

REVIEW OF METHODOLOGIES FOR EVALUATING THE PROFITABILITY OF SYSTEM EXTENSION PROJECTS

ÉNERGIR, L.P. R-3867-2013 (Phase 3B) Summary of Expert Evidence

BUILDING A WORLD OF DIFFERENCE



BLACK & VEATCH

9 April 2018

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Original : 2018.04.09



Gaz Métro - 7, Document 9
(19 pages en liasse)

Purpose and Project Scope ⁽¹⁾

- Black & Veatch Canada Company (Black & Veatch) was retained by Énergir in conjunction with this regulatory proceeding to:
 - Identify the underlying principles and best practices used by gas distribution utilities in conjunction with system expansion projects to connect new customers to their gas distribution systems.
 - Evaluate whether the underlying methodology used by Énergir in its project evaluation process was reflective of those principles and practices.
- Black & Veatch's review and evaluation was based upon a combination of:
 - Our experience in structuring system extension policies and related profitability analyses for other gas and electric distribution utilities in North America.
 - The results of our Peer Group research on the practices of other gas distribution utilities in Canada and the United States.

⁽¹⁾ Black & Veatch's expert report has been identified as Exhibit B-0278



Our Project Approach

- Black & Veatch specifically reviewed each of the inputs or parameters used by Énergir in its IRR calculation model for new projects to determine if the model's underlying methodology reflected the best practices we identified in the gas distribution utility industry.
- The economic test used by the utility to evaluate each project's profitability.
- The specific parameters included in the utility's economic modeling of project profitability.
- The parameters we examined were grouped according to the following categories:
 - General parameters of the utility's profitability analysis
 - Valuation period used
 - Determination of new customers
 - Revenues included in the utility's profitability analysis
 - Capital-related costs included in the utility's profitability analysis

Our Project Approach (Continued)

- Black & Veatch also identified through its research the criteria used by the gas distribution utilities in the Peer Group to evaluate the economic viability of projects to connect new customers to their gas distribution systems.
- The acceptability criteria that we examined included:
 - By individual project or for a project portfolio.
 - IRR greater than the prospective Weighted Average Cost of Capital (WACC).
 - The availability of other funding programs.
 - Different criteria used for unique projects that require specific regulatory approval (For example, *Énergir's projects greater than \$1.5 million*).



Challenges to Establishing a Gas Utility's System Expansion Policy and Practices

Black & Veatch has identified a number of key challenges that should be addressed when establishing a gas utility's system extension policies and practices, including:

- Striking a proper balance between the gas utility's rates and charges for new and existing customers;
- Attribution of common and lumpy investment costs to customers in evaluating the profitability of system extension projects; and
- Appropriately taking into account the uncertainty of estimates, including the determination of the number, type, and gas loads of new customers who are expected to be served at a later point in time from the facilities of a particular development project.

Attributes of a Reasonable System Expansion Policy

- Ensure that the utility's new customers are treated fairly and consistently;
- Manage the growth of the gas utility's distribution business by providing economic and ratemaking guidelines that ensure no undue rate impact for its existing gas customers;
- Provide business principles and guidelines for capital investments made by the gas utility in support of its new business developmental activities; and
- Provide the gas utility's management team with the flexibility (e.g., through its governance process) to actively pursue and finalize new customer opportunities in a manner that recognizes management's specific knowledge of the marketplace and the long-term benefits of increased gas throughput for its existing gas customers.

The Appropriate Context for Examining the Issue of System Expansion Profitability

- Most importantly, the process being addressed in this proceeding should enable Énergir to fairly evaluate its ongoing business decisions to expand its gas distribution system through projects less than \$1.5 million in a manner that benefits its existing gas customers.
- At the same time, though, we should avoid making this process overly complex and detailed since there are other venues in which Énergir regularly provides to the Régie detailed information to assess its development plans and their related costs, and its decisions to pursue larger system expansion projects.
 - Annual rate/tariff filing.
 - Separate applications to approve system expansion projects greater than \$1.5 million.
 - Separate applications to approve system reinforcement projects greater than \$1.5 million.

