

**GAZ METRO LIMITED PARTNERSHIP  
R-3867-2013 – PHASE 3B**

**EXPERTS' JOINT REPORT**

**Paul Chernick, Russell Feingold, William Perea Marcus**

The Régie de l'énergie (the "Régie") is charged in Phase 3B of R-3867-2013 with evaluating methods and parameters for determining the cost-effectiveness of the development (i.e., line extension) projects of Gaz Métro Limited Partnership ("Gaz Métro") through comparison of the projects' costs and revenues. The experts named above have identified a number of steps in the process, input assumptions to the process, and methods of evaluation and present them here in narrative form for the Régie's consideration.

Specifically, we briefly lay out the issues, identifying points of agreement or disagreement. The table attached to this narrative (Attachment A) provides a further brief description of the experts' areas of agreement and disagreement and extremely brief support for the experts' positions. Further information will be provided in each individual expert's report.<sup>1</sup> If there are ambiguities or differences between this text and the chart, the chart is the controlling data source for purposes of this presentation.

**Definition of Gaz Métro's Portfolio and Methods for Evaluation**

The first issues listed in Attachment A (rows 1-9) are threshold questions as to how projects and the portfolio should be defined and the methods for evaluating projects and the portfolio:

- Should there be different minimum thresholds of profitability for individual projects and the portfolio of projects (i.e. the annual development plan) as a whole?
- Should certain cost elements be applied only at the portfolio level, but not at the project level?
- What is the length of time of analysis?
- What is the discount rate?
- Should the portfolio be comprised of all projects undertaken by Gaz Métro or only some projects?

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<sup>1</sup> Mr. Feingold has already submitted his expert report to the Régie on June 28, 2017 as Exhibit B-0278, Review of Methodologies for Evaluating the Profitability of System Extension Projects - Black & Veatch Evidence (Gaz Métro-7, Document 5).

- Should certain special types of projects be treated differently than the vast majority of projects?

The experts all agree that individual projects do not need to meet as stringent a test of profitability as the project portfolio as a whole. The experts also agree with the general proposition that projects with potential for densification (i.e., installation of additional load that is not specifically committed at the time the initial project is developed, but is likely to occur) should also be evaluated to reflect that potential.

The experts also all agree that certain costs which are not included at an individual project level need to be included in the project portfolio. As noted in Attachment A (Row 5), ROEÉ would include additional cost components at the project level that the other two parties included at the portfolio level. Both OC and ROEÉ propose that the cost of line extension administration should be included at the portfolio level, while Gaz Métro would not include that cost.

Gaz Métro and OC would use a 40-year evaluation period based on the engineering life of new connection projects (Row 9). ROEÉ would use a 25–30 year evaluation period recognizing the potential that the economic life may be shorter than the engineering life because of the potential for electrification to reduce greenhouse gases in the 2040–2050 timeframe.

All parties agree that Gaz Métro’s expected future cost of capital (5.28%) should be used as the discount rate. (Row 8)

Gaz Métro defines its project portfolio as consisting of all of its development projects in a given year and believes that such a definition comports with the regulatory treatment of portfolios for system extension projects by other Canadian utilities. (Row 2) OC disagrees with this view and would focus on the subset of the portfolio consisting of new construction projects serving residential and small and medium business customers. OC believes that individual very large industrial projects should be justified individually based on the portfolio threshold cost-effectiveness and including all overhead costs otherwise calculated at the portfolio level. This would prevent these very large industrial projects from being subsidized by smaller projects. OC also recommends removing load addition projects (“ajouts de charge”) from the portfolio because they are not new customer connections. ROEÉ also removes “ajouts de charge”, but includes large industrial projects in the project portfolio.

All three experts agree (in Row 3) that the project profitability (the “Profitability Index” or “P.I.”) threshold for individual projects should be 1.0 for projects without the potential for future densification. For projects with future densification potential, Gaz Métro and OC agree on a P.I. of 0.8, while ROEÉ could have a range of thresholds from 0.6 to 1, depending on the project characteristics.

