

STUDY OF THE MARGINAL COSTS OF LONG-TERM SERVICE
DELIVERY APPLIED TO THE PROFITABILITY ANALYSIS

(FOLLOW-UP TO DECISIONS

D-2013-106 AND D-2015-048)

INTRODUCTION

In the context of the 2015 Rate Case, Gaz Métro Limited Partnership (“Gaz Métro”) presented the results of its study seeking to establish, for each market, the marginal costs of long-term service delivery (“marginal costs”) applied to the profitability analysis (ref.: R-3879-2014, B-0549, Gaz Métro-17, Document 4). To reduce the regulatory burden, Gaz Métro did not believe it was necessary to retain the services of an expert to conduct the study.

Faced with the CFIB’s request to retain the services of an expert to examine the evidence adduced by Gaz Métro, the Régie de l’énergie (the “Régie”) concluded in its Decision D-2015-048 that the marginal costs issue is an important one, and that the proposal to retain an expert to study this topic was justified. However, the Régie also believes it is a matter of procedural fairness that Gaz Métro also have access to an expert, which it did not when the marginal costs issue was examined in the context of the 2015 Rate Case.

Consequently, to allow for the necessary time to deal with the marginal costs issue adequately, the Régie has postponed the study of that issue in this case (R-3867-2013) so that it can be addressed concurrently with the rate structure review.

GAZ MÉTRO’S PROPOSAL

Gaz Métro has retained the services of Dr. Edwin Overcast of Black & Veatch for its study of the marginal costs. He examined the study adduced by Gaz Métro in the context of the 2015 Rate Case and began his own evaluation of the marginal costs to be applied to the profitability analysis.

The results of the analysis conducted by Black & Veatch differ from those adduced by Gaz Métro in its Exhibit B-0549, Gaz Métro-17, Document 4 in R-3879-2014 (which exhibit is attached hereto as Schedule A). That said, Gaz Métro concurs with the analysis produced by Black & Veatch and presented in Exhibit Gaz Métro-6, Document 2 of this case, and agrees with all of its conclusions.

The following table presents a comparison of the profitability calculation, by market, estimated based on the method proposed by Black & Veatch, the method presented by Gaz Métro in the 2015 Rate Case and the method using the \$157 cost. To facilitate this comparison, the calculations were established using the data for projects completed in 2013, the same data on which Gaz Métro's previous study was based (page 9 of Schedule A).

Market segment	New approach (Black & Veatch)	New approach (CT 2015)	\$157	Before \$157
Residential	9.97%	9.92%	8.27%	9.97%
CII	21.05%	20.65%	21.13%	21.42%
Major Industries	7.71%	7.66%	7.87%	7.88%
Total	15.36%	15.13%	14.81%	15.58%

CONCLUSION

Gaz Métro is asking the Régie to approve the method proposed by Black & Veatch presented in the Exhibit Gaz Métro-6, Document 2 in this case, to determine the marginal costs of long-term service delivery specific to each product and to authorize Gaz Métro to use that method in the profitability analysis of a customer connection project, an additional load applied to an existing customer, as well as in the analysis of the overall profitability of the development plan.

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(F O L L O W - U P T O D E C I S I O N D - 2 0 1 3 - 1 0 6)

Study postponed to Phase 2 of R-3867-2013 by decision D-2015-048

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1. Introduction

The 2012–2013 Development Plan, presented as part of the 2013 Rate Case (R-3809-2012) raised concerns from the Régie de l'énergie (the "Régie") regarding certain aspects of the analysis of residential profitability including, in particular, the long-term marginal operating costs used.