Key Findings and Recommendations

Relevant Economic Principles and Cost Concepts

- To conduct a profitability analysis, utilities must identify costs that would vary with a change in the output (the “relevant costs”). Within the context of development projects, the output is the number of new customers being connected to the utility’s gas system by the development project.
- Including non-relevant costs in the profitability analysis could lead the utility to create an imbalance between existing and new customers, and to lose the opportunity to achieve economies of scale and scope from the addition of the new customers.
- Current costs should be used to determine the directly attributable, capital-related costs to connect a new customer (e.g., main extension, service line, meter and regulator) to the gas utility’s distribution system.



Key Findings and Recommendations (Continued)

Relevant Economic Principles and Cost Concepts

- As long as the incremental revenues from a new customer can recover, at a minimum, the directly attributable costs of the proposed new connection, any revenues above that minimum level will provide a positive contribution to the recovery of the gas utility's fixed costs that are common to the specific activities and functions of the gas utility's development efforts to add new customers and to continue to serve existing customers.

Key Findings and Recommendations (Continued)

Relevant Findings from the Peer Group Survey

- The past and new methods employed by Énergir, are well within the bounds set by the common characteristics of the Peer Group utilities.
- Further, there are a number of parameters in Énergir's current IRR calculation model that are in close alignment with the Peer Group results.
- There is a clear distinction between the system extension policies of gas utilities in Canada compared to those of gas utilities in the U.S. in terms of the degree of complexity, specificity and managerial flexibility associated with their economic tests, policies and practices.



Key Findings and Recommendations (Continued)

Relevant Findings from the Peer Group Survey

- The Canadian gas utilities in the Peer Group utilize system extension practices which reflect processes that are typically more comprehensive, well-defined and prescriptive than the processes used by gas utilities in the U.S.
- A 40-year valuation period is the most common valuation period utilized by the Peer Group gas utilities (*as is depicted on the next page of this presentation*).

Key Findings and Recommendations (Continued)

Gas Utility	Valuation Period	Explanatory Comments
ATCO Gas	<i>Not Applicable</i>	The utility's system expansion profitability method (footage allowance) does not require the use of a valuation period.
Enbridge Gas Distribution and Union Gas Limited	40/20	20 years for large volume customers.
Enbridge Gas New Brunswick	<i>Not Applicable</i>	The utility's system expansion profitability method (first year's revenue-to-cost ratio) does not require the use of a valuation period.
FortisBC	40	DCF period is 40 years (increased from 20 years previously). Revised upward by the BCUC to better match the economic life of the assets while still being relatively conservative.
Cascade Natural Gas	<i>Not Applicable</i>	The utility's system expansion profitability method (the Perpetual Net Present Value Method) does not require the use of a valuation period.
Chesapeake Utilities	40	None
Columbia Gas (NiSource)	40	None
Interstate Power & Light	<i>Not Applicable</i>	The utility's system expansion profitability method (three-year CIAC test) does not require the use of a valuation period.
Unitil Corporation	20/10	10 years for residential and commercial customers.

Key Findings and Recommendations (Continued)

Relevant Findings from the Peer Group Survey

- Treatment of capital-related costs for upstream capacity reinforcements
- Four (4) gas utilities do not include such costs in their economic tests for system expansions.
 - Most often stated reason for exclusion – already included in base rates to reflect the system benefits provided to all customers.
- Three (3) gas utilities only include such costs in their economic tests for system expansions on a case-by-case basis based on their incremental capacity needs.
- Two (2) gas utilities include such costs on a portfolio basis only if they are required based on a current annual forecast of upstream capacity needs (*Ontario*).
 - 10-year planning horizon used to determine if incremental capacity is needed.
- One (1) gas utility includes incremental system improvement costs at a per GJ rate to all main extension projects (*British Columbia*).



Key Findings and Recommendations (Continued)

- **Profitability Analysis Method**
 - Black & Veatch recommends that Énergir continue using its current valuation period of forty (40) years.
 - It reflects the weighted average useful life of the incremental capital assets placed into service during a system extension project.
 - It is the most common valuation period utilized by the Peer Group utilities.
 - Black & Veatch finds that the approach utilized by FortisBC, Union Gas Limited and Enbridge Gas Distribution is a reasonable and well-balanced approach, and should be adopted by Énergir. This method utilizes an individual project P.I. of 0.8 and a project portfolio P.I. of 1.1 as the appropriate profitability targets.
 - Black & Veatch recommends that Énergir's indirect development costs that are common to all new customers, and a portion of its system reinforcement costs, should be included only in the profitability analysis for its portfolio of projects.



