

MARGINAL COSTS OF LONG TERM SERVICE DELIVERY

BLACK & VEATCH PROJECT NO. 190132

PREPARED FOR

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Table of Contents

1 Introduction	1
Scope of Services.....	1
2 Marginal Cost of Service Theory	2
Marginal Operating Expenses.....	4
3 Review of Gaz Metro’s Study on Marginal Costs	7
Residential Market.....	7
CII Market.....	8
Major Industries Market.....	8
Conclusion.....	11
4 Peer Utility Research and Comparative Analysis	12
Peer Group Research.....	12
Comparative Analysis.....	13
Appendix A – Line Extension Policy Highlights	20

LIST OF TABLES

Table 1	Gaz Metro Operating Expenses by Category.....	5
Table 2	Residential Marginal Operating Expenses.....	9
Table 3	CII Marginal Operating Expenses.....	10
Table 4	Major Industries Marginal Operating Expenses.....	11
Table 5	Line Extension Research Peer Group.....	13
Table 6	Line Extension Policies with Dollar Allowance Method.....	16
Table 7	Line Extension Policies with Footage Allowance Method.....	17
Table 8	Line Extension Policies with Revenue Test Method.....	18

1 Introduction

This report presents Black & Veatch Canada Company's (Black & Veatch or B&V) independent assessment of Gaz Metro's proposal for changing the methodology to determine the long-run marginal costs for the operation & maintenance (O&M) component of its line extension profitability analysis. The report is organized as follows:

Section 1 provides an introduction to the study and describes the mandate. Section 2 addresses the theory of marginal cost of service. Section 3 presents our analysis of Gaz Metro's marginal costs of long term service delivery. Section 4 provides a comparative analysis of the line extension policies of a peer group of US gas distribution utilities. Appendix A shows additional detail on line extension policies.

SCOPE OF SERVICES

This report represents Phase 1 of Gaz Metro's mandate for a study of Marginal Costs for Long Term Service Delivery, which is the submittal of an expert report. Task 1 consisted of data collection and review of prior Gaz Metro work. From this data, we developed a modified model to independently assess the marginal cost of long term service delivery to be used as a basis of comparison to Gaz Metro's internal work products. Task 2 involved peer utility research to identify a peer group of U. S. distribution utilities, based on relative size and customer density, to use as a comparison group of others line extension policies. Task 3 involved a comparative analysis of the peer group identified in Task 2 to identify various methods of recovering costs of adding new customers to the system. The peer group was categorized by method and evaluated for risk/reward and the merits of each type. Task 4 involves the preparation of this report, documenting our studies.

2 Marginal Cost of Service Theory

Marginal Cost of Service (MCOS) studies do not reflect actual costs, but, rely upon estimates of the expected changes in cost associated with changes in the level of service demanded by customers. MCOS studies are forward looking to the extent permitted by available data from the utility. Where there are significant economies of scale as in the delivery of natural gas, MCOS costs are less than average costs. This conclusion applies equally to capital costs and O&M costs. By adding new customers to the system, a utility adds both direct customer connection costs- meter, regulator, service line and local main extension- as well as potential other facilities such as general main extensions. Determining the marginal investment cost of the customer connection is straight forward. The marginal cost of other facilities is not easily calculated because plant additions are lumpy. Since the general main extension may be used by more than the added customer, the marginal cost of the new customer is less than the full cost of the general plant addition. The general facilities are caused by this new customer plus all future customers over the life of the new facilities hence the term lumpy investment.

O&M expenses serve three functions: direct customer related costs, O&M for existing assets and incremental O&M for new facilities. The direct O&M is relatively easy to measure but still has issues related to lumpy services. Some examples will illustrate this issue. Consider the call center services of the utility. There will be some direct costs for a new customer associated with service establishment and those costs should be collected from the new customer only as is the practice of most utilities. Other call center costs such as billing inquiries or leak reports are only costs at the margin when an additional call from a customer would require additional call center resources such as a customer service representative or additional work stations. Thus, cost at the margin for new customers is zero until all of the call center capacity is used up. At that point new customers potentially require new services such as call center expansion. We say potentially because of technology that allows the call center to meet additional calls with new automated services. In that case, there may not even be any marginal cost since the new services could be purchased from costs saved through technology. In any event the cost causation at the margin is likely zero for long periods for modest growth utilities. For new plant O&M the marginal costs are essentially zero initially as new plant does not require more than mandated safety programs such as leak surveys. Those costs are fixed costs for the system and there is no reasonable marginal allocation for a new customer unless there is no existing capacity that can perform the service. This is precisely the economies of scale and lumpiness problem associated with capacity or any other utility service. New customers that cause zero costs provide a benefit to other customers by reducing per unit cost of leak services for all customers. That continues until so many customers have been added that in total additional O&M expense is required. In the meantime existing customers have benefited from lower costs as a result of the addition in the form of lower unit revenue requirements. Practically speaking it is not useful to charge the incremental cost to the new customer as those costs are part of the shared cost of a system. Due to the fixed cost nature of operating a gas distribution system, existing customers will benefit from the addition of new customers by spreading fixed costs over a larger base of throughput. By the time a “step” increase in O&M is needed, there will likely have been numerous customer additions to the system that can absorb the added cost with no impact to existing customers.

Having said all of this there are some O&M expenses that are directly customer related such as additional billing costs such as postage and billing stock and check processing costs. These costs are generally very minor in total and because they are included in the customer costs are more than covered by the added customer charge revenue. The only O&M costs ultimately added related to a new customer are the future costs of O&M at the customer premise such as meter and service line maintenance. Again these costs are not incurred for some time based on such things as regulations related to meter testing and change out or service line maintenance that given plastic services may not be incurred until many years in the future. As a general matter, all of this leads to the conclusion that the only current impact of a new customer on O&M is a reduction in per unit O&M for other customers initially and a small present value of future O&M that the new customer will share with existing customers for their assets before his own assets cause costs. This leads to the conclusion that the most reasonable estimate of marginal O&M costs for new customers is zero for physical plant, positive for service establishment and minimal for direct customer charges. From a toll design perspective, service establishment should be matched by a direct charge while direct customers charges are easily covered by the tolls since average cost is much greater than marginal cost.

Essentially B&V concludes that the Gaz Metro exercise of estimating these O&M marginal costs to comply with the regulatory requirements overstates the actual long-run marginal costs and unduly burdens line extension policies to the detriment of all existing customers.

Economic theory holds that efficient prices equal short-run marginal cost not long-run marginal costs. The use of long-run marginal cost to evaluate line extension creates a timing mismatch between costs for ratemaking (the first year carrying costs that will be in revenue requirements) and the levelized costs over the life of the assets used in calculating long-run marginal costs. This timing mismatch raises revenue requirements in the short-run but over time reduces the revenue requirement for economic connections of new customers.

MCOS studies focus on the change in costs associated with a small change in output as measured by the customer and capacity addition under the applicable line extension policy. MCOS costs are forward-looking and require making estimates of future costs with an understanding of the elements that drive those future costs. As a practical matter, MCOS costs bear no relationship to the mix of actual historical costs that constitute the utility revenue requirement. The reasons that marginal costs do not reflect actual costs include the following:

1. The relationship between historic and prospective costs reflects changes in technology.
2. Sunk costs (the fixed cost of the existing system) do not impact MCOS cost but may account for a large portion of the test year revenue requirement, particularly where economies of scale are significant.
3. The underlying impacts of inflation on prospective costs differ from past costs.
4. Additions to capacity are lumpy and as a result utilities optimal additions often include more capacity than the marginal change in load.

It is this later point that impacts revenue requirements in the current period but does not have revenues to match those costs. Indeed, if a utility extension policy required new customers to cover these lumpy cost additions, customer growth would be near impossible. However, without these lumpy additions the total cost of gas service in the future would be higher for all customers. For this reason, line extension policies must be crafted to assure that the customer more than covers the direct costs of the extension and makes a reasonable contribution to any new general plant costs. Meeting that test means that the added growth potential from the general main additions must be socialized to allow for the system to grow in the future and to do so while taking advantage of the available scale economies.

