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By electronic filing

July 6, 2011

Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street
27th floor
Toronto, ON M4P 1E4

Dear Ms Walli,

Union Gas Limited ("Union")
2010 Earnings Sharing & Deferral Accounts and Other Balances
Board File No.: EB-2011-0038
Our File No.: 339583-000104

Please find attached the evidence of John Rosenkranz, which is being filed on behalf of Canadian Manufacturers & Exporters ("CME"), Federation of Rental-housing Providers of Ontario ("FRPO") and City of Kitchener ("Kitchener").

Yours very truly,

A handwritten signature in blue ink, appearing to read 'Peter Thompson', is written over the typed name.

Peter C.P. Thompson, Q.C.

\slc
enclosure

c. Dwayne Quinn (FRPO)
Jim Gruenbauer (Kitchener)
Intervenors in EB-2011-0038
Paul Clipsham

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ONTARIO ENERGY BOARD

EB-2011-0038

UNION GAS STORAGE MARGINS AND COST ALLOCATION PROPOSAL

Prepared for:

Canadian Manufacturers & Exporters ("CME")
Federation of Rental-housing Providers of Ontario ("FRPO")
City of Kitchener ("Kitchener")

July 6, 2011

John A. Rosenkranz
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UNION GAS STORAGE MARGINS AND COST ALLOCATION PROPOSAL

In this proceeding Union Gas has applied to the Board for approval of the deferral account balances for year-end 2010 and the utility earnings sharing amount. Union also asks the Board to approve a methodology for allocating costs to its non-utility storage operation, in order to comply with the Board's directives in the Natural Gas Electricity Interface Review proceeding (NGEIR).¹ This report examines the reasonableness of Union's proposed cost allocation methodology and reviews Union's calculation of margins on short-term and long-term storage services for the storage service deferral accounts.

The principal findings and recommendations from this review are as follows:

Allocation of Costs to Union's Non-Utility Storage Operation

- The non-utility storage allocation factor should be based on the actual marketable storage capacity and deliverability at the time of the separation. Union's proposal to use cost allocation factors from its 2007 rate case causes a significant under-allocation of costs to Union's non-utility storage operation, and must be rejected.
- Union allocates certain costs using internal estimates and judgment calls. Greater transparency is needed to demonstrate the reasonableness of these numbers.
- Union should consider whether other objective factors, such as compression horsepower, would result in a better allocation of direct storage operating costs.
- Full or partial approval of Union's proposed methodology must not preclude parties from investigating Union's implementation of that methodology, including support for Union's actual and estimated costs, in future rate proceedings.

Margin Calculations for Storage Services Deferral Accounts

- Union substantially reduces the reported margins on long-term storage services by including a "return on purchased assets" expense for third-party storage service contracts, on top of the actual charges paid to the third-party storage operators. These additional costs are inappropriate, and must be eliminated.
- Union adds an arbitrary premium to the Board-approved return on equity for new storage investments. This high target return reduces the margins shared with ratepayers, and is inappropriate for purposes of calculating storage service margins.
- Union errs by shifting \$1.662 million of fixed cost of service from long-term storage to short-term storage for the purpose of calculating margins.

¹ See Decision with Reasons, Natural Gas Electricity Interface Review (EB-2005-0551), November 7, 2006 ("NGEIR Decision")

I. Proposed Methodology to Separate Non-Utility Storage Costs

In the 2006 NGEIR Decision, the Board allowed Union to continue to sell non-utility storage services from an integrated portfolio of company-owned storage pools and third-party storage services. To help prevent utility customers from subsidizing Union's non-utility storage business, the Board required Union to separate the costs and revenues of its non-utility storage operation from its utility operations.

Union's methodology for implementing the accounting separation of non-utility storage costs was described in the EB-2010-0039 proceeding. The EB-2010-0039 Settlement provided for an independent study of this methodology, which Union filed with its evidence in this proceeding.²

Union's proposed methodology has three main parts: (a) the one-time separation of storage and general plant costs; (b) the allocation of subsequent storage plant additions and retirements; and (c) the allocation of ongoing O&M costs and gas costs for compressor fuel and unaccounted-for gas.

A. One-Time Allocation of Plant Costs at December 31, 2006

Union proposes to separate the plant used for its non-utility storage operation from utility plant as of December 31, 2006. The plant separation methodology has four steps:

Step 1 Divide total storage plant between storage and transmission.

Union explains that its storage plant accounts include three types of assets: (a) plant used for storage services, (b) plant used for transmission, and (c) plant used for both storage and transmission services. With minor exceptions, Union proposes to allocate pipeline, compression, and measurement plant between storage and transmission using the cost study from its 2007 rate case ("EB-2005-0520 Cost Study"):

- Storage lines, storage wells, land rights, base pressure gas, outboard storage compression and dehydration assets are storage-only assets.
- The Dawn Trafalgar meter runs, Tecumseh measurement, TCPL measurement, Oil Springs East measurement, Great Lakes header, and the Plant E compressor are directly assigned to transmission.
- The remaining compression, measuring and regulating assets located at Dawn provide both storage and transmission functions. Compression horsepower is allocated using the allocation factor developed for the EB-2005-0520 Cost Study, adjusted for the direct assignment of Plant E compressor plant described above. Measuring and regulating assets are allocated using Dawn storage and transmission activity estimates, also from the EB-2005-0520 Cost Study.

