Comments on Behalf of the London Property Management Association on Staff Discussion Paper on Distributed Generation: Rates and Connection

I) Introduction

The Staff Discussion Paper and the Discussion Paper from EES Consulting raise a number of issues related to the treatment of distributed generation. It is the view of the London Property Management Association ("LPMA") that instead of focusing on what is done in other jurisdictions, the OEB should be focusing on the treatment of comparable issues within its own jurisdiction. This is particularly true of situations that are equivalent to distributed generation in the natural gas industry. The Board has a long history of dealing with such issues in the natural gas industry, particularly as they relate to Union Gas.

II) Comparison to Natural Gas

Distributed generation is nothing more than fuel switching. Distributed generators can use other fuels, whether natural gas, wind, solar, biomass etc. to displace the need for some or all of their electricity needs. The natural gas utility industry has dealt with fuel switching for decades. Large industrial customers and many institutional customers have the ability to burn other fuels such as heavy fuel oil in place of natural gas. The impacts and implications for rates and services available to these customers are well known to the Board.

In addition, Union Gas has numerous small natural gas producers embedded within its service territory. These small producers are essentially distributed gas sources for Union and its customers. Gas produced by these customers is consumed locally and displaces the need for an equivalent amount of gas to be source through transmission pipelines such as TransCanada and Alliance/Vector. This is similar to the benefit of distributed generation reducing the need for the power to be moved through the transmission system to the local distribution company.

One difference between distributed generation and fuel switching by natural gas customers is that the natural gas customers cannot flow excess gas back into the pipeline. Distributed generators, however, can flow the excess electricity back into the distribution grid, whether through separate metering or net metering.

There is, however, one class of customer on the Union Gas system that can flow gas into the distribution system. These customers are embedded storage pools that receive a transportation service from Union to flow gas into and out of the pools.

The remainder of the comments on the parallels that may exist between distributed generation and similar situations on the Union Gas system will focus on their Southern Ontario operations since that is where the comparable local gas producers and embedded storage pool customers are served. The rates noted below are bundled rates. Semi-bundled and unbundled rates are also available to many customers.

a) Fuel Switching

As noted above, distributed generation, whether a solar panel on a house or a large natural gas fired generator at an industrial facility, is load displacement. The comparable situations faced by natural gas utilities are referred to as fuel switching. They can range from solar hot water heating systems reducing the need for natural gas for water heating, to large industrial customers switching from natural gas to heavy fuel oil. Many of these large industrial customers have the ability to switch fuels at the flip of a switch. The cost of oil as compared to natural gas is often the determining factor as to which fuel is being used at any given time.

The distribution capacity required by the natural gas utilities to serve residential customers does not decline as the result of the customer using solar water heating. The system must be designed to heat the water in the absence of adequate solar heating. The volumes that the costs are recovered through, however, have been reduced. This results in a higher cost to all such customers. This is the logical consequence when the capacity required does not decline, but the utilization of that capacity does.

The same argument is true for large industrial customers that switch fuel. If they want to maintain, or reserve, one hundred percent of the capacity needed to serve them using natural gas, but they burn some other fuel part of the time, the average cost of delivering the natural gas will have to reflect the lower utilization of that capacity.

However, some industrial and institutional customers may not want to reserve firm capacity for their use in case their alternate fuel fails or becomes uneconomic. Union offers a number of services that meets the needs of these customers through interruptible and combined firm/interruptible delivery rates. For small to mid-sized industrial and institutional customers, Union offers a rate (M5A) that is an interruptible service. The delivery is interruptible for up to a contracted number of days per year. This service can also be combined with a firm service, allowing the customer to count on a contracted amount of gas being delivered (firm) while reducing distribution costs by taking an interruptible service for any deliveries about this amount.

For large industrial customers, Union offers a rate (M7) that offers firm service, interruptible serve and seasonal service, as well as combinations of firm, interruptible and seasonal services.

In all cases, the customers enter into contracts that specify the firm CD (contract demand). This establishes the maximum amount of gas that Union is required to deliver to the customer on any day (24 hour period). The contracts also include the interruptible CD, the maximum number days of interruption and establish a number of parameters related to excess consumption on any given day and a minimum volume of gas that the customer agrees to consume in a year.

The bundled rates charged under Rates M5A and M7 consist of a monthly demand charge (a charge per m3 of firm CD), a firm delivery charge, an interruptible delivery charge and a seasonal delivery charge. The rate schedules, in conjunction with the individual customer contracts, also provide for penalty rates (overrun charges) that apply to situations such as the customer consuming in excess of the firm or interruptible CD and failing to consume the minimum annual volume contracted for.

b) Local Production

Union has a number of gas wells connected to its distribution system in Southern Ontario. The utility provides a transportation service for this locally produced gas under Rate M13.

The M13 rate is for the theoretical transportation of the gas from the local production point to Dawn (Union's storage hub). In reality, the gas is consumed in the local market long before it reaches Dawn.

The rate for this service includes a monthly demand charge of a fixed amount per month and a commodity charge based on the volume produced each month.

Production from these local wells can vary substantially from hour to hour, day to day and season to season. Some of the local producers sell their gas to Union Gas, while others sell their gas to marketers or into the export market. In order to sell their gas at competitive rates, many producers contract with Union for a storage and/or load balancing service. This allows the producers to deliver a fixed amount of gas on a daily basis to a buyer even though their production may fluctuate. This gas can then be exported off the Union system for sale in other distribution utilities or for export. Much of this transportation, however, is accomplished with diversions and does not require the physical flow of the gas.

The Board recently dealt with a request by these customers to stream a benefit to the local gas producers served under the M13 rate. In the RP-2003-0063 Decision with Reasons dated March 18, 2004, the Board concluded:

> *"Union operates a fully integrated gas distribution system. Its operation is dependent upon the maintenance of a balanced series of inputs and outputs. Gas supplied by Ontario producers necessarily augments and*

> *displaces other sources of supply within the pipeline. The fact that any given producers' gas contribution to the system may be withdrawn prior to the end point of the distribution system should not result in any particular or preferential treatment. It is impractical and inefficient to attempt to track specific gas molecules within the system in order to tune transportation charges according to presumed and unverifiable distances. Such a practice would be inconsistent with the most cost effective operation of a fully integrated broad service distribution network."*

c) Embedded Storage Customers

These customers are served by Union under Rate M16. The rate applies to all quantities transported to and from the embedded storage pools that are connected to Union's distribution or transmission assets. The rate is comprised of a monthly fixed charge per customer station, a monthly demand charge applied to the contracted demand and a commodity charge for volumes transported. Overrun charges are also specified if the customer exceeds the contracted obligation of Union.

d) RP-2003-0063/EB-2004-0542

A Panel of the Board dealt at length with the M16 rate for embedded storage customers on the Union system in RP-2003-0063/EB-2004-0542. The Panel released its Decision with Reasons in this proceeding on May 19, 2005. LPMA believes that this Decision is particularly relevant to a number of issues raised in the Staff Discussion Paper on Distributed Generation. A copy of the Decision has been attached to this submission as Appendix A.