MARGINAL OPERATING EXPENSES

As noted above, there are economies of scale in O&M that result in new customers reducing the per unit revenue requirement for existing customers so long as the line extension policy produces revenue greater than costs of the direct extension after excluding the customer charge revenue. Marginal operating expense benefits are difficult to quantify because they can only be perceived by customers through a toll decrease when the annual plant carrying costs decline below the levelized carrying costs. Black & Veatch has used its economic, planning and operating experience and expertise to evaluate and review the O&M costs as required by the Regie for reasonableness despite our reservations that such costs are not properly considered part of the line extension policy as discussed above. In any event for new facilities these costs rarely occur at the margin in the near term and certainly are zero for plant O&M and even some customer services in the early years. This conclusion recognizes the importance of scale economies and lumpy additions as they relate to determining marginal costs.

Analysis of Gaz Metro's Distribution Operating Expenses

Not all operating expenses are impacted by the addition of one customer to the system. In fact very few operating expenses are directly impacted by the addition of one customer. The following evaluates each major category of operating expenses included in Gaz Metro's revenue requirement based on the 2015 rate case¹. These operating expenses are categorized based on the criteria below:

- **Category 1:** Costs that directly increase due to the additional of one customer. Examples of this type of cost would be the cost of mailing a bill or processing payments.
- **Category 2:** Category 2 is the most common type of marginal operating expense. These are costs that are impacted by the addition of new customers to the system, but not in a direct manner. An example would be meter reading. One additional customer would not require Gaz Metro to hire an additional meter reader. However, if enough customers were added to the system, eventually additional meter reading staff would be needed. These are costs the eventually require a stepwise increase in costs that is spread over all customers as part of a customer charge.
- **Category 3:** Category 3 costs are those that have no impact on marginal cost. An example would be advertising costs. There is no correlation between advertising expenses and the additional of a customer to the system.

¹ Source: Proposed Cost allocation Translated-Doc-2015_01_23.xls

Table 1 shows each major operating expense category with its assigned category, with additional discussion in the following paragraphs.

System operations and maintenance include the primary expenses related to the operation and maintenance of the infrastructure of the system (mains, meters, services, etc.). Distribution Gas Supply expenses (category 3) have no relation to marginal costs as these costs are related to personnel managing the gas supply these costs do not vary with added throughput or customer costs. Engineering and project planning costs are recovered in overhead adders of capital projects so they are also category 3. The operations and maintenance expenses related to mains, services, and meters are all considered category 2. The marginal costs of these assets are more related to the recovery of the investment rather than additional operating expenses. While Gaz Metro does have preventive maintenance programs for service lines and mains that are made on a multiyear basis, the expense of one additional customer can likely be absorbed by the existing staff that performs these tasks.

Table 1 Gaz Metro Operating Expenses by Category

OPERATING EXPENSES		Category
System operations and maintenance		
Gas supply	3,485,839 \$	3
Engineering and project planning	15,182,754 \$	3
Distribution main operations and maintenance	33,975,660 \$	2
Service line operations and maintenance	6,862,734 \$	2
Meter operations and maintenance	9,350,165 \$	2
Sales and marketing		
Advertising and promotion of natural gas	5,613,276 \$	3
Sales team	18,175,020 \$	2
Customer service		
Customer billing and meter reading	10,275,472 \$	1/2
Credit and collection	3,983,387 \$	2
Bad debts	995,847 \$	3
Administrative and general expenses		
Regulation, accounting, publicaffairs, demand forecasting	18,442,785 \$	3
Cash Management	3,649,591 \$	3
Support services (IT, HR, Legal Services)	55,728,469 \$	2
TOTAL OPERATING EXPENSES	185,721,000 \$	

Sales and Marketing costs are generally not related to marginal operating expenses. Advertising costs have no direct link to marginal customer costs and are therefore a category 3. The costs of

Gaz Metro's sales team have a partial link to marginal operating expenses as their efforts result in additional customers. As such, they fall in category 2.

Customer Service costs are generally considered to be marginal operating expenses, but that is not always the case. Customer billing expenses have the most direct link to marginal costs and would be considered a category 1. However meter reading has more of a stepwise impact on costs in that additional meter reading costs are incurred only after a certain threshold of new customers have been added to the system where the current staff can no longer handle the additional workload. This type of cost falls in category 2. Credit and collection costs are considered category 2. There are some fairly direct costs related to checking credit of new customers, but collections of bad debt is not considered a marginal costs, much like bad debt. The costs of collections and bad debt are not considered marginal costs because new customers should be screened for credit worthiness before being added to the system and there should be no expected costs related to bad debt.

Administrative and General expenses are generally not considered to be marginal operating expenses. At most, there is a stepwise relationship of expanding support services (HR, IT, Legal) that could be considered a category 2, but none of these costs are appropriate to be included in the marginal operating expenses associated with the profitability analysis of a new customer.

3 Review of Gaz Metro’s Study on Marginal Costs

Gaz Metro’s proposed approach to revising how marginal operating expenses are applied to its profitability analysis for new customers is documented in the document *Study on Long-term Marginal Costs of Service Delivery Applied to Profitability Analysis* (2015 Rate Case – R-3879-2014). Gaz Metro defines the “marginal cost of service delivery” as the set of costs that can be linked to a customer once he or she has agreed to become a customer of Gaz Metro. It includes the marginal costs the customer creates and the associated internal costs for the maintenance of its facilities and the services that are directly supplied.

The study presents an alternative approach to the current value of \$157 per year that used for all potential customers regardless of size or market. The current value, which originated from a study prepared by Pacific Economics Group (PEG) in case R-3693-2009 Phase 2, represents the average of the long-term operational marginal costs of Gaz Metro across all markets. It has been acknowledged by PEG and Gaz Metro that the long-run marginal operating costs are lower for smaller customers. Gaz Metro’s study has appropriately prepared a separate analysis for each of its markets: Residential; Commercial, Institutional, and Industrial (CII); and Major Industries. This distinction between markets is an important modification as the costs of adding a Residential customer to the system are clearly much different than adding a Major Industries customer. By differentiating between the three markets, you reduce the risk of overestimating the costs of adding a smaller customer, which could lead to a profitability analysis that results in a decision to not add a customer to the system when the additional customer would have benefited the entire system.

Black & Veatch has reviewed the methodology and analysis used to develop its proposed marginal costs and we find the approach more appropriate for future use than the current \$157 value. Gaz Metro has properly accounted for the fact that first year costs differ from subsequent years and that costs are not the same for each customer, even within the same market. To account for this, Gaz Metro has identified a minimum and maximum value for each component and market to make the best approximation of marginal costs in the profitability analysis. An appropriate treatment of first year costs that are unique is a service establishment charge for each market segment and a per market amount for ongoing costs that varies by market segment for the line extension policy.

Black & Veatch recommends some modifications to the costs included in Gaz Metro’s proposed rate structure. Our recommendations relate primarily to eliminating certain costs that are not appropriate to the marginal costs of a new customer or are not directly related to marginal costs in all cases. The cost basis for the analysis prepared by Gaz Metro is generally 2012-2013. We recommend this analysis be updated with the same approach for current costs if approved for use. In the following sections we present our recommendations for each market as well as explanation of changes we recommend.

RESIDENTIAL MARKET

Table 2 presents a comparison of the marginal cost proposal as filed by Gaz Metro and a line by line comparison of modifications recommended by Black & Veatch. The changes we recommend are as follows:

- Cost of Reading a Meter – As noted in section 2, 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.
- Cost of Processing a Standard Customer Call – Not all customers make calls to the utility so we recommend changing the minimum range to zero.
- Bad Debt And Collection And Recovery Costs - As noted in section 2 – Bad debt and collections expense should not be anticipated for a new customer and the marginal cost should be zero.
- Preventative and Corrective Maintenance on Service Lines – Gaz Metro has proposed a method in which the total cost of preventative and corrective maintenance be based on the total cost of the activity (based on total hours times the standard cost rate) divided by the number of services. In reality, there is a limited amount of maintenance required for services. While Gaz Metro does have preventive programs (service line inspection, leak detection) that are made on a multiyear basis, there are not ongoing annual costs for an individual service. Further, there is no reason to expect maintenance costs in the first year of placement. Therefore, we recommend using zero for the first year costs and zero for the minimum in years 2+.

