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October 26, 2007

British Columbia Utilities Commission  
6<sup>th</sup> Floor, 900 Howe Street  
Vancouver, B.C. V6Z 2N3

Attention: Ms. Erica M. Hamilton, Commission Secretary

Dear Ms. Hamilton:

**Re: Terasen Gas Inc. ("TGI") and Terasen Gas (Vancouver Island) Inc. ("TGVI")  
Application for System Extension & Customer Connection Changes Review  
(the "Application") Project No. 3698472  
Final Argument Submission**

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In accordance with the British Columbia Utilities Commission Order No. G-90-07 setting out the Regulatory Timetable for the Application, TGI and TGVI respectfully submit the attached Final Argument Submission.

If there are any questions regarding the attached, please contact Mr. Tom Loski, Director, Regulatory Affairs at (604) 592-7464.

Yours very truly,

**TERASEN GAS INC. and  
TERASEN GAS (VANCOUVER ISLAND) INC.**

*Original signed by: Tom Loski*

**For:** Scott A. Thomson

cc (e-mail only): Registered Parties

Attachment

**BRITISH COLUMBIA UTILITIES COMMISSION**

**IN THE MATTER OF the *Utilities Commission Act*,  
R.S.B.C. 1996, Chapter 473 (the “Act”)**

**and**

**An Application by Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc. for a  
Review of its System Extension and Connection Policies**

**SUBMISSION OF**

**TERASEN GAS INC.**

**AND**

**TERASEN GAS (VANCOUVER ISLAND) INC.**

**October 26, 2007**

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**SUBMISSION OF  
TERASEN GAS INC. and  
TERASEN GAS (VANCOUVER ISLAND) INC.**

**A. OVERVIEW OF APPLICATION**

1. On July 31, 2007 Terasen Gas Inc. (“TGI”) and Terasen Gas (Vancouver Island) Inc. (“TGVI”) (collectively the “Companies”) applied to the British Columbia Utilities Commission (“BCUC” or the “Commission”) for changes to the System Extension and Connection policies of each company.
2. With respect to the main extension (“MX”) tests, the Companies seek approval to make the following amendments to their MX tests and policies:
  - When determining the economic viability of main extensions, each Company requests Commission approval to manage the overall Profitability Index (“PI”) of its new MX projects on an annual aggregate basis. Each of the Companies seeks approval
    - (a) to use an aggregate PI of 1.10 as the target which all main extensions completed within a one year period must in aggregate achieve; and
    - (b) to use a PI of 0.80 as the threshold for passing individual main extensions; and
  - As the economics of the capital costs, including the service line costs, are evaluated in the MX test, for those customers who are subject to a MX test, the Companies seek the following approvals:
    - (a) Remove the requirement for a minimum customer contribution by eliminating the Service Line Installation Fee (“SLIF”); and
    - (b) Discontinue the application of the Service Line Cost Allowance (“SLCA”) in the MX test.
3. With respect to the connection fees and charges the Companies seek approval to:
  - Remove the requirement for a minimum contribution by eliminating the SLIF of \$215; and
  - Apply the SCLA only to service lines for in-fill customer attachments (i.e for those customers not subject to an MX test); and
  - Increase the SLCA to \$1535, or \$1750 if the elimination of the SLIF is not approved, from the current amount of \$1,100; and
  - Increase the SLCA for duplexes to \$3070, or \$3285 if the SLIF is not eliminated; and

- Increase the SLCA to recognize the benefits of energy efficiency.

4. The Companies seek approval to implement energy usage and efficiency allowances in the main extension test and the SLCA to encourage gas fired space and water heating, high efficient gas fired space and water heating, and high efficient space and water heating in Leadership in Energy and Environmental Design (“LEED”) buildings.

5. The rationale for and justification of each of the items for which approval is sought is discussed in the balance of these submissions.

6. The Companies submit that the changes to the System Extension and Connection policies sought in the application will help send the appropriate market signals to developers and customers, when considering energy alternatives. These changes will also help to reduce barriers to customers wishing to connect to the natural gas system. Importantly, these changes will also simplify the current tests and processes and will make them easier for customers to understand. Finally, the Companies submit that the proposed changes will help British Columbia meet targets set out in the Energy Plan.

