDOUT Software Suite Features

- Easy scenario and simulation creation with minimal data manipulation
- Fast simulation and optimization run times
- User-friendly, flexible, and intuitive interface specifically designed for the gas industry
- A comprehensive list of data items and parameters to accurately model gas system intricacies
- Flexible data management including various input options and integration with Microsoft Excel
- Customizable reports/graphs and seamless integration to Microsoft Excel, Access, Visio, Text, or HTML files
- Network diagramming and portfolio schematic visualization feature
- Over 100 comprehensive System Reports & Custom Reporting tools
- Dispatch and Gas Cost Forecasts



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Ventyx, an ABB company, is the world's leading supplier of enterprise software and services for essential industries such as energy, mining, public infrastructure and transportation. Ventyx solutions bridge the gap between information technologies (IT) and operational technologies (OT), enabling clients to make faster, better-informed decisions in both daily operations and long-term planning strategies.

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1 **PUB/CENTRA 9**

2 ***Reference: Tab 7 p. 6 and 7 of 16 – Eastern Storage Options***

3
4 **Please elaborate why Eastern Storage Options C and D were discounted prior to**
5 **modeling in SENDOUT, specifically including the following:**

- 6
7 **• magnitude of the cost differential of Options C and D with ANR and Option B ;**
8 **• reliability;**
9 **• daily nomination flexibility; and**
10 **• flexibility of sources of supply.**

11
12 **Cost (unit basis)**

13 As Option B was less costly or equal to Options C and D on all cost measures on a unit basis, it
14 was logically determined that modeling the portfolio costs of Options C and D would be
15 unproductive and unnecessary as Option B would be the low cost portfolio by default. In
16 comparing the ANR option and Option B, it was not readily apparent that one option was less
17 costly or equal to the other on all measures. As an example, the different storage rate structures
18 of ANR and Option B made a direct comparison of unit storage costs difficult without modeling
19 these costs in conjunction with other costs on a total portfolio basis. As such, detailed modeling
20 was conducted for the ANR and Option B portfolios, as described in Tab 7.

Reliability and daily nomination flexibility

Reliability takes into consideration the ability of the option to consistently deliver storage gas as nominated, which includes firmness of nominations and interconnect capacity with interconnecting pipelines. Firmness of nominations considers all nomination cycles, including intra-day and late-night (effective 5 a.m.) modifications to storage withdrawals. Options B and C indicated that intra-day nominations would be firm, while Option D indicated that intra-day nominations would be interruptible. Accordingly, due to the greater assurance of firm service from Options B and C, they were deemed to be equal to each other and better than Option D. For many years, ANR has provided exceptional reliability in accommodating Centra's storage withdrawals at all nomination cycles. Options B and C acknowledged they did not have experience accommodating storage nominations at the 5 a.m. cycle, but would provide this service provided it could be coordinated with interconnecting pipelines.

Reliability also considers how the storage facility is connected to interconnecting pipelines that would be utilized to transport storage withdrawals to Manitoba. ANR can utilize two large interconnects with GLGT to deliver Centra's storage gas. Each of these two interconnects are larger than the single interconnect that would be utilized by the Option B and C storage facilities to deliver storage gas to the interconnecting pipeline. ANR therefore has at least twice the interconnect capacity with the interconnecting pipeline than Options B and C, and also has interconnect redundancy that Options B and C do not have, thus providing the greatest assurance of the ability to deliver Centra's storage gas to the interconnecting pipeline under constrained operating conditions. In addition, as affiliated companies, the ANR and GLGT systems are operated from the same control room, providing assurance of optimal communication between these pipeline systems to facilitate reliable operations.

Flexibility of sources of supply

1 The ANR option provides the lowest transportation cost to ship WCSB supply to storage, and
2 provides access to the lowest basis non-WCSB hub (Chicago) that is relevant in the region. The
3 Chicago market is “in path” of the transportation path used for injections of WCSB supply into
4 ANR storage, providing optimal flexibility to use the path for either WCSB or Chicago-sourced
5 supply for storage injections. In addition, the ANR option provides the ability to acquire supply in
6 Michigan indexed to the MichCon hub at the ANR storage injection point. In winter, Centra can
7 also access Chicago supply to manage storage levels, and Michigan supply indexed to the
8 MichCon hub at the large Farwell interconnect between ANR and GLGT. Options B and D rely
9 on a single alternative hub to WCSB supply, and as these hubs are not “in path” of the WCSB
10 transportation path to storage, provide no utilization of this path if using non-WCSB supply for
11 storage injections. Option C provided options to access more than one non-WCSB hub, but the
12 chosen option would become embedded in the contractual cost of the storage service and
13 become locked-in, thus limiting the ability to adapt to changing market conditions.

CENTRA GAS MANITOBA INC.

TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION

RESPONSE TO INFORMATION REQUESTS OF
THE PUBLIC UTILITIES BOARD OF MANITOBA

1 **PUB/CENTRA 10**

2 ***Reference: Tab 7 p. 7 to 10 of 16 – SENDOUT Modeling***

3
4 **Please provide responses in a format similar to Tab 8 Attachment 5.**

5
6 **(a) Please explain whether Centra modeled significant changes in the Canada-US**
7 **exchange rate with the SENDOUT model. If so, please provide the results. If not,**
8 **please confirm whether such a scenario could be modeled with an exchange rate of**
9 **\$1.30 CAD/USD and the assumptions that would need to be made to prepare such a**
10 **model. If such a scenario can be modeled, please provide the optimized**
11 **arrangements and corresponding costs (in Canadian dollars) for ANR and Option B.**
12 **If such a scenario will not produce valid output, then please explain the impacts that**
13 **a large change to the Canada –U.S. dollar exchange rate will have on the total costs**
14 **of all four options (ANR, B, C, and D) and whether the cost advantage of any option**
15 **is reduced or enhanced.**

16
17 While it is technically possible to model the effect of changes in CAD/USD exchange rates
18 on overall portfolio costs including that of commodity in SENDOUT, the outcomes would
19 not be valid because the relationship between Canadian and U.S. natural gas prices in
20 Canadian dollar equivalents is very complex and multi-faceted. In fact, very little of the
21 historical change in basis differentials between Canadian and U.S. delivery points can be

1 explained by changes in CAD/USD exchange rates. To attempt to model overall portfolio
2 costs in SENDOUT using CAD/USD exchange rate scenarios different from those
3 underlying the futures prices from which the originals were derived, while assuming a linear
4 relationship between the relative prices of Canadian and U.S. sourced commodity in
5 Canadian dollar equivalents, may yield misleading results.

6
7 The attachment to this response depicts the most recent 10-year history of monthly
8 AECO/NYMEX basis differentials (the pre-eminent benchmarks for the market value of
9 natural gas in Canada and the U.S. respectively) in CAD/GJ, relative to CAD/USD
10 exchange rates. As the chart indicates, there is little correlation between movements in
11 CAD/USD exchange rates and the relative cost of Canadian versus U.S. sourced natural
12 gas denominated in Canadian dollars. During this period, the correlation coefficient
13 between changes in CAD/USD exchange rates and changes in the relative prices of
14 Canadian versus U.S. sourced natural gas in Canadian dollars was approximately minus
15 0.23, indicating a very weak relationship between the two. The associated coefficient of
16 determination, at approximately 0.05, indicates that only 5% of the change in the relative
17 price of Canadian versus U.S. sourced gas denominated in \$CAD can be explained by
18 changes in CAD/USD exchange rates.

19
20 The effect of each 1% increase or decrease in the CAD/USD exchange rate on the
21 proposed ANR option would be approximately \$150,000 per year including both fixed and
22 variable transportation and storage costs. Therefore, an exchange rate of \$1.30 CAD/USD
23 would have the effect of increasing the annual costs of the ANR storage and transportation
24 assets by approximately \$4.5 million CAD, relative to CAD/USD exchange rates at parity.
25 The impact would be similar with Option B.

26

Regarding Options C and D, and as discussed in CAC/Centra 7(g), these options were equal to or higher cost than Option B on all cost measures. One of Options C and D provided the option of having storage rates quoted in either USD/Dth or CAD/GJ. Under the assumption of a significant weakening of CAD relative to USD, storage costs quoted for this Option in CAD/GJ could become lower than Option B storage costs. However, the weakening of CAD cannot make this Option less costly than Option B with respect to any other cost measure. Conversely, any strengthening of CAD relative to USD, regardless of magnitude, would add further to the cost disadvantage of the storage costs for this Option, if quoted in CAD/GJ, relative to Option B.

(b) Please explain whether Centra modeled significant changes in TCPL tolls – both increases and decreases – with the SENDOUT model. If so, please provide the reference TCPL tolls, optimized arrangements, and corresponding costs for the ANR and B options. If not, please provide the optimized arrangements and corresponding costs for these two options for a TCPL reference toll that is 50% above and 50% below the current EZT of \$2.24/GJ. Please state any assumptions and comment on changes to the optimized portfolio in response to the change in tolls.

With respect to storage and transportation rate assumptions in PUB 10(b) through (f), Centra notes that the rates negotiated with transportation and storage providers were for specific portfolios. In particular, the discounted rates from ANR for annual storage and for winter Joliet-to-storage transportation included in the Tab 7 model results are specific to the proposed ANR/GLGT portfolio and cannot be assumed to be available in model scenarios that contemplate material deviations in storage and transportation capacities. Accordingly, ANR annual storage and winter Joliet-to-storage transportation were removed from the model in the PUB 10 scenarios, with the exception of PUB 10(d) and (e) which

specifically contemplate annual storage under different parameters than the proposed portfolio. While other rates in the term sheet also cannot be assumed to be available under different portfolio configurations, Centra has maintained the remaining rates in the model for discussion purposes only. Regarding the toll premiums for TCPL STFT used in the Tab 7 model results, these assumptions have been maintained in the PUB 10 scenarios. Please see the response to CAC/Centra 8(e) for model results that remove this STFT assumption.

Centra modeled TCPL toll increases and decreases of 35% relative to the tolls used in the model results reported in Tab 7, which were derived from a TCPL reference toll of \$2.24/GJ. The increased and decreased toll scenarios resulted in TCPL reference tolls of \$3.02/GJ and \$1.46/GJ. Please see the attachment to this response for the ANR and Option B model results using futures and ICF price curves.

In general, increases in TCPL tolls result in higher storage capacity and storage deliverability, while decreases in TCPL tolls result in lower storage capacity and storage deliverability. The exception is y05 of the ICF curves in which higher storage capacity is maintained despite the reduction in TCPL tolls, presumably to take advantage of the relatively wider summer-winter price differentials in y05 of the ICF curves. The reductions in storage capacity and storage deliverability in the other lower TCPL toll scenarios demonstrate two modeling caveats:

- 1) A reduction in TCPL tolls should increase the demand for gas from AECO and Empress, putting upward pressure on gas prices at AECO and Empress and thus offsetting the reduction in TCPL tolls with respect to the landed cost of WCSB gas in downstream markets. Due to the complex relationship between tolls and gas prices,

1 this effect cannot be readily modeled and is not considered in the model results, as
2 Empress prices are held constant despite the toll changes.

