IN THE MATTER OF
The Ontario Energy Board Act, 1998, S.O.1998, c.15, Schedule B;

Natural Gas Electricity Interface Reviews

EB-2005-0551

Reply Evidence of
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on Behalf of Union Gas Limited

May 26, 2006

I. Introduction

We (Professor Richard Schwindt, of Simon Fraser University, and Mr. Bruce Henning and Mr. Michael Sloan of EEA, Inc.) have been asked by Union Gas Limited (Union) to evaluate the nature of competition for natural gas storage services in the markets where Union competes. Our evaluation was first filed with the Ontario Energy Board in October 2004. We filed an updated study with the Ontario Energy Board as part of Union Gas evidence filed on May 1, 2006.

In this evidence, we respond to several issues and misconceptions expressed by parties in this proceeding concerning the EEA/Schwindt Study,[1] the nature of a competitive market, and the operation of the North American and Ontario natural gas markets.

In Section II of this evidence we respond to comments and confusion related to competitive markets found in intervenor evidence and in information provided by

[1] "Analysis of Competition in Natural Gas Storage Markets For Union Gas Limited," Bruce Henning, Michael Sloan, Richard Schwindt, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, May 1, 2006.

intervenors during the Technical Conference. Professor Richard Schwindt is largely responsible for Section II.

In Section III of this reply evidence we focus on the appropriate analysis of natural gas markets in the assessment of market concentration. Our comments focus on the role of price as an indicator of market connectivity, the availability of pipeline capacity in the competitive market region, including the role of commercial transactions – collectively know as the "secondary market," and other sources of capacity that connect regional markets and provide competitive alternatives for storage services in Ontario, as well as examining the appropriate competitive market price for consideration of market power. Mr. Bruce Henning and Mr. Michael Sloan of EEA are the principal authors of Section III.

II. Nature of Competitive Markets

Based on our review of intervenor evidence, and over the course of the Technical Conference it seems to us that there was some confusion as to the characteristics of competitive markets and the level of competition required to allow for a finding that regulatory forbearance and market-based pricing of natural gas storage for ex-franchise customers is appropriate and in the public interest in Ontario. Specifically, at times it appeared that some commentators believed that conditions characterizing a "perfectly" competitive market had to be satisfied in order to justify forbearance over storage rate regulation.

2.1 Perfectly Competitive Markets

When modeling a perfectly competitive market, economists impose a number of rigid assumptions including: a very large number of buyers and sellers; a perfectly homogenous product; no barriers to market entry or exit; perfectly informed buyers and sellers (i.e., complete information about prices, product characteristics, production technologies, etc.); and identical production costs across suppliers. When these assumptions are satisfied, a perfectly competitive market will come to an equilibrium at which, among other things: price equals marginal cost which in turn equals average total cost; all suppliers will just earn a normal profit (i.e., revenues will just cover costs which include a normal return to entrepreneurs) and an efficient allocation of resources will be achieved.

There are few, if any, perfectly competitive markets in any economy today. In nearly all markets, sellers have some degree of market power in that they have some influence over prices, products are not perfectly homogenous, information is not complete, costs are not identical across producers, and some producers can earn returns above normal profits. The fact that all the assumptions of a perfectly competitive market are not fulfilled does not mean that a market is uncompetitive or not "workably competitive." This is why competition policy is concerned with the degree to which a market deviates from the ideal outcomes of perfect competition and incorporates relative standards such as "substantial" lessening of competition and "significant" market power.

2.2 Market Power and Price Increases: the Benchmark

Market power exists when a supplier has the ability to restrict output, raise price and thereby earn supernormal profits. In a period of deregulation, evidence that a firm could raise prices above the pre-existing regulated price is not evidence of market power. Specifically, if the regulated price were set below a competitive market price, once the constraint was relaxed prices would move up to the market level. This increase is not due to the exercise of market power but rather is simply the movement of price from an artificially imposed low level to the market level. In his evidence, Mark P. Stauft errs when concluding that Union Gas has market power because its market-based rates exceed "its conventionally determined cost-based rates" by more than 10 percent.[2] Simply, the cost-of-service (COS) rate is the wrong benchmark.

2.3 Market Power and Price Increases: the Profitability Requirement

The test for market power is whether a firm or group of firms can raise price above the competitive level to a significant extent and can profitably maintain the price increase for a substantial period of time. The key qualifier is that the price increase must be profitably maintained. Many firms have the "power" to increase their prices significantly but cannot do so profitably because the negative effect of lost sales volumes exceeds the positive effects of increased per unit revenues. In order to defeat an attempted price increase, customers clearly do not have to find alternative suppliers for all (or even a substantial part) of their requirements. All they must do is redirect enough

[2] Direct Evidence of Mark P. Stauft, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, pages 32-33.

sales to make the price increase unprofitable. For example, if a firm attempts to increase price by 5 percent and, in response, customers redirect 6 percent of their purchases to an alternative service provider, the net effect of the price change is a reduction in the firm's total revenue. The evidence of Mark P. Stauft that customers of the two Ontario utilities would have to be able to redirect one-half of their purchases to alternate storage suppliers to attenuate market power concerns is misguided.[3]

2.4 Market Power and Supernormal Returns

While firms with market power may be able to obtain supernormal returns, the existence of supernormal returns is not necessarily attributable to market power. Supernormal returns are a form of economic rent, which is defined as follows:

> Economic rent: The income received by any factor of production over and above the amount required to induce a given quantity of the factor to be supplied.[4]

There are several sources of economic rent. Monopolists (and firms with substantial market power) can under certain circumstances set price above total costs and thereby receive an income above what is required to purchase all production inputs (including entrepreneurial services). This is monopoly rent and is associated with supply restriction.

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[3] Direct Evidence of Mark P. Stauft, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, pages 44-46.

[4] Robin Bade, Michael Parkin and Brian Lyons, Foundations of Microeconomics (Toronto: Addison Wesley Longman, 2003), page G-3.