In the RP-2003-0063/EB-2004-0542 proceeding a number of the embedded storage providers and potential providers of embedded storage argued that the existing M16 cost allocation and rate did not recognize the system benefits realizable by connecting embedded storage pools to Union's distribution system. In particular these parties submitted that embedded storage was a new frontier in Ontario and it should e supported by cost allocation and rate setting principles or arrangements that may depart from those applicable to other users of Union's system.

As the Panel stated in its Decision with Reasons (page 5), the customers were in effect seeking special status from the Panel. The Decision goes on to state that the Board has had many requests for special status for a customer group or a customer over the years. The Decision goes on to state:

> *"The Board has been consistent in its response to such requests by adhering to its established principles in dealing with cost allocation and rate setting. Principled ratemaking involves the creation of a unified and theoretically consistent set of rates for all participants within the system. It begins with the establishment of a revenue requirement for the regulated utility and proceeds to design rates for the respective classes according to well-recognized and consistent theory respecting such elements as cost allocation. This is an objective and dispassionate process, which is driven by system integrity and consistent treatment between consumers on the system. Principled ratemaking typically does not involve a ranking of interests according to a subjective view of the societal value of any given participant or group of participants. This approach is not unique to Ontario. A departure from these principles should only be undertaken where the evidence and all other circumstances outweigh the inherent virtue of an objective process."*

The Decision also dealt with the "controversial" suggestion made by the embedded storage customers that involved the "streaming of benefits" to the embedded storage customers. The Panel responded to this suggestion at page 6 of the Decision:

> *"The proponents of this approach would reduce the rate level charged to the embedded storage operator to the extent that its presence within the overall gas distribution system provided a benefit to the system as a whole through enhanced reliability, security of supply and the avoidance of system expansion, reinforcement costs or fuel costs. The streaming of such benefits to a particular class of system users is not typically an attribute of distribution systems. In this case it is even more problematic. First, it is not clear that either of Tribute or Northern Cross will provide any reliable benefit to the system. Neither party demonstrated that their proposed operations offer any reliable system benefit, which can be counted upon by the system operator and other system users. Second, the valuation of such benefits, were they to be demonstrated, would be a complex undertaking, requiring substantial additional evidence. Third, other user classes may well raise the same kind of issues with respect to the benefits they provide to the system. Similar arguments could be made by virtually every rate class and class of customer. The streaming of benefits can create a very tangled matrix. In fact the distribution system is based on the interdependence of all customers and classes of customers."*

Another key finding of the Panel is found on page 9 of the Decision:

> *"Tribute did not effectively refute the proposition that, although a customer may not have caused the fixed costs to be incurred in the first place, that customer should still be contributing to the recovery of such fixed costs if it makes use of the assets. This principle has been reflected in past decisions by this Board. The Board also agrees with Union and other parties that, with respect to the question of notional flow versus physical flow, it should be the contractual arrangements that govern ratemaking, not the physical movement of gas."*

This finding deals with two key issues. First, the Panel found that if the customer makes use of an asset, then he should contribute to the recovery of those fixed assets. Second, the Panel also found that contractual arrangements should govern rate making, not physical flows.

Finally, the Panel dealt with the issue of fuel cost savings and unaccounted for gas. The Panel agreed that any fuel cost savings should not be applied to an individual customer and that the allocation of unaccounted for gas costs should be based on contractual, not physical, flows.

III) Relevance to Distributed Generation

Is the conclusion in the 2004 RP-2003-0063 Decision with Reasons and the principles enunciated in the 2005 RP-2003-0063/EB-2004-0542 Decisions with Reasons relevant to the issue of distributed generation?

A simple rewording of the section from the RP-2003-0063 Decision with Reasons, referenced above in section II, part b, which dealt with the streaming of benefits to a particular customer or class of customers to move the context from a natural gas distribution system to an electricity distribution system results in the following. Changes from the wording used by the Panel have been highlighted.

> ***Company X*** *operates a fully integrated* ***electricity*** *distribution system. Its operation is dependent upon the maintenance of a balanced series of inputs and outputs.* ***Electricity*** *supplied by* ***distributed generators*** *necessarily augments and displaces other sources of supply* ***on*** *the* ***grid****.*

> *The fact that any given* ***distributed generators'*** *contribution to the system may be withdrawn prior to the end point of the distribution system should not result in any particular or preferential treatment. It is impractical and inefficient to attempt to track specific* ***electrons*** *within the system in order to tune* ***delivery*** *charges according to presumed and unverifiable distances. Such a practice would be inconsistent with the most cost effective operation of a fully integrated broad service distribution network.*

As demonstrated above, the Panel's conclusion regarding the streaming of benefits is equally applicable to distributed generators served by an electricity distributor as it is to a storage operator served by a natural gas utility.

The principles described by the Board in the RP-2003-0063/EB-2004-0542 Decision with Reasons as being applicable to the situation being reviewed in that Decision are equally applicable to distributed generation. In particular, the paragraph from page 5 of that Decision and reproduced at the top of page 6 of these Comments dealing with special status for a customer group is applicable to the current situation word for word. The LPMA sees no need and sees no justification for departing from these principles in this situation.

In addition to the 2004 Decision, the issue of the streaming of benefits was dealt with at page 6 of the 2005 Decision. The relevant paragraph is shown on the bottom half of page 6 of these Comments. Changing the context from the natural gas industry to the electricity industry results in the following, again, with the changes highlighted.

