Gaz Métro Cost of Service Allocation Process R-3867-2013 phase 1

Régie de l'Énergie

Demande relative au dossier générique portant sur l'allocation des coûts et la structure tarifaire de Gaz Métro

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16 April, 2015

- **Purpose of cost allocation**
- **Avoid overuse of allocation on access measures**
  - Customer number
  - Connection number (Gaz Métro mains allocation)
- **Allocation of mains (largest distribution cost component)**
  - Realistic planning-based model of main extension
  - Mains utilization
  - Sharing economies of scale
  - Paying for the basic costs of covering the service territory
- **Supply mains**
- **Other expenses**

Overview of Presentation

- **Brief overview of topics covered in my prefiled evidence, reflecting what the Board has heard since my filing**
- **Purpose of cost allocation**
- **Avoid overuse of allocation on access measures**
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- **Allocation of mains (largest distribution cost component)**
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- **Other expenses**

Purpose of Cost Allocation

Divide embedded cost equitably (justly, reasonably,…) among customer groups

- **Based on causality**
  - Factors that caused the costs should guide the cost allocation
  - Causality is usually linked to current usage
  - Sometimes a historical perspective required for fairness
    Identify drivers of past investments and commitments
- **Focus on average cost, specifically:**
  - Embedded average costs, not marginal (Knecht prefers marginal for some purposes)
  - Geographic cost variations *usually* excluded from allocation
    Charging more for classes concentrated in high-cost areas (Knecht position) generally bad idea
  - Vintage differences *usually* excluded from allocation
  - Allocation of aggregate cost important, not of individual pieces of equipment
    Can use pieces to get to total, but not critical

Cost Allocation is Not Rate Design

- The drivers of costs within a class may be different from the broad data categories used for allocation between classes
- For allocation, only the average cost in the class matters
  For rate design, differences within the class may be important
- Cost allocation has little effect on customer behaviour
  - Only fair division of the embedded costs matters
  - Allocation may constrain rate design
- Rate design can affect usage
  Marginal costs and policy matter

Minimum System Uses Customer Count as a Dumping Ground

- "the inclusion of the costs of a minimum-sized distribution system among the customer-related costs seems…clearly indefensible.
- [Cost analysts are] under impelling pressure to fudge their cost apportionments by using the category of customer costs as a dumping ground…. "

- Bonbright's Principles of Public Utility Rates (pp. 491–492)

Minimum System Uses Customer Count as a Dumping Ground

- **Minimum system is very old approach**
  - Zero-intercept does not reflect reality
    - Zero-volume system consists of propane tanks
  - Minimum size (Gaz Métro proposal) does not match Gaz Métro reality
- **Customer number drives few costs**
  - Meters, meter-reading, billing, customer service, etc. (mostly weighted by cost per customer)
- **Connection number drives connection costs**

What Drives Mains Extensions?

- **Minimum system theory**
  - The utility will extend the mains at its cost for any customer, no matter how small.
    - "the total mains system must be extended to interconnect all customers [so the] number of customers [causes the] length of pipe..." Knecht, p. 5
  - Larger size customers only increase the size of the mains installed, but not the length.

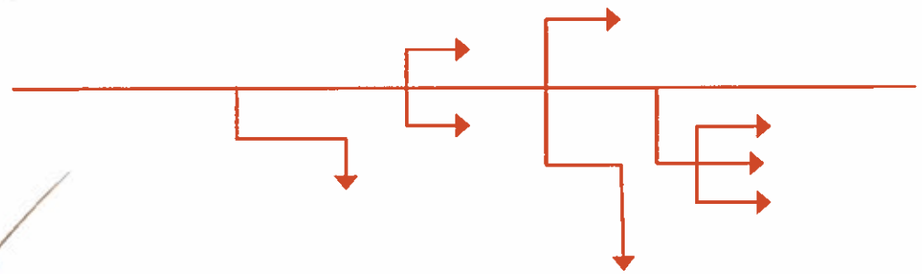
What Drives Mains Extensions?

- **Gaz Métro planning reality**

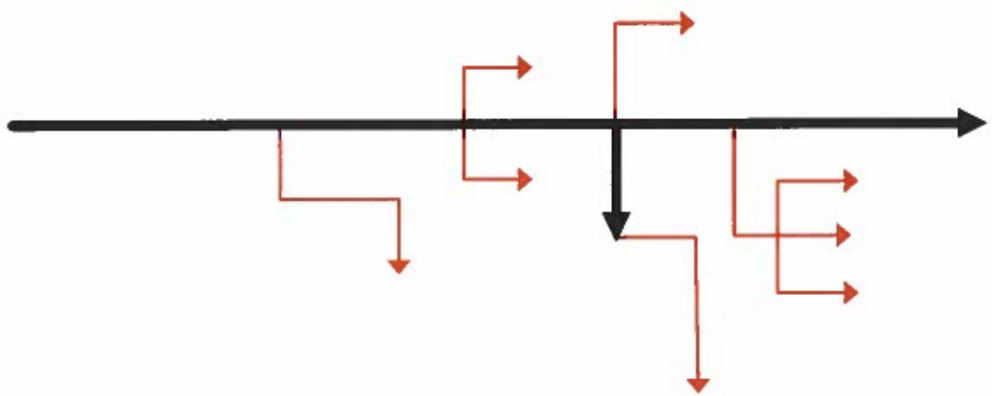
- Large demands drive major main extension projects.
- Small customers may be added to the backbone mains.
  - More load may require more *capacity*;
  - More customers do not require *longer backbone* mains.
  - Small-customer loads may justify 2" lines off the backbone mains
- The potential small-customer load may be included in sizing backbone main
- Groups of small customers may justify 2" lines off the backbone mains.
- Many small customers can justify extension of a main.
  Not common for Gaz Métro
  Demand level—not customer number—is critical in justifying extension