## **B. APPLICATION DETAILS AND JUSTIFICATION**

### **I. Main Extension Test**

7. TGI’s current MX Test uses a discounted cash flow analysis that has been in place in its present form since the January 1997. The Commission approved TGI’s DCF-based MX methodology and the proposed parameters by Letter No. L-46-96 dated November 5, 1996<sup>1</sup> and acknowledged that TGI’s approach was consistent with the Commission’s September 1996 System Extension Guidelines. TGI has continued to employ the same DCF-based methodology since that time with year-to-year updating of the input factors and parameters as appropriate. The input parameters are identified in Table 5.1 of the Application (Exhibit B-1, Page 21). The key metric of the MX Test is the profitability index or PI. The PI is the ratio of the present value of forecast incremental net cash inflows from the main extension divided by the present value of the forecast cash outflows. For an MX project to proceed without requiring a contribution in aid of construction, the project must have a PI that is equal to or greater than a threshold level, which is currently set at 1.0.

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<sup>1</sup> Note: Exhibit B-1, Page 18 incorrectly references BCUC Order G-104-96 as the Order approving the main extension test. BCUC Order G-104-96 approved changes to the SLCA and SLIF.

8. TGI adopted TGI's MX methodology effective January 1, 2006. TGI's adoption of the customer connection policies and MX Test of TGI was a provision in the Negotiated Settlement Agreement for TGI's 2006 and 2007 Revenue Requirements approved by BCUC Order No. G-126-05.

9. As described in Section 5 of Exhibit B-1, the MX Test is a discounted cash flow model that compares the forecast incremental revenues and costs over a twenty-year period associated with customers attaching to the new main in the first five years after the main extension is installed. The revenue and cost items that are the input parameters in the MX Test are listed in Table 5.1 (Exhibit B-1, Page 21).

10. TGI and TGI propose to continue using the same DCF-based MX methodology subject to a small number of modifications and changes that are addressed in other portions of this submission.

11. Analyses of main extensions of the Companies indicate that main extension projects produce results on average that are well in excess of the current PI ratio threshold of 1.0. The effect of this is that current customers receive a benefit from the addition of new customers but new customers contribute more than the costs to attach them to the system. The results of the large sample presented in Exhibit B-1, Appendix 3, Schedule 5, indicate an aggregate PI of 2.30 for 112 TGI MX projects and 1.83 for 55 TGI MX projects. Additional analysis of historical MX projects for TGI was provided in the response to BCUC IR No. 1, Question 8.1 in Exhibit B-3. The analysis in this response compared forecast and actual MX results for a sample of 26 TGI MX projects from 2004 or later. The average PI of these projects was 1.51 on a forecast basis and 1.41 on an actual basis. The 55 TGI MX analyses reviewed in Exhibit B-1, Appendix 3, Schedule 5, when adjusted for apparent under-forecasting of mains and service line costs, resulted in an aggregate PI of 1.34, which is well in excess of 1.0 (Exhibit B-9, BCUC IR No. 2, Question 39.2). These results demonstrate that overall the discounted revenues from the additional customers on new mains far exceeds the discounted costs associated with those new customers. As such current customers receive a benefit from the attachment of new customers; however new customers are required to contribute more than their costs to attach to the system.

12. The Companies submit that the material filed in respect of this application demonstrates that the changes sought in the MX test are warranted. The concept underlying the MX Test is that new main extensions should be economic, that is, the existing customers

should not be exposed to an undue cost burden as a result of the expansion of the distribution system to attach new customers. The Companies submit that the evidence demonstrates that the existing policies are leading to new customers being required to contribute more than their costs to attach to the system; which results in existing customers receiving a substantial benefit from these new customers. The Companies also submit that the stringency of the existing policies imposes inappropriate barriers for new customers seeking to connect to the gas system. The Companies submit that their MX Tests should not be designed in a manner that results in the new customers added each year contributing more to the system than their costs. But the current design of the MX Tests of the Companies leads to this result. The Companies submit that their proposed changes to the PI will address this shortcoming of the current Tests. A potential unintended consequence of high up front costs to connect to the system is that new customers may choose to not attach to the system. If this occurs then current customers will never receive the benefit from the attachment of the economic customers.

