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Response of Gaz Métro Limited Partnership (Gaz Métro)

Discovery no. 2 from expert Paul L. Chernick to Gaz Métro related to the application regarding the allocation of costs and rate structure of Gaz Métro phase 3, part B (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, 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 intervenor in its analysis of Gaz Métro's responses.

1. References:

(i) Study of the Marginal Costs of Long-Term Service Delivery Applied to the Profitability Analysis (Gaz Métro-6, Document 1), pp. 5, 7, etc.

Preamble:

- Gaz Métro does not appear to include any demand-related marginal costs due to capacity expansion required to serve new load.

- The document does not identify costs related to increased peak demand and requirement for distribution capacity resulting from customers added through service extensions.

- "The items included in the marginal costs are the additional costs to issue an invoice, cash a payment and, for a telemetry customer, to use a cell line. The internal costs associated with maintaining facilities at a customer's premises primarily consist of the salaries and fringe benefits of the employees who perform the tasks to which can be added, in the case of employees assigned to maintenance and meter reading, the cost of clothing. Maintenance activities relate to the meters, the connection, and the pipeline installed at the customer's premises, and the services provided relate to credit checks, the processing of

financial assistance or the consumer Rebate Consumption Program ("RCP"), telephone calls to customers, meter reading, bad debts, collection, customer retention, and the drawing up of contracts."

Questions:

1.1. Please explain how Gaz Métro plans to take into account the costs of increasing capacity from the pipeline delivery points to the beginning of the equipment added as part of a service extension.

Response:

For the purposes of the Phase 3B examination, and without commenting on the relevance of the references cited in the preamble that are excerpted from Phase 3A, Gaz Métro points out that it takes system reinforcement into account. In that respect, please refer to the response to question 8.4 of the Régie's request for information no. 9 (Gaz Métro-9, Document 1).

1.2. Please provide the amount of additional demand included in the computations and results shown on pages 3 (of the 2016.10.04 section), and pages 6, 7, and 9 of the 2014 10.08 section.

Response:

For the purposes of the Phase 3B examination, and without commenting on the relevance of the references cited in the preamble that are excerpted from Phase 3A, Gaz Métro points out that the results of the analyses presented in reference (i) were obtained using data taken from the actual *a priori* development plan (by market) presented in the 2013 Annual Report.[1] It should be noted that these are not typical cases, but rather consumption data forecasts based on contracts signed during the 2012-2013 fiscal year.

1.3. Please provide a list of all the load-related projects that have entered service on the Gaz Métro transmission, supply and distribution lines (such as looping, compression, additional connections to pipeline supplies, additional storage) completed since January 1, 1995 or

[1] R-3871-2013, B-0066, Gaz Métro-13, Document 2.

currently under construction.

Response:

Please refer to the response to question 1.6.

1.4. Please provide the cost of each of the load-related projects identified in the previous question.

Response:

Please refer to the response to question 1.6.

1.5. Please provide a list of all the load-related projects currently planned or proposed on the Gaz Métro transmission, supply and distribution lines (such as looping, compression, additional connections to pipeline supplies).

Response:

Please refer to the response to question 1.6.

1.6. Please provide the cost of each of the load-related projects identified in the previous question.

Response:

For the purposes of the Phase 3B examination, and without commenting on the relevance of the references cited in the preamble that are excerpted from Phase 3A, Gaz Métro points out that the reinforcement projects have been identifiable since 2004. Please see the table below for a list of the reinforcement projects and their respective costs.

Pressure Class	Project #	Project Definition	Costs Between 2004 and 2017 *($)*	Projected Costs
Distribution	1	Looping of the 640, Terrebonne	407,785	
Distribution	2	Looping Croissant des Iles, Laval	11,809	
Distribution	3	Looping Repentigny - Residential	529,558	

Pressure Class	Project #	Project Definition	Costs Between 2004 and 2017 *($)*	Projected Costs
Distribution	4	Looping: Syst. Polymère Structural, Magog	42,251	
Distribution	5	Looping Beloeil, St-Jean-Baptiste	420,799	
Distribution	6	Looping Bromont, des Carrières St.	245,249	
Distribution	7	Looping Montcalm, Candiac	212,256	
Distribution	8	Reinforcement, St-Sébastien	269,988	
Distribution	9	Reinforcement, St-Valérien	353,127	
Distribution	10	System Looping cl 400 de St-Jérôme	64,658	
Distribution	11	Looping Boisbriand, 3825 Alfred-Laliberté	243,455	
Distribution	12	Véolia, Pion St., St-Hyacinthe	354,646	
Distribution	13	Meubles Ashley, Sherbrooke	27,104	
Distribution	14	Reinforcement - Asphalte générale	789,484	
Distribution	15	System Reinforcement, Pierrefonds	342,891	
Distribution	16	550 McArthur, St-Laurent	64,541	
Distribution	17	Émile Giroux Reinforcement, Québec	677,765	
Distribution	18	University of Montréal, Outremont Campus	164,057	
Distribution	19	Rang St-Paul, St-Rémi	569,041	
Distribution	20	Groupe Robin, Trois-Rivières	777,713	
Distribution	21	Sani Estrie, 405 Rodolphe-Racine, Sherbrooke	246,944	
Distribution	22	System Reinforcement – Régional Development Bedford	799,312	
Distribution	23	2911, Marie-Curie Ave, St-Laurent	247,674	
Distribution	24	Delivery Point, St-Jérôme	661,789	
Distribution	25	Looping - Fruit D'Or	994,040	
Distribution	26	Looping, Mercure Blvd, St-Nicéphore	528,478	
Distribution	27	99999 du parc industriel Rd, Lanoraie	195,839	
Distribution	28	Looping Petites Sœurs, Ste-Famille	27,454	
Distribution	29	Serres Marian Vinet, St-Rémi	87,528	
Distribution	30	de Portland Blvd, Sherbrooke	318,269	
Distribution	31	University of Montréal, Outremont Campus	102,929	
Distribution	32	Flea Market/ Faubourg Carignan	333,187	