3 2) As the model has perfect foresight of the weather and Manitoba gas load it needs to
4 serve every day, the model has no need to make intra-day or 5 a.m. nomination
5 changes to respond to intra-day weather-driven load swings. Accordingly, the model
6 reduces storage capacity and storage deliverability in response to significant
7 reductions in TCPL tolls (with no corresponding upward effect on AECO and
8 Empress prices). Storage capacity and storage deliverability provide an LDC with
9 reliable swing service in the winter months at all nomination cycles, including when
10 gas markets are closed, in order to respond to weather-driven load swings, mitigate
11 pipeline balancing fees, and serve the market requirement for natural gas. This
12 important benefit of storage is not considered in the model.

13
14 Also of note, in six of the eight cases in the attachment to this response, the ANR portfolio
15 has a small total cost advantage over the Option B portfolio.

16
17 **(c) Please model with SENDOUT optimized portfolio arrangements using the Alternate**
18 **Market Scenario pricing (Tight Gas, Optimistic Mainline Drivers, Pessimistic Mainline**
19 **Drivers) developed by ICF in its June 2011 report to Centra. Please provide the**
20 **optimized arrangements and corresponding costs for the ANR and B options for**
21 **each pricing scenario. Please state any assumptions and the TCPL reference tolls**
22 **embedded into each Alternate Market Scenario.**

23
24 Among ICF's alternate market scenarios, ICF modeled TCPL tolls ranging from EZT's of
25 \$1.00/GJ to \$3.00/GJ on the Optimistic Mainline Drivers and Pessimistic Mainline Drivers
26 scenarios. In response to this IR, Centra has performed SENDOUT modeling on two

bookend scenarios as follows: \$1.00/GJ toll on the Optimistic Mainline Driver scenario; and \$3.00/GJ toll on the Pessimistic Mainline Driver scenario. The price curves in these scenarios are based on ICF's October 2010 Base Case. Please see the attachment to this response for the model results.

(d) Please model 100% annual storage for the ANR option, using the futures pricing and ICF base case pricing as price inputs, and provide the optimized arrangements and corresponding costs. Please compare this to the proposed portfolio.

Centra notes that the rate agreed to with ANR for annual storage was specifically for annual storage capacity of 7.4 PJ. For the purpose of modeling 100% annual storage for this IR, Centra utilized a higher annual storage rate based on earlier negotiations. Please see attachment to this response for the model results.

In comparison to the ANR SENDOUT results in Tab 7 which assumed 7.4 PJ of annual storage, the 100% annual ANR storage scenario tends to reduce storage capacity and purchase more winter gas from Chicago to manage storage levels. Despite reducing storage capacity, overall portfolio costs are the same or slightly greater under this scenario, as the unit cost of storage has increased.

Centra also notes that due to the model's perfect foresight of commodity prices, weather, and the exact load it has to serve every day, the model can execute a winter buying strategy that may include winter purchases for injection into storage starting in early November if the model knows it will have to serve a cold winter, thus enabling the model to perfectly reduce the size of storage. An LDC would lack this perfect foresight, making cost

savings achieved through reduced storage capacity and early and frequent winter gas purchases to manage storage levels less feasible in reality.

(e) Please model the ANR portfolio but constraining the maximum effective capacity to 15.5 PJ and allowing for the maximum cyclability offered by ANR. Please use the futures pricing and ICF base case pricing as price inputs, and provide the optimized arrangements and corresponding costs. Please compare this to the proposed portfolio.

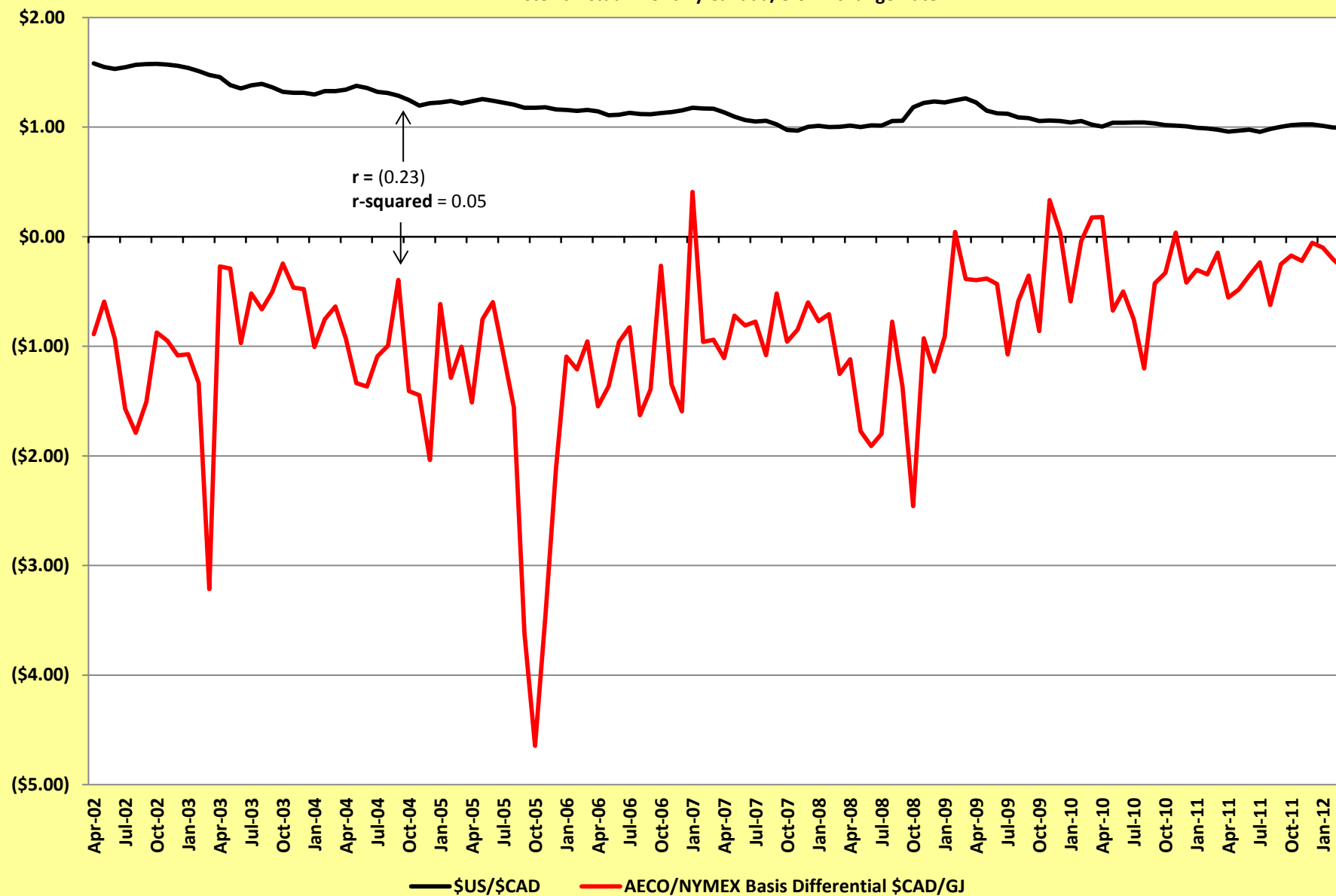
Centra notes that the rate agreed to with ANR for annual storage was specifically for annual storage capacity of 7.4 PJ. For the purpose of modeling 100% annual storage for this IR, Centra utilized a higher annual storage rate based on earlier negotiations. Please see attachment to this response for the model results.

With storage fixed at 10.9 PJ (15.5 PJ / 1.42 cycles), the model relies more heavily on WCSB supply transported on TCPL from Empress than in the Tab 7 ANR SENDOUT results, as reflected in the Empress supply quantities and increase in transportation costs. Overall portfolio costs are somewhat higher than the ANR SENDOUT results in Tab 7. Presumably, this lower storage capacity requires the model to choose between more frequent cycling of winter US gas purchases to manage storage levels versus buying more winter WCSB supply transported on TCPL to avoid storage depletion.

(f) Please model with SENDOUT both 50 and 60 day deliverability for ANR storage. Report the optimum storage and transportation configuration and corresponding costs for each deliverability option. Please compare these results to the proposed ANR portfolio.

1
2 The 50 and 60 day storage service model results tend to decrease storage relative to the
3 Tab 7 ANR SENDOUT results, particularly the 50 day service. Reduced storage capacity
4 appears to result in generally greater reliance on WCSB supply transported on TCPL from
5 Empress, as reflected in the Empress supply quantities and increase in transportation
6 costs. Overall portfolio costs are somewhat higher than the ANR SENDOUT results in Tab
7 7. These effects are more pronounced for the 50 day service than the 60 day service.
8 Please see the attachment to this response.

Historic Actual AECO/NYMEX Basis Differential (\$/GJ CAD)
versus
Historic Actual Monthly Canada/U.S. Exchange Rate



TCPL tolls:	ANR - Futures Curves				ANR - ICF Curves			
	+35%		-35%		+35%		-35%	
	y01	y05	y01	y05	y01	y05	y01	y05
Average Annual Costs (CAD millions)*								
Supply	188.7	269.0	186.8	269.4	188.0	329.9	186.3	329.3
Storage	10.1	11.1	7.3	5.7	9.6	11.9	7.3	10.5
Transport	62.2	59.7	37.8	37.7	63.5	58.9	38.0	34.8
Total	261.0	339.7	231.8	312.7	261.1	400.7	231.5	374.5
Storage								
Capacity (PJ)	18.2	20.0	12.2	8.7	17.2	22.1	12.2	19.3
Deliverability (TJ/day)	221.6	236.2	174.1	149.3	214.7	245.5	174.2	216.0
Average Annual Supply (PJ)*								
Empress - Baseload	42.0	40.0	44.7	37.4	42.8	36.9	44.7	40.7
Empress - Swing	5.6	4.4	9.1	14.0	6.3	3.5	9.3	4.9
Emerson	1.1	1.4	0.5	0.4	1.0	0.3	0.3	0.2
ANR inject point	2.1	4.4	0.1	2.5	2.1	3.7	0.1	3.6
Chicago	3.3	3.1	0.3	0.0	2.2	9.4	0.2	5.5
Farwell	1.1	1.8	0.6	0.6	0.8	1.5	0.6	0.4

TCPL tolls:	Option B - Futures Curves				Option B - ICF Curves			
	+35%		-35%		+35%		-35%	
	y01	y05	y01	y05	y01	y05	y01	y05
Average Annual Costs (CAD millions)*								
Supply	189.7	271.4	187.7	270.9	187.3	332.1	186.3	329.9
Storage	11.5	12.3	6.5	6.1	9.1	12.3	6.1	9.2
Transport	60.2	55.2	38.8	35.7	65.1	57.7	39.6	36.3
Total	261.3	338.8	233.0	312.6	261.5	402.0	232.0	375.4
Storage								
Capacity (PJ)	19.0	20.3	10.8	10.0	15.2	20.3	10.2	15.2
Deliverability (TJ/day)	253.2	253.2	165.9	167.5	253.2	253.2	170.1	253.2
Average Annual Supply (PJ)*								
Empress - Baseload	40.7	30.7	42.6	33.7	43.7	36.0	44.7	43.5
Empress - Swing	4.5	6.1	11.3	13.0	6.5	4.2	10.0	5.9
Emerson	1.3	0.4	0.5	0.3	0.9	1.3	0.3	0.8
MichCon	8.6	17.7	0.8	7.9	4.0	13.6	0.2	5.0

*Annual average over 20 weather years.