13. The Companies make two requests in the Application regarding the profitability index and its use in the MX Test going forward. First, each Company requests Commission approval to manage the overall PI of its new MX projects on an annual aggregate basis. Specifically the Companies propose to target an aggregated PI of 1.1 for MX projects in any given year. The targeted aggregate PI of 1.1 is more conservative than requiring a PI of 1.0 and will therefore be able to accommodate unanticipated variances in either costs or consumption that may occur. The Companies propose to evaluate the aggregated PI of each utility on an annual basis using a random sample of main extension projects from that year. Secondly, the Companies seek approval to reduce the threshold PI for individual main extension projects to proceed without a customer contribution from the current required level of 1.0 to 0.8. Using a threshold PI of 0.8 for individual main extensions is expected to result in an overall aggregate PI of 1.1 or greater. The Companies also propose to adjust the threshold PI for individual main extensions from time to time based on the variations in the aggregated PI result above or below the target level of 1.1.

14. The Companies submit that these two requests with regard to the future application of the profitability index in the MX Test are both reasonable and should be approved. With the proposed changes to the MX Test and evaluation process, existing customers will continue to realize benefits. The addition of new customers who on aggregate have a PI of 1.1 or greater ensures that existing customers will continue to realize benefits resulting from the addition of new customers. Further, with the proposed aggregate PI of 1.1, new customers will be

contributing to the system an amount marginally greater than the costs associated with attaching, but not so much that they may be discouraged from attaching. The Company submits that this is reasonable.

15. As indicated in paragraphs 2 and 3 above, the Companies are requesting in the Application to eliminate the applicability of the Service Line Installation Fee (if the SLIF is not eliminated generally) and Service Line Cost Allowance to those customers who are subject to the main extension test. The rationale for the request to eliminate applicability of the SLCA for new MX projects is discussed in the Application (Exhibit B-1) at pages 22 to 24. To set the context for this request it is instructive to consider the current treatment of the SLCA in relation to the MX Test. The MX Test considers the forecast capital costs for the mains, service lines and meters associated with a main extension. The service lines are included in the MX evaluation at their forecast direct cost up to the level of the SLCA. For example, a service line estimated to cost \$900 is included in the MX Test at \$900. On the other hand, a service line estimated to cost \$2,000 is only included in the MX analysis at the SLCA of \$1,100. The MX analysis recognizes that the customer contributes the extra \$900 over the current SLCA so this is not a cost incurred by the Company in extending service to that customer. The customer contribution for service line costs in excess of the SLCA is required regardless of the relative profitability of the main extension.

16. To illustrate what is meant by the SLCA not being applicable in the case of customer attachments associated with new main extensions it is helpful to continue with the example from the previous paragraph. In the case of the service line estimated to cost \$2,000, it is proposed that the full amount of \$2,000 will be included in the main extension evaluation along with the mains and metering costs. The customer contribution for extending the main and providing service will be the result of the estimated mains and metering costs combined with high service line costs and the forecast revenues to be generated from that MX project. The customer on that new main extension will not make a separate contribution for service line costs in excess of the SLCA. If the overall combination of costs and revenues of the main extension is such that the project does not meet the PI threshold the customer will make a contribution to bring the project up to the PI threshold required by the MX Test. The inclusion of the full service line cost in the analysis ensures that the effect of those costs will be appropriately captured in the PI ratio and customer contributions if required. Under this proposed approach, positive contributors to the profitability of the MX project such as low mains costs or high expected revenues can partially or fully offset high service line costs, thereby resulting in the MX project exceeding the PI threshold and eliminating the requirement



that the customer specifically contribute to the service line costs. The effect of this change is that the customer may be required to pay less than they would have under the current process and as such be more likely to attach to the system. Adding this economic customer to the system will also benefit existing customers. Conversely, if the potential customer decides not to attach to the system due to high attachment costs, where that customer would be economic, then existing customers will not receive the benefit they should or could have from the addition of the customer.

17. Figure 5.1<sup>2</sup> of the Exhibit B-1 shows an example of an MX project with a high PI under the existing and proposed treatments for the SLCA (and SLIF). Under the existing policies the customer is obliged to make both SLCA and SLIF contributions in spite of the project having a PI of 2.39. Under the proposed approach the customer on a new main extension will not make any contribution for the service line (and will not pay the SLIF). The PI for the Figure 5.1 example decreases to slightly 2.26 but the project is still very economic. The new customer (or builder) avoids, in the example, the cost barrier of the SLCA and SLIF contributions totalling \$678. Existing customers benefit by having the profitable MX project added to the system.

