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British Columbia Utilities Commission  
6th floor, 900 Howe Street  
Vancouver, BC V6Z 2N3

**Attention: Erica Hamilton**  
**Commission Secretary**

Dear Sirs/Mesdames:

**Re: Terasen Gas Inc.**  
**An Application for Approval of a Biomethane Service Offering and**  
**Supporting Business Model and for Approval of the Salmon Arm**  
**Biomethane Project and for Approval of the Catalyst Biomethane Project**

We enclose for filing in the above proceeding the electronic version of the Submissions on behalf of Terasen Gas Inc.

Twenty hard copies of the Submissions will follow by courier.

Yours truly,

**FASKEN MARTINEAU DuMOULIN LLP**

*[original signed by Matthew Ghikas]*

Matthew Ghikas

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Enc

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**An Application by Terasen Gas Inc.**

**for Approval of a Biomethane Service Offering and Supporting  
Business Model**

**and**

**for Approval of the Salmon Arm Biomethane Project and  
for Approval of the Catalyst Biomethane Project**

**Final Submissions of Terasen Gas Inc.**

**September 10, 2010**

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## PART ONE: INTRODUCTION AND OVERVIEW OF SUBMISSIONS

### A. Introduction

1. In this Application (the “Application”) Terasen Gas Inc. (“TGI” or the “Company”) has applied for the necessary Commission approvals to allow the Company to introduce an end-to-end business model for the acquisition of Biomethane supply and its sale to TGI customers as a “Green Gas”<sup>1</sup> offering. The specific approvals sought are set out in Section 14 of the Application<sup>2</sup>, but in general involve two main components:

- **Biomethane supply:** TGI seeks approval pursuant to section 44.2 of the *Utilities Commission Act* (the “Act”)<sup>3</sup> of an expenditure schedule for TGI’s investment in infrastructure supporting two supply projects that will provide the initial Biomethane supply for the Green Gas offering. TGI has also filed the related energy supply contracts pursuant to section 71 of the Act, and has proposed criteria to inform the Commission’s public interest assessment of future energy supply contracts.
- **Customer rates:** TGI seeks approval pursuant to sections 59-61 of the Act of the proposed Green Gas rate, tariff provisions, cost allocation methodology, and accounting treatment, to permit the sale of Biomethane to customers.

2. Biomethane is a renewable and carbon neutral energy source, and substituting it for natural gas reduces greenhouse gas (“GHG”) emissions. Customer demand exists for a renewable energy program offered by TGI that will allow customers to reduce their “carbon footprint” in this manner. The public interest is served by providing customers with the option of reducing their GHG emissions while still using natural gas and making efficient use of existing distribution infrastructure. TGI’s involvement in the development of Biomethane supply, and

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<sup>1</sup> The term “Green Gas offering” is only a working name, and will not be used in customer communications. B-1, p. 1.

<sup>2</sup> B-1.

<sup>3</sup> R.S.B.C. 1996, c. 473.

its delivery to customers through a new Green Gas offering, also advances several of “British Columbia’s energy objectives” identified in the *Clean Energy Act*.<sup>4</sup> These benefits can be delivered by TGI with relatively modest cost and risk to customers. As such, TGI submits that its proposed expenditures in the two supply projects, and the related energy supply contracts, are in the public interest. The statutory requirement that TGI file all future Biomethane supply contracts with the Commission, in conjunction with the proposed criteria to inform the Commission’s review of those contracts, will ensure that new Biomethane supply is developed in step with demand and in a manner consistent with the public interest. The Green Gas rate, and the underlying mechanisms and methodologies used to derive the rate, provide a just and reasonable basis for providing customers with access to Biomethane and should be approved.

## **B. Overview of the Application**

3. This section provides the regulatory background and a brief overview of the Application and the Final Submission.

### **(a) Application Reflects Outcome of RRA Negotiated Settlement Agreement**

4. TGI brought this Application forward in accordance with a provision of the Commission-approved Negotiated Settlement Agreement (“NSA”) for TGI’s 2010 and 2011 Revenue Requirements and Delivery Rates Application (the “2010/2011 RRA”).<sup>5</sup> In the 2010/2011 RRA, TGI had sought approval to proceed with Biogas upgrading projects and Biogas/Biomethane purchase agreements as a small-scale pilot supply project, with the associated costs of the projects and the cost of Biomethane supply recovered from all customers through midstream rates.<sup>6</sup> TGI had not contemplated a customer offering at that time. Section 15 of the NSA provided as follows:

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<sup>4</sup> S.B.C. 2010, c. 22. The objectives are incorporated by reference into the Utilities Commission Act.

<sup>5</sup> Commission Order G-141-09, dated November 26, 2009.

<sup>6</sup> B-10, BCUC 2.12.8. (For reference, see also Terasen Gas Inc. – 2010/2011 RRA Application, Ex. B-1, pp. 250-251.)

## **15. Biogas**

Issue No. 3 in the Commission Panel's "Issues of Particular Concern to the Commission Panel" stated:

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

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

5. Consistent with the NSA, TGI undertook market research to establish demand for a Green Gas offering, advanced two supply projects to provide the initial Biomethane, and developed a rate structure with associated cost allocation methodology and cost recovery mechanisms. TGI has applied for public interest approval of an expenditure schedule, rather than seeking a CPCN as indicated in the Commission Panel's "issue of concern", because the investment required by TGI is well below the approved CPCN threshold.<sup>7</sup> TGI has referred to the supply and delivery model, as well as the cost allocation proposed as a basis for deriving just and reasonable cost of service-based rates, as the "end-to-end business model".

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<sup>7</sup> TGI also observes that the "issue of concern" must be treated as a "matter to be addressed" rather than as a directive to TGI, as procedural fairness would have precluded any such directives at the time of the NSP. The NSP took place before the Commission Panel could consider the full evidentiary record.

**(b) Making Biomethane Available to Customers is in the Public Interest**

6. TGI's acquisition of Biomethane supply and its investment in upgrading, interconnection and monitoring facilities require the Commission to consider the public interest. In Part Two of these Final Submissions, TGI reviews the following two factors that are important to the Commission's determination:

- TGI's involvement in the development of Biomethane as a renewable, and carbon neutral energy source, advances British Columbia's energy objectives; and
- there is presently customer demand for a Green Gas offering, and meeting this demand is in the interests of customers and the Company.

**(c) Biomethane Supply**

7. Biomethane supply is discussed in Part Three of these Final Submissions. TGI is seeking section 44.2 public interest approval for its expenditures on two Biomethane supply projects - one in Abbotsford (the "Catalyst Project") and one in Salmon Arm (the "CSR D Project") - in respect of which TGI has also filed energy supply contracts pursuant to section 71 of the Act. TGI has also proposed criteria to facilitate the public interest assessment of future energy supply contracts.

8. The two proposed supply projects will provide the initial Biomethane supply for TGI's Green Gas offering. The extent of TGI's involvement in each project, and the character of the associated energy supply contracts, differs in some key respects as a result of commercial considerations. In the CSR D Project, TGI is purchasing raw Biogas under a long-term contract, and will construct and own facilities to upgrade the raw Biogas and inject the upgraded Biomethane safely into TGI's distribution system. In the Catalyst Project, TGI agreed to purchase upgraded Biomethane as TGI was comfortable with the project partner's ability to perform the upgrading in a reliable manner. In both cases, TGI's required investment is relatively modest and the projects yield a cost-effective Biomethane supply on a long-term basis.

9. TGI's market research, filed with the Application, suggests market demand well in excess of the Biomethane supply yielded by the two projects. TGI's investment in the projects, and the Company's decision to enter into energy supply contracts, is also warranted based on participation rates in similar programs elsewhere. TGI submits that both of these Projects are in the public interest as they support the launch of the Green Gas offering for the benefit of customers, with little associated risk.

10. A number of the public interest considerations to be determined in this Application (particularly those discussed in Part Two, below) will apply equally in the case of other supply projects, thus creating an opportunity for streamlining the public interest assessment of future contracts. TGI has proposed parameters, or criteria, for acquiring future Biomethane supply. The parameters include: a price ceiling on Biomethane supply; long-term supply commitments by project partners; contractual terms to ensure reliability of supply; and terms that facilitate the redeployment of TGI's assets to other projects, if required. The adoption of TGI's proposed criteria will enhance regulatory efficiency, since the Commission will normally be able to perform its public interest assessment of future supply contracts by assessing a project's ability to deliver Biomethane to TGI's system within the established parameters. Transparent criteria provide the additional benefits of facilitating TGI's own assessment of potential projects and assisting potential partners in developing and financing supply projects.

**(d) Customer Side of "End-to-End Business Model"**

11. As discussed in Part Four of these Final Submissions, TGI has proposed to offer a Green Gas offering that consists of a notional blend of 10% Biomethane and 90% natural gas. TGI has developed a two-phased approach to launching the product, which is reflected in the proposed Terms and Conditions of service. Phase 1 is expected to launch later in 2010, and is targeted at residential customers because market research suggests that they represent the largest market potential. A targeted offering also limits the need for systems changes under TGI's current outsourced Customer Information System ("CIS"). Phase 2, currently anticipated to begin in 2012 after TGI's new insourced CIS is launched and stabilized, will expand the

product offering to commercial customers and match demand once new supply comes on-line. The phased launch is to be supported by customer communications intended to both educate customers about this new product, and to encourage them to make an informed decision that best meets their individual requirements. TGI submits that the proposed approach will best ensure the success of the Green Gas offering, making the best use of the limited supply of Biomethane.

12. The proposed rates have been determined based on an assessment of the costs of providing Green Gas service to TGI customers, rather than being established as an arbitrary percentage premium over the cost of traditional natural gas. TGI has allocated costs to the Green Gas offering based on principles of cost causality. Customers who opt-in to the Green Gas service will pay the cost of Biomethane supply, leaving other non-bypass customers affected only to the extent that they cover the costs attributable to making the program available to them (i.e. the costs associated with giving all customers the option to participate). The current cost of the blended Green Gas offering, borne by Green Gas customers, equates to a 10% premium (approximate) over the current cost of traditional natural gas.<sup>8</sup> The rate impact to non-bypass customers associated with the proposed investment in Biomethane supply is very modest, representing less than half of one cent per GJ for residential customers.<sup>9</sup> For a residential customer using 95 GJ per year the annual incremental cost is 38 cents.<sup>10</sup> TGI's cost allocation approach is consistent, for instance, with the cost allocation approach for the Customer Choice program, the Stable Rate program and Energy Efficiency and Conservation programs. TGI's market research, filed with the Application, demonstrates customer support for this approach.

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<sup>8</sup> 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 in the Application 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 is 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. See B-10, BCUC 2.2.3.

<sup>9</sup> B-3, BCUC 1.31.2; B-1, Appendix J-2, Schedule 10, Line 20.

<sup>10</sup> B-1, p. 111.

13. TGI submits that, for the reasons identified above and discussed in more detail in Part Four below, the proposed Terms and Conditions and rates for Biomethane service are just and reasonable and should be approved. Customer research has confirmed the potential for significant demand for a Green Gas offering with a cost of approximately 10% above traditional natural gas. TGI submits that every indication is that the proposed Green Gas offering will be a success.