Step 2 Allocate storage plant used for storage services (excluding dehydration) between utility and non-utility operations.

² This study was done by Black & Veatch ("B&V Study")

Union proposes to allocate plant costs to its non-utility storage operation using the same inputs that were used to allocate costs to C1 storage service in the EB-2005-0520 Cost Study. To reflect the Board's directive to reserve up to 100 PJ of storage space for utility use at cost-based rates, utility storage space is increased by 7.9 PJ--the difference between the 100 PJ of reserved cost-based space and the projected in-franchise storage requirement of 92.1 PJ (inclusive of integrity space) from the EB-2005-0520 Cost Study. A corresponding adjustment is made to utility storage deliverability.³

After making the adjustment for the NGEIR Decision, Union calculates the ratio of non-utility storage space to total storage space to be 40.2%, and the ratio of non-utility storage deliverability to total deliverability to be 35.2%. Union then averages the two ratios, which results in a final non-utility storage plant allocation factor of 37.7%. Union's calculations are reproduced in Schedule 1.

Step 3 Allocate dehydration plant between utility and non-utility storage services.

Dehydration plant is allocated on the basis of peak day deliverability requirements, including the Enbridge requirement for Tecumseh storage. The deliverability numbers are taken from the EB-2005-0520 Cost Study.

Step 4 Allocate general plant to the non-utility storage operation.

Two separate factors are used for allocating general plant: one for vehicles and heavy equipment and another for all other categories of general plant. Union uses the relative value of vehicles related to storage and transmission and the ratio of non-utility storage plant to total storage plant (from Step #2) to allocate plant for vehicles and heavy equipment. Other general plant is allocated using the average of the O&M Storage Support Allocator and the ratio of non-utility storage plant to total plant.

Comments

Union's proposed storage plant allocation methodology has several flaws:

1. Failure to use actual information

It is unreasonable to use out-of-date estimates developed for an entirely different purpose when actual storage supply and utilization information is at hand. The projections used in the EB-2005-0520 Cost Study were estimates for the year 2007, based on information available in 2005. These numbers do not correspond to year-end 2006, which is when the one-time separation of storage plant cost occurs to coincide with the late-2006 date of the NGEIR Decision. More importantly, however, there is no reason to use stale estimates when the allocation can be done using actual information.

³ Utility storage deliverability is increased by 0.095 PJ/day, which is the 7.9 PJ of reserved cost-based storage space at 1.2% deliverability.

2. Inappropriate adjustments to available storage space

Adjustments to storage space and deliverability that were made to develop allocation factors for the 2007 rate case are not appropriate in this context. To avoid cross-subsidies between utility and non-utility operations, storage plant should be allocated based on the utilization of the storage assets. For the utility storage operation, this is defined by the storage space and deliverability that are reserved to meet utility needs. For the non-utility storage operation, utilization is measured by the storage services that can be sold from the non-utility assets. Union's proposed methodology is not consistent with this basic principle. For example, "storage deemed unavailable" is treated as available storage space, which inflates the share of plant costs allocated to utility storage services.

3. Exclusion of storage made available by resource optimization activities

The storage numbers Union uses for ratemaking purposes significantly understate the amount of long-term non-utility storage service that Union is actually able to sell. This is illustrated by Table 1, which compares the actual storage space and utilization information for 2009 (from Exhibit B3.4), with Schedule 16 of the B&V Study, which shows actual storage capacity for October 31, 2009. Most of the numbers on the two sides of the table are consistent. However, the Total Utilization number from the B&V Study is 14.9 PJ higher, which appears to directly correspond to the amount of Resource Optimization space.⁴

⁴ Union defines Resource Optimization as storage space created using gas loans and planned utilization of otherwise-empty space. (Exhibit B3.38)

Table 1

Storage Space and Utilization 2009		Storage Capacity Reconciliation 10/31/2009	
	<u>PJ</u>		<u>PJ</u>
Base	164.7	Official Working Capacity	163.7
Unavailable	-0.7	Additional Union Capacity	2.8
LNG	<u>0.6</u>	Union Storage	166.5
Union Storage	164.6	3rd Party Storage	<u>9.8</u>
3rd Party Storage	<u>11.7</u>	Subtotal	176.3
Total Available Space	176.3	Resource Optimization	<u>14.8</u>
		Available Storage Capacity	191.1
Union Requirement	61.5	Utility Requirement	100.0
Carriage	19.3	Unutilized Utility Space	<u>9.5</u>
Integrity Space	<u>9.7</u>	Net Utility Requirement	90.5
Subtotal	90.5		
Long Term Non-Utility Storage	76.3	Long-Term Storage Sales	91.1
Short Term Non-Utility Storage	<u>9.5</u>	Short-Term Peak Storage	<u>9.6</u>
Subtotal	85.8	Subtotal	100.7
Total Utilization	176.3	Total Utilization	191.2
Source: EB-2011-0038, Exhibit B3.4		Source: EB-2011-0038, Exhibit A, Tab 4 Attachment 1, Schedule 16	

A similar result is found when actual long-term storage sales for 2010 from Union's Index of Customers postings are compared with the actual planned storage utilization figures for the same period (see Table 2). The actual contract quantities for the long-term storage services sold by Union are nearly 30 PJ greater than the reported storage utilization amount.