1 In its D-2013-106 decision, the Régie asked Gaz Métro Limited Partnership ("Gaz Métro"):

2 *[Translation] [27] [...] to use a long-term marginal operating cost of \$157 in the profitability analysis of the residential*
3 *and CII development plan. This value could be subject to review in a future rate application once the distributor has*
4 *produced an assessment of these costs.*

In the 2014 Rate Case (R-3837-2013, B-0096, Gaz Métro-7, Document 3), Gaz Métro informed the Régie that it would conduct a study to determine the long-term marginal operating costs, the findings of which should be presented as part of the 2015 Rate Case. Gaz Métro then asked the Pacific Economics Group ("PEG") to comment on the use of a single long-term marginal operating cost for all markets and to attempt to estimate one for each market. Although PEG indicated that it was in complete agreement with the fact that the long-term operating costs are lower for smaller customers than for the biggest ones, the econometric models did not allow it to ascertain such costs on the basis of separate markets (see Appendix 1 of Exhibit B-0096, Gaz Métro-7, Document 3). Based on the analyses described in Appendix 1 of Exhibit B-0096, Gaz Métro-7, Document 3, PEG arrived, however, at an estimate of \$98, in 2013 dollars, for the residential market.

This document presents the findings of Gaz Métro's study, the purpose of which was to determine the long-term marginal operating cost for each of the markets. Subject to the Régie's approval, this cost will be used to evaluate the profitability of the proposed connection, development and load addition projects for customers in the residential, commercial, institutional and industrial ("CII") markets, as well as Sales Major Industries.

2. REGULATORY TREATMENT

2.1 Background: 1996 to 2013

The last update of the long-term marginal operating cost used in the calculation of the profitability of residential projects dates back to June 1999 and had established the cost at \$43 for the first year and \$41 for subsequent years.

As regards the CII and Sales Major Industries markets, the most recent evaluation dates back to 1996, at which time the long-term marginal operating cost was set at \$248 for the initial year and \$59 for subsequent years.

At that time, the long-term marginal operating cost included the marginal costs and the cost of activities resulting from serving a customer. It also included a cost associated with the possible addition of staff contingent upon the achievement of activity levels based on the number of new customers.

These long-term marginal operating costs were used until the Régie's D-2013-106 decision came into force on July 15, 2013.

2.2 From 2013 to date

The long-term marginal operating cost of \$157 applied by Gaz Métro, in compliance with Decision D-2013-106, originates from a study of U.S. businesses carried out by the expert Pacific Economics Group (PEG) that was filed in the context of a bid to renew the incentive mechanism (R-3693-2009 Phase 2). It represents an average of the long-term marginal operating costs of these businesses for all markets combined.

3. GAZ MÉTRO'S PROPOSAL

3.1 Definition

Gaz Métro submits, at the outset, that a distinction must be made regarding the term "operational cost" used in its "Revenue Requirement" statement since, in the latter, operating expenses represent costs prior to capitalization. To avoid ambiguity, in this study Gaz Métro will use the term "marginal cost of service delivery" rather than "operating cost", since it will mainly apply to the costs for certain activities that arise from operating expenditures.

The “marginal cost of service delivery” is defined as being the ***set of costs that can be linked to a customer once he or she has agreed to become a Gaz Métro customer. It includes the marginal costs the customer generates and the associated internal costs for the maintenance of its facilities and the services that are directly supplied.***

The items included in the marginal costs are the additional costs to issue an invoice, cash a payment and, for a telemetry customer, to use a cell line. The internal costs associated with maintaining facilities at a customer’s premises primarily consist of the salaries and fringe benefits of the employees who perform the tasks to which can be added, in the case of employees assigned to maintenance and meter reading, the cost of clothing. Maintenance activities relate to the meters, the connection, and the pipeline installed at the customer’s premises, and the services provided relate to credit checks, the processing of financial assistance or the consumer Rebate Consumption Program (“RCP”), telephone calls to customers, meter reading, bad debts, collection, customer retention, and the drawing up of contracts.

- 1 It is important to clarify the concept of “associated internal costs” in the aforementioned definition. The
- 2 arrival of a new customer or the addition of a load for an existing customer will take time away from the
- 3 employees who deliver the services, without inasmuch requiring, in the short term, that an additional
- 4 staff member be assigned to each of the departments concerned. Therefore, these associated internal
- 5 costs, which are established according to various parameters, were included in the calculation of the
- 6 *marginal cost of service delivery* in order to take into account any impact that adding customers (or
- 7 loads) might have on the labour costs of Gaz Métro over the medium and long term.