## **PART TWO: INVESTMENT IN BIOMETHANE SUPPLY IS IN THE PUBLIC INTEREST**

### **A. Introduction**

14. TGI's acquisition of Biomethane supply (section 71) and investment in interconnection and upgrading facilities (section 44.2) require the Commission to consider the public interest. TGI submits that it is in the public interest for TGI to invest in supply development and acquisition for delivery to customers. Key facts supporting this finding are:

- TGI's involvement in the development of Biomethane as a renewable, and carbon neutral energy source, advances British Columbia's energy objectives; and
- there is customer demand for a Green Gas offering, and meeting this demand is in the interests of customers and the Company.

15. In this Part, TGI addresses the considerations that inform the public interest in the context of this Application, and explains why the above facts support a finding that TGI's proposed energy supply contracts and expenditures are in the public interest.

### **B. Public Interest Considerations**

16. TGI seeks orders relating to the two supply projects under sections 44.2 and 71 of the Act. In this section, TGI addresses the factors that the Commission must consider in performing its public interest assessment under these provisions.

17. Section 44.2 provides that a public utility may file with the Commission a statement of capital expenditures the public utility has made or anticipates making during the period assessed by the schedule. When a public utility elects to file an expenditure schedule – as TGI has in this case to facilitate a public interest review of a new type of investment - the Commission must either accept the schedule if it considers that making the expenditures would be in the public interest, or reject the schedule in whole or in part.

18. TGI's contracts to purchase either raw Biogas or upgraded Biomethane meet the definition of "energy supply contract" and engage section 71 of the Act.<sup>11</sup> Section 71(1) provides:

71 (1) Subject to subsection (1.1), a person who, after this section comes into force, enters into an energy supply contract must

(a) file a copy of the contract with the commission under rules and within the time it specifies, and

(b) provide to the commission any information it considers necessary to determine whether the contract is in the public interest.

19. Under the above provision, the Commission's explicit approval is not required for a filed contract to be in force. In fact, most electricity and natural gas energy supply contracts filed with the Commission are accepted as filed without explicit acknowledgement from the Commission. However, pursuant to subparagraph (b), the Commission may choose to request additional information to facilitate a public interest review of any filed contract. In this case, TGI has proactively filed additional information to support the public interest, in recognition of the fact that the two energy supply contracts are the first Biomethane and Biogas contracts to be filed with the Commission.

20. The Act specifies factors that the Commission "must consider" in making a determination regarding the public interest under these provisions. In particular, and of relevance to this Application, the Commission is expressly required under both sections 44.2 and 71 to consider "British Columbia's energy objectives"<sup>12</sup>, and "the interests of persons in British Columbia who receive or may receive service from the public utility"<sup>13</sup>.

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<sup>11</sup> The Act defines an "energy supply contract" as "a contract under which energy is sold by a seller to a public utility or another buyer, and includes an amendment of that contract...". "Energy" means electricity or natural gas. "natural gas" means any methane, propane or butane sold for consumption as a domestic, commercial or industrial fuel, or as an industrial raw material. Raw Biogas is 40% to 60% methane and upgraded Biomethane is 96% methane, and therefore either commodity falls under the definition of "natural gas". See B-1, p. 8 for a discussion of the chemical composition of Biogas and Biomethane.

<sup>12</sup> Utilities Commission Act, s. 44.2(5)(a) and s. 71(2.1)(a).

<sup>13</sup> Utilities Commission Act, s. 44.2(5)(e) and s. 71(2.1)(d).

**C. Development and Sale of Biomethane Supports British Columbia’s Energy Objectives**

21. British Columbia’s energy objectives, which the Commission must consider in assessing TGI’s two supply contracts and the Company’s expenditures on the two supply projects, emphasize the role of public utilities in developing renewable resources, reducing GHG emissions, and energy efficiency, among other things. The Act also contemplates a role for public utilities like TGI in the development and delivery of Biomethane to energy consumers. TGI’s proposed development of Biomethane supply, and the associated delivery of the Biomethane to customers, advances a number of British Columbia’s energy objectives as a result of its attributes as a renewable and carbon neutral energy source.<sup>14</sup>

**(a) British Columbia’s Energy Objectives**

22. British Columbia’s energy objectives, as set out in the *Clean Energy Act* (and as incorporated into the *Utilities Commission Act*)<sup>15</sup>, include eight objectives promoted by the Application:

(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... ;

(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;

(k) to encourage economic development and the creation and retention of jobs;

(l) to foster the development of first nation and rural communities through the use and development of clean or renewable resources;

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<sup>14</sup> The attributes of Biomethane are described in Section 2 of the Application.

<sup>15</sup> See the definition of “British Columbia’s energy objectives” in section 1 of the Utilities Commission Act.

(m) to maximize the value, including the incremental value of the resources being clean or renewable resources, of British Columbia's generation and transmission assets for the benefit of British Columbia.

23. The *Clean Energy Act* defines "clean or renewable resource", a term referred to in objective (m), as including "biogas".<sup>16</sup>

**(b) How the Application Promotes British Columbia's Energy Objectives**

24. In Table 3-1 of the Application, TGI describes how the Biomethane development for the Green Gas offering is consistent with and promotes British Columbia's energy objectives relating to reducing GHG emissions and maximizing the value of renewable resources. To summarize:<sup>17</sup>

- Biogas is a renewable energy source<sup>18</sup> that would otherwise be lost to the atmosphere if left to dissipate.<sup>19</sup> These two projects also maximize the value of the "clean or renewable" Biogas in the sense that upgrading Biogas to Biomethane for direct consumption in heating applications is very efficient.<sup>20</sup>
- The production and consumption of Biomethane is considered carbon neutral because producing and consuming Biomethane does not add to the amount of carbon released into circulation.<sup>21</sup>
- On the supply side, TGI expects that the Biomethane production process will be carbon negative, because raw Biogas collection and/or generation process will avoid more GHG intensive emissions such as fugitive methane emissions that occur out of the existing waste management practices at farms, landfills and wastewater treatment plants.<sup>22</sup>

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<sup>16</sup> See section 1 of the Clean Energy Act.

<sup>17</sup> B-1, pp. 16-20; see also B-10, BCUC 2.3.5.2.

<sup>18</sup> B-5, BCSEA 1.18.1.

<sup>19</sup> B-1, p. 16.

<sup>20</sup> B-1, p. 16. See also B-4, BCOAPO 1.3.1.

<sup>21</sup> B-1, p. 17. See also B-6, CEC 1.1.1.

<sup>22</sup> B-5, BCSEA 1.18.2, 1.18.3.3, 1.20.1.

- On the consumer side, the Green Gas offering will result in the displacement of carbon positive natural gas through the consumption of Biomethane, which results in a net reduction in the amount of GHGs in the atmosphere.<sup>23</sup>

25. The expected annual GHG emission reduction associated with the two supply projects applied for in this Application is material. The CSRD Project is expected to reduce CO<sub>2</sub>e gas by 1,500 tonnes per year, with the potential to save 2,250 tonnes per year at the maximum contract amount.<sup>24</sup> The Catalyst Project is expected to reduce CO<sub>2</sub>e gas by 4,200 tonnes per year, with the potential to save 9,000 tonnes per year at the maximum contract amount.<sup>25</sup> Future projects will necessarily increase the GHG savings.

26. The development of Biomethane supply supports the objectives focussed on technology and economic development in several ways. For instance:<sup>26</sup>

- TGI is proposing to use made-in-BC technology for the CSRD Project.
- The Green Gas offering will lead to the development of a Biogas capture and upgrading industry that simply does not exist at the current time. The development will create investment opportunities in British Columbia. The Catalyst Project, for instance, is directly creating the employment of the entrepreneurs who are responsible for the development of that project.
- TGI proposes to partner with municipalities and regional districts, and will seek out further such partnerships that may also include First Nations communities for the development of clean and renewable Biomethane supply projects.

27. Government has confirmed its view that the objectives of TGI's Biomethane program align with British Columbia's energy objectives. On August 3, 2010, the Ministry of

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<sup>23</sup> B-1, p. 19. See also B-6, CEC 1.1.4, 1.8.1; B-5, BCSEA, 1.20.1.

<sup>24</sup> B-1, p. 91.

<sup>25</sup> B-1, p. 101.

<sup>26</sup> B-1, p. 26 (Table 3-1).

Energy, Mines and Petroleum Resources sent a letter to TGI expressing support for the Application as follows:<sup>27</sup>

This letter is to express support for Terasen Gas' application to the British Columbia Utilities Commission for approval of the above-noted Biomethane Service Offering. The objectives of this proposal align with the policy actions of the BC Energy Plan, the BC Bioenergy Strategy and the British Columbia energy objectives of the Clean Energy Act (the Act), particularly the objectives in section 2(g) "to reduce greenhouse gas emissions" and section 20) "to reduce waste by encouraging the use of waste heat, Biogas and biomass".

28. Thus, the development of Biomethane supply in British Columbia, in tandem with the Green Gas offering, makes efficient use of a valuable renewable resource. It also provides tangible environmental benefits and supports economic development. The Commission must consider these compelling benefits in assessing the public interest under sections 44.2 and 71.

**D. Biomethane Development and Green Gas Offering is in the Interests of TGI's Existing and Potential Customers**

29. The Commission's assessment under sections 44.2 and 71 must also account for "the interests of persons in British Columbia who receive or may receive service from the public utility", i.e. existing and potential customers of TGI. A segment of existing and potential TGI customers want to reduce their carbon footprint and have indicated support for TGI meeting that demand with an energy-based program.<sup>28</sup> The development of Biomethane supply to meet the demand for a renewable energy program will also assist TGI in retaining and attracting customers inclined to make energy choices based on environmental attributes.<sup>29</sup>

**(a) Confirmation of Customer Support for TGI's Involvement in Biomethane and Demand for Green Gas Offering**

30. TGI submits that developing and acquiring Biomethane supply to facilitate a Green Gas offering represents an appropriate response to customer demand. Put another way,

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<sup>27</sup> E-1.

<sup>28</sup> B-10, BCUC 2.3.1.1.

<sup>29</sup> B-10, BCUC 2.3.3.7 and 2.30.2.4.

it is in the “interests of existing and potential customers” of TGI for the Company, where possible, to provide safe, reliable and cost-effective products and services that meet customer expectations. TGI undertook two types of research to ascertain demand: secondary market research on other “green pricing”<sup>30</sup> programs; and primary market research using a scientific methodology that yields reliable results.<sup>31</sup> Customers have indicated support for TGI’s involvement in Biomethane development, as well as strong interest in a renewable energy offering from TGI.

### ***Secondary Research on “Green Pricing” Programs Focussed Primary Research***

31. The secondary research on other “green pricing” programs allowed TGI to focus the primary research. TGI’s initial secondary research indicated that, of the three types of “green pricing” programs that are offered in North America, the top performing green pricing programs (in terms of participation rate) were all some form of renewable energy-based program.<sup>32</sup> Carbon offset programs<sup>33</sup> were less successful, and contribution programs<sup>34</sup> (the earliest type of green pricing program) are now the least successful. Among the more than 850 U.S. green pricing programs, only about 15-20 call themselves “contribution” programs.<sup>35</sup> For this reason, the TNS survey did not ask respondents about a contribution type program, focussing instead on renewable energy programs and carbon offsets.<sup>36</sup>

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<sup>30</sup> B-1, p. 28 (for the definition of “green pricing”).

