Gaz Métro Limited Partnership
Application relating to the marginal costs of long-term service delivery
applied to the profitability analysis, R-3867-2013

RESPONSE OF GAZ MÉTRO LIMITED PARTNERSHIP (GAZ MÉTRO) TO THE REQUEST FOR
INFORMATION NO. 8 FROM THE RÉGIE DE L'ÉNERGIE (THE "RÉGIE") WITH RESPECT TO
THE GENERIC MATTER BEARING ON THE ALLOCATION OF COSTS
AND RATE STRUCTURE OF GAZ MÉTRO

1. References: (i)   Exhibit C-ROEÉ-0082, p. 20;
                (ii)   Exhibit C-ROEÉ-0082, p. 21;
                (iii)   Exhibit C-ROEÉ-0082, p. 25.

Preamble:

(i)   *"What categories of operating costs result from additions of new loads, as distinct from additions of new customers?*

A: Gaz Métro identifies four categories that it treats as being driven by the number of customers added, but that probably vary more with the added revenue, which I list below, with the line numbers from the B&V Report (B-0145, pp. 9-11):

- *Cost of Bad Debts;*
- *Collection and recovery costs;*
- *Customer retention costs -Major accounts;*
- *Customer retention costs -Major industries.*

A small customer who goes into financial distress or leaves unpaid bills will impose lower costs of bad debt and debt collection than a larger one, for the same number of months of unpaid bills."

(ii)   *"Q: Why do you disagree with B&V on the treatment of Distribution Gas Supply expenses*

A: The costs in this account cover long-term and short-term planning of Gaz Métro purchases of gas for its customers; system control for all gas on the Gaz Métro system; and contractual relationships with Gaz Métro's suppliers, third-party suppliers, and self-supplying customers."

(iii)   *"Q: Has Gaz Métro omitted any costs from this category?*

A: I believe so. Gaz Métro must incur costs prior to the commitment of customers to connection to the new line, for marketing; explaining the connection process, rates, the CRP, and other matters to potential customers; and estimating the costs of service connections so that customers can commit to the connection. Those costs must be included in the evaluation of the decision to proceed with the line extension."

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Questions:

1.1 Please comment on the advisability of calculating the "Cost of Bad Debts" and "Collection and Recovery Costs" as a function of expected revenues, as suggested by Expert Witness Chernick in reference (i).

Answer:

Dr Overcast believes that: "*It is true that cost of bad debts and collection and recovery costs are more a function of revenues as opposed to added customers or added load. That does not change the fact that these are not marginal costs but rather are the result of social policies and should not be used as part of a line extension policy.*"

Gaz Métro also wishes to clarify, with respect to recovery costs, that according to the *Conditions of service and tariff* approved by the Régie, a charge for non-honoured payment of $25, late payment charges of 1.5%, a collection charge of $50 as well as a minimum reconnection charge of $225 are billed directly to customers, as applicable.

1.2 Please comment on the advisability of including costs relating to Distribution Gas Supply expenses in the marginal costs of long-term service delivery, as suggested by Expert Witness Chernick in reference (ii).

Answer:

Dr Overcast believes that: "*These are fixed costs that do not vary with the quantity of gas used by the system or the number of customers. As fixed costs they make no contribution to marginal costs by definition and should be zero. Witness Chernick is incorrect to suggest that these costs be included as marginal costs. There are a number of issues with the views expressed by Mr. Chernick related to the inclusion of managing gas costs being considered as a marginal cost of customer additions.*

First, he errors in using historical data to estimate marginal cost. Marginal costs must be forward looking. The use of historical regression analysis looks only at average costs not marginal so it is not surprising that the results approximate average cost as claimed by Mr. Chernick.

Second, a theoretical model of the relationship between a dependent variable and one of more independent variables is the basic foundation for regression analysis. In this case the model as discussed by Mr. Chernick is that added customers add to gas throughput and the added throughput adds to the cost of gas supply management. There is no factual basis for this model as follows: as the Italian economist Vilfredo Pareto states "In non-mathematical language, the independent variable "x" in an algebraic equation corresponds to a cause.

