

Société en commandite Gaz Métro
Renouvellement du mécanisme incitatif à l'amélioration
de la performance de Gaz Métro, R-3693-2009

RÉPONSE DE L'EXPERT PACIFIC ECONOMICS GROUP RESEARCH, LLC
À LA DEMANDE DE RENSEIGNEMENTS N° 2 DE LA RÉGIE DE L'ÉNERGIE (LA RÉGIE) :
RENÉGOCIATION DU MÉCANISME INCITATIF À LA PERFORMANCE DE GAZ MÉTRO

QUESTION À L'EXPERT

32. Référence : Pièce B-0025, Gaz Métro-5, document 5, page 5, réponse à la question 4.

Préambule :

« The elasticity weights for the output indexes for capex and total cost were based in part on the econometric work presented in Appendix 3. Please see our answer to the following question for further explanation. As explained on p. 50 of the report, we were concerned that the elasticity shares of Gas Metro would differ from those of the typical distributor in the US sample due to Gaz Metro's unusually low customer density. We could have addressed the problem with a more flexible and complex functional form but chose this method in the name of simplicity. »

Demandes :

32.1 Veuillez indiquer si la faible densité du réseau de Gaz Métro et l'hétérogénéité de sa clientèle peut avoir un impact sur les économies d'échelle et sur le calcul du facteur X. Dans votre réponse, veuillez tenir compte des caractéristiques du réseau énoncées en réponse à la question 2 fournie par le Groupe de travail.

Réponse :

The low density on some parts of Gaz Metro's network does affect the Company's potential to realize economies of density that contribute to scale economies. This should ideally be reflected in the X factor and the output measure that is used in a cost target or revenue cap formula. This issue was given considerable attention in my research for the Group de Travail. The referenced data provided by the Group de Travail reveals that customer density on Gaz Metro's system varies by region and is unusually low outside the Montreal region.

32.2 Veuillez indiquer si l'utilisation d'une formule qui tiendrait compte notamment du nombre de km de conduite pourrait palier ces problèmes.

Réponse :

Cost escalation formulas that take some account of the effect of growth in line miles on cost can help cost and revenue caps reflect unusual opportunities to realize economies of customer density appropriately.

- 32.3 Si oui, veuillez présenter une telle formule qui permettrait de calculer un facteur X tenant compte des particularités de Gaz Métro. Veuillez présenter la formule et les hypothèses retenues et, commenter les résultats.

Réponse :

The research that I undertook for the Group de Travail did consider the use of line kilometers as an output measure. Econometric cost models were developed for O&M expenses, capex, and total cost. Line miles were considered as an output (or "network") variable in each cost model. The results of the econometric work at sample mean values of the variables in the cost model varied considerably by cost category. Miles of line was found to have been the most important driver of gas utility capex and had a much smaller (but still statistically significant) impact on total cost. The impact of line miles on O&M expenses was not statistically significant. These results are generally sensible because a sizable portion of the O&M expenses of a gas utility goes for general administration and customer account services, where special economies of density are less likely to be pronounced. Based on the econometric results, I used line miles in the TFP indexes for capex and total cost and also included line miles in the output measures for the cost caps. With line miles included in the output measures, the targets for capex and total cost would grow less should Gaz Metro elect only to increase customer density rather than increasing customers and line miles proportionately.

In constructing the output indexes, I was reluctant to use elasticity *weights* based on the elasticities at sample mean values of the US business conditions because I suspected that the relative cost impacts of customers and line miles might be different for Gaz Metro, with its unusually low customer density, than the weights for the typical US utility. My custom elasticity shares assigned a heavier weight to line miles and a lighter weight to customers. This is the only specification that matters in our TFP index work.

I did not, however, customize the *sum* of elasticities that were used in the econometric productivity targets and instead used the elasticities at the sample mean for this purpose. An elasticity is the ratio of average cost to marginal cost. Gaz Metro has an unusually large cost/customer and this would tend to reduce the elasticity of cost with respect to customers. However, the marginal cost may be unusually high as well. A flexible functional form could in principle be used in the econometric cost model to help estimate a Gaz Metro-specific marginal cost to go along with its average cost. However, the

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accuracy of such an exercise would be limited using our US sample because there are no companies in the sample with unusually low customer density. I did undertake preliminary work using a flexible functional form to estimate Gaz Metro specific marginal costs but the resultant sum of elasticities were not greatly different from those that we used to compute the econometric productivity targets. The sum of elasticities was a little higher (meaning 10-20 basis point lower econometric productivity growth targets) for total cost and capex and a little lower (meaning a 20 basis point higher econometric productivity target) for O&M expenses.

In summary then, the issue of customer density was given considerable attention in our work for the Group de Travail. The featured methodology strikes a reasonable balance between accuracy and complexity with respect to this issue.