A second source of economic rent is attributable to the fixed supply of certain resources. Waterfront property is in fixed supply and as demand increases so does price without any increase in the cost of supplying the property (indeed the land is costless in the sense that it is a gift of nature). This is often called scarcity rent.

A third source of rent is associated with the differential productivity of a set of resources. For example, early in the development process agricultural land was plentiful in Canada and the price of agricultural products likely just covered the costs of labour and capital. As the demand for agricultural products increased, less fertile land was brought into production and product prices increased to cover the increased costs of cultivating less productive farms. These competitive market prices just covered the costs of farming the less fertile land but exceeded the costs of the original fertile farms. The owners of the fertile land received a payment above what was required to keep their land in production. They obtained a differential rent.[5]

The fact that owners of natural gas storage assets can obtain economic rents (i.e., can obtain returns above the cost of service) when selling at market-based rates is not evidence that they possess market power. It is likely that they are receiving both scarcity rents and differential rents (assuming that the least costly storage sites were the first to be developed).

In his evidence Mark P. Stauft confuses the sources of rents.

"The suggestion would be that, if the Utilities are given authority to charge market rates for their storage services, they will charge rates that exceed a just and reasonable level, i.e. a level that reasonably reflects the cost of providing the

[5] This is also called a Ricardian rent after David Ricardo an early 19th century economist.

service. Those monopolistic prices would induce new market participants to install new storage and transportation infrastructure in order to compete customers away from the Utilities, and capture for themselves a portion of the economic rent that we assume the Utilities will be extracting through their above-cost prices."[6]

It should be noted that competition policy practitioners clearly recognize that an analysis of market power must consider the different sources of economic rent.

"The theme of this article is that the confusion between profits, Ricardian rents, and scarcity rents can lead to errors in drawing conclusions about the extent to which market power is exercised in a market and, ultimately, to incorrect legal arguments and decisions in antitrust cases."[7]

2.5 Competitive Markets and Price Transparency

It is true that when modeling perfectly competitive markets, economists assume that buyers and sellers have complete information about the critical characteristics of the transaction (including price, product characteristics and so forth). However, it is also true that economists recognize that in the real world nearly all firms have varying degrees of market power and that under more realistic assumptions price transparency can be anti-competitive. Ross and Bazilianuskas explain why this is true.

(viii) Good Information about Prices and Customers:

[6] Direct Evidence of Mark P. Stauft, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, pages 68-69.

[7] M. Sanderson and R. Winter, "Profits versus "Rents" in Antitrust Analysis, an Application to the Canadian Waste Services Merger," *Antitrust Law Journal*, 70(3), 2002, p. 510.

As Stigler ["A Theory of Oligopoly", 72 Journal of Political Economy, 1964, 44:61] pointed out, for any sort of an agreement or understanding to hold together, the parties must have the ability to monitor compliance. While he made this point with reference to cartels, it is true of any sort of agreement or understanding, including the simplest non-aggression treaties of conscious parallelism. If firms cannot easily see each other's prices - real transaction prices, not simply posted prices - they will be vulnerable to defections by rivals or they will see an opportunity to capture a larger share of the market by defecting themselves. As a result, the agreement is less stable. There is a certain irony here in the fact that the economists' ideal of perfect competition also requires good information about prices in order for markets to achieve a first-best allocation of resources. However, when you add market power having such full information carries a cost.[8]

In her appearance at the Technical Conference Bruce McConihe appeared to suggest that price transparency (i.e., published transaction prices) was a prerequisite for a competitive market.[9] Price transparency is assumed when modeling perfectly competitive markets, but is not required for the operation of competitive markets and may be anti-competitive in some circumstances.

[8] A. Baziliauskas and T. Ross, "Lessening of Competition in Mergers Under the Competition Act: Unilateral and Interdependence Effects", *Canadian Business Law*, Vol. 33, 2000, pp. 373-426

[9] Bruce McConihe, Ontario Energy Board File No EB-2005-0551, Technical Conference Hearing Transcripts, May 17, 2006, p. 185 & 223.

2.6 Market-Based Pricing: Static and Dynamic Efficiency

In a general sense, market driven prices are critical to the efficient allocation of resources in market economies. During the Technical Conference it appeared to us that undue emphasis was placed on the role of market driven prices on dynamic efficiency and too little on static efficiency.

In a dynamic context, prices assist in directing resources into or out of an industry over time. When demand increases, market prices rise, providing incentives for capacity expansion. Symmetrically, falling demand results in lower market prices and this signals that resources should exit the industry. In the context of natural gas storage, increasing prices provide incentives for the development of new storage capacity both through the expansion of extant facilities and the development of de novo operations.

Market pricing also plays an important static role in that it facilitates the efficient allocation of existing capacity. Simply, market prices have a rationing function. Those that value the good or service most obtain it. If for some reason price is set above the market equilibrium, surpluses will result and if set below, shortages ensue. It is clear that cost of service rates for natural gas storage in Ontario are below the market equilibrium. In a sense this has created a "shortage" in that available capacity would surely be oversubscribed if all potential buyers were eligible for the cost of service pricing. The low-priced storage capacity has been rationed by eligibility rules (e.g., in-franchise customers) since pricing has not been allowed to perform its rationing function. Indeed, some customers who qualify to purchase the low-priced service have engaged in rent seeking through the resale of their allocations.

In her evidence Bruce McConihe suggests that all storage owned by Ontario local distribution companies should be priced at the cost of service. She recognizes that this would require some procedure for allocating this resource to ex-franchise customers since price would no longer play this role.[10] She also envisages a regime where capacity purchased at cost of service rates could be resold at market-based rates with the economic rents accruing to the reseller. Such a system would have both efficiency enhancing and efficiency impairing features. Even though this approach creates market prices that help to ensure that capacity ultimately reaches those who value it most, it is not economically efficient. The economic rents would surely be dissipated as potential resellers engaged in costly strategies to "game" the allocation system.