<sup>31</sup> B-5, BCSEA 1.4.1.

<sup>32</sup> Energy-based Programs: this type of program allows customers to choose a selected amount of energy to be supplied from renewable sources for a premium. B-1, p. 29.

<sup>33</sup> Carbon Offset Programs: this type of program offers customers the option to offset their GHG emissions for the energy use in their homes or business. The utility either acquires carbon offsets from their own projects or contracts with a third party to acquire carbon offsets on their behalf. B-1, p. 29.

<sup>34</sup> Contribution Programs: allow customers to contribute to a utility managed fund for renewable energy project development. Ex. B-1, p. 28.

<sup>35</sup> B-1, p. 39; B-3, BCUC 1.5.1, 1.5.3.

<sup>36</sup> TGI is not averse to creating an offset program in the future (or a contribution program) if these programs gain greater acceptance and promise greater customer take-up. See B-3, BCUC 1.4.1 and 1.4.2.

### ***Primary Research Confirmed Customer Demand and Preferences***

32. The purpose of the primary market research was to “better understand the potential market for green gas, its market drivers and factors affecting different price points.”<sup>37</sup> As discussed below, the primary market research validated customer preference for a renewable energy program; confirmed customer support for TGI’s involvement in developing and offering Biomethane to customers; and shaped the design of the Green Gas offering.

33. TNS conducted the market research by way of an online survey held between November 23, 2009 and December 4, 2009. The sample size of the residential survey was 1,401 participants, and 500 commercial participants.<sup>38</sup> The margin of error for the residential survey was +/- 2.6% at the 95% confidence level, and for the commercial survey it was +/- 4.4% at the 95% confidence level.<sup>39</sup> The online survey methodology was used to facilitate the use of discrete choice analysis, which allows for analysis of which features of a program weigh more heavily in the respondent’s energy choices.<sup>40</sup> The methodology employed by TNS yielded reliable results.

34. The key findings of the primary market research conducted by TNS and TGI’s secondary research are set out in Sections 4 and 5 of the Application, and are summarized below.

- **There is strong support for the program generally:** There is strong residential and commercial support for TGI’s investment in Biogas projects and offering a Biogas program. Approximately 67% of respondents indicated they agree with TGI developing and investing in Biogas projects. TGI submits that this is strong

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<sup>37</sup> B-1, App. D-3, p. 3. Within this overarching purpose, TGI identified a number of specific objectives: determine market interest; determine the potential target market and market size; develop a clear and concise customer profile; determine market drivers; determine price points and factors affecting price points; and understand customer perceptions on different product offerings – offsets / Biomethane. See B-3, Att. to BCUC 1.43.1.1, “Scope of Work Proposal”, p. 2.

<sup>38</sup> B-1, p. 35-36.

<sup>39</sup> B-1, p. 36.

<sup>40</sup> B-1, p. 36.

public support for TGI's investment in Biomethane supply projects and for pursuing the Green Gas offering at this time.<sup>41</sup>

- **Customers prefer an energy-based program over an offset program:** When asked if they would actually enrol in a green pricing program (assuming all factors remained equal, i.e. energy prices), 56% of residential respondents and 47% of commercial respondents indicated they would sign up for a Biogas program. Only 24% of residential respondents and 35% of commercial respondents indicated they would sign up for a carbon offset program. These findings reveal that, at present, both residential and commercial markets have a strong preference for a renewable energy-based program such as Biogas rather than a carbon offset program. This is consistent with TGI's secondary market research, which demonstrated that the top performing programs in North America are energy based programs. TGI submits that this finding demonstrates that TGI not only has support for going forward with a Biogas program, but that it has chosen the "green pricing" model that has the highest chance of success at this time. Offset-based products may become more viable once familiarity with offsets increases.<sup>42</sup>
- **TGI's customers support the cost allocation:** A large number of customers indicated that they would support moderate price increases for a Biogas program if the full cost of the program was borne by all customers (47%). The TNS Study also suggested that there is enough market share potential for a program where customers voluntarily pay a "green premium" price.<sup>43</sup> TGI's proposal, which allocates costs based on cost causality, results in Green Gas

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<sup>41</sup> B-1, pp. 37-38.

<sup>42</sup> B-1, pp. 38-40; B-3, BCUC 1.4.1; 1.4.2 and 12.1.

<sup>43</sup> Residential and commercial respondents who indicated they were likely to sign up for a Biogas program were asked whether they would prefer to have a Terasen Gas Biogas program funded through a universal price increase borne by all consumers or through price premiums charged to only those who sign up. The results were that 47% would prefer a universal price increase, while 26% prefer a premium price increase. However, a large number of residents (27%) did not state a preference or did not know how to answer this question. TGI submits that this data supports the cost allocation that TGI has adopted for the program.

customers paying for the higher cost of Biomethane and all non-bypass customers incurring only an additional \$0.004 (levelized) to \$0.006 (2012) per GJ to make the program available to all customers.<sup>44</sup> As such, the TNS Study results suggest customer acceptance of the results of the allocation methodology.<sup>45</sup>

- **The Green Gas offering is using the right price point:** The TNS Study considered how much residential and commercial segments were willing to pay for a voluntary program taking into consideration higher price premiums. TGI used the range of other green pricing premiums found in North America (10% - 30%), with a corresponding blend of Biomethane and GHG reduction, to arrive at the three options presented in the survey. Among those surveyed individuals that were likely to sign up for a program, almost half (46%) had a preference for a 10% price increase, with a 10% GHG reduction. Approximately 30% would choose a 20% price increase with a 20% GHG reduction, and 23-25% preferred a 30% price increase resulting in a 30% GHG reduction. TGI submits that these findings support TGI's choice to proceed with a 10% blend of Biomethane and corresponding GHG reduction, which based on current Biomethane cost of service results in a (approximate) 10% premium to current traditional natural gas commodity rates.<sup>46</sup>
  
- **TGI customer demand is strong and will likely exceed supply:** The survey results provided a basis for TNS to calculate projected market take-up estimates at the three price points. The results were as follows:<sup>47</sup>
  - (A) 16% of residents say they would sign up for a Biogas renewable energy-based program that had a 10% price increase and a corresponding 10% GHG reduction; 10% of TGI' commercial customers say they would subscribe to a Biogas program at a 10%

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<sup>44</sup> B-3, BCUC 1.31.2; B-1, Appendix J-2, Schedule 10, Line 20.

<sup>45</sup> B-1, pp. 41-42.

<sup>46</sup> B-1, pp. 43-44.

<sup>47</sup> B-1, p. 45.

price increase of the current commodity price and 10% GHG reduction.

- (B) 11% of residents say they would sign up for a program at a 20% price increase with a 20% GHG reduction; 6% of commercial customers say they would subscribe at a 20% price increase and 20% GHG reduction.
- (C) 8% of residents say they would sign up at a 30% price increase with 30% GHG reduction; 5% of commercial customers say they would subscribe at a 30% price increase and 30% GHG reduction.

35. Applying the TNS Study results based on the 10% price increase model to TGI's customers results in an estimated maximum take-up of 120,000 residential customers and 9,200 commercial customers. The two proposed supply projects are capable of serving only 12,000 – 15,000 residential customers based on a 10% Biomethane blend, leaving significant demand unmet.<sup>48</sup> While this amount is to be considered an upper limit on demand,<sup>49</sup> the primary research verified that demand for TGI's Green Gas offering can be expected to exceed the available Biomethane supply from the two proposed projects by a considerable margin.

36. The industry average take-up rate for similar programs, which TGI derived from secondary market research, represents a conservative measure of potential demand for the Green Gas offering. The number of residential customers that can be served by the two proposed supply projects is less than the North American industry average for enrolment in green pricing programs of 2.2%. The North American industry average, applied to TGI's residential customer base, suggests over 16,000 residential sign-ups.<sup>50</sup>

### ***TNS Study Was Reliable and Objective***

37. Commission Staff asked a number of information requests that addressed the TNS Study design.<sup>51</sup> The evidence supports the reliability and objectivity of the TNS market research. TGI's evidence was that the Company made it clear to TNS that the Company desired

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<sup>48</sup> B-1, p. 46.

<sup>49</sup> B-3, BCUC 1.55.3, 1.55.4; B-10, BCUC 2.30.2.3.

<sup>50</sup> B-1, p. 46.

<sup>51</sup> See B-3, BCUC 1.43.1.1 through 1.45.5 and 1.54.1 through 1.54.16.

reliable and robust data to provide the basis for an informed decision about the viability of a Biomethane program offering to customers in BC.<sup>52</sup> TGI also worked closely with TNS to ensure that the survey questionnaire did not contain any intentional or unintentional bias. Numerous drafts of the questionnaire were circulated in order to ensure clarity of the language, particularly when it came to the description of program options, so that participants would be able to understand the subject matter.<sup>53</sup>

38. TGI has filed all written communications between TNS and TGI related to the survey development process, the RFP that set out the scope of the study, and a “survey scope” document that was provided to TNS in advance of its initial meeting with TGI.<sup>54</sup> The documents support TGI’s evidence that the survey was designed to be an independent, objective study to determine demand for a Green Gas offering.<sup>55</sup>

### ***Summary Regarding Customer Demand***

39. The apparent demand for TGI’s proposed Green Gas offering supports a Commission determination that the proposed energy supply contracts and TGI’s expenditures on supply infrastructure are in the public interest. The market research also supports the development of additional Biomethane supply. TGI discusses in Part Three, Section D below the proposed criteria that will facilitate the efficient assessment of future supply contracts.

#### **(b) Benefits to Customers From Retaining and Adding Customers**

40. The previous section addressed the interest of customers in having TGI meet their expectation for service offerings. There is also a longer-term customer interest in ensuring that TGI’s product offerings meet the expectation of customers and potential customers. All customers benefit from initiatives to retain and add throughput to the TGI

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<sup>52</sup> B-3, BCUC 1.44.1.1.

<sup>53</sup> B-3, BCUC 1.54.6.

<sup>54</sup> B-3, BCUC 1.43.1.1, 1.44.1.1 and B-9, redacted response to BCUC IR 1.43.1.6.

<sup>55</sup> B-3, BCUC 1.43.1.2, 1.43.1.9.

system because added throughput spreads system costs over a larger base, thus resulting all else equal in lower delivery rates.<sup>56</sup>

41. Customers also benefit directly if the current trend towards increasing business risk can be slowed in the longer-term through a comprehensive suite of new alternative energy product initiatives. Increased business risk drives higher required returns on debt and equity, and results in higher rates, all else being equal.<sup>57</sup>

**E. Conclusion Regarding the Public Interest**

42. The evidence supports a Commission determination that the Application meets customer demand, and advances British Columbia's energy objectives. TGI submits that the Commission should give these factors significant weight in assessing the public interest.