Minimum System Theory

- Plan small lines for small customers



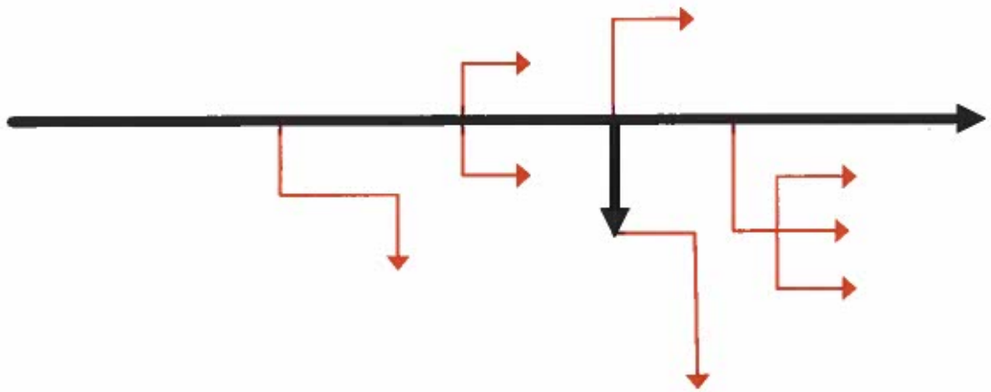
- Upgrade parts for larger loads



Gaz Métro Planning Model

- Plan major extensions for major loads

- Add small lines for small loads



Who Needs Which Mains?

- **Large customers**
  - Every large main (>2")
  - The bulk of the capacity in those mains
- **Small customers**
  - All the small mains
  - A small share of the capacity in the large mains

Sharing the Economies

- **Minimum system theory**
  - Small customers get no economies of scale
  - The access component is based on the fixed costs of trenching and installing 2" pipe along every main of every size
  - The economies of scale are all attributed to the capacity cost component, benefiting only large customers
  - Small customers pay full stand-alone costs for mains
    Large customer classes pay less than they would without small customers
  - Violates average-cost and causation principles

Sharing the Economies

- Small customers allocated cost of actual small pipe (no economies) plus an average- or incremental-cost share of costs of large pipes
- Large customers still get most of the economies of scale from the large pipes

Who Pays for the Fixed Costs of Serving the Area?

- **Minimum system theory**
  - Trenching, installation, cost of hypothetical small pipes along *all* mains allocated on connection count
    - Even where 2" pipe is not installed
    - Charged primarily to small customers
  - Demand pays only for the lower-cost upgrading of the mains beyond 2

Who Pays for the Fixed Costs of Serving the Area?

- **Planning model**

- **Where 2" pipe is installed: Trenching, other costs allocated on connection count**
  - Charged primarily to small customers
  - Same as Gaz Métro approach
- **Where larger pipes are installed, trenching, cost of actual pipe allocated on demand**
  - Classes that could be adequatelyserved by 2" pipe (<36,500 m^3) are allocated a share of the large-pipe capacity cost equivalent to capacity of 2" pipe
  - Lower than the cost of 2" pipe

Equitable Allocation of Mains Cost

	% Cost Allocated on Access	
	Distribution Mains	**Distribution & Supply Mains**
GM Proposal	71%	65%
Realistic proposal		
Average Cost	42%	31%
Incremental Cost	35%	25%

Cost Allocation Process

- **Most jurisdictions allow allocation review in each rate application**
  - Regulators may not review allocation in complex revenue cases, defer to 2nd phase, next case or special hearing
  - Some precedents may be difficult to reverse, but parties are usually free to argue
  - Costs, usage and other factors may change
  - Data availability and analyses improve over time
  - A party may propose a change in method a few times before it is accepted

Cost Allocation Process

- **Gaz Métro data availability is limited**
  - Questions raised about reliability of some provided cost information
  - Limited data on components and causes of overhead costs
- **Cost allocation process should continue past this hearing**

Other Issues Regarding Mains

- **Supply mains length is not determined by customer number**
  - Driven by regional demand, specific large-customer demands, and large-customer pressure requirements
- **Low-pressure lines can be alternatives, not additions, to high-pressure lines**
  - If a 400 kPA (low-pressure distribution) main is less expensive than a 2,900 kPA (supply) main of the same length, customers who can tolerate the lower-pressure line are cheaper to serve
  - Classes that can be served without expensive high-pressure main extensions should be allocated less cost than similar classes that require high pressure.
  - Mr. Knecht gets this backward with his "decomposition" principle

Other Expenses

- **Gaz Métro proposes to allocate many costs on customer number**
  - Engineering and planning, customer billing and meter reading costs
  - Half of marketing, advertising and promotion of natural gas, accounting, internal audits and finance, pricing and regulation, legal services, corporate control, public and government affairs, and demand forecasting.
  - Many of these costs are clearly driven by load, revenues, investment levels and other factors
- **Again, customer count is the dumping ground**

Recommendations in This Proceeding

- **Adopt the average-cost classification of distribution mains**
  - Shown in my Table 1
- **Allocate supply mains on demand**
  - Or allocate supply and distribution mains as in my Table 2
- **Revise the treatment of overhead and miscellaneous costs**
  - As discussed in Section IV of my testimony
- **Establish a process going forward**
  - Analysis of the distribution benefits of energy-efficiency efforts
  - Analysis of the costs of billing and meter reading by type of meter read
  - Resolution (or reduction) of outstanding data uncertainties
  - Opportunities for continuing methodological improvements