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Sometimes this is an admissible translation and sometimes it is not. For cause, colloquially speaking, must necessarily come before its effect." The Chernick model fails to recognize that throughput does not come before the cost but after as it is the cost that result in a specific portfolio of gas supply and the hourly management of supply deliveries.

Third, his regression analysis is inadequate for any number of reasons including providing incomplete information to assess the results-- no reported F-statistic or t-statistics to assess R-squared or regression coefficients for their significance-, small sample size and arbitrary selection of the time series. This latter point is likely explained by the fact that using the entire period provided by Gaz Metro the resulting R squared fall to .37, is barely significant and the intercept term is not statistically different than zero.

Fourth, Mr. Chernick does not use actual sales to customers which are the difference between total throughput and transportation volumes. Again the reason for this decision is obvious. It results in an even lower R squared and both the total model and each variable are barely significant.

Finally, his analysis fails the test of common sense when one observes that the real cost of gas supply expense declined steadily from 2005 to 2012 despite growth in numbers of customers and both increases and decreases in throughput over that period. Those throughput changes would reflect among other things weather, the economy, conservation and customer growth. The simple fact is that gas supply expenses are not a marginal cost of customer connections."

Furthermore, Gaz Métro indicates that it would not be appropriate to include the costs relating to the operating expenses of the Gas Supply and Transport division in the marginal costs of long-term service delivery, as any variation in such costs cannot be specifically attributed to the addition of new customers or their volumes to the gas supply portfolio required by Gaz Métro. In fact, the Gas Supply team manages the expected gas demand as a whole, for both active and expected customers. What is more, according to the data submitted in response to question 4.2 of Mr. Chernick's request for information (B-0225, Gaz Métro-8, Document 7), operating expenses have varied without any direct link to customer growth, but rather as a function, notably, of the evolution of the gas market and the implementation of solutions to face such evolution.

1.3   Please comment on the advisability of including marketing costs in the marginal costs of long-term service delivery, as suggested by Expert Witness Chernick in reference (iii).

Answer:

D[r] Overcast believes that: "*Marketing costs are not marginal costs associated with adding customers or adding load. This is in the nature of expenses that are unrelated to the number of customers or the growth in load. They certainly do not change with load or customer additions as would be required for them to be considered marginal costs. These costs do not result and are not generated from the addition of a new customer, in Gaz Metro's market marketing efforts deployed in a year do not necessarily generate a new customer addition in that same year as potential customers can express interest several years later.*"

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2. References: (i)   Exhibit <u>C-ROEÉ-0082.</u> p. 8 and 9;

               (ii)   Exhibit <u>B-0196.</u> Schedule 1, p. 1 to 4;

               (iii)   Exhibit   <u>B-http://publicsde.regie-energie.qc.ca/projets/235/DocPrj/R-3867-2013-B-0145-Demande-Piece-2016_10_04.pdf#page=30145,</u> p. 3 and 9 to 11.

Preamble:

(i)   *"Gaz Métro provides a range of estimates, from zero to the average expected cost of the service, for several cost categories (processing CRP applications, customer retention, various meter maintenance costs). […]*

These ranges add nothing to the analysis of profitability, for two reasons. First, the values presented as the high end are not high-end estimates: they are averages, reflecting high-cost and low cost situations. Gaz Métro is proposing ranges from zero to average, rather than just using the average.

Second, Gaz Métro has not explained how it would use these ranges.

Where Gaz Métro has distinguished the costs of serving different types of customers (as for meter maintenance), those values can be used in the profitability analyses, by multiplying the cost for each type of meter by the number of those meters to be added. It is not clear how Gaz Métro would know, as it is proposing to extend a line, whether the eventual new customers would use the call center, apply for a CRP grant, or require customer retention services in the future. »

(ii)   Tables describing the methodology applied to calculate each of the costs presented in the proposal submitted by Gaz Métro's expert.

(iii)   Tables 2 to 4. Marginal costs of long-term service delivery submitted by Gaz Métro's expert.

