RESPONSE OF GAZ MÉTRO LIMITED PARTNERSHIP (GAZ MÉTRO) TO REQUEST FOR INFORMATION NO. 9 OF THE RÉGIE DE L'ÉNERGIE (RÉGIE) REGARDING THE APPLICATION RELATING TO THE ALLOCATION OF COSTS AND THE RATE STRUCTURE – METHODOLOGY FOR EVALUATING THE PROFITABILITY OF SYSTEM EXTENSION PROJECTS

Introductory Commentary

Gaz Métro notes that, concurrently with the filing of the responses to this request for information no. 9, Gaz Métro is also filing Exhibit Gaz Métro-7, Document 4, which describes a new approach to the evaluation of profitability. The content of this new exhibit provides additional information to be taken into consideration by the Régie in its analysis of Gaz Métro's responses.

The request

1. References: (i) Exhibit B-0178, p. 3;
(ii) Exhibit B-0178, p. 5;
(iii) Exhibit B-0178, pp. 14 and 15;
(iv) Exhibit B-0220, p. 12.

(i) *"*[TRANSLATION] *Gaz Métro therefore has a methodology for evaluating the profitability of system extension projects (the "methodology").*"

(ii) *"*[TRANSLATION] *Gaz Métro therefore presents a profitability criterion that is, a priori, lower than the PCC, known as the acceptable minimum threshold. This acceptable minimum threshold establishes the minimum profitability required for extension projects where the elements known at the time of their evaluation, such as the number of customers and volumes associated with the projects, fall short of the PCC but whose anticipated densification would push these projects to an overall level of profitability greater than or equal to the PCC."*

(iii) "[TRANSLATION] *More specifically, Gaz Métro has set itself a profitability objective for various markets. Consequently, the combination of densification sales and extension projects must achieve the profitability objective that was set. Obviously, extension projects include projects whose profitability exceeds the PCC, projects with a profitability somewhere between the acceptable minimum threshold and the PCC, as well as exceptional cases (industrial parks and*

road repaving activities). All of Gaz Métro's various markets are profitable and generate rate decreases for customers. The acceptance of extension projects with densification potential will decrease the profitability of markets in the short term, but will help generate significantly lower rates for customers over time, while giving more customers access to natural gas."

(iv) *"*[TRANSLATION] *The changes will generate a reduction in customer contributions. Gaz Métro does not require customers to make contributions for AMT extension projects, seeing as the potential for the future densification of authorized extension projects should allow the PCC to be achieved. However, Gaz Métro continues to require customer contributions for extension projects deemed to be unprofitable."*

Questions:

1.1 Please indicate whether the "methodology" referred to in reference (i) consists essentially of the proposal of a profitability criterion that is, *a priori*, lower than the PCC, known as the acceptable minimum threshold (AMT), as described in reference (ii).

Response:

The methodology referred to in reference (i) essentially presents a profitability criterion that is, *a priori*, lower than the PCC, known as the acceptable minimum threshold (AMT), as described in reference (ii). In addition, Gaz Métro also presents in Exhibits B-0178 and B-0120 an approach that frames the assessment of extension projects that will eventually maximize beneficial impacts for customers, which is to say AMT-type projects.

1.2 Please indicate to which category of projects valued at less than $1.5 million the proposed AMT criterion would apply:

- Each of the individual projects;
- The portfolio of projects by market category, such as residential, commercial and large corporations;
- The overall portfolio for all projects;
- Other. Please elaborate.

Response:

The AMT criterion presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1 applies to each of the individual projects valued at less than $1.5 million for which profitability is, *a priori*, lower than the PCC.

1.3 Please present the various profitability objectives determined for the residential, commercial

and large corporation markets referred to in reference (iii).

Response:

The following are the minimum profitability objectives for fiscal year 2016-2017:

- 6.28% for the residential market;
- 14.13% for the commercial market; and
- 6.28% for the Sales Major Industries market.

1.4 Please indicate how these profitability objectives (reference (iii)) interact with respect to the AMT and the PCC.

Response:

Profitability objectives are established so that all sales - whether lower than, equal to, or greater than the PCC - all together generate a profitability that is equal to or greater than the objective provided in the response to question 1.3. Gaz Métro also refers to the response to question 1.12.

1.5 Please elaborate on the expediency of establishing an AMT per market.

Response:

Gaz Métro believes that an AMT per market could have been considered, but specifies that whatever threshold is established, in the end it is always the evaluation of the PCC's achievement that attests to the acceptance of projects.

1.6 Please elaborate on the expediency of establishing an AMT per project.

Response:

Gaz Métro indicates that the AMT methodology (as presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1) using the profitability threshold in force at the time of the project's analysis, is applied to each project that does not achieve the PCC. It would have been difficult for Gaz Métro to establish a different threshold for each project, as this option would not only have been complex from an operational standpoint, it would also have introduced an additional element of subjectivity. Gaz Métro had favoured establishing a threshold that allowed all projects to be placed on an equal footing and be accepted on the basis of the PCC being achieved over time.

1.7 If the AMT were to be targeted by some of the development plan's projects, please indicate which proportion of the development plan's overall portfolio (expressed in number of

projects and in dollars) would consist of projects that achieve the AMT. In this context, please comment on the expediency of establishing an AMT based on the overall profitability of the development plan.

Response:

According to Tables 1 and 2 of Exhibit B-0220, Gaz Métro-7, Document 2, approximately 9% of customers and 12% of residential market revenues, as well as 18% of customers and 11% of commercial market revenues, could be generated by AMT projects over a development plan's term.

In addition, as mentioned in the introductory commentary, Gaz Métro notes that it has filed a new approach for evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

1.8 Please indicate whether the proposed AMT criterion would also apply to projects valued at over $1.5 million.

Response:

The AMT criterion presented in January 2017 in Exhibit B-0178, Gaz-Métro-7, Document 1, applies to extension projects valued at less than $1.5 million. For those extension projects where investments exceed $1.5 million, the files will be presented to the Régie in accordance with section 73, clause (1) of the first paragraph of the *Act respecting the Régie de l'énergie*.

1.9 Please indicate whether Gaz Métro proposes that the anticipated densification be taken into account when determining if the AMT has been achieved, or whether this anticipated densification is taken into account using the AMT to achieve profitability equal to or greater than the PCC.

Response:

In the methodology presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1, the anticipated densification is taken into account using the AMT to achieve profitability equal to or greater than the PCC.

1.10 Please indicate whether, pursuant to the current method, Gaz Métro requires a contribution for all extension projects deemed unprofitable based on the difference between the PCC and *a priori* profitability.

Response:

Pursuant to the *Conditions of Service and Tariff* in force on March 31, 2017, section 4.3.4 stipulates, among other things, that "*the distributor may, on entering into the contract, agree*

with the customer on a financial contribution payable by the customer." Gaz Métro generally exercises this discretionary power by requiring a contribution from customers in order to achieve the PCC for extension projects when applying the current methodology.

1.11 When anticipated profitability is below the PCC, please indicate whether, pursuant to the proposed method, Gaz Métro will require a contribution for all extension projects deemed unprofitable based on the difference between the PCC and the anticipated profitability.

Response:

According to the method presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1, Gaz Métro would require a contribution in two situations:

1. When the *a priori* profitability of the extension project does not reach the minimum acceptable threshold. In such a situation, Gaz Métro would require a contribution so as to achieve the AMT. Such AMT-extension projects must present a future densification potential that would allow the PCC to be achieved.
2. If the *a priori* profitability of an extension project does not achieve the PCC and the future densificaton potential does not allow for the PCC to be achieved, Gaz Métro would require a contribution, as the extension program is deemed unprofitable. The amount of the contribution makes up for the difference between the *a priori* profitability and the PCC.

1.12 Please indicate how the profitability objective is currently established for development plans. Under the new methodology, would the profitability objective of future development plans be modified? If so, please provide further details on the targeted profitability objective.

Response:

The profitability objective of the development plans is evaluated using the historical investment structure and weighted average prospective capital cost to generate rate reductions and ensure the protection of its competitive position.

- The investment structure represents the proportion of investments that have generated new revenue, i.e. that have enabled the connection of new customers to the system, as well as the proportion of investments that do not generate revenue, such as asset maintenance activities.

- The weighted average prospective capital cost represents the rate of return that Gaz Métro must make on its investments in order to fulfill its funding obligations. A return greater than the PCC means that cash flows derived from investments cover the funding obligations and therefore result in rate reductions for all customers.

As Gaz Métro makes investments that do not generate revenue, those that do must ensure that profitability exceeds the average weighted prospective capital cost. The profitability objective of a development plan is therefore to increase the average cost in capital based on the historical proportion of revenue-generating investments.

In addition, as mentioned in the introductory commentary, Gaz Métro notes that it has filed a new approach for evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

1.13 Taking into account all of the responses to the sub-questions above, please specify the Distributor's request with respect to the proposed *methodology*.

Response:

As indicated in the conclusion of Exhibit B-0178, Gaz Métro-7, Document 1, as well as in the request (Exhibit B-0176), Gaz Métro respectfully asks the Régie to "take note of" the methodology for evaluating the profitability of system extension projects. The Régie may then, in the context of reviewing rate applications, rule on the utility and prudent nature of investments that will have been carried out by Gaz Métro under this methodology.

The profitability calculation method

2. References: (i) Exhibit B-0220, pp. 3 and 4;
(ii) Exhibit B-0019, R-3991-2016 pp. 1 to 3 / Excel File Exhibit B-0020, R-3991-2016, Schedule 1, Tab DaQ model.

Preamble:

(i) *"*[TRANSLATION] *The model for evaluating the profitability of system extension projects is not in an Excel file, but was generated by the software that calculates project profitability used by Gaz Métro to analyze all of its system extension projects. The software is an internal tool that was developed by the business. That is why, in order to respond to the Régie's request, Gaz Métro refers to the Excel file that allowed it to evaluate the profitability of the system extension project in Drummondville, which was filed in the context of responses to the Régie's requests for information. That file reproduces the calculations that are performed by the internal software, and presents the inputs that were used to calculate the profitability of all system extension projects*."

(ii) Drummondville system extension project profitability model.

Questions:

2.1 Please explain how the accounting depreciation for service lines and connections is established at 44.4 years and 21 years, respectively (reference (ii)). Please indicate whether these values are consistent with those used to calculate the depreciation of the required revenue. Please elaborate on your response.

Response:

First of all, it bears noting that the software used to calculate project profitability is based on the required revenue method. This tool, which has been used for several years, makes it possible on the one hand to evaluate the internal rate of return generated by a project, and on the other hand, to evaluate the rate impact and break-even rate for the same project, hence the designation "required revenue tool". Its main goal is to determine the revenues needed to recuperate the costs associated with a new project, to compare these required revenues to the project's projected revenues, and to quantify the upward and downward impact on rates resulting from this new investment. This is why the software used to calculate profitability is directly aligned with the method used by Gaz Métro to determine the required revenues of the rate case (R-3987-2016, B-0114, Gaz Métro-12, Document 1), using depreciation periods based on a pool of assets (R-3879-2014, B-0466, Gaz Métro-107, Document 11).

In fact, amortization rates are determined using a rate study that Gaz Métro conducts every five years in collaboration with an expert. A rate study was therefore provided to the Régie in the context of the 2016 rate case (R-3879-2014, B-0466, Gaz Métro-107, Document 11).

Gaz Métro carried out the following three steps to determine the depreciation rate of service lines at 44.4 years:

1) Calculation of the average investments in steel and direct plastic service lines, namely the two types of services lines most used in construction projects. This average is based on the investments made on service lines over the last three years (2014 to 2016). Gaz Métro considers that a period of three years is sufficient to establish a significant trend.
2) Calculation of the three-year average depreciation expense using the depreciation rate for steel service lines as defined in the depreciation rate study (asset category Z1150, see Exhibit B-0466, Gaz Métro-107, Document 11, Schedule B, p. 1) and the depreciation rate for direct plastic service lines (asset category Z1151, see Exhibit B-0466, Gaz Métro-107, Document 11, Schedule B, p. 1).
3) Calculation of the weighted depreciation rate for the service line by dividing the three-year average depreciation expense by the average investments on service lines. The rate is thus established at 2.2538 %, or 44.4 years.

   The same three steps were carried out to calculate the amortization rate for connections. The categories considered were the following : steel connections (Z1100) and direct plastic connections (Z1102). The rate thus established is 4.7554%, or 21 years.

These are the numbers of years that are used in the profitability evaluation tool.

2.2 Please indicate whether the depreciation period for meters is the same as for connections. If not, please explain why the depreciation rate for meters is the same as for connections (reference (ii)).

Response:

The depreciation period for the meters differs from that of connections, and is 14 years. However, the depreciation rate for meters that is used in the Excel profitability evaluation is the same as that of the connections. Given that the investment for a meter is relatively modest compared to that of a connection or service line, Gaz Métro did not wish to unduly complicate the Excel profitability evaluation and therefore merged the cost of the meter with that of the connection in the tool.

2.3 Please provide a list of the assets that may have a depreciation period that is shorter than the lifespan of the project.

Response:

In general, the estimated lifespan of Gaz Métro projects is 40 years, which term is used in the profitability evalutation tool to calculate the internal rate of return. All distribution assets with a depreciation period of less than 40 years will have a depreciation term that is shorter than the lifespan of the majority of projects.