For the marginal operating costs of mains and meters, the Gaz Metro proposal acknowledges that a single point estimate of cost per customer is not appropriate and it is much more customer specific. Its use of an estimated cost per meter of mains provides a superior method of evaluating the profitability of a prospective customer. Similarly with meters, Gaz Metro appropriately show the minimum cost to be zero, as not all customers will require maintenance once placed in service.

CII MARKET

For the commercial, institutional and industrial (CII) market, we recommend generally the same modifications as the residential market. In addition to the same changes we recommend for residential, we also recommend eliminating the customer retention cost for major accounts. Much like meter reading, the addition of one customer is unlikely to increase the costs of staff responsible for customer retention activities. Our recommendation for CII is shown in Table 3.

MAJOR INDUSTRIES MARKET

For the major industries market, we recommend no additional changes from the other two markets. The adjustments recommended for major industries are to meter reading, customer retention costs, and maintenance of service lines. Many of the other costs are already zero for this market.

Table 2 Residential Marginal Operating Expenses

Line	Description	Gaz Metro As Proposed				Black & Veatch Revised			
		Residential				Residential			
		Year 1		Year 2 and +		Year 1		Year 2 and +	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1	Mailing of subscription confirmation letter	\$0.83	\$0.83	\$0.00	\$0.00	\$0.83	\$0.83	\$0.00	\$0.00
2	Cost of mailing bill	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36
3	Cost of opening a billing file	\$9.66	\$9.66	\$0.00	\$0.00	\$9.66	\$9.66	\$0.00	\$0.00
4	Cost of reading a meter	\$6.71	\$6.71	\$6.71	\$6.71	\$0.00	\$0.00	\$0.00	\$0.00
5	Input of a new contract	\$36.29	\$36.29	\$0.00	\$0.00	\$36.29	\$36.29	\$0.00	\$0.00
6	Cost of a credit check conducted internally	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
7	Annual cost for cashing a payment	\$0.74	\$0.74	\$0.74	\$0.74	\$0.74	\$0.74	\$0.74	\$0.74
8	Cost of processing a standard customer call	\$12.84	\$12.84	\$12.84	\$12.84	\$0.00	\$12.84	\$0.00	\$12.84
9	Cost of Bad Debts	\$0.57	\$0.57	\$0.57	\$0.57	\$0.00	\$0.00	\$0.00	\$0.00
10	Collection and recovery costs	\$2.43	\$2.43	\$2.43	\$2.43	\$0.00	\$0.00	\$0.00	\$0.00
11	Customer retention costs - Major accounts	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12	Customer retention costs - Major industries	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
13	Preventive maintenance - Service line	\$12.88	\$12.88	\$12.88	\$12.88	\$0.00	\$0.00	\$0.00	\$12.88
14	Corrective maintenance - Service line	\$17.99	\$17.99	\$17.99	\$17.99	\$0.00	\$0.00	\$0.00	\$17.99
15	Processing of CRP application	\$0.00	\$23.83	\$0.00	\$0.00	\$0.00	\$23.83	\$0.00	\$0.00
16	Preventive maintenance - Mains	\$0.22/m							
17	Corrective maintenance - Mains	\$0.37/m							
18	Meters inspection and maintenance costs								
19	Type of meters								
20	Turbine	\$0.00	\$31.68	\$0.00	\$31.68	\$0.00	\$31.68	\$0.00	\$31.68
21	Spin test for turbine (less than 12 in)	\$0.00	\$79.20	\$0.00	\$79.20	\$0.00	\$79.20	\$0.00	\$79.20
22	Telemetry	\$0.00	\$118.79	\$0.00	\$118.79	\$0.00	\$118.79	\$0.00	\$118.79
23	Corrective instruments	\$0.00	\$87.11	\$0.00	\$87.11	\$0.00	\$87.11	\$0.00	\$87.11
24	Spin test for turbine (12 in and more)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25	Cost of a cellular line - telemetry	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26	Total	\$109.30	\$449.91	\$62.52	\$379.31	\$55.88	\$409.33	\$9.10	\$369.60

Table 3 CII Marginal Operating Expenses

Line	Description	Gaz Metro As Proposed				Black & Veatch Revised			
		CII				CII			
		Year 1		Year 2 and +		Year 1		Year 2 and +	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1	Mailing of subscription confirmation letter	\$0.83	\$0.83	\$0.00	\$0.00	\$0.83	\$0.83	\$0.00	\$0.00
2	Cost of mailing bill	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36
3	Cost of opening a billing file	\$9.66	\$9.66	\$0.00	\$0.00	\$9.66	\$9.66	\$0.00	\$0.00
4	Cost of reading a meter	\$6.71	\$6.71	\$6.71	\$6.71	\$0.00	\$0.00	\$0.00	\$0.00
5	Input of a new contract	\$52.62	\$52.62	\$0.00	\$0.00	\$52.62	\$52.62	\$0.00	\$0.00
6	Cost of a credit check conducted internally	\$17.19	\$17.19	\$0.00	\$0.00	\$17.19	\$17.19	\$0.00	\$0.00
7	Annual cost for cashing a payment	\$1.75	\$1.75	\$1.75	\$1.75	\$1.75	\$1.75	\$1.75	\$1.75
8	Cost of proceeding a standard customer call	\$12.84	\$12.84	\$12.84	\$12.84	\$0.00	\$12.84	\$0.00	\$12.84
9	Cost of Bad Debts	\$7.77	\$7.77	\$7.77	\$7.77	\$0.00	\$0.00	\$0.00	\$0.00
10	Collection and recovery costs	\$33.31	\$33.31	\$33.31	\$33.31	\$0.00	\$0.00	\$0.00	\$0.00
11	Customer retention costs - Major accounts	\$0.00	\$39.05	\$0.00	\$39.05	\$0.00	\$0.00	\$0.00	\$0.00
12	Customer retention costs - Major industries	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
13	Preventive maintenance - Service line	\$12.88	\$12.88	\$12.88	\$12.88	\$0.00	\$0.00	\$0.00	\$12.88
14	Corrective maintenance - Service line	\$17.99	\$17.99	\$17.99	\$17.99	\$0.00	\$0.00	\$0.00	\$17.99
15	Processing of CRP application	\$0.00	\$32.90	\$0.00	\$0.00	\$0.00	\$32.90	\$0.00	\$0.00
16	Preventive maintenance - Mains	\$0.22/m							
17	Corrective maintenance - Mains	\$0.37/m							
18	Meters inspection and maintenance costs								
19	Type of meters								
20	Turbine	\$0.00	\$31.68	\$0.00	\$31.68	\$0.00	\$31.68	\$0.00	\$31.68
21	Spin test for turbine (less than 12 in)	\$0.00	\$79.20	\$0.00	\$79.20	\$0.00	\$79.20	\$0.00	\$79.20
22	Telemetry	\$0.00	\$118.79	\$0.00	\$118.79	\$0.00	\$118.79	\$0.00	\$118.79
23	Corrective instruments	\$0.00	\$87.11	\$0.00	\$87.11	\$0.00	\$87.11	\$0.00	\$87.11
24	Spin test for turbine (12 in and more)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25	Cost of a cellular line - telemetry	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26	Total	\$181.91	\$570.65	\$101.62	\$457.45	\$90.41	\$452.93	\$10.11	\$370.61