		ANR			
TCPL toll/scenario:		\$1.00 - Optimistic y01y05		\$3.00 - Pessimistic y01y05	
Average Annual Costs (CAD millions)*					
Supply		246.3	332.6		207.0329.1
Storage		6.3	6.2		8.59.5
Transport		29.1	29.2		66.263.5
Total		281.6	367.9		281.6402.1
Storage					
Capacity (PJ)		11.0	10.8		14.617.6
Deliverability (TJ/d)		150.7	151.6		211.1215.0
Average Annual Supply (PJ)*					
Empress - Baseload		44.9	44.9		43.942.9
Empress - Swing		9.4	9.6		7.86.3
Emerson		0.5	0.4		0.70.2
ANR injection point		0.0	0.0		1.10.3
Chicago		0.1	0.1		0.95.0
Farwell		0.3	0.3		0.70.6
		Option B			
TCPL toll/scenario:		\$1.00 - Optimistic y01y05		\$3.00 - Pessimistic y01y05	
Average Annual Costs (CAD millions)*					
Supply		247.7	334.1		205.3328.6
Storage		5.1	5.1		7.37.5
Transport		29.5	29.5		69.368.4
Total		282.2	368.7		281.9404.5
Storage					
Capacity (PJ)		8.7	8.7		12.512.8
Deliverability (TJ/d)		145.2	145.1		208.8213.1
Average Annual Supply (PJ)*					
Empress - Baseload		42.7	42.8		45.044.8
Empress - Swing		11.5	11.6		8.48.0
Emerson		0.7	0.6		0.50.6
MichCon		0.2	0.2		1.31.6

*Annual average over 20 weather years.

	100% Annual ANR Storage				
	Futures Curves			ICF Curves	
	y01	y05		y01	y05
Average Annual Costs (CAD millions)*					
Supply	189.1	269.8		189.0	330.3
Storage	8.8	9.2		8.6	11.4
Transport	49.1	48.0		49.4	47.8
Total	247.0	327.0		247.0	389.4
Storage					
Capacity (PJ)	13.3	14.0		12.7	19.1
Deliverability (TJ/d)	214.1	216.6		214.1	238.2
Average Annual Supply (PJ)*					
Empress - Baseload	42.7	40.5		42.9	40.4
Empress - Swing	6.7	6.7		6.8	4.4
Emerson	1.0	0.9		0.9	0.2
ANR injection point	1.1	3.9		0.7	3.7
Chicago	2.2	1.5		2.8	6.2
Farwell	1.6	1.7		1.1	0.4

*Annual average over 20 weather years.

	10.9 PJ All Annual ANR Storage				
	Futures Curves			ICF Curves	
	y01	y05		y01	y05
Average Annual Costs (CAD millions)*					
Supply	188.1	270.2		187.9	332.8
Storage	7.7	7.9		7.7	7.9
Transport	51.9	49.8		51.9	51.3
Total	247.6	327.8		247.4	391.9
Storage					
Capacity (PJ)	10.9	10.9		10.9	10.9
Deliverability (TJ/d)	199.1	202.4		199.6	206.3
Average Annual Supply (PJ)*					
Empress - Baseload	43.7	38.6		43.9	43.5
Empress - Swing	8.3	9.2		8.3	7.7
Emerson	0.7	0.5		0.6	0.2
ANR inject point	0.0	4.0		0.0	0.0
Chicago	1.3	1.4		1.4	2.8
Farwell	1.3	1.4		1.0	1.1

*Annual average over 20 weather years.

	ANR Storage - 50 Day Service			
	Futures Curves		ICF Curves	
	y01	y05	y01	y05
Average Annual Costs (CAD millions)*				
Supply	187.0	268.0	186.7	329.8
Storage	9.0	9.1	8.7	12.0
Transport	52.2	50.9	52.7	48.7
Total	248.2	327.9	248.1	390.4
Storage				
Capacity (PJ)	12.8	12.8	12.4	16.9
Deliverability (TJ/d)	255.9	255.5	248.7	337.3
Average Annual Supply (PJ)*				
Empress - Baseload	44.2	41.0	44.3	41.9
Empress - Swing	8.2	8.8	8.4	5.0
Emerson	0.8	0.7	0.7	0.2
ANR inject point	0.6	3.4	0.4	4.4
Chicago	0.6	0.2	0.5	3.1
Farwell	0.8	0.9	0.7	0.7

	ANR Storage - 60 Day Service			
	Futures Curves		ICF Curves	
	y01	y05	y01	y05
Average Annual Costs (CAD millions)*				
Supply	187.4	267.8	187.2	329.9
Storage	9.3	9.2	8.9	11.5
Transport	51.0	50.2	51.5	48.4
Total	247.6	327.1	247.5	389.7
Storage				
Capacity (PJ)	14.5	14.1	13.9	17.8
Deliverability (TJ/d)	241.6	235.8	232.1	295.8
Average Annual Supply (PJ)*				
Empress - Baseload	43.8	42.1	43.9	41.3
Empress - Swing	7.4	7.8	7.8	4.7
Emerson	0.8	0.8	0.8	0.2
ANR inject point	1.6	3.2	1.2	4.3
Chicago	0.7	0.2	0.7	4.1
Farwell	0.8	0.9	0.8	0.7

*Annual average over 20 weather years.

CENTRA GAS MANITOBA INC.

TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION

RESPONSE TO INFORMATION REQUESTS OF
THE PUBLIC UTILITIES BOARD OF MANITOBA

1 **PUB/CENTRA 11**

2 ***Reference: Tab 7 p. 13 of 16 – Model Constraints***

3
4 **(a) Please explain how the maximum capacities that are model constraints were derived**
5 **or selected, in particular:**

- 6 • **21,101 GJ/d of Emerson, ANR injection point, or Farwell capacity;**
7 • **42,202 GJ/d of capacity from Joliet to storage;**
8 • **52,753 GJ/d of MichCon supply;**
9 • **54,000 GJ/d and 215,614 GJ/d of TCPL STS capacity; and**
10 • **50,000 GJ/d of unserved capacity.**

11
12 The following model constraints were embedded in SENDOUT to ensure the model
13 employed robust assumptions regarding supply and transportation options.

14
15 Emerson, ANR injection point, and Farwell supply: Among these three transactional
16 points, only Emerson is exchange-traded on electronic trading platforms. Compared to
17 hubs such as AECO and Chicago, Emerson is significantly less liquid with respect to
18 traded volumes and number of transactions, and is generally only supplied by one pipeline
19 (deliveries from TCPL are received by GLGT and Viking pipelines at Emerson). Liquid
20 trading points between interconnecting pipelines are generally supplied by more than one
21 pipeline and are therefore less dependent upon the circumstances of a single pipeline. The

1 ANR injection point and Farwell are not exchange-traded points and cannot be easily
2 measured with respect to traded volumes and number of transactions. However, as these
3 points are close to ANR storage facilities in Michigan, it should be possible to acquire
4 supply at these points from counterparties, albeit without the benefit of live electronic
5 trading data or published indices to assist price discovery and transparency. For these
6 reasons, Centra constrained available supply at these points to 20,000 Dth/day (21,101
7 GJ/day) in the model to avoid over-reliance on these supply options.

8
9 ANR winter Joliet-to-storage transportation: This transportation capacity was limited to
10 40,000 Dth/day (42,202 GJ/day) by ANR for the agreed upon rate.

11
12 MichCon winter supply: Winter purchases of MichCon supply under Option B were limited
13 to 50,000 Dth/day (52,753 GJ/day) based on a specifically negotiated transportation
14 service for this supply. Daily purchases of up to 50,000 Dth/day from the MichCon hub
15 were deemed reasonable given the hub's greater liquidity relative to smaller hubs such as
16 Emerson.

17
18 TCPL STS capacity: This capacity is held under a long-term contract that cannot be
19 readily modified. Due to the characteristics of the contract (rate structure, unequal seasonal
20 capacities, and different seasonal direction of flow), it cannot be readily modeled in a
21 manner in which the model freely selects capacity levels.

22
23 Unserved demand: "Unserved" firm winter market demand of 50,000 GJ/day was specified
24 in the model in order to emulate Centra's current practice of using firm winter peaking
25 services to serve firm demand under very cold weather conditions. Rather than discretely
26 embed peaking services of 50,000 GJ/day in the model that would provide for the last

1 dispatch option in Centra's portfolio, Centra simply specified that 50,000 GJ/day of firm
2 winter market demand did not have to be "served". SENDOUT therefore only produced a
3 portfolio that would serve Centra's forecast firm peak day of 470,000 GJ/day less 50,000
4 GJ/day. 50,000 GJ/day was selected as a reasonable level to allow for the use of firm
5 peaking services based on Centra's experience arranging these services year-to-year.

6
7 **(b) Please provide the optimized arrangements and corresponding costs if these**
8 **constraints are not imposed on the SENDOUT model.**

9
10 Please see the attachment to this response for the model results. The constraints
11 referenced in part (a) were removed with the exception of the 42,202 GJ/day ANR winter
12 Joliet-to-storage transportation and the STS capacities for the reasons noted in part A. The
13 constraint of 50,000 GJ/day unserved firm demand was removed such that the model could
14 construct a portfolio that serves all firm demand.

	Futures Curves						ICF Curves				
	Case 1 - ANR			Case 2 - Option B			Case 3 - ANR			Case 4 - Option B	
	y01	y05		y01	y05		y01	y05		y01	y05
Average Annual Costs (CAD millions)*											
Supply	191.0	281.0		189.1	273.1		190.3	343.0		187.5	331.6
Storage	8.9	13.1		8.6	8.7		8.6	18.6		8.6	8.8
Transport	51.3	34.0		55.1	49.5		52.6	31.7		56.2	56.0
Total	251.1	328.0		252.8	331.3		251.5	393.2		252.2	396.3
Storage											
Capacity (PJ)	14.1	22.9		14.3	14.3		13.2	34.2		14.3	14.5
Deliverability (TJ/d)	221.2	279.0		238.2	238.2		223.5	374.1		238.2	242.4
Average Annual Supply (PJ)*											
Empress - Baseload	40.7	17.9		42.4	32.5		41.9	13.2		44.2	43.6
Empress - Swing	6.5	2.0		7.7	6.9		7.0	0.7		7.8	6.1
Emerson	2.3	5.0		1.8	2.7		1.9	6.3		1.4	1.9
MichCon	N/A	N/A		3.5	13.0		N/A	N/A		2.1	3.8
ANR inject point	2.2	22.8		N/A	N/A		1.2	34.3		N/A	N/A
Chicago	0.0	0.0		N/A	N/A		1.0	0.0		N/A	N/A
Farwell	3.8	7.5		N/A	N/A		2.5	0.7		N/A	N/A

*Annual average over 20 weather years

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1 **PUB/CENTRA 12**

2 ***Reference: Tab 7 p. 15 and 16 of 16 – Option B***

3

4 **(a) While the application explains Centra's view on the reliability of the ANR portfolio,**
5 **the application does not detail the reliability attributes of the Option B portfolio.**
6 **Please discuss how Centra evaluated the other options and in particular Option B**
7 **related to reliability and compare and contrast the reliability of ANR with these**
8 **options.**

9

10 Please see the response to PUB/Centra 9, which discusses the reliability of the options.

11

12 **(b) Please elaborate on any additional flexibility that Option B provided which ANR did**
13 **not.**

14

15 Option B did not provide any additional flexibility compared to ANR.

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1 **PUB/CENTRA 13**

2 ***Reference: Tab 7 Attachment 1 – ICF Model***

3

4 **(a) Please explain whether and how the TCPL Mainline, TCPL STS, ANR, and GLGT**

5 **pipeline capacities optimized in ICF's analysis differ for the ANR options of 50, 60,**

6 **and 70 day deliverability.**

7

8 **Response provided by ICF:**

9 The peak day requirements on Centra's system drive winter deliverability requirements for

10 all pipelines needed to transport storage gas to the Centra service territory. Hence, as

11 shown in the attached table, the average optimum level of TCPL STS capacity, Great

12 Lakes capacity from Farwell/Deward to Emerson, and ANR capacity from ANR storage to

13 Deward/Farwell do not change based on deliverability. Annual TCPL FT capacity declines

14 slightly as storage deliverability moves from 50-day to 70-day storage, however the impact

15 is less than three percent of the total TCPL FT capacity.