Table 2

UNION STORAGE SERVICE CONTRACTS		
(PJ)		
	Long-Term Storage¹	Short-Term Peak²
1 JAN 2010		9.5
2 FEB 2010		10.6
3 MAR 2010		12.4
4 APR 2010		12.1
5 MAY 2010		12.1
6 JUN 2010	105.4	12.1
7 JUL 2010	106.4	9.0
8 AUG 2010	106.4	9.0
9 SEP 2010	101.7	10.1
10 OCT 2010	108.6	10.1
11 NOV 2010	107.0	10.1
12 DEC 2010	109.6	10.1
13 Average	106.4	10.6
STORAGE SPACE UTILIZATION³		
(PJ)		
	Long-Term	Short-Term
14 2009	76.3	9.5
15 2010	78.3	10.1
Sources:		
1. EB-2011-0038, Exhibit B3.34 (Index of Customers)		
2. EB-2011-0038, Exhibit B3.6		
3. EB-2011-0038, Exhibit B3.4		

Schedule 2 shows the relative utilization of marketable storage space by Union's utility and non-utility storage operations using actual storage information for 2006 in place of the projections from the EB-2005-0520 Cost Study. This calculation includes Resource Optimization space and excludes "space deemed unavailable". The result, shown on Line 14 of Schedule 2, is an increase in the Non-Utility Space Allocator from Union's proposed value of 40.2% (Schedule 1, Line 14) to 45.9%.

4. Arbitrary allocation of storage deliverability

The NGEIR Decision put a 100 PJ cap on cost-based storage space, but did not cap cost-based deliverability. The deliverability amount that corresponds to the 100 PJ of utility storage space is therefore undefined. For cost allocation purposes, Union proposes to adjust the utility deliverability amount by applying a 1.2% deliverability factor to the surplus quantity of cost-based storage space. This is a reasonable approximation. However, for the reasons discussed previously, the base amount of utility storage deliverability should be the actual requirement for the 2006-07 gas year, not the projected deliverability used for the EB-2005-0520 Cost Study.

Schedule 2 shows the utilization of storage deliverability in 2006 using actual storage deliverability for that period. Because Union was unable to provide the actual utility deliverability requirement for 2006, the utility deliverability requirement on Line 18 is a pro rata adjustment of the number from the EB-2005-0520 Cost Study, using the 2006 actual and projected utility storage space requirements, net of integrity space.⁵ The corrected Non-Utility Deliverability Allocator is 40.9% (Schedule 2, Line 24).

5. Averaging space and deliverability allocation factors

Union's use of a simple arithmetic average of the space and deliverability shares to calculate the final plant allocation factors is another deviation from the EB-2005-0520 Cost Study methodology, but is a reasonable approximation. Averaging the corrected space and deliverability allocation factors shown in Schedule 2, the corrected non-utility storage allocation factor is 43.4% (Schedule 2, Line 25). The corrected non-utility storage allocation factor is 15% higher than the 37.7% factor proposed by Union.

B. Post-2006 Plant Additions

Union identifies three different types of storage plant additions:

1. Storage plant associated with the development of new storage pools and the expansion of existing pools.
2. Replacement projects that are part of normal business operations.
3. Projects with both replacement and incremental facilities.

The costs for new storage facilities developed solely for the non-utility market are allocated entirely to the non-utility storage operation. Replacement plant is allocated between utility and non-utility storage on the same basis as the asset being replaced. The third type of plant addition involves the replacement of assets, but also improves efficiency or provides growth opportunities for the unregulated storage business. In this case, the incremental cost of the project, beyond the simple replacement cost, is directly assigned to non-utility storage.

Comments

The allocation of all costs associated with new storage capacity to non-utility storage is consistent with the NGEIR Decision and subsequent Board decisions approving the operation of new storage facilities. Union's proposed treatment of replacement plant is reasonable, but more difficult to implement, since it will presumably require Union to maintain separate plant allocation factors on a pool-by-pool basis.

The proposed methodology for projects that combine replacement and incremental storage assets is also reasonable in principle, but requires Union to make judgment calls about which capital costs are strictly replacement, and which capital costs create incremental service. Union must be required to provide documentation to demonstrate the reasonableness of these allocations.

⁵ EB-2011-0038, Exhibit B3.57.

C. Operating & Maintenance Expenses and Gas Costs

1. Operating & Maintenance Expenses

Union proposes to allocate O&M costs to its non-utility storage operation each year using several different allocation factors:

- O&M expenses that are directly tied to the storage facility operations are allocated to non-utility storage using the same allocators that are applied to the assets for that facility.
- O&M expenses related to the support of the storage operations, including Business Development and Regulatory costs, are based on labor estimates provided by management, which are reviewed and adjusted annually.
- Administrative and General costs are allocated using the labor estimates and other O&M expenses.

