IN THE MATTER OF

FORTISBC ENERGY INC.

BIOMETHANE SERVICE OFFERING:
POST IMPLEMENTATION REPORT AND
APPLICATION FOR APPROVAL OF THE CONTINUATION AND MODIFICATION OF THE BIOMETHANE PROGRAM ON A PERMANENT BASIS

DECISION

December 11, 2013

Before:

D.M. Morton, Commissioner/Panel Chair
D.A. Cote, Commissioner
L.A. O'Hara, Commissioner
C. van Wermeskerken, Commissioner

TABLE OF CONTENTS

Page No.

TABLE OF CONTENTS

Page No.

EXECUTIVE SUMMARY

This Application seeks to expand and make permanent a pilot program that allows FortisBC Energy Inc. to acquire and sell biomethane. Biomethane, chemically identical to natural gas, is produced in British Columbia from organic farm and landfill waste. Under the *Clean Energy Act*, biomethane is considered a clean or renewable resource and, as such, its development and use is encouraged by the energy objectives contained in that Act.

The pilot program was established in 2010 with a supply cap of 250,000 GJ (which was subsequently increased by 280,000 GJ) to sell a blend of 10 percent biomethane, on a voluntary basis, to residential and commercial customers and the sale of 100 percent biomethane to on-system transportation customers. The approval of the pilot program included approval for the Biomethane Variance Account (BVA). All purchases of biomethane are recorded in this account, as are sales.

Along with the approval of the pilot program, the BC Utilities Commission approved the Biomethane Energy Recovery Charge (BERC), a rate at which biomethane is sold, of $9.904/GJ, along with a methodology to reset the BERC annually. The methodology is arithmetic and considers the balance in the BVA along with expected sales and purchases over the forecast period. The BERC was increased to $11.696/GJ, effective January 1, 2012. Further, BERC resets have been put on hold pending the conclusion of this Proceeding.

In this Decision, the Panel reviews the pilot program, finding that while the program has not met its targets for residential subscribers, it has modest, although unplanned, success with small commercial and municipal customers. Two municipal customers, the cities of Vancouver and Richmond, are each taking 100 percent biomethane. Due to smaller than expected sales to date, there is a projected accumulation of some 95.1 TJ of biomethane, representing almost $1,198,000 (before tax) in the BVA by December 31, 2013.

However, there is evidence of potential new markets among institutional and large industrial customers, which FortisBC Energy Inc. (FEI) describes as emerging markets. These customers would take a 100 percent biomethane blend. In the Application, FEI indicated that it had been in discussions with some of these customers. The Panel is encouraged to see this new development, although we have concerns that this potential market is relatively untested. FEI has yet to enter into an agreement with an emerging market customer.

FEI, along with Interveners, argues that the Biomethane Program supports the BC Government's energy objectives, as articulated in the *Clean Energy Act*, and therefore the pilot program should be expanded. However, the British Columbia Pensioners' and Seniors' Organization *et al.* expressed concerns about the asymmetry of costs and risks borne by FEI's non-bypass ratepayers and submits that the Commission should seek to balance those costs and risks appropriately. The Panel agrees with these assessments and approves a continuation of the program. However, we direct the program to be structured in such a way that the interests of the ratepayer are protected without impeding the program from moving forward. Specifically, the Panel makes the following findings and directs the following modifications to the Biomethane Program:

Cost Allocation Principles

The Panel approaches the issue of cost allocation and recovery from the principle of cost causation. This is an established approach in utility rate setting and was reiterated in the Alternative Energy Solutions Inquiry. Before making determinations on the recovery of costs, the Panel first considered all costs associated with the Biomethane Program and determined whether they should be allocated to biomethane customers.

The Panel accepts FEIs approach to allocate the following costs to the Biomethane Program:

- biomethane gas supply including FEI owned upgraders;
- direct administrative costs of enrollment; and
- IT upgrades.

The Panel finds also that education, marketing, and interconnection costs are part of the true cost of the Biomethane Program and should no longer be shared as was done in the pilot program phase.

In the event that these mitigations are not effective in assisting FEI to establish a BERC that enables FEI to sell sufficient biomethane to maximize its revenues, the Panel is of the view that it may be appropriate to set the BERC at a lower rate. In this circumstance, FEI is directed to bring before the Commission an application for approval of the lower BERC rate.

Cost Recovery

The Cost Allocation and Recovery model approved for the pilot provides for the recovery of the three bulleted items above from biomethane customers. Education, marketing, and interconnection costs are recovered from all FEI ratepayers. FEI proposes to continue this model going forward with two exceptions: an interconnection test to allocate some portion of interconnection costs to suppliers and a mechanism that would recover the cost of any unsold and unsalable biomethane from its sales customers.

The Panel does not agree with FEI's proposed approach to cost recovery and directs FEI to accumulate all biomethane supply and Biomethane Program costs in the BVA. This transparent approach to cost allocation principles will facilitate the comparisons of different supply projects and also assist in the evaluation of the overall effectiveness of the program. The Panel is of the view that the fully allocated cost of the Biomethane Program should, where possible, be recovered through sales of biomethane at the BERC rate. Accumulating the fully allocated costs of the program in the BVA facilitates this recovery.

Recovering the fully allocated costs of the program has the potential to increase the BERC by over $4 in 2014, an amount that drops to half that in 2021 over and above the BERC that would result from applying FEI's proposed Cost Allocation and Recovery methodology. Accordingly, the Panel acknowledges that including the fully allocated costs could potentially reduce adoption rates;

however, there is not sufficient evidence on the record, other than customer surveys, concerning the price elasticity of biomethane to make any specific assessment in this regard.

Nevertheless, the Panel provides FEI with flexibility with regard to its product offerings. The Panel approves a greater range of biomethane blends that FEI can offer to customers. In the Panel's view, offering a lower blend at a reduced price to those customers that are sensitive to the price increase could help to mitigate any potential erosion of FEI's biomethane customer base that may be caused by an increase in the BERC. Further, customer surveys indicate that a significant percentage of existing customers may be willing to pay more for a higher concentration biomethane blend. In the Panel's view, this should enable FEI to maximize the income it receives from the Biomethane Program.

To provide FEI additional flexibility, the Panel is prepared to allow FEI to levelize interconnection costs and to smooth the BERC rate impact of education and marketing costs. A deferral account for education and marketing costs is approved and FEI is directed to propose a strategy to reduce the impact of education and marketing costs in the early years of the program.

Transfer to the Midstream Cost Reconciliation Account

FEI requests approval of a scheme to transfer unsold and unsalable amounts of biomethane to the Midstream Cost Reconciliation Account (MCRA). FEI states that it only intends to utilize this avenue after exhausting sales of biomethane at the full BERC rate through other channels, and, in its view, the scheme is unlikely to be used. Accordingly, it submits that the risk to the MCRA is small.

The Panel is supportive of this approach, although only as a last resort. However, by transferring unsold balances to the MCRA, this amount would only be recovered from FEI's sales customers. Given that approval for the program is predicated on its alignment with the province's energy objectives and that all of FEI's customers will benefit, the Panel finds all FEI's non-bypass customers should pay for unsold biomethane.

If FEI considers such a move necessary, it must bring an application before the Commission describing the full circumstances of the unsold and unsalable biomethane.

The Panel directs that if, as and when unsold volumes of biomethane are moved from the BVA to the MCRA, the associated cost must be calculated at the prevailing Commodity Cost Recovery Charge. The difference between that and the BERC is to be recorded in a new account, the Unsold Biomethane Premium deferral account, and recovered in a rate rider from all of FEI's non-bypass customers.

Other Oversupply Risk Mitigation Strategies

FEI proposes other oversupply mitigation schemes, including off-system sales and banking of unsold biomethane. The Panel approves off-system sales, so long as they are not at a rate less than the BERC. With regard to banking, the Panel is of the view that BVA should not be used to store unsold biomethane indefinitely. In particular, the balance in the BVA, together with the expected purchases for the forecast period, should not significantly exceed the amount of biomethane FEI can reasonably expect to sell.

At this time, the Panel does not approve off system sales of biomethane at a rate less than the BERC. If FEI considers such a sale necessary, it must bring an application before the Commission describing the full circumstances of the proposed sale. In the event such a sale is approved, the difference between the sale price and the BERC must be moved to the Unsold Biomethane Premium deferral account for recovery in a rate rider.

Supply Cap

FEI requests a supply cap of 3 PJ per year for the program continuation. However, the Panel finds that the demand predicted by FEI amounts to only 1.5 PJ per year. Further, consultant reports submitted by FEI indicate a probable limit of readily available supply in the order of approximately 2 PJ per year. Accordingly, at this time, the Panel approves 1.5 PJ per year as the supply cap.

Supply Price Cap

At this time, the Panel makes no change to the supply price cap currently in place; however, in the Panel's view, the market is a more efficient mechanism to determine supply pricing and this avenue should be explored. Further, we are not persuaded that, although there is not an abundance of potential suppliers, a supply price cannot be established in this manner. FEI is directed to prepare a Request for Expressions of Interest, for Commission review, to solicit further information concerning supply availability and price.

Other

FEI proposes an interconnection test to fairly allocate interconnection costs between the biomethane supplier and FEI. While the Panel is supportive of this approach, it does not agree with the specific test proposed by FEI, and directs a new and more comprehensive proposal to be filed by March 31, 2014.

The Panel approves FEI's request to build and operate upgrader facilities, in the case where it is dealing with regional and municipal governments, as long as all associated costs are segregated and recovered through sales of biomethane.

1.0 INTRODUCTION

1.1 The Applicant and Application Overview

The British Columbia Utilities Commission (Commission or BCUC) approved a FortisBC Energy Inc. (FEI) two-year biomethane pilot program through the Decision and accompanying Order G-194-10 dated December 14, 2010 (2010 Biomethane Decision). The 2010 Biomethane Decision approved an end to end business model for the acquisition of biomethane supply and the sale of biomethane to FEI customers together with a cost allocation and recovery model. Order G-194-10 established a maximum contracted supply cap of 250,000 GJ per year for the pilot program and required FEI to file a report on the pilot program within two years of the date of the Order.

On December 19, 2012, FEI filed its Biomethane Service Offering: Post Implementation Report (PIR) and Application for Approval for the Continuation and Modification of the Biomethane Program on a Permanent Basis (2012 Biomethane Application). In the 2012 Biomethane Application, FEI reports on the pilot program and seeks Commission approval for the continuation of the pilot program on a permanent basis with certain modifications to the program.

Initially, FEI also sought section 71 acceptance of the supply contracts between FEI and EarthRenu Energy Corp. (EarthRenu), Greater Vancouver Sewerage and Drainage District (GVS&DD), Seabreeze Farm Ltd. (Seabreeze), and Dicklands Farms (Dicklands), respectively, as well as section 44.2 acceptance of the related FEI interconnection facility expenditures. The review of these contracts and interconnection expenditures was subsequently removed from the 2012 Biomethane Application proceeding by Commission Order G-45-13. They were instead reviewed under the pilot program rules in order to accommodate the approval of rates for each of these suppliers under sections 58-61 of the *Utilities Commission Act* (UCA) or acceptance of supply contracts under section 71(1), and acceptance of FEI interconnection expenditures under section 44.2 in an expedited fashion.

