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British Columbia Utilities Commission
Sixth Floor
900 Howe Street
Vancouver, B.C.
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Attention: Ms. Erica M. Hamilton, Commission Secretary

Dear Ms. Hamilton:

**Re: Terasen Gas Inc. ("Terasen Gas")
Application for Approval of Biomethane Service Offering and Supporting
Business Model, for the Approval of the Salmon Arm Biomethane Project and
for the Approval of the Catalyst Biomethane Project (the "Application")
Response to the British Columbia Utilities Commission ("BCUC" or the
"Commission") Information Request ("IR") No. 2**

On June 8, 2010, Terasen Gas filed the Application as referenced above. On August 20, 2010, the Commission issued BCUC IR No. 2. In accordance with Commission Order No. G-109-10 setting out the Regulatory Timetable for the review of the Application, Terasen Gas respectfully submits the attached response to BCUC IR No. 2, one day in advance of the deadline.

If you have any questions or require further information related to this Application, please do not hesitate to contact the undersigned.

Yours very truly,

TERASEN GAS INC.

Original signed:

Tom A. Loski

Attachment

cc (e-mail only): Registered Parties



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 1

1.0 Reference: Biogas Upgrading

Exhibit B-3, BCUC 1.1.1, p.1-3

Hartland Landfill Beneficial Use of Landfill Gas (Hartland Landfill), slide 17

http://www.crd.bc.ca/waste/hartland/documents/landfill_gas.pdf

TGI states: *"The British Columbia Oil and Gas Commission and the National Energy Board regulate the extraction, production and transportation of natural gas through processing facilities and gas pipelines to a public utility's gas distribution main. From that point onward natural gas is regulated by the Commission."* (Exhibit B-3, BCUC 1.1.1)

- 1.1 Given that biogas upgrading facilities and the upgrading process are upstream of the public utility's gas distribution main, would it be appropriate for the Commission to develop a separate methodology for analyzing biogas upgrading facilities? Please explain why or why not?

Response:

The processes in the Act applicable to "public utility" investments such as Biomethane upgrading assets (such processes could include a CPCN for larger projects, an optional expenditure schedule for smaller projects, and/or revenue requirements application) are equally applicable regardless of whether the asset in question is upstream or downstream of the gas distribution main. Put another way, the Act does not impose the distinction outlined in the question.

However, TGI recognizes that the upgrading assets are characterized by a relatively small capital investment that will typically fall below the CPCN threshold. TGI is also proposing that the Commission establish parameters for supply contracts for raw Biogas, and the supply cost must implicitly account for the cost of the upgrading facilities. These two factors suggest that a streamlined process, which focuses on whether the supply contract falls within the Commission's established parameters, is most efficient for addressing future supply projects. In section 8.4 of the Application TGI describes its proposal for how future projects should be assessed. For the reasons set out in TGI's response to BCUC IR 1.24.3, TGI believes that this approach is in the public interest and appropriate for analyzing future projects.

TGI states: *"If the Commission were to find that biogas upgrading facilities were not subject to the Act's provisions, the result would be a regulatory gap that would leave biogas upgrading facilities without an active regulator, which TGI submits would not be in*



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 2

the public interest. While there is legislation that governs certain aspects of the collection of gas from digesters and landfills, such as the Gas Safety Act and the Landfill Gas Management Regulation, there is no regulator, other than the Commission, with any jurisdiction to actively monitor and ensure the safe and also reliable operation of biogas upgrading facilities." (Exhibit B-3, BCUC 1.1.1)

- 1.2 Please provide any legal decisions supporting Terasen's assertion that it is appropriate for a regulatory tribunal to expand its jurisdiction to fill "a regulatory gap."

Response:

This question appears to be based on a misunderstanding of TGI's position as described in its response to BCUC IR 1.1.1. For clarity, TGI believes that the Commission is a creature of statute and as such the scope of its jurisdiction is defined by the Act. The Commission cannot expand its jurisdiction beyond the "four corners" of the statute, whether to fill a perceived regulatory gap or otherwise.

TGI's position is that the upgrading of Biogas to Biomethane and the provision of Biomethane to customers by TGI is subject to Commission regulation because these activities are "public utility" services as defined in section 1 of the Act, not because there would otherwise be a "regulatory gap". In referencing a "regulatory gap", TGI was intending to point out that it made sense for the Legislature to have conferred this jurisdiction on the Commission as other regulation did not address matters such as reliability of supply.

- 1.3 Please provide excerpts of or links to the sections of the *Gas Safety Act* and the *Landfill Gas Management Regulation* that govern the collection of gas from digesters and landfills.

Response:

The Landfill Gas Management Regulation, B.C. Reg. 391/2008, a regulation under the Environmental Management Act, S.B.C. 2003, c. 53, is found at:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/28_391_2008

See the definition of "landfill gas management", which includes "collection of landfill gas". See also sections 2, 4, 7, 8, 9, 10, 11, and 12.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 3

TGI notes that in its response to BCUC IR 1.1.1, TGI incorrectly referenced the "Gas Safety Act"; the correct reference is to the Gas Safety Regulation, B.C. Reg. 103/2004, which is a regulation under the Safety Standards Act, S.B.C. 2003, c. 39. The Gas Safety Regulation ("GSR") is found at:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/15_103_2004

The GSR defines "digester gas" as follows:

"digester gas" means a gas produced from the biological treatment of sewage and which is composed of methane, carbon dioxide and hydrogen sulphide or any combination of them;

The GSR defines "gas" as follows:

"gas" means any of the following:

- (a) natural gas, manufactured gas, liquefied petroleum gas, digester gas, landfill gas or a mixture or dilution of any of them;
- (b) hydrogen;

Numerous provisions of the GSR apply to a "gas installation", "gas system" and/or "gas equipment", which would include an installation, system or equipment related to digester gas. See for example the provisions of Part 6 of the GSR.

Although these statutes deal with certain technical and safety aspects of Biogas collection and upgrading, there is no regulator, other than the Commission, to regulate matters such as adequacy and reliability of service.

"The Hartland Landfill operates under an Operational Certificate, Waste Management Act" (Hartland Landfill, slide 5)

- 1.4 Please explain why biogas upgrading facilities are not covered under the *Environmental Management Act* which replaced the *Waste Management Act*.

Response:

This question appears to be premised on the incorrect assumption that TGI's position is that the Environmental Management Act does not apply to upgrading facilities. TGI noted in its response to BCUC IR 1.1.1 two examples of statutes that apply to these facilities. These were examples



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 4

only, and not intended to provide an exhaustive list of the statutes that apply to these facilities. The point of these examples was to illustrate that while these facilities are subject to some statutory regulation, the Commission is the only entity that has jurisdiction over matters such as the reliability of service provided by upgrading facilities (that is, regulation that addresses reliable supply from the perspective of the customers receiving gas). However, TGI notes that the Commission's jurisdiction over upgrading facilities is determined by the definition of "public utility", not whether or not there is other legislation that is also applicable to upgrading. Please see the response to BCUC IR 2.1.2.

"1) Conditioning Skid

- *Cools the gas*
- *Reduces moisture and removes siloxane" (Hartland Landfill, slide 17)*

1.5 Does Terasen consider the cooling, reduction of moisture and removal of siloxane biogas upgrading? Please explain the similarities and differences between biogas upgrading at the Salmon Arm Landfill and the process at the Hartland Landfill.

Response:

The process described on slide 17 of the cited presentation does not constitute a complete upgrading process to create pipeline quality Biomethane. TGI would equate the conditioning of Biogas as fuel for electricity generation to the conditioning, for example, of solid biofuel delivered as a fuel for electricity generation. Solid biofuel would similarly have a desired moisture content that would need to be controlled and would require the removal of substances harmful to the generation equipment.

TGI does not have the complete specifications for Hartland Landfill equipment or processes referred to in the question and therefore can only answer this question at a high level. TGI has set a specification for raw landfill gas accepted into the upgrading equipment that could potentially mean that conditioning of the raw landfill gas is needed prior to the upgrading process in the same way that conditioning of the Hartland Landfill, landfill gas is conditioned prior to electricity generation. The difference is that the upgrading of landfill gas to Biomethane actually purifies the gas far beyond these conditioning processes and creates the fuel that can be used by the end-user, making the upgrading process more akin to the electricity generation than the conditioning steps in this example.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 5

- 1.6 How does Terasen propose to deal with waste products from the biogas upgrading process?

Response:

Byproducts produced in solid form are small in quantity, non-hazardous and safe for landfilling.

Liquid condensate is sent to the landfill's water treatment system.

Gaseous byproducts (mainly CO₂) are handled in accordance with current landfill practice and applicable regulations.

For some projects there may be opportunities for beneficial use for byproducts (CO₂ for example). Terasen Gas will work with producers to identify and capture such opportunities.

- 1.6.1 Does the biogas upgrading process result in toxic by products? Please discuss. If yes, do the toxic by-products require special treatment, handling and storage?

Response:

Please see our response to BCUC IR 2.1.6.

TGI states: *"The analytical approach described above has been implicitly accepted by the Commission in other applications. In the Dockside Green Energy LLP Decision and Reconsideration, the Commission accepted that DGE's construction and operation of a biomass facility to provide hot water heating to the Dockside Green development was subject to the provisions of the Act. For the purposes of the application of the Act, there is no meaningful distinction between the Dockside Green biomass facility as a facility for generating an agent for the production of heat and biogas upgrading facilities that accomplish the same outcome."* (Exhibit B-3, BCUC 1.1.1)

- 1.7 For Dockside Green, were the risk of cost overruns and stranded assets borne by the ratepayers or the shareholder?



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 6

Response:

The purpose of BCUC IR 1.1.1 (Exhibit B-3), in the quoted reference above and the balance of the response, is to provide evidence and support for the fact that the Biogas agreements and the Biogas upgrading facilities included in the Application are regulated activities and assets under the Act. The reference to Dockside Green was in the context of using it as an example of a non-conventional energy system that is subject to BCUC regulation. BCUC IR 1.1.1 did not make any assertions about the treatment of costs or cost allocation approaches.

Nevertheless to respond to the question, the Commission decision in BCUC Order No. C-1-08 and the reconsideration decision in BCUC Order No. C-3-08 made a determination on the treatment of cost overrun and stranded asset risks for Dockside Green that is consistent with normal regulatory practice in BC. The following is an excerpt from Order C-1-08.

***"NOW THEREFORE** pursuant to Sections 45, 46, 59, 60 and 61 of the Utilities Commission Act (the "Act"), the*

Commission orders as follows:

1. The Commission grants a CPCN to DGE for the construction and operation of a DES to provide hydronic energy service at Dockside Green as set out in the Application, subject to the following conditions:

1.1 Any extraordinary capital expenditures or operating and maintenance expenses, natural gas and/or any other fuel commodity costs that are incremental to the costs included in the revenue requirements estimate presented in the Application and are required in order that the thermal energy generation system referred to as the Nexterra Plant fulfills the role described for it in the Application and supporting material, will not be included in DGE rate base and revenue requirements and will not be recovered in DGE customer rates.

1.2 Any extraordinary capital expenditures or operating and maintenance expenses, natural gas and/or any other fuel commodity costs that are incremental to the costs included in the revenue requirements estimate presented in the Application and are required in order to obtain, process, handle or replace the fuel source for the district energy system, including the cost of gas that is used because wood supply is not available or the cost of wood supply to the extent it exceeds the price set out in the Binding Letter of Intent with Three Point Properties LLP that is Attachment 7.1 in Exhibit B-2, will not be included in the DGE rate base and revenue requirements and will not be recovered in DGE customer rates.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 7

1.3 DGE has provided written confirmation to the Commission that it accepts the conditions to the CPCN, within 60 calendar days of the date of this Order.

2. If any of the conditions in the CPCN for the district energy system are not met, the CPCN is cancelled immediately."

The initial decision appears to put the risk of cost overruns on the shareholder. It did not directly speak to the stranding risk associated with investments falling within the scope of the CPCN approval, implicitly adopting the statutory allocation of risk. That allocation is that ratepayers bear the risk of stranding where the investment in the asset was prudent. The shareholder bears the risk of stranding where the investment was imprudent.

The Commission then reconsidered and issued Order C-3-08, addressing the risk of cost overruns. The following is an excerpt from that order:

***"NOW THEREFORE** pursuant to Section 99 of the Act, the Commission orders that Commission Order No. C-1-08 is varied as follows:*

1. Sections 1.1, 1.2, 1.3 and 2 are removed.

2. Section 11 should be read so as to reflect the removal of the Commission determinations and directions set out in Sections 1.1, 1.2, 1.3 and 2 only and should include all other directions in the Reasons for Decision attached as Appendix A to Commission Order No. C-1-08 and Appendix A to this Order".

This reconsideration decision restores the appropriate balance of risk of cost overruns between customers and the shareholders. Dockside Green's request for reconsideration was based in large part on the fact that by disallowing cost overruns before any actually occurred the Commission was prejudging the overruns to be imprudent before the Dockside Green utility had an opportunity to defend them. The reconsideration decision allows the utility the opportunity to recover its prudently incurred costs including a fair return on investment. As such, the ratepayers bear the risk of prudently incurred costs that end up being stranded regardless of whether the costs exceed the budget, and the shareholder bears the risk for imprudently incurred investment in stranded assets.

1.8 For Dockside Green, were any of the costs related to program management and customer education borne by non-Dockside Green customers (i.e. Terasen's cost allocation proposal)?



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 8

Response:

TGI's reference to Dockside Green in BCUC IR 1.1.1 was in the context of providing an example of an instance where the Commission has regulated the operations used for generating heat to be used by customers attached to the Dockside Green system. This regulation in the context of Dockside Green was appropriate because of the scope of the definition of "public utility". The parallel that TGI was drawing was that the upgrading of Biomethane is similarly a process for production of heat energy to be used by customers attached to a distribution system, and is also a "public utility" service subject to Commission jurisdiction. Terasen Gas does not believe there are otherwise significant parallels to be drawn between the cost allocation at Dockside Green, a stand-alone district energy system utility (which is partly owned by Terasen Inc. but not part of the gas utility) and that proposed for the Green Gas program, a new service offering that is a part of the core business of the gas utility.

Terasen Gas believes that the analogy being drawn in the question, i.e. that TGI's proposal is akin to Dockside Green trying to allocate to non-customers costs of providing energy to customers, is inapt. Both TGI and Dockside Green are collecting revenues only from customers, and are not in a position to do otherwise. The issue here is rather one of how to appropriately allocate costs *among* customers when some but not all of the customers will take advantage of the opportunity to obtain Biomethane service. Dockside Green does not face the same issue of allocation because all customers must take the "green" service and must pay the associated premium over what customers would have paid had they been using a traditional energy source like gas or electricity. In a hypothetical instance where the Dockside Green utility were to offer an additional program to all of its customers, such as the delivery of thermal energy through water heated by a different energy source than currently used, allocating the program management and customer education costs to all of the customers that have the opportunity to avail themselves of the new service (i.e. all of Dockside Green's customers) would be consistent with the regulatory precedent under which Terasen Gas is proposing to offer Biomethane service. Another possibility might be the situation where another district energy system was constructed in the vicinity of Dockside Green and was combined with the Dockside Green utility as one regulatory entity. In this case the costs of customer education and program management related to adding the second district energy system to Dockside Green could be borne by all customers including those on the original system. In that case the benefit to the customers on the original system might be to achieve economies of scale and a sharing of common costs.

The approved treatment of TGI's Energy Efficiency and Conservation (EEC) spending provides another analogous example to the proposed allocation of a portion of the Biomethane costs to all customers. EEC programs are offered to all customers (or all customers in a particular class) and the EEC costs are recovered from all customers even though only some customers chose to participate in the program's offerings.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 9

- 1.9 Regarding the annual operation, maintenance and administration cost, does Dockside Green incur the full cost of these services (i.e. the stand alone operating costs) or does it incur only incremental costs as part of a larger organization (i.e. Terasen's cost allocation proposal)?

Response:

As discussed in the responses to BCUC IRs 2.1.7 and 2.1.8 the purpose of the response to BCUC IR 1.1.1 and the references to Dockside Green is to provide evidence in support of the assertion that Biogas upgrading facilities are regulated assets under the UCA. The references to Dockside Green in that response are not meant to make any commentary on the appropriateness of cost allocation approaches employed for Dockside Green or the Green Gas program proposed in the Application.

With the foregoing being said, the annual operation, maintenance and administration costs of Dockside Green consist of some costs that are the direct operating and maintenance costs associated with running and maintaining the energy facilities while other costs which fall more into the general and administrative ("G&A") category are in some cases allocated from corporate cost pools. Legal, regulatory, finance and accounting expenses are examples of costs that might be treated in this fashion. It is more cost effective, particularly for a small utility like Dockside Green, for these types of activities to be carried out by a parent company (Corix Utilities is the operating partner for Dockside Green) and provided to a number of smaller operating entities on a shared services basis. While it would not be appropriate to describe shared services costs of this nature as incremental costs it is clearly appropriate to say that economies of scale benefits would accrue to Dockside Green customers from these categories of costs provided on a shared services basis. Although the circumstances of TGI's Green Gas program are different from those of Dockside Green, TGI believes that its approach to dealing with the costs of the Green Gas program are appropriate in view of these differing circumstances.

- 1.10 Does TGI have a Legal opinion to support its interpretation of the Commission's jurisdiction surrounding Biogas?

Response:

TGI objects to the question. TGI makes this objection based on solicitor client privilege, not based on the particular subject matter as TGI believes that the definition of "public utility" is



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 10

unambiguous. TGI submits that solicitor client privilege should be respected in the context of Commission processes, just as it is in court processes, and no party should be asked to provide legal opinions by any other party or the Commission.

- 1.11 Has TGI had discussions or received correspondence with any Government Ministry to support TGI's interpretation of the Commission's jurisdiction surrounding Biogas?

Response:

No, TGI has not addressed the Commission's jurisdiction with Government. Terasen Gas does not believe that it is necessary to do so because the definition of "public utility" is unequivocal.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 11

2.0 Reference: Biomethane Pricing

Exhibit B-3, BCUC 1.7.4, p. 28

TGI states: *As discussed in the response to BCUC IR's 1.7.1 & 1.7.2, if the trend illustrated in Table 4.2 followed the pattern from 2007 to 2008 at a 2% annual decline for the average premium to be 14% in 2010 and a 1% annual decline in the median premium to be 13% in 2010, TGI's product offering based on today's commodity prices would be an 11% premium, within 3% of the average price premium and within 2% of the median premium in 2010. It is important to note that the resulting premium will vary over time depending on conventional natural gas prices and the cost of renewable energy. TGI's market research provided a range of premiums and resulting GHG reductions, the scientific research suggested that there is greater uptake potential at this price point and 10% Biomethane blend. The Company feels confident that this price premium and Biomethane blend allows for maximum market penetration."*

- 2.1 Based on the analysis above, is it TGI's position that TGI's Biomethane blend pricing represents a price approximately 3% lower than the average pricing premium and 2% lower than the median premium for 2010?

Response:

Yes, if the trend illustrated in Table 4.2 followed the pattern from 2007 to 2008 at a 2% annual decline rate for the average premium and a 1% annual decline rate for the median premium for 2010, then the variance between the average / median pricing premiums and TGI's pricing for a 10% blend of Biomethane would be 2-3% lower than the industry.

The NREL and Chartwell reports attached in Appendix C of the Application indicates that premium prices can vary widely and many new programs are leading with lower initial premiums. TGI does not feel this potential small percentage variance from the average in other jurisdictions is material as the cost paid by customers of utilities in other jurisdictions for other non-conventional energy sources is not connected to TGI's cost of service for Biomethane; therefore, one cannot use the premium percentages from other jurisdictions to draw any conclusions about the sufficiency of the premium proposed to cover TGI's costs of service (See BCUC IR 1.6.3).

The estimated 10-11% premium is a derived value taking 90% of the current commodity recovery charge plus 10% of the Biomethane rate applied for all divided by the current commodity recovery charge (See BCSEA 1.5.2). TGI's market research also supports that there is greater uptake potential at this price point and the Company feels confident that this price premium allows for maximum market penetration (See Section 5, page 44 of the Application). The 10% blend is a useful starting point for other potential pricing options that can be augmented at a later date as the market develops. As discussed in Section 6 of the Application,



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 12

TGI will propose higher blends (such as 20%) when the market is further developed which would result in a higher percentage premium.

The secondary market research was utilized to draw a comparison to other types of green pricing programs in order to provide context for TGI's proposed program. TGI's premium has been designed to recover the incremental cost of Biomethane. If the cost of acquiring Biomethane rises or falls, that price will be reflected in the blended rate charged to customers participating in the program and the resulting premium compared to the current commodity rate would rise or fall in order to maintain a 10% blend of Biomethane. TGI has proposed in the Application that the rate be reset annually to reflect the costs.

- 2.2 Is it TGI's position that the variance between average/median pricing premiumns and TGI's pricing is between 2-3% and this amount is not material?

Response:

Please see our response to BCUC 2.2.1.

- 2.3 What is the difference, in dollars, between total projected biomethane revenues at an 11% premium vs. total projected biomethane revenue assuming a 14% premium?

Response:

As discussed in the Company's response to BCUC IR 1.6.3, the premium being discussed is a calculation of the cost of service of Biomethane relative to the cost of commodity gas. Based on today's commodity price this represents a 10% premium.