Below is a list of assets whose depreciation period is less than 40 years.

Number of capital asset category	Designation of capital asset category	Depreciation period	Depreciation rate
Z1102	Connections to immoveable property – direct plastic	19.42 years	5.15%
Z1104	Pre-expansion connections – Inserted plastic	18 years	5.56%
Z1105	Pre-expansion connections – Steel	13.83 years	7.23%
Z1150	Main service lines – steel	31.92 years	3.13%
Z1200	Meters	13.92 years	7.19%

Note 1: R-3879-2014, B-0466, Gaz Métro-107, Document 11, Schedule C, page 1.

2.4 For assets whose depreciation period may be shorter than the lifespan of the project, please indicate whether the model provides for reinvestments once the depreciation period of those assets expires. For example, if a meter has a depreciation period of five years, please indicate whether the model provides for reinvestments for meter expenses every five years. Please justify your response.

Response:

First of all, as explained in the response to question 2.1, the software used to calculate project profitability is based on the required revenue method. This tool makes it possible on the one hand to evaluate the internal rate of return generated by a project and, on the other hand, to evaluate the rate impact and break-even rate for the same project, hence the designation "required revenue tool". Consequently, the software used to calculate profitability is directly aligned with the method used by Gaz Métro to determine the required revenues of the rate case (R-3987-2016, B-0114, Gaz Métro-12, Document 1), using depreciation periods based on asset pools (R-3879-2014, B-0466, Gaz Métro-107, Document 11). These depreciation

periods differ from the useful lifespan of the assets, as indicated in the following table. For each asset indicated below, the useful lifespan is longer that the depreciation period.

Number of capital asset category	Designation of capital asset category	Depreciation period	Lifespan (Note 1)
Z1102	Connections to immoveable property – direct plastic	19.42 years	50 years
Z1104	Pre-expansion connections – Inserted plastic	18 years	35 years
Z1105	Pre-expansion connections – Steel	13.83 years	35 years
Z1150	Main service lines – steel	31.92 years	45 years
Z1200	Meters	13.92 years	18 years

Note 1: R-3879-2014, B-0466, Gaz Métro-107, Document 11, Schedule A, page IV-4, column 4. The first two numbers represent the lifespan of the asset category.

As a result, the profitability evaluation model does not provide for any reinvestment of assets whose depreciation period is less than 40 years. The study of depreciation rates (R-3879-2014, B-0466, Gaz Métro-107, Document 11) takes into account, among other things, the fact that it is a "pool" of assets: for each category of property, some of the assets were acquired a number of years ago (already in use) and new assets are added each year. It is the average useful life of all of these assets (old and new) that is calculated to establish the depreciation period of each category.

The new asset considered in the profitability evaluation tool still has a remaining useful life and allows for revenue to be generated even if it has been entirely amortized in the profitability evaluation model. For this reason, we do not provide for any reinvestment following the end of the depreciation period.

2.5 If, depending on the response to the previous question, there are no plans for reinvestment, please indicate whether it would be appropriate for such reinvestments to be taken into consideration in the model.

Response:

No. Gaz Métro does not take reinvestments into consideration in the model as the distribution asset still has a remaining useful lifespan following its depreciation period. This asset is still useful, safe and in good condition owing to the asset management risk management program. This asset can still generate revenue, even if it has been completely amortized in the profitability evaluation model.

2.6 Please indicate how payments made to the customer under the RCP, CRRP, GEEP and AASPES are taken into account in the model (references (i) and (ii)). Please explain, if applicable, why these payments would not be taken into account in the calculation of the project's profitability.

Response:

Amounts under the RCP are taken into account in the project's profitablity analysis. They are generally considered in the costs of a project's first year and amortized on a straight-line basis over ten (10) years. These amounts may also be spread out over several years, depending on the expected arrival of customers over time.

Note that the GEEP financial assistance paid to a customer is not considered in the project profitability analysis. The financial assistance afforded under the GEEP programs seeks to incite customers to choose to take measures or use equipement that are highly energy efficient once the connection is made, and not necessarily to incite them to connect to the gas system.

AASPES is used as a complement to financial assistance granted to a customer or as an amount that reduces the external contribution required to connect a customer to oil. AASPES amounts are therefore also considered in the profitability evaluation of projects.

2.7 For projects with several customers, please indicate how the unit rates for distribution revenues are calculated. Please specify whether they are evaluated using the average rate or whether they are based on the unit rates estimated for each customer. Please explain your response.

Response:

The unit price for each customer is based on their specific forecasted consumption.

2.8 For each of the supply, transportation and balancing services, please indicate whether the marginal costs associated with a project may differ from the average cost of the Distributor's supply portfolio. Please detail your response.

Response:

On margin, certain distribution projects may generate marginal supply, transportation and balancing costs that differ from the average costs. In any case, given that these costs are entirely transferred to cusomers through adjustments to supply, transportation and balancing rates, as the case may be, there is no impact on the profitability. As marginal supply, transportation and balancing costs are canceled out by equivalent revenue, they have no impact on the IRR of distribution projects and need not be taken into account in the economic profitability analysis of distribution projects.

2.9 Please indicate whether marginal supply, transportation and balancing costs are taken into account in the model. If not, please explain why.

Response:

Please refer to the response to question 2.8.

2.10 Please comment on the expediency of taking into account supply, transportation and balancing components in the profitability analysis.

Response:

Please refer to the response to question 2.8.

2.11 Please indicate whether the model used (references (i) and (ii)) and the hypotheses retained for a system extension are the same as those used for a load addition.

Response:

The model is the same; only the costs taken into consideration may differ. For example, service line costs are not taken into consideration in the case of a load addition.

2.12 Please explain how the model (references (i) and (ii)) applies to projects valued below $1.5 million. Is each project subjected to the model, or does the Distributor proceed with groups of projects? Please elaborate your response.

Response:

Each project is individually subjected to the model so that its profitability may be evaluated.

2.13 Please comment on the expediency of producing an explanatory guide on the methodology used to evaluate the profitability of system extension projects and the hypotheses applied to the model that would be updated when changes are made.

Response:

Gaz Métro is open to the idea of producing a guide explaining the methodology used to evaluate the profitability of projects, once the present file has run its course, so as to not delay the treatment of said file.

3. Reference: Exhibit B-0178, p. 3.

Preamble:

[TRANSLATION]
"In the context of its development plan, Gaz Métro presents its "new customer" and "load addition"sales to the Régie de l'énergie (the "Régie") separately, broken down by residential, commercial and large corporation markets.

"Some of these sales require that the system be expanded (extension project), while others allow for the densification of the existing distribution system (densification sales)."

Question:

3.1 Please explain the difference between a densification sale and a load addition. Please specify how they are taken into account in the evaluation of anticipated profitability.

Response:

A densification sale is when a new customer is connected to an existing service line or an existing customer requires a load addition. A load addition corresponds to an increase in consumption owing to the addition of equipment and/or expansion of a customer already connected to natural gas.

Densification sales are not provided for in the evaluation of the *a priori* profitability of an AMT extension,[1] but they do improve the profitability established *a priori*, seeing as the service line can be used by more customers, which means that the volume and revenues are higher than anticipated.

4. References: (i) Exhibit B-0018, R-3941-2015, pp. 6 and 7;
(ii) Exhibit B-0018, R-3941-2015, p. 5;

[1] Methodology presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1.

(iii) Exhibit B-0015, R-3825-2012, pp. 7 and 8.

Preamble:

(i) [TRANSLATION] "*1.7 Please explain the various steps that go into basic engineering and detail engineering* […].

Response:

[TRANSLATION]
"Basic engineering consists of conducting a visual reconnaissance of the premises where the service line might be installed, and identifying the summary parameters of the design, such as the type of line, operating pressure, line burial depth and related facilities that may be required. Searches in the archives of plans or real estate transactions may also be carried out for information on the nature of the soil and the prior use made of the immovables. This could help guide the orientation of the environmental study and soil characterization to be performed in the context of the detail engineering.

"Detail engineering involves taking an inventory of all service line installation conditions for the purposes of completing the final design. At this stage, Gaz Métro retains external firms or contractors to perform the following activities:

- *environmental study;*
- *soil characterization;*
- *locating of other companies' service lines;*
- *surveys; and*
- *siting investigation for the acquisition of a lot, servitude and work area*. [emphasis added]

"What is more, Gaz Métro solicits the managers of public rights-of-way and the permit-issuing authorities in order to agree on a specific site for the service line and learn of any special requirements that must be taken into consideration when developing the project. Reconciling all of the data allows Gaz Métro to prepare plans and specifications for the call for tenders and the work's implementation." [emphasis added]

(ii) "[TRANSLATION] *1.5 Please indicate if a Monte Carlo simulation using the @RISK software or other similar tool was conducted during the project estimate stage* […]. *If so, please provide the results along with the precision range obtained.*

Response:

[TRANSLATION] "*A Monte Carlo simulation was performed* […] *The cost estimate* […] *was $3.8 million before applying the contingency. The Monte Carlo simulation report sets the project cost at $4.3 million if the probability of no overruns stands at 85%."* [emphasis added]

(iii) [TRANSLATION] "*3.2 Please explain how this contingency is determined; does a general rule exist or is it established on a case-by-case basis."*

Response:

[TRANSLATION]
"The contingency does not result from applying a percentage to the total cost of the project. It is determined on a case-by-case basis. Not only can it differ from one project to the next, it can also differ from one activity to another within the same project.

"Each project activity (excavation, installation, etc.) is analyzed individually so as to estimate its degree of contingency. To do this, an optimistic scenario and a pessimistic one are carried out for each activity based on the degree of knowledge that Gaz Métro then has of the project's components and based on the experience acquired in the course of similar projects carried out in the past. For example, the cost of excavating a trench for a service line installed at the bottom of a ditch could vary considerably depending on whether or not there are rocks or blocks of rock. [emphasis added]

"After having established an optimistic and pessimistic scenario for each of the activities included in the project cost estimate, Gaz Métro evaluates the probability of each of these scenarios occurring in order to determine the amount of the contingency to be applied to the project."

Questions:

4.1 Please explain whether Gaz Métro classifies system extension projects valued at less or more than $1.5 million based on the accuracy level of the cost estimate and/or progress made in the engineering study. If so, please present and explain this classification. If not, please propose a project classification that will allow for an assessment of the uncertainty associated with the cost estimate or the risk of cost overruns.

Response:

From a reading of the various questions, Gaz Métro notes that several among them are related to the cost estimate methods used for construction projects.

Consequently, Gaz Métro presents the main steps of carrying out the cost estimates for the construction project so that the outcome reflects the fair cost, and this with the desired level of accuracy.

Project cost estimates are performed using various tools depending on the project's characteristics and the level of risk they represent. Various probable scenarios based on the specific design criteria and the experience with previous projects carried out by Gaz Métro are considered in order to obtain an estimate that is as realistic as possible.

Estimate Class

One important element to establish from the very beginning is the desired estimate class, seeing as this is what will determine the level of accuracy, timeframe and costs of completing the project estimate and contingency level required, among other things. The table of estimate classes was developed based on the recommendations of the Association for the Advancement of Cost Engineering (AACE International Inc.).

Table of Estimate Classes

	Class 5	Class 4	Class 3	Class 2	Class 1
	Size	**Feasibility**	**Budget**	**Monitoring**	**Forecast of final costs**
Summary of usefulness	Very general overview of a project's cost: minimum time and $	Preliminary estimate for the purposes of analyzing a project's feasibility	Targets approval of financial resources	Detailed update of a project's cost estimate following completion of a project estimate	Estimate update by means of a final forecast of costs during completion
Accuracy	-30% to +50%	-20% to +30%	-15% to +15%	-10% to +15%	-5% to +10%
Production schedule	1 to 2 weeks	2 to 4 weeks	2 to 8 weeks	6 to 15 weeks	12 to 25 weeks

Contingency	None	10% to 25%	10% to 15%	Analysis of the risks or costs associated with the project risks	Analysis of the risks or costs associated with the project risks
Knowledge of parameters	0% to 2%	1% to 15%	10% to 40%	30% to 75%	65% to 100%
Production costs	0.1% to 0.5% of estimated costs	0.2% to 1% of estimated costs	0.5% to 2% of estimated costs	1% to 5% of estimated costs	2% to 10% of estimated costs

A class 5 estimate generally does not require the intervention of any manpower other than that of Gaz Métro, whereas a class 3 estimate may require the intervention of external professionals and targeted site visits in order to specify certain elements of the project, such as soil characterizations, environmental surveys, watercourses, general transom surveys, basic engineering, etc. This information helps reduce the risks inherent to the project. A class 3 estimate is generally used for the internal approval of projects completed by Gaz Métro, including those submitted to the Régie de l'énergie.

Estimate Process

In the case of projects valued at over $1.5 million, estimates rely on in-house expertise, prices obtained from external suppliers, mandates contracted out for the purposes of specifying the land's condition or other unknown data mainly pertaining to technical and environmental aspects, and databases in which the actual costs and completion conditions of prior projects are recorded.

In the case of projects valued at less than $1.5 million, estimates rely on the costs of general contracts that are in force, knowledge of the territory, in-house expertise, prices obtained from external service providers and mandates contracted out for the purposes of specifying the land's condition or other unknown data. Given the large number of projects to be completed that are valued under $1.5 million, Gaz Métro has entered into what are known as "Contrats généraux" (general contracts) by means of a call for tenders process targeting contractors. Essentially, these contracts are made up of defined service requests (tasks carried out by contractors) for which prices are established by the bidders. Consequently, the prices for various service requests are known in advance, and project estimates are carried out based on the amount of work to be completed.