FEI seeks various modifications to the current offerings approved for the pilot program, specifically:

- changes to Rate Schedules 1B, 2B and 3B to allow FEI to offer higher percentage blends of biomethane to residential and commercial sales customers;
- a number of clarifying amendments to Section 28 and related definitions of FEI's General Terms and Conditions (GT&Cs);
- the increase to the supply cap; and
- the recovery of costs of unsold Biomethane Variance Account (BVA) balances in the Midstream Cost Reconciliation Account (MCRA).

FEI's pilot program currently offers a blend comprised of ten percent biomethane at the Biomethane Energy Recovery Charge (BERC) rate and ninety percent natural gas at the Commodity Cost Recovery Charge rate. The rates for the Midstream and Delivery components are the same as for residential and commercial sales customers who do not elect to enrol in Biomethane Service.

In the 2012 Biomethane Application, FEI's seeks approval to offer additional blends of biomethane other than 10 percent under Rate Schedules, 1B, 2B and 3B. Eligible customers will continue to be Rate Schedule 1, 2, and 3 customers in the Lower Mainland, Inland and Columbia service areas. FEI states that its primary research of existing residential and commercial subscribers to Biomethane Service indicates the following:

- 66 percent of residential participants indicated they would be interested in increasing their current blend
- Almost 20 percent of residential participants said they would subscribe for a blend as high as 50-100 percent
- 75 percent of commercial customers would be interested in increasing their blend from the current 10 percent offering (Exhibit B-1, pp. 43-44).

1.2 Approvals Sought

In this proceeding, FEI seeks the following approvals, some of which were refined or revised over the course of the proceeding:

- continuation of Rate Schedules 1B, 2B and 3B permitting FEI to continue the Biomethane Service offering to residential and commercial sales customers groups with amendments to provide customers with the option for additional biomethane blends beyond the 10 percent blend offered under the pilot program;
- continuation of Section 28 and related Definitions of FEI's GT&Cs, and amendments to the same;
- continuation of Rate Schedule 11B for on-system biomethane sales to FEI transportation service customers and Rate Schedule 30 for off-system biomethane sales as part of FEI's Biomethane Program;
- continuation of the cost allocations and accounting treatment for the costs associated with the Biomethane Program, including the continuation of the BVA, the quarterly reporting process and the BERC rate setting mechanism;
- continuation of FEI's ability to purchase carbon offsets and recover the costs through the BVA in the event of under-supply of biomethane, at a per gigajoule unit price not exceeding the difference between the BERC and the Commodity Cost Recovery Charge in effect at that time;
- approval of the recovery of costs in the BVA through the Midstream Cost Recovery Account as refined in the FEI Final Submission to be a mechanism of last resort for the cost recovery of biomethane that cannot be sold at the BERC rate;
- approval that future supply contracts for the purchase of biogas or biomethane filed with the Commission that meet the filing requirements in sections 71(1)(a) and 71(1)(b) of the UCA if they meet the criteria described in Section 6 of the 2012 Biomethane Application. These include not exceeding the maximum purchase price set out in Confidential Appendix J of the 2012 Biomethane Application and a supply cap of 3 Petajoules (PJ) on total annual contracted supply commitments;
- approval of the implementation of a cap on the level of investment FEI will make on interconnection facilities for future supply projects as proposed in FEI's Final Submission; and
- approval to reset the BERC rate following the Commission's final decision in this proceeding.

(Exhibit B-1, pp. 3-5; FEI Final Submission, pp. 44-51)

FEI proposes to reset the BERC rate following the Commission's decision on this Application. This would ensure the BERC rate would be based on the most current information at the time it is set. FEI expects to file updated financial schedules on the BVA along with the proposed BERC rate and effective date as a separate filing or as part of FEI's next quarterly gas cost report to the Commission (FEI Final Submission, p. 51).

2.0 GOVERNMENT POLICY AND BIOMETHANE

In the 2010 Biomethane Application proceeding, FEI expressed the view that the *Clean Energy Act,* S.B.C. 2010 c. 22 (CEA) provided new and heightened importance to its role in developing renewable resources, reducing greenhouse gas (GHG) emissions, and reducing waste by using biogas as well as promoting energy efficiency. In the Commission's 2010 Biomethane Decision, it was noted that all levels of government are placing an increasing level of focus on climate change and pollution, and have been adopting policies to solve some of the environmental challenges through adoption of policies favouring renewable forms of energy. Logical partners for biomethane projects included municipalities and regional districts because of their operation of landfill and sewage treatment facilities which are significant sources of raw gas. The 2010 Biomethane Decision also noted that when biomass is converted to energy it is considered to be a clean source of energy. This is because gas which would otherwise simply be released into the atmosphere naturally is used to produce energy, in place of non-renewable sources, thus reducing the greenhouse gases which would otherwise be released into the atmosphere. The government publication referred to in that decision entitled "BC Bioenergy Strategy – Growing our Natural Energy Advantage" states that "bioenergy is absolutely critical to B.C. climate goals and economic objectives" (THE BC BIOENERGY STRATEGY: Growing Our Natural Energy Advantage, p. 4).

In consideration of these factors, in conjunction with the CEA and the *Carbon Tax Act*, S.B.C. 2008, c.40 (CTA) and the *Greenhouse Gas Reduction Targets Act*, S.B.C. 2007, c. 42 (GGRTA), the Commission found that the 2010 Biomethane Application was consistent with government policy and British Columbia's energy objectives.

The Commission Panel in the 2010 Biomethane Application considered the four objectives set out in section 2 of the CEA be the most relevant to that application, namely:

> (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 by 2012 and for each subsequent calendar year to at least 6 percent less than the level of those emissions in 2007;
>
> (h) to encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia; and
>
> (j) to reduce waste by encouraging the use of waste heat, biogas and biomass.

In the 2010 Biomethane Application, the Commission was satisfied that the pilot program was consistent with BC's energy objectives and Provincial Government policy (2010 Biomethane Decision, p. 2).

In the 2012 Biomethane Application, FEI submits that "governments at all levels continue to pursue policies that favour renewable energy as an integral part of the solution to meet their climate change, sustainable energy practices and pollution goals." FEI also points out the policies set out in the 2007 B.C. Energy Plan are still present in BC's legislation and more recent regulation and strategies (Exhibit B-1, pp. 13-16). For instance:

- Order-in-Council 245/2011 provides for a biomethane credit equivalent to a refund of the carbon tax paid on biomethane purchased in BC;
- BC's Natural Gas Strategy refers to encouraging biomethane opportunities, including offering consumers low-carbon natural gas; and
- The B.C. Climate Action Secretariat has confirmed that public sector organizations will receive recognition for their purchases of biomethane as a credit against their obligations to be carbon neutral.

Section 44.2 (5) of the UCA requires the Commission to consider certain matters prior to accepting an expenditure schedule filed by a public utility under section 44.2. Just as with the 2010 Biomethane Application, relevant to this Application are the legislation and applicable of the British Columbia energy objectives set out above, any most recent resource plan filed under section 44.1, and the interests of persons in BC who receive or may receive service from the public utility.

Furthermore, this Panel must also consider the longer term targets for reduction in levels of GHG emissions set out in subsection (b)(ii) to (b)(v) of British Columbia's energy objectives, as detailed by the Applicant (Exhibit B-1, p 15). By 2016, the emissions targets will have changed from a 6 percent reduction of 2007 levels to an 18 percent reduction of 2007 levels, which percentage only increases in future time periods set out in those subsections. The consequences of certain approvals resulting from this application will reach far past 2015, and as such, the target reduction level of GHG emissions will become more onerous as time passes and more will need to be done to support clean energy initiatives.

Commission Determination

The technology used to convert biomass to biogas cannot reasonably be considered innovative, given its widespread usage around the world. However, it does represent a new application of this technology in the province of BC. Furthermore, since biomethane is considered to be clean and is a renewable resource, its use instead of conventional natural gas will reduce greenhouse gas emissions.

The latest government incentives of providing biomethane credits and government's expression of desire to encourage not only biomethane opportunities but also the refund of carbon tax paid on biomethane purchases are further indication of government support of the Biomethane Program. As demand for Biogas is encouraged, consumers may be encouraged to switch to the renewable biomethane energy source, and their interests are furthered by having Biogas made available. GHG emissions are reduced if biomethane displaces conventional natural gas. Four of British Columbia's energy objectives are met by the use of biomethane gas and the government of British Columbia clearly supports the development of the use of biomethane (Exhibit B-1, p. 18).

Therefore, the Commission Panel finds that the current Application is consistent with government policy as outlined in the BC Energy Objectives and the CEA. However, the CEA is silent on whether the cost of developing a biomethane industry should be borne by biomethane customers, FEI ratepayers, or even provincial taxpayers, and in what proportion. This is a key issue for the Panel. We consider the issues of cost allocation and cost recovery in Sections 4.3 and 4.4 of this Decision.

3.0 BIOMETHANE PILOT PROGRAM REVIEW

3.1 Introduction

In accordance with Order G-194-10 dated December 14, 2010, FEI has filed its PIR along with its application. The requirements for the report were to include but not be limited to the following:

- A financial review of all projects undertaken.
- Validation of the market research.
- Enrollment and Attrition rates.
- Costs and assessment of customer marketing/education programs.
- Customer segmentation and targeting.
- Assessment of Pricing Methodology and Principles for Cost Recovery.
- Future Projects under consideration.
- Forecasts of biomethane supply as well as anticipated demand.

The purpose of this report was to provide the Commission with a basis upon which to review the two-year Biomethane pilot program and determine whether there has been sufficient success to warrant continuing it on a permanent basis. Accordingly, in this Section, the Commission Panel has conducted a review of the factors related to the program over its two-year test period. Consideration of factors related to the Biomethane Program after the pilot will be considered further in Sections 4 and 5.

3.2 Review of Projects Undertaken

In the 2010 Biomethane Application Decision, FEI received approval for two initial supply projects, the Salmon Arm Landfill (partnering with the Columbia Shuswap Regional District (CSRD)) and the Fraser Valley Biogas (FVB) project (initially owned by Catalyst Power Incorporated (Catalyst)).

During the pilot program a third project at the City of Kelowna landfill was approved. The three projects brought the maximum possible supply under the program to the allowed cap of 250,000 GJ per year of contracted supply (Exhibit B-1, p. 9).

i) Fraser Valley Biogas

Initially owned by Catalyst, the project began supplying biomethane to FEI in September 2010. However, the volumes of biomethane produced from this project were lower than had been anticipated and were insufficient to generate the anticipated revenues and the business failed. FEI believes this business failure results primarily from Catalyst's overly optimistic estimate of biomethane volumes. As a result, Catalyst was unable to sustain itself as a going concern and was foreclosed by its creditor in November 2011. Subsequently, in December of that year, a new entity, FVB was able to purchase all interests in the biogas facility. A new Biomethane Supply Agreement was negotiated with FEI and accepted by the Commission in 2012. Based on its experience with the FVB project, FEI strongly advocates independent gas volume estimates from reputable third parties as part of its process.