As detailed throughout the Application and our responses to the Round 1 Information Requests, the proposed Green Gas rate is the result of a weighted average of the cost of service of Biomethane and the cost of conventional natural gas. The "premium" discussed is not an input in a formula, but rather the product of a calculation used to compare the Green Gas rate to the Terasen Standard Rate. Terasen Gas is not proposing to charge a 10% premium to conventional natural gas for Biomethane, but rather we are proposing to recover the cost of service of Biomethane which, based on a 10% blend, currently represents a 10% premium relative to conventional natural gas.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 13

Based on the Sumas forward price discussed in the Company's response to BCUC IR 1.7.2 the premium would be 11%. As the commodity price changes over time it is possible that a reduced conventional natural gas commodity price or an increased Biomethane price could result in a premium of 14%. As shown in table provided in our response to BCUC IR 1.6.4, were the cost of service of Biomethane to increase such that it represented a 14% premium over today's commodity rate of \$4.976/GJ, and all else were to remain equal, the Biomethane rate would then be \$11.942 / GJ and the Green Gas rate at a 10% Biomethane blend would be \$5.673 / GJ.

In summary, the difference in dollars between total projected Biomethane revenues at an 11% premium vs. total projected Biomethane revenue assuming a 14% premium would depend entirely on what was causing the change in premium. If the premium had increased due to an increase in the cost of service of Biomethane, then revenues would increase proportionately. If the cost of service of Biomethane were unchanged but the commodity price of natural gas were to decrease, then the revenues associated with Biomethane would be unchanged. This is because the revenues from Biomethane are collected in order to recover the cost of Biomethane, regardless of relative premium of Biomethane to conventional natural gas.

2.4 Is TGI willing to under price Biomethane to allow for maximum market penetration?

Response:

Terasen Gas does not foresee a scenario where Biomethane would be under-priced in order to allow for maximum market penetration. TGI's market research has demonstrated there is sufficient customer demand to purchase the Biomethane supply volumes forecast for the next number of years at the forecast Biomethane recovery rates. TGI believes it will be necessary to limit the level of customer enrolment as demand for the Green Gas rate offering is expected to exceed the supply of Biomethane. Furthermore, should TGI actually have some excess Biomethane which is not required to meet the Rate Schedule 1B demand, TGI is aware of on-system and off-system customers which are willing to purchase available Biomethane supply.

2.5 Please clarify what is of higher priority to TGI – maximum market penetration for biomethane blend or reducing risk to all ratepayers as a result of offering the biomethane program?



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 14

Response:

Terasen Gas' primary objective in offering the Green Gas program is to safely, reliably and economically serve our customers' demand. TGI believes that maximizing market penetration for the Biomethane blend to meet the demand is consistent with the objective of reducing risk to all ratepayers because it may help to retain and attract customers.

Terasen Gas recognizes that there are risks associated with investing in the infrastructure necessary to provide Biomethane service. Throughout the Application, and particularly in Section 11, TGI has identified these risks and proposed methodologies to proactively mitigate them. The Company believes that these proposals are appropriate measures to mitigate the additional risks associated with offering this program to meet the demands of our customers.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 15

3.0 Reference: Biomethane Pricing

Exhibit B-3, BCUC 1.10.2, p. 32-33

3.1 TGI states: *"With this Application, TGI is looking to provide a new product offering (Biomethane) to meet the changing demands of customers, not to "rebrand" itself. Over time, it is TGI's intention to educate and provide new products and services to customers that help customers achieve their goal of reducing their carbon footprint."*

3.1.1 Has TGI assumed that all its customers have or will have a goal of reducing their carbon footprint?

Response:

No, however, Terasen Gas is aware that many of our customers have a goal of reducing their carbon footprint and the proposed Green Gas offering has been developed to serve their expressed demand for it. As discussed in Section 3 of the Application, the Green Gas offering is consistent with government policy.

3.1.2 If, at a very optimistic level, TGI forecasts participation in the biomethane blend program at up to 16%, why does TGI believe that all TGI customers would support paying for an education program that reaches all customers?

Response:

Please refer to BCUC IR 1.16.1. In addition, TGI submits that the cost allocation methodologies approved in the Customer Choice program were driven by the same cost causality principles approved in the Stable Rate program, approved by Commission decision G-25-04.

In the proceedings leading up to both of these decisions, Terasen Gas expressed the view that the cost allocation of education costs to all customers was appropriate because all customers (now or in the future) received the value of having the choice of who they buy their gas from. . The Commission implicitly approved this reasoning, setting the precedent which Terasen Gas continues to agree with and forms the basis for customer education cost allocation proposals in this Application.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 16

3.1.3 Will the education program TGI is proposing reach all customers?

Response:

The customer education budget was proposed based on the incremental requirements to generate awareness of TGI's proposed Green Gas program (see BCUC IR 1.18.3). The education program materials will be designed to be accessible to all customers so they can make an informed decision about whether or not they want to participate in the program. The messaging on the communications pieces will be targeted to those with the greatest likelihood of participation in the Green Gas program. (Refer to Appendix H 1.1 Generating awareness, interest and subscription).

As discussed in BCUC IR 1.19.6, TGI will not exceed the budget if approved and is confident that the modest Customer Education budget of \$400,000 over 2010-2011 is sufficient to achieve the number of program participants needed to match the initial supply of the Biomethane/natural gas blend in Phase One as discussed in Section 6 of the Application. TGI will endeavour to attain the greatest impact possible through customer education through a variety of tactics such as maximizing social networking and negotiating added value on its mass media buys. Ultimately, Biomethane advertising efforts can help educate British Columbians about environmental protection and renewable energy, but planned expenditures are mindful of the smaller market size needed to support available Biomethane volumes.

3.1.4 Why does TGI believe that it is qualified to educate its customers about reducing their carbon footprint?

Response:

As a leading energy provider in B.C., serving 96 per cent of the province's natural gas consumers, Terasen Gas is a well-respected, credible source of new energy information. Many of our customers are concerned about their carbon footprint, and the size of this footprint is tied to their own personal energy consumption. Biomethane, in combination with traditional natural gas, helps to reduce the carbon footprint of customers that would otherwise be using all natural gas. A customer's fuel choice and the efficiency with which they consume that fuel drives their individual carbon footprint. As a leading provider of energy in the province of British Columbia, Terasen Gas has a role to play in educating customers on their energy use and ways in which they can use energy more efficiently.

Please also refer to response to BCUC IR 2.3.3.5.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 17

3.1.5 Will TGI's education be neutral and unresponsive of any particular TGI product?

Response:

As discussed in BCUC IR 1.18.4, the customer education plan, which the Company believes best supports the introduction of the Biomethane program, has been designed to meet four objectives:

- generate awareness and understanding of Biomethane as a renewable energy and its availability today;
- generate awareness and understanding of the Terasen Gas Green Gas program;
- stimulate interest and participation in the program; and
- maintain participation and support for the program.

As Biomethane has not previously been available as an energy source in B.C., customers must first be made aware of its introduction to the marketplace and its environmental benefits. Customer awareness of and interest in Biomethane as an energy source for their homes and businesses, will help make the market attractive for more producers to enter (See BCUC IR 1.60.8). Communications for TGI's Green Gas program will combine these educational messages with promotional messages that will be designed to motivate customers predisposed to support renewable energy initiatives to enrol in the program in a timely manner. The successful development of TGI's Biomethane supply is dependent upon customer participation in its Green Gas program. As indicated in the response to BCUC IR 1.10.5, customers ultimately benefit from the optimization of TGI's system, and Biomethane can assist in this goal.

Please also refer to BCUC 1.60.3 for discussion on the difference between education and promotion of the proposed program.

3.1.6 Will TGI's education promote a specific product offered for sale by TGI?

Response:

Please refer to BCUC IR 2.3.1.5.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 18

3.1.7 What is the difference between education and marketing?

Response:

TGI would describe the difference between education and marketing in a manner similar to the response to BCUC IR 1.60.3 regarding the difference between education and promotion. However, marketing does have a slightly broader definition that includes the management process that identifies, anticipates and satisfies customer requirements and meeting the needs and wants of customers.¹

3.2 TGI states: *"However, TGI believes that more is involved in "rebranding" than providing customers with new products and services or educating customers as to the availability and benefits of a range of energy forms, as is contemplated by TGI."*

3.2.1 What more does TGI believe is involved with rebranding? What additional steps would be necessary for TGI to take to rebrand itself as a "green" company?

Response:

The statement made is clarifying that "rebranding" is much more than just providing customers with educational and promotional materials. As discussed in BCUC IR 2.3.4.1, Terasen Gas believes that the proposed customer education program is not an exercise in branding, but rather one of informing our customers of the availability and merits of the Green Gas program to meet the changing needs of our customers.

To rebrand an organization as "green" is to shape the perceptions in the minds of target audiences towards a certain point of view and positioning in the market. This effort would require the organization to strategically define what "green" positioning in the market entails within the appropriate business context and standard. The process of rebranding would also include a gap analysis of current and desired perception. This is accomplished through qualitative and quantitative customer research; competitive analysis; and study of other external forces that define what "green" means to the general public. It should be noted that rebranding is not limited to changing a name or the look of customer-facing communications materials. It is to understand the drivers of perception of the desired positioning which can be product,

¹ The Chartered Institute of Marketing (CIM)



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 19

operational and service-driven. In other words, an organization should "walk the talk" in order to avoid the practice of "green-washing".

As highlighted in BCUC IR 2 .3.4.1 and 2.3.4.2, the product segmentation process would not be engaging in a "rebrand" as the product has not previously been available as an energy source in British Columbia. Customers must be made aware of its introduction to the marketplace and its environmental benefits (educational phase) so that the product can become established in the marketplace. The Green Gas program would be promoted as an energy alternative to our customers. Please also refer to BCUC IR 1.10.1.

3.3 TGI states: *"Past examples where the costs of such services and education associated with significant initiatives by the Terasen Utilities were recovered in rates include the costs that were incurred to design build and implement the Commercial Unbundling Program in April, 2004 and the Customer Choice Program that was launched in May 2007. Another example would be the TGI and TGI Energy Efficiency and Conservation programs and activities that are delivered to customers with the costs being directly recovered from the customers over time. The new product offering contemplated by TGI in this Application is a regulated offering and the costs of service must be accounted for in the utility's overall revenue requirement."*

3.3.1 In the case of the Commercial unbundling program, Customer Choice program, did TGI introduce to the market a new product (offered by TGI) as part of the unbundling initiative?

Response:

As noted in the quotation that follows, the introduction of the unbundled commodity service was established in response to Commission direction in Letter L-49-02, dated December 13, 2002. This direction itself was prompted by the release of the British Columbia Energy Policy, "Energy for Our Future: A Plan for BC," on November 25, 2002:

As a result of the Province's new Energy Policy, the Utilities Commission Act was amended in the spring of 2003 to allow direct natural gas sales to low-volume customers and to require the licensing of marketers who serve those customers. These amendments are now in force.

By Letter No. L-49-02, the Commission requested that Terasen Gas update and reassess the program that was previously developed with the intent of making the ABC-



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 20

T option available for November 2004. On February 28, 2003, Terasen Gas filed its report and reassessment of the Commodity Unbundling option for residential and commercial customers.²

TGI is of the view that the ensuing launch of these unbundled products were facilitated, rather than explicitly introduced by TGI. The new commodity products represented an offering from independent Gas Marketers, rather than TGI. Terasen Gas was required to play a vital role in this offering because of the nature of the Essential Services Model whereby we continue to manage all aspects of the delivery of natural gas including customer billing and management of the Midstream. TGI was accorded educational responsibilities through subsequent regulatory proceedings because the Company was the best suited to develop the necessary customer communications. Consistent with the introduction of the unbundled options, TGI will retain responsibility for the regulated, variable-rate Biomethane product. Alternatively, Gas Marketers may choose to offer a variety of fixed-rate commodity products that may or may not feature green components, like carbon offsets or Biogas content.

3.3.2 In the case of the education for the Customer Choice program, did TGI provide education that was supportive of a specific product offered by TGI?

Response:

No, Terasen Gas is neutral with respect to which product offering customers select. The Company does see value in facilitating fixed rate offers because some customers prefer the security of a locked-in rate. The fixed commodity rates provide customers additional product options to better meet their individual needs. The educational materials produced in concert with the Gas Marketers and Commission staff have always focused on describing the attributes of both offers. Program advertising has never suggested that a fixed price contract was superior, or inferior to the regulated variable-rate offered by Terasen Gas. Program messaging simply educates the consumer about the availability of the offering and provides them with the information needed to make an informed purchase decision. This is the point of similarity on customer education between the Customer Choice program and the Green Gas program. The proposed Green Gas customer education program is being formulated to inform customers about the availability of the Green Gas program and provide them with the information needed to make an informed purchase decision.

² BCUC Regulatory Agenda, Issue: 03-4, dated October 2003.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 21

3.3.3 In the case of the TGI and TGVI Energy Efficiency and Conservation programs, did TGI ever encourage customers to buy a new product?

Response:

Yes, the TGI and TGVI EEC programs encourage customers to choose products that are more efficient. These products are not usually new to the marketplace, however they would be "new" to the customers that are choosing them in that customers are being encouraged through EEC initiatives to select an efficient product over the "business as usual" product. Each EEC "program" is essentially a new product that must be promoted in order for customers to be aware of them. Customer education and awareness is an essential part of TGI and TGVI's EEC programs.

Terasen Gas submits that the proposed cost allocation methodology in this Application is in keeping with the standard practice for all of our various different products and services. For example, overhead and education costs for different rate classes are recovered from all customers because the presence of multiple customer groups benefits all customers by helping build additional throughput across which to allocate fixed costs.

3.3.4 As part of TGI's education program, does TGI intend to inform customers of choices/alternative ways to reduce their carbon footprint such as fuel switching or increased conservation? If so, provide an example of how such alternatives will be included in the education program and to what level of significance they will be included.

Response:

TGI's proposed Green Gas education budget does not include funding to provide information about energy efficiency and conservation ("EEC"). There are separate EEC budgets that cover energy efficiency and conservation related education and outreach (See BCUC IR 1.18.3). It is the Company's practice, however, to seek opportunities wherever possible to consolidate multiple key messages in one communications vehicle, where costs are allocated on a proportional basis for each individual initiative that is being promoted. For example: TGI may have a booth at a tradeshow funded from the Green Gas customer education budget, but within the booth there may also be a brochure promoting EEC programs and those particular pieces would be paid for from the EEC program budget.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 22

3.3.5 Please explain why TGI believes it is the responsibility of a utility to educate the general public about carbon footprinting.

Response:

This response will also respond to question BCUC IR 2.3.3.6. TGI is a major provider of energy in BC, and a significant number of British Columbians (i.e. the general public) are customers or potential customers. Many of our customers or potential customers are concerned about their carbon footprint, and the size of this footprint is tied to their own personal energy consumption. In addition, it is also government policy to reduce carbon emissions in the province and the province has set aggressive targets to do so. This policy trend has already resulted in, and will continue to result in, direct impacts on our customers and potential customers and how they consume energy. In many ways including changes to the Utilities Commission Act to recognize Government energy objectives, the Government is signalling that utilities have a role to play in achieving these goals.

A customer's fuel choice and the efficiency with which they consume that fuel drives their individual carbon footprint. Terasen Gas believes that natural gas, as well as Biomethane, has a role to play in BC's clean energy future because of its properties and flexibility. The Company has not only a role but an obligation to our existing customer base to continue to educate them and others about how efficient consumption of natural gas benefits all customers, and to educate our customers and potential customers about the choices available to them in their context as gas consumers.

Consumption of natural gas through combustion produces CO₂, an activity we know that many of our customers are concerned about personally reducing through either reduced or more efficient consumption. Terasen Gas currently educates our customers about how they can do this in their context as our customers through such activities as increasing the efficiency of their natural gas appliances (through maintenance and / or replacement), using natural gas as a replacement for more carbon-intensive fuels such as heating oil, diesel or gasoline, and subject to this Application's approval, by displacing a portion their natural gas consumption with carbon-neutral Biomethane.

According to Statistics Canada³, the population of British Columbia in 2008 was a little over 4.3 million. Presently Terasen Gas has over 900,000 accounts, the vast majority of which are residential and serve multiple British Columbians who share dwelling places and therefore Terasen Gas accounts. As our customer base is a substantial portion of the population of British

³ http://www45.statcan.gc.ca/2009/cgco_2009_001-eng.htm



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 23

Columbia, in many cases the most efficient way to reach our customers and potential customers with educational materials is through education programs that reach the general public.

Since our customers want to know how to reduce their own CO₂ emissions, and since it is in the interests of all customers that the utility not lose customers who are seeking to reduce their own CO₂ emissions but are not aware of how to do that while remaining customers of the utility, and since our customer base is a substantial portion of the general public, it is often most efficient for the utility to educate the general public about their carbon footprinting.

The Company seeks to educate our customers (and therefore, sometimes, the general public) about their carbon footprinting through factual information that supports their efficient consumption of natural gas. Terasen Gas, believes it is appropriate for a utility to focus its education efforts on methods of helping customers and potential customers to reduce their CO₂ emissions through the efficient consumption of products that a utility delivers (in this case, natural gas or Biomethane) as opposed to other methods of reducing CO₂ emissions. TGI believes that it has earned credibility through the reliable provision of information in the past within its core area of expertise, and does not believe that information it provides on CO₂ reduction is or will be regarded as biased by customers simply because it is focussed on the efficient use of natural gas (or Biomethane) as opposed to other methods beyond the scope of TGI's business.

- 3.3.6 Does TGI admit that they may have a perceived bias to most strongly support, through its education initiative, a single method of carbon foot print reduction (such as the use of biomethane blend gas) despite the existence of many other ways to reduce carbon footprinting?

Response:

Please refer to BCUC 2.3.3.5.

- 3.3.7 If customers switch to biomethane, does TGI forecast reduction in total gas sales volume?



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 24

Response:

No, Terasen Gas does not expect a reduction in total gas sales volumes as a result of customers displacing their natural gas volumes with Biomethane sales volumes. All else being equal, Terasen Gas would expect that the result of replacing one gas with another in equal volumes would result in no change in the total gas volume.

Many factors can impact total gas sales volumes over time. Appliance efficiency can decrease loads but also stimulate demand from new customers. The development of new types of appliances can do the same. Industrial volume is an additional and substantial variable impacting total gas sales volume, a significant portion of which is affected by whether or not electricity is being generated from the combustion of natural gas. Finally, the competitive position (including consumers perception of the product around environmental impacts), of different types of energy impacts the relative demand for natural gas and therefore total gas sales volume.

As indicated in the Application, the Company believes that the Biomethane offering will help TGI to retain and attract customers, which could increase the total gas-Biomethane combined sales volumes (i.e. total throughput):

- The first possible reason for this increase would be an incremental increase in the number of gas customers as there is the potential that the proposed offering would be attractive to people who are not presently customers of Terasen Gas.
- The second would be that customers who have reduced their natural gas volumes in recent years in order to reduce their own carbon footprint would be more comfortable adding additional volumes to their own account if they were able to do this in a carbon neutral way.
- Finally, the Green Gas program might prevent customers who would otherwise leave the Terasen Gas system in search of even less carbon-intensive energy sources, therefore increase in the total gas sales volumes relative to what would otherwise be forecast as a decrease.

All of these above-mentioned reasons for a possible increase in total gas sales volumes would be a benefit to all non-bypass customers on the Terasen Gas system as increases in gas volumes allow the cost of service to be allocated over more volumes, resulting in relative decreases in delivery rates, all else being equal.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 25

3.3.8 Would it be a disadvantage to TGI if conservation or fuel switching were more popular choices to reduce carbon footprinting over biomethane blend gas usage?

Response:

In this Application, Terasen Gas responds to our customers demand for ways to make their own consumption of natural gas less carbon-intensive. Our Energy Efficiency and Conservation ("EEC") program encourages our customers to use both energy efficiency and conservation as ways to reduce their own personal carbon footprint. Terasen Gas sees both the EEC and Biomethane options, utilized either separately or together, as advantageous for our customers.

Customers choosing to fuel switch away from the Terasen Gas distribution system would be disadvantageous to Terasen Gas and all of our remaining customers as the lost load would result in less volume over which to allocate the cost of service to customers through. This would result in the need for incremental increases to delivery rates, all else being equal. This, in turn, can make it more difficult to retain and attract customers. One of the ways in which Terasen Gas is seeking to mitigate this loss of customers is by introducing the proposed Green Gas program in response to both existing and potential customers' needs.

3.3.9 Does TGI intend to display the Terasen brand name and logo on the educational material it intends to make available? If so, will the shareholder benefit from increased brand exposure resulting from educating the customer?

Response:

Terasen Gas intends to display the Terasen name and logo on all materials distributed by our Company for the education of our customers. The use of the Terasen name and logo on materials, which identifies Terasen Gas as the source, provides assurance to our customers of the quality of the information they are receiving.

Terasen Gas has addressed the question of whether or not there is a benefit to our shareholder from the use of the Terasen name and logo in our response to BCUC IR 1.14.4.3.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 26

3.3.10 If TGI is given Commission approval to conduct the educational component of the project, would TGI be willing to obtain Commission approval for all educational materials prior to their release similarly to the Customer Choice program?