2. Gas Costs

The costs of unaccounted-for gas and compressor fuel are calculated annually based on actual non-utility storage activity.

Comments

Union's proposed allocation of O&M costs raises several concerns:

1. Allocations based on labor time estimates

Union's use of labor time estimates to allocate storage support activities and overhead costs is arbitrary and opaque. Of particular concern is the fact that Union does not appear to have a process in place to document and validate these estimates.⁶

2. Allocation of direct storage operating costs based on plant costs

Allocating storage operations costs based on asset allocation factors may be reasonable if storage facilities are homogeneous, but is inappropriate if utility and non-utility storage assets are dissimilar. In particular, it appears that Union's non-utility storage additions have been heavily weighted toward compression, in order to provide new high deliverability storage services. Since compression facilities tend to have relatively high maintenance costs compared to other storage plant, an allocation factor other than storage plant, such as compressor horsepower, would be a better allocator of compression O&M costs.

3. No comparison of non-utility storage O&M costs and utility storage O&M costs

It is difficult to assess the reasonableness of Union's cost estimates because Union does not provide a way to compare non-utility storage O&M costs to the O&M costs assigned to utility storage. Union explains that because its existing accounting systems do not

⁶ EB-2011-0038, Exhibit B3.45

separately report storage O&M costs, it cannot make this comparison.⁷ A complete cost allocation study will need to be done for the 2013 rate rebasing application. It is important that a detailed, side-by-side comparison of utility and non-utility storage O&M costs be provided with that application to assist in evaluating the reasonableness of the O&M costs Union allocates to both non-utility storage and utility storage.

D. Use of Transmission Assets by Union's Non-Utility Storage Operation

Union operates an integrated system of transmission, storage and distribution facilities. The proposed cost separation methodology addresses the overlap between transmission and storage operations resulting from shared compression and M&R facilities at the Dawn Hub. To avoid cross subsidies between Union's non-utility and utility operations, and create a level playing field between Union's non-utility storage business and other Ontario storage operators, it is important that Union's non-utility storage operations are charged appropriately for any other use of Union's utility transmission assets.

There are two areas where Union's non-utility storage operation currently uses utility transmission assets.

1. Transportation for storage pools connected to transmission and distribution lines

Most of the storage pools owned by Union gas are connected to the Dawn Hub through pipelines that are classified as storage plant, but there are exceptions. The Heritage Pool, for example, is connected to the Sarnia Industrial Line, and the Jacob Pool, which is currently in development, will be connected to Union's Panhandle transmission line. Both of these pools are non-utility storage assets.

Union provides transportation service for third-party storage pools that are connected to its transmission or distribution lines under the M16 Rate Schedule. The rate for M16 service is based on the cost of transporting gas between the storage pool and the Dawn Hub. Union currently has contracts for M16 transportations service for the St. Clair storage pool and the Huron Tipperary storage pool.

Storage pools connected to transmission lines use Union's transmission assets. With the separation of Union's non-utility storage operation from its utility operations, Union's non-utility storage operation should be subject to the same transportation charges as other storage operators. The utility business should be credited for the use of transmission assets by the non-utility storage business at the M16 rates.

2. Transmission assets used to provide non-utility storage services

Union provides non-utility storage services that bundle storage and transportation services, or otherwise make use of, Union's transmission facilities. There are two examples of storage services that overlap with transportation. First, while a large majority of Union's short-term storage services involve the receipt and redelivery of gas at Dawn, Union's Index of Customer report shows some storage transactions that provide for receipt and/or delivery at Parkway (see Table 3).

⁷ EB-2010-0039, Exhibit B4.14

Table 3
Storage Contracts with Receipt and/or Delivery at Parkway

Contract Identifier	Max. Storage Quantity (PJ)	Effective Date	Expiration Date	Receipt Point	Delivery Point
HUB030E35	2,416,078	11/1/10	8/31/11	Dawn	Parkway
HUB305E21	775,000	12/1/10	7/31/11	Parkway	Parkway
HUB345E138	2,300,022	10/1/10	8/31/11	Dawn	Parkway

Source: Storage Index of Customers as of 5/30/2011

The second example is Union's short-notice Downstream Pipeline Balancing Service (DPBS), which is a non-utility storage service that involves the receipt and delivery of gas at Parkway, not Dawn. To provide this service, Union presumably uses the Dawn-Trafalgar transmission system to move gas to and from Dawn storage. To deliver gas to customers at short notice, this service may also use pipeline linepack.⁸

Both of these bundled services are examples of how Union utilizes its integrated storage and transmission system to meet customers' needs. It is in the public interest that Union continues to offer these types of services. However, to keep utility customers from unfairly subsidizing Union's non-utility storage operation, Union should provide an appropriate credit to the transmission cost of service for the use of utility transmission assets for non-utility storage transactions.