Once the cost estimate is completed and validated, the project is subjected to the internal approval of Gaz Métro.

Contingency and Project Risks

The contingency is the amount that is set aside at the time the estimate is prepared. It is used to cover any additional costs that may result from the uncertainties associated with such elements as engineering progress, market conditions and on-site conditions (execution) entailing potential changes to the project.

When preparing class 3 estimates, some uncertainty remains in terms of the project's definition, from technical aspects to timeframe and the realization conditions on the lot. Consequently, a contingency must be set aside in order to mitigate these uncertainties. As the various steps of a project are completed, the associated level of uncertainty decreases, as does the probability of needing to resort to the contingency amounts.

The value of the contingency provided for in a project's budget is one of the measures used to mitigate the risk of exceeding the allotted budget. Therefore, not all risks are mitigated by the contingency.

The amounts allocated to the contingency help compensate for (the accepted) uncertainties and portion of the risks that are mitigated or not. The determination of how much will be set aside for a project's unforeseen aspects must take the following elements into consideration:

- project timetable;
- market conditions at the time of the call for tenders;
- environmental conditions;
- risks inherent to the type of work; and
- technical data, quantity variations, additional activities, methods, productivity.

As described in the table, a class 3 estimate has an accuracy level of more or less 15%. If the project carries risks that could result in a budget overrun exceeding 15%, those risks are considered in the contingency's calculation. This type of project requires a higher contingency percentage.

The percentage of the engineering work's completion that is used to complete a cost estimate based on the desired level of accuracy is expressed in the table above as a percentage of knowledge acquired. For example, to qualify a class 3 estimate that yields an estimate with an accuracy of around 15%, between 10% and 40% of a project's parameters must be known.

This percentage will fluctuate depending on the degree of difficulty associated with the project's completion.

Projects valued at over $1.5 million

These projects are larger in scope and generally have a higher risk level. This is why Gaz Métro acquired the @RISK software, which allows it to use the Monte Carlo simulation method to calculate the contingency based on the risks of the project for which the estimate is being prepared. This tool is a complex algorithm that uses probabilities to produce a wide range of simulations. The main steps for completing a Monte Carlo simulation are:

- Quantifying the risk in terms of the optimistic and pessimistic values of each element of the estimate. The optimistic value corresponds to the probable cost in the event that all goes well in the best of worlds; the pessimistic value, on the other hand, is the probable cost if everything goes wrong. There is no mathematical formula capable of determining the risk associated with elements of an estimate. This evaluation is based on known information and personal judgment. This is why risk quantification is carried out by an in-house group of qualified individuals who each contribute their experience.

- Using the risk register (*register in which all risks that might arise in the course of a project are analyzed and inventoried*) in order to ensure that specific risks must be evaluated and included in the Monte Carlo simulation.

- Associating a probability distribution to each element of the estimate.

- Completing a Monte Carlo simulation.

- Analyzing the Monte Carlo simulation's results, which are presented as a graph so that the probabilities of occurrence of the project's estimate can be examined and the riskier elements identified.

Gaz Métro has adopted a rule whereby a project's final estimate must present a probability of success of 85% (P85). The contingency is therefore the difference between the cost at P85 and the initial estimated cost.

Projects valued at under $1.5 million

Projects valued at under $1.5 million are generally carried out in a known and mastered environment, are more repetitive in nature and account for a significant proportion of projects that are completed. Consequently, the database of completed projects' actual costs and knowledge of the environment are well documented. The cost estimate of these products is carried out using a tool based on general contract prices, the parameters of which are already established or are based on a table of average costs, depending on the complexity of

the project for which an estimate is being prepared. Project costs are estimated based on a class 3 estimate and the contingency can vary between 10% and 15%. The percentage used is based on the risks associated with the project.

In conclusion, the project's estimated cost (including the contingency) becomes the budget of the project in its delivery phase. The objective is to deliver the project on budget. The risks of cost overruns are taken into consideration in the contingency's calculation. If a new risk identified in the course of delivering a project valued at over $1.5 million results in a cost overrun exceeding 15%, Gaz Métro will inform the Régie thereof.

4.2 Please specify if a risk analysis such as the Monte Carlo simulation (reference (ii)) or other method is systematically used for all system extension projects. If not, please indicate for what projects such an analysis is performed and why. Please explain if the contingency of a project to which Gaz Métro refers in reference (iii) is obtained using this risk analysis.

Response:

Please see the response to question 4.1.

4.3 Please explain how Gaz Métro determines the contingency for system extension projects with costs of less than $1.5 million.

Response:

Please refer to the response to question 4.1.

4.4 Please explain if a correlation can be established between the overall contingency of a system extension project (reference (iii)) and the accuracy range in the cost estimate (expressed as a percentage) and between the contingency and the probability of a cost overrun. If so, please present this correlation. If not, please comment on the expediency of establishing a rule for calculating the contingency relating to the cost estimate's range of uncertainty.

Response:

Please refer to the response to question 4.1.

5 **References:**
(i) Exhibit B-0018, R-3941-2015, p. 4;
(ii) Exhibit B-0129, R-3831-2012, p. 18;
(iii) Exhibit B-0092, R-3871-2013, p. 3.

Preamble:

(i) "[TRANSLATION] *1.1 Please specify what research has been performed regarding the presence of underground infrastructure. Also, please specify the information that allowed Gaz Métro to presume the level of difficulty was similar to extension projects currently being carried out on the Island of Montréal* […].

"Response:

"Research into the presence of underground infrastructure consisted of visual inspections carried out on Broadway Street by Gaz Métro's project technicians. These inspections revealed the location of sluices, sewers, manholes and other infrastructures. […] *This research yielded results similar to the other research carried out in Montréal and did not allow to presume that the level of difficulty would be any greater than that of other extension projects currently being carried out on the Island of Montréal."* [emphasis added]

(ii) "[TRANSLATION] *(2) $4,983.9 k increase in contractor costs.*

- *"The difference between the costs presented in the contractor's bid (including its general costs) and estimated costs is $3,390 k.* […] *The estimate's amount is based on the historic costs of similar projects carried out in the past, but smaller.*

[…]

"Actually, the instability of the soil and high level of the water table required deeper and larger ditches than were anticipated for the service line's installation.

- *"An additional cost of $332 k to crush rock resulted from a larger quantity of rock than was anticipated as well as the hardness of that rock."* [emphasis added]

(iii) "[TRANSLATION] *The final cost estimate for the project indicates a $1.423 million overrun as compares to the original budget. The study of an alternate route resulted in a relocation of the service line that increased the original route's length by 5.4 km.* […] *In fact, the nature of the land where that service line segment is installed, which circumvents eroding banks, was significantly different compared to the original route* […]" [emphasis added]

Questions:

5.1 Considering the situations presented in references (i) to (iii) for system extension projects with costs exceeding $1.5 million, please explain what step the evaluations are at when Gaz Métro presents requests for authorization to the Régie for these types of projects:

- engineering;
- range of the cost estimate's uncertainty (expressed as a percentage);
- level of contingency.

Response:

Please refer to the response to question 4.1.

5.2 For a system extension project with costs exceeding $1.5 million, please explain what step the following evaluations are at when Gaz Métro decides to proceed:

- engineering;
- range of the cost estimate's uncertainty (expressed as a percentage);
- level of contingency.

In your response, please take into consideration those projects that present a window of opportunity for the Distributor (industrial parks and repaving activities).

Response:

Please refer to the response to question 4.1.

5.3 When requesting authorization for projects valued at more than $1.5 million, please comment on the expediency of presenting:

- the engineering analysis step;
- range of the cost estimate's uncertainty (expressed as a percentage);
- the justification of the expediency of completing a project presenting a cost overrun risk exceeding 15%.

If Gaz Métro is opposed to such a practice, please justify.

Response:

Gaz Métro does not object to responding to the Régie's request.

5.4 Please elaborate on the financial monitoring process applied to system extension projects (whose costs are greater and less than $1.5 million). Specifically, please explain the frequency and length of monitoring as well as the financial parameters revised.

Response:

The financial monitoring of system extension projects (as well as that of all other types of construction projects) is carried out in the context of an *a posteriori* profitability analysis of a development plan, three years later. For example, the analysis of the projects under the 2013 development plan (R-3992-2016, B-0076, Gaz Métro-14, Document 4) filed in the 2016 Annual Report demonstrates the overall profitability of projects greater and less than $1.5 million per market in 2016, namely three years after the sale was signed. The profitability findings for system extension projects in the residential and business markets are included in the findings for new customers (R-3992-2016, B-0076, Gaz Métro-14, Document 4, Schedules 4 and 7).

What is more, system extension projects valued at over $1.5 million undergo an individual monitoring in the context of the annual report. Consequently, in the section entitled "Coûts du projet and explication des écarts" (project costs and explanation of discrepancies) of a project follow-up, a summary of the actual costs as at September 30 of the year underway as well as the total projected costs of the project and explanation of the discrepancies are provided. In the section entitled "Rentabilité initiale and projetée" (initial and projected profitability) of that same exhibit, three financial data elements are presented: a calculation of the actual value of the effect on rates (40 years), an internal rate of return (IRR) and a break-even rate. These findings are presented along with the initial and projected profitability. This monitoring is filed annually before the Régie for such time as there are projected costs. Once a project is completed and the actual costs have been reconciled with the initial projections in accordance with decision D-97-25, Gaz Métro requests the Régie's authorization to stop monitoring.

The financial parameters that are taken into consideration in the calculation of these financial findings (actual value, IRR and break-even rates) are the same as those considered in the initial request for a project's approval filed before the Régie. These parameters are the prospective capital costs and depreciation rates. The revenues, for their part, are presented in the schedule of billed rates.

To perform the financial performance calculations, Gaz Métro uses the same year's version of the required revenue tool (profitability evaluation tool) as was originally used. By adopting this approach, Gaz Métro ensures that the project's returns are compared with those that were presented in the request for the project's approval filed with the Régie, thus ensuring that no discrepancy is created owing to a change of parameters.

5.5 Considering your response to the sub-question above, please specify how Gaz Métro handles cost overruns for projects the costs for which are less than $1.5 million.

Response:

A monthly analysis of construction projects with costs overruns exceeding $0.1 million is performed by the new construction and system improvement department. Discrepancies are explained and presented to the department head. Analyses are used to refine the estimate methods.

6 **References:** (i) Exhibit B-0011, R-3931-2015, p. 14;
(ii) Exhibit B-0005, R-3767-2011, p. 18.

Preamble:

(i) [TRANSLATION]

Costs	Rate impact 5 years	Rate impact 10 years	Rate impact 20 years	Rate impact 40 years
100%	401,253	682,185	1,017,726	1,237,524
+ 10%	441,166	750,031	1,118,914	1,360,500
- 10%	361,339	614,339	916,539	1,114,549

(ii) [TRANSLATION]

Sensitivity	IRR (%)	BER*	Rate impact 5 years	Rate impact 10 years	Rate impact 20 years	Rate impact 40 years
Volumes						
80%	6.32%	29.33	672,578	870,995	457,496	450,658
+100%**	8.37%	5.11	6,001	(326,755)	(1,409,349)	(2,861,658)
120%	10.31%	1	(660,775)	(1,524,505)	(3,276,194)	(5,272,873)
Costs						
-10%	13.37%	1	(1,063,307)	(2,112,565)	(3,988,097)	(5,876,052)
+10%	5.80%	0	1,075,310	1,459,055	1,169,400	152,521
Costs						

+10% **Volumes** -20%	4.12%	0	1, 742,067	2,656,805	3,036,245	2,563,628

* = break-even rate
** = reference case filed for a project's approval

Questions:

6.1 Considering the range of uncertainty in the cost estimate of projects, please elaborate on the relevance and usefulness of presenting, for projects valued at more than $1.5 million, a sensitivity analysis summarizing the impact that a 10% variation in costs has on rates (reference (i)) without elaborating on the risks associated with cost overruns. Please comment on the expediency of implementing a sensitivity analysis that would consider the risk associated with cost estimates.

Response:

Currently, Gaz Métro performs a volume analysis of ±20% a cost analysis of ±10%. Given that projects valued at over $1.5 million filed before the Régie are class 3 projects according to the project classification grid, Gaz Métro has no objection to adapting its sensitivity analysis to take into account the risks associated with cost estimation. The sensitivity analysis presented would then be of ±15% for class 3 projects.

6.2 Please explain in which cases the sensitivity analyses for projects with costs exceeding $1.5 million include a volume variation analysis (m^3) (reference (ii)).

Response:

All projects exceeding $1.5 million include a volume variation analysis.

6.3 Please explain if a sensitivity analysis is performed by Gaz Métro for the approval of projects valued at less than $1.5 million. If so, please explain what such an analysis consists of and describe how Gaz Métro uses the conclusions resulting from that exercise.

