FOLLOW-UPSAND COMPLEMENTARY<br>I NFORMATION TOTHESUPPLY, TRANSPORTATION, ANDLOAD-BALANCING SERVICES REVIEW

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## INTRODUCTION

In the evidence in Gaz Métro-5, Document 1 on supply, transportation, and load-balancing services and Gaz Métro-5, Document 2 on interruptible service, Gaz Métro Limited Partnership ("Gaz Métro") proposed changes related to the functionalization and pricing of supply costs for the franchise. In addition to the work presented in these exhibits, Gaz Métro took advantage of the overall exercise to review other items specific to the supply, transportation, and loadbalancing services.

This exhibit describes all of the additional analyses performed as part of Phase 2.
The topics analyzed in this exhibit include the following follow-ups and complementary information:

- Notice of entry or withdrawal from the transportation service and MAO (section 1);
- Supply costs to transfer to load-balancing (section 2);
- Processing of stranded costs (section 3);
- Parameter calculation period (section 4);
- Minimum and maximum load-balancing rates (section 5);
- Thresholds for customized calculation (section 6);
- Evaluation of peak load for customers on a monthly reading cycle (section 7);
- Pricing mechanism for non-uniform deliveries (section 8);
- Supplement for peak service (section 9).


## 1 NOTICE OF ENTRY OR WITHDRAWAL FROM THE TRANSPORTATION SERVICE AND MAO

In spring 2013, several major customers expressed their desire to once again avail themselves of Gaz Métro's transportation service. At that time, article 13.1.4.1 ${ }^{1}$ of the Conditions of Service and Tariff on the notice of entry stipulated that customers had to inform Gaz Métro of this in writing at least 60 days in advance. However, the customers' return could have forced Gaz Métro to purchase more transportation tools, thereby impacting costs. As a result, the

[^0]article was modified such that a customer wishing to avail itself of the distributor's transportation service at the earliest on November 1 must so notify the distributor in writing before the previous March $1^{2}$. This deadline allowed Gaz Métro to account for customer switches in the gas supply plan and therefore implement a transportation rate that better reflected the costs.

In the 2015 rate case, an additional change to the section was proposed to allow a customer to return to the transportation service, even if the March 1 deadline was not met, provided Gaz Métro is able to accept the customer ${ }^{3}$. The objective of this was to be able to take back a customer in cases where this would benefit the other customers, but also to allow Gaz Métro to assume its role as last resort supplier. According to the distributor, the rule on notices of entry to the transportation service should not prevent Gaz Métro from fulfilling its obligation to supply and deliver natural gas to anyone who requests it in the territory served by its distribution system.

In the 2015 Rate Case, Gaz Métro also proposed changes to the notices of withdrawal from the transportation service in order to adapt to the new TCPL rules (2-year renewal notice before contract maturity dates, 15-year term for new transportation contracts between Parkway and the franchise, and 5-year term for all contracts held on this section from the effective date of the new capacities). Article 13.1.4.2 ${ }^{4}$ was modified at the time to request a 60 -day notice for all customers who wanted to leave the distributor's transportation service with assignment of transportation capacity, and to suspend the clause allowing the customer to withdraw from the distributor's service without assignment of transportation capacity. It was also proposed that the assigned transportation capacity be that corresponding to the M12 (Dawn-Parkway) and SH (Parkway-GMIT EDA/NDA) tools with a residual duration as close as possible to the total average residual duration of the contracts available for assignment ${ }^{5}$.

In its decision D-2015-181, the Régie de l'énergie (the "Régie") approved the changes to the Conditions of Service and Tariff on the notices of entry or withdrawal from the distributor's transportation service. However, it asked Gaz Métro to review the notion of profitability surrounding the entry and withdrawal conditions, and to form a working group with stakeholders to discuss the potential improvements to the existing terms.

[^1]Application relating to the allocation of costs and rate structure of Gaz Métro, R-3867-2013
"[73] With respect to the conditions of entry and withdrawal from the Distributor's transportation service, the Régie asks Gaz Métro, in the next rate case, to provide an analysis on the concrete application of the notion of overall profitability, i.e., for the supply, transportation, load-balancing, and distribution services, over the term of the transportation contract, based on profitability criteria, objectives and their application, as requested by the CFIB. This profitability must be reconciled with the Gaz Métro's obligation to provide service.
[74] The Régie understands the IGUA's concerns about the changes to the Distributor's transportation service conditions, which prevent customers from availing themselves of favourable market conditions.
[75] The Régie asks Gaz Métro to form a working group with representatives from all customer categories to evaluate the conditions of notices of entry or withdrawal from the Distributor's transportation service, taking into account the current environment. a report on the potential improvements will have to be submitted with the next rate case."

During this meeting on February 26, Gaz Métro presented the new rules proposed in this exhibit.

### 1.1 POSITIONS OF STAKEHOLDERS

In request R-3879-2014, certain stakeholders commented on the changes proposed by Gaz Métro to the notices of entry or withdrawal from the transportation service. Their positions are presented in the following sections.

### 1.1.1 The Industrial Gas Users Association (IGUA)

In its exhibit ${ }^{6}$, the IGUA agrees with Gaz Métro's proposal regarding the notice of entry.
However, with respect to the notice of withdrawal, it considers the mandatory assignment of capacity to run counter to the principles of a deregulated market and that it prevents customers from availing themselves of favourable market conditions.

The IGUA expresses its concerns on pages 21 and 22 of exhibit IGUA-0050-3879:

> " [13] The IGUA cannot support this change, which it considers discriminatory and which runs counter to the principles of a deregulated market, in that it prevents customers from availing themselves of the favourable market conditions that allow them to stay competitive."
> "The IGUA encourages access to the secondary market, which provides customers with operational flexibility. By suspending customers' right to avail themselves of the secondary market, Gaz Métro is violating the spirit of an open market.

[^2]Accordingly, the IGUA opposes the change proposed in Section 2.3.2. "

### 1.1.2 Canadian Federation of Independent Business (CFIB)

For its part, regarding the notice of entry, the CFIB is concerned about Gaz Métro's flexibility in terms of agreeing or not agreeing to allow customers to return who do not respect the March 1 deadline and about the impact that a lack of transportation can have on all customers:
"In the current situation in which Gaz Métro is unable to guarantee sufficient supply to meet the demand in 2016, the possibility of providing the transportation service cannot be guaranteed and involves an exceptionally high level of uncertainty.

The CFIB considers it unwise by Gaz Métro—and contrary to public interest-to allow these switches and transfers when the latter pose a threat to the supply security for all customers and when the Conditions of Service and Tariff give Gaz Métro the tools needed to refuse them. " ${ }^{7}$

The CFIB also adds that the notion of profitability already inherent to notices of withdrawal should be added to notices of entry and recommend that this notion be defined more precisely:
"[The CFIB recommends]

- Integrating the notion of profitability into clause 13.1.4.1 in order to protect customers of the distributor's transportation service against market arbitrage by customers.
- Ensuring that the notion of profitability is given a practical, concrete application by imposing switching fees or another solution that avoids transferring costs to customers of the distributor's transportation service."

In the case of the notice of withdrawal, the CFIB is not opposed to the rule proposed by Gaz Métro.

### 1.2 Entry to the transportation service

In order to respond to the concerns expressed by the stakeholders concerned, Gaz Métro proposes reviewing the rules governing notices of entry to the transportation service in order to find a compromise between protecting the current customers and the option of offering customers flexibility.

[^3]
### 1.2.1 Règles actuelles

Le préavis d'entrée actuel prévu aux Conditions de service et Tarif est le suivant :
«12.1.4.1 Préavis d'entrée
Le client qui désire se prévaloir du service de transport du distributeur au plus tôt le $1^{\text {er }}$ novembre doit en informer ce dernier par écrit avant le $1^{\text {er }}$ mars précédent. Nonobstant le respect ou non par le client du préavis exigé au présent article, le client ne pourrait se prévaloir du service de transport du distributeur que s'il était possible pour le distributeur de le lui fournir. "

As such, if a customer wishes to avail itself of Gaz Métro's transportation service, at the earliest November 1, and it informs the distributor:

- Before March 1: Gaz Métro will accept the customer.
- After March 1: Gaz Métro will accept the customer if it is able to provide the customer with transportation.

Moreover, given the conditions currently in effect, a customer's return to the distributor's transportation service depends on Gaz Métro's ability to provide the customer with transportation. The notion of profitability does not apply to this section.

Gaz Métro feels that the notion of profitability is not an item that should be added to the conditions. When a customer switches from one service to another, this can have a more or less significant impact on costs (increase or decrease). Therefore, it becomes complicated, or even impossible, to isolate the direct impact of a switch by one customer in particular. Moreover, the supply tools are contracted globally, since the supply structure is designed to meet demand as a whole.

Gaz Métro wishes to establish a clear and simple rule that would apply at all times to encourage customers to notify the distributor before March 1, rather than a rule that would cover the stranded costs that could be generated by certain switches.

### 1.2.2 Proposed rules

Gaz Métro proposes charging late fees to customers who submit their application to return to the transportation service after March 1.

The purpose of these fees would not be to cover all the costs attributable to the customer announcing its return after the deadline. In fact, these costs cannot be separated by customer and are not necessarily higher than for a customer that meets the March 1 deadline. The late fees would therefore not be evaluated based on the costs generated by the customer due to its return to the transportation service, but would be set sufficiently high so as to encourage customers to submit their application before March 1.

As previously mentioned, respecting the March 1 deadline is advantageous for Gaz Métro because it allows the distributor to include the switches in the transportation rate for the coming year. This means that the rate calculated at the time of the rate case is the best representation of the anticipated transportation costs.

The fees would represent a $20 \%$ increase in the effective transportation price, applicable over the subsequent 12 months. As such, a customer that wishes to return to the distributor's transportation service, but which submits its application after March 1, would be subject to the following adjusted transportation price:

Prix de transport ajusté= Prix Tx (1+20\%)
où Prix $T=$ Prix du transport du service du distributeur (article 12.1.2 des CST).

The price adjustment would apply over the 12 months following the customer's return to the transportation service. It would also apply whether or not the customer's return to the distributor's transportation service benefits the existing customers. The notion of profitability would therefore not need to be added to this article.

In any case, the customer's return would be conditional on the availability of the additional capacity required.

In order to determine the overcharge on the adjusted transportation price, Gaz Métro relied on a marketing study on customer price sensitivity, conducted by Extract in $2013^{8}$. This study confirmed that for "Major industries" customers, namely customers that are most likely to switch from one service to another, a variation of more than $5 \%$ of the total

[^4]bill caused a shift in attitude from discomfort to irritation. However, a $20 \%$ increase in the transportation rate represents approximately a $5 \%$ increase in the total bill for this customer category.

The results of this analysis show that by applying a $20 \%$ increase in the transportation price over a period of 12 months, the late fees will be high enough to deter customers from missing the notice deadline. Customers who feel this price is too high and who have passed the deadline could wait until the following year before returning to the distributor's transportation service.

Gaz Métro also attempted to estimate the late fees based on the difference between its transportation rate and the price on the secondary market, since a customer's return could lead to the purchase of transportation capacity on this market. However, since this price is highly volatile, especially depending on the period in question, it was difficult to determine a logical adjustment overcharge. This approach was therefore not retained.

Gaz Métro is asking the Régie to approve the charging of late fees corresponding to 20\% of the transportation price in effect in the Conditions of Service and Tariff in cases where the March 1 deadline for the notice of entry is not respected.

### 1.3 Withdrawal from the transportation service

In an effort to respond to the concerns expressed by the stakeholders involved and to find a compromise between protecting current customers and the option of offering customers flexibility, Gaz Métro proposes reviewing the current rules governing withdrawal from the transportation service, mainly in terms of the assignment of capacities.

### 1.3.1 Notice of withdrawal

The current article on notices of withdrawal stipulates the following:
«12.1.4.2 Préavis de sortie
Sous réserve de l’article 12.2.1, le client qui ne désire plus se prévaloir du service de transport du distributeur pour fournir le service lui-même doit en informer ce dernier par écrit au moins 60 jours à l'avance.

Nonobstant le respect ou non par le client du préavis exigé au présent article, ce dernier ne pourrait se retirer du service de transport du distributeur que s'il était rentable et opérationnellement possible pour le distributeur de l'accepter. "

Currently, a customer who wishes to opt out of the distributor's transportation service, in order to provide the service itself, must so notify the distributor in writing at least 60 days in advance. The customer may opt out of the distributor's transportation service only if it is economically and operationally possible for the distributor to agree to it.

In the event the distributor does not end up with a transportation surplus related to the customer opting out of its transportation service, the customer could provide the service itself, without being assigned the transportation capacities held by the distributor.

Gaz Métro proposes maintaining the minimum 60 days' notice prior to the assignment of transportation capacities taking effect, as well as the suspension of the clause allowing the customer to opt out from the distributor's transportation service without assignment of capacity. The reasons for implementing these rules, which were outlined in the 2015 Rate Case ${ }^{9}$, still apply.