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<sup>56</sup> B-10, BCUC IR 2.3.3.7 and 2.30.2.4.

<sup>57</sup> B-3, BCUC 1.10.5.

### **PART THREE: THE SUPPLY SIDE BUSINESS MODEL**

#### **A. Introduction**

43. The benefits associated with TGI and its customers having access to a cost-effective supply of Biomethane have already been discussed in Part Two. In this Part, TGI addresses how the terms and conditions of TGI's energy supply agreements and the nature of TGI's investments in supply projects support the public interest. In particular:

- the two energy supply contracts, and TGI's investment in related infrastructure, will secure a safe, reliable and cost-effective initial supply of Biomethane to meet some of the expected demand for Biomethane;
- the preferred ownership model involves TGI owning the upgrading infrastructure, as this is the best means available to ensure a reliable supply of Biomethane, while presenting little risk to customers; and
- TGI's proposed criteria for assessing future energy supply contracts promotes the development of a reliable and cost-effective supply of Biomethane and enhances regulatory efficiency.

#### **B. TGI Expenditure on CSRD (Salmon Arm) and Catalyst (Abbotsford) Projects is in the Public Interest**

44. The CSRD and Catalyst Projects, described in Section 9 of the Application, will provide the initial Biomethane supply for the Green Gas offering. TGI has negotiated appropriate commercial terms for the acquisition of supply, and is making reasonable investments in infrastructure. TGI submits that its investment in the facilities required for the CSRD and Catalyst projects, and the associated energy supply contracts, are in the public interest. The Commission should therefore approve TGI's expenditure schedules for these projects pursuant to section 44.2 of the Act, and should accept the energy supply contracts pursuant to section 71.

**(a) CSRD (Salmon Arm) Project**

45. TGI has entered into a 15-year energy supply contract with CSRD for an expected daily delivery quantity of the equivalent raw Biogas required to produce 85 GJ per day of processed pipeline quality Biomethane.<sup>58</sup> TGI is investing in upgrading equipment, along with the distribution main and interconnection facilities, which includes gas quality monitoring, pressure regulation and odorizing.<sup>59</sup> The key benefit associated with the CSRD Project is that TGI will have access to a cost-effective long-term supply of Biomethane.<sup>60</sup> As discussed below, the risks associated with the CSRD energy supply contract and TGI's project investment are low, and have been managed appropriately.

***TGI's Investment in Interconnection, Monitoring and Upgrading Facilities***

46. The ownership model employed for the CSRD Project, i.e. TGI owning and operating the upgrading facilities as well as interconnection facilities, was dictated by the fact that CSRD did not wish to own and operate upgrading equipment. CSRD was interested in partnering with TGI as this was in alignment with its mandate to have transparent operations with the public.<sup>61</sup> Both parties considered that involving a third party in the upgrading process would have complicated the project's operational arrangements to the detriment of both parties.<sup>62</sup> CSRD's preference for this ownership model illustrates why it is important for TGI to remain involved in the development of Biomethane, a subject addressed further in Part Three, Section C.

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<sup>58</sup> B-1, p. 85.

<sup>59</sup> B-1, p. 83.

<sup>60</sup> The CSRD supply contract has a commodity price for raw Biogas that falls within the range proposed as an economic test for future review of projects. See section Part Three, D(b) of these submissions for a discussion of this economic test.

<sup>61</sup> See B-3, BCUC 1.26.1 for further explanation of why CSRD wished to partner with TGI for the Salmon Arm Project.

<sup>62</sup> B-3, BCUC 1.64.3.

**Project Risk Addressed**

47. The Application includes a detailed risk assessment, and outlines how TGI intends to manage those risks. TGI's evidence is summarized below.

48. **Cost Risk is Modest:** TGI's required capital investment of \$1,788,800 (net of government grants) is small compared to CSRD's investment in capturing the raw Biogas. Approximately 30% of that amount represents the cost of interconnection and monitoring facilities that TGI must own in any supply project.<sup>63</sup> The cost of the installed upgrading plant, net of government grants, accounts for the remaining \$1,055,810 or approximately 70%.<sup>64</sup> The upgrading plant costs are based on a fixed price contract, which significantly reduces any cost risk associated with TGI's investment. The upgrading equipment supplier has experience with landfills.<sup>65</sup> The remaining costs were estimated based on the actual costs of the Catalyst Project, thus increasing the reliability of the estimate.<sup>66</sup> TGI included a 10% contingency, which is reasonable given that a large portion of the project cost is fixed (i.e. the upgrading plant).<sup>67</sup> The CSRD Project is currently on budget and TGI is confident that the project will remain on budget based on current data and foreseeable circumstances.<sup>68</sup> Operating costs are very modest (estimated to be approximately \$56,000 annually), and consist primarily of electricity costs, filter and media replacement, odorant and inspections.<sup>69</sup> In sum, the cost risk is modest given the size of the required investment, and TGI has managed the risk appropriately.

49. **No Risk to Gas Supply Portfolio:** Due to the quantity of Biogas from this project, there is no risk to the Company's overall gas supply portfolio.<sup>70</sup>

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<sup>63</sup> B-1, p. 89, Table 9-1. This represents the sum of interconnection facilities (\$395,500); Quality Monitoring facilities (\$242,000) and Main Connection Costs (\$45,100), divided by the total pre-grant costs for the facilities of \$2,304,400.

<sup>64</sup> B-3, BCUC 1.28.1, 1.64.2.

<sup>65</sup> B-1, p. 88.

<sup>66</sup> B-3, BCUC 1.40.1 and 1.40.2.

<sup>67</sup> B-1, p. 89; B-3, BCUC 1.29.2.

<sup>68</sup> B-3, BCUC 1.28.1.

<sup>69</sup> B-1, p. 90.

<sup>70</sup> B-1, p. 92.

50. **Risk of Supply Failure:** Although the production of gas from a landfill is not fully predictable, the supply of gas is expected to grow as more waste is added to the landfill. In terms of the risk of unexpected contaminants, CSRD will not receive payments unless the gas received is successfully injected into TGI's distribution system. From a system perspective, planning will be done assuming that the Biogas is not available.<sup>71</sup>

51. **TGI System Risk:** TGI's ownership of interconnection facilities minimizes system risk. The upgrading equipment will be designed to self-monitor for abnormal conditions and TGI will always have final control of the gas quality. When Biomethane does not meet TGI's quality standards, it will immediately stop delivery to customers. CSRD is required under the contract to operate the landfill gas collection system in a manner that optimizes use for pipeline quality gas. CSRD does not get paid for Biogas that does not meet TGI's specifications.<sup>72</sup>

52. **Reliability Risk:** Reliability of supply depends, to a significant extent, on how the upgrading facilities are operated. TGI's ownership of the upgrading facilities is the best means of ensuring that the facilities are being operated appropriately. This is discussed further in Part Three, Section C below.

53. **Risk of Stranding:** The risk of stranding is low and TGI has taken appropriate steps to mitigate that risk contractually:

- There is little risk of stranding associated with lack of customer demand for Biomethane, as the Biomethane generated by the CSRD project would be fully consumed based on the conservative measure of industry average demand and the commitment from Central Heat.<sup>73</sup>
- The 15-year term provides longer term supply of Biogas and a reasonable period over which to recover equipment costs.<sup>74</sup>

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<sup>71</sup> B-1, p. 92.

<sup>72</sup> B-1, p. 93.

<sup>73</sup> B-1, p. 92.

<sup>74</sup> B-6, CEC 1.21.3.

- The risk associated with interruption or discontinuance of raw Biogas supply has also been addressed. Under TGI's contract with CSRD, TGI has the right to enter the site and physically recover its facilities after a specified period of non-performance. The majority of facilities used for the project could be recovered and used for other projects. The contract provides TGI with a termination payment in excess of the estimated value of the stranded assets and moving costs.<sup>75</sup>
- Advancements in upgrading technology will have little impact on the success of the project, as the current equipment recovers as much as 95% of the methane in raw Biogas. As a result, any technological improvements over time will result in only minor efficiency improvements and would not make the current technology obsolete.<sup>76</sup>

54. TGI submits that the evidence regarding project risk and mitigation measures supports a finding that TGI's proposed expenditures are in the public interest.

**(b) Catalyst (Abbotsford) Project**

55. The Catalyst Project is an agricultural waste to Biomethane project located in Abbotsford, BC. TGI has entered into a 10-year contract to purchase a minimum daily delivery quantity of 230 GJ per day of processed pipeline quality Biomethane from Catalyst Power Incorporated ("Catalyst").<sup>77</sup> TGI's required capital investment, which is limited to distribution main and interconnection facilities, is smaller than the CSRD Project. Although the delivered cost of Biomethane is higher than the CSRD Project, the commodity price still falls within the range of expectation based on TGI's experience to date with Biogas proposals and in reviewing Biogas development programs in other jurisdictions.<sup>78</sup>

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<sup>75</sup> B-1, p. 92.

<sup>76</sup> B-6, CEC 1.21.4.

<sup>77</sup> B-1, p. 96.

<sup>78</sup> B-1, p. 96.

***TGI's Investment in Interconnection, Monitoring and Upgrading Facilities***

56. Although TGI ownership of upgrading assets best ensures a reliable supply of Biomethane, a departure from this approach was warranted in the circumstances:<sup>79</sup>

- Catalyst was able to attain grant funding that significantly reduced the initial capital required for the purchase of the upgrading plant; TGI's involvement after the awarding of the grant would have complicated the funding arrangements.
- The Project timeline would have required TGI to invest much earlier in the project, so it was decided that a Catalyst-owned upgrade plant was the best way to move the project forward according to a timeline that did not jeopardize the viability of the project.
- Catalyst was able to demonstrate that it could be a reliable partner and therefore limit the risk of supply by cooperating with TGI at all phases of the project development. Details of why TGI believes that Catalyst is a suitable candidate for owning and operating upgrading equipment are provided in TGI's response to Commission information request 1.22.3.

It was appropriate in the circumstances for TGI to demonstrate flexibility in the ownership model, as the potential additional reliability benefit afforded by TGI operating the upgrading facilities (discussed in Part Three, Section C below) was limited and was outweighed by the desirability of proceeding with a good project.

***Project Risk Addressed***

57. The Application includes a detailed risk assessment for the Catalyst Project, and outlines how TGI intends to manage those risks. As with the CSR Project, there is no risk to

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<sup>79</sup> B-3, BCUC 1.2.2.

the Company's overall gas supply portfolio.<sup>80</sup> System risk has been managed in a similar manner. TGI's evidence regarding the management of other risks is summarized below.