E. Recommendations – Storage Cost Allocation

1. The non-utility storage allocation factor should be changed from 37.7% to 43.4%. Union will need to adjust its non-utility storage plant balances and associated costs to incorporate this correction.
2. Union should provide an annual report describing how the costs of each "hybrid" storage project placed in service during the previous year were allocated between the non-utility and utility plant accounts.
3. Union should consider modifying its allocation methodology for direct storage O&M costs to account for the fact that utility and non-utility storage facilities may have different characteristics that affect relative operating and maintenance costs.
4. Union must be able to demonstrate the reasonableness of the time estimates it uses to allocate indirect storage O&M costs.
5. Union is seeking final Board approval of the methods used to separate the costs of its non-utility storage operation from its utility operation, and states that its 2013 cost of service filing will include a cost allocation study for its utility operations only.⁹ Any approvals granted in this proceeding should apply only to the proposed methodology, and Union's

⁸ TransCanada offers a short-notice balancing service similar to DPBS using only transmission linepack.

⁹ EB-2011-0038, Exhibit B1.17

implementation of this methodology to allocate plant between utility and non-utility storage operations should be open for review in future rate cases. The cost study prepared for the 2013 rate case should show all storage plant and O&M costs, and describe in detail how these costs are allocated between the utility and non-utility operations.

II. Margin Calculations for Union's Storage Service Deferral Accounts

The differences between the actual storage margins owed to utility customers and the storage margins included in rates are tracked in two deferral accounts: Short-Term Storage Services Account 179-70, and Long-Term Storage Services Account 179-72.

The NGEIR Decision changed how margins from sales of ex-franchise storage services are shared between Union and utility ratepayers. Before NGEIR, the margin sharing methodologies for short-term storage services (transactions shorter than two years) and long-term storage services (transactions two years or longer) were the same. Under the terms of the NGEIR Decision, ratepayers will continue to receive a portion of the margins from short-term storage services, but margin sharing on long-term storage services is phased out.

This section describes several areas where Union is calculating the storage service margins to be shared with utility ratepayers incorrectly. These errors stem from Union's misallocation of costs from long-term to short-term storage, and the inclusion of inappropriate costs for new non-utility storage assets and purchases of third-party storage service.

A. Margins on Short-Term Storage Services

The margin calculation for short-term storage services for 2010 is shown in Schedule 3. This calculation is incorrect because Union has shifted \$1.662 million per year from the long-term storage cost of service to the short-term storage services account.

In the NGEIR Decision, the Board referred to the amount of cost-based storage needed for utility purposes, up to a cap of 100 PJ, as the "utility asset".¹⁰ However, in order to comply with applicable accounting standards, Union currently defines all of the 100 PJ of storage reserved for utility needs at cost-based rates as the utility asset. Because not all of the 100 PJ is used for utility purposes, the cost of the surplus cost-based storage space has been assigned to the non-utility storage operation. The total amount of this adjustment Union is shown on Schedule 3, Line 15.

While this adjustment is appropriate, Union's implementation is flawed. In the EB-2005-0520 Cost Study, costs that were not assigned to utility services were allocated to C1 storage, and were charged to long-term ex-franchise storage for margin sharing purposes. Some of these C1 storage costs were then moved to the utility side of the ledger when Union separated storage plant based on 100 PJ, instead of the 92.1 PJ used for the EB-2005-0520 Cost Study. In moving these costs back to non-utility storage, Union has added fixed costs to the short-term storage account for the purpose of calculating storage service margins, instead of leaving these costs in the long-term storage account, where they originated.

¹⁰ NGEIR Decision, p. 101

Union explains that these costs are charged to short-term storage because the surplus storage is only sold as short-term storage services. However, even if this is Union's practice, earmarking storage space and deliverability for short-term storage services is inconsistent with the Board's view that short-term storage revenue is derived from optimizing storage assets that were developed or obtained for other purposes, but are temporarily available for sale in the ex-franchise market.¹¹ Since short-term storage sales are asset optimization transactions, it is Board policy that margins on short-term storage services should be calculated on the basis of direct marginal costs, such as compressor fuel expenses.¹² Allocating additional fixed costs to short-term storage services runs counter to this policy.

For these reasons, Union's error should be corrected by removing the additional fixed cost of service that Union has applied to short-term storage services (the difference between \$2.661 million and the \$0.599 million approved by the Board), from the short-term storage services account and returning these costs to the long-term storage services account for purposes of calculating margins.

B. Margins on Long-Term Storage Services

The margin calculation for the Long-Term Storage Services deferral account is shown in Schedule 4. In addition to the adjustment described above, there are two other problems with Union's calculation of long-term storage service margins that require correction.

1. Return on purchased assets

According to Union, the long-term storage costs for 2010 include a "return on purchased assets" for third-party storage services of \$6.6 million.¹³ This amount is in addition to \$10.7 million paid to third-party storage operators, which Union has treated as a reduction to revenue.¹⁴ To calculate the "return on purchased assets", Union multiplies the amount of storage space Union has under contract with each third-party storage operator by an assumed capital cost for new storage development of \$10.00 per GJ. This result is then multiplied by a cost of capital based on Union's internal hurdle rate of 14.4%.