Key Findings and Recommendations (Continued)

• Capital-Related Investment Costs

Category	Capital Components	Treatment in Énergir's Profitability Analysis
Direct Incremental Development Costs	<p>Rate of return on investment, income taxes, depreciation expenses and property taxes for the following customer-related facilities:</p> <ul style="list-style-type: none"> • Distribution mains extension • Service (connection) Line • Meter • Regulator 	<ul style="list-style-type: none"> • These types of capital-related costs should be directly assigned to <i>each</i> new customer on an <i>individual project basis</i>. • This is a reasonable and appropriate approach since these customer-related facilities are specifically identified and incrementally incurred to meet the specific needs of each new customer.
Indirect General Capitalized Development Costs	<ul style="list-style-type: none"> • Capitalized General Overhead Expenses • Capitalized General Contractors Fees 	<ul style="list-style-type: none"> • Fixed costs for a certain range of projects that are undertaken by year so they do not change directly based on the number of new customers connected in that year. • It is reasonable and appropriate to assign these costs to new customers on a <i>project portfolio basis</i> because they are indirect common costs that are incurred by Énergir to support the entirety of its development activities for all new customers.
System Incremental Reinforcement Costs	<p>The capital-related costs incurred by Énergir to increase the capacity and operating flexibility of its gas distribution system caused by existing and new customers.</p>	<ul style="list-style-type: none"> • These common capital-related investment costs should be assigned to those customers who created the need for the investment. • Such costs should not be attributed to any one particular project, but should be assigned to new customers on a <i>project portfolio basis</i>.

Key Findings and Recommendations (Continued)

Parameters for Use in Énergir's IRR Calculation Model

- **Revenue Considerations**
 - Énergir has proposed a policy where only new customers that are contractually engaged upon commencement of the project can be considered in the project profitability analysis.
 - In light of the consideration to adopt a P.I. of 0.8 for individual projects (if further growth is anticipated) and a P.I. of 1.1 for the portfolio of developed projects, Black & Veatch believes the movement to only include engaged customers as of the project commencement date is appropriate, and is a more stringent treatment of revenues than what was observed in the Peer Group utilities.
 - The change from estimating future customer growth to only utilizing engaged customers reduces the revenue projected for each project, but revenue from any future growth of new customers will be considered before accepting a project with a P.I. between 0.8 and 1.0.



Other Important Issues for Consideration

- In establishing an appropriate methodology for Énergir to analyze the profitability of its system expansion projects, we should also recognize the following important considerations:
 - While new customers cause Énergir to incur additional costs, that is offset by the fact that many costs of the utility are fixed in nature and do not increase as customers are added.
 - When more customers and sales volumes are added to the gas distribution system, those fixed costs are spread out among more customers which benefits all ratepayers.
 - The proposed inclusion of system incremental reinforcement costs on a project portfolio basis should be made using a realistic assessment of costs
 - Should be established on the same basis as the development plans and costs accepted by the Régie in Énergir's annual rate/tariff filing or in the separate applications for its larger projects.
 - These costs best reflect the current state and plans of Énergir's gas system to continue to satisfy its customers' capacity needs.

Other Important Issues for Consideration (Continued)

- System expansion profitability analyses rely on estimates and forecasts which are inherently uncertain.
- While it is tempting to strive to develop analyses that include an accurate depiction of every element, it is impractical and ineffective to do so.
- This uncertainty is best addressed by setting the P.I. slightly lower than 1.0 for individual projects and slightly higher than 1.0 for the project portfolio, which is the method adopted in other Canadian jurisdictions such as British Columbia and Ontario.



Key Points to Remember...

- It is important to ensure that the right costs be included in Énergir's system expansion portfolio analysis, and that they be included at the right level (i.e., at either the project or portfolio level).
- The Profitability Index (P.I.) established by Énergir at 0.8 (for the individual project) and at 1.1 (for the overall portfolio) reflects a balanced treatment of the various key parameters included in its system expansion portfolio analysis.
 - Use of a 40-year valuation period
 - Inclusion of revenues contractually agreed to with new customers
 - Inclusion of direct costs on an individual project basis
 - Inclusion of indirect overhead costs and system reinforcement costs on a project portfolio basis