Response:

The Company believes that submitting all educational materials for approval prior to their release, similar to the practice followed that supported the launch of the Customer Choice program, is unnecessary and inefficient. The educational materials related to the Customer Choice program were submitted to the Commission for approval prior to their release to our customers because they sought to educate customers about a service offered by gas marketers, who were third parties and removed from the same oversight the Commission has of Terasen Gas. Terasen Gas does not believe that a similar circumstance exists with the Green Gas program educational materials. TGI currently prepares and releases most of its educational materials such as safety-related brochures or EEC program materials, as a normal part of our discretion to manage the business (notably, the principle of management discretion was agreed to by all parties in Section 3 of the Negotiated Settlement Agreement currently in effect as per Commission Order G-141-09). TGI has outlined the principles upon which it intends to proceed with customer education, and the Commission will be reviewing these principles in this proceeding. Terasen Gas believes that an additional requirement for Commission review and approval of individual all education materials would represent an unnecessary burden to the Company and ultimately, due to increased costs and reduced regulatory efficiency, be an undue burden to our customers.

3.4 TGI states: *"TGI "rebranded" itself in changing its name from BC Gas Inc. to Terasen Gas Inc. Terasen Inc. owns the legal rights to the intellectual property of TGI and the Terasen name, not the ratepayer. The costs to undertake such an activity were, in that case, borne by the Terasen Inc. shareholders."*

3.4.1 Does TGI agree that rebranding involves creating a unique name and image for a product in the consumers' mind, through advertising campaigns with a consistent theme and that branding aims to establish a significant and differentiated presence in the market that attracts and retains loyal customers.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 27

Response:

No, Terasen Gas believes that the referenced definition is too narrow and restrictive a definition of the term branding. Terasen Gas does agree that rebranding requires creating awareness by establishing a differentiated presence, market and customer retention as goals. We would add to this the education and demonstration of value. Terasen Gas further discusses the definition of branding in our response to BCUC IR 2.3.2.1.

With regards to the proposed Biomenthane program, we would not be engaging in a product "rebrand" as the product has not previously been available as an energy source in British Columbia. Customers must be made aware of its introduction to the marketplace and its environmental benefits so that the product can become established in the marketplace. Terasen Gas submits that the proposed customer education program is not an exercise in branding, but rather one of one of informing our customers of the availability and merits of the Green Gas program that we have offered in response to customer demand.

3.4.2 Please provide TGI's interpretation of the meaning of "rebranding".

Response:

Rebranding is as a market segmentation / product differentiation process to establish either a new brand or augment one currently in place. The proposed Green Gas program is not an exercise in rebranding. Terasen Gas further discusses the definition of branding in our response to BCUC IR 2.3.2.1.

3.4.3 How large, in terms of employee time and total costs, will the education program for the biomethane project be in comparison to TGI's total promotional and marketing budget?

Response:

Employee time is primarily encompassed with the FTE role proposed in Section 10 of the Application, with a maximum fully loaded cost of \$125,000. It is expected that a portion of this role will include managing the customer education program in collaboration with the Communications department. The proposed customer education budget, as detailed in Section



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 28

6 of the Application, would be an additional \$400,000, which represents approximately 6% of TGI's current \$6.5 million total annual promotional and marketing budget.

3.5 TGI states: *"In sum, this Application proposes the introduction of a new product offering to meet evolving customer needs and changing government policy; the costs in this case should be recovered from customers."*

3.5.1 Has the government introduced policy requiring TGI to offer biomethane to customers?

Response:

No, while Terasen Gas believes, and articulates in Section 3 of the Application, that several recent government policies and statutes encourage us to offer Biomethane to our customers, the Company does not believe that there is yet a policy or statute requiring us to do so.

As also detailed in Section 3 of the Application as well as our response to CEC IR 1.12.4 and BCSEA IR 1.3.4, Terasen Gas believes that the implementation of a Renewable Portfolio Standard for natural gas, such as is currently in place for BC Hydro, is a possible future requirement which we would be obligated to comply with and that the implementation of a Green Gas program on its own merits would provide us with a better capability to meet such a requirement.

Finally, while government policy may only encourage us to offer Biomethane to our customers, it is our need (as it is the need of any business that intends to continue as a viable operation) to serve the interests and demands of our customers that requires us to offer Biomethane.

3.5.2 Does TGI believe that the Clean Energy Act introduces policy encouraging Terasen to maintain customer gas usage rates by offering biomethane blend gas?

Response:

The Clean Energy Act does not articulate a specific policy that gas use rates should be maintained by offering Biomethane blend gas. However, as detailed in Section 3 of the Application, Terasen Gas believes that the policy articulated in the Clean Energy Act does



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 29

support the Company's initiative to offer products and services such as Biomethane to our customers. The *Clean Energy Act* sets out a number of energy objectives, including the following relevant objectives:

(b) to take demand-side measures and to conserve energy, including the objective of the authority reducing its expected increase in demand for electricity by the year 2020 by at least 66%;

..

(d) to use and foster the development in British Columbia of innovative technologies that support energy conservation and efficiency and the use of clean or renewable resources;

...

(g) to reduce BC greenhouse gas emissions

(i) by 2012 and for each subsequent calendar year to at least 6% less than the level of those emissions in 2007,

(ii) by 2016 and for each subsequent calendar year to at least 18% less than the level of those emissions in 2007,

(iii) by 2020 and for each subsequent calendar year to at least 33% less than the level of those emissions in 2007,

(iv) by 2050 and for each subsequent calendar year to at least 80% less than the level of those emissions in 2007, and

(v) by such other amounts as determined under the *Greenhouse Gas Reduction Targets Act*;

(h) to encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia;

(i) to encourage communities to reduce greenhouse gas emissions and use energy efficiently;

(j) to reduce waste by encouraging the use of waste heat, Biogas and biomass;

These energy objectives, and in particular objective (b), speak to the reduced consumption of energy generally through demand side measures. TGI's Energy Efficiency and Conservation ("EEC") programs directly address this objective. EEC can be expected to drive a decline in gas (or Biomethane-gas blend) use rates, and thus it would be incorrect to say that maintaining use rates is itself an objective. However, there are other objectives tied to carbon emission reductions, the innovative use of technology, the substitution of one fuel for another and the use of Biogas. The substitution of Biomethane for natural gas will reduce GHG emissions in the province even assuming that customers maintain the same use rates for the blended product as they did for natural gas only. Thus, TGI believes that its proposed Biomethane service is supported by the Clean Energy Act and should be approved to meet the current demands of customers and to support the longer term interest of our customers in a successful utility.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 30

3.5.3 Does TGI believe that the Clean Energy Act encourages TGI to introduce initiatives to reduce the total volume of gas usage in the province?

Response:

The Clean Energy Act does not establish as a specific objective the reduction of total volume of gas usage in the Province, but it does encourage efficient use of energy and the reduction of GHG emissions. In some instances, these objectives are achieved through reducing gas usage, and TGI's Energy Efficiency and Conservation programs support this approach. In other instances, however, increased natural gas consumption may complement the objectives of encouraging energy efficiency and reducing GHG emissions. For instance, natural gas is a lower carbon fuel for transportation. The Biomethane offering supports several specified objectives in the *Clean Energy Act* and complements TGI's EEC programs emphasis on the efficient use of energy by substituting a renewable carbon neutral fuel (Biomethane) for a non-renewable carbon-emitting fuel (natural gas), thus producing a net reduction in GHG emissions based on the same overall consumption. Please see the response to BCUC IR 2.3.5.2.

3.5.4 What percentage of customers have displayed a "need" for biogas? Explain how this level of "need" has been quantified.

Response:

Please refer to TGI's responses to BCUC IRs 1.16.1, 1.31.3, 1.49.1.6, 1.51.1, 1.51.2, 1.55.3 and 1.55.4, in which TGI discusses the fact that 16% of residential customers and 10% of our commercial customers have stated their demand for the Green Gas offering proposed in this Application. We have quantified this demand through scientific research described in Section 5 of the Application.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 31

4.0 Reference: Conclusion

Exhibit B-3, BCUC 1.10.3, p. 33

4.1 Does TGI believe biomethane is equally "green" as electricity in BC? Does TGI wish to convince customers of the comparability of "greenness" between electricity and gas in BC?

Response:

The natural gas consumed in British Columbia emits more GHGs than the GHG's associated with the electricity consumed in BC. Biomethane is GHG neutral, and thus is "greener" than either natural gas or electricity.

Natural gas emits GHGs upon its consumption in end use applications.

The GHG emissions associated with electricity consumed in the province arise, for instance, as follows:

- Domestically produced electricity coming from hydro dams has a very low carbon intensity. The associated emissions arise from, for example, the release of methane from rotting vegetation in the reservoirs and the land area occupied by the reservoir and transmission rights of way is no longer able to act as a carbon sink.
- Fossil fuels are also consumed in the operating and maintenance of the dams, reservoirs and generation facilities.
- Domestically produced and imported electricity coming from natural gas combustion has a higher carbon intensity than end use consumption of natural gas. This results from the combustion of the gas at low efficiencies relative to the combustion of the gas for direct use applications such as space and water heating. Imported electricity coming from coal combustion has a very high carbon intensity due both to the high carbon content of the fuel and the relative inefficiency of the combustion conversion to electricity. British Columbia presently imports up to 15% of its electricity from jurisdictions where electricity is predominantly made from the carbon-intensive combustion of coal and natural gas.

Carbon-neutral Biomethane has zero carbon intensity and is therefore, in the context of this Application, "greener" than the electricity consumed within the province of British Columbia at the present time. However, the proposed Green Gas program would comprise a blend of 10% Biomethane and 90% conventional natural gas, whereas the BC Hydro standard offering comprises 85% or more "greener" hydro electricity.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 32

In this Application, Terasen Gas is seeking to offer our customers a Biomethane product they have demanded, and educate them about it, including education about the relative environmental benefits of Biomethane.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 33

5.0 Reference: Cost Recovery Principles for the Green Gas Program

Exhibit B-3, BCUC 1.10.1, p.32-33

- 5.1 TGI is proposing that the costs of education and making available the choice to participate in the program be borne by all customers because costs are being incurred for the benefit of all customers.

Isn't it the right of customers to choose whether they want to participate in the program or not? If they have that right, should they not make be an informed decision with all facts known including all costs? If it should be an informed decision, how can customers collect the necessary information to make a decision if some costs of the program are hidden and borne by all customers?

Response:

Terasen Gas confirms that, in accordance with past precedent and accepted practice regarding cost causality, the cost allocation methodologies proposed for the Green Gas program allocate the costs of customer education and other costs associated with making the choice to participate in the program available to customers have been allocated to all non-bypass customers. Terasen Gas also agrees that customers have the right to choose whether they want to participate in the program or not, and hopes that they will exercise that right based on correct information including the costs of making the decision to purchase and consume Biomethane.

The Company disagrees with the premise inherent in the question that any of the costs of the program are being hidden and therefore negatively impacting the ability of customers to make an informed decision. Customers will have available to them the full cost of service of Biomethane (presently proposed at \$9.904 / GJ as found in Section 10 of the Application), as well as the cost per GJ of natural gas for comparison purposes, when they make the decision as to whether or not they wish to purchase Biomethane. The rate will be specified in a rate schedule that must be approved by the Commission, and is thus transparent.

The derivation of the Biomethane rate is equally transparent. This proceeding is intended to address, in a public forum, Biomethane rates, cost of service and cost allocation, among other matters. Terasen Gas was required to advertise the process and instructions on how to intervene, and anyone was free to intervene. A number of parties have intervened. Terasen Gas has filed significant evidence on these matters, and the issue of how the rate for Biomethane was derived is currently being aired in the IR process. Should customers who did not actively participate in this proceeding wish to know at some future time how the rate for Biomethane is derived, they will at a minimum have access to the information filed by Terasen Gas in this proceeding supporting the cost of service and allocation of costs, and the Commission's decision in this regard. In short, customers will have the same access to this background information that they would have following any rate design application heard by the Commission.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 34

6.0 Reference: Guiding Principles

Exhibit B-3, Question 14.3, p.49

- 6.1 Gas Marketers are able to advertise individually for their Green Gas offering why shouldn't TGI be obligated to advertise in a competitive fashion without a subsidy from other customers?

Response:

This topic is addressed in BCUC IRs 1.1.5, 1.16.1 and 1.18.1. TGI makes two general points in response.

First, Gas Marketers earn their profits from the sale of gas commodity, requiring a mark-up on their commodity costs. The revenues accommodate the costs incurred for promotion and sales activity. Terasen Gas, in contrast, neither makes nor loses money on the sale of gas but rather passes on the costs to our customers as a flow through. This is the philosophy underpinning the cost allocation proposals for the Green Gas program where the cost of Biomethane is passed directly to those customers who chose to purchase and consume it. Allocating customer education costs, which include advertising, to all customers is consistent with the precedents set in the Customer Choice program as well as current practice for a wide variety of other utility education initiatives.

Second, there is no cross subsidy between gas customers and Biomethane customers, as the allocation is based on principles of cost causation. TGI is of the view that customer education costs should be recovered from all non-bypass customers because the purpose of customer education is to ensure that all customers are able to make an informed decision about whether or not they wish to participate in the program. Customer education is also important over the long-term because customers' circumstances may change over time, resulting in a different decision than one made when the product is initially launched.

Terasen Gas is responsible for the communication of many messages, some of which are likely construed by customers as products. For example, TGI offers customers the option of choosing to enrol in our Equal Payment Plan and our Pre-Authorized Payment Plan. The costs to support these services in the way of forms, service provisions and advertising are borne by all customers, not just those that are currently enrolled.

This approach is also consistent with safety messages, such as 'Call before you dig'. TGI recovers the costs to communicate the importance of proper digging procedures to all customers and the general public. The Company does not recover the communication costs from only those individuals who happen to be digging and make use of the BC One Call line.

In summary, TGI believes that customer education costs should be recovered from all non-bypass customers because the communication is important to all customers, not just those who



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 35

immediately enrol in the program. In addition, while Gas Marketers can adjust their profit margins, the TGI commodity charge is not marked-up; TGI's shareholder would bear the burden of the necessary education costs when these are a legitimate cost of service that should be recovered through rates.

- 6.2 Why should approximately 98% of customers pay for the advertising and education of a product which they do not want as demonstrated by their lack of participation in the program?

Response:

Please refer to BCUC IR 2.6.1. TGI offers many products which are funded by all non-bypass customers rather than just those that use the service. Customer Choice is just one example. The rationale is the same for all of these, i.e. the costs are associated with making the service available to customers generally even if only a limited number of customers initially enrolled in the program.

TGI wishes also to address the reference to approximately 98% of customers in the question, as the reference is not indicative of the expected participation rates. Although initial pickup rates are expected to be low, this target reflects the limited initial supply of Biomethane that will be available. TGI notes that the market share forecast as a result of our customer research is significantly higher than 2.2%. In research conducted by TNS Canadian Facts and described in Section 5 of the Application, 16% of residential customers indicated that they would participate in the proposed Green Gas program were it made available to them. Additionally, our commercial customers have indicated a participation rate of 10%. The 2.2% referenced in the question is the North American average participation rate for utility customers in unconventional energy programs. In the interests of mitigating risk through conservative forecasting, TGI has only started development of sufficient Biomethane supply to serve slightly less than this 2.2% level of participation but has built the proposed program in a scalable manner so as to facilitate much higher customer participation, such as the 16% and 10% participation rates research suggests is possible. Based on this research, it is reasonable to expect that the 2.2% North American average will be exceeded by TGI over time. The Company believes there is an opportunity for the number of participating customers to exceed the take up suggested by the TNS survey results as more customers become informed about the environmental benefits of Biomethane.

Costs of making the program available to customers and the cost of educating customers that are eligible to participate in the program are recovered from all non-bypass customers. TGI is not only responding to customer demand, but also government policy which is encouraging the



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 36

adoption of green and innovative technologies. As TGI is committed to expanding the proposed program to all customer groups as rapidly as the market will allow, the Company believes it is appropriate to begin recovering the costs of offering the Green Gas program as well as the associated customer education costs from all non-bypass customers beginning in 2012 when the program will be expanded to commercial customers through Rate Schedules 2B and 3B. TGI believes that allocating costs on this principled basis produces a fair result for all customers and the shared costs of this program at this early stage are much smaller than the Customer Choice Program.

- 6.3 Wasn't TGI given the mandate to advertise for Customer Choice on the basis that it did not have a competing product?

Response:

No, the mandate to deliver customer communications resulted from the introduction of an unbundled commodity service that was established in response to Commission Letter L-49-02, dated December 13, 2002. This direction itself was prompted by the release of the British Columbia Energy Policy, "Energy for Our Future: A Plan for BC," on November 25, 2002.

The education plans developed for the introduction of the commercial and subsequent residential program were designed to generate awareness of the program and support consumers to enable them to make an informed purchase decision. TGI was not given this responsibility based on an interpretation of how these products would compete, but rather because the Company was the best suited to facilitate the necessary communications. Consistent with the introduction of the unbundled options, TGI will retain responsibility for the regulated, variable-rate Biomethane product, while gas marketers may choose to offer a variety of fixed-rate commodity products that may or may not feature green components, like carbon offsets or Biogas content.

- 6.4 If given a similar mandate as Customer Choice to advertise "Green Gas" doesn't this place TGI in an unfair advantage with respect to other Gas Marketers as the TGI brand offers a significant advantage when advertising to its own customer base?



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 37

Response:

Please see BCUC IR 1.14.1.4.

Terasen Gas will treat non-TGI entities with Biomethane product offerings equally. Similar to Customer Choice, in its print collateral pieces TGI will inform customers that they have a choice of other green programs offered by gas marketers. The treatment of this information will be similar to the manner in which gas marketer fixed rate offerings have been referenced in TGI's customer communications about its variable commodity rate. This approach will help to ensure that TGI is able to educate customers about the benefits of these commodity offerings, and that there are both variable and fixed rate offers available.

- 6.5 TGI states that: *"TGI believes that the biomethane offering is analogous to a new rate, one that will require education and promotion to establish and maintain – as opposed to a program for the entire industry, such as Customer Choice."*

Why shouldn't TGI be at risk for establishing sufficient demand for Green Gas offerings so that revenue generated from the offerings is sufficient to cover the all the expenses including promotion similar to a Gas Marketer's business plan?

Response:

Please refer to BCUC IR 1.1.5.

Under the regulatory framework established by the Utilities Commission Act, the Commission must set public utility rates that recover the cost of service and provide the shareholder with an opportunity to earn a return on capital it invests in the utility. Educational, promotional and other similar marketing costs are necessary utility costs that are incurred by the Company as it seeks to offer new products in response to consumer interest, and as such they should be recovered through rates. Otherwise, rates would not be just and reasonable as defined under the Act.

The revenue requirement must, of course, be allocated among classes of service and customer classes, with cost of service based rates established through the rate design process. In this Application, TGI has proposed an appropriate allocation of costs of service based on the principle of cost causality. Although Biomethane appeals to a segment of our customers, the costs incurred to make all customers aware of product offerings should be borne by all non-bypass customers.

This is consistent with past precedent. For instance, all non-bypass customers pay the costs (i.e., administration, communication, forms) that support our Equal Payment Plan ("EPP") and



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 38

Pre-Authorized Payment Plan ("PPP") options, even though only a subset of customers take advantage of the options at any given time. Indeed, people's use of these products change with their circumstance. New home owners for example, may not be able to enrol in EPP because there is no consumption history to base their payment structure on. Even if a Green Gas rate is not chosen by a customer when it is initially launched, their circumstances and understanding of the value of the product may change over time. Promotional funding ensures that customers are informed about the product's availability now and reminded about it in the future.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 39

7.0 Reference: Demand in British Columbia

Exhibit B-3, Question 15.2 p. 53 and Question 16.1, p. 55, Question 16.2, p. 56

7.1 TGI states that (Question 15.2, p.53): *"Although this means that some customers would be paying for a portion of the costs for two "green" programs, the two programs offer two substantially different products."*

7.1.1 Are they different products or competing products since the Green Gas program includes carbon offsets and Gas Marketers can have an interest and promote biomethane projects in the same way as TGI?

Response:

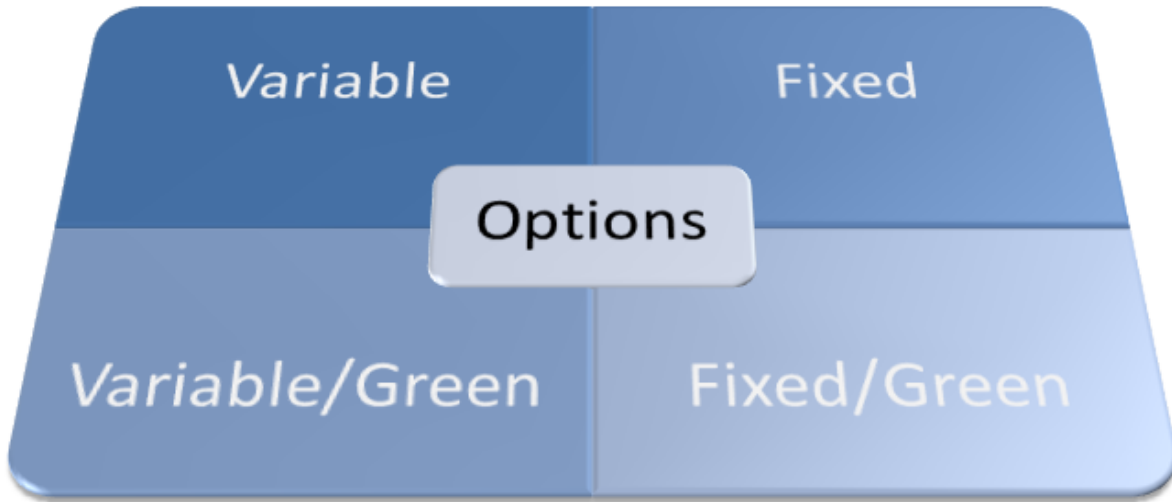
Terasen Gas believes the products offered by the Company and by Gas Marketers represent distinct purchase options for customers. Today gas customers have three purchase options, including: the TGI regulated variable rate, and two Gas Marketer options including either fixed or a fixed rate with green component, such as carbon offset. With the introduction of the Biomethane product consumers will have four commodity options available as shown in Figure 1 below.