However, Gaz Métro proposes that the notion of profitability be removed from the section. The stranded costs related to a customer who opts out of the distributor's transportation service are difficult to quantify, for the same reasons as those listed in the section on notices of entry. However, the fact of no longer referring to profitability must not result in greater risk for customers of the distributor's transportation service. Therefore, it is important to implement rules to reduce the possible impacts of customer switches. These rules will be presented in section 1.4.

Gaz Métro is asking the Régie to approve the removal of the notion of profitability from the rules governing withdrawal from the distributor's transportation service.

### 1.3.2 Assignment rules

A customer who wishes to opt out of the distributor's transportation service will be permanently assigned, starting on November 1, 2016, the transportation capacity already held for it by the distributor. The assigned capacity comes from M12 (Dawn-Parkway) and SH (Parkway-EDA) contracts with a residual term as close as possible to the

[^5]average residual terms for these contracts. As at November 1, 2016, the average term of SH Parkway-EDA contracts will be 13.6 years, and assignment would be made starting with 15-year contracts.

Gaz Métro proposes that the assignment rules be amended to shorten to 5 years the period during which transportation capacities could be assigned. a shorter assignment period would give customers more flexibility. Since the assignment would be shorter, Gaz Métro would however assign contracts based on their price rather than their term. As such, the capacity assigned would probably come from an SH (Dawn-EDA) contract, which is more costly than M12 (Dawn-Parkway) and SH (Parkway-EDA) contracts. However, at the time of the assignment, in addition to price, Gaz Métro should evaluate what is best to assign based on its portfolio of supply plan tools.

The capacities assigned could come from contracts with a term other than 5 years. If a longer contract were assigned, the portion exceeding 5 years would then be permanently reassigned to Gaz Métro. a combination of contracts with shorter terms could also be assigned.

As its first option, Gaz Métro would prioritize a permanent assignment of the capacity. However, in order to make a permanent assignment, a financial guarantee could be requested by TCPL based on the customer's credit rating. If the customer were unable to make such a financial guarantee, the second option would apply, i.e., a temporary assignment. Although a temporary assignment would mean that Gaz Métro would be responsible to TCPL for nonpayment by the customer, the distributor would ensure that clear contract terms are in place holding it harmless by customers under similar circumstances.

Through its Conditions of Service and Tariff, Gaz Métro would also retain the right of first refusal on the capacity assigned to a customer that wants to permanently opt out. This measure, which is currently in place, allows the distributor to ensure access to all regular capacity not used by customers.

The volume of capacity assigned to the customer would be evaluated based on the customer's average annual consumption to reflect the volume that Gaz Métro contracts for transportation for this customer. The annual consumption used to calculate the
assignment for year $t$ would be the maximum between: a actual year $t-1$, a projected year t-1, and a projected year t , multiplied by 365 .

The proposed assignment rule would therefore give customers who wish to withdraw from the distributor's transportation service more flexibility, since the assignment would be for 5 years and would be permitted at all times, if Gaz Métro were able to accept it. Customers would therefore be able to take advantage of market opportunities, thus respecting the principle of unbundling.

Once again, despite this increased flexibility offered to customers, Gaz Métro also wants to implement rules aimed at limiting customers possibly switching back and forth of between the distributor's transportation service and their own service. These limitations could take the form of stricter MAOs. The changes proposed to the transportation MAOs are addressed in section 1.4 of this document.

As such, insofar as the rules for opting in to the distributor's transportation service, as well as the rules applicable to the MAOs, are tightened, Gaz Métro feels that a decrease in the assignment period is reasonable.

Note that these notice rules could only be implemented before the 2018 Rate Case. In fact, until October 31, 2017, Gaz Métro must keep the FTLH transportation capacities between Empress and its territory in excess of the 85,000 GJ/day expected further to the agreement negotiated between TCPL and the eastern distributors (Enbridge, Union Gas, and Gaz Métro), hereinafter called the "Agreement." This temporarily creates upward pressure on Gaz Métro's transportation rate compared to that on the primary market. By changing the notice rules now, customers would have an incentive to opt out of the distributor's transportation service. The current rules protect customers against such moves because a customer who switches would have to leave with a 15-year contract.

As of November 1, 2017, the FTLH capacities will be reduced to the minimum level established in the Agreement (85,000 GJ/day). At the moment, customers who opt out of Gaz Métro's transportation service will still be charged for maintaining this ${ }^{10}$ minimum capacity, in compliance with the Régie's decision. Gaz Métro's price will likely be

[^6]comparable to the price a customer would pay with its own service. The new rules governing notices of withdrawal will then apply.

Gaz Métro is asking the Régie to approve the new transportation capacity assignment rules and that the latter be implemented by November 1, 2017, at the earliest.

### 1.4 MAO

In decision D-2014-065, the Régie asked Gaz Métro to review the rules surrounding MAOs in the transportation service. It was concerned about how rates could be affected by the closure of a customer for whom a significant amount of supply plan tools had been contracted. It also felt that an annual declining MAO would not sufficiently protect customers.

The rules surrounding MAOs were therefore reviewed to address the Régie's concerns and to account for changes to the notices of entry and withdrawal and the assignment rules.

### 1.4.1 Current rules

The MAOs for the transportation service are currently applicable to all customers with rates $D_{3}, D_{4}$ and $D_{5}{ }^{11}$. For customers with stable volume rates, the MAO corresponds to $78 \%$ of the annual projected volume or the volume for the previous year. If the volumes decrease from one year to the next such that they are always lower than the MAO for the previous year, then the MAO is readjusted downward. When this situation occurs over the entire term of a 5 -year contract, the MAO in the fifth year is set at a rate that corresponds to $29 \%$ of the volumes projected in the first year of the contract.

| Année | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| OMA | $78 \%$ | $78 \% \times 78 \%=61 \%$ | $61 \% \times 78 \%=47 \%$ | $47 \% \times 78 \%=37 \%$ | $37 \% \times 78 \%=29 \%$ |

[^7]For interruptible rate customers, the MAO applicable for each contract year is equal to the annual projected volume, multiplied by the agreed upon MAO percentage. The latter is chosen by the customer and can vary from 0 to $85 \%$.

The distributor can lower customers' MAO invoice if it was able to extricate itself, in whole or in part, from its own obligations regarding the transportation service.

In their current form, MAOs cannot recover all of the stranded costs and do not represent a significant proportion of transportation revenue, as illustrated in the following table.

Tableau 1
Lien entre les OMA et les coûts échoués au service de transport

| Année | OMA <br> (M\$) | Revenus de transport <br> (M\$) | Proportion <br> (\%) | Coûts échoués <br> (M\$) |
| :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) $=(1) /(2)$ | (4) |
| 2005 | 3,6 | 228,9 | 1,6 | 1,4 |
| 2006 | 3,6 | 190,5 | 1,9 | 1,0 |
| 2007 | 0,8 | 195 | 0,4 | 0,2 |
| 2008 | 0,5 | 235,9 | 0,2 | 2,9 |
| 2009 | 2,9 | 238,4 | 1,2 | 2,3 |
| 2010 | 2,4 | 266,6 | 0,9 | 6,9 |
| 2011 | 1,1 | 328 | 0,3 | 7,7 |
| 2012 | 1,5 | 319,3 | 0,5 | 1,0 |
| 2013 | 1,3 | 287,6 | 0,5 | 0,0 |
| 2014 | 1 | 303,5 | 0,3 | 0,8 |
| 2015 | 0,6 | 392,2 | 0,2 | 0,0 |

Sources ${ }^{12}$ : 2015 annual report, $R$-3951-2015.
MAO: Gaz Métro-9, Document 1, page 2, I.22. c.5.
Transportation revenue: Gaz Métro-9, Document 1, page 3, I.11, c.5.
Stranded costs: Gaz Métro-9, Document 2, page 1, I. $26, c .4$ + I.27,c. 4 + I.28,c. 4 + I.29, c.4.

The table above illustrates the link between MAOs and stranded costs. The stranded costs correspond to the difference between the actual FTLH transportation cost and the

[^8]revenues resulting from optimization transactions for FTLH transportation carried out throughout the fiscal year. We note a lack of correlation between the revenue from MAOs and the stranded costs. In their current form, the MAOs recover only the transportation costs arising from downward variations in the consumption of certain customers ${ }^{13}$.

However, the stranded costs are not influenced by this type of variation alone. Other factors can also generate stranded costs, including temperature variations and projected variances (see section 3 on this topic). Thus, as a tool, MAOs cannot currently fully recover the stranded costs associated with a decrease in the customer's consumption. Moreover, the MAOs apply, regardless of the change in stranded costs: Even if there were no stranded costs during a certain year, customers with a shortage would have to pay a transportation MAO. In decision D-2015-140 on the complaint by Novelis, the Régie acknowledged that it is impossible for Gaz Métro to distinguish the impact of decrease in a customer's consumption:
"[55] As mentioned by Gaz Métro, the Régie is of the opinion that the transportation MAO is a revenue stabilization tool used to limit the stranded costs related to unused transportation tools. In general, it is not possible at the end of the year to determine what caused the presence or absence of stranded costs related to unused transportation tools, such as demand uncertainties, the effects of weather, or volume shortages by customers subject to an MAO. As such, it is difficult for Gaz Métro to identify the impact of a customer's specific consumption profile on the transportation cost for the purpose of establishing the reduction."

Another characteristic of MAOs in their current form is that they cover only the average annual transportation volume (A), but not the total supply plan tools contracted for the customer's peak consumption (P) (if LF < 100\%).

[^9]Figure 1


When Gaz Métro contracts supply tools, it does so based on the projected demand on peak days for all customers and not on the average annual consumption. Since MAOs are currently based on customers' annual consumption, they are not an option for recovering the costs incurred in relation to peak consumption.

Moreover, Gaz Métro has a reduction clause in place that could lower the cost of MAOs. When Gaz Métro conducts FTLH transportation overage sales, the average unit revenue from these sales, made during the previous fiscal year, reduces the cost of the MAOs, regardless of the volume of transportation overage sold. This is a proxy of the value of replacing the capacities with consumptions not withdrawn by the customer.

### 1.4.2 Proposed rules

Transportation MAOs are revenue stabilization tools used to limit the stranded costs related to unused transportations tools. However, it was shown earlier that MAOs, in their current form, have no direct link to stranded costs and cannot recover them fully.

With the review of the conditions of entry and withdrawal from the transportation service, Gaz Métro is also seeking to mitigate the impacts of unused transportation capacities resulting from variations in customers' consumption profiles. This could be achieved by harmonizing the rules surrounding notices of withdrawal and the transportation MAOs.

The targeted customers are existing customers who could switch from one transportation service to another, or whose consumption profiles could vary significantly. The purpose
of the rule is not to bind potential customers for whom Gaz Métro might have to contract transportation capacities. Specific contractual agreements should be implemented to cover the risks inherent to such a situation.

Rather than require MAOs from all customers, Gaz Métro proposes imposing an MAO only on very large customers. The needs of these large customers can represent a significant portion of the total supply costs, and a decrease in their consumption could generate significant stranded costs, even though the latter cannot be precisely quantified.

Gaz Métro proposes that the MAO apply to customers whose peak need is greater than or equal to $30010^{3} \mathrm{~m}^{3}$ (this currently affects eight customers). This baseline represents close to $1 \%$ of needs for peak tools ${ }^{14}$.

The MAO would depend on the customers' maximum consumption during the year. Based on Figure 1, this means that the MAO would depend on parameter $P$ and no longer on parameter A, as is currently the case. In fact, the supply tools contracted depend on the customers' projected peak consumption. The higher the peak, the greater the capacities contracted. When a customer's peak needs drop, all other things being equal, Gaz Métro ends up with unused transportation capacities. This is why it is important to protect customers against significant fluctuations in supply costs.

Moreover, since the MAO would no longer be strictly related to the transportation service and would also concern the load-balancing service, it would apply for both the customers of the distributor's transportation service and those who provide their own service. It would also be identified in the Conditions of Service and Tariff as an element of the load-balancing service (see section 1.7).

## MAO for customers of the distributor's transportation service

For customers of the distributor's transportation service, the MAO would correspond to the minimum amount (in \$) to recover from the transportation and load-balancing services. It would be evaluated based on the supply costs

[^10]associated with the customer's actual or projected peak service ${ }^{15}$, assuming a stable profile. This amount would be multiplied by a fixed percentage of $75 \%$, corresponding to the portion of costs protected by the MAO.

The MAO would be compared to the revenues effectively generated by the transportation and load-balancing customer. In the case where these revenues are lower than the MAO, the customer would have to pay the difference to Gaz Métro.