Table 4 Major Industries Marginal Operating Expenses

Line	Description	Gaz Metro As Proposed				Black & Veatch Revised			
		Major Industries				Major Industries			
		Year 1		Year 2 and +		Year 1		Year 2 and +	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1	Mailing of subscription confirmation letter	\$0.83	\$0.83	\$0.00	\$0.00	\$0.83	\$0.83	\$0.00	\$0.00
2	Cost of mailing bill	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36	\$8.36
3	Cost of opening a billing file	\$9.66	\$9.66	\$0.00	\$0.00	\$9.66	\$9.66	\$0.00	\$0.00
4	Cost of reading a meter	\$6.71	\$6.71	\$6.71	\$6.71	\$0.00	\$0.00	\$0.00	\$0.00
5	Input of a new contract	\$36.29	\$36.29	\$0.00	\$0.00	\$36.29	\$36.29	\$0.00	\$0.00
6	Cost of a credit check conducted internally	\$17.19	\$17.19	\$0.00	\$0.00	\$17.19	\$17.19	\$0.00	\$0.00
7	Annual cost for cashing a payment	\$1.59	\$1.59	\$1.59	\$1.59	\$1.59	\$1.59	\$1.59	\$1.59
8	Cost of proceeding a standard customer call	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9	Cost of Bad Debts	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
10	Collection and recovery costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
11	Customer retention costs - Major accounts	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12	Customer retention costs - Major industries	\$1,197.16	\$1,197.16	\$1,197.16	\$1,197.16	\$0.00	\$0.00	\$0.00	\$0.00
13	Preventive maintenance - Service line	\$12.88	\$12.88	\$12.88	\$12.88	\$0.00	\$0.00	\$0.00	\$12.88
14	Corrective maintenance - Service line	\$17.99	\$17.99	\$17.99	\$17.99	\$0.00	\$0.00	\$0.00	\$17.99
15	Processing of CRP application	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	Preventive maintenance - Mains	\$0.22/m							
17	Corrective maintenance - Mains	\$0.37/m							
18	Meters inspection and maintenance costs								
19	Type of meters								
20	Turbine	\$31.68	\$31.68	\$31.68	\$31.68	\$31.68	\$31.68	\$31.68	\$31.68
21	Spin test for turbine (less than 12 in)	\$79.20	\$0.00	\$79.20	\$0.00	\$79.20	\$0.00	\$79.20	\$0.00
22	Telemetry	\$118.79	\$118.79	\$118.79	\$118.79	\$118.79	\$118.79	\$118.79	\$118.79
23	Corrective instruments	\$87.11	\$87.11	\$87.11	\$87.11	\$87.11	\$87.11	\$87.11	\$87.11
24	Spin test for turbine (12 in and more)	\$0.00	\$237.59	\$0.00	\$237.59	\$0.00	\$237.59	\$0.00	\$237.59
25	Cost of a cellular line - telemetry	\$0.00	\$186.12	\$0.00	\$186.12	\$0.00	\$186.12	\$0.00	\$186.12
26	Total	\$1,625.45	\$1,969.96	\$1,561.48	\$1,905.99	\$390.70	\$735.21	\$326.74	\$702.12

CONCLUSION

As a whole, we find the Gaz Metro proposal for estimating the marginal costs of long-term service delivery for the purpose of its profitability analysis to be acceptable and an improvement over the currently approved method. The ability to evaluate each potential new customer based on the service characteristics they require and a more accurate reflection of the costs they will cause on the system is superior to the current method. This approach allows Gaz Metro to better match expected costs with expected revenues, which is one of the core concepts of proper cost allocation.

4 Peer Utility Research and Comparative Analysis

Black & Veatch conducted research to identify comparable utilities in the US for comparison to Gaz Metro based on size and customer density. The primary source of data to identify the peer group was the Pipeline and Hazardous Materials Safety Administration (PHMSA) 2014 database on gas distribution utilities. This data base contains statistics for US distribution pipelines for company information, jurisdictional location, miles of main by size and type, number of services, etc. Our approach to identify an appropriate peer group for Gaz Metro was to first calculate an overall customer density for the utilities by dividing the total miles of main by the total number of services. Our target density is based on a reasonable range around the current Gaz Metro system, as shown below.

CUSTOMER DENSITY	
Length of Mains	10,704 km
	6,636 miles
Number of Customers	194,455
Gas Metro Density (cust/main)	18.2 customers/km
	29.3 customers/mile

PEER GROUP RESEARCH

For our peer group, we targeted utilities with a customer density of between 20 and 40 customers per mile of main. The number of customers (services) in the peer group ranged from approximately 70,000 to 450,000 customers with an average of 157,000 customers. The peer group consists of 19 US utilities and is shown in Table 4 on the following page.

Table 5 Line Extension Research Peer Group

UTILITY	STATE	NUMBER OF SERVICES	MILES OF MAIN	CUSTOMER DENSITY (SERVICES PER MILE)
BLACK HILLS ENERGY	CO	68,145	3,064	22.2
UGI CENTRAL PENN GAS, INC	PA	82,041	3,684	22.3
SOURCEGAS LLC	NE	108,284	4,809	22.5
SOURCEGAS LLC	CO	93,089	3,425	27.2
PEOPLES GAS SYSTEM INC	FL	366,250	12,479	29.3
ATMOS ENERGY CORPORATION - COLORADO/KANSAS	CO	96,416	3,170	30.4
CENTERPOINT ENERGY RESOURCES CORP.	AR	450,546	13,626	33.1
SOURCEGAS ARKANSAS INC.	AR	167,913	4,896	34.3
BLACK HILLS ENERGY	KS	99,570	2,801	35.5
SOUTHERN INDIANA GAS & ELECTRIC CO	IN	108,628	3,043	35.7
FLORIDA CITY GAS	FL	126,307	3,470	36.4
SOURCEGAS LLC	WY	82,700	2,259	36.6
LIBERTY ENERGY (MID-STATES) CORP D/B/A LIBERTY UTILITIES	MO	74,686	2,005	37.2
AVISTA CORP	ID	73,859	1,976	37.4
WISCONSIN PUBLIC SERVICE CORP	WI	298,239	7,728	38.6
NORTHWESTERN ENERGY LLC	MT	183,811	4,680	39.3
ATMOS ENERGY CORPORATION - COLORADO/KANSAS	KS	144,368	3,628	39.8
CENTERPOINT ENERGY RESOURCES CORPORATION	MS	158,507	3,961	40.0
NATIONAL FUEL GAS DISTRIBUTION CORP	PA	193,550	4,831	40.1

COMPARATIVE ANALYSIS

The primary focus of this report is on the operating expense component of marginal costs. Line extension policies include both an expense and an investment component to recover the infrastructure costs of adding new customers to the system. This section presents a comparative analysis of line extension policies of the peer group to provide a view of how other utilities recover costs, both expenses and investment, of new customers.

For each utility in the peer group, Black & Veatch reviewed their current tariff, with a specific focus on line extension policies. Our goal was to identify the basis for how utilities recover costs related

to adding new customers to the system and compare and contrast the various methods. We find that generally, utilities use one of three broad methods for cost recovery:

1. **\$ Allowance method.** Customers are limited to a monetary based construction allowance and must make contributions above a set limit.
2. **Footage Allowance method.** Customers are provide a certain length of main or service line extension and must make contributions above a set linear limit.
3. **Revenue Test method.** Customers are provided an extension of mains and/or services without charge if certain revenue projection targets are met. In some case the revenue is a fixed amount in others it is based on revenue adjusted for the expected cost of the extension.

There is about an equal split of utilities that have separate policies or methodologies for services and mains versus a combined approach. There was almost no mention of policy regarding upstream investment for any of the nineteen utilities in the peer group. We also found no significant discussion of the differentiation between new customer's extensions versus system improvement costs.

Dollar Allowance Method

The first group of policy methods identified is utilities that base the amount a customer must contribute to connect to the system on a fixed dollar allowance. These are generally referred to as a Construction Allowance and they set the maximum amount of costs a utility will incur to connect a new customer to their system. Generally any costs above the Construction Allowance must be paid for by the customer. This is a relatively low risk method for the utility as the company contribution is fixed and known and excess costs are born by the customer. This method is easily tied to rates since the utility will know if the current rates will cover the carrying cost of the level of investment.

Of the 19 utilities in the peer group, six use the Dollar Allowance method, as shown in Table 6. Some utilities, such as SourceGas Distribution LLC in Wyoming and Nebraska allow for a larger construction allowance if the customer agrees to a monthly surcharge. That provision essentially allows a customer to amortize excess costs over the surcharge period.

Footage Allowance Method

The next group of policy methods is based on a linear limit to the amount of main or service connection a utility will make without a contribution from the customer. The most common length of the allowance was 100 feet (30.5 m), with some as much as 150 feet. Customers must pay for the connection for needs beyond the length allowed by the utility. This method tends to put more risk on the utility because the cost per foot to install mains and services can vary greatly depending on the location of the customer. For example, extending mains in a dense, urban environment may be very costly per meter due to significant amounts of existing infrastructure to work around, whereas a rural or suburban environment may have a clear, uninterrupted path to install mains that would prove to be less costly on a per meter basis. Often installations in suburban areas may be made without any street cut in utility right of way. This is typically the lowest cost because multiple mains and service lines can be installed at the same time.