58. **Risk of Supply Failure:** A failure by Catalyst to provide gas to TGI could result from loss of waste stream supplies or failure to meet gas specifications. TGI has addressed these risks through a non-performance clause in the agreement that includes a penalty substantial enough to deter Catalyst from selling to an alternative buyer and to ensure that Catalyst manages its feedstock contracts and system operations appropriately.<sup>81</sup>

59. **System Risk:** As with the CSRD Project, TGI owns the interconnection facilities. Delivered Biomethane must meet the same specifications that are used for TGI natural gas supply. The supply agreement includes the right to interrupt delivery of Biomethane from the project if the gas does not meet the quality specifications set out in the agreement. The facilities will also be linked with the Company's gas control system to allow real time monitoring of the quality sampling equipment that will be installed and quick response in shutting off the delivery of Biomethane should quality problems arise.<sup>82</sup>

60. **Cost Risk:** TGI's capital costs for the Catalyst Project are lower than the costs incurred for the CSRD project, since TGI only invested in interconnection, monitoring and metering facilities.<sup>83</sup> At the time TGI filed its round one information request responses, the Catalyst Project was nearly complete and on-budget.<sup>84</sup> As such, there is little cost risk associated with the Catalyst Project.

61. **Risk of Stranding:** The risk of stranded assets is modest and TGI has taken appropriate steps to mitigate that risk contractually:

- The overall investment required by TGI is low.

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<sup>80</sup> B-1, pp. 101-102.

<sup>81</sup> B-1, pp. 101-102.

<sup>82</sup> B-1, pp. 101-102.

<sup>83</sup> B-1, p. 100. Interconnection - \$77,300; Quality Monitoring - \$282,500; Main and Main Connection Costs – \$227,900; Total - \$587,700.

<sup>84</sup> B-3, BCUC 1.40.1.

- The Biomethane generated by the CSRD Project would be consumed based on the conservative measure of industry average demand and the commitment from Central Heat.
- Under the contract with CPI, TGI has the right to enter the site and physically recover its facilities after a specified period of non-performance. The majority of facilities used for the project could be recovered and used for other projects.<sup>85</sup>
- The 10-year term provides longer term supply of Biogas and a reasonable period over which to recover equipment costs.<sup>86</sup>
- The contract provides TGI with appropriate security against stranding.<sup>87</sup>

62. TGI submits that it has appropriately addressed the modest risks presented by the Catalyst Project.

**C. Proposed Ownership Model Allows for Necessary Commercial Flexibility While Protecting Customers**

63. TGI has outlined a framework for its investment in future Biomethane supply projects: the facilities that collect raw Biogas must be owned by the project proponent; TGI must own interconnection and monitoring facilities to ensure the integrity of TGI's system; and TGI will employ a flexible approach regarding ownership of the upgrading equipment. This framework, discussed in further detail below, maximizes the potential for a reliable and cost effective supply of Biomethane for customers over the long-term.

**(a) Digester Will Be Owned by Project Partner**

64. Biogas supply project partners will retain ownership and control over the equipment and processes that create and collect the raw Biogas, such as landfills, sewage treatment plants, and digesters. These facilities require the largest investment, and operating

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<sup>85</sup> B-3, BCUC 1.27.2; B-10, BCUC 2.32.1.

<sup>86</sup> B-1, pp. 75, 96; B-10, BCUC 2.32.2

<sup>87</sup> B-3, BCUC 1.62.5 (filed confidentially).

them falls outside of TGI's core expertise.<sup>88</sup> As such, it is efficient and cost-effective for the partner to retain ownership over production and collection assets.

**(b) Safety and System Integrity Requires TGI to Own Interconnection and Monitoring Facilities**

65. TGI must always control the interconnection, metering and monitoring facilities to ensure the safety and integrity of the Terasen Gas system. Meters measure the amount of gas injected into the distribution system to ensure that, for safety purposes, only the agreed upon amount of gas flows to the local distribution system. The monitoring equipment assesses Biomethane against specifications for chemical and heat content. Odorant is added as a public safety measure. These facilities incorporate standard equipment that is already a part of TGI's core business.<sup>89</sup> TGI's experience with the CSRD and Catalyst Projects has been that the investment required in these facilities is relatively modest.<sup>90</sup>

**(c) Flexible Approach to Ownership of Upgrading Equipment**

66. The upgrading equipment will typically represent a much smaller cost component than the Biogas collection assets, in terms of both capital cost and operating expense. For the reasons discussed below, TGI ownership of upgrading equipment as utility assets best ensures reliability of supply. TGI submits that this should be the preferred ownership model unless there are other commercial reasons to favour third-party ownership of upgrading facilities and the associated risks can be adequately addressed. A flexible approach will ultimately best serve TGI customers by providing a reliable and cost-effective supply.

***Benefits of TGI Ownership of Upgrading Facilities***

67. In light of the fact that the upgrading facilities comprise such a small percentage of an overall supply project costs, the ownership model used for the upgrading facilities will be

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<sup>88</sup> B-1, pp. 69-70.

<sup>89</sup> B-1, p. 72; B-3, BCUC 1.2.2.

<sup>90</sup> B-1, pp. 89-91 and 100-101.

unlikely to have a material impact on the cost of supply.<sup>91</sup> However, there are two key advantages of TGI owning upgrading assets:<sup>92</sup>

- **Reliability:** Although the interconnection and monitoring facilities owned by TGI ensure that the Biomethane injected into the system is safe and of the necessary quality to protect the integrity of TGI's distribution system, the upgrading process determines how much safe and to-specification Biomethane reaches the point of interconnection. A reliable flow of quality Biomethane is required to meet the customer demand for this product. TGI is motivated to provide the best quality gas possible and the Company answers directly to customers.<sup>93</sup> TGI will be unable to meet customer expectations if it must continually reject Biomethane at the point of interconnection because it does not meet specifications. Accordingly, it is important that the upgrading process is controlled by an entity that has the means to ensure that the Biomethane produced meets specifications on a consistent basis and can be injected into the TGI distribution system. TGI has the expertise and competence to operate and maintain an upgrading plant.<sup>94</sup> A precondition of third party ownership of upgrading facilities must be that the third party is equipped to provide reliable, high quality supply.<sup>95</sup>
- **Existing infrastructure:** TGI has in place an existing business and service infrastructure that can respond quickly to customer concerns and issues in the field.<sup>96</sup>

68. The risks associated with ownership of upgrading facilities, and the means by which TGI will mitigate them, has been addressed in Part Three, Section B(a) of these

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<sup>91</sup> B-1, p. 70.

<sup>92</sup> B-3, BCUC 1.2.2, 1.22.3, and 1.23.1.

<sup>93</sup> B-3, BCUC 1.2.2.

<sup>94</sup> B-3, BCUC 1.2.2.

<sup>95</sup> B-3, BCUC 1.2.2, 1.22.3.

<sup>96</sup> B-3, BCUC 1.2.2.

submissions in the context of the CSRD Project. The benefits associated with TGI's ownership of upgrading facilities outweigh the modest cost and stranding risks to customers associated with TGI investment in, and ownership of, upgrading facilities.

69. Commercial realities will also necessitate TGI's involvement in particular instances. Project developers have identified two primary reasons for preferring that TGI own and operate the upgrading facilities. The first reason is financial. Developers have indicated that it is typically easier to obtain financing when an experienced, reputable and reliable partner like TGI is involved in the upgrading. Local governments may similarly be capital constrained. The second reason is related to expertise. Developers have indicated that a partner with experience in gas processing and gas technology is attractive.<sup>97</sup> In this manner, TGI's involvement can facilitate supply development.

70. Some information requests inquired whether TGI's involvement in upgrading might discourage other market participants. TGI submits that the focus if this inquiry is, with respect, misplaced. Protecting potential third party suppliers (if and when they exist) from competition from TGI to encourage new market participants cannot be the end objective of public utility regulation as defined by the Act. The Commission has jurisdiction over the competitive landscape for ownership of upgrading facilities only to the extent that it is ultimately related to the quality, reliability and cost-effectiveness of Biomethane service.<sup>98</sup> From the customers' perspective, reducing TGI's flexibility regarding ownership of upgrading facilities is counterproductive. In addition to the considerations already discussed, logic would suggest that the longer-term effect of insulating third parties that might be interested in owning upgrading facilities from competition with an efficient provider like TGI will be inefficiencies that result in higher overall costs of supply to customers.<sup>99</sup> Thus, a deliberate policy favouring independent ownership of upgrading facilities, and discouraging TGI ownership, should be avoided in the interests of customers and suppliers.

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<sup>97</sup> B-3, BCUC 1.2.2.

<sup>98</sup> The regulation of unfair competition *per se* is something that falls beyond the Commission's jurisdiction, and TGI is competing fairly in the context of unfair competition regulation. See B-3, BCUC 1.21.6.

<sup>99</sup> B-3, BCUC 1.21.6.

***Flexibility Regarding Ownership Model Is In the Best Interests of Customers***

71. TGI submits that, despite the advantages associated with TGI ownership of upgrading facilities, customers will ultimately benefit from retaining the flexibility to employ either ownership models as circumstances require. TGI has made it clear in its dealings with potential suppliers that an independent partner approach is acceptable, and has publically promoted both models.<sup>100</sup> Where the supply partner indicates a desire to own and operate the upgrading facilities, TGI will consider several factors to determine its competence and ability to operate the equipment, such as operations experience, proven ability to manage unusual situations, financial resources, technical knowledge and resources, and the ability to deliver the project.<sup>101</sup> TGI will evaluate all project proponents, including gas marketers who wish to develop Biomethane supply, on the same basis when determining whether to allow them to interconnect their projects to TGI's system.<sup>102</sup> In this manner, TGI will be able to respond to the requirements of supply partners to own the upgrading facilities, while minimizing the reliability risk associated with non-TGI ownership.

***Upgrading Assets Should Be Owned By TGI, Not Another Terasen Company***

72. Commission Staff information requests inquired about the potential to limit TGI's ability to own upgrading assets, suggesting that a Terasen-owned, non-regulated business ("NRB") could own the upgrading assets instead.<sup>103</sup> As a threshold point in response, upgrading is by definition a regulated undertaking under the Act, thus precluding the use of a Terasen-owned NRB to undertake Biomethane upgrading.<sup>104</sup> Requiring TGI to operate two utilities instead of one will inevitably increase costs borne by customers.

73. The Commission has previously recognized that regulatory efficiency is best served by having diverse customers served by TGI rather than a proliferation of smaller

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<sup>100</sup> B-3, BCUC 1.2.3.

<sup>101</sup> B-3, BCUC 1.22.3.

<sup>102</sup> B-3, BCUC 1.16.2.

<sup>103</sup> B-3, BCUC 1.1.1, 1.1.2, and 1.1.3.

<sup>104</sup> The definition of "public utility" includes entities engaged in upgrading Biogas. Therefore, the upgrading equipment is subject to Part 3 of the Act and the Commission's regulatory oversight. TGI's response to BCUC 1.1.1 explains this legal analysis in detail.

regulated utilities under the Terasen parent. In the Reasons for Decision for Terasen Energy Services Inc.'s application for approval of a CPCN for a propane gas distribution system for Gateway Lakeview Estates, the Commission stated:<sup>105</sup>

Nevertheless, TGI has propane customers in Revelstoke, and it is not evident how TES Gateway Lakeview Estates, as a separate small utility, adds value, from the perspective of customers in the resort community, as compared to having these customers served directly by TGI, a separate but larger and related utility. As well, TES has stated, but has provided no support other than reference to the Transfer Pricing Policy and the Shared Service Agreement, that this arrangement ensures that TGI customers do not subsidize the resort community customers. Certainly, it is likely to be less efficient and more costly from the Commission's perspective to regulate a number of small utilities, rather than one larger utility serving the same customers. Going forward, the Commission expects TES and TGI to consider and address this concern when they are developing plans to serve new developments and groups of customers that are in or near TGI's service area. The Commission is not certain that a proliferation of small, but related utilities, all under the same parent, TI or KMI, is necessarily in the public interest. [Emphasis added.]