> *The proponents of this approach would reduce the rate level charged to the* ***distributed generator*** *to the extent that its presence within the overall* ***electricity*** *distribution system provided a benefit to the system as a whole through enhanced reliability, security of supply and the avoidance of system expansion, reinforcement costs or* ***line losses****. The streaming of such benefits to a particular class of system users is not typically an attribute of distribution systems. In this case it is even more problematic. First, it is not clear that* ***distributed generators*** *will provide any reliable benefit to the system.* ***It has not been*** *demonstrated that their proposed operations offer any reliable system benefit, which can be counted upon by the system operator and other system users. Second, the valuation of such benefits, were they to be demonstrated, would be a complex undertaking,*

> *requiring substantial additional evidence. Third, other user classes may well raise the same kind of issues with respect to the benefits they provide to the system. Similar arguments could be made by virtually every rate class and class of customer. The streaming of benefits can create a very tangled matrix. In fact the distribution system is based on the interdependence of all customers and classes of customers.*

In the Union Gas embedded storage proceeding it was established that Union had to build and maintain the capacity to serve all of its customers, even if those customers were, in fact, benefiting from the local storage operator. This was because there was no back up contingency in the event that the local storage pool failed. In such a situation, in the absence of Union maintaining the capacity to serve, service to those customers would fail. It is Union's responsibility to ensure that it can serve its customers under a number of failure scenarios. As a result, there were no reduction in assets or costs associated with the local storage operations to be quantified as benefits. Further, even if there were benefits from the operation of the local storage pools, there is no reason that these benefits should not be shared among all customers. A simple example of this on a gas system is a summer load such as food processing. Because they do not increase the need for peak (winter) capacity, an argument could be made that they should receive a substantial discount on their delivery rate. However, in the absence of the winter peak capacity, there would not be any capacity available to serve the summer load. In this case, the capacity would be built to serve the summer load and that load would incur all the costs associated with it. Such a scenario shows the range of possible outcomes. It also highlights the problem of who came first. If the winter peak came first, should the summer peak get a lower rate? If the summer peak came first, should the winter peak get the lower rate? The Board Panel in the RP-2003-0063/EB-2004-0542 Decision referred to this as a "tangled matrix". LPMA refers to this as a tangled web and cautions the Board: Oh what a tangled web we deem, When first we practice to stream (with apologies to Sir Walter Scott!).

IV) Staff Issues

Staff have identified a number of issues in their Discussion paper in relation to which they believe input would be of assistance. These issues, in the form of questions are listed below, along with comments from the LPMA.

a) Section 3 - Standby Rates

i) What might be a reasonable billing determinant for recovering demand-related costs?

In order to ensure system integrity and reliability, the distributors need to ensure they have the capacity to serve not only the distributed generation customer but all of their customers in the event of a generation failure. LPMA agrees with the proposals of the distributors in that they should recover all their costs from these customers regardless of whether the load is used or not. If these costs are not recovered from these customers, would they be recovered from other customers? If so, why would it be just and reasonable for other customers to cover these costs for a load that may or may not be used by another customer?

LPMA endorses a solution of contracting for a maximum demand, similar to what is done in the natural gas side. Distributors should provide the option to the distributed generator of firm or interruptible (best efforts) service. If the customer needs or wants to maintain access to the maximum demand, they would contract for a firm service. Otherwise, an interruptible service, at a lower cost, may be appropriate.

Rather than an annual contract demand, it may be more appropriate to have maximum contract demand flexibility by time of day. Customers may tailor their operation so as to minimize their maximum demand during on-peak hours and utilize excess grid capacity in off-peak hours. Distributors should be required to provide this flexibility to the distributed generators, as it has the potential to increase the utilization of the system and result in lower costs to all customers.

ii) Should standby charges be further differentiated between backup, maintenance and supplemental services?

It is unclear what purpose would be served by further differentiating the charges to be based on reason. If the costs incurred by the distributor to provide capacity to a customer does it really matter why the customer wants that capacity? In our submission it does not. Further, would there have to be additional standby charges for other sources of demand like increased production, as an example?

As noted above, the customer should be able to use firm and/or interruptible contracted capacity. Each distributed generator may have unique operating characteristics and they should be allowed to tailor their requirements to meet their demands. For example, depending on the production process, some industrial customers may be able to use interruptible service as backup, while others may require firm service.

iii) Are there other issues that should be considered by the Board?

The key issue that should be considered by the Board is take into account the type of standby service(s) that the customers want and require. This may involve designing services and rates on a firm and/or interruptible basis, on a time of day basis, and on a seasonal basis. This would allow the distributors to design services and rates that can provide the maximum benefit to their system while meeting the needs of the distributed generator customers, or at least minimize the additional costs to the system. Again, as an example, a summer peaking utility may be able to provide a distributed generator customer a firm service in the winter at minimal or no additional cost to the utility and the generator may be able to utilize interruptible service in the summer to minimize or eliminate additional costs to the utility.

iv) How should any distribution and transmission benefits provided by load displacement generation be identified and quantified?

LPMA believes there are three components to this question: benefits related to investment avoidance or deferral related to distributed generation that requires firm standby capacity; benefits related to the investment avoidance or deferral related to distributed generation that does not require firm standby capacity; and benefits related to reduced line losses.

In the absence of a fundamental change in the way that the distribution and transmission systems are designed, it is not clear to the LPMA that distributed generation that requires firm standby capacity will provide any avoided or deferred investments. If a distributor has to maintain additional firm capacity to serve a distributed generator in the event of a failure, it is not at all clear why these costs should be recovered from anyone other than the customer they are being used to serve. If a distributor has to increase its system capacity, whether for additional residential subdivisions, an new industrial load, or reserved capacity for a distributed generator, these costs should continue to be allocated to all customers based on established cost causality principles.

If a distributed generator does not require firm standby capacity, then these savings can be reflected in the distribution rates to all customers. The distributed generator will benefit from a lower rate than if firm service was required. Other customer classes can benefit from the additional revenue received from the distributed generator, a portion of which could be used to offset system costs. In the natural gas industry this is often accomplished by allowing revenue-to-cost ratios for interruptible customers to be less than 1.00. As long as the additional revenue is in excess of the incremental costs, some benefits flow to other rate classes.

Finally, the reduction in line losses should not be streamed to individual customers or customer groups on a distribution system. Consider the example of a large customer connecting to the end of distribution system. This could increase line loses. Would it then be appropriate to charge this customer with the incremental line loss? Would different residential subdivisions have different line loss factor adjustments based on their location within a distribution system? Could a customer request a lower line loss factor after a wind farm is connected to the distribution system near their farm? Do solar panels on a neighbouring house that produces more electricity than consumed during the day (i.e. reverse flow through net metering) entitle the neighbours to a lower line loss factor? If not, why not? What a tangled web/matrix indeed!

v) Should a different approach be adopted depending on the size of the customer?

Why should size matter? Five hundred 1 kW distributed generators provide the power as one 500 kW generator. In fact, the five hundred 1 kW generators are likely to provide more benefits to the distribution system than the one 500 kW generator. The five hundred will be spread around the system rather than concentrated in one area. There will be greater diversity from the five hundred as to when they are generating and when they are not. All in all, it would seem that if a different approach is adopted depending on the size of the customer, the smaller customers should get the more advantageous approach.

vi) Should any benefit provided to customers with load displacement generation be recovered from all customers? If so, on what basis should this be done?