2.7 Market Power and Available Supply

The exercise of market power is held in check by buyers' ability to switch suppliers in the event of an attempted price increase. As noted earlier, buyers need only redirect enough demand to render the price increase unprofitable to frustrate the strategy. During the Technical Conference there was some suggestion that to qualify as an alternative, competing suppliers would have to have substantial, immediately available capacity.[11] That is, there would have to be substantial idle capacity in the system. First, as previously discussed, usually buyers would not have to have the ability to redirect all or most of their requirements to defeat the price increase. Second, the fact that there is no

[10] Direct Evidence of Bruce McConihe, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, pages 32-33.

[11] Direct Evidence of John Butler, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, pages 13-14; Direct Evidence of Mark P. Stauft, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, pages 52-55

idle capacity at a point in time does not mean that capacity would not be forthcoming in the short- and medium-term. Owners of storage do not have an incentive to "inventory" capacity. Since a unit of storage capacity not used today cannot be added to the storage capacity available for use next year, storage owners seek to "rent up" their storage fields. Some is sold at low prices; some customers hold capacity in excess of their requirements. If customers of storage at Dawn sought capacity from sellers of storage service at a facility such as the Stagecoach facility in New York, there would be incentives for sellers of the facility to redirect capacity to these buyers as short term contracts expired, and there would be incentives for holders of Stagecoach capacity who did not value that capacity highly to resell it.

III. Functioning of North American and Ontario Natural Gas Markets

The evidence provided by intervenors in both filed evidence and in response to questions during the Technical Conference indicates a lack of understanding of the integrated nature of natural gas markets in North America and implications of this integration in identifying the relevant geographic market for storage services. Several areas of confusion are addressed here:

1) There is an apparent failure to appreciate the relevance and importance of price analysis as an indicator of market connectivity.

2) The availability of pipeline capacity in the competitive market region has been understated.

3) The role of commercial transactions – collectively known as the "secondary market," and other sources of capacity that connect regional markets and provide competitive alternatives for storage services in Ontario have been inappropriately ignored.

4) Market power has been defined using the wrong definition of a competitive market price.

Additionally, Ms. McConihe and Mr. Stauft consider only potential buyers of storage services in Ontario rather than all of the potential buyers in the relevant geographic market. By so doing, Ms. McConihe and Mr. Stauft arbitrarily limit the breadth of transactions that form the basis for a workably competitive market.

These misunderstandings contribute to an inappropriate definition of the relavant geographic market by Ms. McConihe and Mr. Stauft. Both Ms. McConihe and Mr. Stauft rely exclusively on limited pipeline capacity available in the primary market for contracting today to suggest that the Ontario storage market is isolated both from upstream storage in Michigan and other states, and downstream in New York and elsewhere in the Northeast United States rather than considering the broad array of commercial transaction available to participants in the natural gas market.

3.1 Natural Gas Commodity Price Behavior Identifies the Existence of Binding Transportation Constraints

The EEA/Schwindt market competition study filed on May 1, 2006 went well beyond the standard analysis accepted by the U.S. FERC to identify the existence (or non-existence) of market power in natural gas storage markets. In addition to the usual analysis, we provided a detailed empirical assessment of the price linkages between the major market hubs within the competitive market region. The evidence provided in our study demonstrated that:

1) The market hubs within the defined geographic region for the competitive market are efficiently connected and that storage in the markets are effectively linked.

2) The degree of linkage and efficiency of the competitive market region is similar to the degree of linkage and efficiency generally accepted by the U.S. FERC for market competition studies in this region of North America.

Even though both Stauft and McConihe generally agreed with our analysis of price, both of the intervenors' evidence ignored the importance of the statistical tests that we performed to assist in the definition of the relevant geographic market. Questions raised at the Technical Conference also indicate that additional explanation of this issue is required.

A basic tenet of the restructuring of the natural gas market in Canada and the United States is that the creation of market centers and hubs can increase the efficiency of the market by allowing large numbers of buyers and sellers to conduct transactions.

These secondary market transactions include, but are not limited to, the re-sale or assignment of rights to unbundled services. Importantly these transactions also included re-bundled offerings[12] whereby the participants sell or buy the gas commodity at specific locations along the gas transportation network. In an examination of these issues, the U.S. FERC found that:

> "In today's gas market, shippers can effectively bundle gas and transportation to make sales in downstream markets."[13]

> "As long as capacity is not being withheld from the market, high prices during peak periods are the competitive response to market conditions and will result in a more efficient allocation of capacity to those valuing it the most."[14]

> "…the maintenance of regulated rates that do not fit with market conditions can harm consumers by distorting price signals and thereby inhibiting the efficient allocation of resources. In any event, the removal of rate regulation for capacity release will have limited effect on pricing behavior, since there is no rate ceiling for bundled gas transactions…"[15]

[12] These transactions are re-bundled in that the value of the natural gas at the specific location includes the value transportation and/or storage services that a seller uses to deliver the gas to the buyer at the mutually agreed to time and location.
[13] FERC Order 637-a, May 19, 2000. P. 11.
[14] FERC Order 637-a, May 19, 2000. P. 53.
[15] FERC Order 637-a, May 19, 2000. P. 53.

Collectively, these transactions offer buyers of gas alternatives to purchasing firm primary services from the owner of a pipeline or storage asset. Often, the cost of these alternatives is lower than the cost of the primary capacity at the maximum regulated rate. The secondary market also offers the holders of primary capacity a mechanism to offset some of the "sunk costs" of a primary service contract during periods where the contract holder does not require all of the capacity or when the market value of the service exceeds the shipper's alternative use of the capacity.

In today's natural gas market, the market value of the transportation capacity connecting market centers and hubs is revealed by the natural gas commodity price behavior. When pipeline capacity between two markets is available, the prices in the two markets are highly correlated and the standard deviation of the "locational basis"[16] is well behaved. When the demand for pipeline capacity is sufficiently large so as to create a physically binding constraint, the prices and the price relationships in the two markets diverge and become disconnected. There are a number of examples in the gas industry where this type of price behavior clearly indicates the existence of pipeline transportation constraints.[17]

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[16] The "locational basis" is simply the difference in the prices at the two locations.