Response:

In the context of the AMT methodology presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1, using a sensitivity analysis is not required for all projects evaluated, only those extension projects that do not show a profitability greater than the PCC requiring such an analysis. Gaz Métro repeats that a sensitivity analysis is the second step of the governance process and allows it to accurately evaluate how many customers in addition to the *a priori* ones identified will be needed to achieve a profitability equal to the PCC. More specifically, based on the potential for future densification (the first stage of the governance

process), Gaz Métro will simulate a projection of customers, volumes, revenues and associated costs needed to achieve the minimum PCC.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

7 **Reference:** Exhibit B-0023, R-3958-2015, p. 2 and 3.

Preamble:

"[TRANSLATION] […] *In the same matter (B-0132, Gaz Métro-52, Document 3, page 9), Gaz Métro explained that the larger the investment project, the less linear correlation there is between the dollars invested and the capitalized overhead rates. Gaz Métro has therefore established guidelines to reflect this principle. As a result, based on the overhead calculated annually, Gaz Métro deducts 2% from the overhead rates for each additional tranche of $5 million in investments.*

"In the 2016 Rate Case (R-3879-2014, B-0465, Gaz Métro-107, Document 10), following up on decision D-2014-165, Gaz Métro presented a detailed explanation of the implementation of a 2% reduction in overhead rates for each additional tranche of $5 million in investment.

"The following guidelines were applied to investment projects filed in 2015 up to the final decision in the 2015 and 2016 Rate Cases (D-2015-214)". [emphasis added]

Investments	Applicable overhead rates
$0 M - $5 M	14.75%
$5 M - $10 M	12.75%
$10 M - $15 M	10.75%
$15 M - $20 M	8.75%
$20 M - $25 M	6.75%
$25 M - $30 M	4.75%
$30 M and up	2.75%

Questions:

7.1 Please indicate whether the methodology currently used to determine the overhead rates of system extension projects (with costs exceeding $1.5 million) is still the one presented in reference (i). If not, please explain the methodology used.

Response:

Since January of 2017, the new methodology for determining corporate overhead rates ("corporate ORs") applies to new projects valued at over $1.5 million. Consequently, a 14.53%[2] rate is applied to the project's first $1.5 million, and a standard rate of 2% applies to the amount exceeding $1.5 million.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

7.2 Please confirm if the general fees of projects valued at under $1.5 million are calculated using a linear correlation (reference (i)). If so, please present this correlation. If not, explain.

Response:

The corporate overhead rate that applies to projects valued at under $1.5 million is 14.53%. There is a linear correlation between the amount invested and the amount of capitalized overhead rates. The greater the investment, the higher the corporate overhead rates.

For example:

A $0.5 million construction project: the corporate OR is $0.07 million.

A $1.0 million construction project: the corporate OR is $0.15 million (double the amount of a $0.5 million project).

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

8 **References:** (i) Exhibit B-0076, R-3992-2016, p. 3;

(ii) Exhibit B-0075, R-3992-2016, p. 1, footnote on page 2.

Preamble:

[2] Note that the corporate overhead rates dropped from 14.75% in 2016 to 14.53% following the Régie's approval of the 2017 Rate Case in decision D-2016-156.

(i) "[TRANSLATION] ***1.2 ABANDONMENT COSTS***
"*Abandonment costs included in the a posteriori analysis of the 2013 development plan stand at $51,436 on a posteriori capital investments totaling $40.3 million, which represents 0.13%."*

(ii) "[TRANSLATION] *The capital assets and total investments of the 2016 Rate Case include a $1,167,500 amount in the system reinforcement budget*."

Questions:

8.1 Please explain what makes up the abandonment costs in the development plan and how Gaz Métro evaluates them (reference (i)).

Response:

Gaz Métro wishes to refer to question 6 in the Régie's request for information no. 2 of the 2011 Annual Report (R-3782-2011, B-0114, Gaz Métro-45, Document 2, p.13-14) dealing with abandonment costs and the development plan.

Here is the preamble to question 6 (p.13):

> [TRANSLATION]
>
> *"The abandonment costs can be found in two types of projects: those whose chief purpose is to remove an asset (for example, the abandonment of a pre-expansion station or of a connection to a street) and the investment projects in which the work requires the removal of a portion of an asset (for example, removal of part of a service line when completing a looping to reinforce the system."* (Emphasis added)

And here are all of the questions and responses for 6.1 and 6.2 (B-0114, Gaz Métro-45, Document 2, p.13-14):

> [TRANSLATION]
>
> **Question 6.1**
> "*Please indicate whether Gaz Métro, in its economic analysis to evaluate a project's profitability, considers the abandonment costs associated with investment projects in which the work requires removal of a portion of an asset. If not, please explain and justify the exclusion of these costs.*
>
> ***"Response:***
> *"Yes, in its economic analysis to evaluate a project's profitability, Gaz Métro takes into consideration the abandonment costs associated with investment projects in which work requires the removal of a portion of an asset, where applicable.*
>
> *"Only exceptionally, however, is abandonment work carried out in system development*

investment projects. The vast majority of abandonment work is carried out in system improvement projects."

"Question 6.2

"*Please indicate whether Gaz Métro, when evaluating the profitability of its a priori and a posteriori development plans, considers the abandonment costs associated with investment projects in which the work requires removing a portion of an asset. If not, please explain and justify the exclusion of these costs.*

"Response:

"Yes, in the amount to be invested, Gaz Métro considers the abandonment costs associated with investment projects in which the work requires removal of an asset when evaluating the profitability of its a priori and a posteriori development plans."

8.2 Please explain how these abandonment costs are considered in the methodology.

Response:

Please refer to the response to question 8.1.

8.3 Please explain what makes up the system reinforcement expenses for which Gaz Métro provides a budget in the development plan (reference (ii)). Please explain whether this reinforcement is linked to the "densification sales" to which Gaz Métro refers in this matter (reference (ii)).

Response:

As specified in Exhibit B-0196, Gaz Métro-7, Document 2, R-3987-2016, Gaz Métro provides a budget covering the cost of reinforcing the distribution system's capacity and to allow one or several customers to connect to the existing system. Investments made to reinforce the distribution system therefore seek to increase the distribution system's capacity and operational flexibility. The distribution system may need to be reinforced to serve new customers, potential future customers, or existing customers wanting to increase the volume of their current consumption.

Reinforcement could include, among other things, lining the service lines as well as looping or adjusting a compressor station.

8.4 Please explain how these reinforcement costs are taken into consideration in the methodology.

Response:

Reinforcement costs are taken into consideration in the overall profitability of the development plan.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

8.5 Please specify if the analysis performed to establish the AMT includes abandonment and system reinforcement costs (references (i) and (ii)).

Response:

It is indeed possible that the abandonment and reinforcement costs were included in the analysis performed to calculate the AMT, seeing as the computer systems do not allow to isolate all of the actual investments associated with the abandonment and system reinforcement costs. Note, however, that in such a situation, given that these costs were in the *a priori* data as well as the *a posteriori* analysis, they would not influence the results of the densification's impact on the IRR.

Assessments of Development Plans and Determination of the AMT

9 **References:**
(i) Decision D-2016-156, p. 93;
(ii) Exhibit B-0178, p. 8;
(iii) Exhibit B-0178, pp. 6 to 7;
(iv) R-3992-2016, Exhibit B-0076, Schedule 3 p 1 and Schedule 6, p 1;
(v) Exhibit B-0178, p. 7.

Preamble:

(i) "[TRANSLATION] ***APPROVE*** *a prospective capital cost of 5.28% for the 2016-2017 rate year"*

(ii) "[TRANSLATION] *Based on the findings of the a posteriori profitability analysis, Gaz Métro has established the acceptable minimum threshold at 2% of the IRR for extension projects associated with an investment level of less than $1.5 million. The analysis reveals an average IRR increase of 4.48%, which should continue to grow over time. In its analysis, by establishing an acceptable minimum threshold of 2%, Gaz Métro demonstrates that even after a few years, the average IRR increase would be sufficient to achieve or even surpass the PCC.*"

(iii) "[TRANSLATION] […] *Some working hypotheses were amended, however, as explained below:*

1. *"The revenues actually invoiced in accordance with the rate schedule in force between 2009 and 2016 were taken into consideration. Moreover, in decision D-2012-071, the Régie ordered Gaz Métro to calculate the a posteriori internal rate of return (IRR) using the real revenues invoiced:*

2. *"All densification sales associated with the initial extension project were included in the a posteriori findings, and this independently of the fiscal year of the development plan to which the sale is associated."*

(iv) Schedule 3 - Comparison of the residential development plan -- new customers and the *a priori* 2013 load additions vs *a posteriori* 2013 load additions.

Schedule 6 - Comparison of the business development plan -- new customers and *a priori* 2013 load additions vs 2013 *a posteriori* load additions.

(v) Table 1 - Analysis results

Questions:

9.1 According to reference (i), the authorized prospective capital cost currently stands at 5.28% and, in reference (ii), Gaz Métro established the acceptable minimum threshold at 2%. Given that the PCC varies from year to year and that the discrepancy between the PCC and AMT will therefore not be constant, please comment on the expediency of maintaining a constant discrepancy between these two rates. Please explain and justify, where applicable, why a drop or rise in the PCC would not be accompanied by an automatic increase or decrease in the AMT.

Response:

Gaz Métro could have maintained a certain consistency in the discrepancy between the AMT[3] and the PCC. However, a variation tranche or level approach would have been more appropriate to avoid changing the AMT for slight PCC variations. This would have simplified the operational aspect of the AMT approach. Based on the analyses carried out in reference (ii), proceeding in this manner would have allowed the methodology to last longer without having to fear too great a discrepancy between the AMT and PCC.

[3] Methodology presented in January 2017in Exhibit B-0178, Gaz Métro-7, Document 1.

As indicated in the introductory commentary in question 1, note that Gaz Métro filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

9.2 Based on the exhibits in the 2012 to 2016 annual reports presenting the *a posteriori* IRRs for the 2009 to 2013 development plans, please present a table, for each of the 5 years, indicating the references, discrepancies between the *a posteriori* IRR and *a priori* IRR, as well as the *a priori* and *a posteriori* volumes, and this both for the residential and business markets. Please present your response for new customers and load additions, and give a total, in accordance with the original rates schedule and actual rates.

Response:

Please see Schedule Q-9.2.

9.3 In this question, the Régie would like to receive a full assessment of the development projects valued at under $1.5 million based on the follow ups illustrating the *a posteriori* IRR and *a priori* IRR filed in the context of the 2012 to 2016 annual reports. It also intends to understand the methodology that was applied by Gaz Métro to obtain the results presented in reference (v).

For each of the 2009 to 2013 development plans, please present the "*nouveaux clients et ajouts de charge"* (new customer and load addition) tables in the same format and containing the same information as reference (iv), for the residential market and the business market, in accordance with the original rate schedule and actual rates for the following situations:

a) for all projects (with or without contribution), using working hypothesis number 2 found in reference (iii). Please provide details on the calculations involved when implementing the hypothesis, and specify your references.

Response:

To ensure legibility, the content below, which constitutes the response that Gaz Métro had undertaken to provide and which amends the response dated June 27, 2017, is not highlighted in grey.

Schedule Q-9.3a).1 presents the information requested for the residential market and Schedule Q-9.3a).2 presents the information requested for the business market.

The following table presents the number of projects considered in each market in the 2009 to 2013 development plans as well as the variation between the *a posteriori* IRR (including densification, using the original rates) and the *a priori* IRR.

	RESIDENTIAL		BUSINESS	
Year of the development plan	Number of extension projects	Variation between *a posteriori* IRR[4] (incl. densification, using original rates) and *a priori* IRR	Number of extension projects	Variation between *a posteriori* IRR[5] (incl. densification, using original rates) and *a priori* IRR
2009	46	+1.35%	58	+5.57%
2010	72	+2.49%	57	+6.70%
2011	59	+1.87%	120	+1.68%
2012	61	-3.29%	160	+2.08%
2013	40	-1.82%	132	-1.33%
	Total: 278	**Average: + 0.12%**	**Total: 527**	**Average: + 2.94%**

Analysis of residential market results

The variation between the *a posteriori* IRR (including densification, using original rates) and the *a priori* IRR for the five development plans is +0.12 with the population consisting of 278 residential extension projects.

For the 2009 to 2011 development plans, the *a posteriori* IRR is greater than the *a priori* IRR, the average variation for those three years being +1.90%.[6] Gaz Métro therefore notes that for residential extension projects, potential for profitability is achieved after more than 5 years.

For the 2012 and 2013 development plans, the *a posteriori* IRR is below the *a priori* IRR. With only three and four years of real data, certain residential extension projects have not yet reached maturity with respect to their *a priori* predictions and there are still clients to be connected in the years to come. In this *a posteriori* analysis, no volume projections were made and the data consists entirely of actual data.

Analysis of business market results

The variation between the *a posteriori* IRR and the *a priori* IRR for the five development plans is +2.94 with the population consisting of 527 business extension projects. It should be noted that for the 2012 development plan (+2.08%) and the 2013 development plan (-1.33%), the IRR variation is lower than that of the 2009 (+5.57%), 2010 (+6.70%) and 2011 (+1.68%) plans, the potential for profitability having not been fully achieved as only

[4] Schedule Q-9.3a).1, pages 1 to 5, col. 7, line 70.
[5] Schedule Q-9.3a).2, pages 1 to 5, col. 7, line 70.
[6] (2009 Plan 1.35% + 2010 Plan 2,49% + 2011 plan 1.87%) / 3.

four and three years have since passed. Therefore, by calculating the average for the 2009, 2010 and 2011 plans, we obtain an IRR increase of 4.65%.

b) for those projects where a contribution was required, but without using the working hypotheses in reference (iii). Please specify your references.