Pressure Class	Project #	Project Definition	Costs Between 2004 and 2017 *($)*	Projected Costs
Distribution	33	NRC St, St-Paul-d'Abbotsford	414,051	
Distribution	34	Reinforcement & Development Budget		1,174,000 / yr
Distribution	35	Sherbrooke East / Georges-V	249,764	
Distribution	36	System Looping, city of La Baie	42,343	
Distribution	37	Looping highway 13 and Ste-Rose Blvd	109,902	
Distribution	38	Québec - Looping St-Jean St.	88,814	
Distribution	39	Looping, St-Valérien-de-Milton	202,142	
Distribution	40	System Looping, St-Lambert	155,908	
Distribution	41	System Reinforcement PL Oka/St-Eustache	153,535	
Distribution	42	System Reinforcement, Guthrie Ave, Dorval	22,795	
Distribution	43	Looping, Ste-Marie, 3 km 6'' plastic	348,315	
Distribution	44	Looping, des Châteaux Rd, Blainville	108,896	
Distribution	45	Reinforcement PD3087, 3090, Lachute	98,942	
Distribution	46	Qc - Looping, St-Amable (La Chevrotière-Art)	38,924	
Distribution	47	Qc - System Looping, Guimont Rd, Beauport	77,175	
Distribution	48	Québec – Looping, des Pionnières-de-Beauport	27,412	
Distribution	49	Looping, industrial park, Terrebonne	268,062	
Distribution	50	Looping, des Hêtres Blvd, Shawinigan	24,945	
Distribution	51	Reinforcement, Ste-Elisabeth, Laurentides	336,138	
Distribution	52	Looping, highways 15/30, Delson	249,646	
Distribution	53	Estrie - Looping, St-Georges, Drummondville	38,003	
Supply	54	Replacement of supports/surfacing Jacques-Cartier Bridge[1]	13,062,744	
Distribution	55	System Looping, Vaudreuil	58,372	
Distribution	56	Saguenay-Lac. - Looping 160m, de Monftort	47,546	
Distribution	57	Ph3 Reinforcement- Fleury and CN System	194,391	
Distribution	58	System Reinforcement - Clark-Graham	320,510	
Distribution	59	Increase of system pressure, St-Clet	31,000	
Distribution	60	Saguenay-Lac Ab - reconstruction of regional line PL4024-Chic	47,000	

Pressure Class	Project #	Project Definition	Costs Between 2004 and 2017 *($)*	Projected Costs
Distribution	61	Hydraulic capacity, St-Antoine Rd	199,978	
Distribution	62	System Reinforcement, 32nd Ave, Lachine	19,854	
Distribution	63	System Reinforcement, Dagenais Blvd	141,762	
Distribution	64	System Reinforcement, Norman Rd	154,241	
Distribution	65	System Reinforcement, Tecumseh Blvd	705,664	
Distribution	66	Budget for improvement of hydraulic capacity		500,000 / yr
Transmission	67	Compressor station, St-Maurice[1]	31,933,122	2,804,834
Transmission	68	Compressor station, La Tuque[1]	48,763,054	4,553,584
Supply	69	Pétromont[1]	19,993,979	
Total			**129,840,551**	

[1] The costs of major projects include general corporate costs.

1.7. Please indicate on a map of the Gaz Métro system the location of each past and projected load-related project, as well as the location of the line extensions completed since 1995, under construction, or proposed.

Response:

For the purposes of the Phase 3B examination, and without commenting on the relevance of the references cited in the preamble that are excerpted from Phase 3A, Gaz Métro points out that a map showing all of Gaz Métro's gas system installed since 1995 – identified in red – is filed in PDF format as Schedule Q-1.7.

1.8. Please explain the meaning of the references to the marginal cost of service delivery associated with an additional load for an existing customer, if Gaz Métro is not including the costs of adding gas-delivery capacity.

Response:

Please refer to the response to question 1.1.

2. References:

(i) Study of the Marginal Costs of Long-Term Service Delivery Applied to the Profitability Analysis (Gaz Métro-6, Document 1), p. 8;

Preamble:

- "meter reading falls into the category of costs that only increase marginally in a stepwise manner. No single customer addition is likely to increase the costs of meter reading. As such we recommend removing this cost."

Questions:

2.1. Please provide the minimum increment of monthly meter-reader time that Gaz Métro can deploy (e.g., one hour per month, 10% of a full-time-equivalent).

Response:

Gaz Métro is unable to answer the question as formulated. Indeed, Gaz Métro presented, in response to question 5.4 of Expert Paul L. Chernick's request for information no. 1, Phase 3A, B-0215, Gaz Métro-8, Document 7, p. 18, the parameters used to determine the meter-reading routes to be completed within a given month.

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro invites the intervenor to consult, with respect to the assessment of needs in terms of meter-reading workforce, the response to question 1.1 of the Régie's request for information no. 7 for Phase 3A, B-0226, Gaz Métro-8, Document 9.

2.2. Please explain whether any of the personnel who read meters for Gaz Métro also perform other tasks.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro points out that, in regions other than the Greater Montreal area, smaller volumes of meters allow for meter readers to perform multiple tasks. In fact, those employees perform various administrative and collection tasks and are responsible for keeping inventory (warehouse).

2.3. Please explain how Gaz Métro reads meters for each sector or class (e.g., by telemetry, drive-by radio, electronic proximity reading, or manual reading). If Gaz Métro uses more than one meter-reading technology by class or sector, please provide the percentage using each technology.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro submits the following information, presented according to the type of reading and billing frequency (cyclical or end of month):

Type of reading	Cyclical	End of month	Total	Ratio
Radiometry	222,185	264	222,449	99.10%
Manual	1,134		1,134	0.50%
Telemetry	533	324	857	0.40%
Total number of meters			224,440	

The following numbers of counters per rate type have been estimated by cross-referencing a counter database with an invoicing database. Consequently, results are indicative of distribution. The latter allows for a high-level overview of the types of readings per rate type.

Rate type	Radiometry	Manual	Telemetry	General total
1	222,918	1,108	835	224,861
3	200		57	257
4			110	110
5			46	46
3 & 5 combined			32	32
4 & 5 combined			23	23
General total	**223,118**	**1,108**	**1,103**	**225,329**

3. References:

(i) Overcast Evidence (Gaz Métro-6, Document 2), p. 16;

Preamble:

- Gaz Métro does not provide the documents for Tables 6, 7 and 8, and Appendix A.

Questions:

3.1. Please provide the source documents from which Tables 6, 7 and 8, and Appendix A were compiled.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro points out that it has previously answered these questions in the context of Phase 3A and invites the intervenor to review the response to question 14.2 provided in Exhibit B-0225, Gaz Métro-8, Document 7.

4. References:

(i) Methodology for Evaluating the Profitability of System Extension Projects Additional Evidence, Follow-up on Decision D-2017-009 (Gaz Métro-7, Document 2), pp. 3, 4.

Preamble:

- Gaz Métro discusses the development and use of a software tool for profitability analysis.