[17] There have been a number of natural gas markets that have exhibited the signs of a disconnected market, or transmission load pocket even though they are directly connected with pipeline links to other markets. Current markets exhibiting this behavior include New England and New York City. In these markets, gas price basis differentials into the region increase substantially during the winter, and spike on the coldest, highest demand days. For example, the peak price difference between Dawn and New York City has reached US$40 per MMbtu, while the peak price difference between Dawn and New England has exceeded US$55 per MMBtu. Even in very localized areas, the basis blowout going into a transmission load pocket can be extreme. The price difference between Transco Zone 6 (non-New York) and Transco Zone 6 (New York) has exceeded US$15, and regularly exceeds US$10 per MMBtu to move across a local constraint. The New York and New England markets have exhibited the characteristics of a transmission load pocket for the last several years due to the lack of ability to expand pipeline capacity into the region at a rate faster than demand growth. The major pipelines serving these areas have attempted to expand pipeline capacity, but have encountered serious and persistent obstacles even

The core issue is to determine whether two storage fields, say field "A" and field "B" are in the same market. They are so long as the services provided by the gas storage field "A" can be efficiently substituted for by gas storage field "B". One way to observe whether gas at "A" can replace gas at "B" is to observe the gas prices in the two locations. If the transmission system were very efficient one would expect to see the same or nearly the same price behavior in both areas. If the price at "A" increased by more than the price at "B", gas would be shipped from "B" to "A" to take advantage of the price differential. The increased supply at "A" would put a downward pressure on price and the decreased supply at "B" would put an upward pressure on price.

If there are transmission capacity constraints between the two markets, an efficient market will reflect the magnitude and value of the constraints by increasing the price of natural gas at the downstream market. As a result, gas commodity price behavior between two natural gas market hubs directly linked by pipeline capacity can be used to identify the degree of constraints on pipeline capacity between the two markets. When prices remain highly correlated, and when there are no recurring "basis blowouts", the

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though customers have indicated a willingness to sign long-term contracts for additional pipeline capacity, and the basis differential has substantially exceeded the cost of service rates for pipeline capacity during much of the period.

Over the past 15 years, certain markets in California, the Rocky Mountains, and Alberta have also exhibited behavior consistent with transmission constraints. For supply regions, such as Alberta and the Rocky Mountains, the impact of the transmission constraints is typically a collapse in production area prices during the summer due to the lack of sufficient pipeline capacity to transport produced gas out of the region.

The price relationships within the Union Gas competitive market region, which are shown in our May 1, 2006 report simply do not show this type of constrained market behavior. The absence of this behavior provides dispositive evidence that the market centers in the competitive market region are well connected, without significant pipeline constraints.

market is not being constrained by the lack of capacity. An increase in the difference in price between two hubs during high demand periods is a clear indicator of an increase in pipeline value between the two markets during these periods. When the price increase exceeds the cost of the pipeline capacity on a recurring basis, a lack of interconnecting pipeline capacity is indicated and a conclusion that the markets are not efficiently linked would be warranted. In this type of case, storage capacity on one side of the bottleneck could not reliably be used to substitute for storage capacity on the other side.

The price analyses presented in the EEA/Schwindt Study documents the geographic market where the prices are highly correlated and where the standard deviation of the locational basis shows minimal periods where there the markets diverge. As such, the price analysis provides evidence that these markets remain connected and that pipeline capacity is available in the "secondary market." The nature of this evidence and its application to the various connected markets will be discussed further below.

3.1.1 The Ontario Natural Gas Market does not Exhibit Price Behavior Consistent with Pipeline Capacity Constraints or Equivalent to an Electricity Transmission Load Pocket.

Both Mr. Stauft and Ms. McConihe have suggested that Ontario exists within a transmission load pocket, without reliable access to additional pipeline capacity and storage either upstream or downstream of Ontario. However, this conclusion is not consistent with the price behavior in the Ontario market relative to the surrounding areas. The absence of any persistent "basis blowout," – or undue scarcity rents into and out of

Ontario that exceed the tariff rates on pipeline capacity – is a clear indicator that there are no pipeline bottlenecks into Dawn or between Dawn and Western New York.

The evidence provided in the EEA/Schwindt report demonstrates that the basis between Dawn and the major market centers in Michigan has been stable or falling since 2002, with average annual and average winter basis differentials well below the pipeline tariff rates between the market centers. In other words, the price difference between locations was less than the cost of the pipeline capacity physically moving gas between them.

Since the completion of the Vector Pipeline, the basis between Dawn and Chicago has been relatively stable. Following it's in-service date, the pipeline basis has generally increased to the point where a market signal has indicated that expansion is desirable. Notwithstanding the increase in basis, both average annual and average winter basis have been below the pipeline tariff rate, and there have been no significant peak day spikes to indicate a significant capacity constraint.

The basis between Dawn and Niagara has generally been below the cost of firm pipeline service on an annual basis. The basis between Dawn and Niagara has not exhibited any significant and recurring increases in the daily price basis.

3.1.2 Use of Price Behaviour to Quantify the Impact of the Secondary Market and to Identify the Relevant Geographic Market for Storage

In response to questions during the Technical Conference, Ms. McConihe indicated that she did not consider the role of the secondary market in her analysis of

available pipeline capacity because there was no information on the extent of these transactions in the marketplace**.** Ms. McConihe concluded that the absence of posting of information precluded consideration of the role of these alternative transactions.[18]

In so doing, the McConihe evidence and responses in the Technical Conference ignored the dispositive nature of the price relationships in the market as to the availability of capacity in the secondary market. It is precisely this price behavior that demonstrates that the storage facilities identified in the EEA/Schwindt Study compete with Ontario storage.

3.2 The Role of an Analysis of Binding Pipeline Constraints to the Relevant Geographic Market for Storage

The existence and extent of pipeline constraints is a critical factor in the identification of the appropriate geographic market for storage services. The EEA/Schwindt study, as well as the evidence of Stauft and McConihe, considers the importance of such constraints in identifying the extent of the relevant geographic market.