Given that consumers can only choose one option at a time, gas marketers actively compete for customers currently enrolled in the Terasen Gas regulated variable rate. Because the Customer Choice program costs are included in the delivery charges for the each region and rate class, TGI remains relatively indifferent with respect to which product the customer chooses. TGI is focused on providing product offerings that customers value. And these products should remain viable over the long term.

Consumers that seek long term security and are intent on reducing their carbon footprint will gravitate to the fixed rate products made available from independent gas marketers. Alternatively, customers that lean towards a variable rate but also want to go green will likely choose the TGI Biomethane option.

<p>Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")</p>	<p>Submission Date: September 2, 2010</p>
<p>Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1</p>	<p>Page 40</p>

Figure 1: Commodity Purchase Matrix



TGI has a vested interest in ensuring that the products it introduces (i.e., Biomethane) or facilitates (i.e., Customer Choice) remain sustainable with adequate subscription levels. This will help to ensure that the associated set-up and maintenance costs are able to be recovered, and that the options remain available for customers in the future.

7.1.2 In question 60.2, p.189, TGI states that: "TGI believes that the communication activities to simulate interest and participation in the Customer Choice program resides with gas marketers."

7.1.2.1 Will TGI's biomethane education program stimulate interest and participation in the biomethane program?

Response:

Yes, the proposed customer education program is designed to stimulate consumer interest, awareness and participation in the Biomethane program.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 41

7.1.2.2 Why should TGI not compete on a level playing field with Gas Marketers i.e. why shouldn't the revenue generated by TGI's Green Gas program support its advertising budget?

Response:

Please see BCUC IR 2.6.5.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 42

8.0 Reference: Customer Offering, Product Rollout and Proposed Tariffs

Exhibit B-3, Question 16.2, p. 56

TGI states that *"TGI may be willing to consider such arrangements in a future phase of the program when more supply is developed or available."*

- 8.1 Why shouldn't Gas Marketers be allowed to provide biomethane gas into the TGI system if the cost is below or at current TGI projects?

Response:

Please see response to BCUC IR 1.66.1.

In addition, Terasen Gas would like to add that there are substantially more issues than simply the cost of the Biomethane gas that are at play in such a decision. For example, Terasen Gas has an obligation to our customers and to the general public to ensure that all gas injected into our system is both safe to consume and is also injected into our system in a safe manner. This means that we must control access to our distribution system and be the ultimate arbitrar of what gas is injected and what gas is not. If marketers or other parties are able to develop Biomethane projects at a price below the current projects within the guidelines proposed in Section 8 of the Application, Terasen Gas would welcome the additional supply to serve our customers who have indicated a higher level of demand for Biomethane than we are presently able to meet.

As detailed in our response to BCUC IR 1.66.1: *"nothing proposed in this Application precludes Marketers from developing sources of raw Biogas supply"*.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 43

9.0 Reference: Customer Education

Exhibit B-3, BCUC 1.18.3, p. 61

TGI states: *"The customer education budget was proposed based on the incremental requirements to generate awareness of TGI's proposed Green Gas program."*

9.1 Is it TGI's position that any form of information that generates awareness of a TGI product is not advertising.

Response:

No. The Webster's dictionary defines "advertising" as *"the action of calling something to the attention of the public esp. by paid announcements"*⁴. Terasen Gas uses advertising as one of many tools available to generate awareness on a number of items related to the utility's business, for example, to alert customers to safety issues; availability of or changes to products and services; opportunities to participate in regulatory proceedings such as this, etc.

9.2 Are there any alternative green gas programs available to TGI customers?

Response:

Terasen Gas customers who presently choose to purchase their natural gas commodity from Terasen Gas do not presently have any green gas choices, however as detailed in the scientific research in Section 5 of the Application, they are demanding them, which is why we have submitted this Application.

The Company is aware that customers who chose to purchase their natural gas commodity from marketers in the Customer Choice program have or may have the option of purchasing gas for which carbon offsets have been applied. Terasen Gas firmly believes that the proposed Green Gas program does not compete directly with this type of an offering for several reasons:

- 1) The proposed Green Gas program is a renewable energy-based program and not an offset-based program.
- 2) The proposed Green Gas program is based on a variable price and not a on a fixed price contract.

⁴ Webster's New Collegiate Dictionary, published in 1981 by G. & C. Merriam Co, USA. Page 17.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 44

- 3) The proposed Green Gas program is based on a flexible, open tariff allowing customers to leave at any time for either the Terasen Standard Rate or to a marketer contract, whereas the marketer offering results in a contractual obligation for both parties over a defined term from 1 to 5 years.

In summary, the proposed Green Gas program is a new and separate offering from anything presently available to customers buying their natural gas from TGI.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 45

10.0 Reference: Cost Recovery principles for the Green Gas Program

Exhibit B-3, BCUC 1.18.2, p.59-61

10.1 TGI states that: *"The customer education plan, which the Company believes best supports the introduction of the biomethane program, has been designed to meet four objectives:*

- *generate awareness and understanding of biomethane as a renewable energy and its availability today;*
- *generate awareness and understanding of the Terasen Gas Green Gas program;*
- *stimulate interest and participation in the program; and*
- *maintain participation and support for the program."*

10.1.1 Why should there be a promotional component in this plan at all? Shouldn't TGI fund the promotional component independently?

Response:

The starting point in responding to this question must be the legal and regulatory principle that prudently incurred costs of services are recoverable in rates. TGI has discussed the need for a promotional component in the customer education plan and the inability to distinguish costs between promotional and educational elements in BCUC IRs 1.18.2, 1.18.4, 1.60.3, 1.60.5 and 1.60.6. As these costs are necessary to ensure that customers are made aware of the option of taking the Green Gas service, they are an appropriate cost of providing service.

The issue then becomes one of rate design, and allocating costs fairly so that they are recovered from the correct customer group. Support for the cost allocation proposal similar to Customer Choice is discussed in BCUC IR 1.14.3.1.

In addition, TGI's proposed marketing funding to promote the Biomethane offering is consistent with past decisions for similar programs, as evidenced by the Commission's approval of the Stable Commodity Rate Service program. In Commission Order No. G-25-04, dated March 12, 2004, the Stable Rate program was approved and included marketing expenditures to promote the program. The marketing budget for the Stable Rate program was similar to the proposed Green Gas program budget and contained both educational and promotional elements. See also BCUC IRs 2.3.3.3, 2.6.1, 2.6.5.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 46

10.1.2 TGI states that: *"Appreciating the sensitivity of this role, Terasen Gas commits to relate the availability of gas marketer green products when the utility is distinguishing between its regulated, variable rate offerings and the fixed rate contracts of gas marketers."*

10.1.2.1 Isn't this statement a decided change from TGI's original position?

Response:

As discussed in the response to BCUC IR 1.60.9, similar to Customer Choice, in its print collateral pieces TGI will inform customers that they have a choice of other green programs offered by gas marketers. The treatment of this information will be similar to the manner in which gas marketer fixed rate offerings have been referenced in customer communications about TGI's variable commodity rate.

TGI is unclear what the IR is identifying as TGI's original position, but can confirm that TGI referenced its commitment for the first time in response to an information request that raised a specific issue about, and required elaboration on, the proposed customer education program, but is not a change from TGI's current treatment of gas marketer products.

10.1.2.2 Why would it be an advantage for Gas Marketers to have a competitor control the "education" and "promotion" of a market segment when TGI would benefit from advancing its own products?

Response:

TGI is not in control of the education and promotion material for other market participants including Gas Marketers.

Gas Marketers will continue to be responsible for promoting their product offerings to customers but will have the added benefit of increased consumer knowledge of green gas products as discussed in BCUC IR 1.18.1.

Similar to Customer Choice, in its print collateral pieces TGI will inform customers that they have a choice of other green programs offered by gas marketers. The treatment of this information will be similar to the manner in which gas marketer fixed rate offerings have been



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 47

referenced in customer communications about TGI's variable commodity rate. Bill inserts and other brochures can provide the space needed to provide additional messaging that mass media does not.

- 10.1.3 If TGI were to assume a communication role similar to the Customer Choice program, would it not have to be an independent third party and not participant in the "Green" market i.e. not be involved in the Green Gas program?

Response:

Consumers are offered two basic products today – a variable and a fixed rate. Customers can currently purchase a fixed rate product that features a green component (e.g., carbon offsets) from gas marketers. Terasen Gas would like to offer customers a variable-rate green product. TGI does not believe the introduction of this new option is unfairly advantageous. The proposed delivery of the product is consistent with the Company's approach for other rates; it merely includes a promotional element to target those customers inclined to select a green product, and hopefully educate others about the product's environmental benefits. The proposed approach will assist in establishing adequate subscription rates for the variable rate product, and at the same time help inform customers about the availability of similar fixed-rate products from gas marketers.

- 10.1.4 Is the Customer Choice marketing program not designed with the objective of creating awareness for consumer protection?

Response:

The Customer Choice communication objectives were established by Commission staff in Order G-181-01, dated December 12, 2008. Page 3 of this order states:

"The objectives of the Customer Education Plan are to be modified to:

- *Inform gas customers that there is a value distinction between a variable rate and a fixed rate for the gas commodity and provide them with information concerning the issues they could consider to determine which rate plan represents best value in their circumstances.*



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 48

- *Identify the gas commodity marketplace as a competitive market and provide information on where and how the various product offerings may be compared."*

The current advertising strategy has been designed with the participation of gas marketers and Commission staff oversight to align with these stated objectives. Meeting these objectives help customers make informed purchase decisions so that they can choose the best commodity offer for their circumstance.

This is not to say that consumer protection isn't important. Consumer protection is paramount to promoting and achieving a functional and competitive business environment. Consumer protection mechanisms include the licensing of Gas Marketers, the Code of Conduct and the Independent Dispute Resolution process. These mechanisms are designed to ensure fair competition and the free flow of truthful information in the marketplace. Although not specified in the objectives above, TGI is of the view that ongoing communications also help generate awareness of one's rights and obligations afforded by the Consumer Protection mechanisms put in place and enforced by the BCUC.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 49

11.0 Reference: **Cost Recovery Principles for the Green Gas Program**

Exhibit B-3, BCUC 1.18.2, p. 62- 63

11.1 Would you agree with the following aspects of the Customer Choice Program:

- TGI does not compete with Gas Marketers by offering the same product.
- Gas Marketers are independent businesses and may offer fixed price gas contracts as well as contracts reflecting carbon offsets
- There is competition among Gas Marketer for customers
- Each Gas Marketer is responsible for education and promotion of its products
- TGI provides consumer protection advertising because it is not competing with Gas Marketer products.

Response:

Terasen Gas will address each bullet in turn:

- ***TGI does not compete with Gas Marketers by offering the same product.***

TGI does not compete with Gas Marketers in the sale of fixed rate contracts. We offer gas commodity through our regulated variable rate, which is arguably generic in comparison. However, Gas Marketers do vie for customers currently enrolled in the TGI regulated variable rate. Because the Customer Choice program costs are included in the delivery charges for the each region and rate class, TGI remains indifferent with respect to which product the customer chooses. This costing approach is consistent with that proposed for the Green Gas program. TGI is focused on establishing product offerings that provide customers value and remain viable over the long term.

- ***Gas Marketers are independent businesses and may offer fixed price gas contracts as well as contracts reflecting carbon offsets.***

Yes, Gas Marketers are independent businesses that may offer fixed price gas contracts as well as contracts that include carbon offsets. However, given the constraints of the Essential Services Model that underpins the Customer Choice Program, Gas Marketers may not offer either variable rate or variable rate green products.

- ***There is competition among Gas Marketers for customers.***



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 50

There is competition among Gas Marketers for customers.. Gas marketers actively pursue customers that are currently served by the regulated variable-rate offered by Terasen Gas.

- ***Each Gas Marketer is responsible for education and promotion of its products.***

No, Terasen Gas believes that Gas Marketers are motivated to promote and sell their products, rather than "educate" customers. Negligible consumer education effort by Gas Marketers has been evident since commercial unbundling was introduced 2004. Gas Marketers rely primarily on door to door sales activity to promote their product offering. Terasen Gas has been the primary proponent and delivery agent of customer education material regarding Customer Choice.

- ***TGI provides consumer protection advertising because it is not competing with Gas Marketer products.***

No, TGI does not specifically deliver "consumer protection"⁵ advertising, but rather the Company provides education about the availability of the program to customers eligible to participate in it. The communication objectives are mandated by BCUC Order Order G-181-01, dated December 12, 2008 (see BCUC IR 2.10.1.4). Stated objectives are designed to help customers understand that there are competitive offers available, that there is a distinction between fixed and variable rates, and the advertising tells customers what to compare and where more information can be obtained. Achieving these objectives helps customers make an informed purchase decision.

The Commission provides the primary consumer protection mechanisms through the licensing of Gas Marketers, enforcement of the Code of Conduct and the use of the Independent Dispute Resolution process. These mechanisms are designed to ensure fair competition and the free flow of truthful information in the marketplace. TGI is of the view that ongoing communications can help generate awareness of one's rights and obligations afforded by the Consumer Protection mechanisms that support the Customer Choice program and are enforced by the Commission; however, that is not one of the stated objectives of the education communications.

⁵ TGI believes "Consumer Protection" to include those activities that seek to guard customers for unfair marketing activities. These steps may include, but are not limited to ensuring consumers have access to truthful information, and protection from businesses that engage in fraud or passing off.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 51

12.0 Reference: Customer Education

Exhibit B-3, BCUC 1.19.2, p. 64

TGI states: *"TGI does not intend to track the labour hours of TGI staff engaged in the Biomethane program, as TGI labour costs are not included in the program funding requested. Staff costs to develop and administer programs like the Biomethane program are already provided for in the existing allowed TGI O&M budgets. As a result, the program budget includes only costs that are considered incremental to the Company."*

12.1 As part of the TGI 2010-2011 Revenue Requirements Application Negotiated Settlement Agreement, did TGI not agree to track and quantify hours (by way of timesheets) of all staff members in relation to projects such as this?

Response:

No. As part of the TGI 2010-2011 RRA Negotiated Settlement Agreement "NSA", TGI agreed that sales and marketing O&M and other development costs for **Alternative Energy Solutions only** will be directly charged to the deferral account by time sheets or other direct charge. In the NSA document dated November 5, 2009 contained in Order G-141-09 from the Commission, Alternative Energy Solutions is defined as Geo-exchange, Solar-thermal and District Energy Systems and does not include natural gas focused programs such as a Biomethane program. In fact, Biogas is specifically referenced in a separate section (Item 15) within the NSA document. As such, TGI is compliant with the wording and the spirit of the NSA document.

12.2 Is TGI in currently compliance with the terms and conditions reached in the 2010-2011 Revenue Requirements Application Negotiated Settlement Agreement?

Response:

Yes.

Please refer to BCUC IR 2.12.1.

12.3 Is this Application consistent with all components of the terms and conditions reached in the 2010-2011 Revenue Requirements Application Negotiated Settlement Agreement?



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 52

Response:

Yes.

Please refer to BCUC IR 2.12.1.

12.4 Does TGI have the ability to track labour hours, by way of timesheets, of TGI staff engaged in the Biomethane program?

Response:

Yes, TGI has the ability to track labour hours by way of timesheets of TGI staff engaged in the Biomethane program but as noted in the above response to BCUC 1.19.2, TGI does not intend to track the labour hours for this program. Labour costs to develop programs like the Biomethane program are already provided for in the existing allowed O&M budgets.

12.5 How many TGI staff members have job assignments and descriptions that could include working on the customer education program?

Response:

The Company's response to this question will also address BCUC IR 2.12.6.

The primary work done on the customer education program will be performed by the Biogas Program Manager. He / she will be supported by personnel in our Communications department, who will develop strategic and creative plans, design and write communications materials. Currently, there are 12 members of the Communications department who are involved in the strategic and creative development, design and writing of communications materials. The work performed within the Communications department will be done within existing budgets, however the Biogas Program Manager is a new role that requires incremental funding. Terasen Gas has asked for approval of funding for the Green Gas Program Manager FTE role at up to a maximum fully loaded cost of \$125,000. The Biogas Program Manager position has not yet been approved by the Commission and so he / she has not yet been hired. As a result, their salary has not yet been determined.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 53

12.6 How many TGI Staff members that may contribute to the customer education program have salaries of over \$100,000?

Response:

Please refer to BCUC IR 2.12.5.

12.7 To what level are senior executives and board members involved/to be involved in the customer education program?

Response:

Please refer to BCUC IR 1.43.2.4.

12.8 As part of the TGI 2010-2011 Revenue Requirements Application Negotiated Settlement Agreement was TGI given consent to conduct biomethane education programs. If so, describe in which account these costs were included and what was the budgeted cost for labour/other items is within that application.

Response:

TGI did not include funding for a Biomethane education program in the 2010-2011 Revenue Requirement Application because there was no direct product offering to customers proposed in the RRA. TGI had only proposed to invest in supply as part of a pilot program, with no associated product offering that required a customer education exercise to be undertaken. The costs of the Biogas pilot outlined in the RRA were also proposed to be part of the Midstream, and not in delivery rates addressed in the RRA. As a result, the approved O&M budgets do not include funding for the proposed Biomethane education program for which TGI is seeking funding approval for in the current Application.

As clarified in the response to BCUC IR 2.33.5, TGI did recently prepare a renewable energy brochure for the EPIC trade show to test for customers' interest in the proposed Green Gas offering. TGI views the brochure as integral in the development phase of Green gas program and separate from the customer education phase, for which TGI is seeking approval for the incremental funding required.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 54

- 12.9 Have any of the plans TGI had for the biomethane education budget as included in the 2010-2011 revenue requirement application, changed since the Negotiated Settlement Agreement was reached?

Response:

To clarify, TGI did not include funding for a Biomethane education program in the 2010-2011 Revenue Requirement Application because there was no direct product offering to customers proposed in the RRA. TGI had only proposed to invest in supply as part of a pilot program, with no associated product offering that required a customer education exercise to be undertaken. The costs of the Biogas pilot outlined in the RRA were also proposed to be part of the Midstream, and not in delivery rates addressed in the RRA.

Please also refer to the response to BCUC IR 2.12.8.

- 12.10 Does TGI have the capacity to conduct the proposed customer education program within existing resources? If so, why does such capacity exist?

Response:

No. The current budgeted capacity of Terasen Gas is based on the Negotiated Settlement Agreement reached at the conclusion of the 2010-2011 Revenue Requirements Application proceeding and approved by the Commission in order G-141-09. This budgeted capacity was based on the then-proposed absorption of costs associated with Biogas and Biomethane into the Midstream Cost Reconciliation Account and did not allow for costs stemming from such activities as the proposed customer education program.

The customer education budget proposed in Section 6.6.2 of the Application and a portion of working time made possible by the incremental FTE position proposed in Section 10.4 of the Application were proposed so as to provide Terasen Gas with the capacity to conduct the customer education program.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 55

13.0 Reference: Customer Education and Incentive Compensation

Exhibit B-3, BCUC 1.20.2, p. 67

TGI states: *"Pay increases and incentive opportunities for all employees are linked to individual and Company performance. Company performance, for purposes of the Employee Incentive Plan, is measured by how well the Company meets our annual scorecard measures. One of the Company's 10 measures is the progress on new project development initiatives such as a biogas program. Therefore, the success of the Green Gas program in a small way, could influence all TGI employees' incentive pay."*

13.1 Please provide the actual wording of the 10 measures used in the annual scorecard.

Response:

The current annual scorecard consists of the following 10 measures grouped into four categories:

Financial

- Terasen Gas Group Net Earnings

Customer

- O&M Per Customer
- Base Capital
- Customer Satisfaction Survey Score

Key Processes

- Credit and Collections
- Integrated Energy Service Offerings

Employee

- Recordable Vehicle Accidents
- Recordable Injuries/Medical Treatment
- Wellness
- Public Safety



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 56

- 13.2 Given that employees receive compensation for the progress of new programs, how does TGI plan to mitigate the risk that employees deployed to conduct education activities do not begin to perform marketing, promotional or branding activities?

Response:

Terasen Gas supervises employees through a number of control measures. If an employee is deployed to conduct education activities they would be supervised to ensure they are not performing non-assigned functions in the same way that any other employee is supervised to ensure they are not performing non-assigned functions.

- 13.3 Do employee scorecards contain weighting factors associated with each measure?

Response:

In responding to this IR, the Company has assumed the author meant 'annual scorecard' as opposed to 'employee scorecard' as per the reference provided in the lead in to the question.