Response:

To ensure legibility, the content below, which constitutes the response that Gaz Métro had undertaken to provide and which amends the response dated June 27, 2017, is not highlighted in grey.

Schedule Q-9.3a).3 presents the information requested for the residential market and Schedule Q-9.3a).4 presents the information requested for the business market. These schedules share the same format as that of those presented in response to question 9.3 a).

The following table presents the number of projects considered in each market and the variation between the *a posteriori* IRR (excluding densification, using the original rates) and the *a priori* IRR for the 2009 to 2013 development plans.

Table 2

	RESIDENTIAL		BUSINESS	
Year of the development plan	Number of extension projects	Variation between *a posteriori* IRR[7] (excl. densification, using original rates) and *a priori* IRR	Number of extension projects	Variation between *a posteriori* IRR[8] (excl. densification, using original rates) and *a priori* IRR
2009	4	+3.86%	11	+0.57%
2010	2	+2.93%	12	+12.62%[9]
2011	1	+6.03%	10	+2.12%
2012	2	-1.89%	21	-2.53%
2013	3	-1.24%	19	-1.97%
	Total: 12	**Average: +1,94 %**	**Total: 73**	**Average: +2,16 %**

[7] Schedule Q-9.3b).3, pages 1 to 5, col.7, l.70.
[8] Schedule Q-9.3b).4, pages 1 to 5, col.7, l.70.
[9] The high IRR variation is due to the high profitability of a mining project.

c) for projects where a contribution was required, using working hypothesis number 2 in reference (iii). Please provide details on the calculations involved when implementing the hypothesis, and specify your references.

Response:

To ensure legibility, the content below, which constitutes the response that Gaz Métro had undertaken to provide and which amends the response dated June 27, 2017, is not highlighted in grey.

Schedule Q-9.3c).5 presents the information requested for the residential market and Schedule Q-9.3c).6 presents the information requested for the business market.

The following table presents the number of projects considered in each market for the 2009 to 2013 development plans as well as the variation between the a posteriori IRR (including densification, using the original rates) and the a priori IRR.

Table 3

	RESIDENTIAL		BUSINESS	
Year of the development plan	Number of extension projects	Variation between *a posteriori* IRR[10] (excl. densification, using original rates) and *a priori* IRR	Number of extension projects	Variation between *a posteriori* IRR[11] (excl. densification, using original rates) and *a priori* IRR
2009	4	+3.91%	11	+3.97%
2010	2	+2.93%	12	+16.08%
2011	1	+6.03%	10	+2.33%
2012	2	-1.89%	21	-1.70%
2013	3	-0.36%	19	-1.91%
	Total: 12	**Average: +2.12%**	**Total: 73**	**Average: +3.75%**

9.4 Please confirm if the sales under the 2012 to 2017 development plans were taken into consideration in the analysis performed to establish the results in reference (v). If so, please explain.

[10] Schedule Q-9.3c).5, pages 1 to 5, col.7, l.70
[11] Schedule Q-9.3c).6, pages 1 to 5, col.7, l.70

Response:

Yes, the sales under the 2012 to 2017 development plans were taken into consideration. These sales needed to be taken into account in order to obtain the results in reference (v). For more details, please refer to the response to question 9.6.

9.5 Please indicate whether the densification sales considered in the analyses performed to establish the results in reference (v) are signed sales, projected sales, a mix of both, or some other type. In all cases, please explain.

Response:

They contain only actual sales for which a contract was executed with the customer. There are no projections.

9.6 Using specific examples, please explain the impact of the hypothesis whereby all densification sales associated with the initial extension project were included in the *a posteriori* findings independently of the financial year of the development plan to which the sale was related (reference (iii)).

Response:

Take, for example, fictional extension project #1 in the business market, containing the following data:

- Customer A signed a contract in fiscal 2010;
- Volume: 100,000 m^3;
- This initial extension project is part of the *a priori* 2010 development plan.

Suppose that three densification sales are concluded in the years following 2010 (which sales were not included or projected in the *a priori* profitability of fictional extension project #1). These three densification sales belong to *a priori* development plans following 2010, even if the three densification sales were physically connected to the service line that was commissioned in the context of the fictional extension project #1.

The above illustration shows, on the one hand, the *a priori* development plan to which each of the sales contemplated in fictional extension project #1 belong. On the other hand, it shows the actual volume measured *a posteriori* for each of the customers A and B, for the years 1 to 6, that were included in the *a posteriori* results allowing to calculate table 1 in reference (v), independently of the fiscal year of the development plan to which the sale is related (reference (iii)).

a priori

Year of the *a priori* development plan	2010	2011	2012	2013	2014	2015	2016
# of customers Customer info and volume	1 new customer (A) contract 100,000[3]				1 new customer (B) contract 30,000[3]	1 customer (A) contract 25,000[3]	1 customer (B) contract 20,000[3]
Type of sales	fictional extension project #1				on system (densification)	load addition (densification)	load addition (densification)

a posteriori

Years	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
# of customers (cumul.)		1	1	1	2	3	4
Actual volume measured m^3							
customer A − meter A		98,000	98,000	98,000	98,000	118,000	122,000
customer B - meter B		-	-	-	23,000	29,000	47,000
Total a posteriori volume (m^3)		***98,000***	***98,000***	***98,000***	***121,000***	***147,000***	***169,000***

* Hypothesis: in this example, years 0 to 6 correspond to the fiscal years 2010 to 2016, respectively*

9.7 Based on the responses in sections 9.3 (b) and (c), please break down the volume discrepancies for each of the 5 years (2009 to 2013) (notably by market), indicating from which development plan(s) the densification sales result. Please indicate how these volumes were allocated among customers having paid a contribution, and customers associated with the same project that did not.

Response:

To ensure legibility, the content below, which constitutes the response that Gaz Métro had undertaken to provide and which amends the response dated June 27, 2017, is not highlighted in grey.

Gaz Métro wishes to mention that the response provided with respect to question 9.7 concerns only the data provided in response to question 9.3c), that is to say projects for which a contribution has been demanded, which is based on work hypothesis (iv). It should be noted that for all densification sales in the residential and business markets for the 2009 to 2103 development plans, no contribution was paid by densification sales customers, as these sales showed sufficient profitability *a priori* (above prospective capital cost). Only a connection contribution ($300) was paid, where applicable.

Gaz Métro wishes to mention that the volume variation cannot be broken down as requested in question 9.7, there being no *a priori* prediction for densification sales in the profitability analysis contemplated in question 9.3.

However, Gaz Métro presents in the two tables below the *a posteriori* actual volume allocation for densification sales, according to their respective development plans. The *a posteriori* actual volume corresponds to that of the last twelve months available at the time of producing the analysis.

Table 4: Residential market

Extension project development plan	Densification sales development plan by volume (10^3m^3)										Reference Schedule Q-9.3c).5
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**Total**	
2009						5				5	p.1 c.5 l.20
2010											p.2 c.5 l.20
2011											p.3 c.5 l.20
2012											p.4 c.5 l.20
2013						38	4	4		46	p.5 c.5 l.20

Table 5: Business market

Extension project development plan	Densification sales development plan by volume (10^3m^3)										Schedule Q-9.3c).6
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**Total**	
2009	28	22	59	152	19	17	5			303	p.1 c.5 l.20
2010		21	52	133	484	136		1		828	p.2 c.5 l.20
2011				7		22	1			30	p.3 c.5 l.20
2012				59	148	8	17	2		234	p.4 c.5 l.20
2013					3	10	22	12	1	47	p.5 c.5 l.20

In accordance with the Régie's correspondence A-0120, Gaz Métro will respond to question 9.3 no later than by August 10, 2017. Consequently, Gaz Métro will be able to respond to this question no later than by August 10, 2017.

10 **Reference:** Exhibit B-0178, p. 6.

Preamble:

[TRANSLATION]
"Gaz Métro conducted an a posteriori profitability analysis to establish the acceptable minimum threshold. To do this, Gaz Métro targeted development plans of the commercial market for fiscal years 2009, 2010 and 2011. More specifically, Gaz Métro selected all extension projects valued under $1.5 million for which a contribution was required a priori in order to achieve the anticipated profitability. These extension projects were selected seeing as, without a customer contribution, they never would have been profitable at the time they were accepted. Consequently, the projects selected in the analysis are similar to the extension projects contemplated in this evidence."

Question:

10.1 Please explain why the analysis was applied only to the commercial sector. Please explain.

Response:

As indicated in the reference, Gaz Métro wanted to select pojects for which a contribution was required *a priori* in order to achieve the anticipated profitability. Consequently, a number of projects for which a contribution was required *a priori* in order to achieve the anticipated profitability were available per year for the commercial market, but not for the residential market.

Assessment of Development Plans

11 **Reference:** Follow-ups on projects valued at over $1.5 million presented in the context of the annual reports.

Questions:

11.1 Using the follow ups filed in the context of the annual reports, please prepare an assessment for the system extension project valued at over $1.5 million between 2009 and 2016, including, more specifically:

11.1.1 volumes (m^3);

11.1.2 RCP subsidies;

11.1.3 customer contributions;

11.1.4 investments,

11.1.5 IRRs;

11.1.6 break-even rates.

Response:

The following table presents an assessment of the list of system extension projects valued at over $1.5 million between 2009 and 2016.

Project Name	Annual report	Reference of Régie exhibit	Volume 5 years		Subsidies	Contribution	Investments	IRR	Break-even rate
(1)	(2)	(3)	(4)	Unit	(5)	(6)	(7)	(8)	(9)
Versant Soleil	2009	R-3717-20G9	831	10^3m^3	$0	-$1,600,000	$400,501	19.94%	6.03 years
Versant Soleil	2010	R-3745-2010	696	10^3m^3	$0	-$1,600,000	$404,032	19.66%	5.11 years
Versant Soleil	2011	R-3782-2011	605	10^3m^3	$0	-$1,600,000	$246,297	3.01%	None
Versant Soleil	2012	R-3831-2012	583	10^3m^3	$0	-$1,600,000	$246,297	1.13%	None
Saint-Denis-sur- Richelieu	2011	R-3782-2011	not available	10^3m^3	$0	-$2,385,242	$985,573	not available	not available
Saint-Denis-sur- Richelieu	2012	R-3331-2012	12 393	10^3m^3	$0	-$2,335,242	$604,204	16.70%	1 year
Saint-Denis-sur- Richelieu	2013	R-3S71-2013	12215	10^3m^3	$0	-$2,385,242	$427,486	23.29%	1 year
Saint-Denis-sur- Richelieu	2014	R-3916-2014	13099	10^3m^3	$0	-$2,385,24	$426,356	24.94%	1 year
Vallée-Jonction etThetford Mines	2011	R-3782-2011	38 683	10^3m^3	-$18,148,000	$0	$5,921,134	not available	not available
Vallée-Jonction etThetford Mines	2012	R-3331-2012	52 073	10^3m^3	-$18,148,000	$0	$11,994,496	6.72%	18.77 years
Vailée-Jonction etThetford Mines	2013	R-3871-2013	53,027	10^3m^3	-$18,134,612	-$35,600	$12,591,821	6.94%	11.14 years
Vallée-Jonction etThetford Mines	2014	R-3916-2014	53,502	10^3m^3	-$18,134,612	-$19,700	$12,389,438	7.51%	11.37 years
Vailée-Jonction etThetford Mines	2015	R-3951-2015	58,369	10^3m^3	-$18,134,612	-$19,488	$12,591,867	8.11%	6.86 years
Vallée-Jonction etThetford Mines	2016	R-3992-2016	58,614	10^3m^3				5.80%	+40 years
Municipality of la Come	2012	R-3831-2012	117,470	10^3m^3	$0	-$5,500,000	$4,380,439	7.79%	1 year
Municipality of la Come	2013	R-3871-2013	124,100	10^3m^3	Oî	-$5,190,000	$5,381,804	not available	not available
Municipality of la Come	2014	R-3916-2014	not available	10^3m^3	not available	Not available	not available	not available	not available
Municipality of la Come	2015	R-3951-2015	not available	10^3m^3	0$	-$4,706,543	$6,389,201	not available	not available
Municipality of la Come	2016	R-3992-2016	not available	10^3m^3	$0	-$1,888,143	$9,211,855	not available	not available

Project Name	Annual report	Reference	Volume		Subsidies	Contribution	Investments	IRR	Break-even
		of Régie exhibit	5 years						rate
(1)	(2)	(3)	(4)	Unit	(5)	(6)	(7)	(8)	(9)
Municipality of Saint-Félicien	2013	R-3871-2013	137,000	10^3m^3	$0	-$3,370,000	$6,546,899	7.67%	1 year
Municipality of Saint- Félicien	2014	R-3916-2014	170,645	10^3m^3	$0	-$3,370,000	$7,129,365	10.28%	1 year
Municipality of Saint- Félicien	2015	R-3951-2015	190,745	10^3m^3	$0	-$3,370,000	$7,118,640	10.95%	1 year
City of Terrebonne- phases 1A and 1B	2014	R-3916-2014	865,125 (3 years)	10^3m^3	$0	-$145,800	$2,192,991	6.82%	17.47 years
City of Terrebonne- phases 1C etAtmosphera	2014	R-3916-2014	43,000 (3 years)	10^3m^3	$0	-$72,000	$475,458	7.79%	17.77 years
City of Terrebonne- phases 1A and 1B	2015	R-3951-2015	850,713 (3 years)	10^3m^3	$0	-$149,245	$2,299,717	8.05%	13.64 years
City of Terrebonne- phases 1C and Atmosphera	2015	R-3951-2015	53,315 (3 years)	10^3m^3	$0	-$72,300	$504,1,71	7.01%	20.92 years
City of Terrebonne- phases 1A and 1B	2016	R-3992-2016	3,982,579 (7 years)	10^3m^3	$0	-$152,700	$2,388,602	8.12%	13.66 years
City of Terrebonne- phases 1C, 1D, Atmosphera etTerryearova	2016	R-3992-2016	1,030,746 (7 years)	10^3m^3	$0	not available	$741,197	8.78%	12.56 years
Industrial park of Beauharnois	2015	R-3951-2015	not available	10^3m^3	$0	-$3,980,092	$0	none	none
Industrial park of Beauharnois	2016	R-3992-2016	not available	10^3m^3	$0			None	None
Region of Bellechasse	2016	R-3992-2016	47,212	10^3m^3				6.65%	14.21 years
Asbestos region	2016	R-3992-2016	3,092	10^3m^3				13.52%	1 year

Exceptions to the Application of the Acceptable Minimum Threshold

12 **Reference:** Exhibit B-0178, pp. 8 and 9.