With Fraser Valley Gas, FEI is purchasing biomethane and does not own or operate the upgrader. FEI's primary operating responsibility is for the interconnection facility. As of December 2012, the FVB project had delivered a cumulative total of 93,923 GJ into FEI's system with 60,000 GJ anticipated in calendar 2012. The ramping up of supply volumes has been slower than originally forecast but the daily average production has increased steadily since start-up. Current volumes are expected to remain the same or increase slightly through the ten-year life of the agreement (Exhibit B-1, pp. 9-10, 65-67; Final Submission, p. 11).

ii) Salmon Arm Landfill

The Salmon Arm Landfill project is a raw gas purchase agreement with a term of 15 years. FEI owns the upgrading plant and interconnection facilities. Although an agreement was reached with CSRD in 2010, the project was delayed for 18 months because of upgrader plant delivery delays. FEI states that it sole-sourced the upgrader plant but did not foresee the financial

difficulties faced by its supplier Xebec Inc. and subsequent project delays. As a result of these difficulties, FEI reports that a competitive bidding process was employed for a subsequent project, the Kelowna landfill where an upgrader was required. In addition, FEI took a number of precautionary process steps with regard to supplier selection and deliverables in order to improve confidence in the supplier's ability to deliver the upgrader on time and on budget. This more thorough approach will be adopted for all future projects where an upgrader plant is to be owned and operated by FEI.

Due to a design change and higher than expected installation and integration costs incurred on site, the cost of the upgrader exceeded estimates. Overall, FEI expects the total net cost to be $695,000 higher than stated in the 2010 Biomethane Application. The Salmon Arm Landfill project was first able to demonstrate pipeline quality biomethane in early November of 2012 and FEI stated it expected to begin injecting biomethane into the system in March 2013. FEI anticipates delivery of approximately 20,000 GJs in the first year, increasing to 40,000 GJs annually over the next 10 to 15 years (Exhibit B-1, p. 10, pp. 69-72; Exhibit B-17, BCUC 1.77.3).

iii) Kelowna Landfill

The Kelowna Landfill was initiated during the pilot program and an agreement for a 15-year term was accepted by the Commission in October 2013. In service date is expected to be in fourth quarter of 2013 and FEI expects the project to produce 60,000 GJs in the first year of operation with an average volume of 88,000 GJ over the full term of the contract. The capital cost of interconnect facilities is substantially higher for the Kelowna Landfill than either the FVB or Salmon Arm projects due primarily to a significantly higher requirement for mains additions (Exhibit B-1, pp. 73-75).

Commission Discussion

The Commission Panel accepts that a primary purpose of conducting a pilot program is for the parties to gain experience in dealing with the challenges arising from such a new business

venture and learn from this experience. FEI has provided valuable insight into some of the challenges it has faced and has demonstrated its ability to learn from experience and adapt its approach accordingly.

The Panel acknowledges that there may have been an expectation on the part of the Commission that the initial projects would have been further along at this point. While this is not the case, we are satisfied that FEI has made reasonable efforts to move the projects forward in a timely manner. Going forward, the Commission Panel notes that the length of time required for a new project to be up and running is a consideration when matching anticipated demand with available supply.

3.3 Market Research and Program Results

FEI's initial market research as outlined in the original Biomethane Application indicates that there is a potential residential market uptake of 16 percent for a 10 percent blend of biomethane. The Commission in the 2010 Biomethane Application Decision noted that while the potential for a relatively high participation rate existed, it was not persuaded that the case for this had been adequately made. In that Decision, the Commission found that there is likely sufficient demand to justify moving forward with the Biomethane Program but considered the most appropriate means to determine actual demand was to test it in the marketplace (2010 Biomethane Decision, pp. 33-34).

FEI reports that Phase 1 of the Renewable Natural Gas (RNG) Offering of a 10 percent blend of biomethane was launched in June 2011, and made available to residential customers. The decision to focus on residential customers resulted from research showing that the biggest uptake potential was in the residential market. FEI states that it targeted demand of one percent of residential customers by the end of 2012 and two percent by the end of the following year. Actual participation rates have been lower than expected but are trending to the industry median of one percent in North America for green pricing programs. Through January 1, 2013, residential customers totalled 4,777, a number which increased to 5,392 by

June, 2013. This represents 0.76 percent of FEI customers (Exhibit B-1, pp. 29-30; Exhibit B-19, BCUC 2.57.1).

FEI updated its TNS Canadian Facts (TNS) primary research again in 2012. The results indicate that 52 percent of customers would likely sign up for an RNG offering based on a brief description at the beginning of the survey. However, TNS notes that "as customers progress through the survey, they are shown FortisBC's RNG communications and familiarized with the program features. After this exposure, customers are asked a second time the likelihood that they would sign up for the program (over the next 12 months). Intention rates decline drastically as only 16 percent indicate they would be 'very likely' to sign up." TNS speculates that these results lead them to conclude that program features are not what customers envisioned when the concept was first described (Exhibit B-1, Appendix E, Section 4, p. 26).

FEI notes that a key finding of the research is that the current market potential for the current 10 percent blend (at a $6 premium) RNG offering is 27 percent based on 100 percent awareness. FEI estimates that based on current awareness levels of 13 percent this would mean a best case of 3.5 percent uptake if all customers were to follow through on their intentions. FEI also notes that the 27 percent penetration rate is based on ideal conditions and it does not consider it to be an achievable potential (FEI Final Submission, pp. 8-9; Exhibit B-14, BCSEA 1.20.5).

Phase 2 of the program which opened the 10 percent blend RNG Offering to commercial customers was launched in March 2012. As of January 1, 2013, a total of 73 commercial customers had signed up; this number has increased to 92 by July 1, 2013. The additional volume brought on by the commercial market was unplanned at the time of the last application. FEI states that this was instrumental in it having exceeded its actual annual demand target of 58,613 GJ over the 2011/2012 time period as set out in the 2010 Biomethane Application. Actual sales volume is 27,186 GJ in 2012, and 34,231 GJ through the first six months of 2013 (Exhibit B-1, p. 33; Exhibit B-19, BCUC 2.57.1, 2.56.6).

FEI states that based on its market research, it believes the achievable residential and commercial market potential over the next 5 years is 2.1 percent (Exhibit B-1, p. 53).

Commission Discussion

FEI acknowledge that the residential customer participation rates have been lower than expected. Original targets for residential customers in the 2010 Biomethane Application estimated that there would be 12,340 enrollments by the end of 2012. At 4,777, the number of residential subscribers is significantly lower than this. Moreover, the Panel notes that these numbers have only been increased by a further 615 over the first 6 months of 2013. It therefore appears that although the original research showed the biggest uptake potential to be residential customers, the actual results to date have not fully supported this.

The Commission Panel notes the comments of TNS with respect to drop in customer purchase intentions (from 52 to 17 percent) and the TNS conclusion that the program features are not what they originally envisioned. In addition, the Panel notes that only 21 percent of customers like the program features after learning about them. (Exhibit B-1, Appendix E, Section 3, p. 16) Although not specific as to concerns, this finding leads the Panel to conclude that there are potentially steps which may be taken by FEI to utilize the research in determining appropriate product modifications.

Of concern to the Commission Panel are the low expectations that FEI has for penetration in the residential and commercial markets over the next five years. Projecting an overall penetration of 2.1 percent after an additional five years is, in our view, very low given the comparatively higher expectations raised by the initial research (Exhibit B-1, pp. 23-29).

3.4 Customer Segmentation and Targeting

RNG customers have been segmented into two broad categories: residential and commercial customers. The commercial category has been further broken down into small and large

customer groups. FEI offers a 10 percent blend of biomethane to all of these customer groups, with the exception of the sale of 100 percent biomethane to two transportation customers (RS 11B).

TNS research indicates that the primary target customers are those who act in the interest of the environment. This group also tends to be first users of products and services that better the environment. FEI research among RNG users indicate that the primary motivation for subscribing was preserving the environment, providing for future generations and doing the right thing. In addition, a second group has been identified that although environmentally conscious, are more price sensitive and require tangible benefits for participation.

FEI reports that the majority of participants are 50 plus, live in single detached homes and are located in the Lower Mainland. FEI notes that the preponderance of single family dwelling homes participating may be a reflection of the natural gas having the highest market share among this group.

Among commercial customers the primary motivation for participating was doing the right thing and meeting corporate environmental objectives both of which may be related. FEI comment that this is based on a small sample and is best considered qualitative research. The commercial participants are from the small commercial customer class with the largest part of these coming from the Food/Hospitality or service sectors (Exhibit B-1, Appendix E-2).

Looking forward, the combination of residential and commercial customers represented by rate schedules 1B, 2B and 3B will account for 145,848 GJ by the end of 2017 based on FEI's expectation that these groups will continue to track towards a 2.1 percent uptake rate as outlined in its high demand scenario. In the moderate demand scenario these customers are still expected to take 145,848 GJs, although the uptake by emerging market customers is reduced (see Table 1) (Exhibit B-17, BCUC 1.38.2).

Table 1

Biomethane Demand Scenarios

Moderate Demand Scenario (GJ)

Rate Schedule Customers	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1B	20,469	51,560	72,923	91,139	108,109	128,549	131,120	133,742	136,417	139,146	141,928
2B	626	2,351	3,353	4,157	4,889	5,769	5,884	6,002	6,122	6,245	6,369
3B	1,724	4,673	6,559	8,189	9,704	11,530	11,761	11,996	12,236	12,480	12,730
Total 1B to 3B	**22,819**	**58,584**	**82,835**	**103,485**	**122,702**	**145,848**	**148,765**	**151,740**	**154,775**	**157,871**	**161,028**
Total 11B	**3,905**	**11,500**	**14,950**	**19,435**	**25,266**	**32,845**	**33,502**	**34,172**	**34,855**	**35,552**	**36,264**
Power Generation											
UBC		12,600	20,000	150,000	360,000	450,000	459,000	468,180	477,544	487,094	496,836
Haida Gwaii				84,000	84,000	84,000	85,680	87,394	89,141	90,924	92,743
District Energy Systems				46,500	46,500	46,500	47,430	48,379	49,346	50,333	51,340
Subtotal Power Generation	-	12,600	20,000	280,500	490,500	580,500	592,110	603,952	616,031	628,352	640,919
Natural Gas Transportation Customers			9,172	14,161	20,324	28,824	29,400	29,988	30,588	31,200	31,824
Total Emerging Markets	**-**	**12,600**	**29,172**	**294,661**	**510,824**	**609,324**	**621,510**	**633,941**	**646,620**	**659,552**	**672,743**
Grand Total Volumes	**26,724**	**82,684**	**126,957**	**417,581**	**658,792**	**788,017**	**803,777**	**819,853**	**836,250**	**852,975**	**870,034**