The MAO would be calculated as follows:

$$
O M A_{t}(\$)=\left(\text { Prix } T_{t} \times \text { Volume annuel pointe } \times 75 \%\right)
$$

Où Prix $\boldsymbol{T}_{\boldsymbol{t}}=$ prix de transport du service de Gaz Métro à l'année $t$;
Volume annuel de pointe $=P \times 365$;
$\boldsymbol{P}=$ Max (Pointe réelle $t-1$; Pointe prévue $t-1$; Pointe prévue $t$ ).
For a new customer, a load addition, or even a customer returning to the distributor's transportation service (with projected $P \geq 30010^{3} \mathrm{~m}^{3}$ ), which would force Gaz Métro to contract additional transportation capacities, the MAO would be fixed for five years, without the possibility of a decline.

For all other customers (with projected $P \geq 30010^{3} \mathrm{~m}^{3}$ ), including new customers as of the sixth year, the MAO would be applied over the current year plus one year. The revenue from these customers would therefore be $75 \%$ guaranteed for two years.

## MAO for customers who provide their own transportation service

For customers who provide their own transportation service, the principle for determining the MAO would be the same, but the customer's projected or actual average annual consumption (as determined for the purposes of evaluating the transportation capacity to be assigned (see section 1.3.2)), would be subtracted from the annual peak consumption.

[^11]This would have the effect of applying an MAO for the load-balancing service. Using the same average annual consumption in the calculation as that used to determine the assigned capacity would avoid any withdrawal from the transportation service by customers wishing to extricate themselves from their minimum annual obligations.

The MAO would be compared to the revenue actually generated by the customer of the load-balancing service only. In the case where these revenues are lower than the MAO, the customer would have to pay the difference to Gaz Métro.

The duration of the MAOs would be the same as for customers of the distributor's transportation service, based on the customer's category.

The MAO would be calculated as follows:

OMA $_{t}(\$)=\left(\right.$ Prix $T_{t} \times$ Volume annuel pointe $\left.\times 75 \%\right)$
Où Prix $\boldsymbol{T}_{t}=$ prix de transport du service de Gaz Métro à l'année $t$;
Volume annuel de pointe $=(P-A) \times 365$;
$\boldsymbol{P}=$ Max (Pointe réelle $t-1$; Pointe prévue $t-1$; Pointe prévue $t$ );
$\boldsymbol{A}=$ Max (Consommation moyenne réelle t-1; Consommation moyenne prévue $t-1$; Consommation moyenne réelle $t$ ).

Note that customers who foresee a temporary increase in their peak consumption could avail themselves of the load-balancing rate optimization option. This rate option, proposed in exhibit Gaz Métro-5, Document 2, sets the recognized peak during the winter, which could eliminate or limit the MAO.

Finally, Gaz Métro proposes eliminating the notion of a reduction. The $75 \%$ MAO would ensure that $25 \%$ of the costs would have to be absorbed by the distributor. The revenue associated with the sale of transportation overages will partially offset the losses related to consumption decreases by all customers. Moreover, the customer could request an assignment of transportation tools in order to resell the transportation capacity itself and reduce its losses, in the event it felt that the residual value exceeded $25 \%$ of the total cost.


#### Abstract

Gaz Métro is asking the Régie to approve the elimination of transportation MAOs and to replace them with load-balancing MAOs applicable to customers with a peak need greater than or equal to $300 \mathbf{1 0}^{\mathbf{3}} \mathbf{m}^{3}$.


### 1.5 Simulations

Gaz Métro conducted a sensitivity analysis of the impact of changes to the withdrawal rules and the MAOs. The analysis in question helped to evaluate the potential impact on rates of the different scenarios and to determine how the proposed measures reduce this impact.

Gaz Métro based the simulations on the assumption that a large customer (the size of the distributor's largest customer) foresees a significant increase in its peak consumption over the coming years, meaning that Gaz Métro will have to contract primary transportation capacities for the customer. The capacities are contracted for 15 years, in accordance with TCPL rules.

Five scenarios were evaluated:

- Scenario A: The customer's consumption is as expected for the next 15 years; this scenario can also represent a 15-year assignment (current withdrawal rule) for a customer who opts out of the distributor's transportation service.
- Scenario B: The customer does not withdraw the contracted capacities and no measure is taken to minimize the stranded costs.
- Scenario C: The customer does not withdraw anything, but opts out of the transportation service with a 5 -year assignment.
- Scenario D: The customer does not withdraw anything, but is subject to the new MAO rules.
- Scenario E: The customer does not withdraw anything, but is subject to the current MAO rules.

The scenarios presented in Tableau 2 reflect an extreme situation in which the stranded costs would not be lowered by any increase in sales or resale strategy. The table therefore presents the maximum stranded costs.

## Tableau 2

Analyse de sensibilité des coûts échoués

| Scénario | Capacité supplémentaire à contracter chaque année ( $M m^{3}$ §) | Vol. annuel <br> $\left(M^{3}\right)$ | Revenus de Transport ${ }^{16}$ pour 15 ans <br> (M\$) | Pertes sur 15 ans (M\$) | Revenus d'OMA sur 5 ans $^{17}$ <br> (M\$) | Coûts échoués <br> (M\$) | Impact Tarifaire ${ }^{18}$ <br> $\left(\Phi / m^{3}\right)$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (7) | (8) |
| A | 170 | 170 | 122,7 | 0 | 0 | 0 | 0 |
| B | 170 | 0 | 0 | 122,7 | 0 | 122,7 | 2,2 |
| C | 170 | 0 | 40,9 | 81,8 | 0 | 81,8 | 1,5 |
| D | 170 | 0 | 0 | 122,7 | 38,3 | 84,4 | 1,5 |
| E | 170 | 0 | 0 | 122,7 | 20,6 | 120,6 | 1,9 |

The sensitivity analysis presents the measures taken independently and their impact on rates. Various alternatives are available to the distributor to minimize stranded costs. The rules proposed by Gaz Métro are part of these alternatives, but do not have this sole objective. With the conditions proposed in this document, Gaz Métro also aims to establish clear, simple, and easily applicable benchmarks that allow customers to take advantage of market opportunities without, however, triggering switches from one transportation service to another.

### 1.6 COMPARABLE PROCESSES

Gaz Métro conducted a review of Canadian gas distributors' rate conditions for switching transportation services. The information gathered by this rate watch is only partial, but it allowed Gaz Métro to validate its proposals compared to those of its peers.

Union Gas applies rules similar to those proposed by Gaz Metro, with the main objective being to maintain equity between customers in a context of unbundled services ${ }^{19}$ rather than respecting profitability criteria. Specifically, the Ontario distributor authorizes switches between different combinations of services if the operational capacity criteria is met. Finally, Union Gas

[^12]maintains discretionary power over the acceptance of switches between the different services in return for financial guarantees.

For its part, Enbridge Gas ${ }^{20}$ allows switches to its transportation service (bundled rate) or to the customer's transportation service (unbundled rate), if permitted by the system and storage operational capacity. Moreover, if the customer asks to switch without the required notice, Enbridge applies additional conditions ${ }^{21}$ (MAO rule and rule respecting balance between deliveries and customer's consumption) to maintain equity between customers.

At the moment, Fortis BC does not offer an unbundled transportation service comparable to that of Gaz Métro, and its unbundled service offer applies only to direct purchases ${ }^{22}$.

In conclusion, Gaz Métro notes firstly that the Canadian distributors who are subject to the rate watch mostly determine the acceptability of a switching application based on system capacity. Secondly, additional measures are in place to encourage customers to indicate their intention to switch (and to provide a date for the switch) in order to minimize the impacts on other customers. Nevertheless, it is important to point out that the regulatory context and the market conditions specific to each province make it more difficult to compare the various Canadian gas distributors' rate conditions for switching transportation services.

### 1.7 Changes to the Conditions of Service and Tariff

Changes would need to be made to the Conditions of Service and Tariff to account for the changes proposed to the entry and withdrawal rules and the MAOs.

To reflect the changes to the notice of entry to the transportation service, article 12.1.4.1 would need to be amended as follows:

[^13]
### 12.1.4.1 Préavis d'entrée

Le client qui désire se prévaloir du service de transport du distributeur au plus tôt le $1^{\text {er }}$ novembre doit en informer ce dernier par écrit avant le 1 er mars précédent. En deçà du préavis demandé, The customer will have to pay a $20 \%$ increase on the price stipulated in article 12.1.2.1 for the twelve months following its return to the transportation service. Notwithstanding to respect ou non par lo client du préavis exigé au présent articlece the foregoing, le client ne pourrait se prévaloir du service de transport du distributeur que s'il était possible pour le distributeur de le lui fournir.

To reflect the change to the notice of withdrawal from the transportation service, article 12.1.4.2 would need to be amended as follows:

### 12.1.4.2 Préavis de sortie

Sous réserve de l’article 12.2.1, le client qui ne désire plus se prévaloir du service de transport du distributeur pour fournir le service lui-même doit en informer ce dernier par écrit au moins 60 jours à l'avance.
Nonobstant le respect ou non par le client du préavis exigé au présent article, ce dernier ne pourrait se retirer du service de transport du distributeur que s'il était-rentable et opérationnellement possible pour le distributeur de l'accepter.

Articles 12.2.3.1.1, 12.2.3.1.2, and 12.2.3.2 of the "Service provided by the customer" section of the transportation service would also need to be amended to reflect the proposed changes.

### 12.2.3.1.1 Durée du contrat de transport cédé

La capacité de transport cédée au client provient d'un des contrats de-:
$1^{\circ}$ "Service garanti-courte distance entre Parway et le territoire de Gaz Métro $\Rightarrow$ du distributeur, détenus auprès de TransCanada PipeLines Limited or Union Gas Limited The assignment of the transportation capacity is for five years, ayant une durée résiduelle la plus près possible de la durée résiduelle moyenne de l'ensemble des contrats du distributeur.
$2^{\circ}$ " M12 ontro Dawn et Parkway" du distributour, détonu auprès do Union Gas Limited, ayant une durée résiduelle la plus près de celle cédée entre Parkway et le territoire de Gaz Métro défini à l'alinéa 1.

### 12.2.3.1.2 Calcul de la capacité cédée

La capacité cédée au client correspond à la totalité de ses besoins annuels. La capacité cédée pour répondre à la totalité des besoins annuels du client est établie à partir du volume annuelmoyen des deux années précédant la cession ou, le cas échéant pour un nouveau client, à partir du volume annuel projeté, réel ou prévu, divisé par 365 jours.-Le volume annuel est normalisé pour la température pour les clients des tarifs de distribution $D_{1}$-et $D_{3}$.

### 12.2.3.2 Préavis d'entrée

Le client qui désire fournir son service de transport doit en informer le distributeur par écrit au moins 60 jours à l'avance.

### 1.8 Conclusion

Gaz Métro proposes reviewing the transportation service notices of entry and withdrawal and the rules surrounding MAOs. This comprehensive solution must be considered as a whole to ensure that Gaz Métro's objectives are met, i.e., to protect all customers against the impacts of
switching from one service to another, and to give flexibility to customers who want to take advantage of potential market opportunities. In fact, the proposed rules surrounding withdrawal from the transportation service give customers who want to opt out of the distributor's service more latitude, since the assignment would be for five years instead of 15 years, as is the case in the current rule. However, in some cases, this latitude could result in Gaz Métro offloading shorter-term capacities, which, under the current conditions, would result in less flexibility in terms of managing capacities in the event of a decrease in demand. By amending the rules surrounding the MAOs, Gaz Métro reduces the risk that stranded costs will affect rates for the distributor's customers.

Gaz Métro also feels it best to break away from the notion of profitability in the Conditions of Service and Tariff, to instead try to establish clear, straightforward rules that would be applicable at all times. The new proposed rules surrounding the notices of entry and withdrawal, as well as the MAOs, help to achieve this goal.

## 2 SUPPLY COSTS TO BE TRANSFERRED TO LOAD-BALANCING

In decision D-2015-177, the Régie approved the functionalization method for costs related to supply purchases when the purchases are made elsewhere than at the reference location. This functionalization method also included the calculation method for the load-balancing costs included in the supply.

Gaz Métro nevertheless reanalyzed the calculation method for costs to be transferred from supply to load-balancing.

### 2.1 CURRENT CALCULATION METHOD

The approved functionalization method for costs related to supply purchases includes a portion related to the seasonal costs included in the supply cost. In Schedule 6 of the exhibit Gaz Métro-5, Document 1, Gaz Métro analyzes the current method and concludes that the functionalization can be calculated based on average rates, which allows the supply cost without seasonality to be calculated separately from the costs related to purchases made elsewhere than at the reference location. Tableau 3 reproduces the table presented in section 1.3 of Schedule 6.