18. As noted in paragraph 3 of these submissions and discussed below, the Companies request the elimination of the SLIF from their tariffs. If that request is approved there are no further issues with respect to treatment of the SLIF in the MX Test. If the request to eliminate the SLIF is not approved then the Companies make a similar request regarding the treatment of the SLIF for service lines in new MX projects as that made for the SLCA above. To be specific, if the request to eliminate the SLIF is not approved, the Companies request that the SLIF not be applicable in the case of service lines associated with new main extension projects. The logic and justification for this contingent request are the same as those discussed above for no longer considering the SLCA in new MX projects; that being that the costs incurred to attach the customer to the system including mains, meters and service lines, are considered as part of the MX test. If the MX test is above the PI threshold no contribution is required. If the MX test is below the PI threshold, a contribution will be required. Therefore it is counterintuitive to charge a customer the SLIF as part of the main extension as it sends the inappropriate signal to economic customers wishing to attach to the system. Further, those customers that do not meet the threshold will be required to pay a contribution regardless of whether there is a SLIF or not. Therefore there is no risk to current customers

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<sup>2</sup> Exhibit B-1, Page 24

that new customers on new main extensions are not paying for the costs associated with attaching to the system.

## **II. Service Line Installation Fee**

19. The SLIF is an upfront connection fee charged to customers who require either only a service line or a main extension and a service line. The \$215 SLIF is treated as a contribution in aid of construction, thereby reducing the value of the plant in service required to serve the customer.

20. The Companies submit that the SLIF is a barrier to customer connections, the importance of which is magnified in the current competitive market place. Developers continue to be the “decision makers for energy choice and their decisions are naturally driven to maximize profit to the developer rather than minimize the longer term operating costs and maximize the benefits to the customer”<sup>3</sup>. For the main extensions represented in Schedule 5 of Appendix 3 of the Application developers paid 93% of the connection charges<sup>4</sup>. The SLIF increases the cost to attach to the gas distribution system and therefore discourages developers from choosing natural gas as an energy source<sup>5</sup>, as the SLIF represents a cost that must be paid no matter what the economic justification of the project.

21. In its October 3, 1996 Application TGI applied for the SLCA as a replacement for the previous provisions in its tariff for excess length charges for service lines that exceeded 20 metres. TGI did not apply for, or support, the introduction of the SLIF in that regulatory process, as noted at page 2 of the Commission Decision accompanying BCUC Order No. G-104-96. Even at that time, when natural gas enjoyed a much larger price advantage over electricity than it does today, TGI considered that a large upfront connection fee might create a barrier to customers wishing to connect to the natural gas system. Nevertheless, the Commission ordered that an upfront connection fee totalling \$300 (inclusive of the \$85 new customer application fee) be implemented as the Commission “concluded that it would be possible to combine a modest connection fee with the Company’s SLCA proposal so that new customers more fully contribute to the cost of service lines”<sup>6</sup>.

22. The current tariffs of TGI and TGVI require payment of the SLIF whether or not attaching the customer is economic. As indicated in the quotation from the Commission’s

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<sup>3</sup> Exhibit B-1, Page 9

<sup>4</sup> Exhibit B-3, Page 62

<sup>5</sup> Exhibit B-3, Page 61

<sup>6</sup> BCUC Order No. G-104-96, Decision, Page 2

1996 Decision referenced above, the original intention of the SLIF appears to have been for it to relate to the cost of service lines, but the \$215 SLIF has no relationship to either the cost of an individual service line or to the aggregate cost of service lines for all customers added in a year.

23. As discussed in Section I above, for new customers on main extensions the service line costs are taken into account in the MX Test. Paragraph 17 refers to the example of a main extension with a PI of 2.39 which would only decrease to 2.26 with elimination of the SLIF and adoption of the Companies' proposal respecting the SLCA. The response to BCUC IR No.1, Questions 2.3 and 2.4<sup>7</sup>, shows that under what the Companies are proposing, if an MX test does not have a PI that meets the threshold the customer would be required to pay a contribution in aid of construction that would be the same in total as that when the SLIF was in place.