This issue raises a number of questions. First of all, if the benefits associated with load displacement customers are not recovered from all customers, who are they recovered from? A subset of customers? Government? The distributor?

It is most likely that customers would have to pay, as they do for everything else. But again, which customers? If a particular distributor has cost associated with a distributed generator on its system and it provides benefits to a regional area rather than just to the local distributor, should the customers of the local distributor shoulder those costs alone or should the costs be recovered from customers served by nearby distributors and/or the transmission system?

LPMA believes that if costs are to be recovered from customers, it should be on a province wide basis. The Board should amend the transmission rates to include in the overall revenue requirement the costs associated with the benefits provided to customers with load displacement generation. Each utility with such a facility would be required to quantify the amount and the Board should hold regular hearings to approve the amounts in total for the province and include the amount in the transmission revenue requirement. When collected, these revenues could be allocated proportionately to the distributors to keep them whole.

vii) Are there other operational or implementation issues that should be considered by the Board?

If the Board proceeds down this road, it should be prepared to build a superhighway. Requests for special status and the allocation of benefits provided by other types of customers will become the norm. Distributors located near large generation facilities, thus using short transmission distances, should be applying for lower rates to reflect their special location status.

A further operational issue is the expertise that will be required by the local distributors to analyze, allocate and design services and rates for complex and unique situations.

viii) Is a separate classification warranted and, if so, should it apply to all customers with load displacement generation, or to a subset of these customers as suggested in the EESC Report?

The response to this question depends in part on whether distributors will have only a few distributed generators on their system or many. The response also depends on whether the distributed generators operate in a similar manner to one another or want the same type of standby capacity.

As noted earlier, distributed generators may want different levels of different services. They should be able to pick from a menu of such services. However, this does not mean that a one size fits all approach should be taken across all distributors or even within a specific distributor. Each case may well be unique and should be approached on its own merits. Two similar sized distributed generators within a distributor may well require two separate rate classifications. These generators may have operating characteristics that make them as different from one another as is a residential customer from an unmetered scattered load. Cost causality and cost allocation principles may dictate the need for more than 1 rate classification for these customers.

ix) Are there other criteria that should be used to justify a separate rate classification for a subset of these customers?

Cost causality and cost allocation principles should be used. Such criteria can include size, operating characteristics, seasonal differences in operation, time of day differences in operation, or a combination of the above. What may be appropriate on a radial distribution system may not be appropriate on an integrated system.

x) What would be an appropriate threshold for a generator rate class?

LPMA makes no comments on the threshold other than to suggest it may be appropriate to let individual distributors, in conjunction with the Board, to determine this on a case by case basis. A threshold that is appropriate for Toronto Hydro may not be appropriate for Dutton Hydro and vise-versa.

b) Section 4 - Revenue Losses

i) Has net revenue loss due to customers with load displacement generation been material?

Is the past relevant given the potential for standby rates to protect distributors in the future depending on how they are structured?

ii) How might net revenue loss be quantified?

How would revenue losses be allocated between such things as increased distributed generation as compared to conservation and demand management initiatives or a simple economic downturn or upturn?

What is the difference between the net revenue loss associated with an industrial customer installing distributed generation and an industrial customer closing a plant?

Net revenue loss does not need to be quantified.

iii) How might the Board determine an appropriate method to compensate electricity distributors for such revenue loss?

Proper cost allocation, rate design and services should not result in revenue loss to the distributors. Any reduction in revenue (as differentiated from a revenue loss) should correspond to a reduction in revenue requirement that results from the capital and/or OM&A reductions related to the distributed generation. Proper cost allocation and rate design should accomplish this.

c) Section 5 – Connection Costs

i) What alternatives to the status quo should be considered and what is the rationale for each of these options?

LPMA believes that connection costs should be recovered in the same manner as connection costs for other customers, that is, through ongoing rates for use of the system, and where necessary, an up front capital contribution. This approach would minimize the potential for the connection cost to be a barrier to development. It would also allow the distributors to earn an ongoing return on their investment.

However, this will place an added burden on the distributors to finance the connection projects and increase the distributor exposure to stranded costs. For small utilities, in particular, the impact on the distributor of a large connection cost could be substantial. Obtaining the necessary financing for their portion of the capital costs could be difficult. Even for larger distributors, financing of other projects may have to be delayed because of capital constraints. This may have negative consequences on system integrity, reliability and safety.

ii) If connection costs are socialized, is there a risk of uneconomic DG projects going forward? If so, how can that risk be mitigated or avoided? Would this approach affect the incentive for distributors to design economic connections?

Yes, there is a risk of uneconomic projects going forward if connection costs are socialized.

Distributed generators should be viewed as long term investments that have a relatively high level of uncertainty associated with them. In order to minimize the potential impact on distributors that may have to make relatively large investments and become exposed to the risk of stranded assets, the Board may want to suggest a number of contractual obligations in order to protect not only the distributor in question, but all the customers of the distributor. A minimum contract length, for example, backstopped with an appropriate letter of credit or some other financial instrument would at least reduce the risk to the distributor and its ratepayers of stranded costs.

The Board may also want to consider whether it would be appropriate to introduce a province-wide Distributed Generation Assistance charge similar to the Rural Rate Assistance charge. An account could be established and funded through this charge. In the event of any stranded assets a distributor could apply to the Board to use funds from this account either write off the asset or replace the revenue stream from the customer on an interim basis if there was a possibility that the distributed generation plant may be returned to service.

d) Section 6 – Other Aspects

i) Are there other rate-related issues associated with DG that should be addressed, or that should be addressed more fully? Is the experience in other jurisdictions on those issues relevant to the Ontario situation?

More discussion and analysis should be done on the potential for benefits that may result from distributed generation. As noted above, benefits may be a function of the type of standby that these customers require or want.

More discussion is also required on whether the Board should deviate from its established principles in dealing with cost allocation and rate setting including the issue of streaming of benefits. There may well be a sound rationale for this deviation, we have just not seen it yet.

ii) Are there unidentified barriers or is separate treatment required for embedded generation projects or for projects falling below the threshold of a new rate class?

It is unclear whether embedded generation will result in lower or higher delivery costs for other customers. While the purported benefits should reduce costs to everyone, the streaming of benefits to the embedded generators may more than offset the savings if other customers have to bear these additional costs. If there are indeed savings to be gained by all customers, then this barrier of perception needs to be overcome. If costs to customers will go up as a result, this needs to be front and center and included in the debate of whether the benefits associated with distributed generation outweigh the costs.

iii) What are the institutional or regulatory barriers to implementation of DG? How might such barriers best be addressed?