3.2 Methodology

The methodology consisted of identifying and then analyzing the departments whose activities and costs are directly related to customers. A series of interviews were conducted with cost centre managers for the purpose of pinpointing, across the various markets, the activities generated by new customers or by the loads added to existing customers. Each activity was quantified and priced to reflect the time devoted to its completion.

The costs related to meter maintenance, connections and, where applicable, the installation of an additional pipeline at the customer’s premises were also considered. For meters, an analysis of maintenance programs was conducted to determine the time devoted to maintenance activities per type of equipment; next, the cost of the employees assigned to such activities was compiled. In the case of

connections and pipelines installed on the customers' premises, the average cost was calculated based on the history of corrective and preventive maintenance costs. It should be pointed out that these costs are assessed independently of the market, since they basically depend on the type of meter installed at the customer's location and on the number of connections and additional metres of pipeline included in the projects analyzed.

Gaz Métro also found differences between the costs associated with service delivery in the first year, and the cost for subsequent years due to the fact that some of the activities occur only in the first year (e.g. credit checks) whereas other activities are recurrent (e.g. sending invoices). Gaz Métro has also found that the cost of the same activity can vary from one market to another. Explanations on the differences of certain costs across markets can be found in Appendix 2.

The activities and costs taken into account in the study will be reviewed on an annual basis to ensure that the way in which project profitability is evaluated takes into consideration how operations, costs and the model assumptions change over time.

3.3 Findings

The proposed model introduces the concept of a marginal cost of service delivery with minimum and maximum amounts for each market. Thus, the minimum amount will apply to a customer for whom the administrative services, metering devices and installation provided are standard. Above and beyond these "standard" customers, there are customers who have more specific needs that entail higher costs that can reach the maximum amount. This is the case, for instance, where a customer requires additional administrative services or a more elaborate maintenance program for the metering devices or even financial assistance through the RCP or the use of a telephone line for telemetry. The minimum and maximum amounts are presented in the following table, broken down by market.

Market	Year 1		Year 2 and +	
	2014 Cost Min	2014 Cost Max	2014 Cost Min	2014 Cost Max
Residential	\$109.30	\$449.91	\$62.52	\$379.30
CII	\$181.91	\$626.89	\$101.61	\$457.44
Major Industries	\$1,625.44	\$1,969.95	\$1,561.47	\$1,905.98

Note: See the cost breakdown, by market, presented in Appendix 1.

In addition, beyond the maximum amount, additional maintenance costs must also be taken into consideration when connections or additional metres of pipeline are part of the project. It is difficult to integrate these additional costs within a range since they are contingent on the characteristics of the project under study. It should be pointed out, however, that these additional costs were taken into account when calculating the weighted average cost by market, as explained in Section 5.

Moreover, the study helped establish the marginal cost of service delivery associated with an additional load for an existing client, as presented in the following table.

Market	Year 1		Year 2 and +	
	2014 Cost Min	2014 Cost Max	2014 Cost Min	2014 Cost Max
Residential	\$36.29	\$60.12	-	-
CII	\$52.62	\$158.96	-	-
Major Industries	\$36.29	\$239.60	-	\$186.12

Only the additional costs directly related to additional loads are taken into account in the profitability analysis. For example, an additional load will not increase the costs of invoicing, meter reading or cashing a customer's payments. However, this could mean preparing a new contract, conducting a credit check, processing financial assistance granted through the RCP or, where applicable, adding a cell line if the customer is transferred to telemetry. Only the additional costs relevant to the situation addressed in the profitability analysis will be isolated in the model proposed by Gaz Métro.

3.4 Scope

The proposed method will allow for the use, in profitability analyses, of a marginal cost of service delivery that is closer to the specific characteristics of customers in the projects under analysis. Using a more accurate cost will result in a better match between anticipated revenues in the profitability analysis and expenditures that will stem from the implementation of projects.