## Tableau 3

| COÜT DE FOURNITURE SANS SAISONNALITÉ |  |  |
| :---: | :---: | :---: |
| 1 | Prix réel des achats totaux \$/ Gj | 4,367 |
| 2 | Prix uniforme des achats totaux \$ / Gj | 4,250 |
| 3 | Écart \$ / Gj (L1-L2) | 0,116 |
| 4 | Volume d'achat totaux GJ | 80801291 |
| 5 | Portion Fourniture (L2 * L4) \$ | 343438623 |
| 6 | Portion Équilibrage (L3 * L4) \$ | 9392311 |
| RÉPARTITION DE LA PRIME D'ACHAT À DAWN |  |  |
| 7 | Prix réel de la prime \$ / Gj | 1,237 |
| 8 | Prix uniforme de la prime \$ / Gj | 0,881 |
| 9 | Écart \$ / Gj (L7-L8) | 0,356 |
| 10 | Volume d'achat totaux GJ | 74940650 |
| 11 | Portion Transport (L8 * L10) \$ | 66038890 |
| 12 | Portion Équilibrage (L9 * L10) \$ | 26700041 |
| RÉPARTITION DE LA PRIME D'ACHAT EN FRANCHISE |  |  |
| 13 | Prix réel de la prime $\$ / \mathrm{Gj}$ | 1,558 |
| 14 | Prix uniforme de la prime $\$ / \mathrm{Gj}$ | 1,552 |
| 15 | Écart \$ / Gj (L7-L8) | 0,006 |
| 16 | Volume d'achat totaux GJ | 206400 |
| 17 | Portion Transport (L8 * L10) \$ | 320290 |
| 18 | Portion Équilibrage (L9 * L10) \$ | 1211 |
| FONCTIONNLISATION DES COÜTS D'ACHATS PAR SERVICE (\$) |  |  |
| 19 | Fourniture et Compression (L5) \$ | 343438623 |
| 20 | Transport (L11 + L17) \$ | 66359181 |
| 21 | Équilibrage (L6 + L12 + L18) \$ | 36093563 |
|  | Total | 445891367 |

Since the portion related to the allocation of purchase overcharges is included in the calculation of the average transportation rate (with the differential transferred to load-balancing), then Gaz Métro can reproduce line 1-6 of Tableau 3 in order to calculate the amount to be transferred from supply to load-balancing.

### 2.2 Possible improvement to the transfer of seasonal costs INCLUDED IN THE COST OF THE COMMODITY

Under the current method, the seasonal cost of the commodity is calculated based on purchases made during the year. However, these purchases do not represent all of the costs charged to the supply service. In fact, Gaz Métro's supply cost can also include costs related to the following transactions:

- purchases at the price of the distributor's supply service (direct purchases with transfer of ownership);
- purchases or sales related to all types of contracts;
- rebilling at a supply cost different from the cost approved for the period;
- other adjustments related to the supply.

All purchases and all of these other transactions are always charged to the supply costs and the price differential account.

Moreover, all purchase costs are not always kept in the supply accounts. Throughout the year, the monthly price differential (with the approved price for one month compared to the approved price for the previous month) is transferred to another service. Currently, this differential is transferred to the inventory adjustment service. In exhibit Gaz Métro-5, Document 1, Section 4, Gaz Métro proposes transferring the differential to the load-balancing service. Since this portion of the cost is not recovered by the supply service, the amounts transferred should be excluded from the calculation of seasonal supply costs.

The use of the total supply costs entered rather than just the cost of purchases should allow for a more accurate calculation of the seasonal costs.

As such, Gaz Métro proposes improving the calculation of the transfer of seasonal costs based on the total supply cost for the supply service as determined by the number of supply units sold.

### 2.3 METHOD FOR CALCULATING PROPOSED SEASONAL SUPPLY COSTS

All supply costs entered during the year can be calculated as follows:

Costs of supply sold as system gas (cost of merchandise sold)

+ Costs of variations in system gas inventory throughout the year
+ Net costs entered in the price differential account throughout the year
- Inventory costs transferred to the inventory adjustment rate

The total amount represents the actual cost of acquiring the supply for the year. By comparing this amount with a uniform purchase cost, we can determine the overage cost related to seasonal reference location could be calculated (using data from the 2014 annual report):

Tableau 4

|  | Volumes ( $10^{3} \mathrm{~m}^{3}$ ) | Coût (000\$) | Référence |
| :---: | :---: | :---: | :---: |
| Gaz de réseau | 2562729 | 389859 | R-3916-2014, GM9Doc1, p.2, 12 c2 et 12 c5 |
| Compression | 1906891 | 14742 | R-3916-2014, GM9Doc1, p.2, $111 \mathrm{c} 2,112 \mathrm{c} 2,111 \mathrm{c5}, 112 \mathrm{c} 5$ |
| Ajustement compression ${ }^{1}$ | 655838 | 5070 | Vol : 2562729 - 1906 891, Coût 14 742/1906 891 * 655838 |
| Coût total de la molécule facturée |  | 409671 |  |
| Variation de l'écart de prix ${ }^{2}$ |  | 1946 | Non publié auparavant, info coût du gaz 2014 |
| Coût de la variation de l'inventaire |  | 6546 | Non publié auparavant, info coût du gaz 2014 |
| Transfert vers l'ajustement d'inventaire |  | -1726 | Non publié auparavant, info coût du gaz 2014 |
| Coût d'acquisition comptable à tarifer |  | 416437 |  |
| Coût du gaz réseau au prix uniforme | 2562729 | 412722 | Coût selon le prix uniforme de 4,25 \$/GJ (Tableau 3) |
| Coût de la saisonnalité à transférer |  | 3715 |  |

${ }^{1}$ The cost of system gas at a uniform price for 2014 includes compression for the total volume of $2,562,72910^{3} \mathrm{~m}^{3}$. Therefore, the total volume sold must include an amount for compression.
${ }^{2}$ By excluding the effect of $F$ to E prescribed in the old method and by excluding the costs of financial derivatives.
This way, the cost charged for the entire supply of system gas sold is definitely at a uniform price.
purchases (where applicable). By subtracting the seasonal overage cost from the actual (accounting) cost of acquiring the supply, Gaz Métro can be sure to charge a uniform supply cost.

The following table concretely shows how the seasonal cost included in the purchase cost at the
sold must include an amount for compression. be negative, in which case there would be no transfer.

As an added advantage, this calculation method can also be integrated with the changes proposed in exhibit Gaz Métro-5, Document 1: a section on the supply costs and the seasonal cost to be transferred appears on lines 1-10 of the table in Schedule 1 of this exhibit.

> Gaz Métro is asking the Régie to approve the new and improved calculation method for transferring seasonal costs from supply to load-balancing.

## 3 STRANDED COSTS

As explained in section 2.1.5 of exhibit Gaz Métro-5, Document 1, the stranded costs come mainly from three separate sources:

- The need to meet peak demand during the winter: When the demand is seasonal, this automatically results in stranded costs in the form of unused transportation units. Depending on the temperature (hot or cold) during the winter, the stranded costs will be higher or lower.
- Drop in production: a drop in production by a major customer could generate a surplus of transportation tools.
- Projected differential: The longer-term projection (more than 12 months) is based on assumptions that may not materialize over time. As such, tools acquired to meet the expected long-term need may no longer be needed.

In the current rate, the stranded costs anticipated in the rate case are all recovered in the loadbalancing rate. In the annual report, the differential between the actual value of transportation sales and the projected value of transportation sales remains part of the transportation rate.

### 3.1 PROCESSING STRANDED COSTS IN THE LOAD-BALANCING SERVICE

As mentioned in exhibit Gaz Métro-5, Document 1, the supply costs cover all the tools needed to meet customer demand. The difference between transportation costs and load-balancing costs is the way in which these supply costs are billed to customers. The transportation costs are billed based on a stable profile, assuming a consumption with an LF equivalent to $100 \%$. The load-balancing costs, on the other hand, are distributed among customers based on their actual load profile. The lower a customer's LF, the more unused supply units-and stranded costs-the distributor will have (or the more the distributor will have to pay out for replacement tools).

Since the rate for the transportation service is linked to average demand (equivalent to annual demand), this rate covers the cost of all units sent to the franchise for consumption. For its part, the load-balancing rate covers the cost of all capacities purchased by the distributor, but which could not be used. For a cost to be considered stranded, it cannot have been used to supply the units withdrawn by the franchise. As a result, all stranded costs must be processed by the load-balancing service.

### 3.2 ALLOCATION OF Stranded costs

While all stranded costs must be processed by the load-balancing service, they are not necessarily related to customers' consumption profile.

First, the stranded costs related to the consumption profile are a function of the total supply required by customers in the supply plan. This calculation is done a priori since the distributor must have all the tools needed to cover the winter peak or consumption in extreme winter conditions. However, the distributor may end up with surpluses following a warmer winter. In this case, to reduce its stranded costs, the distributor could sell tools during or after the winter. These costs are directly related to customers' consumption profile.

The distributor may also incur stranded costs that are not related to the consumption profile. This situation can occur when the distributor is unable to make annual adjustments to its transportation capacities with the carrier. With the lengthening of TCPL's transportation contract terms, Gaz Métro will have less flexibility in terms of managing its transportation capacities. Moreover, renewal notices are now issued two years before the end of transportation contracts, while the minimum contract extension that can be required by TCPL is five years and the commitment for new contracts is 15 years. The commissioning of new capacities has also been extended to three years. The planning related to managing contracts must therefore be based on long-term consumption projections established over the four-year horizon of the supply plan. However, the consumption projections are based on a likely scenario (called "baseline"), which includes consumptions by new customers and load additions. In the longer term, actual consumptions tend to move away from the baseline scenario, with some new connections never materializing, unexpected new customers being added, etc. This differential is inevitable and cannot be attributed to a specific customer or even to a specific type of consumption profile.

Therefore, Gaz Métro proposes processing stranded costs in two ways:

- The costs of surplus tools, once all or part of the winter effect has been accounted for, must be allocated based on customers' consumption profile.
- The costs of surplus tools needed to meet winter demand, i.e., the costs of projected sales of tools covering the entire winter, must be allocated among all customers based on volume withdrawn.

The load-balancing price proposed in exhibit Gaz Métro-5, Document 1, for each $\mathrm{m}^{3}$ of volume withdrawn, is the following:

$$
\text { Prix } \hat{E}_{i}=\left[\left(\frac{1}{c v_{i}}-1\right) \times \text { Taux moyen de pointe }\right]+\text { Taux moyen autres coûts. }
$$

As such, the stranded costs to be allocated based on the load profile would be considered in the first part of the equation: peak costs. The stranded costs associated with all customers would be considered in the second part of the equation: other costs.

Gaz Métro is asking the Régie to approve the processing of stranded costs in the loadbalancing service and the allocation of these costs, depending on their nature, based on customers' consumption profile or based on volume withdrawn.

## 4 PARAMETER CALCULATION PERIOD

The pricing of load-balancing costs related to the seasonal profile proposed in section 7.3 of exhibit Gaz Métro-5, Document 1, requires the use of the LF. The LF is defined as follows:

$$
\mathrm{CU}=\frac{\text { Moyenne annuelle }}{\text { Pointe hivernale }}=\frac{A}{P} .
$$

The notion of "annual average" is simply the annual consumption divided by 365 days. However, the notion of "winter peak load" has not been defined until now.

Currently, the parameter of peak personalized load-balancing price, where the "winter peak load" is defined in the Conditions of Service and Tariff as the maximum daily load from November 1 to March 31. This period is the same as that used to:
i) calculate the parameter $H$ "winter average" of the current personalized load-balancing price;
ii) define the point at which $D_{3}$ and $D_{4}$ customers pay for prohibited withdrawals when shaving exceeds $150 \%$ of the subscribed volume.

Insofar as the franchise peak influences most of the load-balancing costs, the observation period for the winter peak must minimize or even eliminate the risk of excluding the franchise's peak day. In fact, this is the day on which customers are most likely to hit their heating peak. This risk increases when we narrow the peak observation window.

On the other hand, the winter peak observation period must minimize the risk of capturing an individual peak that does not correlate with the franchise peak. An individual peak that correlates weakly or not at all with the franchise peak will have little impact on the load-balancing costs (or no impact at all, if the peak happens during the summer). This risk increases the longer the observation period extends.

By meeting these two objectives, the peak observation period will reinforce the price signal, which aims to flatten out customers' seasonal load profiles.

## Minimize the chances of excluding the franchise peak

Gaz Métro conducted an analysis of the increase in daily temperatures since 1971, in order to determine a breakdown of when the coldest temperature occurs within the five months of the current peak observation period: November, December, January, February, and March. Gaz Métro makes the realistic assumption that the highest demand is seen during the coldest day. ${ }^{23}$

[^14]
## Graphique 1

## Mois où la pointe a été observée depuis 1971



Over the past 44 years, the peak was observed 28 times in January, nine times in February, six times in December, and once in March. The peak temperature in March was $-20.1^{\circ} \mathrm{C}$. The coldest day of the year has never been observed in November. The coldest temperature observed in November in the past 44 years is $-13^{\circ} \mathrm{C}$, while the warmest peak winter temperature during the same period is $14^{\circ} \mathrm{C}$. The probability of the observed peak being $-13^{\circ} \mathrm{C}$ is less than $1 \%$ (assuming a normal distribution ${ }^{24}$ ).