The EEA/Schwindt study relies extensively on the price analysis described above as well as an assessment of the range of pipeline capacity options and substitutes available to the market and an understanding of the fundamental nature of North American gas markets to conclude that pipeline constraints are not a significant issue within the competitive market region. The price analysis reviews actual market behavior

[18] Bruce McConihe, Ontario Energy Board File No EB-2005-0551, Technical Conference Hearing Transcripts, May 17, 2006, p. 129 & 130.

over a number of years and finds no evidence of serious transmission constraints between centres in the core geographical market.

Both McConihe and Stauft however, took a much simpler and flawed approach to defining the competitive market region. They do not rely on what has actually been observed in the region (i.e., price analysis that confirms a high degree of connectivity between Illinois, Michigan, Ontario, and New York).[19] Instead, both McConihe and Stauft identify the amount of pipeline and storage capacity available for contract in these areas at a specific time.

> "With respect to pipeline capacity, there is no significant amount of uncontracted pipeline capacity into Ontario." [20]

> "The geographic market typically includes those areas that have gas storage facilities and are reachable, directly or indirectly, by pipelines interconnected to Ontario. By this definition, the relevant geographic market could include: Michigan, Illinois, Indiana, Iowa, New York, Pennsylvania, Ohio, and West Virginia. However, at this time, the relevant geographic market is limited to gas storage in Ontario due to the limited ability to move gas stored in the U.S. to

[19] Ms. McConihe conducts the price analysis, and concludes that prices are highly correlated, but then ignores the results of the price analysis when reaching her conclusion that "there are no alternative storage facilities that compete with Ontario storage due to transmission constraints." Direct Evidence of Bruce M. McConihe, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, page 30.

[20] Direct Evidence of Mark P. Stauft, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, page 38.

Ontario (i.e., transmission constraints). Also, there are no suitable product substitutes to replace the function of underground storage."[21]

To focus on open season capacity available on a pipeline or storage field at a specific time is misleading in that it does not capture ongoing capacity expansion or capacity that would be readily available when requested by the market. In addition, their approach to determining the existence of capacity constraints is fundamentally incomplete, since it does not consider any of a wide range of alternative sources for obtaining pipeline and storage services either from the pipeline directly or from the secondary market.

3.2.1 The Analysis of Un-contracted Pipeline Capacity at a Single Point in Time to Identify Transmission Constraints is Inappropriate and Misleading

The McConihe and Stauft evidence takes a superficial view of pipeline capacity availability between Ontario and upstream and downstream U.S. markets when limiting the relevant geographic market to Ontario.

Given the nature of the natural gas industry, where both buyers and sellers must plan several years into the future, it is clear that reliance on the amount of un-contracted pipeline capacity between market centers at an instant in time to define a relevant geographic market for storage is arbitrary and inappropriate. Not only does such analysis ignore the role of the "secondary market" but it also ignores the pipeline capacity that can

[21] Direct Evidence of Bruce McConihe, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, page i.

and will be available within a reasonable planning horizon when the price signals in the secondary market indicate that such capacity will be needed.

If a storage supplier imposed a substantial, non-transitory price increase today and if its customers sought access to a competing storage site, the customers might face difficulties in immediately replacing the higher priced capacity. However, this not the way the natural gas industry works. Contract negotiations typically occur well before existing contracts expire, and new contracts come into effect, or new capacity is required. Hence, any attempt to exercise market power by withholding capacity would be apparent well before the effective period, allowing customers additional time to assess various alternatives.

First, customers could approach pipeline operators for capacity available at the time the current storage contract expired (i.e., at the time the price increase was to be implemented). Second, if this were unsuccessful customers could access the secondary market for capacity at the appropriate time. Third, customers could signal that additional pipeline capacity was required. Admittedly, major greenfield pipeline and storage expansion projects typically require from three to five years to plan and implement. However, most expansion projects influencing the Ontario market are incremental, that is they result in expansion of existing pipelines and storage fields. On pipelines and storage facilities with identifiable expansion opportunities, such as Vector, MichCon, and DTE Gas Storage, pipeline and storage expansions are typically available much sooner. While capacity generally would not be available for the first winter season after an open season announcement, it often would be available prior to the second winter season, and generally would be available prior to the third winter season.

In our view, within the competitive market region identified in our May 1, 2006 evidence, additional pipeline capacity throughout the area would be available if requested by customers within the normal industry planning horizon. Over the last couple of years, Vector and DTE Storage have been aggressively expanding capacity to meet customer requests, and have indicated substantial capabilities to expand capacity in the future. Other providers, including Great Lakes Gas Transmission and NFGS indicate the ability to expand to meet customer requests in their marketing materials.

When combined with the methods of reallocation of existing capacity discussed below and the Union Gas reply evidence, this aspect of the structure of the natural gas market makes the limited geographic market definition proferred by Ms. McConihe and Mr. Stauft completely inappropriate.

3.2.2 There are a Number of Methods to Reallocate Existing Capacity Contracts between Customers

Pipeline and storage providers typically hold a portfolio of contracts that expire at different times, and have different terms and conditions. The start and end of winter (November 1 and March 31) represent frequent contract termination dates. A review of index of customer contract data indicates that all of the major interstate pipeline and storage customers in the competitive market area have capacity contracts expiring within the next two years. As contracts expire, the contracts will either be renewed by the existing customer,[22] or the capacity will be made available to new customers. Within the

[22] Many contracts, particularly long term contracts have right-of-first refusal terms that allow the initial contract holder to renew the contracts at full tariff rates without putting the capacity out for auction.

normal planning horizon of a utility or major natural gas customer, there is typically sufficient firm service pipeline and storage capacity under contract with contracts expiring to maintain an available market for capacity and service.

In addition, there is an active capacity release market on the major pipelines upstream and downstream of Ontario. The capacity release market allows pipeline contract holders to release capacity back to the pipeline to be sold to other parties. These transactions can be either short term or long term. FERC requires interstate pipelines to publicly post a summary description of each capacity release transaction for the last three months; hence a record of recent capacity release transactions is available. A review of capacity release transactions indicates an active market for capacity on the major pipelines in the competitive market region.