The method proposed will require a modification of the current computer applications used for the profitability analyses of projects and the analysis of the development plan's overall profitability. We must therefore provide for a period of about four months after the Régie's final decision to adapt the computer applications concerned.

4. PROCESSES USED BY INDUSTRY COMPARABLES

Gaz Métro surveyed three of Canada's largest natural gas distributors in order to understand the method they use to determine the marginal cost of long-term service delivery and to compare it to the method proposed by Gaz Métro.

Essentially, they use a method similar to that used in their allocation of service costs. However, they retain only the costs allocated based on the number of customers, regardless of whether the costs are marginal or not. The result obtained by using this type of method is closer to an average cost than a marginal cost.

The model proposed by Gaz Métro focuses more on the marginal costs specific to a new client and on the impact that a higher number of customers has on labour due to the associated costs.

5. IMPACT ON THE DEVELOPMENT PLAN'S OVERALL PROFITABILITY

Gaz Métro has calculated the development plan's overall cost using the new method. Since the proposed method includes parameters that vary depending on the specificities of the customer (or of the project under analysis), a weighting of the various cost parameters was performed to estimate the impact of the new method on the development plan's overall profitability. In order to reflect as accurately as possible all of the model's impacts, preventive and corrective maintenance costs were considered for the additional metres of pipeline installed. The proportions used to weight the specific parameters (e.g. type of meters installed, the number of additional metres of pipeline installed) were determined based on the data of projects carried out in 2013.

The following table represents the resulting weighted average cost, by market.

	Year 1	Year 2 and +
Residential	\$137.48	\$70.45
CII	\$316.07	\$208.06
Major Industries	\$5,276.92	\$5,212.96
Total	\$210.10	\$127.00

1

2 *Note: Unlike the table on page 7, line 1, the table above includes the maintenance costs that apply to the additional metres*
3 *of pipeline contained in the Revenue Requirement. Given the large number of metres of pipeline included in projects involving*
4 *the Sales Major Industries that are considered in this analysis, the impact on the weighted average cost for this market is*
5 *significant.*

Based on the information in the preceding table, a calculation for profitability by market was made to estimate the impact of the proposed method on overall profitability. The result was compared to that obtained using the cost of \$157.

Market segment	New approach	\$157	Before \$157
Residential	9.92%	8.27%	9.97%
CII	20.65%	21.13%	21.42%
Major Industries	7.66%	7.87%	7.88%
Total	15.13%	14.81%	15.58%

As demonstrated above, the application of the new method will, all other things being equal, negatively affect the profitability of all markets compared to the method used before the cost of \$157 was imposed. These findings are consistent with the premise that the cost of providing services to residential customers is lower than for other markets. The findings also reveal that the method proposed allows to distinguish between the costs associated with each customer category, which means that profitability can be evaluated more accurately.

6. Conclusion

The results of the proposed method will allow us to establish a marginal cost of service delivery, for each project and market, that is based on the activities generated by the customer for Gaz Métro, whether in terms administrative work, equipment maintenance or other customer-specific elements.

Whereas the model used prior to the cost of \$157 made no distinction between the various projects for any given market, the cost of \$157 made no distinction between the various markets. However, the new approach will allow us to better match the anticipated revenues, and this for each project, when analyzing profitability and the expenses specifically attributable to the customer.

In closing, the proposed method is transparent: each cost item related to a customer is taken into consideration, measured, and updated according to the developments in operations.