Given these observations, we could consider excluding March from the observation period. In fact, the information obtained during the coldest day from December to February when the peak occurred in March allowed to truly capture the heating profile. For example, when the peak of $-20.1^{\circ} \mathrm{C}$ was observed in March, the coldest temperature from December to February was $-19.6^{\circ} \mathrm{C}$. The customer heating profile recorded at a temperature of $-19.6^{\circ} \mathrm{C}$ is likely very similar to that recorded at $-20.1^{\circ} \mathrm{C}$. In this example, the differential generated by excluding the month of March is marginal. And, since the peak occurred in March only once in the past 44 years, this marginal differential should be observed only rarely.

[^15] load-balancing costs associated with the peak.

Graphique 2


Graphique 3 illustrates that Customer 2 does not contribute to the peak observed in December, January, and February because the customer withdraws nothing during these months. However, it withdraws in November and March, but this has no impact on the load-balancing costs associated with the peak.

## Graphique 3



Gaz Métro conducted a consumption analysis on a sample of its customers and found that certain customers systematically know their winter peak load for November.

Based on the analysis of historical temperatures, Gaz Métro notes that the customers who systematically know their peak consumption for the pivotal months (November and March) are allocated load-balancing costs associated with a seasonal profile, whereas they do not generate any cost during the distributor's peak day. Graphique 4 illustrates this finding, always in a theoretical context.

## Graphique 4



Customer 2, who is not affected by temperature, still experiences a winter peak in November depending on the actual conditions, but has no impact on costs, which are generated by the projected customer demand during a cold winter.

The observations on temperature and on the consumption profile of certain customers therefore lead us to propose a change to the peak observation period. By excluding November and March:

- we reduce the inclusion of independent temperature peaks that have no impact on the costs associated with serving the franchise peak;
- we do not reduce the information used to estimate the customer's heating profile, since the coldest days are always observed between December and February (barring exceptions).

Gaz Métro therefore proposes redefining the peak observation period so that it starts on the first day of December and ends on the last day of February.

Article 13.1.3.1 of the Conditions of Service and Tariff would therefore be amended to indicate:
« $\boldsymbol{P}=$ consommation journalière maximale du ter novembredécembre 2014 au 31 mars 28 février 2015 ".

Gaz Métro is asking the Régie to approve the new definition of the peak observation period, i.e., from the first day of December to the last day of February, and the amendment to article 13.1.3.1 of the Conditions of Service and Tariff.

## 5 MINIMUM AND MAXIMUM PRICE

In case R-3529-2004, Gaz Métro suggested placing limits on customers' load-balancing rates. These limits were intended to prevent certain extreme cases leading to unreasonable load-balancing rates:
"For example, a customer simultaneously under rate $D_{4}$ and $D_{5}$ who exclusively employs peak shaving in the interruptible service could, in a given year, withdraw a very low volume at rate $D_{5}$, but have a daily contract volume (DCV) attributed to this tariff. Once winter is over, the DCVs would be revised downward to avoid a volume imbalance. This type of scenario could generate a load-balancing price up to $\$ 10 / m^{3}$ in credit, whereas the average rate for all tariffs, according to the 2004 budget, is $\$ 0.01525 / \mathrm{m}^{3}$. If, the following year, the customer does not withdraw more volume and maintains the same delivery method, the price could be adequate. However, if the customer starts withdrawing more volume, then we would grant a large credit for a completely different load-balancing service, thereby putting revenues at risk. Note that the situation could be reversed, although this is less likely.

To prevent these extreme cases, we propose fixing a minimum and a maximum price for the load-balancing service." ${ }^{25}$ (our emphasis)

This proposal was accepted by the Régie in decision D-2004-194 (p. 20).

Then, in the proposal to abolish rate $\mathrm{D}_{\mathrm{M}}$, Gaz Métro suggested adjusting the calculation of the minimum and maximum load-balancing prices. Gaz Métro's final proposal can be found in case R-3809-2012:

[^16]> "To avoid an increase in credits granted and volatility of the load-balancing price pending completion of the work on its rate structure ${ }^{[\text {[citation omitted], Gaz Métro proposes maintaining the }}$ minimum load-balancing price at $-1.561 \mathrm{c} / \mathrm{m}^{3}$, as approved by decision D-2011-194.

> Although the maximum price before the change is established according to a consumption profile of $20 \%$ of the LF, Gaz Métro finds this to be substantially higher than the historical maximum prices for the load-balancing rate, which were between 6.311 $/ \mathrm{m}^{3}$ (rate as at December 1, 2010) and $8.2844 / \mathrm{m}^{3}$ (rate as at December 1, 2008). Moreover, work is underway on the load-balancing service, and proposals will be presented in the rate structure scheduled to be submitted with the 2014 rate case. As such, Gaz Métro proposes maintaining the maximum load-balancing price at $7.638 \mathrm{C} / \mathrm{m}^{3}$, as approved by decision D-2011-194. ${ }^{\text {²6 }}$

The Régie approved this proposal in decision D-2013-115.

The new formula proposed in section 7.3 of exhibit Gaz Métro-5, Document 1, based on the LF eliminates the problems identified in the previous cases. In fact, the proposed formula has natural limits related to the costs to be allocated based on the customers.

Let us take a closer look at the formula to determine these natural limits:

$$
(1 / C U-1) \text { * Taux moyen de pointe. }
$$

At one extreme, a customer could withdraw natural gas on only one day during the year (during the winter). In this case, the customer's LF would be $0.274 \%$ (i.e., $1 / 365$ ). The formula is as follows:
$(365-1) \times$ Average peak rate or $364 \times$ Average peak rate.

The maximum rate for a customer is therefore equivalent to 364 times the peak rate.

At the other extreme, a customer could withdraw nothing during the winter, for a LF tending toward infinity. In this case, the formula is as follows:
$(0-1) \times$ Taux moyen de pointe ou $-1 \times$ Taux moyen de pointe.
The minimum rate for a customer is therefore equivalent to -1 times the peak rate.

[^17] based on customers' LF:

Tableau 5

| $\begin{aligned} & \hline \mathbf{C U} \\ & (\%) \\ & \hline \end{aligned}$ | Prix ( $¢ / m^{3}$ ) |
| :---: | :---: |
| 10000000 | -1,794 |
| 500 | -1,435 |
| 100 | 0,000 |
| 80 | 0,449 |
| 60 | 1,196 |
| 40 | 2,691 |
| 20 | 7,176 |
| 10 | 16,146 |
| 5 | 34,086 |
| 0,27 | 662,650 |

In the 2015 Rate Case, the peak cost is approximately $1.8 \Phi / \mathrm{m}^{3}$ (see section 8.3 of exhibit Gaz Métro-5, Document 1). Using the proposed formula, here are the load-balancing prices

We can see that the customers' maximum credit is $-1.8 \mathrm{~d} / \mathrm{m}^{3}$, while the maximum cost is $662.7 \$ / \mathrm{m}^{3}$. However, note that no customer currently has an LF below 5\%.

Based on the proposed load-balancing formula, it is therefore no longer necessary to set limits on the load-balancing rate. Gaz Métro therefore proposes abolishing the minimum and maximum load-balancing prices. The last sentence of article 13.1.2.2 of the Conditions of Service and Tariff:
«Le prix moyen ne peut toutefois pas être inférieur à -1,561 $¢ / m^{3}$ ni supérieur à $7,638 ~ ¢ / m^{3}$. 》 will therefore be removed.

> Gaz Métro is asking the Régie to approve the elimination of minimum and maximum load-balancing prices and the amendment to article 13.1.2.2 of the Conditions of Service and Tariff.

## 6 THRESHOLD FOR THE INDIVIDUALIZED PRICE

In the last rate case, the threshold for the individualized load-balancing price was 75,000 $\mathrm{m}^{3}$ per year. This threshold was determined during the 2011 Rate Case (R-3720-2010, Gaz Métro-12, Document 3) and implemented on October 1, 2012.

Gaz Métro does not propose changing the threshold at this phase of the tariff review, but rather reevaluating it in phase 4 , which consists of reviewing the rate structures for the distribution service. This will establish a threshold that will account for the new structure to be proposed and the new customer segmentation.

As such, during the review of the threshold in phase 4, customers whose annual consumption is less than $75,000 \mathrm{~m}^{3}$ will be subject to an average load-balancing rate. This average rate will be determined based on a LF calculated according to the cumulative profile for all customers with an annual consumption of less than $75,000 \mathrm{~m}^{3}$.

For customers whose annual consumption is equal to or higher than $75,000 \mathrm{~m}^{3}$, the LF will be calculated on an individual basis.

Gaz Métro is asking the Régie to acknowledge the fact that the threshold for the individualized load-balancing price will be reviewed in phase 4 (review of the distribution service) of this case.

## 7 EVALUATION OF PEAK FOR CUSTOMERS WITH MONTHLY READINGS

In case R-3443-200027, Gaz Métro proposed adding a multiplier to the load-balancing rate to evaluate the peak daily consumption of customers with monthly readings.

The method proposed by Gaz Métro and approved by the Régie (D-2001-078) to determine this multiplier consisted in comparing the real peak daily consumption, measured with or without a meter that takes daily readings, to the peak daily consumption extrapolated to 44 DJ (baseline

[^18]$18^{\circ} \mathrm{C}$ ) in the service cost allocation study. a regression was then done to determine the relationship between the LF and the ratio between the peak consumption at 44 DJ and the peak consumption "read"28. The following formula resulted from the analysis:
multiplicateur $=2,1-(1,1 \times a \div C)$, le résultat minimal étant 1 ;
où $\mathrm{C}=$ Maximum de la consommation journalière moyenne de chacun des mois de novembre à mars.

Insofar as Gaz Métro proposes maintaining an individualized rate for customers with a consumption higher than $75,000 \mathrm{~m}^{3}$ (see section 6), then the multiplier is still needed.

Gaz Métro conducted certain a nalyses to verify the validity of the multiplier. This involved taking a different approach to evaluating the peak daily consumption of customers with monthly readings.

## New calculation for the multiplier

The proposed method consists in evaluating a new multiplier using a peak consumption calculated (using a regression) based on an estimate of the relationship between the consumption and temperature for each customer with monthly readings of $75,000 \mathrm{~m}^{3}$ or more, based on the temperature and consumption for January 2014.

According to the functional data analysis, we observe a change in the slope when the LF exceeds 0.45 . Two regressions were then tested: one for ratios under 0.45 and one for ratios of 0.45 and over.

The multiplier was then tested using the following formulae:
Multiplier for $\mathrm{A} / \mathrm{C}<0.45=\operatorname{MAX}(1 ; 2.3-(2.0 \times \mathrm{a} \div \mathrm{C}))$, with the minimum result being 1 ;
Multiplier for $A / C \geq 0.45=\operatorname{MAX}(1 ; 1.7-(0.7 \times a \div C))$, with the minimum result being 1 ;
where C is the customer's maximum consumption.

The data used are those for all rate $D_{1}$ customers with an annual consumption higher than $75,000 \mathrm{~m}^{3}$ for whom the parameters of the consumption regression based on temperature are

[^19]positive and significant. Only customers who know their January peak are used because the multiplier is estimated based on conditions for that month. The result is a sample of more than 3,800 observations, i.e., more than half of customers with a consumption higher than $75,000 \mathrm{~m}^{3}$.

## Graphique 5



When the two methods are compared, we note very little difference despite the change in methodology. The average differential between the two is $5 \%$. This is due, among other things, to the fact that a different temperature is used for the two methods. In the current method, the peak consumptions are estimated at 44 DJ (baseline peak 18 used previously in the cost allocation study), while in the proposed method, they are estimated at a temperature of 37.2 DJ (franchise peak for January baseline 13, for the 2014 fiscal year).

In the proposed method, Gaz Métro observed a difference in the slope starting at a LF of 0.45 , and that the multiplier for heating customers varies more significantly than that for customers with a stable profile. The more stable a customer's profile, the less its peak will be affected by the temperature, and the less significant the correction required. This relationship is also present in the current method, although to a lesser degree since the slope for all customers is
the same. This is why, in the previous graph, the multiplier for the proposed method is higher for customers with a very low LF, but begins to decrease starting at a given ratio.

Gaz Métro now proposes using this new multiplier to evaluate the peak consumption for customers with monthly readings. Article 13.1.3.1 of the Conditions of Service and Tariff would be amended as follows:
13.1.3.1 Paramètres pour les clients en services de distribution $D_{1}, D_{3}$ et $D_{4}$
(...)