This was the least common method in the peer group, with four of the nineteen utilities using the footage allowance method. These four utilities are shown in Table 7.

Revenue Test Method

The most common method in our peer group links the amount of investment the utility will make with the expected revenue received from the customer. This is similar to the approach used by Gaz Metro. Some of the utilities use a Maximum Allowable Construction Cost (MACC) as the basis for how much investment a utility will make, and this sounds similar to the Dollar Allowance Method, but the MACC is not the same for every customer or every class and is based on an expected multiple of revenue.

Table 8 summarizes some of the various ways utilities derive their revenue tests. This was the most common method and nine of the nineteen utilities in the peer group use this method. This method is the most cost justified approach as it varies by customer depending on expected revenue contribution. The risk to the utility is lower, as you are attempting to recover adequate costs relative to expected revenues, but revenue projections are not guaranteed and there may be variances with actual revenues.

Conclusion

As noted above, the Revenue Test Method is most similar to the approach used by Gaz Metro in that a test of profitability is the benchmark to determine if new customers are to be added and what, if any, contribution should be made by the customer. We note that of the utilities that apply the Revenue Test Method, there is very little focus in the analysis on the marginal operating expenses. The line extension decision is almost entirely focused on recovery of the investment and the carrying costs of the plant additions. As such, Gaz Metro is in effect considering more costs than many of the peer utilities when making line extension decisions.

Table 6 Line Extension Policies with Dollar Allowance Method

COMPANY	SERVICE EXTENSION	MAIN EXTENSION
Atmos Energy – Colorado	Subscriber is responsible for the cost of the Service Line in excess of the Construction Allowance. The Construction Allowances are: 1. Residential Service - \$920.00 2. Small Commercial Service - \$1,540.00 3. Commercial Service - \$1,540.00	Subscriber is responsible for the cost of the Service Line in excess of the Construction Allowance. The Construction Allowances are: 1. Residential Service - \$500.00 2. Small Commercial Service - \$2070.00 3. Commercial Service - \$2,590.00
Black Hills Energy – Colorado	The construction cost for Service Lines shall include the Cost of the estimated cost to install the service line (see Appendix for Construction Allowances)	The construction cost of Main Extension shall include the Cost of estimate of the combined costs of all facilities necessary to the extension and/or reinforcement, including satisfactory rights of way (see Appendix for Construction Allowances)
NorthWestern Energy – Montana	Residential: \$900 construction allowance CII: \$0.355 time the Utility’s estimate of the annual Therm consumption of the Customer A main extension cost exceed the free limit specified above, the Utility will require the applicant for service to pay the difference between the cost of the project and the main extension allowance.	
SourceGas Distribution LLC – Colorado	Company shall make such reasonable, economically viable extensions of the Mains and/or Service Lines consistent with the applicable construction allowance. The Regular Construction Allowance for new Main and/or Service Line extensions offered to new customers within the service territory for Mains and/or Service Lines will be limited to: o Base Rate Area 1: \$790.00 plus \$2.40 per therm in excess of 757 annual therms o Base Rate Area 2: \$830.00 plus \$2.20 per therm in excess of 760 annual therms	
SourceGas Distribution LLC – Wyoming	The Regular Incentive Allowance for main extensions and new service line installations is \$985. Extra Incentives for New Service Lines/Main Extensions: Up to \$2,000 for Customers selecting the \$20 per month Extra Incentive Allowance Charge, Up to \$3,000 for Customers selecting the \$30 per month Extra Incentive Allowance Charge, Up to \$4,000 for Customers selecting the \$40 per month Extra Incentive Allowance Charge, Up to \$5,000 for Customers selecting the \$50 per month Extra Incentive Allowance Charge.	
SourceGas Distribution LLC – Nebraska	The Regular Construction Allowance for new or replacement service lines and/or main extensions shall be up to \$1,210 or firm shall pay any costs (including installation) in excess of \$1,210: Up to \$2,000 for the \$20 per month Extra Construction Allowance Charge, Up to \$3,000 for the \$30 per month Extra Construction Allowance Charge, Up to \$4,000 for the \$40 per month Extra Construction Allowance Charge, or Up to \$5,000 for the \$50 per month Extra Construction Allowance Charge.	

Table 7 Line Extension Policies with Footage Allowance Method

COMPANY	SERVICE EXTENSION	MAIN EXTENSION
Black Hills Energy – Kansas	up to 100 ft. at no cost beyond 100 ft. charged to the customer at the per foot cost for that type and size of service	No charge provided the necessary extension is not greater than 100 feet per prospective customer and anticipated revenue is sufficient to prevent an undue burden on existing ratepayers.
CenterPoint Energy Resources Corp – Mississippi	No charge up to 100 ft. if base load customer	Res: the first 100 feet of Main will be installed at no charge. CIAC for more. Small CII: the first 100 feet of Main will be installed at no charge. Any additional footage will be evaluated for economic feasibility. Large CII: based on economic analysis
Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities – Missouri	New service piping, up to and including a size ¾ inch in diameter, will be installed by the Company free of charge for residential and for commercial Customers whose annual consumption is 500 Mcf or less	Res: Up to 150 ft. free of 2" Plastic CII: For each firm Customer whose annual consumption is estimated by the Company to be over 500 Mcf, the free length, if any, will be determined on an individual feasibility basis
SourceGas Distribution LLC – Arkansas	No charge for Residential or Non-Res	Company will provide Extensions of gas mains of 100 feet or less from its existing mains without cost to the customer, plus Main Extension Surcharge (MES), if applicable (see Appendix)

Table 8 Line Extension Policies with Revenue Test Method

COMPANY	SERVICE EXTENSION	MAIN EXTENSION
Atmos Energy – Kansas	Covered under Mains policy	Residential: free provided that the necessary extension does not require an expenditure by the Company in excess of the average embedded cost per customer for existing Mains Com/Ind: based on individual contracts
Avista Corporation – Idaho	Res: Company will provide if annual revenue therefrom will be not less than 1/3 the extension cost. If between 1/6 and 1/3 of the cost free if applicant agrees to pay for gas service for a period of five years CII: Company will provide if annual revenue therefrom will be not less than one-third the extension cost	Res: Company will provide if annual revenue therefrom will be not less than 1/3 the extension cost. If between 1/6 and 1/3 of the cost free if applicant agrees to pay for gas service for a period of five years CII: Company will provide if annual revenue therefrom will be not less than one-third the extension cost
Centerpoint Energy Arkansas Gas	up to 100 ft. at no cost	no cost if ROI will exceed the Company’s cost of funding capital projects
Florida City Gas – Florida	The maximum capital investment required to be made by the Company for main and service facilities without cost to the Customer shall be defined as the Maximum Allowable Construction Cost (“MACC”). The MACC shall equal six times the annual Margin Revenues estimated to be derived from the facilities.	
National Fuel Gas Distribution Corp. – New York	Based on Projected revenue from new customer relative to company investment. Residential: Justified Company Investment Per Dollar of Additional Annual Revenue is \$4.58 CII: Justified Company Investment Per Dollar of Additional Annual Revenue ranges from \$0.48 to \$4.58 based on term of use	
People Gas System – Florida	Main Extension Program - If the estimated cost of extending necessary Main and Service facilities exceeds the Maximum Allowable Construction Cost (MACC); and there is a reasonable likelihood that an extension of Main or Service facilities will produce sufficient revenues to justify the necessary investment in such facilities, the Company may provide for the recovery of estimated actual extension costs in excess of the MACC via a Main Extension Program (MEP Charge). • MEP Charge = MEP Non-fuel Revenue Requirement / Projected Number of Premises / Number of Months in the Amortization Period	
Southern Indiana Gas and Electric Company – Indiana	Company will extend without charge its facilities including distribution mains, underground service pipes, meters and other equipment necessary to provide the service provided that Company’s revenue for a period of five and one-half (5.5) years is equivalent to	