Pipeline companies can also hold reverse open seasons allowing contract holders to sell capacity back to the pipeline if additional pipeline demand exists.

Finally, backhaul capacity is typically available on most pipelines, even if not announced. A review of the major interstate pipelines and storage companies in the competitive market region (TransCanada, ANR, Vector, Great Lakes, NFGS) indicates that all have backhaul contracts in place to meet the needs of specific customers or have the potential to offer contracts facilitating backhaul arrangements that provide additional connectivity in the competitive market region.

The gas supply strategy used by Centra Manitoba, Inc. provides an instructive example of how backhaul capacity can be used to allow natural gas storage located in the United States to meet storage requirements for Canadian customers. Centra Manitoba contracts with ANR Pipeline for 14.7 Bcf of storage capacity in Northern Michigan.

During the winter, withdrawals from this storage are transported via ANR to the Great Lakes interconnect, backhauled on Great Lakes to Emerson, and then backhauled on TransCanada to Centra Manitoba.[23] The same approach would be available to Ontario customers interested in holding storage capacity in New York or Pennsylvania, and to Michigan customers interested in holding storage capacity in Ontario or further downstream.

Both Stauft and McConihe ignored the impact of potential backhaul arrangements when determining the size of the competitive market.

3.2.3 The Secondary Market Provides an Important and Reliable Source of Pipeline Capacity between Regions.

The secondary market for pipeline and storage capacity is active and effective, and offers a reliable substitute for firm service contract capacity. Natural gas marketers currently hold significant amounts of natural gas pipeline and storage capacity on most if not all of the major pipelines and storage fields in the Union Gas competitive market region. These companies profit by re-bundling and reselling pipeline and storage capacity to meet the needs of their customers.

Both Stauft and McConihe have ignored the secondary market for pipeline and storage capacity. The secondary market is a critical component of the overall functioning of North American gas markets, and currently represents a key element in supplying

[23] Centra Manitoba, Inc, FERC "Index of Customer" data on firm contracts from ANR Pipeline, Great Lakes Pipeline, and TransCanada Pipeline.

natural gas to Ontario, and in linking the different elements of the competitive market region.

The secondary market functions effectively due to the ability of natural gas marketers and other market participants to re-bundle a package of services to create new products and to deliver natural gas in ways not available to an individual pipeline or storage provider. Many of these services include exchange agreements that allow a party to exchange natural gas delivered at point "A" for natural gas delivered at point "B", regardless of the availability of physical or contractual pipeline capacity between the two points. When physical pipeline capacity exists between two points, exchanges often look like backhaul or forward haul agreements, although they are generally easier to implement and more economic than backhaul agreements. Exchange transactions can also be executed between two points even when there is no pipeline path directly connecting one point to the other.

There is no central data source for secondary market transactions although information is available on a variety of individual agreements and a review of pipeline and storage capacity held by individual marketers provides a good idea of their importance. A partial summary of capacity held by marketers on the major interstate pipelines and storage fields in the competitive market area is shown in Attachment 1. The information in this attachment indicates that the major marketers hold significant capacity on pipelines into and out of Ontario, and storage capacity both upstream and downstream of Ontario. This capacity is available to help facilitate transactions for storage services in Ontario and the connected competitive market region. Due to the difficulty in fully identifying all relevant marketers, and the lack of data on intrastate

pipelines and storage fields, this table is not complete, but it does provide an indicator of the importance of natural gas marketers in this region.

The Kimball 27 storage field,[24] located in St. Clair county Michigan near the Canadian border provides an illustrative example of a secondary transaction. In its application to the FERC for market-based rates dated March 11, 2004, WPS-ESI indicated that the physical flow of deliveries from WPS-ESI Gas Storage was to Canada, even though all of the customers for the storage capacity were located in Michigan. WPS-ESI replaced the storage volumes that flowed to Canada with gas received in Michigan.[25]

Based on this description, WPS-ESI uses Kimball 27 storage operations to exchange gas for upstream clients, even though no backhaul capacity contracts are in place. Bluewater Gas Storage (27 Bcf of working gas capacity) operates in much the same fashion. Bluewater Gas Storage does not yet provide interstate services, but the intrastate Bluewater Pipeline has 250,000 MMcfd of pipeline capacity into Ontario.

As of October 2005, 45.6 Bcf of working gas capacity out of the total 60.5 Bcf at Washington 10 was held under contracts regulated by the U.S. FERC for interstate commerce.[26] Almost all of this capacity is held by natural gas marketers (see Attachment 1), hence we do not know the ultimate customers. However, due to the location of the field, the identity of the marketers, and the capacity held by the marketers on pipeline capacity into and through Ontario, the majority of this capacity is expected to be used to meet storage requirements either in or via Ontario.

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[24] WPS-ESI recently sold the Kimball 27 storage field to Bluewater Holdings.

[25] WPS-ESI Gas Storage, LLC's Application for Section 284.224 Blanket Certificate, FERC Docket No. CP04-80-000, March 11, 2004, p.3.

[26] The current capacity of Washington 10 is 65 BCF.

The Enbridge use of Stagecoach storage in New York in conjunction with a contract with Constellation Energy to provide 10 day storage service in the Enbridge service territory is another clear example of the availability and effectiveness of the secondary market at linking Ontario storage to storage in other regions.[27] Based on the public record in this proceeding, Enbridge withdraws natural gas from the Stagecoach storage field in New York on up to 10 peak days during the winter season, and transfers title to the gas to Constellation Energy. In exchange, Constellation Energy delivers a similar amount of natural gas to the Enbridge CDA. Constellation could deliver natural gas using pipeline capacity under it's control, or purchase natural gas in the open market, or use other means to ensure physical delivery of natural gas to Enbridge at the specified location.