Pour les clients aux services de distribution $D_{1}$ et $D_{3}$ à l'exception des clients en combinaison tarifaire $D_{3}-D_{5}$, la consommation journalière maximale des mois d'hiver est estimée de la façon suivante :

$$
\boldsymbol{P}=(\text { MaxC }) \times \text { multiplicateur }
$$

où $\quad$ MaxC $=$ Maximum de la consommation journalière moyenne de chacun des mois de novembredécembre 2014 à marsfévrier 2015
où multiplicateur $=$ Maximum $(2,12,3-(1,12,0 \times a \div \operatorname{MaxC}) ; 1) \underline{\text { si A/MaxC }<0,45}$
Maximum (1,7-(0,7xa $\operatorname{MaxC}) ; 1)$ si $A / M a x C \geq 0,45$


#### Abstract

Gaz Métro is asking the Régie to approve the update to the formula for the multiplier used to evaluate the peak daily consumption for customers with monthly readings and the amendment to article 13.1.3.1 of the Conditions of Service and Tariff.


## 8 PRICING MECHANISM FOR NON-UNIFORM DELIVERIES

Currently, Gaz Métro anticipates that customers who provide their own delivery service will deliver, on a daily basis, a volume equal to $1 / 365$ of their projected annual consumption to the agreed-upon point; the projected delivery profile is uniform. The mechanism used to account for deviations from a uniform delivery profile is transposition, which is incorporated into the calculation of the individualized load-balancing rate. This was introduced at the same times as rates were unbundled. The mechanism did not previously exist, even though customers already provided their own delivery service and were expected to have a uniform delivery profile. The decision was made to introduce the notion of transposition following the introduction of a customized rate for billing the portion of supply tool costs generated by the customers' consumption profile. This meant that a customer could be exempt from billing for the load-balancing service if it delivered
the same volume as it withdrew on a daily basis, and limited the possibilities of arbitration if a customer delivered nothing during the winter, for example.
"The unbundled rates will have to account for the customer having the option to supply the merchandise according to different delivery profiles, ranging from always delivering the merchandise according to a uniform profile (as is currently the case) to delivering a daily volume equal to its load; this type of customer is known as "deliver and burn."
(R-3443-2000, SCGM-2, document 1, page 7, I.21)
The rules governing the transposition are described in article 13.1.4 of the Conditions of Service and Tariff.

The following section questions the application of the transposition for all customers who deliver their supply, independent of their choice of carrier. In section 8.1, Gaz Métro first draws a link between the reciprocity of the franchise delivery profile and the consumption profile: For a customer who delivers its supply to the franchise, one less unit delivered during the peak period has the same impact on costs as one more unit withdrawn during the peak period. The current transposition mechanism allows the delivery profile and the consumption profile to be considered simultaneously. However, for a customer who provides the natural gas that it withdraws from its facilities and who uses Gaz Métro's transportation service, one less unit delivered during the peak period does not have the same impact on costs as one more unit withdrawn during the peak period. Therefore, the transposition does not allow for the delivery profile and the consumption profile to be considered simultaneously for customers who deliver to an agreed-upon point outside of Québec. This will be analyzed in section 8.2.

### 8.1 Customers who deliver their supply to the franchise

First, we will analyze the case of supply deliveries made on Gaz Métro's territory (for customers who provide their own transportation and delivery services). For supply deliveries to the franchise, the transposition accurately determines the causality of the costs presented in section 2 of exhibit Gaz Métro-5, Document 1.

The following example was used:

- Two customers, Customer 1 and Customer 2, who deliver their supply daily to Gaz Métro's territory.
- The customers are required to deliver the same volume as they withdraw during the year. If the customer delivers a volume that differs from the volume withdrawn during a day, it must make up for this difference later in the year, which involves using the load-balancing service. Note that in cases where the annual delivery differs from the annual load, article 11.2.3.3.2 of the Conditions of Service and Tariff already provide for the financial settlement of the volume imbalance.
- Customer 2 is responsible for ensuring that the sum of the volumes delivered is equal to the sum of the volumes withdrawn on a daily basis. It can be seen as representing the customers who use Gaz Métro's transportation and supply services.
- For simplification purposes, we used a year made up of only 12 days.

Tableau 6 presents the price of the supply components for this example.

Tableau 6

| Fourniture | Jour 1 à Jour 6 | Jour 7 à Jour 12 |
| :--- | :---: | :---: |
| Prime variable | 3,00 \$/unité | $2,00 \$ /$ unité |
| Transport | Jour 1 à Jour 12 |  |
| Prime fixe | $3,00 \$ /$ unité de pointe |  |

The annual transportation price is equal to the maximum volume delivered multiplied by the price of $\$ 3.00 /$ peak unit. For a maximum delivery of 15 units, the cost is $\$ 45$ ( $\$ 3 /$ unit $\times 15$ units).

Finally, the annual price paid by each customer is evaluated for each example. The price is calculated based on the tools acquired by the customer prior to the cost sharing. For example, when Customer 2 delivers more supply to the franchise to meet the daily demand from Customer 1, the additional costs incurred are not reflected in the amounts paid to the suppliers by Customer 1, which are displayed on the graph.

Graphique 6 illustrates a situation in which both customers deliver the volume that they withdraw each day (the curves are superimposed on the graph).

## Graphique 6



The cost incurred by Customer 1 when it deviates from the uniform delivery profile, while maintaining a uniform consumption profile, is shown in Graphique 7. Because Customer 1 delivers seven fewer units during the first six days and seven extra units during the last six days, Customer 2 adjusts its daily deliveries so that the overall daily delivery to the franchise corresponds to the overall daily consumption.

## Graphique 7



If Customer 1 changes its withdrawals, Customer 2 also adjusts its daily deliveries by maintaining a uniform delivery profile, as illustrated in Graphique 8. The additional costs generated by Customer 1 compared to the baseline scenario (Graphique 6) are therefore assumed by Customer 2. They are the same in Graphique 7 and Graphique 8 (\$63). Moreover, the impact of Customer 1's non-uniform delivery profiles on Customer 2's costs is the same per service (+\$42 and +\$21 for the supply and transportation services, respectively).

## Graphique 8



In reality, Customer 2 represents all customers of Gaz Métro's supply and transportation services, and Customer 1 represents customers who provide their own supply services. This theoretical example illustrates the motivation behind the transposition of volumes: When it comes to the costs of customers who use Gaz Métro's transportation and supply services, one less unit delivered has the same impact as one extra unit withdrawn (when the delivery is made to the franchise). Therefore, when the load-balancing rate was developed in order to create customized bills based on the customer's consumption profile, there was justification for billing the delivery profile and the consumption profile together. As such, Customer 1 may have a customized load-balancing price of zero if it delivers exactly the same volumes as it withdraws, because it generates no costs for Customer 2.

In Graphique 9, we note that the cost of supplying Customer 2's demand is the same, with or without Customer 1 when the latter delivers the same volume as it withdraws. The same reasoning applies in Graphique 6.

## Graphique 9



The current rates for the load-balancing service at the average customized price for customers who use Gaz Métro's supply service are based on the customers' consumption profile. This consumption profile is recorded through parameters a (average consumption load), H (average winter consumption), and $P$ (winter peak consumption). For customers with their own supply service (without or without transportation), the customized price is based on the customer's transposed consumption profile. The profile is recorded using the same parameters, corrected for the delivery profile.

In the example used in this section, winter is defined as extending over the first five days. According to the various scenarios, Customer 1 therefore has the following parameters, before transposition:

Tableau 7

|  | A | H | P |
| :--- | :---: | :---: | :---: |
| Graphique 6 (A) | 15 | 15 | 15 |
| Graphique 7 (B) | 15 | 15 | 15 |
| Graphique 8 (C) | 15 | 22 | 22 |
| Graphique 9 (D) | 15 | 22 | 22 |

Given these parameters and pricing without transposition, Customer 1 would have to pay the same load-balancing rate, regardless of its delivery profile (uniform or non-uniform). The same parameters $A, H$, and $P$ for graphs a and $B$ show Customer 1 as having the same consumption profile, but a different delivery profile. Customer 1 also has the same parameters for graphs C and $D$ because the consumption profile is the same. However, it was shown that the delivery profile has an impact on Customer 2's costs: The additional costs incurred by Customer 2 due to Customer 1's delivery and consumption profiles are the same for graphs a and $\mathrm{D}(\$ 0)$, on the one hand, and for graphs $B$ and $C(\$ 63)$, on the other hand. Therefore, there is a non-rated cost impact if Customer 1's delivery profile is not taken into account in the pricing. This is why, for customers with their own supply and transportation service, parameters $A, H$, and $P$ are evaluated based on the customers' consumptions, which are amended using the following formula:

$$
\begin{aligned}
\text { CT } & =\mathbf{C}+\text { LTU }- \text { VJC } \\
\text { où } \quad \text { CT } & =\text { consommation (mensuelle ou quotidienne, selon le cas) transposée } \\
\text { C } & =\text { consommation (mensuelle ou quotidienne, selon le cas) } \\
\text { LTU } & =\text { livraison théorique uniforme (somme des VJC du } 1^{\text {er }} \text { octobre } 2014 \text { au } 30 \text { septembre } \\
& 2015 \div \# \text { jours du ter octobre } 2014 \text { au } 30 \text { septembre } 2015 \text { ayant un VJC) } \\
\text { VJC } & =\text { volume journalier contractuel }
\end{aligned}
$$

The parameters are changed using the same formula for customers with their own supply service only, but who use the distributor's transportation service. However, the impact of the costs on the delivery profile of these customers is not necessarily the same and must be analyzed separately (section 8.2).

By applying this equation to each of the graphs, the following transposed parameters are obtained:

Tableau 8

|  | LTU | $\mathbf{A}^{\top}$ | $\mathbf{H}^{\top}$ | $\mathbf{P}^{\top}$ |
| :--- | :---: | :---: | :---: | :---: |
| Graphique 6 (A) | 15 | 15 | 15 | 15 |
| Graphique 7 (B) | 15 | 15 | 22 | 22 |
| Graphique 8 (C) | 15 | 15 | 22 | 22 |
| Graphique 9 (D) | 15 | 15 | 15 | 15 |

The causal link is therefore maintained in the pricing since the behaviours that generate the same costs are priced in the same way. In fact, using identical parameters, the customized rate will be the same.

### 8.2 Customers who deliver supply to a reference point outside OF Québec

The findings taken from the illustration in the previous section on the correction of the calculation of load-balancing parameters do not apply to customers who deliver natural gas to the agreed delivery point outside of Québec (customers who use their own supply service, but who use Gaz Métro's transportation service). In fact, using the same example as in the previous section, we can see that the effect on costs of a non-uniform delivery profile is not the same in this case as the effect of a non-uniform consumption profile. This difference stems from the fact that Gaz Métro does not have to adjust the use of its transportation capacities in this case, unlike the situation in the previous section, in which customers delivered the supply directly to the franchise. As a result, only costs associated with the seasonal nature of supply prices are generated when a customer using its own supply service makes non-uniform deliveries.

In the example below, rather than each customer providing its own transportation service, Customer 2 (who represents customers using supply services contracted by Gaz Métro) is responsible for transporting the entire supply to Gaz Métro's territory in order to meet the daily demand. The same prices are used in the previous example (see Tableau 6).

## Graphique 10



1 If Customer 1 does not deliver exactly the same volume as it withdraws, as shown in Graphique 2 11, it generates costs for Customer 2. These costs are only generated by the acquisition of supply: Customer 2 must purchase more or less supply if Customer 1 delivers more or less than it withdraws to a reference point outside of Québec.

## Graphique 11



Not only do the transportation costs remain the same, but the reduction in Customer 1's costs is entirely offset by the increase in Customer 2's costs. The transportation costs also remain the same because the variation in delivery does not affect the demand by the franchise. Therefore, when delivery to the reference point outside of Québec deviates from the uniform profile, the additional costs charged to Customer 2 stem only from the supply prices.

Graphique 11 presents the impact of the delivery profile at a constant consumption profile. Alternatively, Graphique 12 presents the impact of the consumption profile at a constant delivery profile. Graphique 12 illustrates that when the consumption for a customer who delivers its supply to a reference point outside of Québec deviates from the uniform profile, the additional costs charged to Customer 2 stem from the supply prices and the additional transportation capacities. The delivery profile for Customer 1 at the reference point outside of Québec therefore does not have a reciprocal impact on its consumption profile, unlike a customer who delivers to the franchise.

## Graphique 12



### 8.3 PRicing of delivery variances with respect to a theoretical UNIFORM DELIVERY PROFILE

As explained in section 8.1, the delivery variances are the same as the consumption variances for customers who delivery their supply to the franchise. Since the proposed load-balancing rates are based on parameters a and $P$, the use of the transposed peak for these customers is retained. Schedule 2 presents the impacts of current and proposed rates on various delivery profiles in the franchise.