Terasen Gas' annual scorecard incorporates individual weighting factors for each of the Company's performance measures. The weightings reflect the Executive Leadership Team's ranking of the importance of each measures contribution towards achieving the goals set out in the Corporate Strategic Plan.

- 13.4 Is employee incentive compensation determined by a calculation? If so, what is the formula for calculating?

Response:

The Employee Incentive Plan (EIP) is an opportunity available to eligible employees to share in the company's success and be recognized for their contributions in achieving the outcomes in the performance year. This program emphasizes and encourages excellence, growth and development which provide incentive opportunities for all employees that are linked to individual and company performance. The EIP is paid in February following the performance year (equivalent to a calendar year). Each affiliation has unique guidelines outlining the methodology



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 57

for processing EIP. The IBEW and COPE incentives are governed by the guidelines set out in their respective collective agreements.

M&E:

The Employee Incentive Program introduced in 1996 provides management and exempt employees a direct stake in the results they produce. Employees are eligible to earn an incentive amount depending on their ability to impact outcomes and results which align with the Scorecard Objectives. All personnel are required to have personal performance plans in place in the first quarter of each year. Actual payout is based on the employees' personal performance as well as Company performance. A minimum threshold level of corporate financial performance must be achieved before the plan pays out. The general formula used to calculate an M&E EIP amount is as follows:

Annual Salary x Personal Performance x Corporate Scorecard

IBEW:

There are two components to the EIP calculation for IBEW:

1. Corporate Scorecard: \$1,000 times the Scorecard multiplier; this amount will be prorated if an employee's annual absences exceed 20 days in the performance year;
2. Individual Performance Measures:
 - a. Lost Time Accidents: an additional \$300 if the employee maintains zero lost time accidents in the performance year
 - b. Motor Vehicle Accidents: an additional \$300 if the employee maintains zero motor vehicle accidents in the performance year; and
 - c. Attendance: an additional \$300 provided no more than two paid medical/dental appointments AND total paid sick leave is less than 50% of the bargaining unit average for the performance year. The employee must meet both attendance criteria to be eligible.

Sample IBEW Calculation:

Assumptions:

Scorecard Multiplier: 1.05

Employee had no lost time accident and no motor vehicle accident

Employee had less than 50% of the bargaining unit's average sick leave and not more than 2 paid medical/dental appointments

Corporate Scorecard Factor: 1,000 x 1.05 = \$1,050



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 58

Individual Performance Measures:

Lost Time Accidents: \$300
Motor Vehicle Accidents: \$300
Attendance: \$300

Total EIP Payment: \$1,950.00

COPE:

All employees have a personal performance plan and behavioural goals developed for the reporting year. There are three components to the EIP calculation:

1. Corporate Scorecard Factor: 1% of an employee's actual earnings times the Scorecard Multiplier;
2. Employee Performance: 1% of an employee's actual earnings provided the employee has met both the behavioural goals and 3 out of 4 of their performance goals as identified in their performance plan; and
3. Total Sick Leave: 1% of an employee's actual earnings provided the employee's total paid sick leave (including sick leave and paid medical appointments) is less than 75% of the bargaining unit average.

Sample COPE Calculation:

Assumptions:

Scorecard Multiplier: 1.05
Actual Annual Earnings: \$40,000
All performance and behavioural goals were met
Employee had less than 75% of the bargaining unit's average sick leave

Corporate Scorecard Factor: $40,000 \times 1\% \times 1.05 = \420

Employee Performance Factor: $40,000 \times 1\% = \$400$

Sick Leave Factor: $40,000 \times 1\% = \$400$

Total EIP Payment: \$1,220.00

The costs for all 3 Employee Incentive Plans are captured under Operation and Maintenance expenses.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 59

14.0 Reference: Incentive Compensation

Exhibit B-3, BCUC 1.20.2, p. 67

TGI states: *"Staff costs to develop programs like the Green Gas program are already provided for in the existing allowed O&M funding. Additionally, costs for the Biogas Program Manager (FTE) role identified in Section 10 of the Application are proposed to be shared by all TGI customers. As a result, any bonus costs resulting, in part, by the performance of the Green Gas program will be shared by all TGI customers."*

14.1 Please explain if, under a user-pay program, incentive compensation resulting from the program should be borne by all customers.

Response:

This program is responsive to the demands of our customers and its success will benefit all customers. In keeping with the precedent from Customer Choice, our Energy Efficiency and Conservation program, and current practice, the cost of compensation for Terasen Gas employees responsible for managing programs made available to our customers but not necessarily participated in by all customers is recovered from all non bypass customers.

14.2 On an employee evaluation or incentive compensation form, does TGI identify which performance measures contributed to total employee incentive compensation? If so, is any weighting noted on this evaluation or incentive compensation document?

Response:

Terasen Gas needs to continue to deliver, safe and reliable service offerings to our customers. The goal of the compensation program is to retain, attract and motivate the employees to help deliver these product offerings to customers – and as such, Terasen Gas has designed a total compensation program – a part of which is incentive compensation.

Terasen Gas employee evaluation forms (referred to internally as Performance Plans) have both annual goals and performance measures that document how well an employee meets those measure, influences, and play a substantial role in how incentive compensation is awarded. Weightings for these measures may or may not be formally noted, however some goals may have more influence over others in determining the employee's incentive pay.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 60

15.0 Reference: Feasibility Process

Exhibit B-3, BCUC 1.21.2, p. 70

TGI states: *"In order to ensure the supply is economic, TGI has developed an initial framework that is used to evaluate potential new supply. The initial feasibility process (as described in BCUC IR 1.21.1) will be used to complete an initial economic evaluation. From this initial feasibility, TGI will refine cost estimates (including the price paid to potential suppliers) and supply estimates to improve confidence in the final price for customers before finalizing an agreement."*

15.1 Under TGI's initial feasibility process, does TGI propose any metrics to determine economic feasibility, similar to a main extension process? Please provide an example of the entire formal evaluation that would occur under this feasibility process.

Response:

TGI has explained the metrics for economic feasibility of a proposed project within Section 8.4.1, Guiding Principles of Biomethane Supply, within the Biogas Application. In the Application, we have requested approval of a cost of service model with a currently proposed maximum cost threshold for Biomethane of \$15.280/GJ for a project to proceed under the proposed streamlined regulatory process described in Section 8.4.3 of the Application.

While some elements of a main extension test are also employed in our analysis of the feasibility of a given Biogas project, the fact that the capital costs and return expectations of the producer can vary widely means that limiting the feasibility process to a prescribed extension test is not appropriate. For example, the capital costs and required return for a private business developing a completely new green field project may be quite different from that of a municipality who is already required to install landfill and Biogas collection in its facilities. A prescribed extension test is not flexible enough to satisfy this range of needs and allow the development of a Biomethane industry in BC. The negotiation of a Biogas price acceptable to both parties is a key aspect of the Biogas project feasibility analysis that is not part of a main extension test. The ability to negotiate on pricing is also key to the development of a Biogas industry in B.C.

The TGI process for determining feasibility, as explained in our response to BCUC IR 1.21.1, involves a series of steps from an initial investigation through to the development of a formal purchase agreement. The question is specific to the initial investigation step, however, TGI offers the following additional description of the overall process.

The initial feasibility study is limited to a preliminary investigation of the distribution system's capacity to accept the proposed quantity of Biomethane to be delivered and a preliminary estimate of the costs of upgrading and/or interconnecting with the distribution system. An



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 61

interested project developer must provide sufficient information about their project proposal for TGI to carry out this investigation, such as the expected quantity of Biogas or Biomethane to be delivered to TGI, the location of the proposed facilities and sufficient company information. TGI's system planning group will use the gas flow and project location information to identify any system constraints and provide preliminary cost estimates for any system upgrades. Rough estimates of upgrading and /or other interconnection equipment derived from our project and proposal experience to date are also prepared. If system upgrade requirements appear reasonable, the preliminary cost data is entered into the Biogas cost of service model for a preliminary analysis of the cost of Biomethane from the project.

If it appears, based on this preliminary analysis, that the project can be completed within the economic feasibility parameters described above, TGI will advise the project proponent and suggest proceeding to the next step. Typically, based on our proposal experience to date, the next step will be the preparation of a memorandum of understanding for the parties to continue working together on detailed investigations and the preparation of a formal purchase of Biomethane agreement. The memorandum of understanding is intended to provide a level of assurance to each party that it is worthwhile applying additional resources to a more detailed investigation of project feasibility. The detailed investigation undertaken by each party results in a more detailed understanding of project challenges and a more accurate estimation of capital and operating costs. This more detailed information allows each party to negotiate an acceptable Biomethane purchase price and purchase agreement terms.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 62

16.0 Reference: Supply Agreements

Exhibit B-3, BCUC 1.21.3, p. 70-71

TGI states: *"No. As outlined in the Application (Sections 5 and 6), TGI has outlined many strategies to protect customers from over supply. These strategies are:*

- 1. Strong customer demand supported by research (Section 5). As described in the Application, TGI believes that it has used conservative estimates in determining customer demand. Specifically, the research done shows a 16% demand while TGI has chosen to use an industry average of 2.2%.*
- 2. In the unlikely event that customer demand is lower than expected, TGI has the opportunity to sell biomethane via schedule 11 and schedule 30 to non-residential customers. Further, if there is a shortfall in demand due to the blend offering (10%), there are customers who will buy biomethane at 100% purity. Given these facts, if new supply projects come forward, TGI intends to continue to pursue new supply development projects and will file the supply contracts with the BCUC."*

16.1 Does TGI have any past experience selling biomethane gas to its customers?

Response:

Prior to our agreement for the sale of 10,000 GJs of Biomethane to Central Heat Ltd. and our receipt of expressions of interest from the 12 residential customers as discussed in our response to BCUC IR 2.16.2, Terasen Gas was not aware of any organization in the Province of British Columbia, ourselves included, that had experience selling Biomethane to customers.

Terasen Gas does have past experience selling new products and services to our customers. For example, our experience in developing and implementing the Stable Rate program for residential customers was integral in helping us understand how best to formulate the proposed Green Gas program.

16.2 Does TGI have any formal commitments from residential customers to purchase biogas? If so, what are the commitments and what volume of gas have they committed to purchase?



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 63

Response:

Currently, TGI does not have any formal commitments from residential customers for Biogas as we do not have an approved tariff. TGI has determined there is market interest for Biogas amongst residential and commercial customers through the customer surveys discussed in Section 5 of the Application. Additionally, TGI has received inquiries from residential customers online and from contact at tradeshow and over a dozen have left their contact information requesting to be notified prior to launch of TGI's proposed renewable energy program.

- 16.3 Does TGI have any formal commitments from customers other than residential customers, to buy biogas other than Central Heat? If so, what are the commitments and what volume of gas have they committed to purchase?

Response:

Currently, TGI does not have any formal commitments to sell Biomethane other than the letter of intent that Central Heat provided. TGI has had several inquiries from gas marketers, commercial and transport customers on their interest to purchase Biogas, but Central Heat has been the only non-residential customer to provide a letter of intent. Once residential demand requirements have been established through Phase 1, TGI would seek to more formally acquire commitments for sale of excess Biomethane through the risk mitigation measures identified in Section 11 of the Application through Rate Schedule 11B and amendments to Rate Schedule 30 for on or off-system sales.

- 16.4 What does TGI believe are the disadvantages of conducting phase 1 on a "pilot" project basis as described below? Under a possible pilot model, TGI would not enter into any further supply agreements (which typically extend for periods of 10 years or more) until phase 1 was completed at the end of fiscal 2011. At that time, TGI could review the results of the pilot with the Commission before proceeding with phase 2 which would expand biomethane to commercial customers and allow for further biomethane supply agreements if the pilot project results supported doing so?

Response:

Please refer to BCUC IRs 1.21.3 and 1.25.3.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 64

In addition to these responses, a delay, such as described above, would result in several project proposals currently before TGI being unnecessarily delayed, potentially causing them not to proceed at all. As such, the development of a Biomethane industry in BC would be suppressed and opportunities for municipalities and other organizations to utilize an existing resource in the most efficient and effective way possible, in order to achieve provincial and municipal emission targets, would be foregone or missed.

- 16.5 If the program is approved, is TGI willing to bring forward for Commission approval all additional biogas/biomethane supply agreements with a net present value of minimum required payments in excess of \$5? If not, please explain your response and address if TGI believes that a different threshold might be more appropriate.

Response:

Please refer to BCUC IRs 1.24.1, 1.24.2 and 1.24.3.

The Company proposes to bring all additional supply agreements forward for Commission approval under the streamlined approval process proposed in Section 8 of the Application.

- 16.6 If the program is approved, should the Commission review, on an annual basis, TGI's Biomethane projects expected to be built over the year and apply a CPCN on that basis regardless if an individual project exceeds costs of \$5million?

Response:

No, TGI believes that the proposed means of addressing supply projects is most appropriate and that the approach outlined in the question would be inefficient and lead to practical problems.

In theory, the Commission could take that approach for any small capital expenditures incurred by a utility. However, the established regulatory processes employed by the Commission in respect of all of the major utilities in BC involve:

- Those utilities applying for a CPCN only for projects larger than a particular threshold. This threshold is put in place to prevent an unworkable situation where utilities are seeking advance approval through CPCN applications for every anticipated capital



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 65

expenditure no matter how small (the idea being that since a CPCN establishes need in advance, utilities might take this approach to facilitate subsequent cost recovery).

- Utilities establishing need for smaller capital expenditures as part of a revenue requirements process, which is efficient.

While grouping small expenditures together in a single CPCN, and then addressing them in the revenue requirements as well, might be permissible, it is a departure from the practices developed by the Commission over many years.

The combined CPCN process contemplated in the question also assumes that all projects are known at the outset of each year. The reality is that projects will arise from time to time, resulting in a situation where the utility must either apply for new combined / single project CPCN or forego the new project(s) until the following year. The former is inefficient. The latter approach could lead to the non-development of projects which come to the attention of the Company after the start of the year and require prompt attention, depriving our customers of access to the Biomethane that they are demanding. It could also potentially impact the development of the Biomethane supply market in BC.

As proposed in Section 8 of the Application, Terasen Gas will submit to the Commission for approval all supply agreements that would be included in the program. In the unlikely event that any of these individual projects require capital expenditure of \$5 million or more, the Company will submit the project to the Commission as an application for a CPCN, just as it would any other core utility business capital project that requires a capital expenditure of \$5 million. The Company believes that the approval process proposed within the Application is the most appropriate approach to ensure both prudent review and regulatory efficiency.

- 16.7 Given that customer commitments are limited to a one month period and gas supply commitments can be up to 15 years, has TGI considered a take or pay model to address this matter?

Response:

Terasen Gas did consider several different models for structuring customer commitments to purchase Biomethane. The idea of locking customers into long-term contracts for the Green Gas program was eliminated from consideration early in the process so as to avoid any possible perception of Terasen Gas competing with the products offered by gas marketers participating in the Customer Choice program.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 66

Other considerations included selling more or even all of the Biomethane through other sales channels made possible under the proposed Rate Schedule 11B or the proposed amendments to Rate Schedule 30. Upon receipt of the scientific research detailed in Section 5 of the Application these options were ruled out as it was clearly demonstrated in the research that a residential offering represented the best opportunity for a Green Gas program to proceed during Phase 1.

Ultimately the Company chose to propose the structure proposed in the Application because the significant customer demand relative to the small amount of available Biomethane supply mitigated the concerns that would drive a take or pay model. The Company has committed to develop additional Biomethane supply as this significant customer demand becomes better quantified through proven sales of the product. Terasen Gas feels that the proposed program is the most reasonable way to ensure a measured approach while making steps towards meeting the significant customer demand.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 67

17.0 Reference: Public Interest

Exhibit B-3, BCUC 1.24.3, p. 82-84

Capital Regional District Landfill (CRD Landfill)

http://www.crd.bc.ca/waste/hartland/documents/landfill_gas.pdf

Regional District of Nanaimo Landfill (Nanaimo Landfill)

<http://www.rdn.bc.ca/cms.asp?wpID=1513>

Vancouver Landfill

<http://vancouver.ca/engsvcs/solidwaste/landfill/ColUtilProject.htm>

TGI states: "TGI believes that future supply contracts that meet these criteria will be in the public interest for the following reasons: ...

- *Provides an alternative for renewable energy supply development in BC. The conversion of biogas to biomethane as outlined in this Application (Section 2) is more efficient for this energy form to be injected into the natural gas network rather than creating electricity for injection into the electricity grid." (Exhibit B-3, BCUC 1.24.3)*

Nanaimo Landfill

"Methane collected at the Regional Landfill is currently burned at an on-site flare station to reduce greenhouse gas emissions and other impacts such as nuisance odours. The RDN has entered into an agreement with Cedar Road LFG Inc., which is constructing a facility at the Regional Landfill that will use methane collected to produce electricity.

The electricity generated at the Regional Landfill will be fed into the BC Hydro power grid. It's anticipated that plant operated by Cedar Road LFG Inc. will produce 1.5 megawatts of green power, sufficient to supply 1,200 homes." (Nanaimo Landfill, <http://www.rdn.bc.ca/cms.asp?wpID=1513>

CRD Landfill

"How We Do it

The facility contains a reciprocating engine which works very much like the spark ignition in a car, except instead of gasoline, methane is the fuel. Mechanical energy is turned into electrical energy. The electricity produced is fed into the existing BC Hydro distribution system on-site.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 68

Vancouver Landfill
"Landfill Gas Beneficial Use

In January 2003 Maxim and Vancouver signed an agreement regarding the project. The agreement has a 20-year term and Vancouver will receive approximately \$400,000 per year in revenues from the project. Vancouver 's revenues will be used to offset the cost of operating the LFG collection system.

...Maxim is selling electricity from the project to B.C. Hydro as "green power". B.C. Hydro is paying a premium for the power as part of its initiative to meet 10% of increased demand for electricity through a variety of new green energy sources through 2010 (B.C. Hydro, 2003). Maxim has a contract with B.C. Hydro to install a 4th engine at the facility and will be producing a total of 7.4 MW of electricity by the end of 2004." <http://vancouver.ca/engsvcs/solidwaste/landfill/CollUtilProject.htm>

- 17.1 Given that Terasen considers it *"more efficient for this energy form to be injected into the natural gas network rather than creating electricity for injection into the electricity grid"*, is Terasen of the view that the three sites that convert landfill gas into the electricity and the associated Electricity Purchase Agreements with BC Hydro are not in the public interest? Please explain.

Response:

There are many factors that go into the public interest, and the Commission's determination is necessarily context specific. Accordingly, Terasen Gas is not currently in a position to comment on whether power purchase agreements entered into by BC Hydro are in the public interest. TGI does believe that it is beneficial for both gas and electric utilities to have programs for using Biogas as it increases the options available for using this valuable renewable resource.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 69

18.0 Reference: Gas Collection Assets

Exhibit B-3, BCUC 1.26.1, p. 87-88

Report on Inventory of Greenhouse Gas Generation from Landfills in British Columbia (Inventory of GHG Landfills), Table 4 Predicted Methane Generation

http://www.env.gov.bc.ca/epd/codes/landfill_gas/pdf/inventory_ggg_landfills.pdf

TGI states: *"4. Longevity: CSRD is making a significant investment in gas collection assets and therefore wanted a long term contract to maximize the use of the capital invested over a long period of time. CSRD indicated that because TGI is a stable entity with an assumed long-term health, there is reduced risk associated with benefitting from this project for many years in the future."* (Inventory of GHG Landfills) <http://www.rdn.bc.ca/cms.asp?wpID=1513>

18.1 Under the Landfill Gas Management Regulation will the CSRD and other regional districts be required to invest in gas collection assets? Please explain.

Response:

The Landfill Gas Management Regulation requires an owner or operator of a landfill site for which there is an accepted design plan to install landfill gas management facilities in accordance with the accepted design plan (see section 8). CSRD has already invested in gas collection assets. TGI is not aware if the Landfill Gas Management Regulation will require additional investment by CSRD in the years to come. Likewise, TGI is not aware if the Regulation will require additional investment by other regional districts in the years to come.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 70

19.0 Reference: Gas Collection Assets

Exhibit B-3, BCUC 1.26.2, p.89

TGI states: *"Fourth, the risk of stranding, which this hypothetical policy would seem to be directed at addressing, is small. Moreover, the risk relates almost entirely to the interconnection facilities, as the upgrading equipment can be moved and reused. The small stranding risk relating to the interconnection facilities will exist regardless of who owns the upgrading equipment."*

19.1 Please provide the estimated cost of moving upgrading equipment.

Response:

In order to estimate the costs TGI would consider decommissioning, transport, and re-commissioning. These costs will vary depending on the distance of the move and the particular upgrading technology used. As an example, an estimate of the decommissioning and recommissioning costs could be drawn from estimated commissioning and site costs of for the CSRD project. TGI estimates that decommissioning costs would range from \$40,000 to \$50,000 and that the CSRD commissioning costs of \$85,000 (which includes a contingency) would apply for recommissioning as well. The relocation using truck transport, assuming a destination in the Lower Mainland for example, could be very roughly approximated at \$15,000. These costs would combine to approximately \$140,000 to \$150,000 for relocation. TGI expects that such moving costs would be included in the cost of service for the new project in the same way that delivery and commissioning of new equipment would be.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 71

20.0 Reference: Biomethane Acquisition Costs

Exhibit B-3, BCUC 1.34.1, p. 107

20.1 TGI states that *"As referenced on page 116 of the Application, "Terasen Gas Midstream will still manage the overall balancing of all the gas in the system and will shed seasonal supply or increase off-system sales, as appropriate."*

20.1.1 Since the biomethane gas supply is treated as interruptible supply and seasonal gas would remain at essentially at the same levels without biomethane being introduced to the system, does the additional biomethane supply create additional off-systems sales that works in favour of the Terasen Gas incentive through the Gas Supply Mitigation Incentive Program formula?