Cost allocation, as used to derive the Green Gas rate, is an effective and accepted means of ensuring that the correct utility customers pay for costs of service. TGI's approach in this Application of having TGI deliver the end-to-end business model for its customers, without artificially parsing out components of the model to different utilities, is consistent with the Commission's Decision.

### ***Summary Regarding Ownership Model***

74. While flexibility is important in recognition of project-specific circumstances and cost considerations, it is in the interest of TGI and its customers that ownership of upgrading facilities by a partner or third party only be considered in circumstances where the facility owner and operator can be expected to provide a reliable and cost effective supply of upgraded

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<sup>105</sup> An Application by Terasen Energy Services Inc. for Approval of a Certificate of Public Convenience and Necessity for a Propane Gas Distribution System for Gateway Lakeview Estates, Reasons for Decision, p. 2 of 7 (Order No. C-22-06).

Biomethane.<sup>106</sup> TGI submits that this approach will result in TGI obtaining a reliable and cost-effective supply, and TGI ownership of upgrading assets poses only modest risk to customers.

**D. Review of Future Supply Projects and Supply Contracts**

75. Under section 71, the Commission can accept an energy supply contract without any process (as is done for most electricity and natural gas supply contracts), or can require TGI to provide additional evidence in support of the public interest. Although there will be differences among future supply projects that will affect the terms and conditions of energy supply contracts and the size of TGI's required investment, many of the public interest considerations will be the same for all projects. TGI submits that this potential for redundancy in the Commission's review of relatively small supply projects makes it desirable to establish criteria that will provide the reference point for an efficient public interest review of future energy supply contracts.<sup>107</sup> TGI submits that the proposed criteria, discussed below, are appropriate.

**(a) Public Interest Considerations Common to All Supply Projects**

76. The factors outlined in Part Two of these Final Submissions, i.e. customer demand, the beneficial attributes of Biomethane, and how Biomethane development and the Green Gas offering promotes "British Columbia's energy objectives", will be common to all supply projects. TGI has led extensive evidence, and responded to many information requests, on these matters in the context of this proceeding. TGI has also set out its process for assessing potential supply projects.<sup>108</sup> The nature of the evidence on all of these matters can be expected to be consistent from project to project. The Commission's consideration and determination of these matters in this proceeding avoids the need for the Commission to require information on these matters each time TGI files an energy supply contract.

77. What will change from project to project are the negotiated terms of the supply agreements, including price. The proposed criteria will address such matters.

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<sup>106</sup> B-1, p. 67; B-3, BCUC 1.22.3.

<sup>107</sup> B-1, p. 80.

<sup>108</sup> B-3, BCUC 1.21.1; B-10, BCUC 2.15.1

**(b) Additional Public Interest Criteria**

78. TGI submits that the record before the Commission in this proceeding demonstrates that, after accounting for the public interest considerations common to all supply projects, energy supply contracts meeting the following criteria will generally be in the public interest:<sup>109</sup>

- **A price ceiling:** TGI will use a cost of service model to evaluate projects, ensuring that the cost/GJ of Biomethane injected into the TGI system is below a predetermined ceiling. The price ceiling will be benchmarked against BC Hydro's Residential Inclining Block ("RIB") Step 2 rate, and currently yields a price ceiling of \$15.280/GJ. TGI determined to benchmark the price ceiling against BC Hydro's RIB Step 2 rate after consideration of five other alternative methodologies, discussed in the Application. BC Hydro's RIB Step 2 rate reflects BC Hydro's cost of new clean electricity supply, and it is the only directly customer-observable comparison price for new renewable clean energy in British Columbia.<sup>110</sup> TGI submits that it has selected an appropriate proxy to use as a benchmark for the price ceiling until such time as an alternative reasonable market-based mechanism can be found.
- **Long-Term Supply Contracts:** TGI's second criterion is that supply contracts be at least ten years in length. The minimum term promotes a stable supply of Biomethane over time, and allows TGI a reasonable period of time to recover the costs of supply project assets.
- **Safety and Reliability:** TGI has proposed the following criteria directed to ensuring a safe and reliable supply of Biomethane:

(A) TGI has, by agreement, retained final control over the injection location; and

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<sup>109</sup> B-1, p. 80; B-3, BCUC 1.24.3.

<sup>110</sup> B-1, pp. 76-80.

(B) TGI has, by agreement, reserved the right to refuse gas if customer safety or asset integrity is at stake.

- **Selection of Partners:** The partner is a municipality, regional district or other public authority, or is a private party with a track record in dealings with the Company or that posts security to reduce risk of stranding.

79. TGI submits that supply contracts meeting these criteria should be accepted for filing in a manner akin to natural gas supply contracts, with no additional supporting information being necessary except in unusual circumstances. TGI's expenditures on infrastructure and operating expenses associated with projects can and should be assessed in the normal course in subsequent revenue requirements applications, as is currently done with all capital expenditures below the CPCN threshold of \$5 million.<sup>111</sup> In the unlikely event that any individual project were to require a capital expenditure of \$5 million or more, the Company will seek a CPCN, just as it would for any other capital project of similar size.<sup>112</sup>

**(c) The Advantages of Adopting a Streamlined Procedure**

80. Establishing criteria for streamlined future review of projects provides two key benefits. First, the criteria will allow for the safe, economic and timely development of additional Biomethane supply projects. TGI will have the ability to enter negotiations with project proponents with advance knowledge of the Commission-endorsed parameters, which will allow projects to be reviewed and evaluated by TGI expeditiously.<sup>113</sup>

81. Second, establishing criteria in advance promotes regulatory efficiency.<sup>114</sup> The Commission always retains the discretion to depart from the proposed criteria, and can require

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<sup>111</sup> B-3, BCUC 1.24.2, 1.24.2, 1.24.3. TGI's investment in a supply project will be unlikely to exceed the CPCN threshold. TGI would choose not to apply for approval pursuant to section 44.2.

<sup>112</sup> B-10, BCUC 2.16.6, 2.1.1. The processes in the Act applicable to "public utility" investments such as Biomethane upgrading assets (i.e. 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.

<sup>113</sup> B-3, BCUC 1.24.3.

<sup>114</sup> B-3, BCUC 1.24.3.

further process to address the public interest on a case-by-case basis as necessary.<sup>115</sup> TGI is also free to bring forward supply projects and energy supply contracts that fall outside the proposed criteria, and they will have to be assessed by the Commission in the normal course. However, establishing criteria in this Application should permit a more efficient assessment of many energy supply contracts going forward. Customers are the ultimate beneficiaries of efficient process.

**E. Conclusion Regarding Supply Side Model**

82. The terms and conditions of TGI's energy supply contracts, and the nature of TGI's investments in supply projects, ensure that the benefits associated with Biomethane development and customer access to Biomethane are provided in a manner that supports the public interest.

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<sup>115</sup> B-3, BCUC 1.24.3.

## **PART FOUR: CUSTOMER SIDE BUSINESS MODEL AND JUST AND REASONABLE RATES**

### **A. Introduction**

83. TGI's proposed Green Gas offering itself, and the way in which TGI intends to launch and support the offering, has been structured to accord with the market research results, to make the best use of the limited supply of Biomethane, and to best ensure the success of the offering. TGI submits that the proposed rates for the Green Gas offering are just and reasonable and should be approved.

84. In this Part, TGI addresses the following points:

- the appropriateness of cost of service based rates and the proposed product attributes;
- the benefits associated with a phased implementation approach;
- the importance of the proposed customer education plan;
- the compatibility of the Green Gas offering with Customer Choice and the Essential Services Model ("ESM");
- how the proposed rate structures address over and under supply risk;
- the fairness of a cost allocation approach based the principle of cost causation; and
- the proposed cost recovery mechanisms.

### **B. Structure of Green Gas Offering Reflects Cost of Service and Market Research**

85. The proposed Green Gas offering is a notional blend of 10% Biomethane and 90% natural gas. TGI's selection of a notional 10% blend as the initial product offering is the

best approach in the present circumstances because it is supported by TGI's market research and will maximize the number of customers that can participate in the offering.<sup>116</sup>

86. A number of information requests appeared to be based on a misconception regarding how TGI will set the Green Gas rate. The applied for rate of \$9.904 / GJ for the 10% Biomethane component of the Green Gas offering is based on the cost of Biomethane supply, and is not calculated based on a fixed percentage over traditional natural gas prices.<sup>117</sup> The percentage premium of Biomethane relative to traditional natural gas will fluctuate with the cost of both commodities. The percentage premium in other jurisdictions is similarly irrelevant to the calculation of the Biomethane rate in BC.

### **C. The Benefits of Phased Implementation**

87. TGI proposes to phase-in the implementation of the Green Gas offering over a multi-year period. The phased approach will best allow TGI to gauge customer demand and align supply with customer demand over time. TGI submits that the proposed terms and conditions of service applicable to both phases are just and reasonable and should be approved at this time.

#### **(a) Phase 1 and Phase 2**

88. Phase 1 is expected to launch in 2010 and is generally targeted at residential customers. The approach of first targeting the residential market is appropriate based on the TNS research results showing the highest uptake potential in the residential market (16%). There is potential for the two supply projects included in this Application to be fully subscribed within the first phase of enrolment even using the industry average participation rates of 2.2% in other jurisdictions.<sup>118</sup> A portion of the Biomethane will go to Central Heat.<sup>119</sup>

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<sup>116</sup> See section Part Two, Section D.

<sup>117</sup> This proposed rate has been determined based on a 15-month forecast period. Going forward, Biomethane rates will typically be set on a forecasted 12 month period with the rate reset on a January 1 effective date.

<sup>118</sup> As of December 31, 2009, there were approximately 752,000 TGI residential customers (excluding Fort Nelson and Revelstoke), and approximately 616,000 eligible to participate in the program that are currently not signed up with a Gas Marketer. 2% of 616,000 customers would result in just over 12,000 enrolments and over

89. Limiting the number of tariff offerings before 2012 minimizes billing system impacts.<sup>120</sup> The current outsourced arrangement for TGI's customer billing system has limitations and there would be additional expense associated with overcoming those limitations for additional rate classes and blend offerings. The Company's new CIS is scheduled to "go live" on January 1, 2012.<sup>121</sup> Once the new billing system is in place and stabilized, TGI will be in a position to undertake Phase 2 more efficiently and cost-effectively. Phase 2 will involve expanding the product offering to commercial customers.<sup>122</sup> TGI will also consider offering higher blends of Biomethane from the currently proposed 10% blend.<sup>123</sup>

**(b) Benefits of Approving Rates Required For Phase 2 At This Time**

90. There are two reasons why it is in the best interests of customers for the Commission to approve the rate schedules for both phases at this time. First, TGI estimates that conducting another process to address the Phase 2 rate schedules next would result in additional regulatory costs of approximately \$225,000.<sup>124</sup> It is unnecessary to incur those costs given the scope of the evidentiary record in this proceeding. Second, delaying the approval of the rate schedules could impede the timely expansion of the program to commercial customers.<sup>125</sup> The review mechanisms proposed in the Application (and discussed in Part Five below) are adequate for the Commission to oversee the development of the Green Gas offering.<sup>126</sup>

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115,000 GJ/ yr of Biomethane at a 10% blend assuming an average annual residential use rate of 95 GJ / yr. B-1, p. 52.