16

17 The optimum level of pipeline capacity required to fill ANR storage depends on the level of

18 storage deliverability, increasing by more than ten percent as storage deliverability moves

19 from 50-day to 70-day.

Average Optimized Pipeline Capacity For Different Levels of ANR Storage Deliverability (GJ/Day)			
	50-Day	60-Day	70-Day
TCPL			
TCPL FT Capacity	110,491	110,305	110,212
TCPL STS Capacity (Winter)	215,614	215,614	215,614
TCPL STS Capacity (Summer)	54,000	54,000	54,000
Great Lakes			
Emerson to Crystal Falls	45,705	49,787	52,219
Farwell/Deward to Emerson	215,614	215,614	215,614
ANR Michigan			
Crystal Falls to ANR Storage	45,705	49,787	52,219
ANR Storage to Deward/Farwell	215,614	215,614	215,614

(b) Please explain the significance of the 75th percentile in Table 2.

Response provided by ICF:

The 75th percentile in Table 2 indicates the storage capacity value at which the optimum level of storage capacity will be less than in 75 percent of the weather cases evaluated.

The 75th percentile was selected as a logical comparative level and has no special statistical, legal or operational significance.

(c) Please expand Table 2 to include the 67th and 90th percentiles.

Response provided by ICF:

See the revised table 2 below.

Table 2(R): Range of Optimized Storage Capacity Due to Weather and Price Variation

Optimum Working Gas Storage Capacity (PJ)								
	Average	Maximum	Minimum	Median	67th Percentile	75th Percentile	90th Percentile	
Option A (ANR) 50-Day Storage	15.61	30.00	10.39	13.18	17.67	19.88	25.21	
Option A (ANR) 60-Day Storage	16.24	29.80	12.47	13.88	16.56	19.17	24.55	
Option A (ANR) 70-Day Storage	17.03	29.28	14.54	15.09	17.07	18.09	23.09	
Option B 50-Day Storage	14.10	21.85	10.78	12.41	15.81	17.99	19.19	
Option B 60-Day Storage	15.65	22.64	12.94	12.94	15.63	17.72	22.29	
Option B 70-Day Storage	16.79	26.27	15.09	15.09	15.09	16.98	21.46	

(d) ICF's optimization analysis determined that there was a small economic benefit to higher deliverability storage (50-day vs 60 or 70 day). Centra selected 71 day deliverability for its portfolio. Please explain why Centra did not agree with ICF's findings and explain what other considerations resulted in Centra selecting a different deliverability.

ICF acknowledges in its conclusions that its "optimization modeling approach relies on perfect foresight considering weather conditions and natural gas prices" and attributes the small economic benefit associated with higher 50 day deliverability storage to "the ability to take greater advantage of daily changes in natural gas prices to optimize the mix of gas purchases, storage injections, and storage withdrawals on a daily basis". ICF's optimization modeling takes advantage of the perfect foresight cited above in optimizing the portfolio on a daily basis; however, in practice the utility does not have perfect foresight and cannot replicate the behaviour of the model which has that advantage. It is this dilemma that prompted Centra to use seasonal average prices in SENDOUT, to avoid the situation whereby the optimization model determines monthly supply acquisition decisions assuming perfect foresight of monthly price differentials that would otherwise have been embedded in the model.

1 **(e) ICF's optimization analysis determined that the optimum storage capacity for 70-day**
2 **deliverability is, on average, 17.03 PJ, while 18.09 PJ is the optimal capacity 75% of**
3 **the time, based on anticipated weather variations. Please explain why Centra**
4 **selected 15.5 PJ of storage instead.**

5
6 To clarify, 18.09 PJ is the storage capacity value at which the optimum level of storage
7 capacity will be less than in 75 percent of the weather cases evaluated (please see ICF's
8 response to part (b) of this response).

9
10 ICF's model produces a different portfolio for each weather and price scenario and resulted
11 in a range of storage capacities for 70-day ANR storage of 14.54 PJ to 29.28 PJ based on
12 perfect foresight of the particular commodity prices and weather conditions in that case.
13 The outlier scenarios drive up the average capacity value, in this case to 17.03 PJ.

14
15 In contrast, SENDOUT selects a single lowest-cost portfolio for all 20 weather scenarios for
16 a particular price curve which may include less storage capacity than it would otherwise
17 select if producing a discrete result for the coldest of the 20 weather scenarios.

18
19 ICF in its modeling used all five years of prices in their curves versus the modeling
20 performed in SENDOUT which used futures and ICF price curves for y01 (2013/14) and
21 y05 (2017/18) only. Thus ICF's outputs were influenced by more years of greater
22 summer/winter price differentials which are more similar to y05 of the ICF price curves than
23 y01. When y05 of ICF's price curves were used in SENDOUT, the model output was an
24 optimal storage capacity of 19.9 PJ of ANR storage (please see the table in Tab 7, page 14
25 of 16 of the Application).

Centra's selection of 15.5 PJ of storage capacity was directionally influenced by the results of the SENDOUT model, which are directionally similar to ICF's model results considering the differences in the two modeling approaches.

(f) Please confirm whether the working gas capacity shown in Figure 1 on page 6 of 6 refers to the contracted capacity or to the effective capacity considering the cyclability of annual storage.

Response provided by ICF:

The working gas capacity shown in Figure 1 on page 6 refers to the contracted storage working gas capacity.

(g) Please provide Centra's view on how the percentages of purchases from various storage options shown in Table 3 would change with increases in TCPL tolls of 50% and 100%.

Directionally for both ANR and Option B, Centra's view is that as TCPL tolls increase the percentage of non-WCSB purchases would also increase; however, as outlined in the response to CAC/Centra 1(f), there is a dynamic and complex relationship between tolls and gas prices and, as such, this effect cannot be readily modeled.

(h) Please give ICF's view on the optimum storage capacity for 70-day ANR storage and compare this to Centra's proposed storage capacity.

Response provided by ICF:

1 ICF's view on the optimum storage capacity for 70-day ANR storage differs depending on
2 the expected operational patterns and constraints of the storage holder. A company, such
3 as an unregulated marketer, may be willing to actively trade in the daily gas market with the
4 objective to arbitrage the daily price movements, thereby assuming the additional risks that
5 are inherent in such activities. A company with this objective is likely to hold additional
6 storage capacity and pay for additional deliverability to participate in the daily market in
7 such a manner. As a result, any storage analysis that considers price volatility to optimize
8 storage value, including the ICF optimization analysis conducted for Centra, may overstate
9 the value of natural gas storage as a tool for price arbitrage to a utility that does not intend
10 to actively trade in the daily market with the intent of generating profits. At the same time,
11 any storage analysis that optimizes based on price may understate the value of storage to
12 provide security of supply and to minimize risk to a utility that assigns value to these
13 storage attributes. As a result, ICF provided a set of storage value assessments to Centra
14 Manitoba. In the report prepared by ICF for Centra, ICF advised that the results of the
15 optimization analysis should be viewed as one additional source of information during the
16 portfolio development process and that selection of a final portfolio from among the range
17 of optimized solutions depends on a range of factors including risk tolerance, operational
18 considerations, and other issues that are difficult to define in strict economic terms.

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1 **PUB/CENTRA 14**

2 ***Reference: Tab 7 Schedules 1 and 2 – Futures and ICF Forecasted Pricing***

3
4 **Please prepare graphs that overlay the cost of AECO gas landed in Manitoba onto the**
5 **prices shown in Tab 7 Schedules 1(f) and 2(f). Please state any assumptions.**

6
7 Centra is unable to provide the information requested, as the all-in landed cost of gas in
8 Manitoba is highly variable depending upon factors such as weather, Centra's purchase load
9 factor and the extent to which certain transportation services would be utilized.

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1 **PUB/CENTRA 15**

2 ***Reference: Tab 8 p. 3 of 8, Attachment 5 – Storage Attributes***

3

4 **(a) Please explain why Centra did not increase the percentage of annual storage in**
5 **relation to seasonal storage if the price difference between the two is only**
6 **\$0.0105/Dth, especially in light of the opportunity to reduce the total storage**
7 **capacity with cyclable storage.**

8

9 Centra notes that the cost difference of \$0.0105/Dth is applicable only to the specific
10 package of services agreed to in the term sheet, including 7.4 PJ of annual storage. In the
11 course of negotiations, a higher rate was contemplated for 100% annual storage, and this
12 higher rate was embedded in the model results reported in PUB/Centra 10(d). The model
13 results in 10(d) indicate there is no cost advantage to the 100% annual storage option
14 relative to the model results in Tab 7 of the application, which assumed 7.4 PJ of annual
15 storage at the rate provided in the term sheet.

16

17 The response to PUB/Centra 10(d) also notes that model results that rely on reduced
18 storage capacity and increased winter gas purchases and cycling of storage gas relative to
19 the Tab 7 model results will be more difficult to execute in reality. Due to the model's
20 perfect foresight of commodity prices, weather, and the exact load it has to serve every
21 day, the model can execute a winter buying strategy that may include winter purchases for

1 injection into storage starting in early November if the model knows it will have to serve a
2 cold winter, thus enabling the model to perfectly reduce the size of storage. An LDC would
3 lack this perfect foresight, making cost savings achieved through reduced storage capacity
4 and early and frequent winter gas purchases to manage storage levels less feasible in
5 reality. In short, the “tighter” the portfolio in terms of reduced storage capacity and
6 increased cycling, the more disconnected a model result is likely to be from the operational
7 realities faced by an LDC, due to the model’s perfect foresight.

8
9 The selection of 7.4 PJ of annual storage was also related to the availability of deeply
10 discounted ANR Joliet-to-storage winter transportation of up to 42,202 GJ/day to facilitate
11 firm access to Chicago supply for winter storage injections via the Joliet Hub. Under ANR’s
12 tariff, maximum daily storage injections are determined by dividing the storage capacity by
13 175; accordingly, 42,202 GJ/day transportation capacity to deliver Chicago supply to
14 storage, multiplied by 175 equals approximately 7.4 PJ of storage. Realistically, Centra
15 could assess by mid-January – or about midway through a 151 day winter season – the
16 type of winter being experienced with respect to draw down of storage gas, and purchase
17 Chicago supply for injections of approximately 42,202 GJ/day for the last 75 days of the
18 winter, totaling just over 3.1 PJ of Chicago supply. Under ANR’s tariff, annual storage can
19 be cycled up to 1.42 times, or 42% of 7.4 PJ which equals 3.1 PJ.