Preamble:

[TRANSLATION] "[…] *In addition to the rules for applying the acceptable minimum threshold, Gaz Métro has identified two exceptions where a profitability level that does not meet the acceptable minimum threshold would be accepted for an extension project. There are two specific contexts that afford a window of opportunity that should be taken advantage of: the development of an industrial park and the repaving of a road. These two types of infrastructure work can be carried out in tandem with extension project work, such that both can progress while disturbing and interfering as little as possible with the infrastructure already in place. This coordination can also yield cost savings that will benefit all customers. Indeed, a number of elements (such as sawing activities and the removal and replacement of asphalt) allow Gaz Métro to generate savings by taking advantage of this optimal window of opportunity.*

"Furthermore, some factors (such as the refusal of a number of municipalities to proceed with interventions in recently paved surfaces) adversely affect the potential for development and optimization of the gas system and customer base due to a missed window of opportunity. Indeed, it is difficult to reach customers who are established along recently paved surfaces, and they will probably turn instead to a less economical and potentially more polluting energy solution. Coordinating the installation of the system in a sector with densification prospects when the municipality engages in repaving activities, for example, will eventually allow to maximize the number of customers and revenues, to the benefit of all customers." [emphasis added]

Questions:

12.1 Please specify if the exceptions to the application of the acceptable minimum threshold are already included in the practice currently in force at Gaz Métro.

Response:

The AMT[4] and its exceptions have been in force internally at Gaz Métro since the fall of 2015 as regards the development of an industrial park and road paving activities with densification prospects.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

12.2 Considering that Gaz Métro could benefit from costs savings and win the acceptance of a number of municipalities if it takes advantage of the window of opportunity opened by projects to develop an industrial park and repave roads, please explain why the profitability of this type of project would be 2% lower than the PCC, or even the AMT.

Response:

In the context of an industrial park development project, Gaz Métro can obtain a lower AMT profitability[5] since the majority of lots are vacant and there is no known customer ready to commit themselves at the time Gaz Métro makes its decision. However, the competitive position and attributes of using natural gas in the processes are prized by industries and will therefore allow the PCC to be achieved over time.

As for the repaving of roads, profitability lower than the AMT is only acceptable in those cases where the aim is to get closer to a potential project located beyond the repaving work anticipated by the city. The costs associated with road repaving are included in the potential

[5] Methodology presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1.

project identified and must show a profitability that is equal to or greater than the PCC over time.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

12.3 Please give a brief description of potential projects to develop industrial parks and repave roads that have been identified or are anticipated.

Response:

As regards the description of an industrial park development project, please refer to the schedule in the response to question 1.14 of the FCEI's request for information no. 2 (Gaz Métro-9, Document 3).

Gaz Métro presents a road repaving project bearing number 10007240120 consisting of a vast real estate development project that will incorporate a public hub developed around the Transit-Oriented Development (TOD) principles. This project will include a number of public facilities, including a grade school, gymnasium, multi-functional space, community centre, pool and neighbourhood police station. In the periphery of this hub, several medium and high-density development phases are also projected. The project provides for over 5,400 residential units over time. The City will repave the main street and is asking Gaz Métro to run its system through before the municipality performs its work, and this before Gaz Métro can convince customers to commit. The sensitivity analysis indicates a profitability exceeding the PCC, but only with the addition of three 100-unit residential towers.

12.4 Please explain the criteria on which Gaz Métro relies when deciding whether to proceed with system extension projects associated with industrial parks and road repavings. More specifically, explain whether there are any triggering factors or acceptable minimum/critical thresholds, for example, in terms of number of customers, volume, densification potential, IRRs, etc.

Response:

When deciding to proceed with system extension projects associated with industrial parks and road repavings, Gaz Métro relies on the internal governance process that was presented in Exhibit B-0178, Gaz Métro-7, Document 1, and for which specifications were provided in Exhibit B-0220, Gaz Métro-7, Document 2.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

The governance process

13 **Reference:** Exhibit B-0220, p. 9 to 12.

Preamble:

"[TRANSLATION] *As presented in the section entitled "Internal Governance Process" of the evidence bearing on the methodology for evaluating the profitability of system extension projects, the first phase of the internal governance process is to evaluate the extension project's potential for future densification. Gaz Métro has improved on the information presented in Exhibit B-0178*." [emphasis added]

Questions:

13.1 Please describe the current governance process.

Response:

In the current methodology, the phases *1- Evaluation of future densification potential*, *4- Project authorization process* and *5 - Operationalization of the densification phase* presented in Exhibits B-0178 and B-0220 (Gaz Métro-7, Documents 1 and 2) essentially describe the current governance process. Note that the process is not as systematic as the one presented.

Consequently, phases *2- Sensitivity analyses* and *3- Conciliation of the potential for future densification and the sensitivity analyses* such as those presented in Exhibits B-0178 and B-0220 were not included in the current governance process. The addition of these phases has allowed to create a systematic and rigorous process that allows for the qualitative assessment of the potential for future densification.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

13.2 Please explain the differences between the current governance process and the one proposed.

Response:

Please refer to the response to question 13.1.

13.3 Please describe the current acceptance criteria.

Response:

In the existing methodology, in other words before Gaz Métro implemented the AMT methodology starting in the fall of 2015, as indicated in the response to question 12.1, the acceptance criterion applied internally by Gaz Métro was to achieve or exceed the PCC. In some cases, and this under specific contexts, Gaz Métro accepted projects with a profitability lower than the PCC.

13.4 Please explain the differences between the current acceptance criteria and those that are being proposed.

Response:

The "current" acceptance criteria were described in the response to question 13.3. In terms of the acceptance criteria of the methodology presented in Exhibit B-0178, Gaz Métro accepts extension projects with future densification potential that present an *a priori* profitability lower than the PCC but higher than the AMT.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

14 **References:** (i) Exhibit B-0220, p. 9;
(ii) Exhibit B-0220, p. 10;
(iii) Exhibit B-0220, p. 11;
(iv) Exhibit B-0178, p. 11.

Preamble:

(i) "[TRANSLATION] *Site visits can also be used to take a census of other potential customers that use an alternative energy source. Gaz Métro assesses the conversion possibilities presented by these potential customers and estimates a consumption that is based on the consumption calculation rules. This potential for conversion is also taken into consideration in the potential for future densification*." [emphasis added]

(ii) *"*[TRANSLATION] *The site visits, discussions with various players in regional development, the consultation of the developer's location diagram and the land use and development plan for the territory help identify the vacant lots where potential customers might set up. For these vacant lots, Gaz Métro estimates consumption based on the municipal requirements which, in turn, rely on the percentage of square feet that are to be built using the rules in force. To be conservative, Gaz Métro only takes heating of the air into consideration, presumes that the building will have only one floor and includes only a proportion of the vacant lots when determining the potential for consumption. The potential of vacant lots is also included in the potential for future densification."*

(iii) *"*[TRANSLATION] *When an extension project is more likely than not to achieve the PCC over time, a formal investment request is filled out and sent by the development advisor to the senior development advisor*."

(iv) *"*[TRANSLATION] *Once an extension project ─ including those with anticipated profitability ─ is authorized, the fifth phase begins (known as the operationalization of the densification phase). All information gathered in phase 1 regarding future development potential is therefore sent to the sales force responsible for the system's densification.*"

Questions:

14.1 As regards reference (i), please explain how these potentials are considered in the future densification potential. More specifically, please elaborate on the proportion of the identified potential that will be considered in the future densification potential.

Response:

Among the customers identified during the site visit, Gaz Métro considers only those customers that use an energy source such as propane and fuel oil in its future densification potential. Depending on the size of the building, an assessment of the future volumes will be performed and used as a basis for calculating the valuation of the future densification potential.

14.2 As regards reference (i), please file and explain the consumption calculation rules.

Response:

Whenever these are available, the energy invoices of potential customers are used to estimate their natural gas consumption. When invoices are not available, Gaz Métro uses the calculation rules for estimating the natural gas consumption of a new customer. These rules differ depending on what customers use this energy for: heating, cooling, hot water, sanitation, etc. These rules are only used in cases that Gaz Métro defines as being standard.

For more details, please refer to the schedule in the response to question 7.6 in Option consommateurs's request for information no.2 (Gaz Métro-9, Document 4).

14.3 As regards reference (ii), please explain the criteria that allow Gaz Métro to establish a list of vacant lots based on a consultation of the developer's location diagram or the land use and development plan for the territory in order to identify the vacant lots where potential customers could set up.

Response:

Based on the territories to be developed, Gaz Métro uses the minimum percentage of construction that the municipality requires. Most municipalities have rules governing the construction area of buildings based on the amount of space acquired by customers.

In order to identify the vacant lots where potential customers could set up, Gaz Métro visits the sites, speaks with various stakeholders in regional development, consults the developer's location diagram or land use and development plan for the territory. Once the lots are identified, Gaz Métro uses a proportion to determine the future consumption potential. Gaz Métro does not specifically apply a proportion per type of customer. The proportion of vacant lots included in the sensitivity analysis will vary based on the economic conditions prevailing in the project's region.

14.4 As regards reference (ii), and based on the criteria establishing the list of vacant lots, please provide a detailed explanation of how the proportion is established per type of customer for the vacant lots considered in the future densification potential.

Response:

Please refer to the response to question 14.3.

14.5 As regards reference (iii), please illustrate in detail and provide numerical examples of the criteria that are used to determine the likelihood that an extension project will achieve the PCC over time.

Response:

Gaz Métro refers to the response to question 12.3, which illustrates and provides several examples of sensitivity of achieving the PCC. As for the likelihood of the PCC being achieved over time, Gaz Métro refers to the sensitivity analyses performed as indicated on page 10, lines 15 through 17, Exhibit B-0178, Gaz Métro-7, Document 1.

14.6 As regards reference (iv), please explain how Gaz Métro would reevaluate its governance process if, after several years of application, it came to realize that the future densification is not producing the expected results.

Response:

Gaz Métro believes in the governance process that was implemented in the context of the methodology presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1. Gaz Métro may reassess its process in light of the results obtained following the analysis of various extension projects. Gaz Métro continually strives to improve itself, and will take pains to adapt the various elements of its governance process depending on the nature of the results obtained.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

14.7 Please elaborate on the type of *a posteriori* follow-up that may be carried out for each system extension project (costs over or under $1.5 million) where the IRR is less than the PCC in such a manner as to evaluate the level of actual densification as opposed to the anticipated level, and the impact that this densification has on the IRR. Please comment on the expediency of presenting the results for all projects and the requisite explanations in the annual report for 2018 et seq.

Response:

First, for projects of $1.5 million and up, it is at the time the matter is being evaluated that Gaz Métro will reach an agreement with the Régie as to the follow-up method that is appropriate in these specific cases.

For projects valued at under $1.5 million, as indicated in the introductory commentary, Gaz Métro notes that it has filed a new profitability evaluation approach, including a proposed *a posteriori* follow-up, which is presented in Exhibit Gaz Métro-7, Document 4.

14.8 Please comment on the expediency of filing an evaluation report on the results as well as a full re-evaluation of the governance process and the parameters of the methodology used in the 2019-2020 rate case.

Response:

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

14.9 Please comment on the expediency of producing an explanatory and detailed document on the governance process.

Response:

Gaz Métro believes it has explained and detailed the governance process in Exhibits B-0178 and B-0220. This notwithstanding, Gaz Métro has no objection to integrating the information presented in Exhibits B-0178 and B-0220 in a document.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

15 **References:** (i) Exhibit B-0220, p. 7;

(ii) Exhibit B-0178, p. 5.

Preamble:

(i) "[TRANSLATION] [...] *Gaz Métro adds that it does not have a long history of extension projects which, a priori, have a profitability lower than the PCC but present a potential for future densification thereafter (AMT extension projects).*"

(ii) "[TRANSLATION] *Indeed,* […] *Gaz Métro explains that the extensions sometimes contain only limited, short-term quantitative information, thus hampering the eventual assessment of profitability and, by that very fact, placing the entire file at risk of not being carried out*.