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Questions:

2.1 Please submit the tables with the minimum and maximum limits for marginal costs of long-term service delivery for Residential, CII and Major Industries markets (reference (iii)), and identify therein the cost(s) corresponding to average values (reference (ii)).

Answer:

Firstly, it is important to clarify again the methodology proposed by Gaz Métro. Contrary to Mr. Chernick's understanding and as explained in the answer provided to question 1.1 of the Régie's request for information no. 5 (B-0196, Gaz Métro-8, Document 1), Gaz Métro's proposed methodology does not rely on minimum and maximum limits. Each cost component, which is calculated according to the description provided in reference (ii), is first tailored to the customer's particular situation before being included in the marginal cost used in the profitability analysis for such customer. Each component is determined ahead of the profitability analysis. For instance, for a residential customer applying for a CRP (rebate consumption program) grant and for whom a positive displacement meter with radiometry is installed, the marginal cost will equal the sum of the cost of a residential customer, of the cost of processing a CRP application and of the maintenance cost of the positive displacement meter with radiometry.

Naturally, to quantify the marginal cost of each component for a new customer, average times and costs have been applied, as explained in the answer provided to question 1.1 of the Régie's request for information no. 5.

On that topic, Dr Overcast adds the following: "*There is no meaning to the average of two different marginal costs. The tendency to default to an average is not analytically correct in any event since that requires an assumption that both values are equally likely. They are not. As a result Gaz Metro objects to making calculations that are not sound. The use of a minimum and a maximum is to allow Gaz Metro the flexibility to account for the expected unique characteristics of each extension.*"

For illustration purposes, Gaz Métro provides in the following pages two examples of the application of its proposed methodology to determine the amount of the marginal operating cost to be considered in the profitability analysis of a new project.

Objective: Explain the calculation of the amounts of $2,640 and $2,560 in service delivery marginal costs (relating to operating expenses) applied in the profitability analysis for the project in **Figure 1**. The marginal cost is presented in the line in grey highlighting in the following profitability analysis.

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Figure 1 - Scenario 1

	GAZ MÉTRO LIMITED PARTNERSHIP CALCULATION OF REVENUE REQUIRED BUDGET	REVENUE REQUIRED SRR-VERSION 17.0
GazMétro life in blue		

Serres Demers		
	Project type	Extension - Estimate
	Region	Montérégie
	Customer type	COMM. - Major accounts
	Capital cost D-2016-156	6.42%
	Weighted prospective capital costs	5.28%

	Representative	
	Advisor	
	OTP	
	Municipality	Drummondville
	Length, in linear meters	

	Total	0	1	2	3	4	5
Number of customers			1	1	1	1	1
Volume, in 1000 m³			2,020.0	2,020.0	2,020.0	2,020.0	2,020.0
Expense of service lines - Base	908,900	908,900	0	0	0	0	0
Expense of service lines - Contractor fees	148,622	148,622	0	0	0	0	0
Expense of service lines	1,057,522	1,057,522	0	0	0	0	0
Expense of connections - Base	471,834	471,834	0	0	0	0	0
Expense of connections - Contractor fees	85,845	85,845	0	0	0	0	0
Expense of connections - Cost of meter(s)	5,202	5,202	0	0	0	0	0
Cost of connections	562,881	562,881	0	0	0	0	0
UMQ fees (0.00%)		0	0	0	0	0	0
General corp. fees (14.53%)	235,445	235,445	0	0	0	0	0
PRC - 5 years			0	0	0	0	0
PRC - 10 years			0	0	0	0	0
CASEP - PRC (10 years)			0	0	0	0	0
Non-depreciable assets			0	0	0	0	0
System connection contrib./Deadline/Location		0	0	0	0	0	0
CASEP - Capital Property		0	0	0	0	0	0
External subsidies		0	0	0	0	0	0
Customer contributions		0	0	0	0	0	0
Total investment	1,855,848	1,855,848	0	0	0	0	0
Operating cost			2,640	2,560	2,560	2,560	2,560
Book depreciation			57,954	57,954	57,954	57,954	57,954
Public utility tax			26,968	26,099	25,230	24,360	23,491
Royalties			2,142	2,142	2,142	2,142	2,142
Taxes			26,097	6,037	7,621	9,061	10,367
Yield			96,459	93,399	90,339	87,279	84,219
Revenue required			212,261	188,191	185,845	183,357	180,733
Revenues			0	0	0	0	0
Distribution rate (¢/m³)			8.2380	8.2380	8.2380	8.2380	8.2380
Rebate rate (¢/m³)			0.0000	0.0000	0.0000	0.0000	0.0000
Distribution revenue (¢/m³)			8.2380	8.2380	8.2380	8.2380	8.2380
Distribution revenue ($)			166,408	166,408	166,408	166,408	166,408
Annual rate contribution			45,853	21,784	19,438	16,949	14,326