The largest regulatory and institutional barriers to implementing distributed generation is the need for expertise in designing the services that these customers want or require and properly allocating the associated costs to ensure that these customers are paying their fair share and that there is no cross-subsidization between customers or customer classes.

Cost allocation is the key in setting proper rates for all parties. Most electricity distributors have had limited dealing with cost allocation issues and methodologies because it has not been a priority. However, the need for a new and significant rate class will be a priority to ensure reasonable outcomes for all classes of customers. The Board may want to address this issue through workshops for interested stakeholders.

iv) Are there DG-related issues, other than those relating to the rate or connection cost treatment of DG facilities that need to be addressed? Is the experience in other jurisdictions on those issues relevant to the Ontario situation?

No comments.

Appendix A

To EB-2007-0630 Comments

from the

London Property Management Association

RP-2003-0063
EB-2004-0542

IN THE MATTER OF the *Ontario Energy Board Act, 1998,* S.O. 1998, C.15 (Schedule B);

AND IN THE MATTER OF an Application by Union Gas Limited for an order or orders amending or varying the rate or rates charged to customers under the M16 rate schedule.

BEFORE: Paul Vlahos
Presiding Member

Paul Sommerville
Member

Pamela Nowina
Member

DECISION WITH REASONS

May 19, 2005

THE APPLICATION, BACKGROUND AND OVERVIEW OF THE PROPOSAL

Union Gas Limited ("Union") filed an application with supporting prefiled evidence, dated December 23, 2004, with the Ontario Energy Board ("the Board") under section 36 of the *Ontario Energy Board Act, 1998* for an order or orders to amend or vary the rates and other charges charged to customers served under the M16 rate schedule. Union also provided copies of the application to Intervenors of record in the RP-2003-0063 proceeding and to Tribute Resources Ltd./Tipperary Gas Corp. ("Tribute"), Northern Cross Energy Limited ("Northern Cross" or "NCE"), Enbridge Gas Distribution Inc. ("EGDI"), and Market Hub Partners ("MHP"). The Board assigned file number RP-2003-0063/EB-2004-0542 to Union's application.

Below is the background and overview of Union's proposal. Copies of the evidence by Union and by others, exhibits, arguments, and transcripts of the proceeding are available at the Board's offices. The Panel has considered the full record but has summarized it throughout this decision document only to the extent necessary to provide context for its findings. More details of the proceeding itself are set out in appendix A of this decision document.

Union is applying for approval of new M16 rates for transportation service for embedded storage pools, i.e., pools that are connected to Union's transmission or distribution system. Union currently has one active customer served under the current M16 rate schedule, EGDI, and the existing M16 rates were designed to apply specifically to EGDI's Chatham 7-17-XII pool.

Since the current M16 rates were designed, other parties, such as Northern Cross and Tribute, have expressed interest in developing storage in other locations in Union's franchise area. One issue in the RP-2003-0063 proceeding (Union's 2004 rates) was the appropriateness of the existing M16 schedule for embedded storage companies in general. During this proceeding, some parties, notably Northern Cross, argued that the existing M16 rate did not recognize the system benefits realizable by connecting embedded storage pools to Union's distribution system. Northern Cross also proposed in the above proceeding that storage operators should be offered a service of a lower priority than that provided to consumers and producers.

In the Board's RP-2003-0063 Decision With Reasons, the Board made the following directive:

> The Board directs Union to review the cost causality associated with NCE's storage operations with special emphasis on the allocation of storage costs. Union should take into consideration the reduced level of service and the ability of a storage operation to inject and withdraw at a different rate and time versus the service requirements of a pure gas consumer in its rate design. The Board also directs Union to review the cost allocation and rate design applicable to distributed storage pools such as the Ashfield Pool and submit such evidence as part of its 2005 rates application.

Union's application for a redesigned M16 rate was filed in response to this directive. The timing of the application was driven by the fact that Union had already signed a contract to provide firm transportation to Tribute's Tipperary pool as of the later of April 1, 2005, or one month following the satisfaction of all conditions precedent, and, as such, Union required approval of a firm transportation toll that would be applicable to that pool.

Under Union's M16 rate proposal, service would be differentiated between east and west of Dawn and an interruptible service would also be offered. EGDI's Chatham 7-17-XII pool would be classified as west of Dawn. Tribute's Tipperary pool and Northern Cross' prospective Ashfield pool would be classified as east of Dawn. Only one of these two Huron County pools could be accommodated by Union's current physical infrastructure on a firm transportation basis.

The following types of charges would apply for firm transportation service:

- A monthly charge to recover specific meter station costs;
- Different demand charges for customers east and west of Dawn to reflect the different transmission assets used by such customers;
- A transportation commodity charge that is independent of distance; and
- Distinct commodity charges to recover fuel and unaccounted-for-gas (UFG) that reflect the transmission system used and seasonal fuel requirements (M16 customers may choose to provide their own fuel).

For interruptible service, Union's proposals are similar to firm service except that there would be no demand charges.

Union testified that its M16 rate proposal offers the lowest possible transportation rate consistent with the Board's established cost allocation and rate design principles, including postage-stamp ratemaking, cost causality, and a reasonable contribution to the cost of facilities by all customers. Union also asserted that any system benefits that may be caused by a particular customer should not be streamed to that customer. Union noted that this principle has been previously endorsed by the Board.

BOARD FINDINGS

The issues for the Panel are as follows:

- Should independent embedded storage be viewed as a special case?
- Should there be an interruptible transportation service option?
- Should there be a differentiation of transportation service between west and east of Dawn?
- Should there be a contribution to fixed costs for assets not caused by storage customers?
- Are there any system benefits from embedded storage and if so should such benefits be streamed to embedded storage?
- Are the allocated unaccounted-for gas costs reasonable?

The Panel deals with each of these issues below.

<u>Should independent embedded storage be viewed as a special case?</u>

Union's written evidence covered all aspects of the costs allocated and rates derivation for the proposed revised M16. The oral evidence of Union, the evidence sponsored by Tribute, cross-examination of witnesses for both parties, and submissions by all parties focused on the firm transportation component east of Dawn, as Tribute's prospective Tipperary storage pool would be served under this part of the proposed revised M16 rate schedule.