High Demand Scenario (GJ)

Rate Schedule Customers	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1B	20,469	51,560	72,923	91,139	108,109	128,549	131,120	133,742	136,417	139,146	141,928
2B	626	2,351	3,353	4,157	4,889	5,769	5,884	6,002	6,122	6,245	6,369
3B	1,724	4,673	6,559	8,189	9,704	11,530	11,761	11,996	12,236	12,480	12,730
Total 1B to 3B	**22,819**	**58,584**	**82,835**	**103,485**	**122,702**	**145,848**	**148,765**	**151,740**	**154,775**	**157,871**	**161,028**
Total 11B	**3,905**	**12,500**	**18,750**	**28,125**	**42,188**	**63,281**	**64,547**	**65,838**	**67,154**	**68,497**	**69,867**
Power Generation											
UBC		12,600	20,000	250,000	600,000	750,000	765,000	780,300	795,906	811,824	828,061
Haida Gwaii				140,000	140,000	140,000	142,800	145,656	148,569	151,541	154,571
District Energy Systems				77,500	77,500	77,500	79,050	80,631	82,244	83,888	85,566
Subtotal Power Generation	-	12,600	20,000	467,500	817,500	967,500	986,850	1,006,587	1,026,719	1,047,253	1,068,198
Natural Gas Transportation Customers			45,858	70,805	101,619	144,119	147,001	149,941	152,940	155,999	159,119
Total Emerging Markets	**-**	**12,600**	**65,858**	**538,305**	**919,119**	**1,111,619**	**1,133,851**	**1,156,528**	**1,179,659**	**1,203,252**	**1,227,317**
Grand Total Volumes	**26,724**	**83,684**	**167,443**	**669,915**	**1,084,009**	**1,320,748**	**1,347,163**	**1,374,106**	**1,401,588**	**1,429,620**	**1,458,213**

(Source: Exhibit B-17, BCUC 1.38.2)

In addition to the residential and commercial markets, FEI has identified a different class of projects which it terms “emerging markets.” This emerging market group includes potential power generation customers like the University of British Columbia (UBC) and the Westpac Energy Group, municipality customers like the city of Vancouver and the city of Richmond and natural gas transportation customers such as BFI, some of which are included in Rate Schedule 11B totals above. Most of these are interested in the purchase of higher blend of biomethane than what is currently offered in the marketplace. FEI estimates the potential demand for these projects to total over 3 PJ per year. If all of the potential projects were to come to life they would dwarf the anticipated biomethane requirements from residential and commercial

markets. FEI reports that many of these customers have signed Letters of Intent which demonstrates their commitment to buy biomethane (Exhibit B-1, pp. 53-56).

Commission Discussion

The Commission Panel notes that the program has evolved significantly since the pilot program was approved in late 2010. Initially, the focus was on the residential customer with high expectations raised with respect to how many customers could be expected to participate. The actual results have been much more modest. The commercial customer program was introduced during the pilot and while the number of customers has not been large, with the addition of the two RS 11B customers, the GJs per customer are significantly higher than for residential customers. The recent focus on emerging markets has transformed the potential market for biomethane substantially and the fact there are some sales and Letters of Intent from a number of potential customers is encouraging. However, to date there are no firm commitments for large quantities which can be relied upon.

3.5 Customer Marketing and Education Programs

FEI states that communications have been essential to its success with the RNG Offering in that it has provided customers with information on the product in a simple and understandable manner. Acknowledging the need for marketing to support this initiative, FEI states that "[i]n addition to providing customers with details about the RNG Offering, communications must also motivate the customer to participate; therefore customer education must also contain elements of promotion." In accordance with its initial application four objectives have been identified for the Biomethane Program communication efforts:

- Create awareness and understanding of RNG as renewable energy and its availability.
- Create awareness of the specific FEI RNG Offering.
- Stimulate interest and participation in the program.
- Maintain RNG Offering participation and support (Exhibit B-1, p. 35).

FEI submits that its messaging is first used to educate customers about biomethane and then encourage them to become program participants. Its approach is addressed in some detail in response to BCUC IR 1.10.3 where the four step process (awareness, interest, desire leading to action) has been outlined noting that at any stage in the process the customer may opt out and decide not to purchase the product. FEI notes that in spite of the interest in the program "it takes multiple contacts and continued awareness of the initiative in order to motivate customers to take action to follow through on their support." To achieve its targets, FEI reports that it utilized an integrated approach employing methodologies including bill inserts, community newspapers, radio, videos, direct mail, promotional offers, news releases, consumer shows and its website to communicate with potential customers. The most effective of these has been the use of the billing insert. Presumably, it is the combination of these approaches that results in satisfying the "Rule of Seven" it refers to in response to BCUC IR 1.10.4. FEI confirms its desire to continue with an integrated approach to marketing by stating that an "...integrated marketing campaign which utilizes multiple channels to reach potential customers is needed to continue to increase awareness of the program in order to motivate customers to take action..."(Exhibit B-1, pp. 35-36; FEI Final Submission, p. 9; Exhibit B-19, BCUC 2.6.2).

FEI has also developed a partnership with AIR MILES to further their marketing initiatives. In FEI's view AIR MILES provides customers with information about the program and encourages participation at the same time and is thus, an effective education tool. It considers the reach and power of AIR MILES as a means to cost-effectively drive large-scale shifts in consumer behaviour while benefiting the environment. In addition, FEI states that the rich data analytics offered by AIR MILES allows for customized and targeted marketing communications. This was used for an incentive offer (30 bonus AIR MILES and 10 monthly AIR MILES) targeting 300,000 AIR MILES customers. The use of AIR MILES as an incentive to purchase seems to have been successful in that the number of enrollments during a campaign with a time limited AIR MILES offer led to an increase in enrollments during the time frame where they were offered (Exhibit B-17, BCUC 1.14.3, 1.14.3.1; Exhibit B-19, BCUC 2.5.1).

FEI takes the position that the program has been successful but note that awareness levels at 13 percent are quite low. FEI's view is that continued effort is needed to increase these levels with particular emphasis on the 35-55 age demographic which has had a lower than expected enrollment. FEI concedes it is unable to provide information on specific customer additions by channel as customers cannot currently indicate where they heard about the program or what induced them to participate (FEI Final Submission, p. 53; Exhibit B-19, BCUC 2.7.1, 2.14.1).

The key success factor with the commercial group of customers has been the successful targeting of sustainability leaders and then recognizing those organizations who choose to become participants in the program. FEI has recognized commercial participants as "Green leaders" on its website and provided decals they can display within their business. As noted previously, "doing the right thing" is a primary motivator for joining the program. The most successful channels for gaining commercial customers have been bill inserts and direct sales contact (Exhibit B-1, pp. 36-37).

Total costs for marketing and education were approximately $385,000 for 2010/2011, and $301,000 for 2012. In 2010/2011, amounts spent were primarily for print and radio communications ($191,267), production costs ($88,522) and promotion and events ($105,789). In 2012, less money was spent but many of the same marketing approaches were maintained. In addition, the AIR MILES program was introduced with expenditures of $60,797 in 2012 (Exhibit B-17, BCUC 1.18.2).

Commission Discussion

The Commission Panel accepts that with a new product introduction like biomethane there is a need to educate potential customers with regard to the product, the program and the benefits of participation. This is particularly important with the biomethane product as it is a new concept and the benefits of its use are not widely known or accepted. The Panel also accepts that there is a need for an integrated approach in marketing and that a reliance on one channel

or methodology may over the long term fail to produce required results. However, the fact that FEI is unable to track the effectiveness of the various methodologies it has employed is a concern as is the fact that only a 13 percent awareness level has been achieved.

FEI has conducted surveys of existing residential and commercial biomethane customers and report there has been a great deal of enthusiasm for the program. To support this it has provided a number of positive supportive quotes from participants of both groups within its Application. These, while anecdotal in nature, do serve to demonstrate that to at least some the program provides an outlet for their desire to preserve nature or do the right thing.

The Commission Panel also has concerns with the use of AIR MILES as a tactical tool to promote Biomethane Program participation and retention of these customers. The effectiveness of this program in attracting new customers cannot be accurately ascertained due to the lack of a sales tracking mechanism but there does appear to have been a significant increase in enrollments over the period where AIR MILES were promoted (Exhibit B-17, BCUC 1.10.2.1). Our concern with the program does not lie in the effectiveness of AIR MILES to attract new customers but with the fact that it includes a retention program, the cost of which far exceeds the initial acquisition cost. Therefore, while the initial costs of the AIR MILES offering may be modest, the ongoing costs will continue to grow exponentially. This is because customers who purchase this are not only offered an inducement of 30 AIR MILES to join the program but are also offered 120 AIR MILES in each year that they stay. This, in effect, means the biomethane product is being discounted below its actual cost in order to retain customers. When asked for information which would allow the cost of this to be calculated, FEI cited a non-disclosure agreement with AIR MILES and answered the IR on a confidential basis (Exhibit B-17, BCUC 1.14.5.2.3). Respecting FEI's non-disclosure agreement, the Commission Panel notes that the largest part of the costs are the ongoing costs and while they remain undisclosed, are very substantial. This issue will be addressed further in Section 5.1 of this Decision.

3.6 Cost Allocation

In keeping with Order G-194-10, the cost of developing and implementing the Biomethane Program has been broken into two groups by FEI: those allocated to all customers and those allocated to Biomethane Program customers. Cost allocated to all customers include those related to interconnection and analysing equipment, system modification and those related to customer education, marketing and the Biogas Program manager position. Costs allocated to biomethane customers include the costs related to the cost of purchasing or upgrading the raw biogas and operations and maintenance (O&M) costs directly related to the management of new biomethane customers. FEI proposes that this method of cost recovery continue.

O&M costs allocated to all non-bypass customers were reported as $413,000 in 2012 and are projected at $506,000 for 2013 (Exhibit B-1, Appendix B, Table J-2; Exhibit B-19, BCUC 1.16.1). Costs related to education and marketing total $688,820 for 2011 and 2012 with $306,100 forecast for 2013 (Exhibit B-17, BCUC 1.23.1). Costs related to the Biogas program manager total $104,040 (Exhibit B-1, Appendix B, Table J-2, Line Labour Cost).

Costs allocated to biomethane customers include O&M directly related to management of biomethane customers that was recorded in the BVA (a total of $41.4 thousand for 2011 and 2012. The 2013 cost allocated to biomethane customers is estimated at $275,000.

Interconnection costs will continue to rise as facilities are put in service with the expectation that interconnection O&M costs will rise to $396,000 in 2014 and the remaining cost of service will rise to $943,000. Gross Gas Plant in service at the end of 2013 is forecast at $3.571 million in 2013 which will increase to $6.248 million by the end of 2014 (Exhibit B-1, Appendix H, p. 2).