4.1. Please explain whether the tool is designed to run on desktop Windows computers and/or on Apple computers, and if so, please provide a working copy of the software with all the profitability analyses conducted in the 2009 through 2013 development plans.

Response:

The analysis tool runs on Windows.

Please refer to the response to question 7.1 of OC's request for information no. 1 as well as to Schedule Q-7.1 of the said response (Gaz Métro-9, Document 4).

Gaz Métro is not able to provide all of the profitability analyses conducted between 2009 and 2013.

4.2. Please provide a copy of the spreadsheet mentioned on page 4 for "the system extension project in Drummondville".

Response:

Gaz Métro files as Schedule Q-4.2 a copy of the Excel file from Exhibit B-0020, Gaz Métro-2, Document 1, Schedule 1 of R-3991-2016.

5. References:

(i) Methodology for Evaluating the Profitability of System Extension Projects Additional Evidence, Follow-up on Decision D-2017-009 (Gaz Métro-7, Document 2), p. 4.

Preamble:

- Estimation of number of customers and revenues added, in "the current methodology" and "the one Gaz Métro presented in its evidence".

Questions:

5.1. Please explain in detail the differences between the two methodologies.

Response:

Please refer to the response to question 1.1 of the CFIB's request for information no. 2 (Gaz Métro-9, Document 3).

5.2. Please provide the profitability computation for each system-expansion project considered for development plans from years 2009 through 2016, as conducted under "the current methodology".

Response:

It is impossible for Gaz Métro to analyze each of the projects, whether or not carried out, in light of the context at the time that warranted a project's acceptance or rejection. Indeed, the historical context and parameters are not thoroughly documented and do not to give an accurate account of the assessment of the projects at the time the decisions were made.

In addition, Gaz Métro is not able to provide all of the profitability analyses performed between 2009 and 2016.

Finally, Gaz Métro points put that the methodology presented in Exhibit B-0178, Gaz Métro 7, Document 1, has been in use since the fall of 2015.

5.3. Please provide the profitability computation for each system-expansion project for development plans from years 2009 through 2016, as those would have been conducted under the methodology that "Gaz Métro presented in its evidence".

Response:

Please refer to the response to question 5.2.

5.4. Please identify the projects that were considered to be unprofitable in the development plans for years 2009 through 2016 but would be

considered profitable under the methodology that "Gaz Métro presented in its evidence".

Response:

Please refer to the response to question 5.2.

6. References:

(i) Methodology for Evaluating the Profitability of System Extension Projects Additional Evidence, Follow-up on Decision D-2017-009 (Gaz Métro-7, Document 2), p. 4.

Preamble:

- "Consequently, the customers that manifest an interest in connecting to the system, once the service line is built, are included in the second or third year of the required revenues."

Questions:

6.1. Please explain how Gaz Métro determines that a customer has "manifest[ed] an interest in connecting to the system".

Response:

It is through exchanges with the customer that Gaz Métro is able to determine the customer's interest. Such exchanges with the customer can take place during meetings, site visits and even by phone.

6.2. Please explain how Gaz Métro determines whether a customer should be assumed to connect to the system in the first year, as opposed to some later year.

Response:

Customers included in year 1 are those who will have signed a distribution contract with Gaz Métro.

6.3. Please explain how Gaz Métro distributes the customers that have "manifest[ed] an interest in connecting to the system" between years two and three.

Response:

Gaz Métro must specify that the potential for densification relating to the current methodology is generally limited to known potential customers (existing buildings for which an interest has been manifested, vacant lots for which there is a known developer with well-defined projects, etc.). Distribution of such potential customers between years 2 to 5 varies according to the exchanges that took place with the potential customer, and also takes into account, among other factors, the energy consumed by potential customers and their capacity for a short-term conversion.

6.4. For each system-expansion project included in the development plans for years 2009 through 2011, please provide the number of customers by class that were counted in the profitability analysis as having "manifest[ed] an interest in connecting to the system".

Response:

Gaz Métro is not able to answer this question, as Gaz Métro does not include information in its systems regarding the interest manifested by potential customers.

6.5. For each system-expansion project included in the development plans for years 2009 through 2011, please provide the number of customers by class that connected to the system through that project in the second year.

Response:

Gaz Métro does not keep in its systems information on customer rates that are anticipated for its expansion projects included in the *a priori* development plans. However, from the *a posteriori* profitability follow-up 3 years later for the 2009, 2010 and 2011 development plans, Gaz Métro can assert that all actual customers of the extension projects in the

residential market are billed at Rate D1. For extension projects in the business market, all actual customers are also billed at Rate D1, except for 3 customers of the 2011 development plan, which are billed at Rates D3 and D4. As regards the number of customers anticipated for years 1 to 5 for residential and business *a priori* extension projects for the *a priori* 2009 to 2011 development plans, Gaz Métro refers to Schedule 1 of Exhibit *Gaz Métro – 7, Document 2 (page 1, 2 and 3),* which indicates the number of customers anticipated for each of these years.

6.6. For each system-expansion project included in the development plans for years 2009 through 2011, please provide the number of customers by class that connected to the system through that project in the third year.

Response:

Please refer to the response to question 6.5.

6.7. For each system-expansion project included in the development plans for years 2009 through 2011, please provide the number of customers by class that connected to the system through that project in each year after the third.

Response:

Please refer to the response to question 6.5.

7. References:

(i) Methodology for Evaluating the Profitability of System Extension Projects Additional Evidence, Follow-up on Decision D-2017-009 (Gaz Métro-7, Document 2), p. 5.

Preamble:

- Gaz Métro conducts “the profitability analysis and evaluation of the rate

impact over a period of 40 years".

Questions:

7.1. Please provide any analysis that justifies the assumption that the revenues estimated for the project will persist for 40 years.

Response:

Please refer to the response to question 7.1 of the CFIB's request for information no. 2 (Gaz Métro-9, Document 3).

7.2. For each VGE or large CII customer added by Gaz Métro since 1977, please indicate whether that customer or facility is still on the system, and if not, the date on which that customer or facility ceased to take service from Gaz Métro.

Response:

Gaz Métro does not have information on the consumption of its customers all the way back to 1977. Historical consumption per customer in Gaz Métro's systems is only partially available starting from 2004. Otherwise, the systems do not allow to determine with any certainty the commissioning date of the facilities that were added to the system due to the systems migration in 2012 (please see R-3837-2013, B-0096, Gaz Métro-7, Document 3). In addition, the Régie notes in its decision D-2014- 077 that [TRANSLATION] *"given the absence of valid historical data, the Régie finds there is no reason to continue the efforts to retrace the information on lost customers for the years prior to 2013."*

7.3. For each VGE or large CII customer added by Gaz Métro since 1977 and still on the system, please provide any available information regarding whether the facility has increased or decreased its gas consumption since the facility connected to the system.