24. For new customers who are not on main extensions (infill attachments) the current tariff provisions require payment of an \$85 application fee, payment of the \$215 SLIF, and being subject to the service line cost allowance. There are no main extension costs for these infill customers; the only costs relating to attaching them are the administrative costs associated with the processing of the new account information (covered by the \$85 application fee) and the capital costs associated with the service line and the meter. As discussed further in Section III below, the SLCA is intended to determine what costs for a service line can be supported by the revenues expected from a new customer. All costs associated with connecting new customers are factored into the calculation of the SLCA. This is true for infill customers as well. The fact is that for infill customers there are no connection-related costs that are not taken into account before consideration of the SLIF, and therefore there are no costs that this charge is designed to cover. For new customers on main extensions all connection and extension-related costs are taken into account in the application fee and the MX test, and therefore there are no costs that the SLIF to cover. The Companies submit the SLIF is not a reasonable or just charge; it only acts as a barrier to customer connections

25. As noted in paragraph 21, in the Decision respecting Order No. G-104-96 the Commission concluded that a connection fee be implemented so that customers "more fully contribute to the cost of the service line". However, as new customers are already fully contributing to the cost of the service line through the determination of the SLCA (and the contribution of costs above the SLCA), or though an MX Test, the SLIF becomes at worst a

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<sup>7</sup> Exhibit B-3, Page 8

cost barrier, and at least an over contribution by a new customer. The unintended effect of the SLIF is either that economic customers are charged a fee and as such are discouraged from attaching to the system or that new economic customers are over contributing. If the SLIF results in a customer not attaching, existing customers will not benefit from the attachment of an economic customer. The SLIF should be eliminated.

26. Lastly, eliminating the SLIF results in only a very minor change in rate base and revenue requirements, and therefore in the rates of customers. For 2006 the increase in TGI revenue requirements would have been only \$91,293 increasing to \$1,343,377 by 2011. The increase in TGI rates for 2008 would be \$0.001/GJ<sup>8</sup>, however this does not factor in the effect of new customer additions on revenues; it can be expected that the addition of new customers would result in the increase in rates being less than this amount.

27. The Companies submit that it is appropriate to eliminate the SLIF as there is no justification to charge new customers a fee that does not relate to a cost of connecting to the system.

### **III. Service Line Cost Allowance (“SLCA”)**

28. As noted in paragraph 3 above and in Section 7 of the Application<sup>9</sup>, the Companies are seeking Commission approval to increase the Service Line Cost Allowance to reflect a level appropriate in the context of current costs and rates. The Companies’ request to increase the SLCA is contingent upon the Commission’s determination with respect to another modification sought in this Application, that being the elimination of the \$215 Service Line Installation Fee. If elimination of the SLIF is approved the Companies are seeking an increase in the SLCA from \$1,100 to \$1,535. If SLIF elimination is not approved the Companies are seeking to have the SLCA increased to \$1,535 plus the amount of the SLIF. For example if the SLIF remained at \$215 the proposed SLCA would be \$1,750. The Companies are also requesting that the SLCA for Duplexes be increased. This is discussed in more detail later in this section of the Submission.

29. The Companies are making two additional requests with respect to the SLCA (Exhibit B-1, page 30). The first is that the SLCA should no longer be applicable to service lines for new customer attachments that are associated with new main extension projects: the SLCA would only therefore be applicable to infill development where a main extension is not

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<sup>8</sup> Exhibit B-5, Page 5

<sup>9</sup> Exhibit B-1, Page 30

required. This request has been discussed previously in Section I of these submissions. The second is that the SLCA be further increased to recognize the benefits of energy efficiency. This request is discussed further in Section IV of these submissions.

30. The SLCA was approved by Order No. G-104-96 and was implemented in TGI's tariff effective January 1, 1997. TGVI adopted the SLCA effective January 1, 2006 pursuant to Order G-126-05. The SLCA has been \$1,100 for TGI from inception to the present time and for TGVI since it was adopted in 2006. The key data and results from the 1996 SLCA analysis are summarized in Table 4.1 and Schedule 1 of Appendix 3 of the Application<sup>10</sup>. The methodology employed to set the level of the SLCA involved two main steps. In the first step an MX test was run for a single customer using a then-current average mains cost per customer and average annual consumption. The purpose of this step was to determine what average service line cost (called the Target Service Line Cost in Table 4.1) could be supported by those parameters to yield an MX Test PI of 1.0. The SLCA (called the Maximum Allowance in Table 4.1) was determined in the second step, in which a large sample of 1996 service line installations was evaluated. The SLCA of \$1,100 was then determined as the upper limit placed on the 1996 service line costs that reduced the overall sample average cost to the Target Service Line Cost from the first step.