Union describes the "return on purchased assets" as an incremental cost that has been added to "recognize the risk assumed by the shareholder when entering into long-term storage purchase contracts".¹⁵ Union provides no explanation as to what this risk entails or how the imputed return on investment Union calculates relates to this risk.¹⁶ More importantly, however, there is no basis for Union to include in the storage margin calculation any costs other than the direct payments Union makes to third-party storage operators for these storage services.

¹¹ NGEIR Decision, p. 99.

¹² NGEIR Decision, p. 100, citing EBRO 494-03.

¹³ EB-2011-0038, Exhibit B3.15

¹⁴ EB-2011-0038, Exhibit B3.16. In a later interrogatory response (Exhibit 3.53), Union restated the Long-Term Storage Services margin calculation showing the reductions to revenue as a separate Incremental Storage cost. These restated numbers were used in Schedule 4.

¹⁵ EB-2011-0038, Exhibit B3.53

¹⁶ If "shareholder" means Spectra Energy Corp, this may not even be a Union cost.

2. Rate of return on new storage assets

Union calculates the return on rate base for new (post-NGIER) non-utility storage assets using an internal hurdle rate of 14.4%. This causes the return component of the long-term storage cost for 2010 to be \$5.294 million than it would be using the Board-approved cost of equity.¹⁷ According to Union, the difference in costs for 2008 and 2009 are \$1.641 million and \$4.471 million, respectively. This inflated cost reduces the amount of long-term storage margin shared with ratepayers by at least \$1.231 million for 2008, \$2.236 million for 2009 and \$1.324 million for 2010.

Margin sharing on non-utility storage services creates an adjustment to the regulated, cost-based rates charged to Union's utility customers, and Union has never obtained Board approval to depart from using the Board approved cost of equity in its long-term storage margin calculations. For purposes of calculating storage service margins, storage costs should be based on the Board-approved return on equity.

C. Recommendations – Storage Service Deferral Accounts

1. Union should shift \$1.662 million from the short-term storage costs, and add an equal amount to the long-term storage costs.
2. Third-party storage costs should be equal to the actual costs paid to third-party storage operators. Union must remove the "return on purchased assets" from the long-term storage costs.
3. For purposes of calculating the storage service margins to be shared with utility ratepayers, Union should calculate the return on incremental non-utility storage assets using the Board-approved return on equity.
4. Union should identify all revenues and costs that enter into the storage margin calculation, instead of incorporating certain costs as a reduction to revenue.

The implications of these recommendations for 2010 storage service margins are shown on Schedule 5. The ratepayer share of the long-term storage service deferral account balance increases from \$8.7 million to \$12.2 million, and the ratepayer share of the short-term storage service deferral account balance increases from \$0.7 million to \$1.8 million.¹⁸

¹⁷ EB-2011-0038, Exhibit B3.18

¹⁸ These numbers do not include the cost changes that would result from implementing the corrections to Union's proposed storage cost allocation methodology recommended in Section I.

Schedule 1
Non-Utility Storage Allocator - Union Proposal

<u>Line</u>	SPACE	<u>PJ</u>	<u>Calculation</u>
1	Base Underground Storage	162.5	
2	LNG Storage	0.6	
3	Third Party Storage	1.1	
4	Total Storage	164.2	Line 1 + Line 2 + Line 3
5	Integrity Space	9.7	
6	Available Storage*	154.5	Line 4 - Line 5
7	Non-Utility Storage	70.0	
8	Reserved Cost-Based Storage	100.0	
9	Projected Utility Requirement	92.1	
10	NGEIR Adjustment	7.9	Line 8 - Line 9
11	Adjusted Non-Utility Storage	62.1	Line 7 - Line 10
12	Utility Storage	92.4	Line 6 - Line 11
13	Utility Space Allocator	59.8%	Line 12 / Line 6
14	Non-Utility Space Allocator	40.2%	Line 11 / Line 6
DELIVERABILITY		<u>PJ/Day</u>	
15	Total Storage	2.360	
16	Utility Requirement	1.435	
17	NGEIR Adjustment	0.095	Line 10 x 1.2% deliverability
18	Adjusted Utility Requirement	1.530	Line 16 + Line 17
19	Non-Utility Storage	0.830	Line 15 - Line 18
20	Utility Deliverability Allocator	64.8%	Line 18 / Line 15
21	Non-Utility Deliverability Allocator	35.2%	Line 19 / Line 15
22	Non-Utility Storage Allocator	37.7%	Average of Line 14 and Line 21

* Includes space deemed unavailable.