Response:

Please refer to the response to question 7.2.

7.4. For each VGE or large CII customer added by Gaz Métro since 1977, please indicate whether that customer or facility is still on the system, and if not, the date on which that customer or facility ceased to take service from Gaz Métro.

Response:

Please refer to the response to question 7.2.

7.5. For each VGE or large CII customer added by Gaz Métro since 1977 and still on the system, please provide any available information regarding whether the facility has increased or decreased its gas consumption since the facility connected to the system.

Response:

Please refer to the response to question 7.2.

7.6. Please provide any data regarding the average vacancy rate for each class or sector for which Gaz Métro has such data.

Response:

Please refer to Exhibits R-3970-2016, B-0143, Gaz Métro-3, Document 2, as well as R-3970-2016, B-0217, Gaz Métro-3, Document 6.

7.7. Please provide any data regarding the frequency and duration of multi-month shutdowns or major reductions in operations by Gaz Métro industrial customers.

Response:

Gaz Métro does not compile information on the frequency or duration of production shutdowns or significant consumption reductions of its industrial customers.

7.8. Please provide the weather-normalized consumption per customer for Gaz Métro residential customers, for years 1996 to 2016.

Response:

Please refer to the response to question 7.2.

7.9. Please describe the greenhouse-gas emission-reduction targets of the Federal government and the Québec government for 2040 and beyond.

Response:

Gaz Métro has identified the following GHG-emission reduction targets:

- The federal government's GHG-emission reduction target is 30% below 2005 levels by 2030.[2]
- The Québec government's GHG-emission reduction target is 37.5% below the 1990 level by 2030.[3]

7.10. Please provide any analysis on which Gaz Métro relies for the assumption that Canada can meet its international greenhouse-gas obligations without reductions in end-use gas consumption, past 2040.

Response:

Gaz Métro has not performed such an analysis. However, it bears noting that natural gas can help reduce pollution and increase prosperity. Natural gas can also contribute to sustainable economic development. To achieve the GHG-emission reduction targets established at the provincial and federal levels and to develop sustainable energy solutions, both levels of government have implemented measures which provide for the use of natural gas.

NATURAL GAS IN QUÉBEC

Québec's 2030 Energy Policy

[2] *Canada's Second Biennial Report on Climate Change*, Environment and Climate Change Canada, p. 7, https://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=02D095CB-1%23BR-Sec3.
[3] Press Release (in French only): *Le gouvernement propose une cible québécoise de réduction des émissions de GES de l'ordre de 37,5 % pour 2030*, MDDELCC Québec, http://www.mddelcc.gouv.qc.ca/Infuseur/communique.asp?no=3315

Within the framework of Québec's 2030 Energy Policy, the Québec government intends to:

- pursue the extension of the gas network;
- demand the establishment of natural gas transportation reserve capacity for industrial customers;
- For road transportation:
  - Support the conversion of transportation vehicles already on the road to fuels with lower carbon content, in particular liquefied natural gas (LNG) and compressed natural gas (CNG);
  - Enhance the eco-trucking program to promote conversion to natural gas for heavy-duty vehicles;
  - Establish a pilot project for a network of multi-fuel service stations offering gasoline, biofuels, natural gas, propane, electricity and hydrogen, and extend it by 2030 throughout Québec. The service stations will first be installed in regions with high potential for use;
  - Support Gaz Métro's objective of increasing by 15% by 2030 the heavy-duty vehicle fleet powered by LNG or CNG;
  - Collaborate with Gaz Métro to evaluate the possibility of extending along the north-south axis the Blue Corridor, a network of LNG fuelling stations for heavy-duty vehicles;
- For maritime transportation: use of new energy sources, including LNG;
- Develop an LNG supply network;
- Northern Plan: Ensure natural gas supply at competitive prices to enhance the profitability of mines, reduce GHG emissions, attract new investments and supply liquefied natural gas in the North;
- Expand renewable natural gas development in Québec: development of projects devoted to biomethanization[4] and conversion of forestry biomass from which we must harness the full energy potential.

Budget of the Québec government 2017-2018

Some of the measures provided for in the 2017-2018 Québec Economic Plan unveiled in March 2017 include:

- The enhancement of the eco-trucking program in the freight transportation sector and its extension until December 31, 2020, and the increase of the maximum eligible expenses (from $50,000 to

[4] Section 112 of the *Act respecting the Régie de l'énergie* was amended in order for the government to establish regulations setting out "*the quantity of renewable natural gas to be delivered by a natural gas distributor and the terms and conditions according to which it is to be delivered*."

$100,000) related to the acquisition of technology or a vehicle allowing for the use of alternative fuels with lower greenhouse gas emissions. Hence, the maximum financial assistance that a company can now obtain is $30,000, compared to $15,000 prior to the program's enhancement.

- The government renewed the $21 million allocation remaining from the 2016-2017 budget to allow the completion of projects extending the natural gas distribution network.

NATURAL GAS IN CANADA

Federal investments

The federal government contributed financially to projects expanding the natural gas distribution network:

- Extension of the natural gas transmission system in the Asbestos region: This project initially valued at $4.4 million was made possible thanks to a financial contribution of up to $3.3 million from Canada Economic Development for Quebec Regions (CED) and a financial contribution of $0.4 million from the city of Asbestos. With this investment, which represented a significant development leverage for the region, 28 businesses in the city's industrial park were connected to the system. Natural gas will reduce GHG emissions by close to 192 tons and yield efficiencies in energy costs of approximately $200,000 a year;

- Extension of the natural gas transmission system in the Bellechasse region: This project initially valued at $39.9 million to extend the natural gas transmission system between the municipalities of Lévis and Sainte-Claire by approximately 60 km was made possible thanks to a joint investment by the federal and Québec governments for an amount of up to $35 million. Gaz Métro's contribution should be anywhere from $7 million and $8 million. Natural gas will reduce GHG emissions by close to 6,000 tons and yield efficiencies in energy costs of approximately $2.5 million a year.