31. The initial SLCA of \$1,100 was determined in TGI's SLCA Application without any consideration of the \$215 SLIF. TGI's SLCA Application was, in effect, that based on 1996 information it was appropriate for the Company to invest up to \$1,100 in a service line. The Commission's 1996 decision to implement the SLIF limited the Company's investment in a service line to \$885 (\$1,100 - \$215).

32. In the preparation of this current Application the SLCA analysis was updated to incorporate current cost and revenue parameters. The updated SLCA analysis was summarized in Table 4.2 for TGI and Table 4.3 for TGVI (Exhibit B-1, Pages 14 and 15). Additional information was filed in support of the updated SLCA calculations in Exhibit B-9 in the responses to BCUC IR No. 2, Questions 35.1 to 35.3. It should be noted that the calculations supporting the request in the Application to increase the SLCA to \$1,535 are based on conservative assumptions. As shown in Table 4.2 for TGI, the \$1,535 result is derived from an assumed load of 80 GJ per year, which is well below the normalized 2006 average residential consumption of 96.9 GJ per year. Additionally, Table 4.3, shows that for TGVI, the \$1,535 result is derived from an annual assumed load of 61GJ which is

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<sup>10</sup> Exhibit B-1, Page 12

approximately the TGV average annual individual residential consumption. Much has changed since the SLCA was set at \$1,100 in 1996. Costs have increased in that period but revenues have also increased as a result of approved rate increases from revenue requirements applications. The SLCA analysis presented in this Application has been updated with current costs and revenues using the methodology accepted by the BCUC in 1996. The Companies submit that increasing the SLCA to \$1,535 is supported by the evidence in this proceeding. Increasing the SLCA is reasonable and appropriate after remaining unchanged for more than ten years.

33. As indicated in the response to BCUC IR No. 1, Question 21.1 in Exhibit B-3, the Companies seek to have the SLCA for duplexes increased in step with the increases in the SLCA sought in the Application employing the same methodology as was approved by BCUC Order No. G-19-99 in establishing a separate SLCA for duplexes. Since a duplex involves adding two accounts on a single service line the SLCA for duplexes permits twice the net service line investment as for a single family dwelling. Thus the Companies request an SLCA for duplexes of \$3,070 (i.e., 2 x \$1,535).

34. The Companies submit that the likelihood of attaching uneconomic customers under the proposed changes to the MX Test and connection policies is very small. Nearly all new customer attachments are associated with new main extensions. The MX Test with the proposed changes will continue to provide a thorough incremental evaluation of the costs and benefits of all new customer attachments. For customers on new main extensions all factors that might contribute to the project being below the threshold PI, whether high estimated mains and service lines costs or low forecast usage, are considered in the MX Test.

35. It is only for infill customers (i.e., customers connecting to existing mains for which an economic test is not conducted) that there is the possibility of uneconomic customers being attached. For TGI, the frequency of infill customers is very low, accounting for only about 3% of new customer attachments. For TGV the percentage of infill customers has been higher but has been declining in recent years to approximately 18% of new customer attachments in 2006. TGV expects this trend to continue as the utility matures (see the response to BCUC IR No. 1, Question 13.2<sup>11</sup>). To be uneconomic an infill customer must also be a low volume gas user. For TGI the percentage of customers using less than 20 GJ per year was about 3.5% in 2006. For TGV in 2006 the percentage of customers using less than 20 GJ was in

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<sup>11</sup> Exhibit B-3, Pages 50 and 51

the range of 11% to 12% (BCUC IR No. 1, Question 15.1<sup>12</sup>). If all these potentially low volume/infill customers were uneconomic, they would only represent 0.11% (ie. 3% of 3.5%) of new customer attachments at TGI and 2.1% (i.e. 12% of 18%) of all new attachments at TGVI.

36. Other factors that contribute to the low likelihood of attaching uneconomic customers is that low consumption per customer tends to occur more frequently in multi-family developments where the capital costs per customer also tend to be lower<sup>13</sup>, and that for infill service lines to single family dwellings customers are generally unlikely to go to the considerable expense involved in fitting the dwelling for gas service for a very small load. Lastly the SLCA takes into consideration all customers' average volume and costs, as such there will be many infill customers who attach to the system whose volumes are high, or costs to connect are low, or both. The connection of these customers is taken into consideration when calculating the SLCA.