	6	7	8	9	10
Annual rate contribution	11,576	8,707	5,727	2,641	(543)

Rate contribution (3 years)	79,864	Rate contribution (15 years)	97,866
Rate contribution (5 years)	104,737	Rate contribution (20 years)	41,093
Rate contribution (10 years)	124,444	Rate contribution (40 years)	(364,975)
Break-even rate (years)	22.01	Grid used —> COM Major Accounts Level 5	
Internal rate of return (IRR 40 years)	5.89%	Superior signing officer - Sales —> President	

SALES

Representative Date ___/___/___	Director, Sales Date ___/___/___	Senior Executive, Sales Date ___/___/___
Vice-President, Sales and Market Dev. Date ___/___/___	President Date ___/___/___	

CONDITIONS OF COMPLETION

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<u>Scenario 1</u>

The initial example above (**Figure 1**) relates to the project analysed in the answer to question 1.3 of the IGUA's request for information in Exhibit B-0207, Gaz Métro-8, Document 2, Schedule 1, page 3.

To come to the marginal costs of $2,640 for Year 1 and $2,560 for subsequent years to be included in the profitability analysis, Gaz Métro applied a detailed grid of parameters. This grid, used for all projects, no matter the reference market, comprises 19 components presented in **Figure 2.** Each of those 19 components relates to a specific type of costs to be considered in the marginal operating costs.

The costs presented in the grid of parameters have been determined as indicated in the answer to question 1.1 of the Régie's request for information no. 5, in Exhibit B-0196, Gaz Métro-8, Document 1, Schedule 1.

When performing the project profitability analysis, Gaz Métro already has on hand all of the information required to populate the fields of the grid, so as to take into account each relevant component for the new project.

(a) The costs presented for components #1 to #4 are not optional. They are automatically included in all projects analysed. With respect to the other 15 components, an option must be selected.

(b) Many of the components in the grid prompt for a Yes/No answer, as is the case, for instance, for components #18 (costs of inspection of telemetry and corrective instruments) and #19 (telemetry – cost of a cellular line). When "Yes" is selected, the related cost in the grid is added, and conversely, when "No" is selected, no cost is added.

(c) Some components generate different costs according to the option selected. This is the case, for instance, for components #5 (cost of inputting a new agreement) and #17 (cost of meter inspection). For each of those components, one option must be selected, which will then input the cost displayed in the grid for such option in the calculation of marginal cost. To better illustrate this process, the selected options have been highlighted in grey.

(d) Components #15 and #16 apply to all projects. The costs of $0.22 and $0.37, respectively, per meter of line are applied according to the exact number of meters of line for the analysed project.