Gaz Métro proposes a P.I. for its project portfolio of 1.1 and ROEÉ proposes to use the same P.I. if its 25–30 year evaluation period is adopted. OC recommends a P.I. of 1.3 for the project portfolio, and ROEÉ would agree with OC if a 40-year evaluation period is adopted.

All of the experts acknowledge the need for special treatment for industrial parks (where early installation can reduce installation costs) and street repaving (where a gas development project must either be undertaken at the time of repaving or be delayed by a number of years). (Row 11) However, ROEÉ differs as to how these projects should be treated, and OC could accept Gaz Métro’s proposal for these projects only if there is a commitment to further analysis and refinement of the parameters on a going-forward basis.

### **Cost Input Assumptions for Gaz Métro’s Profitability Analysis**

Regarding the input assumptions to the process, the experts agree that the capital cost of any given project (or of the portfolio of projects) is converted into a revenue requirement using a variety of assumptions. These assumptions are presented on rows 16-25 and 30-31 and include:

- Rate of return on assets and associated income tax rate
- Depreciable life of assets
- Tax depreciation methods for assets
- Other non-income taxes
- Gaz Métro’s corporate overheads as a percentage of capital costs
- Contractors’ overheads as a percentage of capital costs
- Operations and Maintenance Expenses (“OPEX”)

The financial assumptions were largely set out in B-0258, OC 7.2, and most of them are not controversial. The experts agree to use Gaz Métro's rate of return, tax depreciation parameters, other taxes, corporate overhead percentages, and depreciation for items other than mains. The experts also agree on the overhead values for Gaz Métro and its contractors.

The only difference in depreciation rates relates to mains (Row 19), where ROEÉ proposes a depreciable life for mains of 30 years, which is shorter than the engineering life of about 44 years used by Gaz Métro and accepted by OC, to reflect potential electrification.

The experts also agree to follow the Phase 3A decision of the Régie for OPEX associated with new customers who are included in Gaz Métro's annual development plan.

OC has identified and proposes to include four additional types of costs that Gaz Métro did not include. ROEÉ agrees with OC on all of these items.

- OC proposes to add two additional cost loading factors to the OPEX in Gaz Métro's profitability analysis for (a) cash working capital and (b) overheads associated with the Company's Human Resources Department. (Rows 27-28) If both of these were adopted, they would increase all OPEX costs by 2.7%.
- An additional issue recommended by OC for inclusion in Gaz Métro's project portfolio is the cost of administering the line extension program and marketing line extensions to new customers. (Row 32) OC recognizes that the inclusion of this cost is dependent on the Régie's response to OC's challenge to Gaz Métro's response to B-0293, OC IR 6.2. If the Régie upholds OC's challenge, then OC would develop an estimate for this additional cost, and if the Régie denies this challenge, OC will not pursue this item.
- OC also recommends that Gaz Métro be required to include the cost of a replacement meter investment in year 20 of a 40-year analysis, because data provided to the Régie suggests that the useful life of a meter is 20 years. (Row 35)

The OC and ROEÉ experts differ with Gaz Métro on how to calculate new capacity reinforcements. (Row 33) Gaz Métro proposes to ascribe the portfolio of reinforcements of individual projects under \$1.5 million to new capacity in the year of the hook-up and to include it in the capital costs of the project portfolio. ROEÉ and OC propose a method of calculating new

capacity based on total expansions over a longer period of time divided by the change in design peak day demand over those same periods of time, and multiplied by the design peak day increment of the project or portfolio.

Gaz Métro did not include in its profitability analysis preventive or corrective maintenance of mains associated with capacity expansion. OC and ROEÉ would include this cost component based, if possible, on converting the cost figures for new mains to metres of new main and applying the costs from Phase 3A (\$0.22 per metre for preventive maintenance and \$0.37 per metre for corrective maintenance on an annual basis). (Row 34)

### **Revenue Input Assumptions for Gaz Métro's Profitability Analysis**

The experts agree that the tariffed \$300 charge for new residential hookups be treated as a contribution in aid of construction to reduce project costs. (Row 36) This agreement resolves an issue that was a matter of at least apparent contention in Phase 3A.