20
21 A further consideration of annual storage is that under ANR’s tariff, ROFR applies to the
22 service as it is currently held; in other words, in respect of maintaining storage capacity
23 under the ROFR process, annual storage held by Centra is subject to ANR’s tariff rate for
24 annual storage, while seasonal storage is subject to ANR’s tariff rate for seasonal storage.
25 Accordingly, contracting for 100% annual storage increases Centra’s recontracting risk
26 under the ROFR process in a high value storage market, as ANR’s tariff deliverability rate

1 for annual storage is approximately 20% higher than its corresponding rate for seasonal
2 storage.

3
4 **(b) Please explain why a cyclability of 1.42 was selected and whether ANR or Option B**
5 **offered different levels of cyclability.**

6
7 Annual storage under ANR's tariff is limited to a cyclability of 1.42. Option B offered varying
8 levels of cyclability.

9
10 **(c) Please describe how the portfolio and corresponding costs would change if a higher**
11 **level of cyclability was incorporated.**

12
13 Cyclability under ANR's tariff is limited to 1.42. While Option B can provide higher
14 cyclability, it is less flexible than ANR's cyclability. With Option B, and unlike ANR, a
15 shipper cannot inject and withdraw on the same day, thus limiting the days that a shipper
16 can manage storage levels with winter injections.

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PUB/CENTRA 16

Reference: Tab 8 p. 5 of 8 – Nomination Flexibility

Please compare, by way of a cost versus benefit comparison, the cost of the additional flexibility offered by storage and transportation providers to make nomination changes at the late night window versus the benefit of avoiding load balancing charges Centra would expect to incur if it was not able to make late night nomination changes.

Under Centra's current transportation and storage portfolio, there is no additional cost or fees charged by the service provider for the ability to make changes at the late night nomination window (also known as the "STS 4 nomination cycle") which is also the case with the proposed portfolio. The STS 4 nomination cycle has a nomination deadline of 03:00, and an effective time of 05:00.

As noted in Section 6.3.9 of ICF's June 2011 report, Centra's balancing fees would be expected to increase without access to the STS 5 a.m. nomination cycle, which Centra currently uses for load balancing. TCPL balancing fees are charged as a percentage of the Mainline's Eastern Zone toll. Prior to the implementation of late-night STS nomination cycles, Centra experienced annual balancing fees of up to approximately \$2 million per year at a time when the Eastern Zone toll level was less than half of what it is today. Centra's balancing fees in recent years have been in the order of \$200,000 per year.

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1 **PUB/CENTRA 17**

2 ***Reference: Tab 8 p. 6 of 8; Tab 7 Attachment 1 Table 3 – Supply Diversity***

- 3
- 4 **(a) Please give the percentage of WCSB gas that Centra expects to purchase in relation**
- 5 **to the total annual gas purchases given normal weather with the proposed portfolio.**
- 6 **Please also give the minimum and maximum percentages of WCSB gas that could**
- 7 **be purchased based on the proposed portfolio, again with normal weather.**
- 8

9 Centra expects to make decisions related to sources of supply on an annual, seasonal, and

10 monthly basis based on then-current market conditions. With respect to the 20 years of

11 weather embedded in the SENDOUT model, WCSB (Empress) supply averages about

12 90% of annual purchases under the ANR portfolio.

13

14 The minimum percentage of WCSB gas could conceivably be approximately 60% under

15 the assumption that storage would be filled entirely with non-WCSB supply and the GLGT

16 winter transportation capacity to Emerson would be used at a high load factor through a

17 combination of maximum storage withdrawals (including maximum cycling) and significant

18 purchases of supply at Farwell. Centra does not anticipate operating the portfolio in this

19 manner at this time.

20

1 The maximum percentage of WCSB gas could conceivably be 100% under the assumption
2 that WCSB injections into storage are maximized (to the level of about 2/3 of total storage
3 capacity), and that the proposed portfolio places no restriction on WCSB purchases in
4 general such that Supplemental Gas from storage is not required.

5
6 **(b) At what TCPL reference toll is it less expensive to fill storage with US-based**
7 **supplies, assuming the basis and exchange rate as forecasted for 2012/13?**

8
9 There is a complex relationship between factors including, but not limited to, transportation
10 tolls and the respective commodity prices at pricing hubs. For example, a change in
11 pipeline transportation tolls will cause a change to the pricing equilibrium that affects the
12 commodity price itself at the pricing hub. Due to this complex inter-relationship, and the
13 potential effects of other market variables, it is not possible to predict the market outcome
14 of the change to only one factor or variable.

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1 **PUB/CENTRA 18**

2 ***Reference: PUB/Centra 17; Tab 8 – Western Transportation Service***

3

4 **(a) With the increased flexibility in the proposed portfolio to access different sources of**
5 **supply, especially increased supplies from US markets, the proportion of**
6 **Supplemental gas consumed by Centra's customers is expected to increase. Please**
7 **explain how this will affect Western Transportation Service customers and Centra's**
8 **Fixed Rate Primary Gas Service customers.**

9

10 Centra's current rate design considers U.S. gas purchases to be Supplemental Gas. An
11 increase in the level of U.S. gas purchases in place of corresponding purchases of
12 Western Canadian supply would result in a reduction in the percentage of a customers'
13 annual consumption to be billed as Primary Gas and an increase in the percentage to be
14 billed as Supplemental Gas.

15

16 Such an occurrence would require Centra to adjust billing percentages for all customers to
17 reflect the respective Primary Gas and Supplemental Gas percentages. For customers
18 under fixed-rate fixed-term arrangements, provided either through gas marketers or
19 through Centra by way of its Fixed Rate Primary Gas Service, there would be
20 proportionally less annual consumption to be billed at their contracted Primary Gas rate,

1 while proportionally more of their consumption would be billed at the Supplemental Gas
2 rate.

3
4 **(b) Please identify any changes that Centra is implementing or considering for the WTS**
5 **or FRPGS, including in respect of billing percentages.**

6
7 Centra recognizes that the adoption of a new gas portfolio may have impacts on both
8 commodity rate design and the structure of WTS. However, it should be noted that the
9 adoption of the proposed portfolio may not result in a substantial change to the annual
10 Primary/Supplemental Gas split, and therefore the impacts of increased U.S. gas
11 purchases may be relatively minor.

12
13 Centra has not yet implemented any changes to commodity rate design or WTS, but it has
14 begun preliminary work on examining the possible impacts of the proposed new
15 arrangements on commodity rate design. As noted in the response to PUB/Centra 19(a),
16 the impacts of the proposed portfolio on billing percentages will not materialize until after
17 the start of the 2013/14 Gas Year on November 1, 2013. Centra is of the view that there is
18 sufficient time between the approvals requested in this Application and the appearance of
19 any impacts on billing percentages to facilitate an examination of the matter and a public
20 review of possible alternatives.

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PUB/CENTRA 19

Reference: Tab 8 – Billing Percentage

- (a) Please provide the forecasted billing percentage for the 2012/13 gas year based on the proposed storage and transportation arrangements. If necessary, estimate the 2012/13 billing percentage using the 2011/12 volume forecast.**

Because storage withdrawals under normal weather conditions are not anticipated until November 2013 under Centra's proposed portfolio, the proposed storage and transportation arrangements are not expected to have a material effect on Centra's operations under normal weather conditions until the 2013/14 gas year. Therefore, using the 2011/12 volume forecast, Centra's best expectation at this point in time is that normalized billing percentages for the 2012/13 gas year will be similar to those at the outset of the 2011/12 gas year at:

	Primary	Supplemental
Firm	97%	3%
Interruptible	95%	5%

- (b) Please provide the normal weather billing percentage for the gas years 2009/10, 2010/11, and 2011/12.**

	Firm Customers		Interruptible Customers	
Gas Year	Primary Gas	Supplemental Gas	Primary Gas	Supplemental Gas
2011/12	97%	3%	95%	5%
2010/11	98%	2%	67%	33%
2009/10	96%	4%	67%	33%

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1 **PUB/CENTRA 20**

2 ***Reference: Tab 8 p. 7 of 8 – Tariff Versus Discounted Rate Contracts***

3
4 **(a) Please elaborate on the typical differences between tariff rate contracts and**
5 **discounted rate contracts.**

6
7 Centra's understanding is that tariff rate contracts are set at the maximum allowed rate
8 under the pipeline's tariff, and are subject to change with the tariff. Any change to tariff
9 rates would most likely be the result of rate cases at FERC. A discounted rate contract is
10 one whose rate is set below tariff rates, but above the minimum rate set in the tariff. Under
11 straight fixed variable rate design, this rate is not subject to change unless the maximum
12 tariff rate should fall below the discounted rate, whereby the discounted rate would be
13 lowered to the new tariff rate. Discounted rates are given for primary service, that is to say
14 service from the primary receipt point to the primary delivery point. Any secondary
15 transaction not specifically negotiated in the original contract would be charged additionally
16 up to the tariff rate. Further, discounted contracts are not eligible for Right of First Refusal
17 unless specifically negotiated.

18
19 **(b) Please identify any rights or responsibilities of tariff-rate contracts that are not**
20 **typically incorporated into discounted rate contracts, but which are included in the**
21 **proposed contracts.**

- 1
- 2 Centra's contracts include negotiated secondary receipts and deliveries at the discounted
- 3 price, as well as contractual Right of First Refusal.

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1 **PUB/CENTRA 21**

2 ***Reference: Primary Gas Supply Contract***

- 3
- 4 **(a) Please provide the status, next steps, and milestones of the process for renewal or**
5 **replacement of Centra's Primary gas supply contract, including the time frame for**
6 **seeking Board approval of the cost consequences of any contracts.**

7

8 Centra issued its RFP for Western Canadian gas supply to a number of natural gas
9 suppliers and marketers on April 27, 2012. Centra will undergo its evaluation of the
10 proposals and conduct any discussions and/or negotiations that may be required following
11 receipt of the proposals on during May. Approval of the contract(s) by Centra's Executive
12 and Board of Directors will be sought in the summer of 2012. PUB approval of the cost
13 consequences of the contract(s) will be sought as part of Centra's upcoming General Rate
14 Application (GRA).

- 15
- 16 **(b) Please provide the Request For Proposal (or draft if not finalized) for Centra's**
17 **Primary Gas Supply Contract and the scoring model developed by Centra. Please**
18 **comment on and explain any changes in the scoring model from that used during**
19 **the last process to secure a Primary Gas supply contract.**

20

21 Please see attachment to this response.

1
2 Approval of the cost consequences of the contract(s) will be sought as part of Centra's
3 upcoming GRA at which time Centra will provide the scoring model.
4

5 **(c) Please provide the results of the scoring model when they become available.**
6

7 Please see the response to part (b).
8

9 **(d) Please identify the number of parties the RFP was sent to, the number of responses**
10 **to the RFP that have been received, and how many responses are compliant with the**
11 **RFP requirements.**
12

13 Centra issued the RFP to 43 parties and eight parties submitted proposals which are
14 currently being evaluated for compliance.
15

16 **(e) Please explain why Centra chose to proceed with a RFP rather than negotiate a**
17 **renewal of the ConocoPhillips contract.**
18

19 The natural gas market has been in significant flux over the past few years; thus Centra
20 believed it appropriate to "test" the market for Western Canadian gas supply by widely
21 issuing an RFP rather than negotiating a renewal of its current supply contract with
22 ConocoPhillips.
23

24 **(f) Please explain how the Primary Gas Supply Contract may address changes in**
25 **delivery point and the resulting changes in transportation costs if TCPL's current**
26 **restructuring application before the NEB is approved.**

1
2 Centra intends to address this requirement as part of its negotiations to conclude its
3 Primary Gas Supply Contract.