37. The Companies submit that the increase to the SLCA for infill customers is warranted and should be approved. Further, the Companies submit that the SLCA should no longer be applicable to service lines for new customer attachments that are associated with new main extension projects; and the SLCA would only therefore be applicable only to infill development where a main extension is not required. Lastly the Companies submit that the SLCA be increased to take into consideration the effect of energy efficiency and conservation as discussed in Section IV below.

#### **IV. Energy Efficiency and Conservation**

38. The Companies believe that this application is consistent with the objectives of the BC Energy Plan released in the spring of 2007 by the Ministry of Energy, Mines and Petroleum Resources. The Energy Plan states that "it is important for British Columbians to understand the appropriate uses of different forms of energy and utilize the right fuel, for the right activity at the right time". The changes to the system extension and connection policies sought in this application help send the appropriate signal to customers regarding the end uses of both gas and electricity.

39. The Companies are proposing three credits related to energy efficiency and conservation which can be additive. The Company proposes that customers receive a credit within the calculations of both the SLCA (for infill customers) and the MX test (for all other

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<sup>12</sup> Exhibit B-3, Pages 55 and 56

<sup>13</sup> Exhibit B-3, the response to BCUC IR1, Question 13.2 at Page 50

attachments) to encourage the use of gas for space and water heating. The customer would receive an additional credit if the customer uses high efficient gas space and water heating. The customer would receive a further additional credit if the customer used higher efficient gas space and water heating and whose building meets a minimum of Leadership in Energy and Environmental Design (“LEED”) General Certification for the building. These credits will help send the appropriate price signals to developers and customers regarding fuel choice for heating applications as well as encourage the use of more efficient heating applications and building design.

40. Electricity is required by all customers while the use of natural gas for space and water heating is a choice. The Companies’ view is that current policies serve to inappropriately discourage customers from choosing natural gas for new heating applications in order to reduce overall connection costs. The Company believes that it is important to send potential customers the appropriate price signals to encourage energy efficiency and encourage customers to use gas for heating applications. The Companies submit that the use of gas in heating applications is utilizing the right fuel, for the right activity, and therefore helps to achieve objectives of the Energy Plan.

41. The Energy Plan, Policy Action #4 states “Explore with B.C. utilities new rate structures that encourage energy efficiency and conservation” and further states that utilities are encouraged to “explore, develop and propose to the Commission additional innovative rate designs that encourage efficiency [and include] tariffs focused on promoting energy efficient new construction”. The proposed energy efficiency credits applied to new customers who choose gas for heating/water heating, high efficient heating/water heating and LEED building design with high efficient heating/water heating help to achieve the objectives set out in Policy Action #4.

42. As noted by BC Hydro in BC Hydro IR No.1, Question 1, “One key objective of the 2007 BC Energy Plan is the reduction of overall greenhouse gases...”. The Companies believe that the use of natural gas for heating applications will result in lower greenhouse gas emissions than the use of electricity<sup>14</sup>. The Companies also noted that electricity is not the right fuel for heating as the use of electricity is less efficient than the use of gas when the marginal source of electricity is gas fired generation<sup>15</sup>. If gas is used for all new space and water heating, BC Hydro will be more likely to achieve the Province’s goal of electrical self

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<sup>14</sup> Exhibit B-4, Page 5

<sup>15</sup> Exhibit B-4, Page 5



sufficiency by 2016, and do so with zero net greenhouse gas emissions. It will also allow BC Hydro to be in a better position to use its portfolio to displace inefficient gas fired generation in the region through electricity trade. This would result in lower greenhouse gas emissions in the western North America region than if incremental electricity was used directly for heating applications. Providing incentives for customers to use both gas for heating applications therefore helps in achieving the goals of greenhouse gas reductions.

43. The proposed credit for high efficient space and water heating appliances encourages efficiency without requiring customers to pay a potentially higher contribution in aid of construction. Without this credit, there would be little encouragement for customers to attach using heating appliances that consume less energy than their standard efficiency counterparts. If the lower volume of high efficiency appliances was used in the economic test, the customer would be less likely to pass the test. Existing customers are encouraged to reduce their consumption by adopting higher efficiency appliances through DSM. Providing an incentive for new customers to also reduce demand prior to connecting to the system ensures consistent treatment of both existing and new customers. The proposed credit is therefore not only consistent with the Energy Plan objectives but is crucial in sending the appropriate price signal to customers.