"Gaz Métro therefore presents a profitability criterion that is, a priori, lower than the PCC, known as the acceptable minimum threshold. This acceptable minimum threshold establishes the minimum profitability required for extension projects where the elements known at the time of their evaluation, such as the number of customers and volumes associated with the projects, fall short of the PCC but whose anticipated densification would push these projects to an overall level of profitability greater than or equal to the PCC." [emphasis added]

Question:

15.1 Considering that Gaz Métro does not have a long history of extension projects which, *a priori*, present a profitability lower than the PCC, please elaborate on the reliability of the findings resulting from the profitability evaluation methodology applied to projects with densification potential (references (i) and (ii)).

Response:

Considering that Gaz Métro does not have a long history of extension projects which, *a priori*, present a profitability lower than the PCC, Gaz Métro has performed an *a posteriori* profitability analysis allowing it to quantify the densification of extension projects in the commercial market for fiscal years 2009, 2010 and 2011 in which a contribution was required, *a priori*, in order to achieve the anticipated profitability. These extension projects were selected seeing as, without a customer contribution, they never would have been profitable at the time they were accepted. Therefore, the projects selected for the analysis are similar to the expansion projects targeted by the methodology presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1.

The findings of the *a posteriori* profitability analysis demonstrate that the profitability of the extension projects analyzed increased by an average of 4.48%. Consequently, by setting an AMT and applying the governance process, Gaz Métro is confident that accepting extension projects with densification potential will, overall and in time, have a downward impact on customer rates.

Please also refer to the response to question 9.3.

16 **Reference:** Exhibit B-0178, p. 9 to 11.

Preamble:

"[TRANSLATION] *The first phase of the process consists of evaluating the extension project's future densification potential.*

"[…]

"[…] *phase two of the process consists in conducting sensitivity analyses in order to evaluate how many customers in addition to those identified a priori will be needed to achieve a profitability rate equal to the PCC.*

"Phase three of the process is to reconcile the evaluation of the potential for future densification and the sensitivity analyses conducted in the second phase. Where it is more likely than not that the extension project will eventually achieve the PCC, a formal investment request is filled out and sent by the development advisor to the senior development advisor. The file will include, more specifically, a summary of the analyses conducted, the revenue required for the project and the latter's profitability.

"The fourth phase relates to the projects' authorization process. Once the investment request file is received by the senior development advisor, he or she will review the file to make sure that the

profitability has been rigorously estimated based on the technical solutions retained, and that the relevant information allowing to gauge future expectations is present. The file is then sent for authorization to the Senior Executive, Sales.

"Once an extension project ─ including those with anticipated profitability ─ is authorized, the fifth phase begins (known as the operationalization of the densification phase). All information gathered in phase one regarding future potential development is therefore sent to the sales force responsible for the system's densification. […]" [emphasis added]

Questions:

16.1 Please indicate the probability based on which an extension project is considered to have the potential to achieve the PCC.

Response:

In the third phase of the governance process,[6] Gaz Métro compares the potential for future densification identified in the first phase of the governance process to the number of customers in addition to those identified *a priori* that will be needed in order to achieve a profitability rate equal to the PCC. According to the information gathered during site visits, the sensitivity analysis must demonstrate that the PCC has been achieved or exceeded with a degree of certainty deemed to be sufficient, and specific to the context of each of the projects. Therefore, there is no probability threshold, so to speak, that is considered.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

16.2 Please specify how the process for technically defining solutions relating to the system extension projects is monitored in the internal governance process presented in the third phase of reference (i).

Response:

The involvement of the senior development advisor consists of ensuring that the trajectory proposed in the project is optimized to maximize the densification, that the proposed system complies with Gaz Métro's best practices, and that the technical analysis tools used by the development advisor are up to date.

[6] Methodology presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1.

Contributions

17 **Reference:** Exhibit B-0220, p. 12.

Preamble:

"[TRANSLATION] *The changes will generate a reduction in customer contributions. Gaz Métro does not require customers to make contributions for AMT extension projects, seeing as the potential for the future densification of authorized extension projects should allow the PCC to be achieved. However, Gaz Métro continues to require customer contributions for extension projects deemed to be unprofitable."*

Questions:

17.1 Please indicate what rules are currently in place for determining requests for customer contributions. Please indicate whether these rules apply to each of the customers or if particular situations could apply when necessary.

Response:

Under the existing methodology, in other words before Gaz Métro applied the AMT methodology starting in the fall of 2015, the customer contribution was evaluated in order to achieve a profitability equal to the PCC. A majority of the projects with contribution involve only one customer. Where there is more than one customer, the base on which the contribution is allotted will be established based on the anticipated consumption.

As regards the AMT methodology presented in January of 2017 in Exhibit B-0178, Gaz Métro-7, Document 1, please refer to the response to question 1.11.

17.2 Please indicate whether the Distributor has identified alternatives to a request for contribution in order to improve the profitability criteria of a project. If so, please elaborate on the benefits and inconveniences of these alternatives. If not, please indicate whether Gaz Métro would consider a development rate.

Response:

Gaz Métro is currently exploring various alternatives in order to promote a development that is beneficial to all of its customers. These alternatives are mainly rate-oriented and will be further examined in Phase 4 of R-3867-2013, which addresses the review of distribution rate structures. Gaz Métro notes that the rate modifications that will be analyzed in Phase 4 of this

matter would complement, and not replace, the new approach presented in Exhibit Gaz Métro-7, Document 4.

17.3 In the context of the Distributor's request to consider the potential densification of projects with an IRR lower than the PCC, please indicate whether the Distributor intends to maintain the $300 contribution requested as a connection fee for D_1 rate customers who consume less than 10,950 m³/year.

Response:

Yes, Gaz Métro intends to maintain the $300 contribution requested as a connection fee for D_1 rate customers consuming less than 10,950 m³/year in the methodology presented in January of 2017 in Exhibit B-0178, Gaz Métro-7, Document 1.

17.4 Please indicate if a contribution may be required from a customer benefitting from one or several subsidies such as the CRP/RCP, CRRP/ PRRC, AASPES/CASEP or GEEP/PGEÉ. Please elaborate on these possible combinations and their impact on the calculation of the project profitability criterion.

Response:

When a contribution is required from the customer (with the exception of the $300 contribution), that customer cannot benefit from an RCP subsidy. Indeed, it is illogical for a customer to subsidize a financial assistance such as the RCP by paying a contribution personally, an action that would neutralize the RCP's effect on project profitability. As for the CRRP, given that the customer is already connected, no combination is possible, or at least foreseeable, with a contribution.

However, an AASPES-type subsidy may be attributed to the project, which would then reduce investments and, by that very fact, the customer's contribution.

Note that the GEEP financial assistance paid to a customer is not considered in the project profitability analysis. The financial assistance afforded under the GEEP programs seeks to incite customers to choose to take measures or use equipement that are highly energy efficient once the connection is made, and not necessarily to incite them to connect to the gas system.

17.5 Please comment on the expediency of more accurately describing the rules for requesting a contribution in the *Conditions of Service and Tariff*.

Response:

Gaz Métro is not opposed to revising the *Conditions of Service and Tariff* when the circumstances so require. Section 4.3.4, however, seems to adequately reflect the contribution request rules.

17.6 Please explain the types of projects that are deemed unprofitable for which Gaz Métro intends to continue requiring customer contributions. Please explain why these projects would require a contribution as opposed to AMT projects, considering that the profitability of these two types of projects would be lower than the PCC.

Response:

Please refer to the response to question 1.11.

Risk Management

18 **Reference:** Exhibit B-0220, p. 12.

Preamble:

[TRANSLATION]
"The changes will generate a reduction in customer contributions. Gaz Métro does not require customers to make contributions for AMT extension projects, seeing as the potential for the future densification of authorized extension projects should allow the PCC to be achieved. However, Gaz Métro continues to require customer contributions for extension projects deemed to be unprofitable."

Questions:

18.1 Please indicate whether the new methodology used to evaluate the profitability of system extension projects diminishes, increases or is neutral with respect to Gaz Métro's overall risk. Please explain and justify your response.

Response:

In the opinion of Gaz Métro, supported by an internal governance process and a systematic and strict approach framing the evaluation of extension projects which, upon completion, maximize positive impacts on customers, the proposed methodology brings no significant change to Gaz Métro's overall risk. Furthermore, the proposed methodology allows Gaz Métro to achieve overall profitability with its conservative development plan, given that

anticipated profitability is not included, *a priori*, in the IRR evaluation, to better identify projects with anticipated profitability, and to therefore closely monitor densification progress.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

18.2 Please explain the rate impact of not achieving the PCC *a posteriori* for projects with profitability equal to the AMT or for projects that are "exceptions" to the AMT's application.

Response:

If the profitability of extension projects with future densification potential do not achieve the PCC over time, this would generate a rate increase for customers. Moreover, Gaz Métro is confident that the authorized extension projects with future densification potential will on the whole eventually have the impact of reducing rates for customers.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

18.3 Please indicate what the potential gains and losses for Gaz Métro customers and Gaz Métro associates would result from applying the new methodology for evaluating the profitability of system extension projects.

Response:

As mentioned in Exhibit B-0178, Gaz Métro presents an approach to the Régie for assessing extension projects that will eventually maximize the beneficial impacts for customers. This approach, combined with a rigorous internal governance process that frames the decision as to whether or not to accept extension projects, including those with profitability potential, allows to ensure an overall profitability exceeding the PCC will be achieved, thus contributing to lower rates for customers while granting access to natural gas.

As for associates, since Gaz Métro does not foresee any changes to its overall business risk, the authorized rate of return on shareholder equity should not be affected. Nevertheless, associates would surely welcome maintaining natural gas' strong competitive position.

As indicated in the introductory commentary, it should be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

18.4 To the extent that there is uncertainty as to whether or not the PCC will be achieved for projects with an *a priori* profitability rate of 2% or more, but lower than the PCC, please comment on the appropriateness of regulating access to subsidies and requests for contributions so as to modulate the risk for all customers. For example, the following modulations could be foreseen:

- Targeted customers would not be eligible to receive the RCP and AASPES;
- Targeted customers would be eligible to receive the RCP and AASPES, but would pay a contribution based on the PCC.

Response:

With respect to the first modulation, Gaz Métro wishes to clarify that projects with an *a priori* profitability of 2% and more, but lower than the PCC, are eligible to receive the RCP if the anticipated profitability allows for the achievement of profitability equal to or above the PCC.

It should be noted that exceptional cases (industrial parks and road repaving activities) do not qualify to access the RCP.

AASPES remains accessible for the replacement of higher polluting sources of energy and improving the profitability of extension projects whose profitability is, *a priori*, greater than the AMTs, but lower than the PCC. Gaz Métro argues that barring access to AASPES would impede the replacement of higher polluting sources of energy and go against the very essence of the program, which is to facilitate conversion in order to contribute to the improvement of Québec's environmental balance sheet.

As for the second modulation, Gaz Métro indicates that this is possible, but unlikely, that a customer would subsidize its own financial support, such as the RCP, by paying a contribution, which would *de facto* neutralize the RCP's effect on profitability.

For these reasons, Gaz Métro does not believe it is necessary to regulate access to subsidies and contribution requests with respect to the approach presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1.

As indicated in the introductory commentary, it should also be noted that Gaz Métro has filed a new approach to evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

18.5 If there is greater uncertainty surrounding achievement of the PCC for those exceptions where no profitability is required *a priori*, please comment on the possibility of regulating access to subsidies and contribution requests so as to modulate risk for all customers. For example, targeted customers would not have access to the RCP and AASPES.

Response:

Gaz Métro refers the Régie to the response to question 18.4, as the same conclusions would apply.

18.6 Please indicate how Gaz Métro manages the cost overrun risks of investment projects with its subcontractors so as to minimize the risk for its customers. Please explain.

Response:

Please refer to the response to question 4.1.

18.7 Has Gaz Métro taken its risk management practices with its subcontractors in terms of the costs overruns of investment projects and compared them with best practices? If so, please present the results of this comparison. If not, please explain whether Gaz Métro intends to do so.

Response:

Gaz Métro has not specifically compared its risk management practices and does not foresee doing so since it has developed its own project management system based on best practices, its internal expertise and principles taken from the PMBOK Guide published by the Project Management Institute.

19 **Reference:** R-3825-2012, Exhibit B-0021, pp. 4 to 6.

Preamble:

[TRANSLATION]
"Gaz Métro does not use grids to classify the project's risk level. However, all the tools placed at its disposal by the Conditions of Service and Tariff *are used to mitigate the risk that a new connection agreement could represent".*

Questions:

19.1 With respect to risk management in the context of connection agreements with new customers, please explain the changes brought, if any, to the process used to evaluate the customer risk mentioned in reference.

Response:

The evaluation process mentioned in reference applies to all new connection agreements. Each project is individually evaluated according to its own specificities. Gaz Métro does not foresee modifying the process.

19.2 Based on the reference explaining risk management in the context of connection agreements with new customers, please comment on the appropriateness of establishing grids to classify risk levels per customer based on which Gaz Métro could require guarantees.

Response:

Gaz Métro does not deem it necessary to establish grids that classify risk levels per customer based on which guarantees could be required. Gaz Métro deems its deposit policy to be efficient as is evidenced by its business practices.