Response:

Initially, Terasen Gas expects that the Biomethane gas supply will create additional off-systems sales of natural gas. As outlined in the Application, Terasen Gas Midstream will manage the incremental Biomethane supply volumes by shedding seasonal supply or by increasing off-system sales of natural gas. During the initial stages of the program Biomethane supply volumes are expected to be minimal and will not materially alter the Company's operations in terms of contracting levels or off-system sales volumes.

As with all off-system sales of natural gas, these incremental off-system sales of natural gas created by the Biomethane supply will also be included in the Gas Supply Mitigation Incentive Program formula. This is appropriate because Terasen Gas will still be required to manage these incremental supply volumes in the best manner possible on behalf of Core customers. It is important to note that, although the insignificant level of natural gas off-system sales created by Biomethane supply volumes will be considered part of commodity re-sales for GSMIP purposes, the Hurdle Discount mechanism effectively normalizes commodity re-sales by offsetting the impact of the differences in customer load due to weather or other factors. The higher the re-sale volume, the lower the Hurdle Discount, this thereby increases the benchmark to which the re-sale price is compared in determining the Total Eligible Margin in GSMIP. The Hurdle Discount ultimately ensures that the Company does not realize any windfall gains from higher volume of re-sales regardless of whether this higher volume results from weather, or any other supply factors such as the Biomethane supply.

20.1.2 How will this gas supply be accounted for in the GSMIP plan since it is assumed to be interruptible service?



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 72

Response:

Please refer to the response to BCUC IR 2.20.1.1. As stated in that response, the insignificant additional volume of natural gas off-system sales created by the Biomethane supply during the initial phases of the program will be considered part of commodity re-sales. However, the Hurdle Discount mechanism will effectively normalize the commodity re-sales results.

Additionally, it should be noted that due to the phased-in approach of the Biomethane projects, all Biomethane supply is expected to be taken up by customers enrolling in the Green Gas rate offering. As a result, on-system and off-system sales of Biomethane are not expected to be material. However, the Company will have agreements in place with third parties to make arrangements for off-system sales of any excess Biomethane supply. The accounting of such non-GSMIP transactions will be tracked separately in the Biomethane Variance Account.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 73

21.0 Reference: Cost Causality

Exhibit B-3, BCUC 1.37.5, p. 121

21.1 Do you agree that one of the principles of fair rate design to avoid cross subsidies is that those who cause the costs should pay them? If you do agree, then should not the following costs be borne by the residential and commercial customer segments that selected the biomethane option?

- Capital costs for modifications to the billing system, enrollment, new biomethane tariffs and additional reporting
- Customer inquiry calls on the Green Rate offering
- Costs of quarterly updates of the Terasen Gas Standard Rate Offering portion of the Biomethane tariff rate
- Customer education costs including the marketing program
- Full-time Equivalent position of Program Manager created for the Green Gas program

Response:

Terasen Gas believes that one of the general principles of rate design is assigning cost responsibility to customers that cause the costs, although a number of other rate design objectives also exist, including competitiveness, customer impact, and ease of administration to name a few. TGI believes that the approach taken by TGI is consistent with cost causality, and the approach contemplated in the question varies from that principle.

Aside from the cost of gas, most of the utility's costs cannot be directly attributable to any customer or customer class. To arrive at a result that would be regarded as a 'fair' allocation of costs, common costs will be allocated based on general classifications, such as customer class contribution to peak demand, volumetric consumption or the relative number of customers in the class compared to the total number of customers. All of these factors are means of allocating based on cost causation. Also, costs can be allocated on the basis of which customers benefit from the expenditure, not necessarily which customers trigger the expenditure. The Company respectfully submits that the items listed in the points above, with the exception of enrolment costs represent costs that benefit and are caused by all customers. In the cost allocation proposals contained within the Application, Terasen Gas has proposed to allocate the costs of enrolment to those customers choosing to participate in the Green Gas program. The Company will address each individual point raised in the question below.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 74

Capital Costs for Modifications to the Billing System, New Biomethane Tariffs and Additional Reporting

All customers use the billing system and benefit from access to accurate billing. Thus, in the Customer Care Application, the Customer Choice program and the Stable Rate program, all customers (including those who participate in the program and those who do not) contribute to the costs of modifying and maintaining the billing system. All customers also benefit from and pay the costs of implementing all rate schedules in the tariff and associated reporting. In addition, Terasen Gas believes that the accounting required to allocate the individual costs of maintaining each individual tariff to only those customers who are in that tariff would result in an undue regulatory burden that would outweigh any small associated benefit.

Customer Inquiry Calls on the Green Rate Offering

As was the precedent set in the Customer Choice program and the Stable Rate program, all customers benefit from having access to information about the Green Gas offering so that they can make an informed decision as to whether or not they wish to participate in it. It would be unreasonable to allocate to Green Gas customers the cost of a customer calling to gather information about the program and then choosing not to participate. Further, customer inquiry calls may be for other reasons than just receiving information on the Green Rate offering, and a number of inquiries may be dealt with in an individual call, making the prospect of tracking and allocating the call or portion of a call that is applicable to a Green Gas inquiry a difficult, if not impossible, task.

Costs of Quarterly Updates of the Terasen Gas Standard Rate Offering Portion of the Biomethane Tariff Rate

All customers benefit from having available timely and accurate information about the costs of a program, product or service that is available to them. It would be unreasonable to only make the pricing information available to customers after they have chosen to participate in the Green Gas program, and it is therefore unreasonable to only allocate the costs of maintaining the pricing information for Biomethane to Green Gas customers.

Customer Education Costs including the Marketing Program

All customers benefit from having access to information about the Green Gas offering that is being made available to them so that they can make an informed decision as to whether or not they wish to participate in it. In keeping with this fact and the precedent set by the cost allocation for the Customer Choice and Stable Rate program, Terasen Gas believes this must be a cost allocated to all non-bypass customers.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 75

Full-time Equivalent Position of Program Manager Created for the Green Gas Program

All customers will benefit from the functions performed by the Program Manager, many of which are already detailed in the above, such as managing the customer education program and contributing to the quarterly cost updates.

In summary, Terasen Gas believes that the cost allocation proposals that are contained within the Application are the most appropriate to address these specific costs and are consistent with the principle of cost causality.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 76

22.0 Reference: Carbon Credits

Exhibit B-3, BCUC 1.38, p.123

- 22.1 As a result of TGI displacing natural gas with biomethane gas and the resulting carbon credits, will these credits flow back to customers of the Green Gas program to lower customer rates?

Response:

As discussed in response to BCSEA IR 1.20.2, the regulations that drive any resulting carbon credits are unclear at this point and as such Terasen Gas cannot speak definitively about any resulting revenue that could flow back to Green Gas customers.

Terasen Gas does however commit to flowing back any incremental revenues resulting from the "greenness" of this gas, be they from Carbon Tax savings, carbon credits, or similar mechanisms, to the customers who purchase Biomethane.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 77

23.0 Reference: Program Costs

Exhibit B-3, BCUC 1.59, p. 187

- 23.1 If the development cost is not directly assigned to those customers who caused the cost of \$410,000 does this not violate the definition of cost causality?

Response:

The estimated \$410,000 of costs to develop the program are part of the marketing business and development O&M costs for preliminary research in finding applications that may allow Terasen Gas to offer new services to customers or enable the Company to avoid other costs by using the existing storage, transmission and / or distribution system more efficiently. These costs are part of the total preliminary research operating expenses of the utility and are not caused by any one particular group or class of customers. They have been appropriately included in the utility's total cost of service as agreed to in the Negotiated Settlement Agreement for the TGI 2010-2011 Revenue Requirement and Rates Application. This treatment is also consistent with the historical treatment of business development O&M costs for Terasen Gas.

The costs in question are incurred to ensure the long-term health of the utility for the benefit of customers, and to be responsive to the demands of our customers. Our customers have an interest in limiting increases to delivery rates, which are partially driven by declining throughput. Customers have encouraged Terasen Gas to investigate ways to increase system throughput so as to increase the amount of volume over which to allocate the cost of service. A majority of our customers surveyed have also expressed their desire to see Terasen Gas offer a Green Gas program. Finally, a significant number of customers have expressed their desire to participate in the proposed Green Gas program and to bear the costs of purchasing Biomethane, several of whom might otherwise reduce their own contribution to system throughput or leave the system entirely.

Terasen Gas believes that it is impossible to isolate which of these customers specifically "caused" the expense and therefore does not believe there is any reasonable basis for making an exception to the approved O&M treatment for these costs. Please see response to BCUC IR 2.21.1 for a further discussion of cost causality.



<p>Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")</p>	<p>Submission Date: September 2, 2010</p>
<p>Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1</p>	<p>Page 78</p>

24.0 Reference: Converting biogas to electricity

Exhibit B-4, BCOAPO 1.3.2

BC Hydro Clean Power Call Request for Proposals, Report on the RPF Process, August 10, 2010 (BC Hydro Clean Power Call), p. 12

http://www.bchydro.com/etc/medialib/internet/documents/planning_regulatory/acquiring_power/2010q3/cpc_rfp_process_report.Par.0001.File.CPC_RFP_Process_Report_August_3_2010.pdf

TGI states: *"TGI is confident that converting biogas to biomethane is a better option than electricity generation for energy customers in many cases. Based on the cost escalation of the commodity due to inefficiencies in converting the energy from its raw form into useable energy, it is clear that biomethane is the right choice in many cases for optimum use of this renewable resource..."*

	Electricity		Biomethane	
Raw Gas Price	\$5.00	/GJ	\$5.00	/GJ
Loss - Conversion to Transmission	65%		9%	
Adjusted Price	\$14.29	/GJ	\$5.49	/GJ
Loss - Transmission	6%		3%	
Adjusted Price	\$15.20	/GJ	\$5.66	/GJ
Loss - End Use	0%		8%	
Adjusted Price	\$15.20	/GJ	\$6.16	/GJ

The analysis clearly shows that the end price to the customer, assuming the same starting price is significantly higher for the same amount of energy supplied."

24.1 Please convert the \$/GJ Adjusted Price to \$/MWh.

Response:

The relevant conversion factor between gigajoules and kilowatt-hours is 1 GJ = 277.78 kWh (or 0.27778 MWh)

The Adjusted Price of \$15.20/GJ for Biogas to electricity is equivalent to \$0.0547/kWh (or \$54.70/MWh).



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 79

The Adjusted Price of \$6.16/GJ for Biogas to Biomethane is equivalent to \$0.02218/kWh (or \$22.18/MWh).

- 24.1.1 At prices of \$105.4 to \$133.8 per MWh (BC Hydro Clean Power Call, p. 12) will biomethane producers prefer to generate electricity rather than converting landfill gas to biomethane? Please explain why or why not.

Response:

The project proposals currently before TGI are not of sufficient size to have qualified for BC Hydro's Clean Power Call if they were generating electricity rather than Biomethane. TGI also notes that the quoted prices from BC Hydro's Clean Power Call are the range of prices identified as levelized adjusted firm energy prices. By comparison, electricity that might be generated from a landfill project may not be consistent enough in its production profile to qualify as firm energy. Table 3.6 of the Clean Call Report (see Attachment to CEC IR 2.3.1, page 12) makes it clear that non-firm power is not as valuable as firm energy.

Subject to the foregoing qualifications, if electricity produced from Biogas was able to receive prices in the range of \$105.4 to \$133.8 per MWh there is a reasonable likelihood that producers might prefer to generate electricity rather than Biomethane because, given the conversion factors used in the example, this range exceeds the price TGI is likely willing to pay for Biomethane and remain within the proposed Biomethane supply purchase price limit.

The price that producers can get for electricity versus Biomethane, however, is only one of a number of factors that go into a decision whether to produce electricity or Biomethane for pipeline injection. In many cases, depending on factors such as location, system constraints and interconnection costs as well as the capital and operating costs of the project, the most efficient and effective use of the resource will be the production of Biomethane for pipeline injection. In other cases, the most efficient use of the resource will be to generate electricity. Another consideration may be, for instance, that converting Biogas to GHG neutral Biomethane for pipeline injection to displace conventional natural gas consumption will go further to reducing GHG emissions in BC than producing electricity from Biogas. TGI's position is that energy policies and pricing should encourage the most efficient and effective use of the resource.



<p style="text-align: center;">Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company")</p> <p style="text-align: center;">Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")</p>	<p style="text-align: right;">Submission Date: September 2, 2010</p>
<p style="text-align: center;">Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1</p>	<p style="text-align: right;">Page 80</p>

25.0 Reference: Biomethane Supply Agreements

Exhibit B-5, BCSEA 1.4.1, p. 13

25.1 The following excerpt was taken from Exhibit B-5:

"Additionally, the supply projects proposed in the Application are enough to serve a residential offering at a 10% blend assuming a 2% uptake rate, mitigating risk of oversupply while the market demand is validated in Phase 1 of the program."

25.1.1 For every 1% of customer-uptake, how much biomethane (in GJ) is required?

Response:

For every 1% of residential customer uptake, TGI anticipates that approximately an additional 60,000 GJs / yr would be required to serve eligible customers assuming an annual usage rate per customer of 95 GJ / yr as illustrated in the table below.

	# of customers*	# of Eligible Customers**	% of customers	Enrolments	Volume (95 GJ / yr)	Volume @ 10 % Biomethane
Residential - TGI Rate 1	752,416	616,981	1.00%	6,170	586,132	58,613

Notes:

* # of customers do not include Revelstoke

**eligible customers are those not currently enrolled with a gas marketer in the Customer Choice Program.

25.1.2 What would be the total biomethane needed in GJ, in addition to the supply agreements included in this Application, if there was a 10%

Response:

As illustrated in the following table, in addition to the supply agreements included in the Application, TGI would need an additional 360,000 - 480,000 GJ/ yr in order to serve residential customer demand at a 10% uptake rate assuming a 10% blend of Biomethane and an annual usage of 95 GJ / yr based on the existing supply projects' minimum and maximum contracted volumes (104,000 – 222,500 GJ / yr. Please refer to BCSEA IR 1.11.2). In order to match supply to a 16% residential uptake rate, TGI would need an additional 715,000 – 830,000 GJs of Biomethane.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 81

	# of Eligible Customers*	% of customers	Enrolments	Volume (95 GJ / Yr)	Volume @ 10 %	Additional Supply Needed (Max Contracted Volume 222,500 GJ)	Additional Supply Needed (Min Contracted Volume 104,000 GJ)
Residential - TGI Rate 1	616,981	10.00%	61,698	5,861,321	586,132	363,632	482,132
Residential - TGI Rate 1	616,981	16.00%	98,717	9,378,113	937,811	715,311	833,811

Notes:

*eligible customers do not include Revelstoke and are those not currently enrolled with a gas marketer in the Customer Choice Program

25.1.3 What would be the total biomethane needed in GJ, in addition to the supply agreements included in this application, if there was a 16% uptake rate?

Response:

Please refer to response to BCUC IR 2.25.1.2.

25.1.4 As the biomethane supply agreements proposed in the Application provide sufficient supply to serve a residential offering assuming a 2% uptake, would TGI be willing to limit its contracted supply of biogas during phase 1 to no more than 2% of TGI's customer base with 10% of biogas component? If no, would TGI be willing to limit its contracted supply of biogas during phase 1 to no more than 10% or 16%? Please explain your response.

Response:

Please refer to BCUC IR 1.21.3.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 82

26.0 Reference: User-Pay Model

Exhibit B-5, BCSEA 1.4.1, p. 14

26.1 The following excerpt was taken from B-5:

"During the Negotiated Settlement Process (NSP), this proposal was withdrawn from the negotiations.

In the "Issues of Concern" set out in the Negotiated Settlement Agreement, dated November 5,

2009 that resulted from the NSP, the Commission Panel stated:

"Biogas – to be reviewed by a CPCN which demonstrates market uptake of customers that are willing to pay the full costs".

TGI understood this to be a direction from the Commission to move the "biogas" project forward on the basis of a user pay cost recovery model, which is consistent with TGI's current approach to cost recovery.

26.1.1 Please explain TGI's interpretation of the meaning of "full cost" as used in the statement above.

Response:

Our response to this question will also respond to BCUC IRs 2.26.1.2, 2.26.1.3, 2.26.1.4, 2.26.2.1, 2.26.2.2 and 2.26.2.3.

Terasen Gas interpreted this statement as an issue of concern to the Commission Panel that it wished parties to consider in the context of the Negotiated Settlement Process. The parties did address the issue in negotiations, and the outcome of the agreement was as follows:

"The Parties agree that, upon acceptance of this Agreement by the Commission, TGI withdraws its requests in this Application related to Biogas. The Parties acknowledge that these requests are being withdrawn to facilitate a settlement on other issues presented in this Application. The Parties agree that TGI will bring forward an application (the "Biogas Application") during the test period that will:

- (a) Address the economic assessment model; and*
- (b) Provide Biogas rates (including green rate, transportation rate, etc.); and*
- (c) Provide for recovery of costs associated with providing Biogas service.*

TGI may include in the Biogas Application any Biogas Projects under development at that time. TGI is, however, not precluded from applying for Commission approval in



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 83

respect of individual Biogas Projects at any time, either prior to the Biogas Application or afterwards.

TGI has followed that agreement to the letter, as this Application addresses the matters set out in the NSA.

In light of the nature of the agreement on Biogas in the NSA, i.e. that the matters would be deferred, there was no need to address the details of cost allocation at that time. However, TGI notes that the Commission Panel's issue of concern was provided in a context where TGI had proposed to recover the entire cost of supply projects from all non-bypass customers as a pilot project that would further the Company's understanding of Biomethane as a resource. The current proposal is substantially different, and allocates costs based on cost causality. Terasen Gas believes that the cost allocation proposals made within this Application are in keeping with past precedent and practice, and are the most fair and appropriate methodologies with which to allocate the costs of the Green Gas offering.

BCUC IR 2.26.1.2 through 2.26.1.3 use the term "user pay model". The difficulty with that term is that it is capable of being interpreted differently. TGI believes that the Green Gas offering is no more , and no less, of a "user pay model" than any other TGI rate class for which rates cover its cost of service.

The legal requirement is that rates must be just and reasonable, not that programs must be offered on a user pay basis. As part of ensuring that rates proposed in this Application are just and reasonable TGI has allocated costs based on the same foundational principle of cost-causality that is applied in rate design generally. The source of the questions appears to be a differing view on what group of customers are driving the costs that TGI has proposed to allocate to all customers. TGI believes that these costs associated with making the program available to all customers benefit more than just the customers who opt in presently. Put another way, the offering is "user pay" in the sense that those accorded with the choice to opt in are paying the costs of making that choice available.

26.1.2 Does TGI believe that in a standard user-pay cost model would mean that a user pays for ALL incremental costs between operating and not operating a program? Please explain your response.

Response:

Please see our response to BCUC IR 2.26.1.1.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 84

26.1.3 Under a user-pay model does it make sense that some costs of the user-pay program, which are directly a result of the program's offering and would otherwise not be incurred, should not be borne by the customers?

Response:

Please see our response to BCUC IR 2.26.1.1.

26.1.4 Does TGI believe that this Application proposes a user-pay cost model for the biomethane project?

Response:

Please see our response to BCUC IR 2.26.1.1.

26.2 On page 25 of Exhibit B-5, in response to BCSEA IR 1.8.3, TGI note: "Second, costs associated with making the Green Gas offering available to all customers should be borne by all non-bypass customers. This includes costs incurred in ensuring that Biomethane injected into the Terasen Gas distribution system is monitored for quality and is safely delivered to the system. It also includes IT upgrades, program management and customer education."

26.2.1 Please explain how this cost methodology is consistent with a user-pay model?

Response:

Please see our response to BCUC IR 2.26.1.1.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 85

26.2.2 Under a user-pay model, does TGI believe it is expected that non-participating customers would pay for the infrastructure to make a user-pay program available?

Response:

Please see our response to BCUC IR 2.26.1.1.

26.2.3 Does a user-pay model typically expect the participants to pay all additional costs incurred that are above the costs that would be incurred if no program was offered at all.

Response:

Yes, that is a reasonable definition of a user-pay model, although other variants are presumably possible. TGI notes that the test applicable in the current context is that the rates are just and reasonable, not that new programs only charge incremental costs in the manner described. TGI believes that cost causality supports TGI's proposed allocation more so than the above model. Please refer to BCUC IR 2.26.1.1.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 86

27.0 Reference: Unrecovered Cost Treatment

Exhibit B-5, BCSEA 1.5.10, p. 19

An excerpt from Exhibit B-5:

"5.10 Please confirm that Terasen's intention is that if the program is less than fully subscribed then the biomethane supply costs not recovered by participants' rates will be recovered to the extent possible by sales of biomethane to other customers.

Response:

As discussed in Section 11 of the Application, the intent is that excess Biomethane would be sold through Rate Schedule 11B for on-system sales and Rate Schedule 30 for off-system sales so that all costs would be recovered for Biomethane supply costs."