COMPANY	SERVICE EXTENSION	MAIN EXTENSION
<p>UGI Utilities, Inc – Pennsylvania</p>	<p>or in excess of Company's estimate of the cost of providing such facilities</p> <p>Res: The Company will also install at its expense that length of service-supply pipe (curb to meter) with an estimated installed cost of up to two times or where the requested service will not require a supply-main extension three times, the anticipated base revenue.</p> <p>CII: In extensions costing up to \$10,000 from which the Company anticipates long-term, continuous usage at projected volumes, the Company will install, at its cost, a meter, regulator, and service connection.</p>	<p>Res: Company will provide the necessary supply mains, provided the applicant pays, as an extension deposit, the excess, if any, of the estimated cost for the minimum system of supply-main needed to serve the proposed extension over an amount equal to four times the anticipated base revenue.</p> <p>CII: The Company will provide supply main, provided that the investment by the Company will not exceed: (a) for the estimated cost of service-supply pipe, an amount up to two times the anticipated base rate revenue; and (b) for the combined estimated cost of service-supply pipe and supply-main (minimum system), an amount up to four (4) times the anticipated base rate revenue.</p>
<p>Wisconsin Public Service Corp – Pennsylvania</p>	<p>The Company will extend gas main to provide gas service to customers upon application per rate schedule CURT and payment as calculated below, Except as allowed by Section 2.H. The customer's payment for a gas main extension will be calculated by the following formula:</p> <p>$P = [(F \times R) + SFC] - A + WCC$, where:</p> <p>P = Payment by customer for gas main.</p> <p>F = Trench footage of gas main.</p> <p>R = Applicable per foot rate of the nominal size gas main, in the Company's sole discretion.</p> <p>SFC = Special Facilities Charges associated with gas main, not including Winter Construction Charges.</p> <p>A = Allowance for gas main.</p> <p>WCC = Winter Construction Charge.</p>	

Appendix A – Line Extension Policy Highlights

Atmos Energy – Colorado

- Service line extension
 - The Subscriber is responsible for the cost of the Service Line in excess of the Construction Allowance. The Construction Allowances are:
 1. Residential Service - \$920.00
 2. Small Commercial Service - \$1,540.00
 3. Commercial Service - \$1,540.00
- Mains extensions
 - The Subscriber is responsible for the cost of the Main Extension in excess of the Construction Allowance. The Construction Allowances are:
 1. Residential Service - \$500.00
 2. Small Commercial Service - \$2,070.00
 3. Commercial Service - \$2,590.00

Atmos Energy – Kansas

- Residential Mains Extension
 - The Company shall make free extensions of its Mains ... provided, however, the necessary extension does not require an expenditure by the Company in excess of the average embedded cost per customer for existing Mains as filed in the Schedule of Advance for Construction of Mains and Company Service Lines
 - If, in the judgment of Company, any extension requires such extraordinary construction cost, or the prospective business therefrom is so meager that it is doubtful whether the business from the extension will pay a fair return sufficient to compensate for the extraordinary expenses involved, a cash contribution or a satisfactory guarantee of revenue through adjustment of the minimum bill provisions of the applicable rate may be required
 - Residential: The Main tap charge shall be an amount determined by dividing the total cost of the Main extension by the number of potential customers reasonably expected to take service from the Main extension, less the cost-free allowance per potential Customer as determined in Section A of the Schedule of Customer Advances for Construction of Mains and Company Service Lines
 - CI: Extensions of Company's Main to supply a Commercial Customer or Industrial Customer with Gas Service shall be made in accordance with individual contracts between such Customer and Company based upon the amount, character and permanency of the gas requirements.

Avista Corporation – Idaho

- Residential Extension Rules:
 1. The Company will furnish and install, at its expense, an extension if the annual revenue therefrom will be not less than one-third the extension cost.
 2. The Company will furnish and install, at its expense, an extension if the annual revenue therefrom will be more than one-sixth but less than one-third the extension cost provided the applicant agrees to pay, for gas service for a period of five years, an annual amount equal to not less than one-third the extension cost.
 3. The Company will not be required to construct extensions where the annual revenue will be less than one-sixth the extension cost.
- Commercial and Industrial:

The Company will furnish and install, at its expense, an extension if the annual revenue therefrom will be not less than one-third the extension cost, provided the prospective permanence of the applicant, characteristics of gas load, and other factors are acceptable to the Company. The Company may require an advance construction payment, an advance payment of bills for gas service, and/or the execution of a contract providing for the conditions of service and the payment by the applicant of a prescribed minimum annual amount for said service.

Black Hills Energy – Kansas

- **Main Extensions** - Firm Customers: Company will extend its facilities without charge or advance payment where such extensions are necessary to serve Full Service customers (includes heating), firm prospective customers, or a group of such customers whose premises are located within the area in which the Company is authorized to operate, **provided the necessary extension is not greater than 100 feet per prospective customer**. The extension will be free of charge only if the Company, in accordance with Section (8-e), determines that the anticipated revenue is sufficient to prevent an undue burden on existing ratepayers.
- **Service Extensions** - Firm Customers: Qualified Full Service (includes space heating) Firm customers will be provided, at Company expense, measurement facilities and up to one hundred feet of service line from Company's main to customer's premises. Any service line extension beyond that amount will be charged to the customer at the per foot cost for that type and size of service. Any payments required from customers will be non-refundable.

Black Hills Energy – Colorado

- **Construction Costs of Main and Service Line Extensions:** The construction cost of Main Extension shall include the Company's estimate of the combined costs of all facilities necessary to the main extension and/or reinforcement, including satisfactory rights-of-way. The construction cost for Service Lines shall include the Company's estimated cost to install the service line.

- **Construction Allowance:** The amount of Construction Costs of Main and Service Line Extensions that is refundable to the Applicant upon conditions prescribed in the Construction Payment Refund section.

CONSTRUCTION ALLOWANCE BY CLASS		
Class and Rate Schedule	Service Line Allowance	Main Allowance
Residential (RS)	\$174.00	\$376.00
Small Commercial (SC)	\$174.00	\$512.00
Small Volume (SVF)	\$0.39/Dth	\$3.08/Dth
Small Volume (SVI)	\$0.39/Dth	\$3.08/Dth
Large Volume (LVF)	\$0.03/Dth	\$2.68/Dth
Large Volume (LVI)	\$0.03/Dth	\$2.68/Dth
Large Volume (LVTS)	\$0.03/Dth	\$2.68/Dth
Irrigation (IR)	\$0.12/Dth	\$1.74/Dth
Irrigation (ITS)	\$0.12/Dth	\$1.74/Dth

Notes:

1. Where the allowance is calculated on a Dth basis, an Applicant's projected average usage is used to determine the allowance consistent with its requested peak day capacity.
2. The Main portion of the Construction Allowance will be reduced at the same percentage that the transportation delivery charge for an Applicant under Schedules LVTS and ITS is discounted.

Centerpoint Energy Arkansas Gas

- Under normal construction conditions, the Company will install up to 100 feet of service line (up to one inch in diameter and capable of a delivery pressure of up to 60 psig) at no cost to the customer
- **Mains extensions:** Company shall construct main extensions from its existing facilities to serve new customers where the cost of the Company's capital investment is economically feasible. If it is determined that the Company's return on investment (ROI) on the proposed main extension will equal or exceed the Company's cost of funding capital projects, the extension will be made at no cost to the customer. If it is determined that the Company's ROI will be less than the Company's cost of funding capital projects, the customer shall be required to pay an amount sufficient to ensure that the Company is able to earn an ROI equal to its cost of funding capital projects.
 - Company has the option to provide the necessary capital in the amount equal to the necessary customer contribution to be recovered by a fixed daily surcharge rate applied to each customer account within the boundaries of the project for up to five years* or until the customer contribution is recovered by the Company, whichever comes first.