The experts agree that revenues should include both customer charges (i.e., the Basic Fee) and commodity charges. (Row 38) The experts also agree (Row 39) that revenues should be based on only those customer connections that are known or contracted for at the time of project development (though projected future revenues from densification can change the P.I. threshold for individual projects).

### **Additional Analyses**

The experts acknowledge that Gaz Métro currently conducts a backcast analysis of three years (i.e., *a posteriori* profitability analysis) for the aggregate of projects with a P.I. exceeding 1.0, and proposes to also conduct a six year analysis for the aggregate of its other projects. (Row 41) ROEÉ and OC agree with Gaz Métro that portfolio analysis is appropriate for evaluating the overall profitability of Gaz Métro's development plan (and its prudence if P.I. thresholds are not met). However, OC and ROEÉ also recommend that the project data that are assembled into the portfolio analysis should also be provided, because project data would provide useful information for reviewing future forecasting methods and thresholds. These retrospective project data would not be used for second-guessing past decisions made by Gaz Métro.

OC proposes a sensitivity analysis if a P.I. of 1.1 is accepted by the Régie based on two variables: (a) a cost of capital and discount rate of 100 basis points above the 5.28% current cost of capital; and (b) ROEÉ's project life. (Row 42). The purpose of the analysis would not be to second-guess the prudence of Gaz Métro's existing portfolios and investments, but to determine if parameters or thresholds need to be re-examined. ROEÉ accepts the value of sensitivity analyses in identifying which parameters are most critical and guiding future decisions. Gaz Métro does not support these types of sensitivity analyses.

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ATTACHMENT A  
September 15, 2017

	Evaluation Methods and Common Inputs	Gaz Métro Proposal (Black & Veatch)	Excluded from B&V Mandate	OC	ROÉÉ	Reference notes
1	Evaluate project portfolio differently than Individual projects	Yes - include Indirect General Capitalized Development Costs (capitalized general overhead expenses and capitalized general contractor fees) and System Incremental Reinforcement Costs on a project portfolio basis only.		Agree with Gaz Métro - except for very large industrial projects (See #2). Also include line extension administration and marketing.	Yes - include Gaz Métro overheads, line extension administration and marketing at the portfolio level. Include contractor overheads, new capacity costs at the project level.	
2	Portfolio composition	All projects included in portfolio		Portfolio should only include projects for residential and business new customers. Very large industrial projects should meet portfolio profitability test individually including all overheads. Additions in load requiring investment ("ajouts de charge") should not be included in portfolio.	Portfolio should include all projects requiring main extensions to reach new customers. Include very large industrial projects in portfolio, but exclude additions in load requiring investment ("ajouts de charge").	
3	Threshold profitability index (P.I.) for individual projects	Profitability Index of 0.8 with densification potential; P.I. of 1.0 if no densification potential		agree	Set threshold based on densification potential and historical increase in net revenue on similar projects: 1.0 for projects with limited densification potential, 0.8 for projects with average potential, 0.6 for projects with high potential	
4	Threshold P.I. for project portfolio	Profitability Index of 1.1 (based on ensuring ratepayer benefits and consistency with system extension profitability methods used by other Canadian utilities)		P. I. of 1.3 (higher figure used because of uncertainties in financial parameters and future project life)	1.1 if evaluation period set at 25 years; 1.3 if evaluation period of 40 years	
5	If portfolio evaluation is different, which specific inputs are included for the project portfolio and not for individual project (list by number).	30, 31, and 33		30, 31, 32, 33, 34	30, 32	
6	Discount Rate	5.28% (rate of return)		Agree as a package, also ties to OC's higher threshold P. I. for portfolio	Agree as a package	
7	Escalation Rate for expenses	0%		Agree as a package	Agree as a package	
8	Escalation Rate for revenues	0%		Agree as a package	Agree as a package	
9	Length of evaluation period	40 years based on experienced engineering life of assets		40 years, but acknowledge risk of shorter useful life identified by ROÉÉ is one factor considered in OC's higher threshold P. I. for portfolio	25-30 years based on potential for greenhouse gas reductions from electrification	
10	<b>Special Types of Projects</b>					
11	Treatment of projects installed early at new industrial parks and for street repaving	\$1.5M per year amount (based on an annual review) used to improve profitability to a P.I. of 0.8 for those individual projects with densification potential. The budget is funded from the profitability of the development portfolio in excess of the 1.1 P.I. threshold from the previous year.	X	Use Gaz Métro approach on an interim basis, subject to future change going forward. Adopt ROÉÉ densification study for industrial parks to inform future decision making. Make a comparison of densification projects arising from street repaving with similar densification projects arising in normal course of business to see if subsidy beyond 0.8 remains reasonable for them in the future. (See line #41)	Two-fold test for New Industrial Parks: (1) Perform densification study to set threshold; (2) compare cost of early build-out to cost of build-out when justified under normal rules. Similar treatment for street repaving, if GM can develop rationale for assuming that load will materialize following the line extension. Compare cost-benefit of extending system now or waiting until end of moratorium.	
12	Treatment of Hybrid Projects (that provide line extensions for new customers and capacity additions for existing loads in a single project)	Such projects will be treated as exceptions on a case-by-case basis. If the costs of the project can be separated between Direct Incremental Development and System Incremental Reinforcement, then the Direct Incremental Development costs will be included in the individual project analysis and the System Incremental Reinforcement costs will be included in the project portfolio analysis. Otherwise, the total investment costs will be included in the project portfolio analysis.		Agree with Gaz Métro, as long as projects are identified and method of cost analysis is specified.	Project-specific analysis should be undertaken, using normal thresholds, netting out present value of avoided capacity expansion cost.	