1 **Gaz Métro is asking the Régie to approve the proposed method to determine the marginal costs**
2 **of long-term service delivery specific to each project and to authorize Gaz Métro to use that**
3 **method in the profitability analysis of a customer connection project, an additional load applied**
4 **to an existing customer, as well as in the analysis of the overall profitability of the development**
5 **plan.**

APPENDICES

Appendix 1

Cost details by market

Residential	Year 1		Year 2 and +	
Costs	Min	Max	Min	Max
Mailing of subscription confirmation letter	\$0.83	\$0.83	-	-
Input of a new contract - Residential	\$36.29	\$36.29	-	-
Cost of opening a billing file	\$9.66	\$9.66	-	-
Cost of mailing a bill	\$8.36	\$8.36	\$8.36	\$8.36
Annual cost for cashing a payment - Residential	\$0.74	\$0.74	\$0.74	\$0.74
Cost of processing a standard customer call	\$12.84	\$12.84	\$12.84	\$12.84
Cost of reading a meter	\$6.71	\$6.71	\$6.71	\$6.71
Cost of bad debts - Residential	\$0.57	\$0.57	\$0.57	\$0.57
Collection and recovery costs - Residential	\$2.43	\$2.43	\$2.43	\$2.43
Preventive maintenance – connection	\$12.88	\$12.88	\$12.88	\$12.88
Corrective maintenance – connection	\$17.99	\$17.99	\$17.99	\$17.99
Processing of CRP application – Residential	-	\$23.83	-	-
Inspection of turbine meter	-	\$31.68	-	\$31.68
Spin test inspection of turbine less than 12 inches	-	\$79.20	-	\$79.20
Inspection of telemetry instruments	-	\$118.79	-	\$118.79
Inspection of corrective instruments	-	\$87.11	-	\$87.11
Total	\$109.30	\$449.91	\$62.52	\$379.30

1 Note:

This table does not take into account the additional preventive and corrective maintenance costs (\$0.22/metre and \$0.34/metre, respectively) applicable to projects that will require additional metres of pipeline, according to the Revenue Requirement. Moreover, the maximum amount does not take into account the preventive and corrective maintenance costs (\$12.88 and \$17.99, respectively) per additional connection required in the project.

Appendix 1 (cont'd)

Cost details by market

CII	Year 1		Year 2 and +	
Costs	Min	Max	Min	Max
Mailing of subscription confirmation letter	\$0.83	\$0.83	-	-
Cost of a credit check conducted internally	\$17.19	\$17.19	-	-
Input of a new contract - Commercial	\$52.62	\$52.62	-	-
Cost of opening a billing file	\$9.66	\$9.66	-	-
Cost of mailing a bill	\$8.36	\$8.36	\$8.36	\$8.36
Annual cost for cashing a payment - Commercial and industrial	\$1.75	\$1.75	\$1.75	\$1.75
Cost of processing a standard customer call	\$12.84	\$12.84	\$12.84	\$12.84
Cost of reading a meter	\$6.71	\$6.71	\$6.71	\$6.71
Cost of bad debts - CII	\$7.77	\$7.77	\$7.77	\$7.77
Collection and recovery costs - CII	\$33.31	\$33.31	\$33.31	\$33.31
Preventive maintenance – connection	\$12.88	\$12.88	\$12.88	\$12.88
Corrective maintenance – connection	\$17.99	\$17.99	\$17.99	\$17.99
Processing of CRP application – Commercial	-	\$32.90	-	-
Inspection of turbine meter	-	\$31.68	-	\$31.68
Spin test inspection of turbine less than 12 inches	-	\$79.20	-	\$79.20
Inspection of telemetry instruments	-	\$118.79	-	\$118.79
Inspection of corrective instruments	-	\$87.11	-	\$87.11
Input of a new contract - Major Accounts	-	\$56.25	-	-
Customer retention costs - Major Accounts	-	\$39.05	-	\$39.05
Total	\$181.91	\$626.89	\$101.61	\$457.44

1 Note:

This table does not take into account the additional preventive and corrective maintenance costs (\$0.22/metre and \$0.34/metre, respectively) applicable to projects that will require additional metres of pipeline, according to the Revenue Requirement. Moreover, the maximum amount does not take into account the preventive and corrective maintenance costs (\$12.88 and \$17.99, respectively) per additional connection required in the project.