Commission Discussion

The Commission Panel notes that the allocation of costs was very much at issue during the 2010 Biomethane proceeding. In the 2010 Biomethane Decision (p. 50) the Commission was clear

that the approved cost allocation methodology was to be considered "…as a test approval only, as another determination will be required at the point of review for Phase 1." The Panel notes that at this point the cost impact on the non-bypass natural gas customers is minor but as additional interconnection facilities are added and the number of supply projects continues to rise so too will the impact on customer rates.

Further, the Panel is concerned that because interconnection costs aren't currently considered part of the supply cost it makes comparison between the costs of supply projects difficult. The issue of interconnection costs will be further examined in Section 4.3.4 of this Decision.

3.7 Rate Schedule 11B Accounting and Billing Adjustments

Under the pilot program, administrative costs related to the Biomethane Program were to be recovered from biomethane customers through the BVA. These administrative costs were budgeted to be $111.2 thousand to the end of 2012 and actual administrative costs recorded in the BVA for this period were $41.4 thousand (Exhibit B-17, BCUC 1.18.1). FEI notes that "With the implementation of the new Customer Information System ("CIS") in January 2012, FEI no longer anticipates incurring any administrative costs within the Biomethane Variance Account" (Exhibit B-1, p. 123).

In the PIR, FEI did not report any issues in regard to issues with the customer information system or any significant issues with billing. However, FEI agrees it has experienced difficulties in processing the sales to at least one particular Rate Schedule 11B customer, the City of Vancouver, with adjustments to sales continuing to occur some six months after the time the billing should have taken place. FEI notes it currently relies on a manual one-off billing process for biomethane sales to transportation service customers but plans to implement billing for these customers in its CIS system later this year (Exhibit B-19, BCUC 2.56.5.1).

FEI also notes that although it believes that the new in-house CIS has the flexibility and capability necessary to support the offering of additional blends it estimates configuration and testing costs at $14,000 to $15,000 (Exhibit B-17, BCUC 1.28.1).

Commission Determination

The Commission is concerned that the ongoing issues with manual billing of Rate Schedule 11B customers, as has been the case with the City of Vancouver, has required significant manual efforts. In addition, as stated by FEI, system enhancements and/or additional business processes may be required to accommodate the billing of on-system transportation service customers who enroll for Biomethane Service under Rate Schedule 11B. Given FEI's significant forecast demand in "emerging markets," a market sector that may include a number of Rate Schedule 11B customers, there could well be additional costs related to manual billing and/or system enhancements to accommodate this market sector. **The Panel directs that these costs should continue to be recovered through the BVA as established under the pilot program**.

3.8 Continuation of the Biomethane Program on a Permanent Basis

The Biomethane Program was originally approved for a two-year test period. FEI in its Application is seeking approval for continuation of the Biomethane Program on a permanent basis. In making this Application, FEI also seeks a number of modifications to allow expansion of the program in a number of areas including the supply cap, cost recovery mechanism and blend of biomethane. Before dealing with these issues the Commission Panel must first consider whether there is sufficient justification to move the program from a pilot program to a permanent program.

Positions of the Parties

FEI argues that the starting place for the Commission in making a decision on this Application should be "that FEI's Biomethane Program promotes public goods that are a benefit to the entire Province over the long term." FEI takes the position that the Biomethane Program meets customer demand as well as advancing government policy concerning the development of clean, renewable sources of energy and reduces GHG emissions and waste. It further argues that the biomethane projects take a variety of forms of waste that would otherwise emit methane into the atmosphere and transform them into biomethane which can be used interchangeably with conventional natural gas. As such, the program enjoys strong support from its customers and local and provincial governments. FEI submits that the role of the Commission in this proceeding should not be to consider whether it will proceed but how it will proceed as the Biomethane Program is clearly in the public interest (FEI Final Submission, p. 2).

The Interveners specifically avoided commenting on the issue of moving from the pilot stage to a permanent program and focused their comments on the more general issue of whether there should be a Biomethane Program.

In the Commercial Energy Consumers Association of British Columbia's (CEC) submission the Biomethane Program "is a valuable program offering that advances the interests of both residential and commercial energy consumers by increasing customer choice and contributing to lower overall energy prices in the Province while supporting the clean energy objectives of the Province." The CEC submits that from a policy perspective, the program is in the public interest and its development and expansion must be viewed in the context of the energy environment in BC with an electricity surplus predicted for the next 10 years. In its view, the FEI Biomethane Program moderates the impact of "relatively expensive energy that would otherwise be developed and sold into the electricity system…" The cost of this would be borne by all BC Hydro electricity customers. CEC further submits the Biomethane Program as

proposed by FEI would be preferable even in the event virtually no sales were achieved over the next 10 years (CEC Final Submission, pp. 2-3; Exhibit B-15, CEC 1.28.6).

B.C. Sustainable Energy Association (BCSEA) believes the Biomethane Program is in the public interest. Among their reasons are the following:

- Use of biomethane reduces GHG emissions which is one of the BC energy objectives.
- The program assists BC municipalities in implementing their climate change plans.
- The program allows both residential and commercial customers of FEI to support a valuable renewable energy source.
- By providing a market for biogas and biomethane, the program helps with the development of the green energy industry in BC.
- The program contributes to the BC energy objectives related to encouraging the use of biogas and biomass to reduce waste and encourages fuel switching from natural gas to biomethane which reduces GHG emissions (BCSEA Final Submission, pp. 5-6).

The City of Vancouver has encouraged the Commission to approve continuation of the program and an increased supply cap as a means of preventing the wastage of landfill gas in both Vancouver and other municipalities (The City of Vancouver Final Submission, p. 1).

British Columbia Pensioners' and Seniors' Organization *et al.* (BCPSO) also supports continuation and expansion of the biomethane service offering as being in the public interest citing that it is based on a renewable source, reduces waste and can reduce GHG emissions. BCPSO also agrees that the use of biomethane in place of natural gas as compared to burning it to produce electricity is efficient and effective, pointing out that natural gas has a higher carbon footprint in BC (BCPSO Final Submission, p. 3).

Commission Determination

The Commission Panel is in agreement with FEI and the Interveners and approves a continuance of the Biomethane Program on a permanent basis. The principle reason for

making this determination to continue and make permanent the Biomethane Program is the importance of BC government policy and the CEA.

As discussed in Section 2.0, the CEA and specifically British Columbia's energy objectives make direct reference to outcomes of FEI's Biomethane Program. These include the following:

- Encouraging the switching from one energy source to another that decreases GHG emissions in the province.
- Reduces waste by encouraging the use of waste heat, biogas and biomass.
- Encourages communities to reduce GHG emissions and use energy efficiently.

Moreover, the program benefits all British Columbians as the burning of Biomethane is carbon neutral. Therefore, providing FEI's customers with a voluntary program that enables them to contribute to the development of Biomethane in BC is in the public interest.

A second factor in support of making the program permanent is the magnitude of risk which will be borne by the ratepayer. FEI has requested a 3 PJ cap for supply to ensure adequate supply to service what it estimates as its needs. Even if FEI's estimates were far in excess of requirements based on sales activity this amount is a small part of FEI's overall energy requirements. If these supplies can be secured at prices in line with the current BERC rate, the impact on customer rates will not be significant regardless of the amount of biomethane which is actually purchased by FEI's biomethane customers.

The Panel acknowledges there may be benefits – economic, environmental and otherwise - from the program that flow to biomethane suppliers and all British Columbians, including FEI's ratepayers. However, the Panel considers that FEI sales customers do not derive any direct economic benefit if they are required to purchase biomethane at a substantial premium to the prevailing Commodity Cost Recovery Charge. In the face of an abundant supply of considerably cheaper natural gas, the Panel does not consider this program to be a necessary component of FEI's supply portfolio.

We agree with FEI that a key decision in this Application is not whether the Biomethane Program should be allowed to continue but rather how should it be structured in the future and how the interests of the ratepayer can be represented without impeding the program from moving forward. This will be considered further in the Sections which follow this review of the biomethane pilot.

A determination that the Biomethane Program is to be made permanent does not mean that the Panel is satisfied that the expansion of the program is justified from a business or economic standpoint. On the contrary, the Panel has concerns with a number of issues arising within the biomethane pilot program review. These are highlighted below and will be referred to later in this Decision.

Primary, among the Commission Panel's concerns are the following:

- Demand from residential customers is much lower than originally predicted.
- While there is some evidence supporting an emerging market, it is untested and a potentially risky market.
- The BVA balance currently exceeds $1 million and continues to grow (Exhibit A2-18, Tab 4, pp. 1-3).
- If future sales fail to materialize FEI's non-bypass customers may be increasingly relied upon to subsidize the program.

In addition, the Commission Panel is concerned about the de-emphasis of the residential and commercial markets with respect to biomethane uptake potential and the shift to what have been termed as emerging markets. In the 2010 Biomethane Application it was indicated that there was a potential for 16 percent uptake from the residential market alone. Now the residential market when combined with the commercial market is expected to reach a much more modest 2.1 percent uptake rate. Putting this in perspective, the 250,000 GJ cap which was approved in the 2010 Biomethane Decision is sufficient to handle all commercial and residential requirements beyond 2022 in both FEI's moderate and high demand scenarios.

Another concern is with the risk related to emerging markets. FEI has secured some sales of 100 percent biomethane with the cities of Vancouver and Richmond – although when it presented its demand scenarios, it did not include these quantities in the emerging market projections. In any event, while there are some Letters of Intent, there are no firm contract commitments in place with any of the high volume potential customers which have been identified, with the exception of these two examples.

The Commission Panel is not persuaded that it is normal business practice in a competitive market for an enterprise to take on the risk of the huge growth in supply with no assurances there is a market which can be relied upon. Any unsold supply will potentially have to be moved out at distressed prices or charged directly to the natural gas ratepayer.

A final concern lies in the use of AIR MILES to attract and keep new residential customers. A reliance on this marketing approach brings into question whether there is sustainable demand for biomethane and whether the modest 2.1 percent penetration target can be achieved without significant inducement. This issue will be examined further in Section 5.1 of this Decision.

4.0 PROGRAM DESIGN

Having approved a continuance of the Biomethane Program, the Panel will now consider various aspects of the design of the continued program.

4.1 Voluntary vs. Compulsory

The Panel now considers whether a Renewable Portfolio Standard or a Renewable Portfolio Allowance would be more appropriate than a voluntary program and, for the reasons stated below, **finds that the program should be continued as a voluntary program**. The Panel also considers the use of a Transportation Service Option.

4.1.1 Use of a Renewable Portfolio Standard/Renewable Portfolio Allowance

The use of a Renewable Portfolio Standard (RPS) or a Renewable Portfolio Allowance (RPA) as supply models was explored by the Commission during the IR process. Under an RPS approach there would be a requirement for FEI, as part of its supply portfolio, to have a certain amount of RNG. This would, in effect, move the model away from the current user-pay model to one where the additional costs related to the purchase of RNG would be blended with the cost of natural gas and charged to all ratepayers. The question raised is whether the public would be better served by applying a RPS instead of the current user-pay model currently employed.