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	Evaluation Methods and Common Inputs	Gaz Métro Proposal (Black & Veatch)	Excluded from B&V Mandate	OC	ROEE	Reference notes
13	<b>Project Costs</b>					
14	Capital Cost of Project					
15	<b>Items to Annualize Capital Cost of Project *</b>					
16	Rate of Return	5.28%		agree as a package, also tied to OC's higher threshold profitability level for portfolio	agree as a package	
17	Associated Income Tax rate	26.9%		agree	agree	
18	Depreciation Rate (including years and net salvage)					
19	Mains	2.254% (equivalent to 44 year life)		Agree with Gaz Métro - but risk of shorter useful life identified by ROEE is one factor considered in OC's higher threshold P. I. for portfolio	3.33% (30 years)	B-0258, OC 7.2
20	Services and meters	4.755% (equivalent to 21 year life)		agree	agree	B-0258, OC 7.2
21	Commercial programs	10% (equivalent to 10 years)		agree	agree	B-0258, OC 7.2
22	Net salvage cost at end of project	0		agree	agree	B-0258, OC 7.2
23	Tax depreciation (declining balance)	6%		agree	agree	B-0258, OC 7.2
24	Other Taxes percentage	1.50%		agree	agree	B-0258, OC 7.2
25	O&M (OPEX) Costs of Project as per Phase 3A	As decided by Regie in Phase 3A decision		As decided by Regie in Phase 3A decision	As decided by Regie in Phase 3A decision	
26	<b>Items not included in Phase 3A to be included in Project Evaluation</b>					
27	Working capital	Not included	X	0.4% of O&M expenses including Phase 3A	Agree with OC	OC calculated from R-3970-2016, B-0244, p. 11 referenced in B-0258 OC 4
28	Human Resources Department overhead allowance	Not included	X	Not included in capitalized corporate overhead in line 30 (B-0293, OC 4.2). To reflect O&M overhead, add 2.3% to O&M costs including Phase 3A.	Agree with OC	OC calculated from data in B-0293, OC 4.1 and B-0258 OC 4 (HR as % of labor), and then reduced the total by 50% because of non-labor costs in O&M.
29	Acquisition of Gas Supply	Phase 3A decision included approximately \$1.2 million (Contracts and Administration) of the \$3.5 million in operating costs recommended by ROEE, based on a \$/customer by market segment		agree	agree	
30	Corporate capital overheads	14.53%	X	agree	agree	B-0258, OC 7.2
31	Contractor capital overheads	27.10%	X	agree	agree - include in project cost, not only at portfolio level	B-0278, GM-7 Doc 5, p. 31.
32	Cost of administering line extension program and marketing line extensions to new customers	Phase 3A decision excluded the costs of marketing associated with network expansion projects		OC would include these costs as a portfolio cost if the Regie decides that they are relevant. OC has challenged Gaz Métro's answer to information request 6.2 in B-0293. If the Regie agrees with OC, OC will then develop an estimate for portfolio analysis; if the Regie does not agree with OC, then the item will not be pursued.	Agree with OC - include as a portfolio cost, if at all	