As indicated in Gaz Métro's responses to the FCEI's request for information No. 3 in the context of the 2018 rate case,[7] Gaz Métro's deposit policy aims to mitigate Gaz Métro's financial losses related to the credit risk that a customer may present. Gaz Métro evaluates the efficiency of its deposit policy and proposes adjustments, when it deems it necessary, to do so.

Comparables

20 **Reference:** Exhibit B-0178, p. 12.

Preamble:

[TRANSLATION]
"*In Ontario, the Ontario Energy Board allows Union Gas Limited and Enbridge Gas Distribution to use a portfolio approach for extension projects in which projects with an IRR below the PCC can be accepted. With the help of a formula, the profitability index (P.I.) of each extension project may be evaluated. For individual projects, the profitability index must be greater than or equal to 0.8, which corresponds to an IRR of approximately 3.70%. Moreover, the portfolio of projects must achieve a profitability index greater than or equal to 1.1, which corresponds to an IRR of approximately 6.02%.*"

Question:

20.1 Please explain the calculations you use to establish the aforementioned correspondences between the profitability index and the IRR (0.8=3.7%; 1.1=6.02%).

[7] R-3897-2016, B-02014, Gaz Métro-18, Document 3, responses to questions 6.9 and 6.9.1

Response:

The profitability index establishes a correlation between the two components of an NPV: the numerator represents the present value of the project's operating cash flows (therefore excluding the initial investment), while denominator represents the initial investment in the project. The following example of a fictitious project illustrates this:

- Initial investment = $1,652.10
- Annuity = $100 (fixed for a 40-year period)
- 5.28% capitalization rate (= Gaz Métro's prospective capital cost)
- Results:
  - Project IRR = 5.28%
  - Annuity capitalized at 5.28% = $1,652.10
  - Profitability index = Capitalized value of the annuity / Initial investment

    = $1,652.10 / $1,652.10

    = 1

By definition, a project whose IRR is equal to the capitalization rate of the project's cash flow has a profitability index of 1.

To obtain an IRR equal to a profitability index of 1.1, simply divide the denominator by 1.1 ($1,652.10 ÷ 1.1 = $1,501.91), and then recalculate the IRR of a project presenting the following parameters:

- Initial investment = $1,501.91
- Annuity = $100 (fixed for a 40-year period)
- Results:
  - Project IRR = 6.01%
  - Annuity capitalized at 5.28% = $1,652.10
  - Profitability index = Capitalized value of annuity / Initial investment

    = $1,652.10 / $1,501.91

    = 1.1

Here, a profitability index of 1.1 corresponds to an IRR of 6.01%.

To obtain an IRR equal to a profitability index of 0.8, Gaz Métro uses the same method: first establish the denominator (or project cost) by dividing the initial denominator by 0.8

($1,652.10 ÷ 0.8 = $2,065.12) and then recalculating the IRR using the following parameters:

- Initial investment = $2,065.12
- Annuity = $100 (fixed for a 40-year period)
- Results:
  - Project IRR = 3.7%
  - Annuity capitalized at 5.28% = $1,652.10
  - Profitability index = Capitalized value of annuity / Initial investment

    = $1,652.10 / $2,065.12

    = 0.8

Here, a profitability index of 0.8 corresponds to an IRR of 3.7%.

It should be noted that the equivalency between the profitability index and the IRR may differ, on the one hand, depending on the profile of the monetary flow (for example, an annuity with yearly growth rather than a fixed annuity over 40 years) and, on the other hand, depending on the capitalization rate (for example, 6% rather than 5.28%).

21 **Reference:** Exhibit B-0178, p. 13.

Preamble:

[TRANSLATION]
"Creation of an extension fund
In decision G-147-16 rendered on September 16, 2016, Fortis BC obtained approval for a pilot project to create a $1 million extension fund designed to level the playing field between new residential customers in lower density areas and those in urban ones. In order to be eligible, new residential customers must present a profitability index lower than 0.8, but greater than 0.2.

"Requesting customers wanting access to natural gas need to fill out the necessary forms and submit them to Fortis BC, which analyzes and selects the extension projects presenting the highest potential for customer connection."

Questions:

21.1 Please comment on the expediency of establishing an extension fund similar to the one mentioned in reference, with an endowment value of $1 M or $2 M, which would be

accessible to projects with an IRR below the PCC but above a certain minimal threshold to be determined.

Response:

As presented in Exhibit Gaz Métro-7, Document 4, Gaz Métro uses, as recommended by Black & Veatch, the approach based on the profitability index rather than the AMT method.

Under this new approach, for individual projects with no densification potential, the profitability index must be greater than or equal to 1, which corresponds to an IRR on the PCC (5.28%). In addition, for individual development projects with densification potential, the profitability index must be greater than or equal to 0.8, which corresponds to an IRR of approximately 3.70%.

Gaz Métro will also establish a budget of $1 million which may be accessed in order to achieve a profitability index of 1, which corresponds to an IRR of 5.28% for industrial park development projects and road repaving.

Moreover, the development project must achieve, at a minimum, a profitability index greater than or equal to 1.1, which corresponds to an IRR of approximately 6.01%. Projects that are more profitable will therefore help pay for various costs borne by the development plan and achieve an overall profitability index of 1.1.

21.2 Please comment on the possibility of such a fund having maximum allocation limits per customer and per project.

Response:

Please refer to the response to question 21.1.

21.3 Please comment on the expediency of creating this fund using revenues generated by projects whose IRR would, *a posteriori*, be greater than the PCC.

Response:

Please refer to the response to question 21.1.

21.4 Please establish the IRR correlations of the profitability indexes used by Fortis BC as indicated in reference, and please comment on these correlations.

Response:

As mentioned in the response to question 20.1, a profitability index of 0.8 corresponds to an IRR of 3.7%. A profitability index of 0.2 corresponds to a (negative) IRR of -3.2%.

Gaz Métro filed a new approach for evaluating profitability, which is presented in Exhibit Gaz Métro-7, Document 4.

Summary table of *a posteriori* profitability of *a priori* development plan, 3 years later for 2009 to 2013 development plans of commercial and residential markets.

	Annual Report		2012 *(2009 dev. plan)* (1)	note (2)	2013 *(2010 dev. plan)* (3)	note (4)	2014 *(2011 dev. plan)* (5)	note (6)	2015 *(2012 dev.plan)* (7)	note (8)	2016 *(2013 dev. plan)* (9)	note (10)
1	Commercial Market	**New customers**										
2		IRR Variance (actual rates)	0.22%	(1)	-1.87%	(17)	-2.32%	(33)	0.36%	(49)	-2.56%	(73)
3		IRR Variance (orig. rate grid)	0.10%	(2)	-0.19%	(18)	-2.81%	(34)	-2.06%	(50)	-4.34%	(74)
4		*A posteriori* volume *(10^3m^3)*	25,746	(3)	31,079	(19)	51,476	(35)	41 462	(51)	37,569	(75)
5		*A priori* volume *(10^3m^3)*	25,660	(4)	35,972	(20)	59,900	(36)	52 489	(52)	47,057	(76)
6		**Load additions**										
7		IRR Variance (actual rates)	9.94%	(5)	-22.66%	(21)	4.43%	(37)	6.12%	(53)	2.31%	(77)
8		IRR Variance (orig. rate grid)	2.87%	(6)	-9.43%	(22)	3.58%	(38)	1.73%	(54)	-10.52%	(78)
9		*A posteriori* volume *(10^3m^3)*	11,673	(7)	14,937	(23)	17,386	(39)	15,912	(55)	15,030	(79)
10		*A priori* volume *(10^3m^3)*	14,676	(8)	18,845	(24)	20 557	(40)	20,149	(56)	21,620	(80)
11		**Total - commercial**										
12		IRR Variance (actual rates)	-0.07%	(9)	-4.99%	(25)	-2.25%	(41)	0.19%	(57)	-2.22%	(81)
13		IRR Variance (orig. rate grid)	-0.78%	(10)	-1.65%	(26)	-2.88%	(42)	-2.48%	(58)	-5.17%	(82)
14		*A posteriori* volume *(10^3m^3)*	37,419	(11)	46,016	(27)	68,861	(43)	57,374	(59)	52,389	(83)
15		*A priori* volume *(10^3m^3)*	40,336	(12)	54,818	(28)	80,457	(44)	72,637	(60)	68,677	(84)
16	Residential Market	**New customers**										
17		IRR Variance (actual rates)	-0.94%	(13)	-0.74%	(29)	0.73%	(45)	-0.66%	(61)	0.06%	(85)
18		IRR Variance (orig. rate grid)	-0.38%	(14)	-0.15%	(30)	-0.08%	(46)	-1.97%	(62)	-0.87%	(86)
19		*A posteriori* volume *(10^3m^3)*	6,149	(15)	8,509	(31)	6 964	(47)	10 113	(63)	8,921	(87)
20		*A priori* volume *(10^3m^3)*	7,202	(16)	9,377	(32)	9 072	(48)	13 858	(64)	11,339	(88)
21		**Load addition**										
22		IRR Variance (actual rates)	n/a		n/a		n/a		-20.16%	(65)	-6.10%	(89)
23		IRR Variance (orig. rate grid)	n/a		n/a		n/a		-22.42%	(66)	-11.90%	(90)
24		*A posteriori* volume *(10^3m^3)*	n/a		n/a		n/a		200	(67)	226	(91)
25		*A priori* volume *(10^3m^3)*	n/a		n/a		n/a		202	(68)	287	(92)
26		**Total - residential**										
27		IRR Variance (actual rates)	-0.94%		-0.74%		0.73%		-0.73%	(69)	0.06%	(93)
28		IRR Variance (orig. rate grid)	-0.38%		-0.15%		-0.08%		-2.06%	(70)	-0.96%	(94)
29		*A posteriori* volume *(10^3m^3)*	6,149		8,509		6,964		10,313	(71)	9,148	(95)
30		*A posteriori* volume *(10^3m^3)*	7,202		9,377		9,072		14,060	(72)	11,625	(96)

Note	Reference
(1)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.7, l.45
(2)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.7, l.39
(3)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.4, l.10
(4)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.1, l.10
(5)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.8, l.45
(6)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.8, l.39
(7)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.5, l.10
(8)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.2, l.10
(9)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.9, l.45
(10)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.9, l.39
(11)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.6, l.10
(12)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.11, col.3, l.10
(13)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.10, col.3, l.45
(14)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.10, col.3, l.39
(15)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.10, col.2, l.10
(16)	R-3831-2012, Exhibit B-0093, Gaz Métro - 13, Document 3, p.10, col.1, l.10
(17)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.7, l.42
(18)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.7, l.37
(19)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.4, l.10
(20)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.1, l.10
(21)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.8, l.42
(22)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.8, l.37
(23)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.5, l.10
(24)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.2, l.10
(25)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.9, l.42
(26)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.9, l.37
(27)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.6, l.10
(28)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.9, col.3, l.10
(29)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.8, col.3, l.45
(30)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.8, col.3, l.39
(31)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.8, col.2, l.10
(32)	R-3781-2013, Exhibit B-0067, Gaz Métro - 13, Document 3, p.8, col.1, l.10
(33)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.7, l.46
(34)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.7, l.41
(35)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.4, l.10
(36)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.1, l.10
(37)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.8, l.46
(38)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.8, l.41
(39)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.5, l.10
(40)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.2, l.10
(41)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.9, l.46
(42)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.9, l.41
(43)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.6, l.10
(44)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 4, p.1, col.3, l.10

(45) R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 3, p.1, col.3, l.46
(46) R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 3, p.1, col.3, l.41
(47) R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 3, p.1, col.2, l.10

(48)

Note	Reference
(49)	R-3916-2014, Exhibit B-0056, Gaz Métro - 13, Document 3, Schedule 3, p.1, col.1, l.10
(50)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.7, l.46
(51)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.7, l.41
(52)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.4, l.10
(53)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.1, l.10
(54)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.8, l.46
(55)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.8, l.41
(56)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.5, l.10
(57)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.2, l.10
(58)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.9, l.46
(59)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.9, l.41
(60)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.6, l.10
(61)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.3, l.10
(62)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.7, l.46
(63)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.7, l.41
(64)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.4, l.10
(65)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.1, l.10
(66)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.8, l.46
(67)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.8, l.41
(68)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.5, l.10
(69)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.2, l.10
(70)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.9, l.46
(71)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.9, l.41
(72)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.6, l.10
(73)	R-3951-2015, Exhibit B-0036, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.3, l.10
(74)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.7, l.46
(75)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.7, l.41
(76)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.4, l.10
(77)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.1, l.10
(78)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.8, l.46
(79)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.8, l.41
(80)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.5, l.10
(81)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.2, l.10
(82)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.9, l.46
(83)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.9, l.41
(84)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.6, l.10
(85)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 6, p.1, col.3, l.10
(86)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.7, l.46
(87)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.7, l.41
(88)	R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.4, l.10

(89) R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.1, l.10
(90) R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.8, l.46
(91) R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.8, l.41
(92) R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.5, l.10
(93) R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.2, l.10
(94) R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.9, l.46
(95) R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.9, l.41
(96) R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.6, l.10
(97) R-3992-2016, Exhibit B-0076, Gaz Métro - 14, Document 4, Schedule 3, p.1, col.3, l.10

[3] Methodology presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1