(e) The grid then sums up all of the costs associated with the 19 options selected, which then results in the marginal cost of service delivery of $2,640 for Year 1 and $2,560 for subsequent years **(Figure 2).**

(f) The marginal cost of service delivery of $2,640 for Year 1 and $2,560 for subsequent years would then be integrated to the remaining parameters of the profitability analysis **(Figure 1).**

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Figure 2 - Scenario 1

#	Type of Costs	Options	Applicable	Gaz Métro as proposed Cost Year 1	Gaz Métro as proposed Cost Year 2 and +	Black & Veatch revised Cost Year 1	Black & Veatch revised Cost Year 2 and +
1	Mailing of subscription confirmation letter		yes	0.83	-	0.83	-
2	Cost of mailing bill		yes	8.36	8.36	8.36	8.36
3	Cost of opening a billing file		yes	9.66	-	9.66	-
4	Cost of reading a meter		yes	6.71	6.71	-	-
5	Input of a new agreement	Residential and Major Industries	no	36.29	-	36.29	-
		CII	yes	52.62	-	52.62	-
6	Cost of a credit check conducted internally	Residential	no	-	-	-	-
		CII and Major Industries	yes	17.19	-	17.19	-
7	Annual cost for cashing a payment	Residential	no	0.74	0.74	0.74	0.74
		CII	yes	1.75	1.75	1.75	1.75
		Major Industries	no	1.59	1.59	1.59	1.59
8	Cost of processing a standard customer call	Residential and CII	yes	12.84	12.84	-	-
		Major Industries	no	-	-	-	-
9	Cost of bad debts	Residential	no	0.57	0.57	-	-
		CII	yes	7.77	7.77	-	-
		Major Industries	no	-	-	-	-
10	Collection and recovery costs	Residential	no	2.43	2.43	-	-
		CII	yes	33.31	33.31	-	-
		Major Industries	no	-	-	-	-
11	Customer retention costs	Residential	no	-	-	-	-
		CII	Yes	-	39.05	-	-
		Major Industries	no	1,197.16	1,197.16	-	-
12	Preventive maintenance - connection		yes	12.88	12.88	-	-
13	Corrective maintenance - connection		yes	17.99	17.99	-	-
14	Processing of PRC application	Residential	no	23.83	-	23.83	-
		CII	no	32.90	-	32.90	-
15	Maintenance of line attributable to customer - Preventive	$0.22/m	4,250 m	935.00	935.00	935.00	935.00
16	Maintenance of line attributable to customer - Corrective	$0.37/m	4,250 m	1,572.50	1,572.50	1,572.50	1,572.50
17	Meter inspection	Positive displacement meter, with radiometry	no	-	-	-	-
		Turbine meter	no	31.68	31.68	31.68	31.68
		Fixed-pressure factor (FPF) positive displacement meter, with radiometry	no	36.96	36.96	36.96	36.96
		Rotary meter, with radiometry	yes	42.24	42.24	42.24	42.24
		Fixed-pressure factor (FPF) rotary meter, with radiometry	no	63.36	63.36	63.36	63.36
		Spin test for turbines measuring less than 12 inches	no	79.20	79.20	79.20	79.20
		Spin test for turbine measuring 12 inches and more	no	237.59	237.59	237.59	237.59
18	Inspection of telemetry and corrective instruments	telemetry	no	118.79	118.79	118.79	118.79
		corrective instruments	no	87.11	87.11	87.11	87.11
19	Telemetry – Cost of a cellular line		no	186.12	186.12	186.12	186.12
20		Total marginal cost	Total	2,731.65	2,690.40	2,640.15	2,559.85

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Scenario 2

To illustrate how the grid works, Gaz Métro reprised, for scenario 2, the same project as in scenario 1, but this time adding an application for a PRC grant. **Figure 3** demonstrates the result of the marginal cost which would be added to the remaining parameters of the profitability analysis in this case. The only difference in the marginal cost stems from the processing of the grant, where the "CII" option of component #14, namely $32.90, is selected for Year 1.