Ontario customers can also contract on the secondary market for peaking services that provide services equivalent to storage deliverability without holding (explicitly) any storage capacity. Agreements to purchase gas on a specific number of days from firm customers downstream are available from natural gas marketers operating in the region. The gas supply strategy used by Centra Manitoba, Inc. provides an instructive example of how secondary transactions can be relied on to meet peak winter loads. Centra Manitoba relies on purchases of natural gas delivered to Manitoba to meet 13 percent of the company's design firm peak day requirements. Centra Manitoba also uses, where possible, capacity management loan transactions to provide daily peaking supplies.[28]

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[27] This type of arrangement could also be constructed as a backhaul from New York storage into Ontario via Niagara. National Fuel gas offers a delivery point at the interconnect with TransCanada pipeline at Niagara Falls, and TransCanada offers backhaul rates from the interconnect to Dawn and to a variety of other points on the TransCanada system.

[28] Centra Manitoba, Inc.

To be complete, the appropriate analysis of binding constraints should consider all of these alternatives for obtaining pipeline capacity. The EEA/Schwindt analysis captures the aggregate availability of all of these options in our price analysis. Unfortunately, Stauft and McConihe excluded consideration of any options that they could not observe through cursory examination of the posted information of the facility owner/operator. In doing so, they ignore the fundamental nature of the integrated North American market by inappropriately restricting the analysis to the primary market, which is only a small subset of available transactions.

3.3 *Comparing the Current Short-term Intrinsic Value of Storage to Union's Rolled-in Cost of Service Rates is not a Valid Test of Market Power.*

As noted previously, in his evidence, Mark Stauft erroneously contends that Union Gas has market power because its market-based rates exceed "its conventionally determined cost-based rates" by more than 10 percent.[29] In addition to the incorrect application of economic theory, there are also additional factual elements that render this assertion incorrect.

First, the appropriate standard for a price threshold analysis for the exercise of market power is the ability to increase prices above the price that would occur in a competitive market, not an existing cost-based rate. The FERC Policy Statement use of the cost based rate for comparison cited by Mr. Stauft is only a proxy for the competitive price for the services. In considering the market for ex-franchise storage service, there is

[29] Direct Evidence of Mark P. Stauft, Ontario Energy Board, Natural Gas Electricity Interface Reviews, EB-2005-0551, pages 32-33.

no need for such a proxy. In the case of ex-franchise storage services, there have been market-based range rates for years. A time series of the achieved prices is presented in the reply evidence filed by Union Gas. (See attachment_) Since the Union proposal requests forbearance for ex-franchise storage service, any price threshold analysis should consider the "baseline" competitive price to be the price for ex-franchise services. Moreover, as discussed in Section 1, the appropriate economic analysis would require a finding that Union Gas could profitably withhold capacity thereby raising prices by more than 10 percent.

Beyond that, however, the comparison of regulated cost based rate for Union Gas to the intrinsic value of storage is inappropriate for two additional reasons. First, the Stauft evidence attempts to apply the FERC Policy Statement to the Canadian model despite the fundamental difference in cost-based ratemaking in the two countries. In Canada, established ratemaking places a very strong presumption in favor of "rolled-in" rate treatment. Such treatment spreads the costs of incremental expansions of capacity over all customers and shares the benefits of lower cost existing capacity with the new customers. By contrast, FERC policy establishes a presumption for incremental rates in any instance where the effect of "rolled-in" treatment would increase the rates to existing customers by five percent or more. According to FERC "The threshold requirement is that the pipeline must be prepared to financially support the project without relying on subsidization from its existing customers. The Commission has consistently determined that where a pipeline proposes to charge incremental rates for new construction, the pipeline satisfies the threshold requirement that the project will not be subsidized by

existing shippers."[30] This policy is applied to the cost based rates for storage services,[31] as well as the rates for pipeline capacity.

The lack of recognition of this difference makes the attempt to apply FERC policy on rate impacts in the Stauft evidence inappropriate. Even if one were to erroneously conclude that a cost based rate – rather than the price for ex-franchise storage services – should be used as the point of comparison for a price threshold analysis, the cost based rate used for the comparison under the FERC model would be the rate for incremental storage capacity. For a variety of reasons, not the least of which are the market value of "cushion gas"[32] in the current gas price environment and the geology and location of undeveloped storage pools, the incremental cost based rate for new storage is far greater than the historical rolled in cost of service rate for storage capacity.

Secondly, the calculation for the intrinsic value of storage cited in the Stauft evidence is a momentary "snapshot" of market conditions that reflect a number of temporal factors. As can be seen from Table 5 of the EEA/Schwindt report, the realized seasonal value of storage can vary substantially, actually going negative in some periods.

[30] See, e.g., Transcontinental Gas Pipe Line Corp., 115 FERC || 61,200 (2006)
[31] See, e.g., Dominion Transmission, Inc. 111 FERC || 61,414 (2005)
[32] "Cushion gas" is gas maintained in a storage facility necessary to operate the field and therefore never brought to market. In cost-of-service rates for older existing fields, the value of "cushion gas" is deemed to be quite low, often as little as $0.50 per MMBtu. For incremental storage capacity, the value of cushion gas is equal to the prevailing market prices for gas, which are much higher.

3.4 "Cost Based" Rates are not Required to Discipline Prices in the Ontario Storage Market

In answer to a question at the Technical Conference, Ms. McConihe implied that a cost-based rate is necessary to discipline prices.[33] There is a regulatory model that relies on the regulated rate to "backstop" a rates negotiated between two parties. This regulatory model is utilized in the United States by the FERC under the Commission's negotiated rate policy. Under this policy, regulated service providers are allowed to enter into bilateral negotiated transactions where rates and rate design deviate from the approved cost of service rate and rate design so long as the regulated service provider also offers a viable "recourse service" at the approved regulated rate. In this way, FERC offers regulated service providers and shippers the opportunity to seek a rate structure that is mutually more advantageous than the standard tariff rate.[34]

It is important to note, however, that this framework is employed in markets where the Commission has not made a finding of workable competition. In markets where workable competition exists, competition itself serves to discipline prices and no regulatory backstop is required. It is only where a regulated service provider is found to have the ability to profitable exercise market power that the regulated cost-of-service "recourse rate" is deemed necessary.[35] FERC does not require any regulated rate "back stop" where the Commission has found market-based rates appropriate.