2017-2018 Federal Budget

The federal budget also provides measures promoting the use of natural gas in the energy transition. More specifically, in road transportation, the federal government intends to allocate:

- $120 million to deploy infrastructure for electric vehicle charging and natural gas and hydrogen refuelling stations, as well as to support technology demonstration projects;

- $17.2 million over five years, starting in 2017-18, to Environment and Climate Change Canada and Transport Canada to develop and

implement heavy-duty vehicle retrofit and off-road regulations, as well as a clean fuel standard to reduce emissions from fuels used in transportation, building and industrial sectors.

8. References:

(i) Methodology for Evaluating the Profitability of System Extension Projects Additional Evidence, Follow-up on Decision D-2017-009 (Gaz Métro-7, Document 2), p. 7.

Preamble:

- Gaz Métro does not provide the derivation of the values in Tables 1 and 2.

8.1. Please provide the computation of the estimates in Tables 1 and 2, with all underlying workpapers in spreadsheet format with formulae intact. If the workpapers are not available in that format, provide a printout with sufficient annotation to allow reviewers to replicate the analysis.

Response:

Please refer to Schedule Q-8.1.

9. References:

(i) Methodology for Evaluating the Profitability of System Extension Projects Additional Evidence, Follow-up on Decision D-2017-009 (Gaz Métro-7, Document 2), p. 9.

Preamble:

- Gaz Métro discusses a three-phase analysis of densification.

9.1. Please provide all available documentation of the process and results for each of the three phases for each of the main-extension projects in the 2009, 2010, 2011, and 2013 development plans.

Response:

Gaz Métro is unable to provide the information requested. Since the fall of 2015, Gaz Métro applies the methodology presented in January 2017 in Exhibit B-0178, Gaz Métro-7, Document 1. Hence, it bears noting that Gaz Métro did not specifically apply the five steps of the governance process outlined in Exhibit B-0178 for the years 2009, 2010, 2011 and 2013. Please also refer to the response to question 13.1 of the Régie's request for information no. 9 (Gaz Métro-9, Document 1).

10. References:

(i) Methodology for Evaluating the Profitability of System Extension Projects Additional Evidence, Follow-up on Decision D-2017-009 (Gaz Métro-7, Document 2), pp. 10–11.

Preamble:

- "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."

- "If Gaz Métro had required customer contributions in order to ensure that these AMT extension projects achieved the PCC, the number of anticipated extension projects would need to be revised significantly downward."- Gaz Métro says that not requiring contributions for extension projects that meet the AMT threshold would be a change in current practice, and that if contributions had been required, the number of anticipated projects would be reduced. But Gaz Métro also says it does not currently require contributions for extension projects that meet the AMT threshold.

10.1. Please explain whether Gaz Métro has been applying the AMT in approving projects, and if so, for how long.

Response:

Please refer to the response to question 12.1 of the Régie's request for information no. 9 (Gaz Métro-9, Document 1).

11. References:

(i) Methodology Used to Analyze the Profitability of System Extension Projects—Follow-Up on Decisions D-2016-090 and D-2016-169 (Gaz Métro-7, Document 1), pp. 5.

(ii) The record in Phase 3A.

Preamble:

(i) Gaz Metro makes multiple assumptions for the profitability analysis. Some of these regard O&M costs that were not fully discussed in Gaz Métro's filings in Phase 3A, such as pre-commitment costs.

11.1. Please list all the generic inputs used the profitability analysis, and for each such input provide the value that Gaz Métro uses currently and the derivation of that value.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the clarification provided in the preamble, the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro refers to the response to question 7.2 of OC's request for information no. 1 (Gaz Métro-9, Document 4).

11.2. Please provide Gaz Métro's current prospective capital cost (PCC) and the method for deriving that value.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the clarification provided in the preamble, the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro points out that the prospective capital cost for the 2016-2017 year is 5.28%. The calculation is based on a debt cost of 2.82% (54%), a preferred-share cost of 4.44% (7.5%) and an equity cost of 8.90% (38.5%).

11.3. Please provide the working capital rate that Gaz Métro currently uses in its profitability analyses.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the clarification provided in the preamble, the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro points out that no working capital allocation was considered in Gaz Métro's profitability analyses.

11.4. Please provide the working capital rate that Gaz Métro claimed in its most recent rate proceeding.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the clarification provided in the preamble, the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro points out that in the 2017 Rate Case, the working capital (including materials and gas stocks) represents approximately 4.9% of the total rate base. With respect to the distribution rate base, the working capital represents 1.8% (= $34.3 million / $1,888.4 million).

11.5. Please explain how Gaz Métro reflects customer turnover (new customers replacing the original customers served by the line extension) and the related administrative costs in the profitability analysis.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the clarification provided in the preamble, the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro points out that the profitability analyses do not take into account administration expenses specific to customer turnover during the projects' lifecycle.

11.6. Please provide any data available to Gaz Métro on the turnover rate of its customers by class or market segment.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the clarification provided in the preamble, the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro submits the following information:

Attrition rate, by large segment
Loss of customers in % of customers from the previous year

	2014	2015	2016
Residential	1.8%	1.7%	1.8%
Commercial	1.8%	1.9%	1.8%
Industrial	1.4%	1.6%	1.5%
Total	**1.8%**	**1.8%**	**1.8%**

11.7. Please state whether the profitability analysis assumes any increase in Gaz Métro's rates, and if so, provide that escalation value and provide the derivation of the value.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the clarification provided in the preamble, the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro points out that its profitability analyses do not take into account any increase in rates or changes to the service conditions for the entire analysis horizon of the projects.

11.8. Please list all the project-specific inputs to the profitability analysis and explain how Gaz Métro estimates each such input.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the clarification provided in the preamble, the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro refers to the response to question 7.2 of OC's request for information no. 1 (Gaz Métro-9, Document 4).

11.9. Please explain how Gaz Métro estimates the capacity-related upstream costs (e.g., distribution mains, supply mains, transmission lines, compression, pipeline connection costs) attributable to the additional load of the customers anticipated on a line extension project.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the clarification provided in the preamble, the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro points out that for each additional load on the system, a hydraulic design is drawn up. This hydraulic design serves to ensure that the additional load can be added to the system at the desired pressure (distribution, supply, transmission). Once the hydraulic design is approved, an estimate of the costs required for the additional load is calculated, including the necessary changes to the system. In short, the cost estimate for additional loads is calculated on a case-by-case basis.

11.10. Please provide Gaz Métro's estimates of the incremental costs of serving additional demand on its system, in dollars per year per m^3 of design-day load.

Response:

Considering that the cost estimates for the additional loads on the system are calculated on a case-by-case basis, Gaz Métro does not have this information as requested.