FEI, through its responses to Commission IRs, has indicated that it would support an RPS with some qualifications. First, FEI suggests that because the supply of RNG is limited, the renewable supply requirement should be optional rather than mandatory. This would, in effect, change it to an RPA approach. Second, FEI indicates that if such an approach were adopted, it should be allowed to offer higher blends as contemplated in its emerging markets strategy. FEI submits that what it has suggested is a hybrid user-pay, RPS/RPA model with a 3 PJ cap where risks are backstopped by the MCRA and where maximum value is extracted through promotion of the user-pay model across all market segments. FEI further submits that

the difference between its proposed model and the potential RPS/RPA model is small. The key difference lies in the extent to which supply should be developed in conjunction with demand and constrains biomethane development to limit the cost risk to non-participants. Under a more pure RPS/RPA model, biomethane would be developed freely up to the maximum cap without consideration of cost risk because it would be charged to all ratepayers. In FEI's view, its proposed user-pay model balances the cost risk between voluntary participants and all non by-pass customers and is in keeping with past decisions (FEI Final Submission pp. 63-65; Exhibit B-19, BCUC 1.42.1).

Positions of the Interveners

CEC is in agreement with FEI that the best structure for the Biomethane Program is to rely upon a user-pay method which would be backstopped by an RPS/RPA which would allow for the development of RNG but the costs of any amounts unsold would be borne by all customers. CEC submits that the proposed structure balances the interests of all consumers as it allows the program to be developed at lower cost and risk which meets the needs of RNG purchasers and provides benefits to non-participating customers by increasing the use of biomethane regardless of actual sales (CEC Final Submission, p. 14).

BCSEA does not oppose an RPS model in principle but submits the following:

- An RPS in its pure form, as pointed out by FEI, would require policy direction from government.
- There has been no substantive argument made that an RPS would foster biomethane use and production better than the current proposed program.
- There is insufficient evidence on which to base a decision to pursue an RPS.

Neither BCPSO nor the City of Vancouver addressed this issue.

Commission Determination

The Commission Panel finds that there is no evidence to suggest that moving away from the current supply model in favour of some form of RPS model would be appropriate. In addition, none of the parties have argued in favour of such a move and have generally supported the proposed supply model.

In the Panel's view, FEI is correct in its assertion that in keeping with past decisions, there is benefit to maintaining the program as a voluntary sales program as it allows those that wish to participate to do so while allowing others to opt out. In addition, providing a mechanism to balance risk between voluntary participants and non-by-pass customers is desirable as it assures that the program will be able to develop yet, to some degree, moderates the risk exposure of non by-pass ratepayers. A move to a more pure form of RPS would drive a satisfactory level of supply. However, there would be no guarantee that the supply was being secured at the best possible price since the model is primarily supply driven and cost is a secondary concern. The Panel notes that a move to an RPS could result in cost savings relating to marketing and education that would not be required to the same degree under a RPS model. However, in our view, the maintenance of a voluntary participation approach backstopped by effective risk mitigation is more in the public interest than an approach requiring all non by-pass customers to participate.

4.1.2 Transportation Service Option

During the evidentiary part of the proceeding, the Commission raised the potential of FEI entering into wheeling arrangements as an alternative to purchasing biogas. Commission IRs 1.48.1.1, the 1.54 series and the 2.41 series all explored this possibility. FEI submits that its current model where the utility enters into a supply agreement with a supplier and pools its biomethane volumes is the preferred model. FEI has laid out a justification that includes the following reasons:

- Its model provides a more secure supply pool of biomethane due to suppliers being able to sell their supply to FEI alone that then distributes the product to a larger, more diverse base of customers.
- Its model offers security of supply for customers and assures demand for the suppliers.
- Its model allows for mitigation of oversupply risk by negotiating long-term agreements with higher volume customers.

FEI also comments on a number of issues that would arise if third parties entered into agreements directly with the supplier. These include the following:

- It would be difficult to match supply with fluctuating customer demand from a single source injecting continuous volume.
- Customers would be tied to the development cost price of one project rather than benefiting from a pooled price.
- Projects would have to be found to match the particular demand from particular wheeling customers.
- Biogas development would be limited if projects were tied to the customer and were to be brought on one at a time.

As an alternative to wheeling arrangements that would serve to limit risk to other customers FEI is considering entering into long term agreements with its high demand customers. If this approach were to be taken, the customer would enter into long term purchase agreements on a firm contract basis which would be backed by long term supply agreements. FEI states that the use of long-term contracts is a suitable mechanism to serve customers such as UBC and have secured Letters of Intent from two customers who have indicated that they would enter into such a contract in order to have security of RNG supply (FEI Final Submission, pp. 60-61; Exhibit B-19, BCUC 2.41.1).

BCSEA submits that that the PIR confirms that the current pooled approach is viable and does not consider it desirable to pursue a wheeling approach at this time (BCSEA Final Submission, p. 18).

None of the remaining interveners commented on this potential option.

Commission Discussion

The Commission Panel sees value in encouraging potential biomethane customers to contract for their supply directly with a biomethane producer, with FEI providing wheeling services. The benefit of this kind of arrangement is that supply and demand risk is appropriately borne by producers and consumers and not by FEI's non-bypass ratepayers.

However, the Commission Panel acknowledges that there would be challenges if FEI were to develop a program based upon entering into wheeling arrangements and providing transportation services only between the supplier and the customer. In addition, it would likely impede the overall development of the biomethane business as the matching of supply and demand could stall development of some projects or eliminate them altogether. Because of this, the Commission Panel agrees with FEI there is no compelling reason to pursue the potential of wheeling arrangements at this time. Further, FEI's proposed approach of utilizing long-term contracts also serves to mitigate the risk borne by FEI's non-bypass ratepayers.

4.2 Biomethane Blends Offered

FEI believes there is significant potential demand for higher biomethane blends and some customers would sign up that would not otherwise sign up for a 10 percent blend. FEI states that UBC is one example of a customer for which a 10 percent blend is not a viable option (Exhibit B-17, BCUC 1.42.6.2, 1.42.6.2.1). FEI believes other customers include local governments wishing to meet their GHG emissions reductions targets such as the City of Surrey that has indicated a desire to move to 100 percent biomethane supply to fuel its contracted fleet of refuse and recycling trucks (Exhibit B-19, BCUC 2.35.3.1).

FEI also submits, "primary research of existing residential and commercial subscribers indicates the desire of current participants to increase their blend of Biomethane above the current 10% offering" (Exhibit B-1, pp. 43-44).

FEI believes that the new in-house Customer Information System (CIS) has the flexibility and capability necessary to support the offering of additional blends with minor configuration and testing and estimates the costs at $14,000 to $15,000 (Exhibit B-17, BCUC 1.28.1).

FEI proposes no changes to the program offering for its transportation customers under the permanent program. Under the pilot program, FEI offers a 100 percent biomethane sales option for eligible customers enrolled in transportation service (Rate Schedules 22, 22A, 22B, 23, 25 and 27) and/or their Shipper Agents under Rate Schedule 11B. For these customers, all charges under the applicable transportation rate schedule remain unchanged and applicable and the transportation customer enters into an interruptible sales agreement with FEI. Under the pilot program, FEI has four customers to date including the City of Vancouver (Exhibit B-19, BCUC 2.57.1).

In regard to the proposed clarifying amendments to the FEI GT&Cs, FEI contends that these amendments are simple and not controversial (FEI Final Submission, p. 21).

Position of Interveners

CEC supports the introduction of the additional blends and believes the proposed tariff changes are appropriate (CEC Final Submission, p. 18). BCSEA also supports modification of the Biomethane Program to allow flexibility in the percentage blend and believes the introduction of additional blends would enhance the program by substantially increasing potential demand for biomethane (BCSEA Final Submission, p. 9). BCPSO supports the introduction of additional blends provided “the cost of those blends appropriately reflect the cost of the Biomethane Program” (BCPSO Final Submission, p. 3).

Commission Determination

The Commission Panel approves the following:

- **Continuation of Rate Schedules 1B, 2B and 3B permitting FEI to continue the Biomethane Service offering to residential and commercial sales customers groups with amendments as proposed to provide customers with the option for additional biomethane blends in addition to the 10 percent blend offered under the pilot program;**
- **Continuation of Section 28 and related Definitions of FEI's GT&Cs, and the proposed amendments to the same; and**
- **Continuation of Rate Schedule 11B for on-system biomethane sales to FEI transportation service customers.**

The Panel is of the view there may be opportunities for increased sales if customers are offered a wider choice of blends. Offering lower blends could result in greater take-up among customers that are more price-sensitive. For customers that are less price sensitive, research conducted by FEI suggests there may be a willingness to purchase blends with a higher concentration of biomethane.

4.3 Cost Allocation Principles

The Panel has indicated its willingness to approve the proposed Biomethane Program with certain conditions primarily because the Program meets a number of relevant CEA objectives. We will now consider FEI's proposed Cost Allocation and Recovery Methodology.

Generally speaking, cost allocation principles require costs to be recovered from the program, class or group that caused the expenditure to be incurred. However, in this instance, the Panel's approval of the program was not based on the economic merits of the program, but on contribution to the energy objectives outlined in the CEA. Accordingly, the Panel will consider cost recovery methodologies that may not be strictly consistent with these cost allocation principles. **However, the Commission Panel finds that transparency requires the true cost of the supply of biomethane along with all Biomethane Program costs be known.** The Panel

considers it important that the allocation of expenditures incurred in the Biomethane Program is treated in as transparent a manner as possible, even if the recovery principles are not strictly followed.