4
5 **(g) Please explain whether and how the proposed storage and transportation portfolio**
6 **will affect the current or future Primary Gas supply contract.**

7
8 Centra's proposed storage and transportation portfolio will have no impact on Centra's
9 current supply contract with ConocoPhillips which expires October 31, 2012; and it is
10 expected to have little to no impact on the form of Centra's future supply contract.

CENTRA GAS MANITOBA INC.

REQUEST FOR PROPOSAL

WESTERN CANADIAN GAS SUPPLY 2012-2014

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April 27, 2012

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Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

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Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

1 GENERAL REQUIREMENTS

1.1 PURPOSE

Centra desires to enter an agreement securing a two (2) year supply of natural gas at Empress.

These General Requirements provide a description of Centra's anticipated needs under a Contract.

1.2 CONTRACT

Supply and delivery of natural gas will be made in accordance with a written Contract entered between Centra and a successful Proponent.

Centra expects the following documents will form the initial basis of negotiations in respect of a Contract:

- (a) General Requirements of the RFP;
- (b) Proponent's proposal;
- (c) NAESB Base Contract for Sale and Purchase of Natural Gas; and
- (d) Confirmation under a NAESB Base Contract for Sale and Purchase of Natural Gas.

Mutual agreement on all terms and conditions that may form part of a Contract is required.

A mutually acceptable: (i) NAESB Base Contract for Sale and Purchase of Natural Gas with Centra; and (ii) Confirmation, will form an integral part of a Contract.

1.3 TERM

The term of the Contract shall be two (2) years, beginning November 1, 2012 and ending October 31, 2014.

1.4 SUPPLY AND DELIVERY OF NATURAL GAS

Natural gas shall be supplied and delivered to Centra at Empress.

The supply must meet the parameters specified in sections 1.4.1 through 1.4.4 below.

Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

1.4.1 Purchase Quantities – Baseload and Swing

The required supply will have both Baseload and Swing components, with maximum daily quantities varying by month. The monthly Baseload and Swing levels in the table below represent the maximum quantities Centra may specify under a Contract as its Monthly Baseload Quantity (“MBQ”) and its Maximum Daily Swing Quantity (“MDSQ”) for a particular month, as defined in section 1.4.2. The MBQ and the MDSQ may be less than or equal to these maximum quantities, and will be set monthly in accordance with the process described in section 1.4.2.

Months	Baseload maximum (TJ/d)	Swing maximum (TJ/d)
Dec, Jan, Feb	130	70
Mar, Apr, May, Oct, Nov	95	100
Jun, Jul, Aug, Sep	85	75

All quantities under the Contract are to be delivered at Empress on a firm basis.

Proponents may submit a proposal to supply 100% and/or 50% of Centra’s natural gas needs as described in this Request for Proposal.

1.4.2 Setting of Monthly Baseload and Swing Levels

Up to the maximum monthly Baseload and Swing levels specified above, Centra will specify monthly Baseload and Swing levels (daily maximums) as follows:

Baseload gas: At least 32 days prior to the month of flow, Centra will specify the Monthly Baseload Quantity (“MBQ”) it requires daily for that month. Centra will be obligated to take 100% of the specified MBQ each day of the month.

Swing gas: At least 32 days prior to the month of flow, Centra will specify the Maximum Daily Swing Quantity (“MDSQ”) it requires for that month.

The MBQ and MDSQ levels specified 32 days prior to the month of flow may be equal to or less than the maximum Baseload and Swing levels specified in section 1.4.1 and may be influenced by: Centra storage injection requirements; Centra transportation portfolio changes; changes in the Manitoba load; and direct purchase share of the retail gas market in Manitoba. Please see section 1.5 below for a further discussion of direct purchase in Centra’s service territory, which includes Western Transportation Service (“WTS”) and Transportation Service (“T-Service”).

Centra Gas Manitoba Inc.
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1.4.3 Nominations

Baseload gas: The specified MBQ will be nominated as such every day of the month.

Swing gas: Centra may each day nominate from 0 up to the specified MDSQ. Centra will normally nominate the daily Swing quantity at the Timely cycle (0 to maximum), and adjust the quantity up or down as necessary at ID1 and/or ID2, in accordance with pipeline rules and nomination deadlines. Centra will be entitled to make discrete daily Swing nominations at Timely, Evening, ID1, and ID2 NAESB nomination windows every day, including weekends and holidays which will not be nominated rateably. The supplier must be prepared to accommodate daily weather-driven supply variability on a firm basis, including intra-day nominations.

The appendix to this RFP provides Centra daily Swing takes since November 2009. The daily Swing takes represent the total Swing quantity nominated for each gas day, irrespective of which NAESB nomination windows were used to nominate the Swing gas. The said historical data is provided for information purposes only concerning the nature of Centra's weather-driven daily Swing take variability, and does not present all weather scenarios or possible Swing take variation or quantities. The said historical data should not be construed as an indicator of future changes that may occur. Future Swing takes may vary considerably from historical data.

1.4.4 Supply Pricing

Pricing will be indexed to AECO, plus an AECO-Empress price component to accommodate delivery at Empress.

Baseload price: AECO monthly index + AECO-Empress component

Swing price: AECO daily index + AECO-Empress component

The AECO-Empress component should incorporate some form of the basis differential or index between AECO and Empress and should not be a fixed value. The AECO-Empress component does not have to use the same form of basis differential or index for Baseload and Swing.

Alternative pricing formulas may be considered.

Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

1.5 DIRECT PURCHASE

Customers in Centra's service territory have the option of buying natural gas from Centra, or directly from gas marketers through Centra's Western Transportation Service ("WTS"). Gas acquired by customers from Centra ("System Supply") is the subject of this RFP. While WTS Supply is not the subject of this RFP, gas marketer share of the retail natural gas market under WTS may impact Centra's required Monthly Baseload Quantity ("MBQ") and Maximum Daily Swing Quantity ("MDSQ") on a month-to-month basis, as WTS enrolments (i.e. migration of customers between System Supply and WTS Supply) are processed monthly. The MBQ and MDSQ are discussed in section 1.4.2 above.

The table below provides monthly WTS Maximum Daily Quantity ("MDQ") levels experienced since November 2009, which resulted in changes to Centra's System Supply requirements from Empress (the subject of this RFP). This historical experience should not be construed as an indicator of future changes that may occur.

	Historical WTS MDQ (GJ/day)		
	2009/10	2010/11	2011/12
Nov	27,551	27,618	24,455
Dec	27,702	22,785	24,071
Jan	27,772	22,676	23,961
Feb	27,613	21,322	23,805
Mar	27,777	22,629	23,860
Apr	28,112	23,136	
May	32,999	22,267	
Jun	31,666	23,364	
Jul	31,750	23,619	
Aug	30,595	22,765	
Sep	29,361	22,098	
Oct	27,587	22,828	

Transportation Service ("T-Service") is another service available in Centra's service territory, in which a customer may, independently of Centra, acquire both its own natural gas and transportation of this gas to Centra's service territory. Migration of customers to and from T-Service is allowed on an annual basis (effective November 1), and may also impact Centra's System Supply requirements from Empress (the subject of this RFP).

Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

1.6 INTERPRETATION

In the Request for Proposal and in the Contract, unless the content or subject matter indicates otherwise, the following terms shall have the following meanings:

“Centra” and “Purchaser” means Centra Gas Manitoba Inc., its successors and assigns.

“Contract” means the agreement entered into between Centra and Supplier for work to be done and/or supplies, material and equipment to be furnished in accordance with: a Confirmation under NAESB Base Contract for Sale and Purchase of Natural Gas by and between Supplier and Centra; and a NAESB Base Contract for Sale and Purchase of Natural Gas by and between Supplier and Centra, both of which will be either referred to in or attached to and form part of said agreement. In the event of any inconsistency between any of the said documents, the order of application of same for the purpose of the interpretation and application of the Contract shall be as listed beginning with the Confirmation.

“Supplier” means the party or parties named as such in the Contract and the legal personal representatives, successors and assigns of the Supplier.

“ITEM” and “Item” means a designated part of the Work, generally described in the RFP and in any resulting Contract(s).

“Proponent” means a party or parties submitting a proposal in respect of the RFP.

“Request for Proposal” and “RFP” means Centra Gas Manitoba Inc. Request for Proposal Western Canadian Gas Supply 2012-2014, as amended.

“Work” means all work, classes of work, activities, services and/or things, whether temporary, permanent, or incidental in nature, that are to be done, executed, and performed by Supplier pursuant to the Contract, whether temporary or permanent, and includes, without limitation, the supply and delivery of natural gas, all design work, labour, supervision, equipment, apparatus, machinery, things, and materials to be utilized, furnished, and supplied by Supplier pursuant to the Contract.

Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

2 INSTRUCTIONS TO PROPONENTS

2.1 INVITATION

To be accepted, the responding proposal must be received by Centra Gas Manitoba Inc. no later than **15:00 hours, Manitoba local time, May 14, 2012**. The proposal shall be submitted to Centra Gas Manitoba Inc. by e-mail to Neil Kostick at the following email address:

nkostick@hydro.mb.ca

2.2 CONTRACT

Centra expects that a successful Proponent will enter a Contract with Centra.

A successful Proponent(s) will be required: (i) to have an existing NAESB Base Contract for Sale and Purchase of Natural Gas with Centra; or (ii) to enter into such contract with Centra. A successful Proponent will also be required to enter a Confirmation, with Centra, under a NAESB Base Contract for Sale and Purchase of Natural Gas.

Before awarding a Contract, negotiations in respect of matters contained in this Request for Proposal and/or a proposal(s) may be necessary to establish the form and content of any such Contract.

Centra has the sole discretion to award, or to not award, a Contract.

Centra reserves the right, in its sole discretion, to undertake negotiations with any, all, or no Proponent submitting a proposal in response to this Request for Proposal.

In respect of any negotiations, Centra shall have no duty or obligation to advise any other Proponent of any of the same, or to allow them to vary their proposal as a result of any of the same.

Centra reserves the right to award more than one (1) Contract.

2.3 INTERPRETATION

Defined words and phrases used in this Request for Proposal have the meaning given in the General Requirements or as expressly defined elsewhere in the Request for Proposal. Headings are used for convenience only and shall not affect the interpretation or meaning of the Request for Proposal or any resulting Contract.

Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

2.4 ENQUIRIES

Technical and general enquiries concerning this Request for Proposal should be provided in writing to Neil Kostick, whose e-mail address is: nkostick@hydro.mb.ca.

Proponent or Purchaser credit enquiries should be provided in writing to Nancy Skene, whose e-mail address is: nskene@hydro.mb.ca.

Enquiries should be submitted early to permit evaluation and potential response.