CenterPoint Energy Resources Corp – Mississippi

- **Main Extensions - Residential** - For a Base Load Customer, the first 100 feet of Main will be installed at no charge. For any footage in excess of 100 feet, a contribution in aid of construction will be collected at a rate equal to Company's current Main Construction Charges on file with the Commission. For a customer with less than Base Load, a Company's contribution in aid of construction will be collected for all Main at a rate equal to Company's current Main Construction Charges on file with the Commission.
- **Main Extensions - Small Commercial and Industrial** - For a Base Load Customer, the first 100 feet of Main will be installed at no charge. Any additional footage will be evaluated for economic feasibility. If the study shows that additional footage is feasible with no advance, Company will install the main at no charge to the customer. If a cash advance is required, the prospective customer will be required to make a cash advance as necessary to make the extension feasible. For a non Base Load Customer, a contribution in aid of construction will be collected for all main at a rate equal to Company's current Main Construction Charges on file with the Commission.
- **Service Line Extensions – Residential/Small Commercial Construction Allowance for Base Load Customer –**
 - Service Line will be installed for a prospective customer within the limits of the public right-of-way at no charge to said customer.
 - The first 100 feet of Service Line on the customer's premises will be installed at no charge, and will require an easement from the premises owner.
 - Service Line installed in excess of 100 feet on customer's premises will require a non-refundable Cash Advance at a rate equal to Company's current per foot Service Line Construction Charges on file with the Commission, and will require an easement from the premises owner.
- **Service Line Extensions – Residential/Small Commercial Construction Allowance for less than Base Load Customer –**
 - Service Line will be installed for a prospective customer within the limits of the public right-of-way at no charge to said customer.
 - Service Line installed on Company's premises will require a nonrefundable cash advance at a rate equal to Company's current Service Line Construction Charges on file with the Commission, and will require an easement from the premises owner.
- **Extensions – Large Commercial and industrial Customers** - Construction of facilities to serve a large commercial or industrial customer will be done where the results of an economic analysis study indicate that the project is feasible.
 - Customer will make a non-refundable cash advance to Company for the cost of Service Line unless special contractual provisions, such as an annual revenue guarantee, facilities charge, etc., exist and so compensate Company for the Service Line expenditure.

- Company will consider refundable cash advances, non-refundable cash advances, revenue guarantees, facilities charges or other means of establishing the economic feasibility of construction of mains and/or city gate stations to extend service to Customer.

Florida City Gas – Florida

- **Free Extensions of Mains and Services:** The maximum capital investment required to be made by the Company for main and service facilities without cost to the Customer shall be defined as the Maximum Allowable Construction Cost (“MACC”). The MACC shall equal six times the annual Margin Revenues estimated to be derived from the facilities. However, customers initially served under the Residential Standby Generator Service (“RSG”) and Commercial Standby Generator Service (“CSG”) Rate Schedules shall not be eligible for extension allowances, even if additional load is added at a later date, but such Customers may be eligible to receive refunds of amounts paid to the Company for extensions under B.(2) below.
- **Extensions of Mains and Services Above Free Limit:** When the cost of the extension required to provide service is greater than the free limit specified above, the Company may require a non-interest bearing advance in Aid to Construction (“ATC”) equal to the cost in excess of such free limit provided that:
 - At the end of the first year following construction, the Company shall refund to the person paying the ATC or their assigns an amount equal to the excess, if any, of the MACC as recalculated using actual gas revenues, less the actual cost of gas, over the estimated MACC used to determine the amount of the ATC.
 - For each additional Customer taking service at any point on the extension within a period of five (5) years from date of construction, the Company shall refund to the person paying the ATC or their assigns an amount by which the MACC for the new Customer exceeds the cost of connecting the Customer, provided that an additional main extension shall have not been necessary to serve the additional Customer.
 - The aggregate refund to any Customer made through the provisions of (a) and (b) above shall at no time exceed the original ATC of such Customer. The extension shall at all times be the property of the Company and any un-refunded portion of the ATC at the end of five (5) years shall be credited to the plant account of the Company.

Atmos Energy Corporation – Missouri

- **Residential Customers – Free length = 150 feet** -This free length allowance is based upon extension of a 2-inch polyethylene main and the use of natural gas for primary space heating by the Customer. If Customer’s load requires a larger and/or steel main, Customer will be required to deposit the difference between the estimated cost of the main required to serve Customer and the estimated cost of the free extension calculated by this formula.

- **Residential Customers – Free length - For each firm Customer whose annual consumption is estimated by the**
 - Company to be 500 Mcf or less, the free length shall be computed in accordance with Paragraph 2 of this section.
 - For each firm Customer whose annual consumption is estimated by the Company to be over 500 Mcf, the free length, if any, will be determined on an individual feasibility basis, considering the required investment, character and economic life of the load, and other appropriate information, including, but not limited to, overhead costs or charges.
- **Extensions Beyond the Free Limit – Residential and Commercial** - Upon completion of a “Main Extension Contract” the Company will extend its mains to a Customer beyond the free length, provided the Customer deposits an amount of money with the Company sufficient to cover the construction expense for service to the Customer in excess of the free length of 2-inch polyethylene main. All costs of the Company referred to shall include applicable material, labor (contractors or Company personnel), and overhead costs. A copy of the Company’s estimate of the cost of construction, including direct and overhead costs, shall be furnished to the Customer or Developer upon request prior to construction.
- **Services:** New service piping, up to and including a size ¾ inch in diameter, will be installed by the Company free of charge for residential and for commercial Customers whose annual consumption is 500 Mcf or less, from its distribution main to the private property line of the applicant or other private property line through which the service shall be constructed, and for an additional length, from such property lines to the point of delivery determined in accordance with these Rules and Regulations, as is determined by the allowance per Customer for each major use of gas appliances and equipment specified below:
 - Gas Space Heating Equipment - 60 feet
 - Gas Water Heater or Gas Dryer - 40 feet

National Fuel Gas Distribution Corp. – New York

- **The Company investment for upgrade/extension of facilities for a firm gas customer shall be limited to an amount determined as follows:**
Maximum Company Investment = Additional Annual Revenues x Justified Company Investment per Dollar of Additional Annual Revenue
- **Residential** - Whenever the owner or occupant of any property eligible for service as a residential customer makes a written application for service to the Company, and the Company has authority to render service to said applicant, the Company shall extend its facilities so as to serve said property or new residential development, provided that the applicant shall first have executed an agreement to pay to the company the rate charged under the appropriate service classification and to contribute to the cost of extending facilities, an amount equal to the difference between the total cost of construction of facilities less the Company's Maximum Investment
- **Commercial or Public Authority; Industrial** - Whenever the owner or occupant of any property eligible for service as a Commercial or Public Authority customer, or as an Industrial customer, makes a written application for service to the Company, and the Company has authority to render service to said applicant, the Company shall extend its system so as to serve said property, provided said applicant shall first have executed an agreement to pay to the Company the rates charged under the appropriate service classification and to contribute to the cost of

extending facilities, an amount equal to the difference between the total cost of construction of facilities less the Company's Maximum Investment

- **Developer/Builder – Residential** - Whenever the Developer/Builder of a residential property eligible for service makes a written application for service to the Company, and the Company has authority to render service to the property to be developed, the Company shall extend its system to serve said property, provided that, if the cost to extend the facilities exceeds the Maximum Company Investment, as calculated below, the Developer/Builder shall have entered into an agreement to contribute to the cost of extending facilities.

NorthWestern Energy – Montana

- **Residential Service customer** - \$900.00
- **All other Core Customers (\$/Therm)** - \$0.355 time the Utility's estimate of the annual Therm consumption of the Customer
- **Non-Core Transportation Customer** – Determined on an individual basis
- **Extension Beyond Free Limit** – A main extension cost exceed the free limit specified above, the Utility will require the applicant for service to pay the difference between the cost of the project and the main extension allowance.