<sup>119</sup> B-1, p. 53.

<sup>120</sup> B-1, pp. 51-52.

<sup>121</sup> B-1, p. 51; B-3, BCUC 1.39.1.

<sup>122</sup> Customers under Rates Schedules 2 and 3 will be eligible under Rate Schedules 2B and 3B.

<sup>123</sup> B-1, p. 53.

<sup>124</sup> B-3, BCUC 1.58.3; B-13, CEC 2.4.1.

<sup>125</sup> B-3, BCUC 1.25.3 and 1.58.4.

<sup>126</sup> B-3, BCUC 1.25.3.

#### **D. The Importance of Investment in Customer Education and Program Awareness**

91. TGI has proposed a customer education program, and has sought approval to spend \$400,000 for this purpose.<sup>127</sup> TGI submits that this investment is appropriate given the importance of customer communications to the overall success of a Green Gas offering.<sup>128</sup>

92. As a Biomethane / natural gas blend is a new energy product for residential use, TGI will need to educate customers about it in a simple and easy-to-understand manner.<sup>129</sup> A previous study conducted by TGI found that “BC residents were far less confident in suggesting that their awareness extended to being knowledgeable about the alternative energy sources.”<sup>130</sup> As people are less likely to buy a product they do not understand, a sound customer education program is essential to ensuring the success of the Green Gas offering.<sup>131</sup> In addition to providing customers with details about the TGI Green Gas offering, communications will motivate those interested in participating to make the decision to participate now and stay with the program.<sup>132</sup> Customer participation is critical to the success of the program, and integral to the development of a Biomethane market in BC that supports British Columbia’s energy objectives.<sup>133</sup>

93. The nature of the proposed education program to accompany the Green Gas offering is similar to the customer education undertaken for Customer Choice that has been endorsed by the Commission.<sup>134</sup> Customer Choice recognized that a segment of the customer base wants greater certainty in their energy bills over time that comes with a longer-term

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<sup>127</sup> B-1, p. 57. The \$400,000 is made up of the following components: Media costs, including target print and online communications, and direct marketing - \$240,000; Production costs, including print communications, videos, event materials, and a quarterly email newsletter - \$85,000; and, Promotions costs, made up of incentives for joining the program and/or referring others - \$75,000.

<sup>128</sup> B-1, s. 6.6.

<sup>129</sup> B-3, BCUC 1.60.3.

<sup>130</sup> B-3, BCUC 1.60.3.

<sup>131</sup> B-3, BCUC 1.60.3.

<sup>132</sup> B-3, BCUC 1.60.3.

<sup>133</sup> B-3, BCUC 1.60.5; 1.18.2.

<sup>134</sup> The proposed marketing funding to promote the Biomethane offering is also consistent with the approved expenditures for the Stable Commodity Rate Service program, which predated Customer Choice. B-10, BCUC 2.10.1.1.

contract. Customer Choice promotional materials have always focussed on describing the attributes of both fixed and variable rate offerings, without suggesting that one is superior or inferior to the other. Program messaging for Customer Choice educates the consumer about the availability of the offering and provides them with the information needed to make an informed decision at that time to either stay with a variable rate or sign a contract with a Gas Marketer. TGI is a source of reliable information about Customer Choice because it has an established relationship with customers and is indifferent to the outcome. The logic behind the Green Gas offering education program is similar. Many of TGI's customers or potential customers are concerned about their "carbon footprint", and the size of this "footprint" is tied to their own energy consumption. TGI's interest is ultimately in meeting consumer demand for mechanisms that can facilitate concerned customers reducing their own "carbon footprint", and thus helping to retain and attract these customers in the long-term. The customer satisfaction that helps to retain and attract this segment of customers is achieved by *providing the choice to customers* of traditional natural gas or a Green Gas offering and *educating them about their options*, not by directing customers into one product or another using advertising. It is up to the individual customer to decide what makes them a satisfied customer who is content to stay with the utility. In short, TGI is indifferent as to which product is adopted by an individual customer as long as the customer is satisfied with her choice, stays with the utility, and allows TGI to maximize the use of its infrastructure for the long-term benefit of the Company and customers.

94. Costs for the Biomethane customer education campaign cannot be absorbed in TGI's current advertising and promotion budgets. The current funding for TGI advertising and promotion budget that was approved as part of the TGI 2010-2011 Negotiated Settlement Agreement, dated November 5, 2010, did not include funding to undertake a customer education campaign in relation to Biomethane. At that time, TGI had contemplated only a supply pilot, without a customer product launch.<sup>135</sup>

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<sup>135</sup> B-3, BCUC 1.18.3; B-10, BCUC 2.12.8.

95. The allocation of customer education funding between Green Gas customers and other TGI customers is addressed in Part Four, Section G below.

**E. Compatibility of Green Gas Offering with Customer Choice and ESM**

96. The Green Gas offering is compatible with Customer Choice and the Essential Services Model.<sup>136</sup> There are two key reasons for this:

- First, the cornerstone of Customer Choice is that Gas Marketers provide a fixed price product and TGI continues to provide a variable product. Gas Marketers can and have offered “green” products, but they must be a fixed price product. TGI’s Green Gas offering, by contrast, is a variable rate offering.<sup>137</sup> The Biomethane price will usually be adjusted on an annual basis, and TGI’s established practice is to adjust the natural gas commodity rate quarterly. TGI’s customers will thus normally continue to see Green Gas price changes quarterly, or possibly more frequently should circumstances warrant.<sup>138</sup>
- Second, like TGI’s Standard Rate Schedule 1, Rate Schedule 1B will be an open tariff. Residential customers participating in the Green Gas offering will be able to elect to participate in and exit from the Green Gas offering as they see fit. This is no different from TGI’s Standard variable rate natural gas offering. Similarly, the Green Gas offering will not alter the current Customer Choice rules governing how customers currently enrolled with a Gas Marketer can return to the TGI Standard offering. In either case, they must await the expiration of their Gas Marketer contract.

97. TGI also intends to operate its customer education for the Green Gas offering in a manner that recognizes the choices available to customers. The similarity in approach

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<sup>136</sup> TGI responded to a number of information requests from the Commission that were directed at the relationship between the Green Gas Offering and the Customer Choice Program. See for example B-3, BCUC 1.14.1.1, 1.14.3.1, 1.15.1, 1.15.2, 1.15.3.

<sup>137</sup> B-3, BCUC 1.66.2.

<sup>138</sup> B-3, BCUC 1.66.2.

between Customer Choice customer education and the proposed Green Gas customer education has been addressed in Section D above. 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.<sup>139</sup>

98. The fact that both TGI and some Gas Marketers will have “green” programs should be viewed as a means of enhancing the existing choice available under the Customer Choice program. TGI’s proposed customer education activities permit customers to exercise their choice of offering in an informed manner.

**F. Rate Structures Address Under and Oversupply Supply Risk**

99. TGI has incorporated into the proposed rate structures effective means of addressing the risks of over and under supply.

**(a) Temporary Under-Supply Addressed Through Carbon Offsets**

100. The most likely scenario, based on projected demand, is that demand will exceed supply for some time in the future. However, TGI is limiting enrolment to bring supply and demand into balance. In the event that there is a temporary imbalance where actual consumption departs from forecast demand and exceeds the Biomethane supply, the Company has reserved the right to purchase carbon offset credits in order to retain the integrity of the GHG reduction. If the under-supply is resulting in a structural deficit, TGI has also reserved the right to remove customers from the program if it deems necessary in accordance with the new proposed Section 28 of the TGI General Terms and Conditions.<sup>140</sup>

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<sup>139</sup> B-3, BCUC 1.18.4, 1.48.4, 1.60.9, (“green” offerings already referenced on website); B-10, BCUC 2.6.1. Also, BCUC 1.15.1 describes how the Green Gas offering allocation interrelates with Customer Choice.

<sup>140</sup> B-1, p. 119; B-3, BCUC 1.36.2.2.

**(b) Temporary Over-Supply Addressed Through Banking or Sales to Others**

101. TGI will deal with temporary over-supply in three ways:<sup>141</sup>

- Since the product is a notional delivery of Biomethane rather than the actual physical supply of the product, TGI has the option of notionally banking the Biomethane and selling it to customers at a later point in time.
- The Company could sell the gas to third parties through an off-system transaction.
- TGI can sell the gas to on-system customers through Rate Schedule 11B and through off-system sales to customers as per the amendments to Rate Schedule 30, which is proposed to be effective immediately.

**G. Cost Allocation and Accounting Treatment**

102. The costs associated with making Biomethane available to customers must be recovered through customer rates. TGI's approach to allocating costs between Green Gas customers and other customers of TGI reflects cost causality. TGI has also developed suitable cost recovery mechanisms.

**(a) Costs of Service Are Recoverable From Customers**

103. Some information requests inquired whether "promotional costs", as opposed to customer education costs, should be borne by the shareholder.<sup>142</sup> Similarly, other information requests appeared to suggest that the Green Gas offering is really part of a "rebranding" exercise aimed at increasing TGI's share value, and inquired whether TGI's shareholder should thus bear costs of service.<sup>143</sup> TGI submits that the costs of Green Gas service must be recovered in rates, not from the shareholder.

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<sup>141</sup> B-1, p. 120-121.

<sup>142</sup> B-10, BCUC 2.10.1.1.

<sup>143</sup> B-3, BCUC 1.10.1 through 1.10.9 and 14.4.3; B-10, BCUC 2.3.2.1, 2.3.4.1 and 2.3.4.2.

104. Under the Act, public utility rates must be sufficient to recover from customers the legitimate costs associated with the operation of the utility, as well as provide the shareholder with an opportunity to earn a fair return.<sup>144</sup> The prudently incurred costs associated with the Green Gas offering are recoverable in rates. TGI's shareholder cannot, at law, be required by the Commission to incur costs legitimately required for the operation of the utility. TGI submits that 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. As such, they are properly borne by customers and in a manner consistent with other TGI programs approved by the Commission (see below). Otherwise, rates would not be "just and reasonable" as defined in section 59(5) of the Act.

105. TGI also observes that it would be incorrect to characterize the Green Gas offering as a "rebranding" initiative that only benefits the shareholder.<sup>145</sup> Through the Green Gas offering, TGI is looking to provide a new product offering (Biomethane) to meet the changing demands of customers. In its responses to Commission information requests 1.10.5 and 1.14.4.3, for instance, TGI has set out the benefits that customers will obtain from the Green Gas offering.