Schedule 2
Non-Utility Storage Allocator - Corrected

<u>Line</u>	<u>SPACE</u>	<u>PJ</u>	<u>Source</u>
	Union Underground Storage		
1	Base	161.0	EB-2011-0038, Exhibit B3.4
2	Unavailable	0.7	EB-2011-0038, Exhibit B3.4
3	Available Quantity	160.3	Line 1 - Line 2
4	Union LNG Storage	0.6	EB-2011-0038, Exhibit B3.4
5	Third Party Storage	1.1	Line 5 + Line 6
6	Resource Optimization	14.5	EB-2011-0038, Exhibit B3.40
7	Total Available Storage	176.5	Line 3 + Line 4 + Line 5 + Line 6
8	Reserved Cost-Based Storage	100.0	NGEIR Decision
9	Integrity Space	9.7	EB-2011-0038, Exhibit B3.4
10	Utility Storage	90.3	Line 8 - Line 9
11	Marketable Non-Utility Storage	76.5	Line 7 - Line 8
12	Total Marketable Storage	166.8	Line 10 + Line 11
13	Utility Space Allocator	54.1%	Line 10 / Line 12
14	Non-Utility Space Allocator	45.9%	Line 11 / Line 12
	DELIVERABILITY	<u>PJ/Day</u>	
15	Union Underground Storage	2.563	EB-2011-0038, Exhibit B3.29
16	Third Party Storage	0.011	EB-2011-0038, Exhibit B3.28
17	Total Deliverability	2.574	Line 15 + Line 16
18	Utility Deliverability Requirement	1.407	80.8 PJ/82.4 PJ x 1.435
19	Utility Space Requirement	90.5	EB-2011-0038, Exhibit B3.4
20	NGEIR Adjustment	0.114	(100 PJ - Line 19) x 1.2%
21	Adjusted Utility Requirement	1.521	Line 18 + Line 20
22	Non-Utility Deliverability	1.053	Line 17 - Line 21
23	Utility Deliverability Allocator	59.1%	Line 21 / Line 17
24	Non-Utility Deliverability Allocator	40.9%	Line 22 / Line 17
25	Non-Utility Storage Allocator	43.4%	Average of Line 14 and Line 24

Schedule 3
Short-Term Storage Services Account 179-70

		Forecast	Actual	
		2007	2010	
		EB-2005-0520	EB-2011-0038	
1	Revenue	17,961	20,887	2,926
2	Short-Term Peak Storage	13,794	14,886	
3	Firm Short-Term Deliverability	92	0	
4	Off-Peak Storage	1,000	1,710	
5	Supplemental Balancing	2,000	3,240	
6	Gas Loans	1,000	916	
7	Enbridge LBA	75	135	
8	Cost	2,132	4,134	2,002
9	Return on Rate Base	105	905	
10	Interest	153		
11	Depreciation	132	498	
12	Prop & Capital Tax	28	102	
13	Income Tax	6	13	
14	Demand O&M	175	743	
15	Total Demand	599	2,261	1,662
16	UFG	751	653	
17	Compressor Fuel	707	1,220	
18	Commodity O&M	74	0	
19	Total Commodity	1,532	1,873	341
20	Margin	15,829	16,753	924

Source: EB-2011-0038, Exhibit B1.2

Schedule 4
Long-Term Storage Services Account 179-72

		Forecast 2007	Actual 2010	Difference
1	Revenue	42,058	130,668	88,610
2	Long-Term Peak Storage	42,058	105,893	
3	High Deliverability Storage		20,179	
4	T1 Deliverability and UPBS		1,825	
5	DPBS		742	
6	Dehydration service		1,257	
7	Storage compression		772	
8	Cost	20,653	74,655	54,002
9	Incremental Storage	0	18,727	
10	Return	3,317	16,262	
11	Interest	4,838	11,349	
12	Depreciation	4,538	8,645	
13	Prop & Capital Tax	932	1,661	
14	Income Tax	108	8,215	
15	Demand O&M	5,969	11,078	
16	Total Demand	19,700	75,937	56,237
17	UFG	4,177	1,397	
18	Compressor Fuel	3,437	2,643	
19	Commodity O&M	955	0	
20	Customer-Supplied Fuel	-7,614	-5,332	
22	Total Commodity	955	-1,282	-2,237
22	Margin	21,405	56,013	34,608

Sources: EB-2011-0038, Exhibit B1.3 and Exhibit 3.53

Schedule 5
Adjusted Storage Service Margins

<i>Long-Term Storage Services</i>		<u>2007</u>	<u>2010</u>	<u>Source</u>
<i>Account 179-72</i>		<u>(\$000)</u>	<u>(\$000)</u>	
1	Revenue	42,058	111,941	EB-2011-0038, Exhibit B1.3
2	Costs	20,653	55,928	EB-2011-0038, Exhibit B1.3
3	Margin	21,405	56,013	EB-2011-0038, Exhibit B1.3
4	Margin vs. Forecast		34,608	EB-2011-0038, Exhibit B1.3
5	Ratepayer Share		8,652	EB-2011-0038, Exhibit B1.3
Adjustments to Revenue:				
6	Eliminate reductions to revenue		18,727	EB-2011-0038, Exhibit B3.53
7	Adjusted Revenue		130,668	
Adjustments to Costs:				
8	Add LT storage fixed costs		1,662	Schedule 3, Line 15
9	Add third-party storage costs		10,700	EB-2011-0038, Exhibit B3.16
10	Eliminate premium on return		-5,294	EB-2011-0038, Exhibit B3.18
11	Eliminate income tax on premium		-2,674	Pro rata adjustment
12	Adjusted Costs		60,322	
13	Adjusted Margin		70,346	
14	Margin vs. Forecast		48,941	
15	Ratepayer Share		12,235	
16	Change in Ratepayer Share		3,583	
 <i>Short-Term Storage Services</i>				
<i>Account 179-70</i>				
17	Revenue	17,961	20,887	EB-2011-0038, Exhibit B1.3
18	Cost	2,132	4,134	EB-2011-0038, Exhibit B1.3
19	Margin	15,829	16,753	EB-2011-0038, Exhibit B1.3
20	Margin vs. Forecast		924	EB-2011-0038, Exhibit B1.3
21	Ratepayer Share		657	EB-2011-0038, Exhibit B1.3
Adjustments to Costs:				
22	Eliminate LT storage fixed costs		-1,662	Schedule 3, Line 15
23	Adjusted Costs		2,472	
24	Adjusted Margin		18,415	
25	Adjusted Margin vs. Forecast		2,586	
26	Ratepayer Share		1,839	
26	Change in Ratepayer Share		1,182	