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[33] Bruce McConihe, Ontario Energy Board File No EB-2005-0551, Technical Conference Hearing Transcripts, May 17, 2006, p. 187.

[34] Commission's Policy Statement on Alternative Rate Design Mechanism, RM96-7-000, January 1996.

[35] Alternatives to Traditional Cost-of-Service Ratemaking, Statement of Policy and Request for Comments, Issued January 31, 1996.

3.5 It is not surprising that the Demand for Cost-based Storage Service in Ontario appears to exceed the Supply of Cost-based Storage Service.

As noted in Union's responses to Undertakings #15 and #16, and as cited by Mr. Stauft and others, the rolled-in cost of service for Ontario storage is well below the current intrinsic market value of storage. The rolled-in cost-based tariff rates in Ontario are also much lower than the rolled-in cost-based tariff rates in most other jurisdictions, and are substantially below the incremental costs of new storage field development projects.

Given the market value of storage, no one should be surprised that customers are seeking additional access to cost-based storage. Any customer or group of customers with sufficient capability to manage their own natural gas service, or of sufficient size to contract with a marketer to manage their natural gas service has a significant financial incentive today to hold as much cost-of-service based storage capacity as possible, including capacity above their own requirements.[36]

However, much of the storage capacity under contract is held on relatively short-term contracts that will expire within the next one to three years, providing ready access to additional storage capacity within the typical planning horizon of a natural gas utility, or major natural gas consumer such as a power generator or large industrial facility.

[36] The intrinsic value of storage is at an all time high today. As market conditions change, EEA forecasts that the intrinsic value of storage will likely decline substantially.

IV. Conclusions

Both Mr. Stauft and Ms. McConihe have offered an opinion that the relevant geographic market for Union Gas storage is limited to the Ontario market due to a perceived lack of pipeline capacity available to Ontario customers between Ontario and upstream and downstream markets. As we have explained in this evidence, both Mr. Stauft and Ms. McConihe have failed to include critical elements of the natural gas market in their analysis and have not appropriately applied the theory of competitive markets in reaching this conclusion.

Based on our review of the evidence presented by other parties in this proceeding to date, we have seen no evidence that would change the conclusions that we presented in our May 1, 2006 report.

1. We find that Union Gas storage competes within a broad regional storage market. The market structure in the competitive geographic storage region does not raise competition policy concerns under either Canadian or United States' guidelines. Moreover, because of its modest market share and the ready availability of alternatives, we find that Union Gas does not have sufficient market power to significantly influence the price of natural gas storage within the relevant geographic storage market.

2. By utilizing the conventional methodology for examining market structure and finding that the level of storage concentration is moderate, our analysis supports a

finding that the Board should forbear from price regulation for ex-franchise storage services.[37]

3. Forbearance from rate regulation for ex-franchise storage services provides benefits to Ontario without an imposition of additional costs to ex-franchise customers.

[37] For the purposes of this analysis, an ex-franchise customer is any customer outside of the Union Gas service territory, or inside of the Union Gas service territory and taking delivery of natural gas from a party other than Union Gas Limited or taking storage in excess of their seasonal load balancing requirements.

Attachment 1:

Partial List of Major Marketer Capacity Holdings in the Competitive Market Region

Company		Interstate Storage Capacity (MMcf)			Pipeline Capacity Between Hubs			
***Natural Gas Intelligence* Top Marketers (Fourth Quarter 2005)**	**4Q 2005 Sales (BCF/D)**	**NFGS**	**ANR Storage**	**Washington 10 Storage**	**Vector (Mmcfd)**	**GLGT (Mmcfd)**	**TCPL to St. Clair & SWDA (GJ/D)**	**TCPL to Niagara & Chippawa (GJ/D)**
BP	26.30		2,000,000	5,000,000	15,000	42,808		57,614
Sempra	12.10				67,000			
ConocoPhillips	11.80						21,101	53,220
Coral	11.00		2,200,000			23,942	326,367	
Chevron	6.20							
Constellation	5.59	470,000						1,902
Louis Dreyfus	4.37		1,000,000				79,129	79,129
Cinergy	4.24							
Tenaska	4.10	560,000	1,800,000	625,000		142,808		5,859
UBS	3.59							
EnCana	3.33						42,744	
Oneok	2.84			7,000,000	50,000			
ExxonMobil	2.53							
Merrill Lynch	2.23							
Devon	2.12					8,104		9,816
Williams	2.10							
Nexen	2.00		3,006,000	2,000,000	11,600	67,751	349,321	225,705
Sequent	1.90	2,000,000						
Calpine	1.90							
Hess	1.80							
Other Marketers Holding Capacity (Partial List)								
Westcoast Energy U.S.					160,000			
DTE Energy Trading				26,136,000				
National Fuel Resources		3,887,921						
Husky Gas Marketing						42,989	16,002	103,170
Cannat Energy						65,647	63,828	36,222
Dynegy Marketing and Trade						119,740		165,633
Total Capacity Held by Listed Marketers		**6,917,921**	**10,006,000**	**40,761,000**	**303,600**	**513,789**	**898,492**	**738,270**
Total Interstate Capacity Under Contract		**70,133,085**	**52,796,435**	**45,652,550**	**730,000**	**2,321,741**	**984,986**	**1,224,840**
Percent of Capacity Held By Listed Marketers		**10%**	**19%**	**89%**	**42%**	**22%**	**91%**	**60%**

Data Sources:

FERC Index of Customer Data April 1, 2006 for NFGS, ANR Pipeline, ANR Storage, GLGT, Vector.
Washington 10 Storage Corporation Semi-Annual Storage Report April 2005 through October 2005.
Transcanada Contract Demand Mainline Report April 3, 2006
Natural Gas Intelligence: Rankings of Top Marketers 4th Quarter 2005.