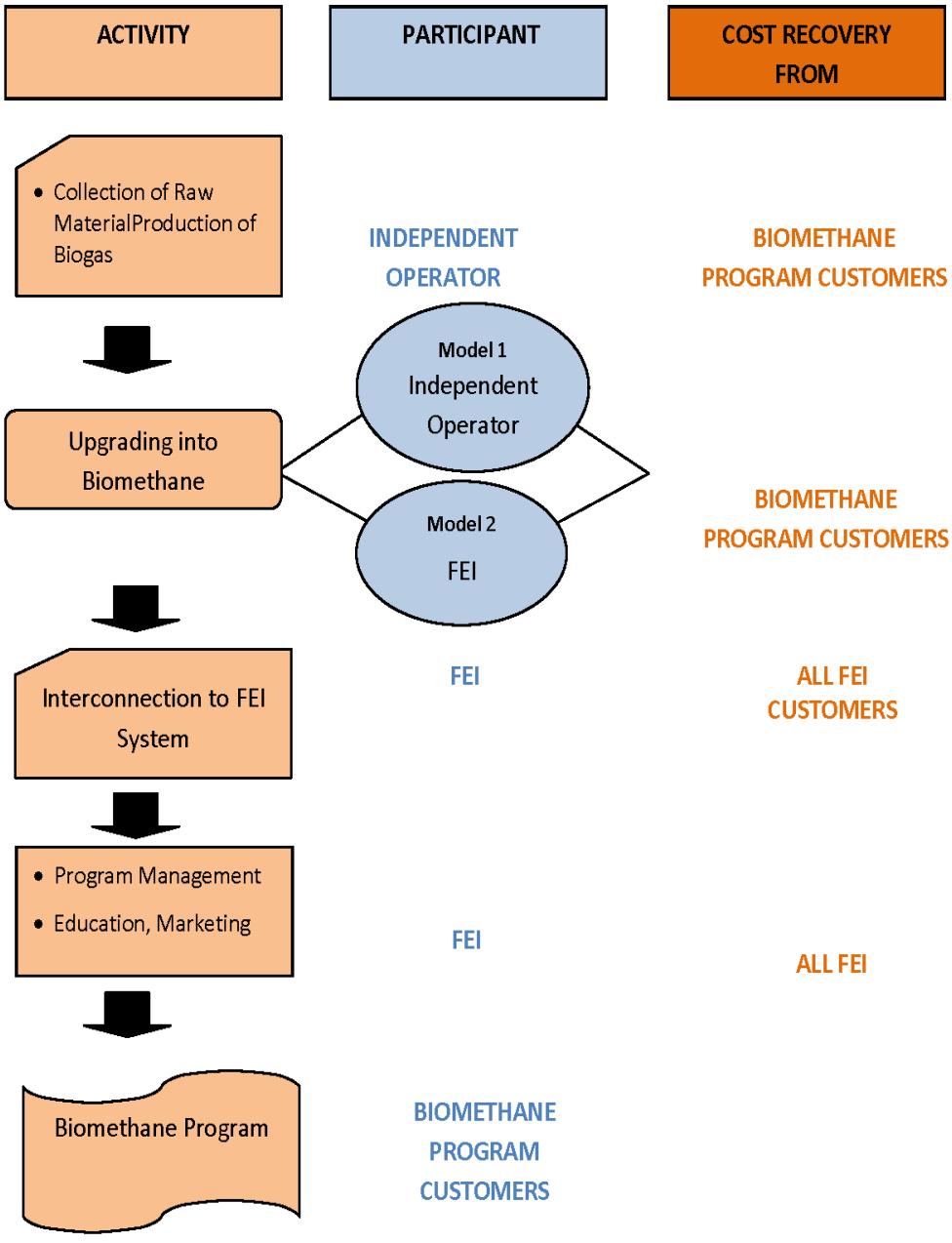
The Panel will review this issue in two steps. First, a determination will be made on how the expenditures should be allocated – to the Biomethane Program or to FEI's ratepayers. In the next section of the Decision, the Panel will consider how expenditures allocated to the Biomethane Program should be recovered.

4.3.1 Cost Allocation and Recovery Model

Before beginning the determination of how biomethane related expenditures should be allocated, FEI's existing and proposed Cost Allocation and Recovery Models will be reviewed. Figure 1 – Biomethane Service Offering Model shows the model as it was approved by the Commission for the pilot program. This depicts by activity, who undertakes an activity and how the costs of the activity are recovered.

Figure 1

BIOMETHANE SERVICE OFFERING MODEL



(Source: 2010 Biomethane Decision, p. 12)

4.3.2 Review of Established Principles

4.3.2.1 The 2010 Biomethane Decision

Figure 2 shows how the allocated costs have been recovered in the pilot program and how FEI proposes to continue to recover these costs.

Figure 2

Biomethane Service Offering
Cost Allocation and Recovery Model - Pilot

Recovered from Biomethane Customers through the Biomethane Variance Account (BVA)	
• Cost of procuring biogas/biomethane	
• Cost of upgrading	
• Direct Admin cost of enrollments and IT upgrades	
LESS	
• REVENUES collected through BERC rates	
Recovered from All Ratepayers	
• Interconnection costs including the pipe	
• Education, Marketing	

(Source: Derived from Exhibit B-1)

In the 2010 Biomethane Application, FEI proposed that customers opting for the biomethane offering should pay the full costs of the biomethane gas supply, direct administrative costs of enrollment and the cost of IT upgrades, while all FEI customers would share the costs related to the interconnection and monitoring equipment as well as marketing and customer education. The Panel reviewing that application then attempted to answer the question: Should any costs be shared by all FEI customers?

In the 2010 Biomethane proceeding, the Commission noted it was cognizant of the new post CEA environment that challenges FEI to innovate and adapt its utility service model. The Panel notes the role of the Commission in balancing the interests of ratepayers and the CEA objectives. It was in that context that the Panel approved the cost allocation methodology proposed by FEI for the test period as just and reasonable; highlighting that in another

determination will be required after the review of the pilot project. In the 2010 Biomethane Decision, the Commission stated that as the biomethane business grows and matures the issue of "who pays" becomes more significant. (The 2010 Biomethane Decision, pp. 45, 51)

4.3.2.2 AES Inquiry

In 2012, the Commission conducted the AES Inquiry. The AES Inquiry Panel in its final report (AES Inquiry Report) outlined some relevant, foundational principles that will provide further guidance to the Panel in this proceeding:

- The introduction of biomethane is more closely related to the introduction of a new supply of fuel than it is to a new business activity. While the source of the fuel may differ, Biomethane Service (the distribution of biomethane to customers) utilizes the same distribution network as the existing natural gas supply and the biomethane product is available to the same set of customers. As all gas going into the distribution system is commingled, the customer buying biomethane is simply paying a premium to bring a more environmentally friendly form of methane onto the system.
- The part of the biomethane initiative that moves beyond the umbrella of the traditional natural gas distribution utility is the inclusion of assets upstream of the distribution utility, including the upgrader and pipe leading to the interconnection point where gas is delivered into the traditional gas utility system.
- Biogas upgrading facilities are analogous to gas plants that treat conventional "raw gas" to remove impurities and gas liquids to ensure the natural gas is of pipeline quality. Such plants are regulated under the UCA, but are not generally part of the traditional natural gas distribution utility.
- Neither biomethane upgraders nor the pipe connecting them to the traditional distribution utility are extensions of the utility system as contemplated in subsections 45(1) and (2) of the UCA.
- Regarding the pipe from the upgrader, these are capital additions for which there is no set test for economic feasibility. The Panel considers these additions should be reviewed on a case-by-case basis. The Panel reviewing the Biomethane Post Implementation Report relating to the existing Biomethane Pilot Project may wish to establish rules or parameters covering pipeline connections to upgraders.

(AES Inquiry Report, pp. 43, 47- 48)

The AES Inquiry Report's specific findings regarding this issue are described here to provide another lens for the review of the proposed model:

1. Biomethane service is part of FEI's regulated service offering and Biomethane service is appropriately considered a Separate Class of Customer within the natural gas class of service (AES Inquiry Report, p. 46). FEI submits this finding confirms that Biomethane customers should be treated the same as all other customers within FEI's natural gas class of customers (FEI Final Submission, p. 35).

2. The key principle for determining cost allocation for regulated utilities is cost causality. The Inquiry Panel stated it does not believe that the principle of cost causality suggests any significant change to the practices that have been consistently followed by the Commission. The Inquiry Panel found the aim of this principle is to have customers bear the share of costs that are attributable to their service, to prevent cross-subsidization among customer groups (AES Inquiry Report, pp. 33-34.)

3. The key guidelines applicable to the Biomethane service are:

    - There should be transparency in cost allocation among different customer groups.
    - All proposals for new business activities must be accompanied by a clear and concise description of the planned cost allocation methodology (AES Inquiry Report, p. 33).

FEI submits that the allocation methodology approved for the pilot program and now proposed by FEI for the Permanent Program satisfies the key principle and guidelines in the AES Inquiry Report, and continues to be appropriate. In particular, FEI submits that the interconnection, education and Biomethane Program Manager costs continue to be allocated to all non-bypass customers and provides its reasoning as follows:

(a) The costs allocated to all customers are those required to make the service available to all customers and, as such, it follows as a matter of cost causation that they be recovered from all customers. In other words, the costs of making the program available and providing every customer with the choice of taking the service should be borne by all customers who are given that benefit. This is consistent with the approved practise for the Customer Choice program and the Energy Efficiency and Conservation program;

(b) The Biomethane Offering has the effect of attracting and retaining customers on the system. Furthermore, it is in the long-term interest of FEI customers that FEI be offering Biomethane service that will contribute to customer retention and additional throughput;

(c) The Biomethane Program is being undertaken to support government policy to develop clean, renewable and innovative resources, to reduce waste and GHG emissions;

(d) Allocating these costs to all non-bypass customers helps keep the price of biomethane at current reasonable levels, which have proven to be successful to date;

(e) A large proportion of customers are open to a universal price model borne by all customers for the Biomethane Program; and

(f) This approach is consistent with the cost allocation approach for the electricity supply model, such as where BC Hydro incorporates its costs of clean electricity projects into its overall supply portfolio (FEI Final Submission pp. 37-39).

Positions of the Parties

BCPSO continues to have concerns about the asymmetry of costs and risks borne by the program. BCPSO submits that the Commission should seek to balance those costs and risks appropriately.

In particular, BCPSO's primary concern is that non-bypass ratepayers are not cross-subsidising the biomethane rate class. BCPSO submits that the principle of cost causality means that the biomethane rate should capture the full incremental costs that the program causes. Accordingly, the biomethane premium should include the full costs of delivering the program, including for example, a portion, if not all of the interconnection, education, and program manager costs (BCPSO Final Submission, p. 4).

BCSEA submits the present approach for allocation of Biomethane Program costs between program participants and non-participants is just and reasonable. In particular, BCSEA submits the evidence of the proceeding supports the conclusion that the proposed cost allocation going forward is unchanged in material respects and notes the Panel found the pilot program approach just and reasonable (BCSEA Final Submission, p. 13).

The CEC also submits the cost allocation model is just and reasonable in that the education, program manager costs as well as capital and O&M costs related to interconnection are to be borne by non-bypass customers (CEC Final Submission, p. 22).

In reply, FEI submits that there is no cross-subsidization of the Biomethane Program and that the BCPSO's submission should be rejected. FEI further submits its proposed cost-allocation methodology is based on established regulatory principles as follows:

- The education, program manager and interconnection costs are required to make the Biomethane Program available to all customers;
- The Program contributes to the retention of customers in general and to additional throughput;
- The Program advances government policy, and provides benefits which accrue to all customers, including reduction of waste and GHG emissions, as well as development of renewable resources in BC; and
- The Biomethane Program is consistent with the AES Inquiry report's finding that Biomethane is part of natural gas class of service and the treatment of other natural gas services such as the Customer Choice and EEC programs (FEI Reply Submission, pp. 4-5).

Panel Discussion

The Panel agrees with FEI that the direct acquisition costs – the cost of the biogas and the cost of upgrading – along with direct administration and IT upgrades - should continue to be allocated to the Biomethane Program.

FEI proposes to continue the cost allocations approved in the pilot but proposes an Interconnection Test to allocate interconnection costs between biomethane suppliers and FEI. The Panel will now examine the allocation of interconnection, education and marketing costs.