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	Evaluation Methods and Common Inputs	Gaz Métro Proposal (Black & Veatch)	Excluded from B&V Mandate	OC	ROEE	Reference notes
33	Method of deriving new incremental capacity.	Each year Gaz Métro will determine the specific investment-related costs of the facilities needed (as part of the reinforcement budget in its annual development plan) to reinforce its existing distribution system to enable the connection of new customers to the existing system and to increase the existing system's operational capacity and flexibility to the benefit of its new and existing customers. Attribute one year's capacity to new development in that year at the portfolio level and add to the capital costs included in the profitability analysis for the project portfolio.		Agree with ROEE.	Derive \$ investment per m <sup>3</sup> of design-day load growth over representative period; multiply by m <sup>3</sup> of design-day load for the customers on the line extension, consistent with sales used in revenue projection and group load factor.	Gaz Métro's position is given in B-0293, Gaz Métro-9, Document 12
34	O&M cost of new incremental capacity	Not included		Need to convert capital costs in #33 (above) to meters (using average dollars per meter) to then apply parameters from Phase 3A.	Agree with OC	
35	Reinvestment of meters after year 20	Not included		Yes, reinvestment in year 20 because meters have useful life of approximately 20 years (Regie 13.1 B-0281)	Yes	
36	Treatment of tariffed residential up-front payment of \$300	Contribution reduces project cost		agree	agree	
37	<b>Revenues from Project</b>					
38	Include customer and volumetric charges	Yes, all revenues included		agree	agree	B-266
39	Inclusion of new customers not identified or contracted for at time of forecast	No		agree	Agree. Use expected densification in setting threshold, see #2	
40	<b>Other Analyses Related to Profitability</b>					
41	Verification or backcasting after projects installed	Two separate verification/backcasting analyses will be performed using: (1) 3 years of experience for all projects grouped by market segment; and (2) 6 years of experience for all projects with a P.I. between 0.8 and 1.0, and including industrial park and road repaving projects.	X	Agree with ROEE. If Gaz Métro's aggregate analysis is accepted without ROEE's project analysis, projects for industrial park and repaving need separate analysis to deal with going-forward planning issues in #11 above.	Agree with GM, but results should also be reported by project. None of the project analysis is for the purposes of second-guessing decisions previously made, but it could identify improvements in future forecasting.	
42	Are sensitivity analyses to input parameters needed?	No		If threshold is 1.1, apply sensitivities at portfolio level only based on two variables: (a) a cost of capital and discount rate of 100 basis points above the 5.28% current cost of capital and (b) ROEE's project life. Use to inform the Régie if mid-course corrections to P. I. thresholds or parameters are needed, not to second-guess any decisions previously made.	ROEE accepts the value of sensitivity analyses in identifying which parameters are most critical and guiding future decisions.	