JOHN A. ROSENKRANZ

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Energy Economist with over 25 years of experience in natural gas and electric project development, contract negotiation, market analysis, and public utility regulation. Areas of interest include:

- Gas supply planning
- Contract negotiation and dispute resolution
- Gas utility tariffs and rates
- Market assessment and due diligence
- Pipeline and storage project development
- Fuel supply for gas-fired power generation

PROFESSIONAL EXPERIENCE

North Side Energy, LLC, Acton, MA

2006 – Present

PRINCIPAL

Recent Projects:

- Consultant to the Maine Public Advocate for interstate pipeline and gas distributor rate proceedings.
- Advisor to the Ontario Power Authority on natural gas issues related to long-term power contracts.
- Helped restructure long-term gas supply, transportation, and energy management contracts for cogeneration plants in Connecticut and Florida.
- Assisted the Ontario Energy Board in drafting new gas transmission access and reporting rules.

Calpine Corporation, Boston, MA

2000 – 2006

DIRECTOR, GAS ORIGINATION

Developed and implemented fuel supply plans for gas-fired power plants. Negotiated and managed contracts with natural gas suppliers and transporters. Directed intervention in gas pipeline rate cases and other regulatory proceedings.

- Obtained regulatory approval for a direct-supply pipeline in Ontario.
- Worked with industrial gas users, distribution companies and state agencies to intervene in a natural gas pipeline rate case, which resulted in over \$2 million in rate discounts to Maine gas consumers.
- Testified on the availability of natural gas supply and pipeline delivery capacity to support the permitting of a gas-fired power plant in the Minnesota.
- Member of a commercial and legal team that obtained arbitration decisions enforcing supplier performance under long-term natural gas contracts with over \$50 million in mark-to-market value.

PG&E Gas Transmission, Boston, MA and Portland, OR

1997 – 1999

DIRECTOR, BUSINESS DEVELOPMENT

Identified and managed development projects and investment opportunities involving natural gas pipelines, underground storage and LNG peaking plants.

- Project manager for a \$1.2 million geologic testing program at a prospective natural gas storage site in Washington.
- Owner representative and management committee member for two interstate pipeline partnerships in the Northeast U.S.

J. Makowski Co. (acquired by U.S. Generating Company), Boston, MA
MANAGER, PROJECT DEVELOPMENT

1992 – 1997

Supervised a team providing project management and marketing support for natural gas pipeline and storage projects. Conducted regional gas market studies for internal projects and outside clients.

- Directed the market and rates analysis for a new interstate pipeline.
- Negotiated long term gas storage agreements with an initial value of \$2.25 million per year.

VICE PRESIDENT - EnerPro, Inc., Chicago, IL

1990 – 1992

Consultant to gas distribution companies during post-Order 636 gas supply restructuring. Helped clients define gas portfolio objectives, draft requests for proposals, evaluate suppliers, and negotiate long-term contracts.

MANAGER, GAS MODELING GROUP - Planmetrics, Inc., Chicago, IL

1986 – 1990

Developed and implemented gas supply modeling systems for gas distribution companies.

ADVISORY ECONOMIST - Chicago Board of Trade, Chicago, IL

1983 – 1986

Researched commodity markets for futures and options trading potential.

EDUCATION

Graduate study in Economics - Northwestern University, Evanston, IL

Completed all course requirements for Ph.D.

Bachelor of Arts, Economics - George Washington University, Washington, DC

REGULATORY PROCEEDINGS

Regulator	Docket	Subject
Federal Energy Regulatory Commission	RP10-729-000	Portland Natural Gas Transmission rate case
	RP04-360-000	Maritimes & Northeast Pipeline rate case
Ontario Energy Board	EB-2010-0199	2010 Natural Gas Market Review
	EB-2005-0551	Natural Gas Electricity Interface Review
	EB-2005-0441	Greenfield Energy Centre gas line permitting
Minnesota PUC	IP-6345/CN-0301884	Mankato Energy Center permitting
Wisconsin PSC	05-CE-130	Elm Road generating station permitting