Appendix 1 (cont'd)

Cost details by market

Major Industries	Year 1		Year 2 and +	
Costs	Min	Max	Min	Max
Mailing of subscription confirmation letter	\$0.83	\$0.83	-	-
Cost of a credit check conducted internally	\$17.19	\$17.19	-	-
Input of a new contract –Major Industries	\$36.29	\$36.29	-	-
Cost of opening a billing file	\$9.66	\$9.66	-	-
Cost of mailing a bill	\$8.36	\$8.36	\$8.36	\$8.36
Annual cost for cashing a payment –Major Industries	\$1.59	\$1.59	\$1.59	\$1.59
Customer retention costs –Major Industries	\$1,197.16\$	\$1,197.16\$	\$1,197.16\$	\$1,197.16\$
Cost of reading a meter	\$6.71	\$6.71	\$6.71	\$6.71
Inspection of turbine	\$31.68	\$31.68	\$31.68	\$31.68
Inspection of telemetry instruments	\$118.79	\$118.79	\$118.79	\$118.79
Inspection of corrective instruments	\$87.11	\$87.11	\$87.11	\$87.11
Preventive maintenance – connection	\$12.88	\$12.88	\$12.88	\$12.88
Corrective maintenance – connection	\$17.99	\$17.99	\$17.99	\$17.99
Spin test inspection of turbine measuring less than 12 inches	\$79.20	-	\$79.20	-
Spin test inspection of turbine measuring 12 inches or more	-	\$237.59	-	\$237.59
Cost of a cellular line – telemetry	-	\$186.12	-	\$186.12
Total	\$1,625.44	\$1,969.95	\$1,561.47	\$1,905.98

1 Note:

This table does not take into account the additional preventive and corrective maintenance costs (\$0.22/metre and \$0.34/metre, respectively) applicable to projects that will require additional metres of pipeline, according to the Revenue Requirement. Moreover, the maximum amount does not take into account the preventive and corrective maintenance costs (\$12.88 and \$17.99, respectively) per additional connection required in the project.

Appendix 2

Explanation of certain cost differences between markets

In table 1 of Appendix 1, costs vary for the same activity from one market to another. These differences are explained as follows.

Credit check

1	Residential:	\$0.00
2	CII:	\$17.19
3	Major Industries:	\$17.19

In accordance with the *Conditions of Service and Tariff*, no credit checks are performed for residential customers.

Customer retention

4	Residential:	\$0.00
5	CII – major accounts:	\$39.05
6	Major Industries:	\$1,197.16

The representative of large customers will need to spend time on maintenance. Major industry customers (Sales Major Industries) require even more time than major account customers (CII) because their needs are different. For example, major industry advisors will closely monitor the energy imbalances of each customer due to the significant volumes at stake. The major industry advisor acts as a one-stop service window for major industry customers and, in that capacity, often deals with metering and billing issues. Similarly, the complexities associated with industrial rates, make-up gas and the load-balancing rate are specific to major industry customers.

Meter inspections and corrective instruments

Maintenance plans vary based on the type of meters and metering instruments installed at the customer's premises. The costs indicated in the maximum amount represent larger-capacity equipment with more sophisticated technology designed to be installed in each of the markets. Thus, the maximum cost for the residential and CII customers represents the cost of turbines

measuring less than 12 inches, while the maximum cost for major industry customers represents the cost of turbines measuring 12 inches or more.

Input time for a new contract

1	Residential:	\$36.29
2	CII – -commercial:	\$52.62
3	CII – major accounts:	\$108.87 (see note)
4	Major industries:	\$36.29
5	Note: The cost of processing a new CII contract consists of the input time of a basic	
6	commercial contract (\$42.62) and the additional input that is required for a major	
7	account contract (\$56.25).	

The complexity of contracts and additional validations to be carried out in the case of major accounts explains the difference between the time spent on a commercial account and on a major account.

Cost of a cellular line - telemetry

8	Residential:	\$0.00
9	CII:	\$0.00
10	Major industries:	\$186.12

Gaz Métro must bear the cost of using a telemetry cellular line when it is not possible to use the major industry customer's telephone line because of the distance between the location of the meter and the telephone line.