Centra has the sole discretion to respond, or not, to an enquiry. Responses may be issued to the enquiring party only, or to any or all prospective Proponents.

A Proponent shall not be entitled to rely on any response received in respect of an enquiry unless that response was provided via an addendum to this Request for Proposal.

2.5 FORM OF PROPOSAL

The Proponent is requested to use the Form of Proposal attached hereto. If any Form of Proposal page is found to have insufficient space, the Proponent is requested to attach a sheet or sheets immediately after such page.

The Proponent is encouraged to include in their proposal thorough and sufficient information concerning matters under consideration.

2.6 ADDENDA

Centra may, at any time prior to the date and time of closing, issue addenda changing this Request for Proposal, and such addenda shall be an integral part of the Request for Proposal.

2.7 PROPONENT'S EXPENSES

The Proponent shall be responsible for all expenses relating to the preparation of its proposal and for any subsequent negotiations and discussions with Centra.

Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

2.8 EVIDENCE OF PROPONENT'S ABILITY, EXPERIENCE, CAPITAL AND CREDITWORTHINESS

Centra may require the Proponent to furnish evidence, in addition to any provided by the Proponent in a proposal, satisfactory to Centra, that the Proponent has the ability, experience, capital, creditworthiness, and facilities required to undertake and successfully perform the work and services.

2.9 PROPOSALS

Centra makes no representation or warranty that responding to this Request for Proposal will result in any Contract. Centra is under no obligation to enter into a Contract with any Proponent or other person.

Centra reserves the right to cancel this Request for Proposal either before or after the date of closing and regardless of whether or not any proposals have been received for any reason whatsoever, in Centra's sole discretion.

Centra reserves the right to re-issue or tender all or any part of the work and services contemplated in this Request for Proposal at any time, including after the date of closing, for any reason whatsoever, in Centra's sole discretion.

If any proposal is accepted, in whole or in part, Centra shall notify the Proponent in writing. The Proponent cannot rely upon oral acceptance.

2.10 SIGNING OF PROPOSALS AND CONSORTIA/JOINT VENTURES

All Proponents are to execute the proposal disclosing the proper legal name of each separate legal entity involved, and the office of each individual signing on behalf of each such separate legal entity.

Proponents which involve a consortium of corporations or more than one separate legal entities such as a partnership or joint venture, are to identify their duly appointed leader in the proposal.

Where more than one legal entity combines to form a Proponent, all such entities shall be jointly and severally bound by the proposal submitted, and any resulting contract(s) awarded.

A copy of a written agreement binding the legal entities involved in each proposal shall be provided to Centra upon request. If no such writing exists at the time of request, it may be necessary for such entities to document their arrangement to fulfill such requirement at any time, including after the time and date of closing for receipt of proposals and before or after an award of any contract.

Centra Gas Manitoba Inc.
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Centra may require evidence of the authority of any person purporting to sign a proposal on behalf of a person, firm or corporation, whether as principal, agent or attorney.

2.11 AMENDMENT OF PROPOSAL

A Proponent may amend its proposal by providing written notice by email to Neil Kostick at the following email address:

nkostick@hydro.mb.ca

Amendments must be signed in accordance with the Instructions to Proponents.

2.12 PRIVILEGE/DISCRETION

Notwithstanding any industry or trade custom or past practices of Centra to the contrary, Centra does not represent that it will necessarily, and Centra shall not be obliged to, accept any proposal, accept the lowest proposal, or be precluded from accepting any proposal or other offer or negotiating further in respect of any proposal submitted. Centra reserves the right, and the Proponent acknowledges that Centra has the right, to reject any or all proposals, for any reason, or to accept any proposal which Centra in its sole discretion deems advantageous to itself.

Centra reserves the right in its sole discretion to accept, waive, or reject any non-compliance or irregularity, including, without limitation, the right to accept, waive, or reject non-compliance or irregularity with the proposal process and/or the requirements of this Request for Proposal.

2.13 PROPOSAL EVALUATION CRITERIA

Proposals received will be evaluated in accordance with the following criteria (in no particular order of preference):

- (a) Provides reliable supply.
- (b) Minimizes total cost of supply.
- (c) Credit/financial substantiation: credit rating/worthiness; credit requirements placed on Centra.
- (d) Counterparty quality.
- (e) Accommodation of monthly supply requirement fluctuations related to direct purchase/WTS.
- (f) Consistent with other corporate goals: sustainable development; reduced environmental impact.
- (g) Nomination flexibility.

Centra Gas Manitoba Inc.
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Centra reserves the right to request one or more Proponents to provide further information or documentation (including, without limitation, information or documentation previously requested, or which is in addition to any provided by the Proponent in a proposal) concerning their proposal(s), or clarifying any matter(s) contained in their proposal(s). In respect of any such further information, documentation and clarifications, Centra shall have no duty or obligation to advise any other Proponent of any of the same, or to allow them to vary their proposal as a result of any of the same.

If necessary, Centra may rank proposals to create a short-list and to arrange telephone interviews with one or more Proponents thus short-listed to clarify and confirm Centra's understanding of various aspects of one or more preferred proposals evaluated.

Centra reserves the right to negotiate with one or more of the Proponents (whether short-listed or not) to discuss and possibly seek modifications of proposals, including, without limitation, possible modifications of proposed products, services, and prices.

The purpose of any such negotiations will be to obtain the most promising proposal for successful performance and delivery of products, work, and services, and to obtain the best value for Centra.

Results from any such negotiations which produce possible modifications to the proposal submitted which, together with the proposal so revised, may be reduced to a written form of memorandum and signed by the Proponent for use with its proposal, and may form part of any contract awarded to that Proponent.

2.14 WAIVER

By submitting a proposal, the Proponent acknowledges Centra's rights under this Request for Proposal and absolutely waives any right, or cause of action against Centra, its officers, directors, employees and/or agents by reason of Centra's failure to accept the proposal submitted by the Proponent, whether such right or cause of action arises in contract (including fundamental breach), negligence, bad faith, or otherwise.

Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

3 FORM OF PROPOSAL

3.1 PROPONENT INFORMATION

This proposal is submitted by: _____
(legal company name)

hereinafter called the “Proponent”, a company duly incorporated under the laws of:

_____ having its head office at: _____
(number, street)

(city/town, province/state, postal/zip code, country)
() - () -
(Telephone) (Fax)

The Proponent’s principal office dealing with this proposal is located at:

(number, street)

(city/town, province/state, postal/zip code, country)
() - () -
(Telephone) (Fax)

The Proponent provides with its proposal the information requested below:

- Credit rating (and guidance, if any)
- Name and contact information of credit representative
- Copy of current Annual Report
- Description of environmental and sustainability practices
- LDC references with contact information

Attach materials, or use additional pages, if required.

Centra Gas Manitoba Inc.
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PROPONENT'S TECHNICAL AND NON-TECHNICAL CONTACT PERSONS

All enquiries concerning the **technical aspects** of this proposal should be directed to:

(please print name and title of Proponent's Representative)

whose telephone number is: () - _____

FAX number is: () - _____

Internet e-mail address is: _____ @ _____ .

and World Wide Web is: _____ http://www. _____ .

All enquiries concerning the **non-technical aspects** of this proposal should be directed to:

(please print name and title of Proponent's Representative)

whose telephone number is: () - _____

FAX number is: () - _____

Internet e-mail address is: _____ @ _____ .

and World Wide Web is: _____ http://www. _____ .

Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

3.2 PRICES FOR THE WORK

NOTES:

1. Proponents can propose on either Item 1, or Item 2, or both Items 1 and 2.
2. Proponents must propose on either Item 1 or 2 in order to submit a proposal under ALTERNATIVES.
3. BASELOAD and SWING components in Item 1 or Item 2 will not be separated for award.
4. BASELOAD pricing assumes Centra has 100% take or pay obligation.
5. BASELOAD Index based on NGX AB-NIT Month Ahead Index.
6. SWING Index based on NGX AB-NIT Same Day Index (daily weighted average).
7. For all price formulas, specify the appropriate commodity index, AECO-Empress component, and any other price components.
8. The AECO-Empress component should not be a fixed value.

Item 1: Provide 100% of Supply Described in Section 1.4 SUPPLY AND DELIVERY OF NATURAL GAS of the General Requirements

BASELOAD: _____ (CAD/GJ)

SWING: _____ (CAD/GJ)

Item 2: Provide 50% of Supply Described in Section 1.4 SUPPLY AND DELIVERY OF NATURAL GAS of the General Requirements

BASELOAD: _____ (CAD/GJ)

SWING: _____ (CAD/GJ)

Centra Gas Manitoba Inc.
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ALTERNATIVE(S)

The following section is provided for the Proponent's proposed alternatives to the Work:

--

The Proponent should provide a description of how, in the Proponent's opinion, the alternative will both meet Centra's requirements and benefit Centra. In no event will Centra be required to offer any modified terms to any other Proponent prior to entering a contract for an alternative offered by a Proponent.

Centra Gas Manitoba Inc.
Request for Proposal - Western Canadian Gas Supply 2012-2014

3.3 SIGNING PAGE

The words used in this proposal have the meanings ascribed to them in Centra Gas Manitoba Inc. Request for Proposal Western Canadian Gas Supply 2012-2014.

We/I the undersigned, having examined all of Centra Gas Manitoba Inc. Request for Proposal Western Canadian Gas Supply 2012-2014 together with all addenda issued prior to close of proposals, hereby submit this proposal and hereby offer to enter into a contract to do the work that is set out, described, or called for in Centra Gas Manitoba Inc. Request for Proposal Western Canadian Gas Supply 2012-2014 upon and subject to the terms and conditions set forth therein.

By signing below, the Proponent certifies that: (a) to the best of the Proponent's knowledge the information submitted herein is true and correct as of the date submitted; and (b) the Proponent agrees to the terms and conditions set out in Centra Gas Manitoba Inc. Request for Proposal Western Canadian Gas Supply 2012-2014.

Dated at _____ this _____ day of _____, 2012

Proponent's Signature
I have authority to bind the Proponent

Name _____ Name _____

Print Name in Full Under Each Signature

Appendix - Historical Daily Swing Takes (GJ)

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Centra Gas Manitoba Inc.