- 27.1.1 Can TGI confirm that if the program is "less than fully subscribed" and if on and off system sales are not sufficient to recover program costs, that the unrecovered program costs WILL NOT be recovered from non-participating customers? Please explain how these cost will be treated.

Response:

Terasen Gas has proposed the creation and allocation of Biomethane revenues and costs to the Biomethane Variance Account (BVA), as described in Section 10 of the Application. This account will collect any unrecovered program costs for recovery from Biomethane customers in future periods through future Biomethane rates.

- 27.1.2 If the program participation rate in 2010 and 2011 is 1%, 2%, 5% and 10%, what will be the costs TGI forecasts that will NOT be recovered through participant rates in those years prior to on or off system sales? Break down the non-recovered amounts by years.

Response:

Please refer to BCUC IR 2.27.1.5.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 87

27.1.3 How would the amount above be changed if the Central Heat commitment is filled?

Response:

Please refer to BCUC IR 2.27.1.5.

27.1.4 If the program participation rate over the life of the biomethane supply agreements is 1%, 2%, 5% and 10%, what will be the costs TGI forecasts that will NOT be recovered through participant rates over the life of the biogas supply agreements on or off system sales? Break down the non-recovered amounts by years.

Response:

Please refer to BCUC IR 2.27.1.5.

27.1.5 How would the amount above be changed if the Central Heat commitment is filled?

Response:

This response addresses BCUC IRs 2.27.1.2 through 2.27.1.5, requesting sensitivity analysis around participation rates (1%, 2%, 5%, 10%, breakeven), over various timeframes (2010, 2011, and the life of the contracts), and the potential impact of Central Heat participation in the program. A summary of the results follows, with the detailed tables after that.

It is TGI's opinion that a deficit scenario is very low as the Company has already had inquiries from potential off-system and on-system customers on the availability of Biomethane and believes that the risk mitigation mechanisms identified in Section 11 of the Application will enable TGI to manage any excess supply of Biomethane in an economical manner.

At a 1% Participation rate excluding Central Heat, the deficiency is \$215,000 in 2010 and \$823,000 in 2011. The deficiency increases in 2012 through 2019, where the deficiency exceeds \$1 million.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 88

At a 2% Participation rate excluding Central Heat, the deficiency is \$70,000 in 2010 and \$243,000 in 2011. In 2019 the deficiency reaches its maximum of \$338,000.

However, for both the 1% and 2% Participation rate, the Central Heat sales decreases the deficiency by \$100,000 in each year. For 2010, at the 2% Participation rate this would result in a small surplus of \$30,000.

When the Participation rate level is 5% and 10% there is no deficiency or surplus. Because the applied for rate is an average for 2010 (three months) and 2011, the surplus in 2010 is offset by an equal deficiency in 2011.

For the years 2012 through 2019 a Participation rate of 2.5% would result in minimal or no deficiency (either including or excluding Central Heat demand).

The following first of two tables shows the annual cost of service (revenue requirement), supply volumes, Residential Participation rate demand volumes, Central Heat demand volume, revenues and deficiency / (surplus). The second table shows the calculation of Biomethane demand for the various participation rate levels.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 90

Table 2 – Participation Rate % Biomethane Volumes

	# of customers	Volume	# of Eligible Customers*	% of customers	Enrollments	Volume	Volume @ 10 %
Residential - TGI Rate 1	752,416	72,348,220	616,981	1.00%	6,170	586,132	58,613
Residential - TGI Rate 1	752,416	72,348,220	616,981	2.00%	12,340	1,172,264	117,226
Residential - TGI Rate 1	752,416	72,348,220	616,981	5.00%	30,849	2,930,660	293,066
Residential - TGI Rate 1	752,416	72,348,220	616,981	10.00%	61,698	5,861,321	586,132
Residential - TGI Rate 1	752,416	72,348,220	616,981	2.50%	15,425	1,465,330	146,533

In responding to this question the following assumptions have been made:

- 1) The number of residential customers from which the Participation level is calculated has been held constant, i.e. there is no customer growth from 2010 to 2019.
- 2) For the year 2010, a partial year with service starting on October 1, the annual demand is assumed to be ¼ of the annual demand.
- 3) For Participation rate levels where supply exceeds demand, Central Heat demand is assumed to be the difference to a maximum of 10,000 GJ.
- 4) The cost of service and supply of Biomethane is the same as filed confidentially in Appendix J-2, Schedule 11, Line 2 and Line 28.
- 5) For the years 2012 through 2019 the residential rate would equal the average cost of service; for 2010 and 2011 the applied for rate has been used.
- 6) When demand exceeds supply, revenue is constrained to the supply volume times the applied for rate (2010 and 2011) or the average cost of service (2012ff); i.e. sales volume cannot exceed supply volume. When residential demand exceeds supply, sales volume to Central Heat is zero.

27.1.6 Does TGI have any other firm commitments to purchase Biogas not factored into the calculations above?

Response:

Please refer to BCUC IRs 2.16.2 and 2.16.3.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 91

28.0 Reference: Biomethane Variance Account

Exhibit B-5, BCSEA 1.5.9, p. 19

TGI states: *"Any variance in cost recovery will be captured in the Biomethane Variance Account (BVA) and addressed in the calculation of rates for the following year."*

28.1 Does TGI intend to record all unrecovered amounts in the BVA deferral account.

Response:

Please refer to the response to BCUC IR 1.36.1.1.

In short, the BVA deferral account will capture all the actual costs incurred and the sales revenues received related to Biomethane gas, thus any under or over recovered costs will be in the BVA.

The BVA proposed in the Application will allow Terasen Gas to track and report both the dollars (costs incurred to acquire the Biomethane supply and revenues collected from Biomethane sales) and the Biomethane gas volumes (volumes supplied at the receipt point and volumes sold to customers). The Biomethane Energy Recovery Charge will be reviewed and reset based on the forecast costs for the prospective period, including any cost variances captured in the BVA, being allocated to the total forecast volumes available for sale during the prospective period. As all volumes available for sale, including any yet unsold volumes of Biomethane green attributes, will be used in the determination of rates, the fact that there may be a volumetric surplus of Biomethane green attributes in the BVA will not affect rates.

28.2 If the program participation rate for biogas is 2% in 2010, 2011, what rate impact will every \$100,000 included in the BVA account have on biogas rates (per GJ) in 2012 and 2013, assuming the full amount of the BVA is fully recovered in 2012 and 2013 and assuming customer participation remains at 2%.

Response:

Based on current cost of service and known costs, all else equal, TGI does not foresee a situation where \$100,000 would be added to the BVA in 2012 and 2013 given that the upgrader is being purchased on a fixed price contract, and the Biogas / Biomethane supply contracts are already set and known (with only a slight price variance based on volumes from what has been forecasted in 2012 with the CSRD contract). TGI will carefully monitor and manage the O&M spending related to the Biomethane charges for customer enrolment. In fact, with a 2% participation rate, the BVA would be fully recovered in both 2012 and 2013 based on the



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 92

proposed rates in the Application (please refer to the response to BCUC IR 2.27.1.5). However, in order to answer the question, TGI has completed the calculation for this hypothetical scenario and provides the results, as follows:

As shown on Schedule 2 in Appendix J-3 of the Application, the forecast volumes of Biomethane for 2012 and 2013 are 135,750 GJ and 134,500 GJ, respectively.

An additional \$100,000 in costs in the BVA to be recovered in 2012 rates, based on the forecast volume of 135,750 GJ, would result in a rate increase of \$0.737/GJ.

An additional \$100,000 in costs in the BVA to be recovered in 2013 rates, based on the forecast volume of 134,500 GJ, would result in a rate increase of \$0.743/GJ.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 93

29.0 Reference: Biomethane Supply Agreements

Exhibit B-5, BCSEA 1.11.2, p. 32

In response to BCSEA IR 1.11.2, TGI indicates the following min. and max. biomethane supplies under agreements included in the Application:

<i>"Year</i>	<i>2010*</i>	<i>2011</i>	<i>2012</i>
<i>CSRD Minimum</i>	-	20,000	20,000
<i>CSRD Max</i>	-	40,000	40,000
<i>Catalyst Min</i>	84,000	84,000	84,000
<i>Catalyst Max</i>	182,500	182,500	182,500"

29.1 If customer participation in the program is 2%, how much over/under supply of biomethane would TGI experience if both projects produced the max. amount?

Response:

This response also addresses BCUC IRs 2.29.2 and 2.29.3.

For the purposes of this response, TGI will assume the minimum and maximum supply volumes for 2011 – the first full year of the program during which both proposed supply projects in this Application will be in production.

In order to meet a 2% participation rate amongst eligible TGI residential customers for a 10% blend of Biomethane, TGI would need approximately 117,000 GJ of Biomethane supply. This would result in approximately a 13,000 GJ /yr under supply of Biomethane at the minimum contracted volumes and a 105,000 GJ / yr surplus of Biomethane at the maximum contracted volumes as illustrated in the following table.

	# of Eligible Customers*	% of customers	Enrolments in Green Program	Volume (Assume 95 GJ / customer / yr)	Volume @ 10 % Biomethane	Over / (under) supply at Min (104,000 GJ / yr)	Over / (under) supply at Max (222,500 GJ / yr)
Residential - TGI Rate 1	616,981	2.00%	12,340	1,172,264	117,226	(13,226)	105,274

*Note: eligible customers do not include Revelstoke and are those not currently enrolled with a gas marketer in the Customer Choice Program



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 94

29.2 If customer participation in the program is 2%, how much over/under supply of biomethane would TGI experience if both projects produced the min. amount?

Response:

Please refer to response to BCUC IR 2.29.1.

29.3 What is the volume, in GJ of Biomethane needed to meet a 2% program subscription rate?

Response:

Please refer to response to BCUC IR 2.29.1.

29.4 What amount would be added to the BVA if customer participation in the program was 2% and both programs produced at the max amount?

Response:

The table attached below shows the annual BVA activity for 2010 and 2011 at the proposed rate, and the forecast impact to the Biomethane Energy Recovery Rate in 2012 under the maximum production scenario.

The BVA deficit balance of \$673.2 K (after tax) at December 31, 2011 is before accounting for the volume of unsold green attributes of 101,593 GJ. At the recovery rate in effect during 2010 and 2011, the unsold green attributes have a recovery value of \$1,006.2 K. TGI would not expect to carry a volume surplus of this magnitude and would sell excess Biomethane supply via Rate Schedule 30 off-system sales or Rate Schedule 11B on-system sales.

The Biomethane Energy Recovery Rate would decrease, under this scenario, effective January 1, 2012; the main driver of the decrease is the fixed costs are being recovered over higher volumes.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 95

Maximum Volume

		2010	2011	2012
Total Maximum Supply	(GJ)	45,625	222,500	222,500
Residential Biomethane Sales Volume @ 2% Participation	(GJ)	29,307	117,226	117,226
Central Heat		10,000	10,000	10,000
Total Cost of Service per Appendix J-3	(\$ 000s)	\$ 360.4	\$ 1,403.9	\$ 1,469.3
Change in Cost of Gas ^(a)	(\$ 000s)	<u>34.0</u>	<u>767.1</u>	<u>780.1</u>
Adjusted Cost of Service	(\$ 000s)	\$ 394.4	\$ 2,171.0	\$ 2,249.4
Amortization of BVA Balance in 2012 Rates (Grossed Up at 2012 Tax Rate)	(\$ 000s)			<u>897.5</u> ^(b)
Total Adjusted Cost of Service	(\$ 000s)			<u>\$ 3,146.9</u>
Residential Rate Applied For	(\$/GJ)	\$ 9.904	\$ 9.904	\$ 9.710 ^(c)
Central Heat Rate	(\$/GJ)	\$ 9.904	\$ 9.904	\$ 9.710
Revised Revenue	(\$ 000s)	\$ 389.3	\$ 1,260.0	\$ 1,235.4
Additions to BVA Deferral Account	(\$ 000s)	\$ 5.1	\$ 910.9	\$ 1,014.0
Income Tax Rate		28.50%	26.50%	25.00%
Tax Offset	(\$ 000s)	(1.4)	(241.4)	(253.5)
Net Addition	(\$ 000s)	<u>3.6</u>	<u>669.5</u>	<u>760.5</u>
BVA Balance - Deficit / (Surplus) ^(d)	(\$ 000s)	<u>\$ 3.6</u>	<u>\$ 673.2</u>	<u>\$ 1,433.7</u>
Cumulative Balance of Unsold Green Attributes (GJ) ^(e)		<u>6,319</u>	<u>101,593</u>	<u>196,867</u>

Notes: (a) Increase due to the higher volume of biogas / biomethane purchased under the supply contracts.

(b) December 31, 2011 BVA balance amortized in 2012 rates.

(c) Forecast 2012 recovery rate (BERC) based on the 2012 maximum volumes, including the balance of Unsold Green Attributes at December 31, 2011.

(d) Cumulative net of tax balance in BVA (excludes the value of Unsold Green Attributes).

(e) Under the Maximum Volume scenario not all of the biomethane available for sale is sold - this results in Unsold Green Attributes which will be sold in a future period.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 96

29.5 What amount would be added to the BVA if customer participation in the program was 2% and both programs produced at the min amount?

Response:

The table attached below shows the annual BVA activity for 2010 and 2011 at the proposed rate, and the forecast impact to the Biomethane Energy Recovery Rate in 2012 under the minimum production scenario.

The main driver of the BVA deficit balance of \$35,300 (after tax) at December 31, 2011 is the under recovery of the fixed costs at the lower than forecast volumes.

The Biomethane Energy Recovery Rate would increase, under this scenario, effective January 1, 2012, to recover the December 31, 2011 BVA deficit and as the 2012 forecast fixed costs are being recovered over the lower volumes.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 97

Minimum Volume

		2010	2011	2012
Total Minimum Supply	(GJ)	21,000	104,000	104,000
Residential Biomethane Sales Volme @ 2% Participation	(GJ)	21,000	104,000	104,000
Central Heat		-	-	-
Total Cost of Service per Appendix J-3	(\$ 000s)	\$ 360.4	\$ 1,403.9	\$ 1,469.3
Change in Cost of Gas ^(a)	(\$ 000s)	<u>(212.3)</u>	<u>(267.6)</u>	<u>(274.7)</u>
Adjusted Cost of Service	(\$ 000s)	\$ 148.1	\$ 1,136.3	\$ 1,194.6
Amortization of BVA Balance in 2012 Rates (Grossed Up at 2012 Tax Rate)	(\$ 000s)			<u>47.1</u> ^(b)
Total Adjusted Cost of Service	(\$ 000s)			<u><u>\$ 1,241.7</u></u>
Residential Rate Applied For	(\$/GJ)	\$ 9.904	\$ 9.904	\$ 11.939 ^(c)
Central Heat Rate	(\$/GJ)	\$ 9.904	\$ 9.904	\$ 11.939
Revised Revenue	(\$ 000s)	\$ 208.0	\$ 1,030.0	\$ 1,241.7
Additions to BVA Deferral Account	(\$ 000s)	\$ (59.9)	\$ 106.3	\$ (47.1)
Income Tax Rate		28.50%	26.50%	25.00%
Tax Offset	(\$ 000s)	17.1	(28.2)	11.8
Net Addition	(\$ 000s)	<u>(42.8)</u>	<u>78.1</u>	<u>(35.3)</u>
BVA Balance - Deficit / (Surplus) ^(d)	(\$ 000s)	<u>\$ (42.8)</u>	<u>\$ 35.3</u>	<u>\$ -</u>
Cumulative Balance of Unsold Green Attributes (GJ) ^(e)		<u>-</u>	<u>-</u>	<u>-</u>

- Notes: (a) Reduction due to the lower volume of biogas / biomethane purchased under the supply contracts.
 (b) December 31, 2011 BVA balance amortized in 2012 rates.
 (c) Forecast 2012 recovery rate (BERC) based on the 2012 minimum volumes.
 (d) Cumulative net of tax balance in BVA.
 (e) Under the Minimum Volume scenario all of the biomethane available for sale is sold.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 98

30.0 Reference: Biomethane Supply Agreements

Exhibit B-5, BCSEA 1.19.2, p. 51

30.1 TGI states: *"Second, Terasen Gas has deliberately decided to take an approach of matching supply to demand. At this time, it is not clear that the market would demand the total resources available in BC, and therefore Terasen Gas did not look beyond evaluating projects on a case-by-case basis to match demand. See also the Application, Section 5 for projected demand in the province."*

30.1.1 Please confirm that ALL supply agreements included in this Application are long-term for periods that extend up to and beyond 10 years.

Response:

Confirmed.

30.1.2 Please confirm that ALL tariffs for biomethane as proposed in this Application are for short term periods and that customers can exit the agreements with a one month's notice.

Response:

Not confirmed.

The length of the term is dependent on each tariff and / or customers' wants:

- Rate schedules 1B, 2B and 3B - The term is dependent on each individual customer's requirements. Once enrolled in the program, customers remain enrolled until such time that they choose to 'switch' to another tariff (i.e., Rate schedule 1 or a Gas Marketer's product offering). Therefore, it is possible that a customer may remain enrolled in the program indefinitely;
- Rate Schedule 11B – The contract term is dependent on the commencement date. Please refer to Clause 8.1 of Rate Schedule 11B for the specific term clause. Further, Rate Schedule 11B contains an automatic renewal clause (8.2) allowing the agreement to continue until such time that either party elects to cancel the contract. In addition to the contract term, there is a term relating to a sales transaction (or Nomination), and the period for this is daily. Each day the Customer submits a nomination for a requested quantity of Biomethane to Terasen Gas, who will then determine whether the requested quantity is available;



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 99

- Rate schedule 30 – The contract remains in effect until one party elects to terminate the contract. Similarly to Rate schedule 11B, there is also a term relating to the sales transaction that can span different periods of time (day, week, month, year). The amount of gas sold per transaction and the price must be negotiated between Terasen Gas and the customer.

The exit conditions are also dependent on each tariff:

- Rate schedules 1B, 2B and 3B – The termination conditions are per Section 8 of Terasen Gas' General Terms and Conditions that provides customers with the ability to terminate their service agreement after the end of the initial term by giving the Company at least 48 hours notice;
- Rate schedule 11B - Customers may 'exit' the tariff *'upon not less than 10 days notice prior to the end of the Contract Year then in effect'*⁶, or, via default or bankruptcy (Refer to Clause 8.3 (Early Termination));
- Rate Schedule 30 - Customers may 'exit' the contract on 30 days' notice, *'but shall remain in effect until the expiration of the latest Delivery Period of any Transaction Confirmation(s)'*⁷.

30.1.3 Please explain why a long-term supply agreements are matched with short-term demand/customer agreements.

Response:

The question is based on the incorrect premise that BCUC IR 2.30.1.2 was answered in the affirmative. It would be erroneous to assume that our supply agreements are matched with short-term demand or short-term customer agreements. Please refer to BCUC IR 2.30.1.2.

⁶ Refer to Section 8.2 (Automatic Renewal) of Rate schedule 11B

⁷ Refer to Section 12 (Term) of Rate Schedule 30



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 100

30.2 TGI states: "In the future, Terasen Gas is willing to introduce as much biomethane as necessary onto the system in order to meet future demand."

30.2.1 Please confirm that this comment indicates that TGI will not introduce any further biomethane to the system without first establishing a demand for the biomethane through actual customer subscriptions.

Response:

Terasen Gas does not confirm this statement. As discussed in our response to BCUC IR 1.3.1, Terasen Gas is actively developing additional Biomethane supply projects in order to meet the demand for this product from our customers. To frustrate this customer demand by unnecessarily slowing the development of additional Biomethane supply could have undesirable effects for the success of the program generally. Terasen Gas is willing to introduce as much Biomethane as necessary onto the system in order to meet future demand, and, as demonstrated in the scientific research detailed in Section 5 of the Application, there is more demand already expressed than there is supply currently available. As discussed in our response to BCUC IR 2.16.4, delaying the continued development of biogas projects could be expected to suppress the development of a Biomethane industry in BC and prevent municipalities and other organizations from utilizing this existing resource in the most efficient and effective way available to help meet provincial and municipal emission reduction targets.

30.2.2 Which information is more reliable – survey data or actual historical results?

Response:

TGI's opinion is that both sources of data play a role in evaluating future demand. Actual historical data tells us what has happened in the past; however, alone it may not be a predictor of what will happen in the future. Nor does it provide information about why something happened. Quantitative research can be used to collect information such as preferences, perception, values and motives; it can be used to determine levels of awareness, barriers to participation and key drivers, all of which can be utilized to shape future demand and understand actual historical results. These surveys tend to include large samples - anything from 50 to any number of interviews and are accurate within statistical limits of the sample size. The combination of quantitative research and historical data allows trend lines to be discerned and forecasts to be made with reasonable accuracy.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 101

30.2.3 Please explain how TGI intends to measure future demand.

Response:

Please also refer to the responses to BCUC IR 1.17.1 and BCSEA 1.4.1

TGI will measure future demand in 3 ways:

- Market research
- Historical data
- Load profile of target customer segment

While the Company's primary research indicates that there is a potential market for 16% of residential customers to sign up for a renewable energy-based program, the Company is mindful that other green pricing programs on average do not experience this type of participation rate. For the purposes of developing the program rollout to customers, the Company analyzed two scenarios in Section 6.5 of the Biomethane Application:

- Ramping up to the industry average participation rate of 2.2%; and
- Ramping up to the potential market share identified in the primary research study of 16% for residential customers and 10% for commercial customers.