The thrust of the evidence of Messrs. Knecht and Fisher sponsored by Tribute and Tribute's submissions is that independent embedded storage is the new frontier in the natural gas market in Ontario and, as such, it should be supported by cost allocation and rate setting principles or arrangements that may depart from those applicable to other users of Union's transmission system. According to Tribute, independent embedded storage providers should not be viewed in the same manner as any other customer classification; rather they should be viewed and treated as competitors to Union's own storage activities and as an enterprise that enhances the reliability of the natural gas system in Ontario. Tribute also grounds its position on the Board's recently released report entitled *Natural Gas Regulation in Ontario: A Renewed Policy Framework* resulting from the Natural Gas Forum.

What Tribute in effect is seeking from this Panel is special status. Union and other Intervenors opposed such treatment for Tribute. True Oil, a potential storage developer, adopted Tribute's position.

Over the years, the Board has had many requests for special status for a customer group or a customer. The Board has been consistent in its response to such requests by adhering to its established principles in dealing with cost allocation and rate setting. Principled ratemaking involves the creation of a unified and theoretically consistent set of rates for all participants within the system. It begins with the establishment of a revenue requirement for the regulated utility and proceeds to design rates for the respective classes according to well-recognized and consistent theory respecting such elements as cost allocation. This is an objective and dispassionate process, which is driven by system integrity and consistent treatment between consumers on the system. Principled ratemaking typically does not involve a ranking of interests according to a subjective view of the societal value of any given participant or group of participants. This approach is not unique to Ontario. A departure from these principles should only be undertaken where the evidence and all other circumstances outweigh the inherent virtue of an objective process.

In the above referenced report resulting from the Natural Gas Forum, the Board raises a number of matters regarding storage. The Board intends to proceed to explore the possible approaches to the issues identified in the report in appropriate fora, where all interested parties would be given the opportunity to participate. Special status for embedded independent storage and the provision of incentives for such operations represent an approach that may be seen as departing from current ratemaking principles, a departure that in the Board's view is not supported by the evidentiary base presented in this case. One controversial suggestion made by Tribute and Northern Cross involves the so-called "streaming of benefits" to the embedded storage operator. The proponents of this approach would reduce the rate level charged to the embedded storage operator to the extent that its presence within the overall gas distribution system provided a benefit to the system as a whole through enhanced reliability, security of supply and the avoidance of system expansion, reinforcement costs or fuel costs. The streaming of such benefits to a particular class of system users is not typically an attribute of distribution systems. In this case it is even more problematic. First, it is not clear that either of Tribute or Northern Cross will provide any reliable benefit to the system. Neither party demonstrated that their proposed operations offer any reliable system benefit, which can be counted upon by the system operator and other system users. Second, the valuation of such benefits, were they to be demonstrated, would be a complex undertaking, requiring substantial additional evidence. Third, other user classes may well raise the same kind of issues with respect to the benefits they provide to the system. Similar arguments could be made by virtually every rate class and class of customer. The streaming of benefits can create a very tangled matrix. In fact the distribution system is based on the interdependence of all customers and classes of customers. This element will be discussed further below.

Proponents and opponents of the special status sought will be able to address these issues in the appropriate process arising from the Natural Gas Forum.

This Panel therefore has proceeded to assess Union's proposals, the proposals made by others, and the parties' submissions on their merits from the perspective of the principles discussed above.

<u>Should there be an interruptible transportation service option?</u>

Union proposes an M16 rate design that offers firm and interruptible transportation service for embedded storage pools. Northern Cross' position is that there ought not to be firm service. No other party supported this position.

Acceptance of Northern Cross' position would in effect render the contract entered into between Union and Tribute inoperative as that contract was entered into on a firm basis. This would then release the current lock by Tribute on the available capacity of the Forest-Hensall-Goderich line and place Tribute and Northern Cross on an equal footing in contracting for that line on an interruptible basis. Also, as some charges associated with firm service would not apply, the service would be provided at a lower cost to the users, thereby improving the economic feasibility for new embedded storage.

There was no evidence before the Panel that forcing an interruptible service only for transportation related to storage would enhance the prospects of more embedded storage in the Province. What is before the Panel is the submission by Counsel to Tribute that neither the Tribute nor Northern Cross project will be viable without firm transportation service, and the submission by True Oil, a potential storage developer in Ontario, that it regards firm service as a requirement on its part to be able to move gas in an out of storage any particular day.

While the Board is not bound by third party contracts, the Board strives not to unnecessarily frustrate pre-existing commercial arrangements. The Panel is not convinced that the position of Northern Cross, in this instance, would serve the public interest. The Board's first-come-first-serve principle espoused by the Board in the EBO 188 guidelines have served the industry well over the years and should continue to apply until the Board replaces those guidelines.

The Panel finds that the proposed introduction of an interruptible transportation service for storage as an option, while maintaining a firm service offering, is reasonable and provides the greatest flexibility to customers.

<u>Should there be a differentiation of transportation service between west and east of Dawn?</u>

Union's proposed M16 rates differentiate between transportation west and east of Dawn and apply different demand charges. The proposed demand charge for west of Dawn is 1.049 cents per gigajoule compared to a proposed demand charge of 0.726 cents per gigajoule east of Dawn.

Enbridge argued that the proposed east-west differentiation is an artificial boundary and it would tilt the playing field regarding the development of storage fields in Ontario. The

Board notes that Enbridge did not pursue this matter through the filing of evidence or through the interrogatory process and raised the issue for the first time in argument. The Board also notes that the proposed Transportation Commodity Charge component of the rate is identical in both the east of Dawn and west of Dawn rates.

The Panel notes that transportation service west of Dawn utilizes capacity on the Panhandle transmission system between Ojibway and Dawn and the proposed demand charge is equivalent to the demand charge in the C1 rate schedule that applies for transportation service between Ojibway and Dawn. M16 service to and from the Chatham 7-17-XII storage pool utilizes capacity that could otherwise be used to provide firm C1 transportation service from Ojibway to Dawn. In contrast, for east of Dawn embedded storage uses the Dawn-Trafalgar transportation system. To derive the east of Dawn transportation charge for M16, Union used the easterly Dawn to Parkway M12 transportation rate and adjusted it for distance to reflect the fact that the Dawn-Trafalgar system is only being used as far as the Stratford lateral and to recognize that these demands are only for the summer injection period.

The Panel does not therefore accept that the east-west differentiation is an artificial boundary. Rather, it is based on a sound rationale in the given circumstances.