11.11. Please provide any available information regarding the costs that Gaz Métro incurs in marketing its services to customers along a potential line extension, negotiating with those customers, providing estimates of the cost of service lines and equipment conversion, and other customer-related costs incurred prior to the customer committing to service by Gaz Métro. Please explain how, if at all, these costs are reflected in the profitability analysis.

Response:

Operating expenses relating to marketing activities

Considering that the evidence for Phase 3A is complete, was submitted to the Régie and is now under advisement, Gaz Métro respectfully submits that questions relating to operating expenses already addressed in Phase 3A are not relevant in the examination of this Phase 3B.

Expenses that can be capitalized

Gaz Métro submits that no expenses that can be capitalized are associated with the marketing activities for potential new connections.

11.12. For each class or market sector for which Gaz Métro has estimates of the costs of bad debt, collection and recovery, please provide those costs (including any such costs related to commodity supply), annual distribution revenues from the class or sector, and the ratio of bad debt, collection and recovery costs to revenues.

Response:

Subject to any representation Gaz Métro may eventually formulate with respect to the use that might be made of the information sought under this question, and considering the clarification provided in the preamble, the issues previously discussed in Phase 3A and those discussed in this Phase 3B, Gaz Métro submits the following table, which presents bad debt write offs, net of recovered amounts, per market for 2016. It should be noted that such write-offs do not match the annual expenses for bad debt presented in the company's financial statements. Information on

collection and recovery costs is not available by market or rate class, but are classified and "< $50,000" or "> $50,000" in terms of net write-offs. Estimated costs for these activities are presented in the following table.

Thus, for 2016, the cost/distribution revenue ratios would be as follows:

Cycles < $50,000	$818,551
Large Output > $50,000	$329,733
Net write-offs (excl. taxes)	**$1,148,284**
Collection Costs	**$989,951**
Recovery Costs	**$2,106,026**
Total Revenue	**$1,500,353,276**
% bad debt/revenue	0.08%
% collection/revenue	0.07%
% recovery/revenue	0.14%

11.13. For each class or market sector for which Gaz Métro has estimates of the costs of customer retention, please provide those costs, annual distribution revenues from the class or sector, and the ratio of the costs of customer retention to class revenue.

Response:

Gaz Métro does not have information on the total costs of customer retention and thus does not HAVE this information by market or rate class as formulated by the intervenor.

In addition, considering that the evidence for Phase 3A is complete, was submitted to the Régie, and is now under advisement, Gaz Métro respectfully submits that questions relating to operating expenses already addressed in Phase 3A are not relevant in the analysis of this Phase 3B.

12. References:

(i) Methodology used to analyze the profitability of system extension projects follow-up on decisions D-2016-090 and D-2016-169 (Gaz Métro-7, Document 1), pp. 5-7.

Preamble:

- Gaz Métro presents the results of an *a posteriori* analysis of projects from the 2009 through 2011 development plans in Table 1.

- "All densification sales associated with the initial extension project were included in the *a posteriori* findings." (Gaz Métro-7, Document 1, p. 6)

- "…a majority of the projects had six, five and four years of actual data available at the time the *a posteriori* analysis was produced. As a result, no projection was made and the *a posteriori* findings consisted entirely of actual data for customers, volumes, revenues and investments." (Gaz Métro-7, Document 1, p. 6)

- "The methodology that Gaz Métro used for this *a posteriori* analysis is based on the one used for the *a posteriori* overall profitability of the *a priori* development plan 3 years later (R-3992-2016, B-0076, Gaz Métro-14, Document 4, section 1.1, p. 1-2 and Schedule 1)." Gaz Métro-7, Document 1, p. 5)

12.1. Please provide the *a priori* analysis for each project in the analysis in Table 1, in spreadsheet form with all formulae and linked worksheets intact. If the workpapers are not available in that format, provide a printout with sufficient annotation to allow reviewers to replicate the analysis.

Response:

In Schedule Q-12.1, the Excel file presents the *a priori* databases (DB) for each of the extension projects, as well as the *a priori* required required revenue (RR) and IRR for each of the 2009, 2010 and 2011 development plans. Gaz Métro calculated an *a priori* IRR for all of the projects under a given *a priori* development plan. Please note that Table 1 cited in the preamble includes a project valued at over $1.5 million for the 2011 development plan. If this project is excluded, the total IRR variation would drop from 4.48% to 4.34%.

12.2. Please provide the *a posteriori* analysis for each project in the analysis in Table 1, in spreadsheet form with all formulae and linked worksheets intact. If the workpapers are not available in that format, provide a printout with sufficient annotation to allow reviewers to replicate the analysis.

Response:

In Schedule Q-12.2, the Excel file presents the *a posteriori* databases (DB) for each of the extension projects, as well as the *a posteriori* required revenue (RR) and IRR for each of the 2009, 2010 and 2011 development plans. Gaz Métro calculated the *a posteriori* IRR for all the projects under a given *a posteriori* development plan. Please note that Table 1 cited in the preamble includes a project valued at over $1.5 million for the 2011 development plan. If this project is excluded, the total IRR variation would drop from 4.48% to 4.34%.

12.3. Please explain whether densification sales for customers that may be connected after 2016 were included in the *a posteriori* analysis.

Response:

The *a posteriori* data used to calculate the 4.48% IRR increase in Table 1 cited in the preamble were taken from December 31, 2015. The data consisted entirely of actual sales (densification sales or sales relating to the original extension project). No sales projection was included in the *a posteriori* results.

12.4. Please explain whether Gaz Métro decreased the post-2016 densification forecast was reduced to reflect the pre-2016 densification that had already occurred.

Response:

As mentioned in the response to question 12.3, Gaz Métro did not include any sales projection in the *a posteriori* results of Table 1 cited in the preamble.

12.5. Please explain whether Gaz Métro used the same retail rates in the *a priori* and *a posteriori* analysis.

Response:

The *a priori* distribution revenue was established uding the distribution rates in effect when Gaz Métro evaluated the *a priori* profitability of the extension project. The *a posteriori* distribution revenue corresponds to the actual distribution revenue invoiced, according to the actual distribution rates in effect from October 2009 to December 2015.

12.6. Please explain whether the *a posteriori* analysis reflects any changes in revenues (compare to the *a priori* analysis) after the end of the actual data in 2016.

Response:

The *a posteriori* distribution revenue reported until year 40 in the profitability evaluation model for new sales corresponds to the actual distribution revenue invoiced for the 12-month period ending December 31, 2015. Gaz Métro did not prospectively vary the *a posteriori* distribution revenue.