44. As noted in the response to BCUC IR No. 2, Question 53.2, the Companies are being proactive in their approach to meet the objectives of the Energy Plan and do not expect that other British Columbia utilities have yet implemented similar policies. The Companies believe that the proposed changes to the system extension policies and implementation of energy efficiency credits help address Energy Plan Policy Actions. 2, 3, 4, 10 and 24, in addition to increasing the likelihood that the objectives of Policy Actions 18, 19, 20 and 21 will be achieved. The Companies submit the proposed credits should be approved even though other utilities may not have addressed the Energy Plan in their respective applications.

## **V. Other Utilities**

45. The Companies have provided evidence in this proceeding on the main extension and customer connection policies for other utilities in Canada and for neighbouring jurisdictions in the Pacific Northwest. Included is discussion on the system extension / customer connection policies of other gas utilities in Alberta, British Columbia, Ontario, Quebec, Washington and Oregon, and electric utilities in British Columbia (Exhibit B-1, Pages 6-8 & Appendix 1, Exhibit B-3, BCUC IR No. 1, Questions 1.1 and 18.2).

46. With respect to service line connections the predominant feature among large gas utilities is to provide a free service connection for service lines that are less than a particular threshold length. In some cases commitments are required to install certain gas appliances or to provide a certain level of annual gas load; however customer contributions toward the cost of service line, other than excess footage charges, are not common.

47. With the only exception being Pacific Northern Gas, by comparison a small utility company with service territories in northern BC, the service line connection policies of TGVI and TGI are the most restrictive among the gas utilities reviewed.

48. With regard to main extensions (“MX(s)”), the policies of TGVI and TGI are also the most stringent among the gas utilities reviewed. For example, the Ontario gas utilities employ a 40 year evaluation period in their discounted cash flow MX test and individual MX projects must only exceed a profitability index (PI) of 0.8 in order to install the main without requiring a customer contribution. By comparison, the current MX test employed by TGI and TGVI considers only a 20 year evaluation period and individual projects must have a profitability index of 1.0 or more to proceed without requiring a customer contribution. If TGI and TGVI were to use a 40 year evaluation period, under the current methodology, the minimum individual threshold would be above 1.0 not 0.8 as noted above for the Ontario gas utility.

49. Even if all requested modifications to TGVI's and TGI's MX Test are approved it will continue to be among the most stringent economic test of those reviewed in this proceeding.

## **VI. Miscellaneous**

50. In the Application the Companies sought to only include distribution system improvements (“SI”) in the MX Test, thereby excluding transmission SIs from the test. Upon further consideration, the Companies believe that it is preferable to include transmission SIs in the test as well. However, the Companies submit that using the methodology employed for the determination of the distribution SIs for the determination of the transmission SIs is not the best approach. Due to the infrequency of future transmission SIs and the likelihood that proposed transmission SIs change (both with respect to the date of implementation and the cost and scope of the system improvement), using the same methodology as that used for distribution SIs may send the wrong price signal to customers. Additionally, there may also be situations where the transmission system in a certain area is under utilized due to declining volumes from energy efficiency measures or changes in industrial consumption. In such circumstance customer rates could increase on a per GJ basis in order to recover the costs

associated with the transmission system. Therefore it would be in the best interest of existing customers for new customers to be encouraged to attach to the system. Adding customers to the system in this area would result in lower per GJ rates than otherwise would be the case. In this case the transmission SI charge should be negative rather than positive. The Companies have not determined the methodology for a transmission SI. As such the Companies will therefore determine the appropriate transmission SI charge annually and include it in the MX Test.

**C. CONCLUSION**

51. The Companies submit that the changes to the System Extension and Connection policies sought in the application will help send the appropriate market signals to developers and customers, and will also help to reduce barriers to customers wishing to connect to the natural gas system. This will result in an overall benefit to both existing and new customers and as such, the changes should be approved. Lastly, the changes sought support the policy actions set out in the Energy Plan and should therefore be approved.

All of which is respectfully submitted.

**TERASEN GAS INC.  
TERASEN GAS (VANCOUVER ISLAND) INC. and**

*Original signed by: Tom Loski*

**For:** Scott A. Thomson

October 26, 2007