<u>Should there be a contribution to fixed costs for assets not caused by storage customers?</u>

Union allocates demand-related costs between in-franchise and ex-franchise customers in proportion to distance weighted design day demand. Under this method no costs related to the use of the Dawn-Trafalgar transmission system would be allocated to storage providers located in Huron County since they do not add to the design day demands on that system in the winter. It is Union's view however that M16 customers located in Huron County should pay a demand charge reflecting their use of the Dawn-Trafalgar transmission system in the summer. Union proposed a demand charge of 0.726 cents per gigajoule.

Union also proposes to charge all M16 customers 2.5 cents per gigajoule for transportation services from the pool to Dawn. This rate is equivalent to the commoditized cost of the Dawn-Trafalgar transmission system excluding Dawn compression for in-franchise customers.

Tribute's position is that these value-of-service charges apply to notional flows in both directions on the Dawn-Trafalgar line, even though the gas physically flows in only one direction. Mr. Fisher, a witness for Tribute, testified that in his view there should be no contribution at all by embedded storage operators. Mr. Knecht, also a witness for Tribute, testified that the contribution should be lowered. Mr. Knecht also suggested that the Union's proposal results in a much higher contribution for embedded storage east of Dawn compared to west of Dawn. True Oil was the only party that supported Tribute's position.

Tribute did not effectively refute the proposition that, although a customer may not have caused the fixed costs to be incurred in the first place, that customer should still be contributing to the recovery of such fixed costs if it makes use of the assets. This principle has been reflected in past decisions by this Board. The Board also agrees with Union and other parties that, with respect to the question of notional flow versus physical flow, it should be the contractual arrangements that govern ratemaking, not the physical movement of gas.

While there is some discretion exercised by Union in attributing certain fixed costs to the M16 class that are not directly caused by customers served under that class, Union has satisfied the Panel that its proposed demand charge of 0.726 cents per gigajoule for east of Dawn is reasonable given that it starts from existing demand charges on Dawn Trafalgar, adjusted to reflect distance and seasonality of the firm demand. Union's proposal reflects the fact that demand charges do tie-up capacity. With respect to commodity charges, the Panel notes that the proposed 2.5 cents per gigajoule commodity charge is the lowest transmission-related unitized cost that Union has anywhere in any of its delivery rates.

<u>Should any fuel system benefits from embedded storage be streamed to embedded storage?</u>

Mr. Knecht testified and Tribute argued that Union's proposal does not recognize the fuel cost savings associated with winter counter-flows as it is based on a notional flow from the pool to Dawn during the winter season. During the winter (withdrawal) season, gas will not physically flow back to Dawn; rather it will be consumed in the local distribution area. Therefore the fuel component of the Dawn-to-pool charge should be offset by an equal pool-to-Dawn fuel credit for volumes withdrawn from the pool and used to serve Union's local customers.

Union and other parties recognized that there may be fuel cost savings but any such savings should not be applied to an individual customer. The Panel agrees. The Board has in recent decisions declined to stream benefits that arise from one customer to that customer. In the case of the Delivery Commitment Credit that previously applied to direct purchase customers who were obligated to provide firm deliveries 365 days a year to specified points on Union's system, the Board directed that this credit be phased out.

In its recent decision RP-2003-0063 in respect of a request to stream a benefit to local gas producers served under Union's M13 rate schedule, the Board stated as follows:

> Union operates a fully integrated gas distribution system. Its operation is dependent upon the maintenance of a balanced series of inputs and outputs. Gas supplied by Ontario producers necessarily augments and displaces other sources of supply within the pipeline. The fact that any given producers' gas contribution to the system may be withdrawn prior to the end point of the distribution system should not result in any particular or preferential treatment. It is impractical and inefficient to attempt to track specific gas molecules within the system in order to tune transportation charges according to presumed and unverifiable distances. Such a practice would be inconsistent with the most cost effective operation of a fully integrated broad service distribution network.

The Board's findings in that case are equally applicable in the instant case on the issue of streaming any benefits resulting from the physical, rather than the contractual flows of gas.

Are the allocated unaccounted-for gas costs reasonable?

Unaccounted-for gas volumes include those associated with the transportation of gas, plus those gas volumes associated with storage. Union allocates unaccounted-for gas costs on a volumetric basis. The proposed unaccounted-for gas charge is 2.9 cents per gigajoule. While there was conflicting evidence as to the number of passes which attracted unaccounted-for gas charges for M16 customers, Mr. Knecht's suggestion is that unaccounted-for gas costs be charged to M16 customers once only on the basis of the physical, not the contractual flows. This position was rejected by Union and most Intervenors on the grounds that it is the contractual, not the physical flow that should drive cost allocation and ratemaking. The Board reiterates that it is the contractual, not the physical flows that should govern ratemaking.

Further, the Panel is satisfied on the evidence that no portion of unaccounted-for gas costs allocated to Union's own storage is allocated to M16 customers in Union's proposal, as Tribute claims.

CONCLUSION AND ORDER

The Panel finds that Union's proposed changes to its current M16 rate schedule and proposed rates and charges are reasonable and are hereby approved. The Board orders that the attached M16 rate schedule shown in Appendix B shall be effective June 1, 2005.

The Panel awards Intervenors eligible for cost awards 100% of their reasonably incurred costs. The final awards shall be fixed following the Board's cost assessment process.

DATED at Toronto on May 19, 2005

Original Signed By

Paul Vlahos
Presiding Member

Original Signed By

Paul Sommerville
Member

Original Signed By

Pamela Nowina
Member

THE PROCEEDING

RP-2003-0063/EB-2004-0542

May 19, 2005

THE PROCEEDING

On February 1, 2005, the Board issued a Notice of Written Hearing and Procedural Order No. 1 setting out the following deadlines:

- February 4, 2005, for the filing of any objections to proceeding by way of written hearing;
- February 10, 2005, for the filing of written interrogatories to the Applicant;
- February 17, 2005, for the filing of the Applicant's interrogatory responses;
- February 28, 2005, for the filing of Intervenors' submissions; and
- March 7, 2005, for the filing of the Applicant's reply submissions.

On February 4, 2005, the Board received a letter from Tipperary seeking an amendment to Procedural Order No. 1, allowing for a settlement conference and, possibly, an oral hearing of the evidence in the proceeding.

On February 9, 2005, the Board issued Procedural Order No. 2, which made provision for convening a Settlement Conference on February 24, 2005, with the objective of reaching a settlement among the parties on as many of the issues as possible.

On February 10, 2005, parties filed interrogatories to Union. On February 17, 2005, Union provided responses to these interrogatories.

On February 17, 2005, Tribute informed the Board that it was submitting "supplementary Interrogatories" and, further, that it intended to file evidence in the proceeding.