As mentioned in the response to question 12.5, the *a priori* distribution revenue is derived from the distribution rates in effect when Gaz Métro evaluated the *a priori* profitability of the extension project. Gaz Métro did not prospectively vary the *a priori* distribution revenue. Thus, the *a priori* distribution revenue for year 5 are carried forward to years 6 to 40 in the profitability evaluation model for new sales.

12.7. Please describe the methodology by which Gaz Métro forecast customer additions in the *a priori* forecasts, describe any efforts by Gaz Métro to understand the source of the underestimates of the *a priori* forecasts and provide any reports or analyses conducted by or for Gaz Métro to explain the differences in the *a priori* forecasts and the *a posteriori* results.

Response:

The *a posteriori* profitability analysis of a development plan 3 years after its *a priori* presentation, such as the one filed in the 2016 Annual Report (R-3992-2016, B-0076, Gaz Métro-14, Document 4), allows Gaz Métro to target significant variances between the *a posteriori* forecasts and the

a priori results and to identify the sources of such variances.

More specifically, Gaz Métro reports the forecast and actual statistics on GDP growth, quantifies the impact of cancelled sales that had been provided for in the *a priori* plan and investigates, in collaboration with its sales force, the business context of certain customers to understand the significant variances in consumption volumes.

In light of the results and findings of the *a posteriori* analysis, Gaz Métro adjusts the methodology as necessary to establish customer, consumption and investment forecasts.

Below are excerpts from the 2016 Annual Report (R-3992-2016, B-0076, Gaz Métro-14, Document 4, p.3, 6, 7).

GDP growth[1]

	2012-2013	***2013-2014***	***2014-2015***	***2015-2016***
Forecast	*1.7%*	*2.0%*	*1.8%*	*1.9%*
Actual	*1.2%*	*1.4%*	*1.3%*	*1.3%*

1. Conference Board of Canada, Gross domestic product at basic prices, by industry, all industries, Québec

[TRANSLATION]

"Gaz Métro must reiterate that the economic context in Québec with which customers were confronted during the 2013-2016 period compared unfavourablly with forecasts. Indeed, as the table in section 2.1 demonstrates, actual GDP growth over four years shows dramatically slower evolution than expected. This economic downturn may have impacted the behaviour of Gaz Métro's customers and could explain, in part, the unfavourable variances in volume and in the number of customers. In addition, the out-of-program measures customers implemented to improve energy efficiency may explain some unfavourable variances in volumes."

"The a posteriori *volumes for the fifth year lag are 9,698 10^3m^3 lower, which translates into a 21% drop. This variance includes a volume of 2,189 10^3m^3 stemming from cancelled sales, and a volume of 4,087 10^3m^3 attributable to a small group of 22 projects. Gaz Métro analyzed their respective situations and came to the following conclusions: the customer failed to achieve the anticipated production levels, the customer suspended its production, the customer changed the configuration of its building, the project did not achieve the anticipated number of customers, the devices installed do not consume as much energy as anticipated."*

12.8. Please explain how Gaz Métro determined that the results in Table 1 are not due to a slower-than-expected onset and faster-than-expected recovery from the major recession of 2008 in Québec.

Response:

Gaz Métro is not aware of the origin of the assertion that the economic recovery was faster than expected folllowing the 2008 recession. Gaz Métro does believe that economic conditions certainly have an impact on the sales and production of gas customers; however, it is not in a position to quantify this impact on its customers' *a posteriori* profitability, since each of those customers may have a different commercial reality.

12.9. Please provide the analysis of the "*a posteriori* overall profitability of the *a priori* development plan 3 years later (R-3992-2016, B-0076, Gaz Métro-14, Document 4, section 1.1, p. 1-2 and Schedule 1)", in spreadsheet form with all formulae and linked or supporting worksheets intact. If the workpapers are not available in that format, provide a printout with sufficient annotation to allow reviewers to replicate the analysis.

Response:

The Excel file provided as Schedule Q-12.9 presents the *a posteriori* data, per year, for all of the new business market customers from the 2013 development plan, as well as the *a posteriori* required revenue (RR) and IRR for such development plan, with both the original rate schedule and the invoiced rate schedule. This *a posteriori* data matches the data provided in Schedule 7 of the follow-up in the exhibit entitled "*Rentabilité* a posteriori *du plan de développement 2013, Suivi après 3 ans*" (*a posteriori* overall profitability of the 2013 development plan 3 years later) (R-3992-2016, B-0076, Gaz Métro-14, Document 4).

12.10. If Gaz Métro has conducted similar *a posteriori* analyses for any development plans other than 2009, 2010, 2011, and 2013, please provide those analyses.

Response:

In the the 2015 Annual Report, Gaz Métro filed the *a posteriori* profitability analysis 3 years later for the *a priori* 2012 development plan (R-3951-2015, B-0036, Gaz Métro-14, Document 4).

In addition to the *a posteriori* analysis 3 years later, and in response to the Régie's question 9.3a (Gaz Métro-9, Document 1), Gaz Métro will provide, on August 10, 2017, the IRR variance between the *a posteriori* profitability and the *a priori* profitability for all expansion projects relating to business market development plans from 2009 to 2012, inclusively, as at December 31, 2016. The assumptions applied are the same as those used to generate Table 1 cited in the preamble.

13. References:

(i) Methodology used to analyze the profitability of system extension projects follow-up on decisions D-2016-090 and D-2016-169 (Gaz Métro-7, Document 1), p. 7.

Preamble:

- "Based on the findings of the *a posteriori* profitability analysis, Gaz Métro established the acceptable minimum threshold at 2% of the IRR for extension projects."

13.1. Please explain why Gaz Métro proposed a fixed minimum threshold of 2%, regardless of changes in the PCC over time, rather than a fixed 4,48% adjustment to the PCC.

Response:

Please refer to the response to question 9.1 of the Régie's request for information no. 9 (Gaz Métro-9, Document 1).

13.2. Please explain whether Gaz Métro proposes to use the AMT rather than the PCC threshold for a project for which the profitability analysis includes all the load that can reasonably be added along the extension,

considering the current state of development and restrictions on land use (e.g., wetlands and protected areas), and if so, why it would be appropriate to assume additional revenue growth.

Response:

Gaz Métro will always use achievement of the PCC for an extension project where additional revenues are not anticipated, and this regardless of the reason.

13.3. Please explain why Gaz Métro proposed a fixed minimum threshold of 2%, rather than correcting its revenue projection methodology.

Response:

Please refer to the response to question 2.5 of the CFIB's request for information no. 2 (Gaz Métro-9, Document 3).