**(b) TGI Has Allocated Costs Appropriately**

106. In order to establish just and reasonable rates for Biomethane customers, it is necessary to allocate costs to the Green Gas customers on a fair basis. TGI's cost allocation methodology has stayed true to the general principle that costs of service should be allocated among customer classes based on cost causality. Specifically:

- customers opting into the Green Gas offering and committing to purchase Biomethane are allocated the full costs to supply pipeline quality Biomethane gas; and

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<sup>144</sup> B-3, BCUC 1.1.5. See section 59(5) of the Act.

<sup>145</sup> See specifically TGI's responses to B-10, BCUC 2.3.2.1, 2.3.4.1 and 2.3.4.2.

- costs incurred in order to give all customers the choice of participating in the Green Gas offering are allocated to all customers.

TGI submits that this allocation is reasonable and should be accepted.

***Costs of Supplying Biomethane Recovered From Green Gas Customers***

107. Green Gas customers drive the costs of supplying Biomethane. These costs consist of:<sup>146</sup>

- the cost of purchasing raw Biogas;
- the cost of purchasing upgraded Biomethane;
- the costs of upgrading raw Biogas to Biomethane; and
- the ongoing administrative O&M costs of the Green Gas offering directly incurred by Green Gas customers (see Application Appendix J-1).

***All Customers Drive Costs of Making Available Green Gas Offering***

108. The costs associated with establishing the Green Gas offering, and making it a success, are caused by all customers. Put another way, it is the creation of the option to participate that drives these costs, rather than the actual participation in the program.<sup>147</sup> The proposed rate impact of allocating costs to all non-bypass customers based on this principled approach is \$0.006/GJ for residential customers in 2012 and only \$0.004/GJ on a levelized basis.<sup>148</sup> For a residential customer using 95 GJ per year the annual incremental cost is 38 cents.<sup>149</sup> These rates are just and reasonable in the circumstances.

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<sup>146</sup> B-1, pp. 112.

<sup>147</sup> B-3, BCUC 1.31.1 and 1.32.1 through 1.32.6.

<sup>148</sup> B-1, p. 111.

<sup>149</sup> B-1, p. 111.

109. Costs allocated to all TGI distribution customers under this principled approach include:<sup>150</sup>

- the cost of service related to gas analyzing equipment, meters, transmission or distribution pipeline extensions constructed to receive the injection of Biomethane;
- capital costs for application development and configuration of the current customer billing system and modifications to supporting processes; and
- certain on-going operating costs (see Application Appendix J-1), including customer education costs.

TGI has elaborated on the basis for allocating particular cost items to all non-bypass customers in its response to Commission information request 2.21.1.<sup>151</sup>

110. The costs incurred to create the option to enrol in the Green Gas offering benefit all customers in a number of ways that parallel those benefits identified in Part Two, Section D regarding supply development. First, there is the intangible benefit of increased choices;<sup>152</sup> the philosophy that “choice is good” is reflected in Commission-approved programs like Customer Choice. Second, market research and consultation with customer groups suggests that there is a significant majority of customers that want to see this program being offered and a significant number of customers will participate in the program.<sup>153</sup> Third, customers benefit when TGI is able to retain and attract customers (and their associated energy demand) who might otherwise have turned to electricity to meet their thermal energy demand given their concerns over the environment and reducing greenhouse gases.<sup>154</sup> TGI therefore submits that its

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<sup>150</sup> B-1, pp. 109-110.

<sup>151</sup> B-10.

<sup>152</sup> B-3, BCUC 1.31.1.

<sup>153</sup> B-3, BCUC 1.31.1.

<sup>154</sup> Commission in Order No. G-90-03 (commercial offering) and C-6-06 (residential offering). B-3, BCUC 1.10.5 and 1.31.1.

proposed allocation approach, based on cost causality, provides a rational and fair method for allocating costs.

***TGI's Allocation Principles Follow Precedent***

111. TGI's proposed principles for allocating costs as between Green Gas customers and other customers is consistent with TGI's approach to other programs that have been previously endorsed by the Commission. Three notable examples are:

- First, under the approved allocation of costs from the Customer Choice program, all TGI non-bypass customers pay for costs incurred to support Customer Choice.<sup>155</sup>
- Second, all non-bypass customers pay the costs (i.e., administration, communication, forms) that support TGI's Equal Payment Plan and Pre-Authorized Payment Plan options, even though only a subset of customers take advantage of the options at any given time.<sup>156</sup>
- Third, the cost of Energy Efficiency and Conservation programs are directly recovered from all non-bypass customers over time,<sup>157</sup> even though not all customers avail themselves of the available incentives under these programs.<sup>158</sup>

***Market Research Supports the Allocation Approach***

112. In addition to TGI's proposed cost allocation approach being consistent with cost causality and past precedent, TGI's market research demonstrates that customers will support allocating some costs to all customers. As detailed in Figure 5-3 on page 42 of the Application, 78% of TGI's residential customers and 65% of its commercial customers surveyed indicated their support for the program when it would result in a price increase to them of \$0.04/GJ to

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<sup>155</sup> B-3, BCUC 1.14.3.1 and 1.64.1.

<sup>156</sup> B-10, BCUC 2.6.5.

<sup>157</sup> B-3, BCUC 1.10.1; B-10, BCUC 2.3.3.

<sup>158</sup> B-3, BCUC 1.10.1; B-10, 2.3.3.3.

\$0.07/GJ. The rate impact to all residential customers is \$0.006/GJ in 2012 (only \$0.004/GJ on a levelized basis).<sup>159</sup> This represents only 15% ( $\$0.04 \times .15 = \$0.006$ ) of the *low end* of the range of rate impacts that a large number of customers surveyed indicated they would be willing to pay in order to have the program made available.<sup>160</sup> TGI submits that this evidence validates TGI's principled approach of allocating to all non-bypass customers the costs associated with giving customers the choice to enrol in the program.

**(c) TGI Has Developed Suitable Cost Recovery Mechanisms**

113. TGI has developed suitable mechanisms to recover allocated costs from Green Gas customers and all non-bypass customers. The accounting treatment is detailed in Section 10.7 of the Application, and is addressed briefly below.

114. TGI is proposing a non-rate base deferral account to capture the costs applicable to all customers incurred prior to January 1, 2012 (i.e. for the remainder of the 2010-2011 revenue requirements settlement period). TGI proposes to recover these costs from all non-bypass customers by amortizing them through delivery rates commencing January 1, 2012 over a three year period. Delivery system-related Capital and O&M costs to be incurred after January 1, 2012, will be forecast as part of future revenue requirements and will not require deferral treatment.<sup>161</sup>

115. TGI proposes to recover Biomethane costs from Green Gas customers through a Biomethane Energy Recovery Charge ("BERC"). As the Biomethane rate will be based on forecast costs, and actual costs invariably differ from forecast costs, TGI proposed a deferral account (the Biomethane Variance Account, or BVA) to capture the variances between the BERC and the costs incurred. As with other deferral mechanisms approved by the Commission for TGI, the BERC and BVA mechanisms will prevent a windfall accruing to either customers or the shareholder by virtue of variances from forecast.

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<sup>159</sup> B-3, BCUC 1.37.2.

<sup>160</sup> B-3, BCUC 1.31.2; B-1, Appendix J-2, Schedule 10, Line 20.

<sup>161</sup> B-1, pp. 110-111.

#### **H. Conclusion: Proposed Rates Are Just and Reasonable**

116. TGI's proposal results in a minimal rate impact for all non-bypass customers,<sup>162</sup> and a Green Gas rate that reflects the premium cost of Biomethane.<sup>163</sup> TGI submits that the proposed rates are just and reasonable, given the benefits to all customers associated with a Green Gas offering, and the principled basis TGI has proposed for cost allocation. The proposed rate and rate schedules should be approved at this time.

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<sup>162</sup> B-1, p. 111 and Appendix J-2, Schedule 11. The rate impact on TGI non-bypass customers from 2012 – 2019 varies from \$0.004 to \$0.006 per GJ. The levelized rate impact is \$0.004 per GJ. The present value of the incremental revenue requirements for this period is \$4,084,100. For a residential customer using 95 GJ per year the annual incremental cost is 38 cents. The levelized rate is derived based on the discounted value of the cost of service in each of the years.

<sup>163</sup> TGI has calculated the Biomethane Energy Recovery Charge recoverable from Green Gas customers at \$9.904/GJ. The BEREC should be set at this amount effective October 1, 2010.

## **PART FIVE: COMMISSION OVERSIGHT**

117. The approvals sought in this Application in respect of the two supply projects, the criteria for the assessment of future supply contracts, and rate structures, provide the necessary framework to initiate a Green Gas offering in response to customer demand. However, as circumstances unfold, changes may well be required. The Commission will remain apprised of the development of Biomethane supply and the Green Gas offering by virtue of the following standard processes:<sup>164</sup>

- the Commission will approve proposed rate changes on an annual basis for the Biomethane portion of the rate schedules;
- TGI will file with the Commission all future supply project contracts; and
- the program's cost of service, and TGI's execution of the approved allocation methodology, will be addressed in the context of periodic revenue requirements applications.

118. TGI has included proposals, and requested orders, that will enhance the Commission's understanding of developments in the end-to-end business model. In particular, TGI has proposed to:

- Report annually on participation numbers, and production and sales volumes;
- File a Post-implementation Report for a formal five-year review of the Green Gas offering that will address supply, demand, and business rules;<sup>165</sup> and

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<sup>164</sup> B-3, BCUC 1.25.3.

<sup>165</sup> Details of what would be included in the Post-implementation Report are provided in Section 8.4.4 of the Application.

- Hold a Post-implementation Workshop, to be attended by TGI and any interested stakeholders and intervenors, at which TGI will address the contents of the Post-implementation Report.

119. The combination of these regulatory mechanisms should provide the necessary comfort that TGI is managing Biomethane supply development and the Green Gas offering in a manner that benefits customers and the Company.

**PART SIX: CONCLUSION**

120. TGI has played a leadership role to date in outlining and implementing alternative energy strategies, including the use of Biomethane, that can help make use of the existing natural gas infrastructure, while helping customers reduce their carbon intensity. TGI's end-to-end business model for Biomethane is an appropriate response to demonstrated customer demand, and supports British Columbia's energy objectives. TGI submits that its involvement in the development of Biomethane supply is important in a smaller market like BC and will benefit customers. TGI, as owner of the largest natural gas distribution system in the Province, must also play an integral role in the delivery of Biomethane to BC energy consumers.<sup>166</sup>

121. TGI submits that the two supply projects that will support the launch of the program, as well as the criteria proposed as a framework for the efficient assessment of future supply projects, are therefore in the public interest. The proposed rates for the Green Gas offering reflect the costs associated with providing that service, and are just and reasonable. As such, TGI respectfully submits that the Commission should approve the specific orders sought set out in Section 14 of the Application.

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

Dated: September 10, 2010 *[original signed by Matthew Ghikas]*  
**Matthew Ghikas**  
**Counsel for Terasen Gas Inc.**

Dated: September 10, 2010 *[original signed by David Curtis]*  
**David Curtis**  
**Counsel for Terasen Gas Inc.**

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<sup>166</sup> B-3, CEC 1.3.1, 1.3.2, 1.3.3 and 1.3.4.