On February 22, 2005, the Board issued Procedural Order No. 3, which set out the following deadlines:

- February 24, 2005, for Union to file responses to Tribute's "supplementary Interrogatories;
- March 3, 2005, for the filing of intervenor evidence;
- March 8, 2005, for filing interrogatories on intervenor evidence;

- March 15, 2005, for filing responses on interrogatories on intervenor evidence; and

- March 18, 2005, as the date of the re-scheduled Settlement Conference.

In response to Procedural Order No. 3, the Board received written evidence prepared by Bob Knecht and Jamie Fisher on behalf of Tribute.

By letter dated March 1, 2005, Northern Cross asked the Board to make allocation of capacity an issue in this proceeding.

On March 4, 2005, the Board invited submissions in respect of Northern Cross' request, setting March 9, 2005, as the deadline for any such submissions.

The Board received submissions on Northern Cross' request from Union on March 8, 2005; the Industrial Gas Users Association on March 9, 2005; and Tribute on March 9, 2005. Northern Cross filed a response to these submissions on March 14, 2005.

On March 18, 2005, the Board issued Procedural Order No. 4 which accepted capacity allocation as an issue in this proceeding and set the following dates:

- April 5, 2005, as the deadline for filing any agreement arising out of the Settlement Conference; and

- April 12, 2005, as the date for an oral hearing to deal with any matters arising from the Settlement Conference and to hear any remaining unresolved issues.

The Settlement Conference was held on March 18, 2005. The following parties participated: Union, MHP, True Oil LLC, TransCanada PipeLines, Northern Cross, the Vulnerable Energy Consumers Coalition, the London Property Management Association and the Wholesale Gas Service Purchasers Group, EGDI, Tribute, the Industrial Gas Users Association, and the Federation of Northern Ontario Municipalities.

By letter dated March 21, 2005, Union informed the Board that parties to the Settlement Conference were unable to reach agreement on any issue in the proceeding.

The oral hearing commenced on April 12, 2005, and concluded on April 13, 2005.

PARTICIPANTS AND THEIR REPRESENTATIVES

Below is a list of participants and their representatives that were active either at the oral hearing or at another stage of the proceeding. A complete list of Intervenors is available on the record.

Board Counsel and Staff	Mike Lyle James Wightman
Union Gas Limited	Crawford Smith Michael Packer Bryan Goulden
London Property Management Association and the Wholesale Gas Service Purchasers Group	Randy Aiken
Vulnerable Energy Consumers Coalition	Michael Janigan Joyce Poon
Industrial Gas Users Association	Vince DeRose Peter Thompson
Tribute Resources Ltd.	Peter Budd Bob Knecht Jamie Fisher
Northern Cross Energy	Joni Paulus Bill Farquhar
True Oil	Frank Gentry
Enbridge Gas Distribution Inc.	Robert Rowe
TransCanada PipeLines	Murray Ross

WITNESSES

There were 6 witnesses who testified at the oral hearing.

The following Union employees appeared as witnesses at the oral hearing:

Michael Broeders	Manager, Product and Services Costing
Mark Kitchen	Manager, Rates and Pricing
Steve Poredos	Director, Capacity Management
Chuck Legg	Manager, Distribution Planning

Tribute called the following witnesses:

Robert Knecht	Industrial Economics, Principal
Jamie Fisher	Consultant

M16 RATE SCHEDULE

RP-2003-0063/EB-2004-0542

May 19, 2005

STORAGE AND TRANSPORTATION SERVICES
TRANSPORTATION CHARGES

(A) Availability

The charges under this rate schedule shall be applicable for transportation service rendered by Union for all quantities transported to and from embedded storage pools located within Union's franchise area and served using Union's distribution and transmission assets.

(B) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher or lower than the identified rates.

a) Charges Applicable to both Firm and/or Interruptible Transportation Services:

Monthly Fixed Charge per customer station ($ per month) (1)	$525
Transmission Commodity Charge to Dawn ($ per GJ)	$0.025

	Customers located East of Dawn	Customers located West of Dawn
Transportation Fuel		
Fuel Charges to Dawn:		
Commodity Rate - Union provides fuel ($ per GJ)	$ 0.029	$ 0.029
Fuel Ratio - customer provides fuel (%)	0.351%	0.351%
Fuel Charge to the Pool		
Commodity Rate - Union provides fuel ($ per GJ)	$0.037	$0.044
Fuel Ratio - customer provides fuel (%)	0.447%	0.533%

b) Firm Transportation Demand Charges: (2)

	Customers located East of Dawn	Customers located West of Dawn
Monthly Demand Charge applied to contract demand ($ per GJ)	$ 0.726	$ 1.049

Authorized Overrun:

The authorized overrun rate payable on all quantities transported in excess of Union's obligation any day shall be:

	Customers located East of Dawn	Customers located West of Dawn
Firm Transportation:		
Charges to Dawn		
Commodity Rate - Union provides fuel ($ per GJ)	$ 0.078	$ 0.088
Commodity Rate - customer provides fuel ($ per GJ)	$ 0.049	$ 0.059
Fuel Ratio - customer provides fuel (%)	0.351%	0.351%
Charges to the Pool		
Commodity Rate - Union provides fuel ($ per GJ)	$0.061	$0.078
Commodity Rate - customer provides fuel ($ per GJ)	$ 0.024	$ 0.034
Fuel Ratio - customer provides fuel (%)	0.447%	0.533%

Overrun will be authorized at Union's sole discretion.

Unauthorized Overrun

Authorized Overrun rates payable on all transported quantities up to 2% in excess of Union's contractual obligation.

The Unauthorized Overrun rate during the November 1 to April 15 period will be $50 per GJ for all usage on any day in excess of 102% of Union's contractual obligation. The Unauthorized Overrun rate during the April 16 to October 31 period will be $9.373 per GJ for all usage on any day in excess of 102% of Union's contractual obligation.

Charges aforesaid in respect of any given month in accordance with General Terms & Conditions shall be payable no later than the twenty-fifth day of the succeeding month.

Notes for Section (B) Rates:

(1) The monthly fixed charge will be applied once per month per customer station regardless of service being firm, interruptible or a combination thereof.

(2) Demand charges will be applicable to customers firm daily contracted demand or the firm portion of a combined firm and interruptible service.

(C) Terms of Service

General Terms & Conditions applicable to this rate schedule shall be in accordance with attached Schedule "A".

Effective XXXXXXXX 200X
O.E.B. ORDER #RP-2003-0063, EB-2004-0542 Chatham, Ontario

Supersedes RP-2003-0063 Rate Schedule effective January 1, 2004.