14. References:

(i) Methodology used to analyze the profitability of system extension projects follow-up on decisions D-2016-090 and D-2016-169 (Gaz Métro-7, Document 1), p. 8.

Preamble:

- "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."

14.1. Please provide the profitability levels that Gaz Métro proposes as acceptable for these two exceptions.

Response:

Gaz Métro has not determined a profitability threshold for these

two exceptions. The development of an industrial park and the repaving of a road are authorized only if the potential for future densification ultimately results in the PCC being achieved or exceeded.

14.2. Please explain why extending a gas main to an industrial park that is not expected to produce sufficient revenues to pay for the main extension is in the interests of the existing customers.

Response:

Please refer to the response to question 14.1.

14.3. Please explain why installing a gas main on a road that will be resurfaced, where the identifiable loads are not expected to produce sufficient revenues to pay for the main extension, would be in the interests of the existing customers.

Response:

Please refer to the response to question 14.1.

14.4. Considering the difficulty of getting permission for road cuts in newly repaved roads, how long would Gaz Métro expect to need to wait before connecting customers along the line extension who are not connected before the repaving?

Response:

Please refer to the response to question 8.2 of OC's request for information no. 1 (Gaz Métro-9, Document 4).

Schedule Q-1.7 is filed as a distinct PDF document.

Schedule Q-4.2 is filed as a distinct Excel file.

	Residential						Business						Total					
	5 years			10 yea rs			5 years			10 yea rs			5 years			10 years		
	Number	Vol	$	Number	Vol.	$	Number	Vol	$	Number	Vol.	$	Number	Vol	$	Number	Vol.	$
AMT Extension	15	1,228,642	484,787	30	2,457,284	969,573	116	6,017,915	1,032,042	222	11,517,044	1,975,114	131	7,246,557	1,516,828	252	13,974,327	2,944,688
Other Extensions	160	14,125,705	3,520,873	294	25,955,983	6,469,604	546	89,830,212	8,634,832	1,041	171,269,690	16,463,114	706	103,955,917	12,155,705	1,335	197,225,673	22,932,718
TOTAL	175	15,354,347	4,005,659	324	28,413,267	7,439,177	662	95,848,127	9,666,874	1,263	182,786,734	18,438,228	837	111,202,474	13,672,533	1,587	211,200,000	25,877,405
													16%	7%	11%	16%	7%	11%

	IRR	
	Residential	Business
AMT Extension	3.14%	2.87%
Other Extensions	8.40%	9.86%

Forecast of the number of off-system projects 2017-2026

Residential

Historic	2009	2010	2011	2012	2013	2014	2015	2016
Number of projects	48	70	62	60	42	45	35	40

Forecast	2017f	2018f	2019f	2020f	2021f	2022f	2023f	2024f	2025f	2026f
Number of projects	39	37	35	32	32	31	31	30	29	28
AMT	3	3	3	3	3	3	3	3	3	3
Non-AMT	36	34	32	29	29	28	28	27	26	25
Volumes in m³										
AMT	245,728	245,728	245,728	245,728	245,728	245,728	245,728	245,728	245,728	245,728
Non-AMT	3,178,284	3,001,712	2,825,141	2,560,284	2,560,284	2,471,998	2,471,998	2,383,713	2,295,427	2,207,141
Revenue in $										
AMT	96,957	96,957	96,957	96,957	96,957	96,957	96,957	96,957	96,957	96,957
Non-AMT	792,196	748,185	704,175	638,158	638,158	616,153	616,153	594,147	572,142	550,136

Parameters

	Historic growth
CAGR 2009-2016	-2.57%
	Growth assumptions
CAGR 2017-2026	-3.86%

Gaz Métro does not contemplate a large number of non-AMT residential projects

	Avg by extension
AMT Volume 2016	81,909
Non-AMT Volume 2016	88,286
AMT Revenue 2016	32,319
Non-AMT Revenue 2016	22,005

Business

Historic	2009	2010	2011	2012	2013	2014	2015	2016
Number of projects								
Less than 1.5 km	92	101	119	144	130	145	164	146
More than 1.5 km	3	3	9	7	3	6	15	6
Pipe length (in m)								
Less than 1.5 km	20,332	21,147	30,657	41,765	32,210	32,505	38,815	43,204
More than 1.5 km	8,655	9,883	109,893	20,148	9,855	17,348	110,228	20,823
Average pipe length (in m per project)								
Less than 1.5 km	221	209	258	292	258	224	237	296
More than 1.5 km	2,885	3,294	12,210	2,878	3,285	2,891	7,349	3,471

Forecast	2017f	2018f	2019f	2020f	2021f	2022f	2023f	2024f	2025f	2026f
Number of projects										
Less than 1.5 km	132	129	126	124	121	119	116	114	112	110
AMT	24	24	23	23	22	22	22	21	21	20
Non-AMT	108	105	103	101	99	97	94	93	91	90
More than 1.5 km	6	6	6	6	6	6	6	6	6	6
Pipe length (in m)										
Less than 1.5 km	36,684	36,684	36,684	36,684	36,684	36,684	36,684	36,684	36,684	36,684
Average pipe length (in m per project)										
Less than 1.5 km	278	284	290	296	303	309	315	321	328	334
Volumes en m³										
AMT	1,245,086	1,245,086	1,193,207	1,193,207	1,141,329	1,141,329	1,141,329	1,089,450	1,089,450	1,037,572
Non-AMT	18,755,759	18,262,186	17,933,138	17,604,089	17,275,041	16,945,992	16,452,420	16,287,896	15,958,847	15,794,323
Revenue in $										
AMT	213,526	213,526	204,629	204,629	195,732	195,732	195,732	186,835	186,835	177,938
Non-AMT	1,802,877	1,755,433	1,723,803	1,692,174	1,660,545	1,628,915	1,581,471	1,565,656	1,534,027	1,518,212

Parameters

	2016	2017 and beyond
Non-AMT	59%	81%
AMT	24%	18.54%
Industrial park	17%	0%
General total	100%	100%

Gaz Métro aims at maintaing the development of its network in meters

Feasible projects are more and more remote

	Avg by extension
AMT Volume 2016	51,879
Non-AMT Volume 2016	164,524
AMT Revenue 2016	8,897
Non-AMT Revenue 2016	15,815

Schedule Q-12.1 is filed as a distinct Excel file.

Schedule Q-12.2 is filed as a distinct Excel file.

Schedule Q-12.9 is filed as a distinct Excel file.