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Figure 3 - Scenario 2

	Type of costs	Options	Applicable	Gaz Métro as proposed		Black & Veatch revised	
				Cost Year 1	Cost Year 2 and +	Cost Year 1	Cost Year 2 and +
1	Mailing of subscription confirmation letter		yes	0.83	-	0.83	-
2	Cost of mailing bill		yes	8.36	8.36	8.36	8.36
3	Cost of opening a billing file		yes	9.66	-	9.66	-
4	Cost of reading a meter		yes	6.71	6.71	-	-
5	Input of a new agreement	Residential and Major Industries	no	36.29	-	36.29	-
		CII	yes	52.62	-	52.62	-
6	Cost of a credit check conducted internally	Residential	no	-	-	-	-
		CII and Major Industries	yes	17.19	-	17.19	-
7	Annual cost for cashing a payment	Residential	no	0.74	0.74	0.74	0.74
		CII	yes	1.75	1.75	1.75	1.75
		Major Industries	no	1.59	1.59	1.59	1.59
8	Cost or processing a standard customer call	Residential and CII	yes	12.84	12.84	-	-
		Major Industries	no	-	-	-	-
9	Cost of bad debts	Residential	no	0.57	0.57	-	-
		CII	yes	7.77	7.77	-	-
		Major Industries	no	-	-	-	-
10	Collection and recovery costs	Residential	no	2.43	2.43	-	-
		CII	yes	33.31	33.31	-	-
		Major Industries	no	-	-	-	-
11	Customer retention costs	Residential	no	-	-	-	-
		CII	Yes	-	39.05	-	-
		Major Industries	no	1,197.16	1,197.16	-	-
12	Preventive maintenance - connection		yes	12.88	12.88	-	-
13	Corrective maintenance - connection		yes	17.99	17.99	-	-
14	Processing of PRC application	Residential	no	23.83	-	23.83	-
		CII	yes	32.90	-	32.90	-
15	Maintenance of line attributable to customer - Preventive	$0.22/m	4,250 m	935.00	935.00	935.00	935.00
16	Maintenance of line attributable to customer - Corrective	$0.37/m	4,250 m	1,572.50	1,572.50	1,572.50	1,572.50
17	Meter inspection	Positive displacement meter, with radiometry	no	-	-	-	-
		Turbine meter	no	31.68	31.68	31.68	31.68
		Fixed-pressure factor (FPF) positive displacement meter, with radiometry	no	36.96	36.96	36.96	36.96
		Rotary meter, with radiometry	yes	42.24	42.24	42.24	42.24
		Fixed-pressure factor (FPF) rotary meter, with radiometry	no	63.36	63.36	63.36	63.36
		Spin test for turbines measuring less than 12 inches	no	79.20	79.20	79.20	79.20
		Spin test for turbine measuring 12 inches and more	no	237.59	237.59	237.59	237.59
18	Inspection of telemetry and corrective instruments	telemetry	no	118.79	118.79	118.79	118.79
		corrective instruments	no	87.11	87.11	87.11	87.11
19	Telemetry – Cost of a cellular line		no	186.12	186.12	186.12	186.12
20		**Total marginal cost**	Total	**2,764.55**	**2,690.40**	**2,673.05**	**2,559.85**

2.2   Considering your answer to the previous question, please provide your opinion on the position of Expert Witness Chernick in reference (i) regarding the relevance and usefulness of defining ranges for the marginal costs of long-term service delivery, varying from zero to an average value.

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Answer:

As explained in the answer to question 2.1, the ranges provided in Gaz Métro's evidence only aim at presenting minimal and maximal values for the various possible options for each component, and to demonstrate that certain costs apply to a customer segment as a whole while others only apply to a specific customer, according to its own characteristics. Black and Veatch's and Gaz Métro's proposed approach is therefore relevant, useful and accurate.

Furthermore, with respect to Mr. Chernick's suggestion to consider average costs for each activity,[1] Dr Overcast would like to point out that: "*The average value is meaningless so it should never be used.*"

2.3   Please provide marginal costs of long-term service delivery which would reflect the actual minimal and maximal limits of operation of Gaz Métro, in the same format as in reference (iii).

Answer:

Gaz Métro must express doubts on the usefulness of the requested information considering the answers provided to questions 2.1 and 2.2. Indeed, Gaz Métro respectfully submits that the answers to the aforementioned questions provide sufficient clarification as to its methodology to render unnecessary the information requested in the question.

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[1] ROEÉ-0082, Chernick Expert Report, page 9, lines 9 to 11.