Request for Proposal Western Canadian Gas Supply 2012-2014

Gas Day	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10
1	27,781	25,916	21,296	34,847	75,675	35,581	27,956	15,277	4,912	1,246	12,327	34,415
2	23,095	25,916	21,296	34,847	75,675	75,025	59,042	13,724	0	91	14,514	34,154
3	71,717	25,916	21,296	34,847	75,675	62,178	82,395	7,365	0	3,448	14,555	21,822
4	28,120	25,916	21,296	34,847	75,675	35,484	47,174	4,319	0	10,508	6,327	23,482
5	50,295	25,916	21,296	34,847	75,675	56,070	83,961	7,093	11,918	11,401	5,455	14,217
6	1	25,916	21,296	34,847	69,987	63,180	55,240	5,982	9,310	2,061	10,310	21,831
7	0	25,916	21,296	34,847	74,993	73,309	75,152	5,895	9,665	1,994	20,052	16,789
8	0	25,916	21,296	34,847	68,294	59,791	54,694	8,671	12,012	2,187	20,788	6
9	8,819	25,916	21,296	34,847	53,488	57,463	25,770	22,613	3,048	4,363	16,668	2,447
10	5,060	25,916	21,296	34,847	60,414	63,858	66,162	26,536	0	4,262	14,070	4,339
11	0	25,916	21,296	34,847	53,962	64,838	40,754	8,194	5,075	8,344	16,996	12,972
12	1	25,916	21,296	34,847	45,663	59,519	30,090	375	10,387	6,348	14,225	24,700
13	13,683	25,916	21,296	34,847	5	46,257	33,830	7,407	4,691	5,135	23,503	39,834
14	33,844	25,916	21,296	34,847	25,962	11,895	11,807	9,577	4,468	2,974	24,585	29,833
15	54,375	25,916	16,706	34,847	38,795	47,033	3,859	10,000	13,643	12,928	24,142	42,022
16	36,172	25,916	12,981	34,847	32,171	54,296	10,769	5,354	5,879	16,620	20,350	38,033
17	29,485	25,916	21,296	34,847	42,342	11,505	10,606	7,746	1,293	19,230	45,262	53,915
18	21,000	25,916	21,296	34,847	75,675	9,434	9,075	10,529	6,873	16,036	30,257	66,929
19	33,357	25,916	21,296	34,847	75,675	17,161	6,902	3,187	6,741	10,909	27,127	49,377
20	36,219	25,916	21,296	34,847	75,675	14,741	8,964	18	7,890	3,057	27,847	63,499
21	14,248	25,916	21,296	34,847	30,430	37,336	3,147	6,041	7,890	2,512	47,746	31,340
22	28,462	25,916	18,590	34,847	60,355	18,367	235	10,591	7,890	3,516	52,820	29,895
23	55,437	25,916	0	34,847	75,675	1,839	135	9,197	5,587	9,085	49,168	25,708
24	19,269	25,916	21,296	34,847	75,675	6,228	8,271	5,825	614	19,154	34,650	9,279
25	65,135	25,916	21,296	34,847	75,675	4,905	10,766	1,599	0	11,278	14,651	12,687
26	61,979	25,916	21,296	34,847	39,884	10,914	18,449	0	3,040	9,374	12,696	5,968
27	55,310	25,916	21,296	34,847	59,404	5,932	12,351	1,464	4,558	6,738	13,143	83,337
28	56,333	25,916	21,296	34,847	15,331	4,784	12,595	13,653	11,471	2,678	19,700	75,439
29	39,998	25,916	21,296		3,699	28,948	7,082	10,101	7,764	7,738	18,249	89,078
30	48,586	25,916	21,296		0	27,068	25,314	4,111	1,408	12,043	24,626	43,772
31		25,916	21,296		0		5,936		173	13,732		62,927

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Gas Day	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11
1	11,108	49,160	37,467	50,283	64,895	68,753	77,511	54,741	0	0	14,585	15,615
2	20,140	49,160	37,467	50,283	64,895	68,808	63,912	17,372	0	4,372	5,341	6,532
3	17,095	49,160	37,467	50,283	64,895	68,706	32,933	8,719	1,403	4,857	6,503	10,812
4	44,580	49,160	37,467	34,934	64,895	68,826	38,661	24,668	1,967	6,321	1,287	12,587
5	14,085	49,160	19,839	50,283	64,895	63,832	29,661	8,150	9,620	1,115	7,253	9,121
6	24,109	49,160	37,467	50,283	64,895	56,925	14,821	15,587	5,196	0	10,599	7,019
7	6,471	49,160	37,467	50,283	64,895	66,110	16,276	25,893	1,923	6,814	7,770	3,828
8	9,882	49,160	37,467	50,283	64,895	68,114	22,986	30,842	2,443	6,469	9,652	8,298
9	1,204	49,160	37,467	50,283	64,895	59,354	22,701	17,045	0	9,854	5,130	3,957
10	24,832	49,160	37,467	50,283	64,895	63,499	30,466	12,973	0	6,341	833	9,981
11	57,126	49,160	37,467	50,283	64,895	48,673	53,303	6,826	4,427	7,060	4,436	10,158
12	45,969	49,160	37,467	50,283	64,895	61,952	77,570	11,470	6,288	3,498	13,656	11,029
13	49,467	49,160	37,467	50,283	64,895	68,754	76,935	15,746	6,595	3,157	22,620	40,899
14	63,331	49,160	37,467	44,990	64,895	46,094	32,663	12,204	4,377	338	49,319	43,296
15	63,030	49,160	37,467	30,225	64,895	68,773	20,618	13,878	0	6,712	31,692	37,823
16	63,030	49,160	28,898	38,989	50,728	68,762	16,970	12,022	0	6,959	28,170	54,467
17	63,030	49,160	37,467	50,283	64,895	68,748	10,173	8,762	0	12,987	7,005	70,219
18	63,030	49,160	37,467	50,283	64,895	57,401	9,456	5,046	0	6,214	12,822	78,909
19	63,030	49,160	37,467	50,283	54,391	58,208	6,942	5,614	0	7,484	21,578	87,102
20	63,030	49,160	37,467	50,283	64,895	58,978	0	16,068	0	3,661	28,897	74,046
21	63,030	49,160	37,467	50,283	64,895	62,708	0	13,950	5,169	2,863	46,084	27,769
22	63,030	49,160	37,467	50,283	64,895	62,127	3,581	17,136	1,192	6,442	34,409	38,723
23	63,030	49,160	37,467	50,283	64,895	40,029	22,840	8,228	2,085	4,921	14,283	43,874
24	63,030	49,160	37,467	50,283	64,895	38,818	53,775	11,269	1,596	11,434	9,991	53,608
25	63,030	49,160	37,467	50,283	64,895	35,061	29,648	2,820	0	6,489	13,554	56,141
26	63,030	49,160	37,467	50,283	64,895	23,492	17,396	5,030	2,863	8,036	15,608	56,120
27	63,030	49,160	37,467	50,283	64,895	28,576	31,305	21,570	4,065	31	15,064	77,520
28	63,030	49,160	37,467	50,283	54,480	18,570	11,614	17,141	0	3,604	12,879	64,182
29	63,030	49,160	37,467		64,890	9,022	20,310	6,990	0	6,996	26,852	54,374
30	63,030	49,160	37,467		59,845	58,853	30,146	1,494	0	6,848	26,809	57,328
31		49,160	37,467		53,423		5,611		0	8,044		54,006

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Gas Day	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12
1	20,778	38,577	25,414	51,731	58,848
2	33,711	38,577	25,414	51,731	58,848
3	45,832	38,577	25,414	51,731	58,848
4	21,328	38,577	25,414	34,535	58,848
5	19,198	38,577	0	43,531	58,848
6	40,440	38,577	25,407	51,731	58,848
7	69,671	38,577	25,414	51,731	58,850
8	69,666	38,577	15,376	51,731	58,848
9	69,671	38,577	607	51,731	58,848
10	69,667	38,577	25,414	51,731	46,101
11	42,046	38,577	25,414	51,731	23,135
12	31,041	38,577	25,414	51,731	55,900
13	56,663	38,577	25,414	51,731	10,824
14	69,669	38,577	25,414	51,731	25,001
15	69,671	38,577	25,414	49,475	26,415
16	69,671	38,577	25,414	51,731	819
17	69,672	38,577	25,414	51,731	0
18	69,671	38,577	25,414	51,731	0
19	69,674	38,577	25,414	33,838	0
20	69,674	38,577	25,414	26,689	20,495
21	69,673	38,577	25,414	51,731	16,797
22	51,030	38,577	25,414	51,731	0
23	65,717	38,577	25,414	51,731	0
24	43,559	38,577	25,414	51,731	58,848
25	69,672	7,194	25,414	51,731	58,842
26	69,672	25,829	25,414	51,731	24,714
27	69,672	38,577	25,414	51,731	58,848
28	69,672	38,577	25,414	51,731	38,382
29	60,578	38,577	25,414	51,731	51,427
30	69,671	38,577	25,414		17,278
31		38,577	25,414		0

CENTRA GAS MANITOBA INC.

TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION

RESPONSE TO INFORMATION REQUESTS OF
THE PUBLIC UTILITIES BOARD OF MANITOBA

1 **PUB/CENTRA 22**

2 ***Reference: Tab 8 Attachment 1 – Term Sheet***

3

4 **(a) Please describe the non-conforming provisions in the ANR-storage-to-GLGT**
5 **contract that will require approval by the Federal Energy Regulatory Commission.**

6

7 **Response provided by USPC:**

8 The contract on ANRPL from Storage to its interconnection with GLGT at Deward (primary
9 route) will allow ANR Pipeline Company to, at its sole discretion, deliver gas into GLGT at
10 either of ANR's interconnections with GLGT at Farwell or Deward. As the language setting
11 forth this right is not in ANR's pro-forma agreement as filed in its tariff, this language will be
12 considered "non-conforming" and will have to be filed with the FERC.

13

14 **(b) What are the cost and operational implications to Centra of ANR delivering gas from**
15 **storage to Deward versus Farwell.**

16

17 **Response provided by USPC:**

18 There will be no cost or operational implications to Centra of ANR delivering gas into GLGT
19 at either point versus the other. Any billing will assume gas moves as nominated, and
20 ANR's decision to deliver gas at either point is operational in nature and should be
21 completely transparent to Centra.

CENTRA GAS MANITOBA INC.

TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION

RESPONSE TO INFORMATION REQUESTS OF
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1 **PUB/CENTRA 23**

2 ***Reference: Tab 5 – Natural Gas Market Update***

3
4 **(a) Provide an update on the status of the Kitimat LNG project, including the related**
5 **pipeline respecting:**

6 **(i) Timing of approvals or results (construction market commitments and export**
7 **licenses), and forecasted in-service date.**

8 **(ii) Gas Supply and market contracts.**

9
10 **Response to part (a) (i) and (ii):**

11 Centra's information regarding the status of the Kitimat LNG project is generally what is
12 available in the public domain.

13
14 **(b) What is Centra's view or opinion regarding the effect that the Kitimat LNG will have**
15 **on natural gas prices and supply from the Western Canadian Sedimentary Basin?**

16
17 Centra does not take market views of natural gas prices, rather it relies upon the use of
18 futures market prices as the best indicator of spot prices in future delivery periods given the
19 information available to the market today. In Centra's view, futures prices represent the
20 consensus market opinion of the impacts of all supply and demand factors that influence
21 natural gas prices for future delivery periods.

- 1
- 2 As such, Centra expects that the futures markets reflect the known information about this
- 3 project in addition to all other factors that influence the formation of natural gas prices.

CENTRA GAS MANITOBA INC.

TRANSPORTATION AND STORAGE PORTFOLIO APPLICATION

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

PUB/CENTRA 24

Reference: Tabs 4, 5 and 7 Attachment 1, ICF Reports

(a) Does Centra plan on having witnesses from ICF in attendance at the public proceedings to support and answers questions regarding the ICF reports and responses to information requests? If not, please explain why not.

ICF was available to respond to Information Requests (IRs) following both the July 2011 and April 2012 Technical Conferences and the number of IRs directed ICF's way was fairly limited. As such, it is not Centra's intention to produce ICF staff as witnesses at the upcoming public proceeding related to Centra's Transportation and Storage Portfolio Application.

(b) If individuals from ICF are scheduled or requested to attend the hearing, please identify these individuals and provide their curricula vitae.

Please see the response to part (a) above.