However, this approach cannot be retained for customers who deliver to a reference point outside of Québec, given the finding in the previous section. In fact, by transposing the peak for these customers, they would be charged an additional cost (positive or negative) for the impact of their delivery on the seasonal portion of the transportation and supply costs, even though they generate no transportation costs. To correct the existing bias in the load-balancing rates for direct purchase customers who choose the distributor as their transportation supplier, Gaz Métro proposes replacing the transposition service with adjustment fees calculated as at the customer's contract anniversary date.

### 8.3.1 Adjustment fees for direct purchase customers who use the distributor's transportation service

The adjustment fees will be estimated as follows:

$$
\text { Frais d'ajustement }=\left[\sum_{i=1}^{\mathrm{N}} \operatorname{Prix}_{\mathrm{i}} \times\left(\mathrm{LTU}-\mathrm{VJC}_{\mathrm{i}}\right)\right]
$$

où i = jour de la période contractuelle;
Prix $_{i}=$ prix du marché au jour $i$ auquel Gaz Métro doit théoriquement acheter les livraisons déficitaires ou théoriquement vendre les livraisons excédentaires;
$\mathrm{N} \quad=$ nombre de jours de la période contractuelle
= volume journalier convenu au jour i; et

$$
\mathrm{LTU}=\frac{1}{\mathrm{~N}} \sum_{\mathrm{i}=1}^{\mathrm{N}} \mathrm{VJC} .
$$

This formula estimates that when the customer delivers a volume higher than (lower than) its uniform delivery, Gaz Métro must theoretically sell (purchase) the overage (shortage) at the market price. If the price is the same throughout the year, the theoretical cost is zero.

The billing of adjustment fees at the end of the year is an interesting approach, since a similar mechanism is already in place for annual volume imbalances (article 11.2.3.3.2 of the Conditions of Service and Tariff). Gaz Métro's proposal involves noting a price impact at the end of the contract year and also allowing the financial settlement or carrying forward of the adjustment fees billed. The billing of adjustment fees would therefore simplify the load-balancing rate for direct purchase customers who use Gaz Métro's transportation service, given the elimination of transposition, without overly complicating the supply service for these customers, who are already accustomed to financial settlements at the end of their contract period. The financial settlement and the adjustment fees would be calculated and billed to the customer at the same time.

### 8.3.1.1 Application of adjustment fees

Gaz Métro proposes that customers who only slightly modify their deliveries on an annual basis not be billed adjustment fees. Any price variance caused by a DCV between $98 \%$ and $102 \%$ of the uniform delivery would not be billed; the buy-back and sale price within this interval would be the distributor's price or the average price for the period. Beyond the $2 \%$ threshold, the buy-back price would be based on the market price.

Graphique 13 shows that customers would pay seasonal supply costs only in cases where the variances exceed the daily flexibility margin. In fact, all imbalances below the threshold would be billed or credited at the same price, known as the "distributor's price." Only the actual acquisition costs incurred when the delivery variances exceed the $2 \%$ threshold would be billed to the customer.

## Graphique 13



This way of dealing with the seasonal nature of the supply gives the customer some flexibility with respect to variations in the delivery profile throughout the year, while mitigating the impacts on customers. The flexibility margin is based on the provisions of article 11.2.3.3.1 of the Conditions of Service and Tariff regarding daily volume imbalances. In this article, Gaz Métro foresees not billing any market price for daily volume imbalances below 2\%.

Regarding the prices used, Gaz Métro would use the market price available at the time of calculating the adjustment fees. However, it would make sense to apply the same logic used to settle volume imbalances in the supply service, i.e., to protect customers against the cost of acquiring supply on the market. The financial settlement would therefore take into account the highest of the market price and the system gas price (or uniform price) when Gaz Métro has to purchase more supply to offset a delivery shortage, and would take into account the lowest between the market price and the system gas price (or uniform price) when Gaz Métro has to sell supply to offset a delivery overage.

Finally, in the case of grouped customers, adjustment fees would be calculated based on the daily sum of the DCVs for each customer in the group; the TUD would be calculated based on these DCVs. The adjustment fees would then be allocated among the customers pro rata to the volumes withdrawn during the contract period or to the DCVs, if the latter were provided by the customers.

Schedule 2 presents the current and proposed pricing impacts for different delivery profiles at a reference point outside of Québec.

Gaz Métro is asking the Régie to approve the replacement of the transposition of load-balancing volumes, for customers who supply the distributor with natural gas that they withdraw at their facilities and who use Gaz Métro's transportation service, with adjustment fees and the application of a $2 \%$ flexibility margin.

### 8.4 CuStomers who have entered into a fixed-price supply AGREEMENT WITH THE DISTRIBUTOR

According to article 13.1.4 of the Conditions of Service and Tariff, for customers subject to the calculation of a customized load-balancing price and who have entered into a fixed-price supply agreement with the distributor provided by a specific supplier, the calculation of their loadbalancing price is based on a transposed consumption profile. However, as illustrated in the previous sections, the cost incurred by the delivery profile to a reference point outside of Québec is not the same as the consumption profile. The supply for customers who have entered into a fixed-price agreement is delivered to a reference point outside of Québec.

Moreover, unlike customers who supply the natural gas that they withdraw at their facilities, customers who have entered into a fixed-price supply agreement are not grouped within the meaning of article 10.4 of the Conditions of Service and Tariff. This makes the application of adjustment fees much more complicated. First, customers who are grouped under the same supply contract are grouped only because they all have a supplier in common. Therefore, separate adjustment fees must be calculated for each customer because the customers are not necessarily related; otherwise, a customer who generates costs could end up paying nothing because of the savings generated by a customer within the same grouping. Then, because the daily contract nomination or delivery stems from an overall projection of the annual consumption for the customer grouping, a customer's individual DCV may be affected by the changes made by another customer in the grouping. a customer with a stable and predictable consumption, whose DCV would have been perfectly stable had it had its own supplier, could therefore be charged because it is grouped together with other customers.

Between October 1, 2014, and September 30, 2015, approximately 14\% of customers with a fixed-price supply agreement had an annual consumption greater than $75,000 \mathrm{~m}^{3}$; the average number of customers in each grouping was approximately eight. This means that not only would few clients be affected by the adjustment fees charged to customers with a fixed-price agreement, but also that the individual adjustment fees would be affected by an average of seven other customers.

For the reasons stated, Gaz Métro proposes that the volumes of customers with a fixed-price supply agreement no longer be transposed and that no adjustment fees be applied.

Gaz Métro is asking the Régie to approve the elimination of the transposition of loadbalancing volumes, for customers who have entered into a fixed-price supply agreement with the distributor provided by a specific supplier.

### 8.5 Changes to the Conditions of Service and Tariff

Tableau 9 summarizes the way in which deliveries would be considered by customers in the load-balancing service.

## Tableau 9

|  | Tarification <br> actuelle | Tarification proposée |
| :--- | :---: | :---: |
| Clients en achat direct avec le <br> transport de Gaz Métro | Trassposition <br> (13.1.4) | Aucune transposition et <br> application de frais d'ajustement <br> pour livraison non uniforme |
| Clients en achat direct avec <br> leur propre service de transport | Transposition <br> (13.1.4) | Transposition (13.1.4) |
| Clients engagés auprès du <br> distributeur dans une entente <br> de fourniture à prix fixe | Transposition <br> (13.1.4) | Aucune transposition |

Article 13.1.4 of the Conditions of Service and Tariff on volume transposition therefore needs to be amended to reflect the fact that the volumes of direct purchase customers who use Gaz Métro's transportation service would no longer be transposed.

### 13.1.4 Transposition des volumes-Processing of deliveries

### 13.1.4.1 Adjustment fees for non-uniform delivery

Pour les clients assujettis au prix de l'équilibrage de l'article 13.1.2.2, qui fournissent au distributeur le gaz naturel ou le "gaz d'appoint saisonnier" and who purchase from the distributor the transportation service used to transport to the distributor's territory the natural gas that they withdrawal from their facilities, adjustment fees are billed at the end of the supply contract period. The customer can choose between the following two billing methods:-ou quisont engagés aupròs du distributeur dans une entento do fourniture à prix fixe approvisionnóo par un fournissour spócifiquo, lo prix do l'équilibrago doit ôtro calculó à partir d'un profil do consommation transposée établi comme suit, sous réserve do l'articlo 19.2.3:
$1^{\circ}$ carry-forward of the adjustment fees over the 12 months of the following contract period; or
$2^{\circ}$ financial settlement of the adjustment fees at the end of the contract period; a customer who, during the supply contract year, modifies the services it purchases from the distributor must always financially settle the adjustment fees at the end of the contract period.

The customer's choice must be sent to the distributor in writing before the start of the supply contract. Should the customer fail to indicate its choice before the deadline, the adjustment fees will be financially settled at the end of the contract period.

The amount of the adjustment fees is equal to the impact of the prices generated by the daily imbalances between the DCV and the TUD based on the adjustment fee calculation period, starting on the supply contract anniversary date and ending on the anniversary date of the contract for the following year. The TUD is established as follows:

TUD $=$ theoretical uniform delivery for the calculation period (sum of the DCVs for the calculation period $\div$ no. of days in the calculation period);

The delivery overage is purchased by the distributor, and the delivery shortage is sold to the customer, at the following price:
$1^{\circ}$ from 0\% to $2 \%$ of the TUD, at the average natural gas supply price for the calculation period;
$2^{\circ}$ above $2 \%$ of the TUD, the lower, in the case of an overage, or the higher, in the case of a shortage, of:
a) the distributor's natural gas supply price for the calculation period, and
b) the market price at the time the imbalance occurred.

### 13.1.4.1.1 Customers groupings in the supply service

The adjustment fees for all customers in a grouping, where applicable, are calculated separately for customers in the grouping if the individual DCVs were provided by the grouping or, failing which, are allocated among each customer in the grouping pro rata to their respective volume withdrawn during the contract period. The adjustment fees are then billed individually to the customers.

### 13.1.4.2 Volume transposition

For customers who provide the distributor with the transportation service used to transport to the distributor's territory the natural gas that they withdraw from their facilities, the load-balancing price defined in article 13.1.2.2 must be calculated based on a transposed consumption profile established as follows, subject to article 18.2.3:

| CT | $=$ C + LTU-VJC |
| ---: | :--- |
| où $\quad$ CT | $=$ consommation (mensuelle ou quotidienne, selon le cas) transposée |
| $\boldsymbol{C}$ | $=$ consommation (mensuelle ou quotidienne, selon le cas) |
| LTU | $=$ livraison théorique uniforme de la période (somme des VJC du 1er octobre 2014 |
|  | au 30 septembre 2015 \# \# jours du 1er octobre 2014 au 30 septembre 2015); |
| VJC | $=$volume journalier contractuel (incluant le " gaz d'appoint saisonnier ", |
|  | le cas échéant) |

Les LTU et VJC sont calculés sur une base mensuelle pour les clients sans lecture quotidienne.

Gaz Métro is asking the Régie to approve the change to article 13.1.4 of the Conditions of Service and Tariff.

## 9 PEAK SERVICE SUPPLEMENT

In the current Conditions of Service and Tariff, article 15.2.4 of the distribution service addresses the concept of a peak service supplement.

The peak service supplement was introduced to account for the effect on costs of extreme consumption profiles during the winter for dual energy customers. At the time of unbundling, Gaz Métro mentioned that the load-balancing rate would take into account the poor LF of customers who only use natural gas during peak periods, since this rate was adjusted to the customers' consumption profile. The supplement could therefore be reduced to keep only the "distribution" portion of the costs incurred to serve customers with facilities that can use a form of energy other than gas during peak periods ${ }^{29}$.

In the case of the allocation of distribution costs (R-3867-2013, Phase 1), Gaz Métro states that the costs of the distribution pipelines are directly related to the capacity required by the customers. The proposed factor for allocating the costs between customers is the capacity (CA) for all customers.

Since all customers have costs that are allocated depending on their required capacity at peak winter temperature, the allocation always takes their peak need into account. For large-volume customers, the hourly contract volume is used. Phase 4 of this case will focus on reviewing the rate structure for the distribution service. Gaz Métro now intends to propose changes to the distribution rate that will reflect the capacity required by each customer. As such, customers who use natural gas during peak distribution service will be allocated and charged the appropriate costs. a supplement for peak distribution service will no longer be required.

[^20]However, for the load-balancing service, costs are not allocated strictly based on required capacity. The costs are allocated depending on the consumption parameters from the previous year in order to establish a variable price only. As a result, the costs for customers who use natural gas only during peak periods may not be correctly allocated.

To illustrate this situation, here are the consumptions for a customer who withdraws volumes only during peak periods:

## Graphique 14



Therefore, when the peak is $-26^{\circ} \mathrm{C}$, the customer withdraws 1,000 units. However, at a peak of $22^{\circ} \mathrm{C}$, it withdraws only 100 units. And at a peak of $-18^{\circ} \mathrm{C}$ or warmer, the customer does not withdraw anything.