The phased sales approach will allow Terasen Gas to gauge consumer demand and bring forth the supply projects as needed to meet this demand. If Terasen Gas does not see the anticipated sign-up rates in the residential target market in the first 15 months of the program based on the low demand forecast, additional supply projects may need to be reconsidered. Alternatively, if residential market demand is well above the low demand forecast, then supply projects will need to be brought on more aggressively to match demand. A key component within the end to end business model presented in the Application is demonstrating there is customer demand for Biomethane. The market research presented in the Application shows that there is strong customer demand for this product offering. The 16% residential and 10% commercial estimates are the maximum market potential for a Biogas offering. While 16% of residential customers and 10% of commercial customers have indicated that they are willing to pay for Biogas, there is commonly a 'gap' between those who express intent to do something and those who actually do. Some respondents will answer positively simply because they see



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 102

the program as being beneficial to the environment, but may not follow through on that belief. This issue is addressed in Appendix D – 3, page 11 of the Application.

The ability to reach and maintain these levels of sign up will be dependent on a number of factors. These include the level of marketing support available to create awareness of the program and communicate its environmental benefits; how easy it is to participate in the program; and the price of natural gas in itself and relative to other renewable fuel choices.

As discussed in BCUC IR 2.30.2.2, the combination of quantitative research and historical data that will be collected in the first phase of the program will allow for trend lines to be discerned and forecasts to be made with reasonable accuracy taking into consideration the load profile of the target customer segment. Additionally, as discussed in BCUC IR 2.16.3, TGI may enter into large volume commitments for Biomethane in order to obtain security of demand for the product.

30.2.4 Does TGI expect that by diversifying the supply portfolio, risk to Utility will decrease?

Response:

The Company understands the question to be referring to the diversification of Biomethane supply as new supply projects come on line. Terasen Gas expects that by diversifying the Biomethane supply portfolio, risks related to reliability of supply will be mitigated.

In terms of TGI's overall business risk, TGI's ability to meet the full demand for Biomethane service may help to address the risk that presently exists of some customers leaving the utility for other options perceived to be "greener" than natural gas. Maintaining these customers will prevent the loss of their volume, decreasing the potential for rate increase for all customers that would, all else equal, affect TGI's ability to compete with other energy forms such as electricity. However, there are many factors that determine a public utility's business risk, and other factors are contributing to increased business risk in the case of TGI. TGI believes that, irrespective of the effect the program ultimately has on business risk, the Biomethane offering is justified based on the fact that it is the role of a public utility like TGI to meet evolving customer expectations.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 103

31.0 Reference: Terasen Cost Biogas Project Costs

Exhibit B-1, Section 9.2.5, page 89 and Section 9.3.4, page 100

31.1 Please provide the accuracy of the \$2,304,400 cost estimate for the CRD Biogas Project.

31.1.1 Identify an expected accuracy range.

Response:

The majority of costs for the CRD Biogas project are now based on executed purchase agreements with suppliers or have already been spent. Please refer to BCUC IR 1.28.1 for discussion on the project budget and BCUC IR 1.40.2 for a discussion on how TGI has used a fixed price contract to reduce risk and therefore increase confidence in the accuracy of this capital cost. TGI believes that any cost overages from the project can be managed within the 10% contingency amount included in the cost estimate.

31.1.2 State if the estimate is at a minimum a Class 33 degree of accuracy as defined in AACE International Recommended Practice No. 10S-90, Cost Engineering Terminology (May 20, 2009). If not please explain why.

Response:

Terasen Gas believes that the questioner intended to ask if the estimate is at a minimum a Class 3 degree of accuracy as defined in AACE International Recommended Practice No. 10S-90, as opposed to a Class 33 degree of accuracy.

The Commission decided in Order G-50-10 to require such degrees of accuracy for cost estimates in CPCN applications. This Application is not for a CPCN therefore the Commission does not require this degree of accuracy from Terasen Gas in order to approve it. Further, the cost of acquiring such a degree of accuracy would be inordinate to the cost of the amount being estimated and as such, Terasen Gas submits that costs of performing this level of accuracy would not be in customers' best interests.

As detailed in the Company's response to BCUC IR 1.40.2, 70.4% of the costs for the CSRD project are contained within a fixed price contract, and 27.2% of costs are based on the Company's experience with the actual costs incurred for the CPI project. The Company further believes that the remaining 2.4% of costs were forecast using high-quality estimates.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 104

31.2 Please provide the accuracy of the \$587,700 cost estimate for the Catalyst Biogas Project.

31.2.1 Identify an expected accuracy range.

Response:

The Catalyst project is expected to be ready for commissioning by the middle of September. Most of the costs have been spent and the project remains on budget.

31.2.2 State if the estimate is at a minimum a Class 33 degree of accuracy as defined in AACE International Recommended Practice No. 10S-90, Cost Engineering Terminology (May 20, 2009). If not please explain why.

Response:

Terasen Gas believes that the questioner intended to ask if the estimate is at a minimum a Class 3 degree of accuracy as defined in AACE International Recommended Practice No. 10S-90, as opposed to a Class 33 degree of accuracy.

As detailed in the Company's response to BCUC IR 2.31.1.2, the Commission does not require this degree of accuracy from Terasen Gas for this type of project, nor would the cost of acquiring this measurement of accuracy be a prudent cost for the Company to incur for this project.

Further, as discussed in the Company's response to BCUC IR 1.40.1, the CPI project is mostly complete and is so far on budget, therefore Terasen Gas has an even higher degree of confidence in the accuracy of our estimates than the already high degree of confidence we had at the time this Application was filed with the Commission.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 105

32.0 Reference: Stranded Assets

Exhibit B-1, Section 9.3.6.3, page 102

TGI states: *"The licensing clause gives Terasen Gas permission to enter the site and physically recover its facilities after a specified period of non-performance. The majority of these facilities, including metering, gas sampling and analyzing, and propane and odorant injection equipment could then be used in other projects."*

32.1 Please provide the cost of physically recovering the facilities.

Response:

The reference cited in the question concerns the Catalyst Project; therefore, this question refers to the interconnection and quality monitoring equipment employed there. TGI estimates that costs for removing recoverable equipment from the Catalyst site is in the \$30,000 to \$35,000 range. This range does not include delivery and reinstallation at another Biogas project location.

"For the connecting pipe and interconnection facilities, which are unlikely to be recovered if such an event occurs after installation, Terasen Gas is requiring a formal letter of security in the amount of \$103,000. Terasen Gas expects this risk to be highest in the first year of operation."

32.2 Please provide the depreciated value of the connecting pipe and interconnection facilities for each year of the contract with Catalyst.

Response:

In addition to the safeguards that TGI has implemented to minimize the risks of stranded assets during the term of the contract (Articles 6, 12 and 13 of the Catalyst Agreement), TGI feels that the benefits to customers of the Biomethane program outweigh the minimal risk of stranded assets at the conclusion of the contract term. The table below illustrates the net book value of the connecting pipe and interconnection facilities for Catalyst for each year of the contract under existing depreciation rates. However, of these assets, only the Distribution Main could be considered a potential stranded cost, since Meters, and Measuring and Regulating Equipment could be removed and placed into service in another location. At the end of the Catalyst contract term, the Distribution Main has a remaining net book value of \$187 thousand. Even at the conclusion of the contract term, the Main may not be stranded since a number of scenarios could unfold over the next ten years, including a renewal of the Catalyst contract or future land use changes requiring that the main provide distribution service to existing or new customers in the immediate area.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 106

(\$000's)

	Dep'n Rate	2010				2011	2012	2013	2014	2015	2016	2017	2018	2019	2020 June Balance
		June Balance	July Balance	August Balance	December Balance										
Gas Plant in Service - Catalyst															
Meters		58.4	74.1	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0
Measuring & Regulating		255.6	283.8	283.8	283.8	283.8	283.8	283.8	283.8	283.8	283.8	283.8	283.8	283.8	283.8
Mains		229.3	229.3	229.3	229.3	229.3	229.3	229.3	229.3	229.3	229.3	229.3	229.3	229.3	229.3
Total		<u>543.3</u>	<u>587.2</u>	<u>591.1</u>	<u>591.1</u>	<u>591.1</u>	<u>591.1</u>	<u>591.1</u>	<u>591.1</u>	<u>591.1</u>	<u>591.1</u>	<u>591.1</u>	<u>591.1</u>	<u>591.1</u>	<u>591.1</u>
Depreciation Provision															
Meters	5.31%		0.3	0.3	0.3	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	2.1
Measuring & Regulating	5.72%		1.2	1.4	1.4	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	8.1
Mains	1.89%		0.4	0.4	0.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	2.2
Total			<u>1.8</u>	<u>2.0</u>	<u>2.1</u>	<u>24.7</u>	<u>24.7</u>	<u>24.7</u>	<u>24.7</u>	<u>24.7</u>	<u>24.7</u>	<u>24.7</u>	<u>24.7</u>	<u>24.7</u>	<u>12.4</u>
Accumulated Depreciation															
Meters		-	0.3	0.6	0.9	5.1	9.2	13.4	17.5	21.6	25.8	29.9	34.1	38.2	40.3
Measuring & Regulating		-	1.2	2.6	3.9	20.2	36.4	52.6	68.9	85.1	101.3	117.6	133.8	150.0	158.2
Mains		-	0.4	0.7	1.1	5.4	9.7	14.1	18.4	22.7	27.1	31.4	35.7	40.1	42.2
Total		<u>-</u>	<u>1.8</u>	<u>3.9</u>	<u>5.9</u>	<u>30.6</u>	<u>55.4</u>	<u>80.1</u>	<u>104.8</u>	<u>129.5</u>	<u>154.2</u>	<u>178.9</u>	<u>203.6</u>	<u>228.3</u>	<u>240.7</u>
Net Book Value															
Meters		58.4	73.8	77.4	77.1	72.9	68.8	64.7	60.5	56.4	52.2	48.1	43.9	39.8	37.7
Measuring & Regulating		255.6	282.6	281.3	279.9	263.7	247.4	231.2	215.0	198.7	182.5	166.3	150.0	133.8	125.7
Mains		229.3	228.9	228.5	228.2	223.8	219.5	215.2	210.8	206.5	202.2	197.8	193.5	189.2	187.0
Total		<u>543.3</u>	<u>585.4</u>	<u>587.2</u>	<u>585.2</u>	<u>560.5</u>	<u>535.7</u>	<u>511.0</u>	<u>486.3</u>	<u>461.6</u>	<u>436.9</u>	<u>412.2</u>	<u>387.5</u>	<u>362.8</u>	<u>350.4</u>



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 107

32.2.1 If the depreciated value of the connecting pipe and interconnection facilities is less than \$103,000 please explain why an amount equal to depreciated value of the connecting pipe and interconnection in order to ensure that non-biogas customers do not bear the risk of stranded assets.

Response:

TGI assumes the question is referring to a letter of security in the amount equal to the depreciated value of the connecting pipe and interconnection facilities.

TGI does not believe that a letter of security against assets that can be recovered and used in other projects is necessary. Please refer to confidential BCUC IR 1.62.5 for an explanation of the reasoning for the letter of security amount and related terms.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 108

33.0 Reference: Terasen Gas Renewable Energy Program Brochure

<http://www.terasengas.com/documents/BiogasBrochure.pdf>

33.1 Please file a copy of the Terasen Gas Renewable Energy Program Brochure.

Response:

Please refer to Attachment 33.1 for the Terasen Gas Biogas brochure.

33.2 Please provide the cost of developing the Terasen Gas Renewable Energy Program Brochure (Renewable Energy Brochure) by resource and year.

Response:

Please refer to BCUC IR 2.33.5.

33.3 Please provide the G/L accounts and cost centres that the cost of developing and maintaining the Terasen Gas Biogas Web Page have been charge to by year.

Response:

Please refer to BCUC IR 2.34.3.

33.4 Please provide the number of copies of the Renewable Energy Brochure that have been printed by year. Also provide the cost of printing and distributing the Renewable Energy Brochure by year and resource.

Response:

Please refer to BCUC IR 2.33.5.



<p style="text-align: center;">Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company")</p> <p style="text-align: center;">Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")</p>	<p style="text-align: right;">Submission Date: September 2, 2010</p>
<p style="text-align: center;">Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1</p>	<p style="text-align: right;">Page 109</p>

33.5 Will the cost of the Renewable Energy Brochure be recovered from all customers or only biogas customers?

Response:

This response will also address BCUC IRs 2.33.2 and 2.33.4.

In anticipation of a May/June 2010 submission of TGI's proposed Green Gas offering and the upcoming EPIC, Sustainable Green Living Expo to be held in Vancouver in May, TGI had a renewable energy brochure produced to be handed out at the TGI tradeshow booth as the audience would be a potential target market for TGI's proposed renewable energy program. The brochure was to inform consumers of TGI's proposed Biogas projects and renewable energy program and take names of any individuals that wanted to be notified prior to the launch of TGI's proposed program. There were 1,000 brochures printed for this event at the cost of \$1,275.

In addition to the 1,000 brochures that were printed, 300 brochures were printed to be distributed to customers along with a letter within the proximity of the Catalyst Biogas Project in Abbotsford that may be affected by the heat content variance as described in Section 11 of the Application. The cost of this printing and mail out to affected customers was \$830.

Summary of Renewable Energy Brochure Costs:

Internal Resource: Terasen Corporate Communications Dept estimated time / cost:

Design & production:	6 hours @\$45/hr	\$270
Writing:	6 hours @\$45/hr	\$270
Production Coordination:	4 hours @\$45/hr	\$180
Total Internal Resource Cost:		\$720

Print and Distribution:

1,000 of the Renewable Energy Brochures	\$1,275
300 customer mail out	\$ 830
Total print and distribution costs:	\$2,105



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 110

All costs outlined above came from existing O&M budgets that will get charged to all customers. Print and distribution costs were charged to Cost Center 2213, I/O 681836. Internal labour costs were not tracked and charged out separately and would have been accounted for in the staff costs accounted for in the Communications Department Cost Center 2247 (refer to BCUC IR 1.19.2).



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Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 111

34.0 Reference: Terasen Gas Biogas Web Page

<http://www.terasengas.com/AboutUs/NewAndOngoingProjects/BioGasProductionRFEOL/default.htm>

34.1 Please provide the cost of developing and maintaining the Terasen Gas Biogas Web Page (Biogas Web Page) by resource and year.

Response:

Please refer to BCUC IR 2.34.3.

34.2 Please provide the G/L accounts and cost centres that the cost of developing and maintaining the Biogas Web Page have been charge to by year.

Response:

Please refer to BCUC IR 2.34.3.

34.3 Will the cost of the Biogas Web Page be recovered from all customers or only biogas customers?

Response:

This response will also address BCUC IRs 2.33.3, 2.34.1 and 2.34.2.

Below are the costs of developing and maintaining the Terasen Gas Biogas Web Page:

Development: \$1,200 labour
(labour charges to write and build = 20 hours x \$60 / hour)

Annual maintenance* \$100 - \$250 labour
(labour charges to update wording, new images, etc. = 3-4 hours at \$60 / hour)

*Website hosting and technical maintenance is negligible, as it is paid based on the entire website and is not included in this example.



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Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 112

Per BCUC IR 1.19.2, staff costs to develop and administer the program materials are already provided for in the existing allowed TGI O&M budgets, therefore, labour hours to develop the Biogas web page were not tracked separately, but would be accounted for in the staff costs accounted for in the Communications department cost center 2247.

As per the response to BCUC IR 1.59.1, all of the costs to develop the Program have been expensed by TGI as part of its existing marketing activities and budgets and therefore costs have been recovered from all customers (see also responses to BCUC IRs 1.19.1, 1.19.2, 1.57.1 and 1.63.2). Upon approval of the proposed Green Gas program, the Biogas web content would be required to be updated to reflect TGI's new program offering and such costs would come from the customer education budget contained within the Application that is proposed to be recovered from all customers.



Terasen Gas Inc. ("TGI", "Terasen Gas" or the "Company") Application for Approval of Biomethane Service Offering and Supporting Business Model, for the Approval of the Salmon Arm Biomethane Project and for the Approval of the Catalyst Biomethane Project (the "Application")	Submission Date: September 2, 2010
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 113

35.0 Reference: Feasibility Study – Anaerobic Digester and Gas Processing Facility in the Fraser Valley, British Columbia

<http://bcfarmbiogas.ca/files/pdf/Electricity%20Feasibility%20Study.pdf>

TGI states: *"This study would not have been possible without the help and support of: ...Terasen: Edmond Leung, Ken Ross, Cynthia DesBrisay, David Bennet, Gordon Doyle"*

35.1 Please provide the cost of Terasen's involvement of the Feasibility Study – Anaerobic Digester and Gas Processing Facility in the Fraser Valley, British Columbia (Anaerobic Digester Feasibility Study) by year and resource.

Response:

Terasen Gas' financial contribution to this study was \$20,000 in 2008. The overall study included a second part titled "Feasibility Study – Biogas upgrading and grid injection in the Fraser Valley, British Columbia". This second part can be viewed electronically at <http://www.lifesciencesbc.ca/Sub-Sectors/BioProducts/Publications.asp>.

As indicated in the study, complete funding for the study was provided by a number of contributors, including BC Hydro, BC Government, BC Innovation Council and other companies and associations. Terasen staff played an advisory role for the study as did staff for each of the contributing organizations. Terasen staff also provided information to the study consultants about our gas system and our potential role in a Biogas industry in BC that was necessary for completion of the feasibility study. Staff time to undertake these activities was minimal and was not tracked separately from other market development activities. As such, further details about the time and costs for individual staff members to contribute are not available.

35.2 Please provide the cost and amount of time (hrs./year) that the following employees: Edmond Leung, Ken Ross, Cynthia DesBrisay, David Bennet and Gordon Doyle, spent on the Anaerobic Digester Feasibility Study by year.

Response:

Please refer to BCUC IR 2.35.1.

Attachment 33.1



Doing our part

Together we can make
a difference

**WE THINK:
BIOGAS IS TOMORROW'S
ENERGY, TODAY**

The environment.
We've got our best people on it.

terasengas.com



Sustainable solutions

At Terasen Gas, we dream of a sustainable energy future for all British Columbians. In fact, we're one of the first Canadian utilities to offer alternative energy solutions as part of our services. To us, providing alternative energy is a natural extension of the piped energy services we've always delivered.

From delivering natural gas, the cleanest-burning fossil fuel, to offering integrated energy solutions—we're helping ensure sustainability becomes reality.

A carbon-neutral alternative

Biogas, a clean, carbon-neutral energy source, will become one of the most environmentally sound fuels in BC.

Often called 'renewable natural gas' it's produced from decomposing waste at farms, wastewater treatment facilities and landfills. Once captured, it's cleaned and upgraded to pipeline-quality biomethane, which can then be injected into our pipelines.

Just think, a renewable energy source—readily available.



The biogas advantage

Taking a stand for clean, renewable energy makes perfect sense when you consider the advantages.

Versatile. Biogas can be captured from landfills, farms, wastewater facilities and some industrial activities. Once processed it can then be used for heating, electricity generation or even as a transportation fuel.

Environmentally sound. Biogas projects help reduce greenhouse gas emissions while increasing the province's production of clean energy. In fact, the use of biogas can safely and efficiently reduce emissions from waste methane, which is 21 times more powerful in warming the atmosphere than CO₂.

Innovative. Processing and injecting upgraded, pipeline-quality gas into our existing pipeline system has the benefit of replacing traditionally sourced natural gas with a carbon-neutral fuel.

Progressive. Biogas production will require new "green collar" jobs. This means BC-based jobs and local economic stimulus—a good thing for all British Columbians.



Sound investment

Our future depends on the wise use of clean, renewable energy sources. By developing biogas we're helping to reduce our collective carbon footprint and stimulating economic growth.

Terasen Gas is working on biogas production projects with Catalyst Power Inc. in Abbotsford and the Columbia Shuswap Regional District (CSRD) at the Salmon Arm landfill. From the landfill alone there could be enough clean energy to potentially heat up to 300 homes per year.

The proposed Catalyst Power and CSRD projects are good examples of how we're working to help BC's carbon footprint look more like a toeprint. Learn more at terasengas.com/biogas

Sign up for a cleaner BC

Terasen Gas will be asking the BC Utilities Commission to approve a new renewable energy program. Soon, customers may have the opportunity to support biogas initiatives simply by subscribing to our program.

Participants would support Terasen Gas' delivery of an amount of pipeline-quality biogas to the Terasen Gas network, proportionate to the customers' gas usage, once our program is approved and launched.

By participating in such a significant energy program you could contribute to a collective savings of about 13,000 tonnes of greenhouse gases in the first year alone. That's like taking 2,000 cars off the road every year.

Be among the first

Sign up at terasengas.com/biogas to be notified prior to the launch of our renewable energy program.

Become part of tomorrow's solution

Biogas. A clean, renewable energy source. Making the choice for a cleaner tomorrow has never been so close at hand.

Learn more at terasengas.com/biogas, or call 604-576-7079.



Terasen Gas is the common name of Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc., and Terasen Gas (Whistler) Inc. The companies are indirect, wholly owned subsidiaries of Fortis Inc. Terasen Gas uses the Terasen Gas name and logo under license from Terasen Inc.