Peoples Gas System – Florida

- **Main Extension Program** - In cases where the estimated actual cost of extending necessary Main and Service facilities exceeds the Maximum Allowable Construction Cost (MACC); and where the Company determines, in its reasonable discretion and in accord with Section VI of the Company's Rules and Regulations, that there is a reasonable likelihood that an extension of Main or Service facilities will produce sufficient revenues to justify the necessary investment in such facilities; and where the Company determines that the creditworthiness of the party or parties requesting the extension is satisfactory to assure recovery of the additional investment above the MACC, the Company may provide for the recovery of estimated actual extension costs in excess of the MACC via a Main Extension Program (MEP Charge). In such cases, in lieu of a Construction Deposit Agreement, the party or parties requesting an extension subject to the MEP Charge may enter into a guaranty agreement with the Company by which said party or parties shall agree to pay to the Company any remaining unamortized balance of the amount subject to the MEP Charge at the end of the Amortization Period.
- **MEP Charge** = $\text{MEP Non-fuel Revenue Requirement} / \text{Projected Number of Premises} / \text{Number of Months in the Amortization Period}$

SourceGas Distribution LLC – Colorado

- Within the Company’s service territory, the Company shall make such reasonable, economically viable extensions of the Mains and/or Service Lines from time to time consistent with the construction allowance as warranted by expansion and development of demand, subject to the Customer’s compliance with any prior contractual relationships involving the Company. The Company shall apply its Extension Policy in a non-discriminatory manner to all applicants under similar circumstances and conditions.
- The Main and Service Line Extension Policy shall not apply to Customers behind a master meter system.
- The Customer will be responsible for all Main and/or Service Line extension costs in excess of the Regular and Additional Regular Construction Allowances. In addition, the Customer and Company may sign a three-year agreement covering Advances for Construction for costs paid to the Company for Main and/or Service Line extensions. The additional costs paid to the Company may be refundable for the three-year period in the amount stipulated in the agreement for each subsequent Customer connected to the same extension, provided however that the refunds will not exceed the total amount of the contribution in advance to construction.
- The Customer specifically agrees that the Company may make additional extensions from the original extension, and the Company shall have the right and privilege to do so without any refund obligation whatsoever to the Customer.
- In all cases where it is deemed desirable or necessary by the Company to construct a Main extension of greater capacity than that which is required for Customer in order to conform to future plans of the Company, the excess construction cost of the Mains shall be borne by the Company,
- **REGULAR CONSTRUCTION ALLOWANCE.** The Regular Construction Allowance for new Main and/or Service Line extensions offered to new Customers within the service territory for Mains and/or Service Lines where the home or structure has primary gas heat and gas water heating or has gas appliance(s) with comparable typical expected annual usage on the Company’s system will be limited to:
 - Base Rate Area 1: \$790.00
 - Base Rate Area 2: \$830.00

SourceGas Distribution LLC – Wyoming

- Within the Company’s service area, the Company shall make such reasonable, economically-viable extensions of the mains of its system from time-to-time as warranted by expansion and development of demand.
- The Regular Incentive Allowance for main extensions and new service line installations within the service area shall be up to the amounts specified below for the corresponding divisions where the home or structure has primary gas heat and gas water heating or has gas appliance(s) with a comparable annual load.
 - Divisions Amount

- All Divisions \$985
- Extra Incentives for New Service Lines/Main Extensions
 - The Extra Incentive Allowance for new service lines and/or main extensions offered to Customers within the Company's service area shall be available in an amount up to a maximum of the cost of connection exceeding the Regular Incentive Allowance, but not to exceed the Regular Incentive Allowance by:
 - Up to \$2,000 for Customers selecting the \$20 per month Extra Incentive Allowance Charge,
 - Up to \$3,000 for Customers selecting the \$30 per month Extra Incentive Allowance Charge,
 - Up to \$4,000 for Customers selecting the \$40 per month Extra Incentive Allowance Charge, or
 - Up to \$5,000 for Customers selecting the \$50 per month Extra Incentive Allowance Charge.

SourceGas Distribution LLC – Arkansas

- **Extension of Mains** - The Company will provide Extensions of gas mains of 100 feet or less from its existing mains without cost to the customer, provided that the customer has made application for gas service, satisfied any applicable deposit requirements, extended gas piping to the point necessary to receive gas service, and has a structure piped for gas service. Exception to the above may be made where local franchises or other agreements are contrary to the above. These requirements are to assure the Company that gas service will be used by a consumer upon completion of the Extension.
- If a proposed Extension falls to meet the economic feasibility test described in above, a Main Extension Surcharge ("MES") shall be available. Once a customer elects to receive the MES, a monthly charge will be applied to the premises at which the customer will receive gas service in order that the customer at that premises repay the cost of the Extension, The amount of the MES available and the corresponding monthly payment are as follows:
 - Up to \$2,068 for Customers selecting a \$20 per month MES,
 - Up to \$3,102 for Customers selecting a \$30 per month MES,
 - Up to \$4,136 for Customers selecting a \$40 per month MES,
 - Up to \$5,169 for Customers selecting a \$50 per month MES.

SourceGas Distribution LLC – Nebraska

- **Regular Construction Allowance for New Service Lines and/or Main Extensions** - The Regular Construction Allowance for new or replacement service lines and/or main extensions offered to any person or firm within the service area shall be up to \$1,210 where the home or structure has primary gas heat and gas water heating or has gas appliance(s) with a comparable annual load. Such person or firm shall pay any costs (including installation) in excess of \$1,210.

- Up to \$2,000 for Customers selecting the \$20 per month Extra Construction Allowance Charge,
- Up to \$3,000 for Customers selecting the \$30 per month Extra Construction Allowance Charge,
- Up to \$4,000 for Customers selecting the \$40 per month Extra Construction Allowance Charge, or
- Up to \$5,000 for Customers selecting the \$50 per month Extra Construction Allowance Charge.

Southern Indiana Gas and Electric Company – Indiana

Company will extend without charge its facilities including distribution mains, underground service pipes, meters and other equipment necessary to provide the service provided:

- 1) that Company's estimate of its Non- Gas Cost revenue from such Gas Services provided to the prospective Customer(s) for a period of five and one-half (5.5) years is equivalent to or in excess of Company's estimate of the cost of providing such facilities
- 2) the prospective patronage or demand is of such permanency as to warrant the capital expenditure involved.

UGI Utilities, Inc – Pennsylvania

Residential - Meter, Regulator and Service-Supply Pipe. For service to single dwelling units, the Company will install at its cost the meter, regulator, and service connection (main to curb). The Company will also install at its expense that length of service-supply pipe (curb to meter) with an estimated installed cost of up to two times or where the requested service will not require a supply-main extension three times, the anticipated base revenue, provided that the excess, if any, is paid by the applicant.

- **Supply Mains** - For service to single dwelling units, the Company will provide the necessary supply mains, provided the applicant pays, as an extension deposit, the excess, if any, of the estimated cost for the minimum system of supply-main needed to serve the proposed extension over an amount equal to four times the anticipated base revenue.
- **Developments** - As used in these rules, a development is five or more lots designated by the owner or developer for the construction of individually metered dwelling units. Normal conditions of construction in a development include trenching provided by the developer. The Company will install at its cost the meter, regulator, service connection and up to 75 feet of service-supply pipe per dwelling unit. The Company will provide the necessary supply-mains, provided the applicant pays the excess, if any, of the estimated cost for the minimum system of supply-main needed to serve the proposed extension over an amount equal to four times the anticipated base revenue from all units. An extension deposit may be required up to the amount of the Company's total estimated investment in the extension. This provision does not apply to separately occupied, vertically arranged dwelling units (multi-unit housing).

- **Commercial and Industrial Gas Service** - In extensions costing up to \$10,000 from which the Company in its sole judgment anticipates long-term, continuous usage at projected volumes, the Company will install, at its cost, a meter, regulator, and service connection. The Company will provide service-supply pipe and supply main, provided that the investment by the Company will not exceed: (a) for the estimated cost of service-supply pipe, an amount up to two (2) times the anticipated base rate revenue; and (b) for the combined estimated cost of service-supply pipe and supply-main (minimum system), an amount up to four (4) times the anticipated base rate revenue. The applicant shall pay any costs in excess of the above limit on the Company's investment.
 - For all other extensions, applicant shall pay for the amount of the estimated cost, if any, in excess of the investment determined by the Company in its sole judgment to be warranted by the anticipated revenue to be derived from the extension.
 - The Company may condition its agreement to extend its facilities upon satisfactory long-term and short-term usage commitments and any other terms and conditions of service as are mutually agreeable to the Company and the applicant. An extension deposit may be required up to the amount of the Company's total investment in the extension.

Wisconsin Public Service Corp

- The Company will extend gas main to provide gas service to customers upon application per rate schedule CURT and payment as calculated below, Except as allowed by Section 2.H. The customer's payment for a gas main extension will be calculated by the following formula:
 - P = [(F x R) + SFC] - A + WCC, where:
 - P = Payment by customer for gas main.
 - F = Trench footage of gas main.
 - R = Applicable per foot rate of the nominal size gas main, in the Company's sole discretion.
 - SFC = Special Facilities Charges associated with gas main, not including Winter Construction Charges.
 - A = Allowance for gas main.
 - WCC = Winter Construction Charge.