In terms of supply needs, this customer still requires a purchase of 1,000 transportation units each year. However, when the peak reaches a maximum of $-18^{\circ} \mathrm{C}$, since its consumption is zero, the customer's peak consumption based on actual parameters is zero. This customer's profile is therefore equivalent to $100 \%$ of the LF. Moreover, for that year, the customer does not have to pay anything since it withdrew nothing, even though its load-balancing price for the year was very high.

While readings for the peak distribution service will no longer be necessary, they will have to be implemented for the load-balancing service. However, article 15.2.4 as such does not resolve the situation in the load-balancing service since the rate is based on the customer's
consumption. In this example, any rate based on consumption would not recover the costs during milder weather.

As a result, customers who withdraw volumes only during peak periods and whose LF is very low must have a load-balancing rate that is not based on annual consumption. These customers would therefore pay a fixed load-balancing price that is not linked to the number of units withdrawn. For customers with an LF below 5\%, Gaz Métro proposes using the customer's presumed LF to calculate a fixed monthly price, when required. To date, however, Gaz Métro does not have any customers with this type of profile.

As such, customers with an LF below $5 \%$ would be billed a load-balancing price calculated based on the new load-balancing price formula:

$$
\text { Prix } \dot{E} i=\left[\left(\frac{1}{C U_{i}}-1\right) \times \text { Taux moyen de pointe }\right]+\text { Taux moyen autres coûts }
$$

However, the value $L F_{i}$ would be established based on presumed rather than actual consumptions. Moreover, while the price $E_{i}$ is charged to regular customers based on their consumption, customers with an LF below $5 \%$ would be charged a price $\mathrm{E}_{i}$ based on their presumed annual volume.

Article 13.1.3.3 would therefore be added to the Conditions of Service and Tariff to reflect this point. Article 13.1.2.3 would also be amended so that the average load-balancing price does not apply in cases where the LF is below $5 \%$.

### 13.1.3.3 Parameters for customers whose projected LF is below 5\%

Notwithstanding article 13.1.2.3, in the case of customers whose projected LF is below 5\%, the distributor may require that the load-balancing calculation parameters be determined based on the projected consumptions. In this case, the load-balancing cost will also be billed based on projected consumptions.

### 13.1.2.3 Prix moyen

Subject to article 13.1.3.3, tl'article 13.1.2.2 ne s'applique pas lorsque le volume retiré entre le $1^{\mathrm{er}}$ octobre 2014 et le 30 septembre 2015 à un service continu ou interruptible est nul ou ne représente pas 12 mois consécutifs de consommation. (...)

Gaz Métro is asking the Régie to approve the use of a presumed LF for charging customers whose projected LF is below $5 \%$, and the application of this price to the customers' presumed volumes.

Gaz Métro is also asking the Régie to approve the addition of article 13.1.3.3 and the amendment of article 13.1.2.3 of the Conditions of Service and Tariff.

## CONCLUSION

Gaz Métro has reviewed all points related to the supply, transportation, and load-balancing services. It is asking the Régie to:

- approve the charging of late fees corresponding to $20 \%$ of the transportation price in effect in the Conditions of Service and Tariff in cases where the March 1 deadline for the notice of entry is not respected;
- approve the removal of the notion of profitability from the rules governing withdrawal from the distributor's transportation service;
- approve the new transportation capacity assignment rules and that the latter be implemented by November 1, 2017, at the earliest;
- approve the elimination of transportation MAOs and to replace them with load-balancing MAOs applicable to customers with a peak need greater than or equal to $30010^{3} \mathrm{~m}^{3}$;
- approve the new and improved calculation method for transferring seasonal costs from supply to load-balancing;
- approve the processing of stranded costs in the load-balancing service and the allocation of these costs, depending on their nature, based on customers' consumption profile or based on volume withdrawn;
- approve the new definition of the peak observation period, i.e., from the first day of December to the last day of February;
- approve the elimination of minimum and maximum load-balancing prices;
- acknowledge the fact that the threshold for the individualized load-balancing price will be reviewed in phase 4 (review of the distribution service) of this case;
- approve the update to the formula for the multiplier used to evaluate the peak daily load for customers with monthly readings;
- approve the replacement of the transposition of load-balancing volumes, for customers who supply the distributor with natural gas that they withdraw at their facilities and who use Gaz Métro's transportation service, with adjustment fees and the application a $2 \%$ flexibility margin; and approve the elimination of the transposition of load-balancing volumes, for customers who have entered into a fixed-price supply agreement with the distributor provided by a specific supplier;
- approve the use of a presumed LF for charging customers whose projected LF is below $5 \%$, and the application of this price to the customers' presumed loads;
- approve the changes made to articles 12.1.4.1, 12.1.4.2, 12.2.3.1.1, 12.2.3.1.2, 12.2.3.2, 13.1.2.2, 13.1.2.3, 13.1.3.1, and 13.1.4, the deletion of article 12.1.3, and the addition of articles 113.1.3.3, 13.1.5, 13.1.5.1, and 13.1.5.2 of the Conditions of Service and Tariff.


## SCHEDULE 1: PRICE SENSITIVITY STUDY

## SENSIBILITÉ PRIX

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Résumé
Mise à jour du modèle développé en 2008 pour l'étude «sensibilité prix ».
Clients « grandes entreprises : inconfort à partir d'une hausse de 2,5\%-3\%. Courbes détaillées présentées à la page suivante.
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Sensibilité prix - Comparaison des groupes


■ Confort : suite à une baisse rapide de la courbe « augmentation acceptable »
$\square$ Inconfort : fin de la zone de confort jusqu'à $80 \%$ des répondants qui considèrent la hausse inacceptable

- Irritation : fin de la zone inconfort jusqu'à $80 \%$ des répondants qui envisagent changer de source

2 Source: Extract Recherche Marketing, 2013.

## SCHEDULE 2: CURRENT AND PROPOSED LOAD-BALANCING RATES FOR VARIOUS DELIVERY PROFILES

Schedule 2 presents a rate simulation for the load-balancing service using the current and proposed rates for a non-uniform delivery profile. Table 1, Table 2, Table 3, and Table 4 present an example of how to calculate the total invoice for the load-balancing service.

The prices used to calculate the invoices are as follows:

1. Monthly supply prices (column 4): average cost of purchases by the supply service from October 2013 to September 2014, reported in exhibit Gaz Métro-16, Document 5 of case R-2014-3879 (B-0597), page 1, line 27, used to calculate the transfer of the cost from the supply service to the load-balancing service. These prices are used to calculate the adjustment fees for a non-uniform delivery profile.
2. Space and peak price for the load-balancing service: price of the load-balancing service in effect from January 1 to December 31, 2015. These prices are used to calculate the total invoice for the load-balancing service at the current rates.
3. Load-balancing rate - function of LF: unit price multiplied by, as presented in exhibit Gaz Métro-5, Document 1, Section 7.3. The result is then multiplied by the annual volume to obtain the load-balancing bill associated with the consumption profile.
4. Load-balancing rate - function of volume: unit price presented in exhibit Gaz Métro-5, Document 1, Section 7.3. The result is multiplied by the annual volume to obtain the load-balancing bill not associated with the consumption profile.

To calculate the load-balancing bill using the proposed rates for the delivery profile, the multiplier proposed in section 7 of this document is used to estimate the peak consumption for customers with monthly readings.

Finally, for customers who supply the distributor with natural gas that they withdraw at their facilities, but who purchase the distributor's transportation service, the total bill for the loadbalancing service is determined by applying the proposals in section 8 of this document, and reported as volume withdrawn. However, Gaz Métro cautions the reader against interpreting a unit rate for the volume withdrawn, because the adjustment fees for the non-uniform delivery profile are not based on volume.

In Table 1, Table 2, and Table 3, the rate impact of a non-uniform delivery profile is presented for 11 different consumption profiles, including a deliver and burn consumption profile and a uniform consumption profile. Table 1 presents the rate impact at the rates currently in effect. Table 2 presents the rate impact for customers who deliver their supply to Gaz Métro's territory, at the proposed rates. Table 3 presents the rate impact for customers who deliver to an agreed-upon point outside of Québec, at the proposed rates.

Table 4 presents the rate impact for the various delivery profiles, for customers with a uniform consumption profile who deliver to an agreed-upon point outside of Québec, at the proposed rates. Table 4 present eight different delivery profiles.

Table 1: Current rates for the load-balancing service for customers who supply the distributor with natural gas that they withdraw at their facilities


Table 2: Proposed rates for the load-balancing service for customers who supply the distributor with natural gas that they withdraw from their facilities, as well as the transportation service used to transport this natural gas to the distributor's territory


Table 3: Proposed rates for the load-balancing service for customers who supply the distributor with natural gas, but who wish to purchase transportation service from the distributor to transport natural gas that they withdraw from their facilities to the distributor's territory - variation of the load consumption with constant delivery profile


Table 4: Proposed rates for the load-balancing service for customers who supply the distributor with natural gas, but who wish to purchase transportation service from the distributor to transport natural gas that they withdraw from their facilities to the distributor's territory - variation of the delivery profile with constant consumption profile



[^0]:    ${ }^{1}$ Now Article 12.1.4.1

[^1]:    ${ }^{2}$ R-3837-2013, B-0256, Gaz Métro-2, Document 4, Section 6.1.
    ${ }^{3}$ R-3879-2014, B-0421, Gaz Métro-16, Document 1, Section 2.
    ${ }^{4}$ Now Article 12.1.4.2
    ${ }^{5}$ R-3879-2014, B-0421, Gaz Métro-16, Document 1, Section 2.

[^2]:    ${ }^{6}$ IGUA-0050-3879, page 20.

[^3]:    ${ }^{7}$ Exhibit CFIB-0032-3879.

[^4]:    ${ }^{8}$ Schedule 1 presents the results of this study.

[^5]:    ${ }^{9}$ R-3879-2014, B-0421, Gaz Métro-16, Document 1, Section 2.

[^6]:    ${ }^{10}$ D-2015-181, Section 3.1.2.

[^7]:    ${ }^{11}$ a transportation MAO could also be applied to $D_{1}$ customers, but only if an MAO were agreed upon with the distribution service.

[^8]:    ${ }^{12}$ Only the sources for 2015 are presented here. The sources from previous years correspond to the equivalent exhibits consisting of the annual reports for each year.

[^9]:    ${ }^{13}$ The customer's contract term influences the period over which the decrease in consumption is noted.

[^10]:    ${ }^{14}$ Peak CT2016 $=32,85110^{3} \mathrm{~m}^{3}$. a peak of $32910^{3} \mathrm{~m}^{3}$ represents $1 \%$ of peak needs.

[^11]:    ${ }^{15}$ Peak $P$ used for the MAO for year $t$ would be the maximum between actual $P$ year $t-1$ and projected $P$ year $t-1$ and projected $P$ year $t$.

[^12]:    ${ }^{16}$ The transportation rate used is $4.81 \mathrm{\phi} / \mathrm{m}^{3}$ (rate estimated at the time of the 2016 Rate Case for 2017).
    ${ }^{17}$ To estimate the MAO, a LF of $80 \%$ was used.
    ${ }^{18}$ The impact on rates is estimated based on the volumes projected for 2017 in the 2016 rate case.
    ${ }^{19} \mathrm{https}: / / \mathrm{www} . u n i o n g a s . c o m / \sim /$ media/aboutus/policies/ServiceSwitching.pdf?la=en

[^13]:    ${ }^{20} \mathrm{https}: / / \mathrm{www} . e n b r i d g e g a s . c o m / b u s i n e s s e s / a c c o u n t s-b i l l i n g / g a s-r a t e s / l a r g e-v o l u m e-r a t e s / r a t e-125 . a s p x ~$
    https://www.enbridgegas.com/businesses/accounts-billing/gas-rates/large-volume-rates/rate-300.aspx
    ${ }^{21}$ Understanding Unbundled Rates and Services: https://www.enbridgegas.com/businesses/accounts-billing/contracts/unbundled-contracts-forms.aspx
    ${ }^{22}$ https://www.fortisbc.com/NaturalGas/Business/ChoosingANaturalGasSupplier/TransportationServiceOption/TransportationAgreem ent/Pages/default.aspx

[^14]:    ${ }^{23}$ See Graphs 47-51, Schedule 4 of exhibit Gaz Métro-5, Document 1.

[^15]:    ${ }^{24}$ a Jarque-Bera test was performed to test the assumption of normality of the peak temperature; we cannot reject the normality assumption.

[^16]:    ${ }^{25}$ R-3529-2004, SCGM-11, document 2, p. 22

[^17]:    ${ }^{26}$ R-3809-2012, Gaz Métro-15, Document 2, p. 6

[^18]:    ${ }^{27}$ R-3443-2000, SCGM-2, Document 1, Section 5.2.1.

[^19]:    ${ }^{28}$ See R-3443-2000, SCGM-7, Document 2.

[^20]:    ${ }^{29}$ R-3443-2000, SCGM-2, Document 3, Section 4.