4.3.3 Education and Marketing Costs

The Commission Panel has previously reviewed FEI's marketing efforts during the pilot in Section 3.5 of this Decision. FEI submits that the evidence shows that its program "has been successful and must continue in order to educate customers, generate awareness, and promote and maintain participation in the Biomethane Program" (FEI Final Submission, p. 52).

With respect to the allocation of the costs of education and the Biomethane Program Manager, FEI submits these costs are required to make the service available to all customers and, as such, it follows as a matter of cost causation that they be recovered from all customers. FEI considers it fair that the costs of making the program available and providing every customer with the choice of taking the service, be borne by all customers who are given that benefit. Other reasons cited for this position include:

- The program is being undertaken in accordance with government policy.
- Allocation of education to all customers keeps the price, which is a barrier, at reasonable levels (FEI Final Submission, pp. 37-39).

FEI makes no specific submission on the allocation of other aspects of its marketing budget, other than a communications budget. However, it does not seek approval for any marketing costs and the Panel notes that marketing and education with regard to the Biomethane Program are included in the O&M spending in its Performance Based Rate Plan (FEI Final Submission, p. 56).

Positions of the Parties

With respect to the sharing of costs, BCPSO takes issue with FEI's view. BCPSO submits: "customers should not be required to be 'educated' about programs which they do not want or cannot afford to participate in" and states that at the very least, biomethane customers should contribute to the costs (BCPSO Final Submission, p. 5).

BCPSO also submits that if FEI is to continue to use AIR Miles to incent participation it should be recovered through the BERC rather than from non-bypass customers. It further observes that using AIR MILES as an incentive is effectively requiring non-biomethane ratepayers paying biomethane customers to participate in the program (BCPSO Final Submission, p. 7).

CEC supports the cost of education being borne by non-bypass customers. In its view, the program is in the public interest, advances provincial government objectives and is in line with initiatives of all levels of government. As such, the costs are in line with cost causation principles and also serves to keep the price lower and potentially dampen demand which may threaten the optional nature of the program. CEC further submits that electricity customer interests are further protected by the existence and expansion of the program and it is therefore suitable for this group to bear the costs of making biomethane available to the public (CEC Final Submission, p. 22).

BCSEA submits that FEI's Application follow the principles of cost causation and fairness in that the cost for customer education should be assigned to all customers as they enable the program to be made available to all customers. BCSEA argue that AIR MILES encourage participation from all customers and as such, costs should be recovered from them. In addition, BCSEA states that the cost of AIR MILES is reasonable, represents money well spent and is a very small fraction of program costs. (BCSEA Final Submission, pp. 13-15)

With respect to BCPSO's assertion that biomethane customers should at least be contributing to education costs, FEI asserts that they do contribute to these costs as they pay the same delivery costs as all non-bypass customers (FEI Reply Submission, pp. 6-8).

FEI strongly disagrees with BCPSO's submission that the costs of the AIR MILES program should not be recovered from non-bypass customers. It argues that to charge biomethane customers for the cost of informing customers all customers about the program would be unfair. In its

view if customers were directly paying for the incentive they received as suggested by BCPSO it would undermine the incentive provided by offering AIR MILES (FEI Reply Submission, pp. 14-16).

Commission Determination

The Panel finds that all of the education and marketing expenditures must be allocated to the Biomethane Program. We do not agree with the view of FEI, CEC and BCSEA's position that the cost causation principles require these costs to be assigned to all FEI ratepayers.

FEI, as a distribution utility, has no responsibility to "market" the gas flowing through its pipes. It simply makes gas available to customers at the prevailing commodity rate. If FEI were to play no part in the marketing of biomethane, either the biomethane supplier or an intermediary would be responsible for marketing the program and would incur all costs associated with it. In that instance, FEI's customers would not be required to pay any education or marketing costs; they would be borne by the supplier or the intermediary and presumably recovered in the price charged for biomethane.

This Biomethane Program is a departure from FEI's traditional distribution role in that FEI has taken on the responsibility for marketing the biomethane. The Panel has approved FEI's continuation in this role because the Biomethane Program supports the Province's energy objectives. Thus, FEI must undertake the necessary marketing and education programs. Nevertheless, the principle of cost causation requires that these costs should be allocated to the Biomethane Program and not to all FEI's customers.

The Panel has already expressed the view that costs related to the Biomethane Program, to the extent possible, should be identifiable and transparent as this allows the true cost of such green energy projects to be known and future evaluations to be conducted. Education and marketing expenditures should be included in these costs.

For clarity, in this Decision, the Panel will refer to "Biomethane Program Overhead Costs" as including education, marketing, direct administration costs of enrollment and the cost of IT upgrades. All of these Biomethane Program Overhead Costs should be allocated to the Biomethane Program. In the Panel's view, all overhead costs related to the Biomethane Program should be included in this allocation.

4.3.4 Interconnection Facilities

FEI states that the purpose of the biomethane supply interconnection facilities is to measure and control the flow of gas onto the system, add odorant to the gas as well as to take the gas via pipeline to FEI's system. FEI believes these characteristics of the interconnection facilities make them similar to FEI's transmission pipeline system that is upstream of the distribution network system. This is because at the receipt point for conventional natural gas supply, either from the Westcoast or the Trans Canada system, FEI must have facilities that perform the same functions. Accordingly, FEI recommends the costs of the interconnection facilities should be treated the same as similar assets on FEI's system and be allocated to all customers (Exhibit B-1, pp. 122-123).

4.3.4.1 Comparable Approaches in Ontario and British Columbia

In its RNG application filed with the Ontario Energy Board, Enbridge Gas Distribution Ltd. proposed that RNG producers are responsible for both the capital and operating costs associated with the interconnection facilities (Exhibit A2-4, Exhibit C, Tab 1, Schedule 2, p. 1). In a similar application, Union Gas Limited also proposed that its RNG producers are responsible for both the capital and operating costs associated with the interconnections facilities (Exhibit A2-5, Exhibit C, p. 5).

FEI stated that it did not review policies and practices of other gas distribution utilities related to the treatment of the capital and operating costs of the interconnection facilities, including

the pipe. FEI explained that a review of this nature was not necessary, as the major hurdle for the Biomethane Program is related to the price for biomethane supply. FEI further confirmed it has decided to own and operate these facilities to maintain its standards of operation and to better monitor the biomethane supplier. Furthermore, if the interconnection facilities were paid for by the project proponent, FEI points out, there would need to be a corresponding increase in the biomethane cost, which may result in the curtailment of the program. (Exhibit B-17, BCUC 1.61.3)

In British Columbia, BC Hydro's Standing Offer Program (SOP) assigns the responsibility for costs related to the delivery of energy to the distribution or transmission system to the project owner. Specifically, "for Projects with an Indirect Interconnection: the Developer will be required to deliver energy to BC Hydro under the Project EPA at a specified Point of Interconnection (POI) on the Transmission System or Distribution System and the Developer will be responsible for all risks, costs and losses associated with transmission to that point of interconnection" (Exhibit A2-2, p.6).

FEI confirmed its understanding of the described practise. However, FEI pointed out independent power producers (IPPs) would count the interconnection costs along with all the other project costs into their analysis and bid prices for power calls. Furthermore, for SOP projects, the proponents would likewise be counting the interconnection costs in their project economics to determine whether the SOP pricing provides adequate profitability to make their project economically viable. Most importantly, FEI pointed out that since the costs of the IPP power are blended in with the costs of BC Hydro-owned generation to yield a combined overall cost of generation, ultimately all BC Hydro ratepayers will be paying in their rates for the IPP interconnection costs. Therefore, the costs borne by all ratepayers of interconnecting IPPs to the BC Hydro grid would be similar regardless of whether the IPPs or BC Hydro are responsible for these costs (Exhibit B-17, BCUC 1.61.1).

4.3.4.2 Interconnection Test

FEI proposes an interconnection test that would impose a cap on the level of investment FEI will make on interconnection facilities for future supply projects, to be set at $1.50 per GJ average capital cost based on a 20-year volume forecast. FEI further proposes that the remainder of the cost of the interconnection is to be funded as a Contribution-In-Aid-of-Construction (CIAC). FEI further clarifies that the interconnection facilities in question are downstream of the receipt point. Where a third-party owns the upgrading facility, it is responsible for the pipe from the upgrader to the receipt point. FEI would only own the pipe from the upgrader to the receipt point when it also owns the upgrading facility (FEI Final Submission, pp. 40-41).

FEI proposed the parameters and principles for its Interconnection Test and provided its reasoning as follows:

- Because the interconnection costs of existing supply projects have been found reasonable and accepted by the Commission, the current maximum $/GJ of the accepted project be set as a threshold for interconnection costs for future projects;
- The average capital cost for interconnection facilities per GJ, for a 20 year total volume, ranged from $.34 to $1.48 GJ, with Fraser Valley Biogas being the lowest cost and Seabreeze Farm representing the highest cost (Exhibit B-15, CEC 1.23.1);
- Setting a limit will provide comfort to the Commission that the extent of interconnection costs to be recovered from all customers is reasonable;
- The maximum purchase price would ensure that the price for biomethane customers was not too high;
- Since the test is based on the cost of the interconnection facilities for existing projects, the approach should be seen as fair and equitable for new prospective suppliers; and
- The test is simple to administer and easy for prospective suppliers to apply to their planning for the sizing of facilities, costs and volume deliverability (FEI Final Submission, p. 43).

FEI submits that this proposal has the following potential negative consequences:

- The BERC rate may be higher in the future than it might otherwise be; and

- The development of biomethane supply may be constrained in the future if suppliers are unwilling to move forward due to the contribution (FEI Final Submission, p. 44).

However, FEI submits these disadvantages are lessened by the fact that, based on the current list of prospective suppliers for biomethane, FEI does not foresee any CIAC requirement having to be made under this test (FEI Final Submission, p. 44).

Positions of the Interveners

BCSEA supports FEI's revised proposal which includes the introduction of a $1.50 per GJ cap on the cost of biomethane supply that would be borne by all customers and notes that any costs beyond the cap would be reflected in the BERC rate and borne by participants in the Biomethane Program.

BCSEA submits this proposal is defensible because

(a) The proposed level is consistent with the interconnection costs of the existing biomethane supplies; and

(b) The cap effectively puts any excess interconnection costs under the maximum supply price and thereby establishes cost discipline on biomethane supply projects (BCSEA Final Submission, p. 14).

The CEC submits that a limitation on interconnection costs to be borne by natural gas customers is in the public interest and strikes a reasonable balance in having the natural gas customers accept responsibility for the interconnection of biomethane into the natural gas supply while maintaining the benefits derived from having a voluntary rather than mandated program. The CEC further submits it accepts $1.50 as a reasonable cap in that the average capital costs currently range from $.34 to $1.48 per GJ (CEC Final Submission, p. 23).

BCPSO submits that "[i]t is clear that Biomethane customers are willing to pay a premium for the program. In BCPSO's submission, that premium should include the full costs of delivering

the program, including for example, a portion, if not all of the interconnection, education, and program manager costs" (BCPSO Final Argument, p. 4).

Commission Determination

It is not clear to the Commission Panel why, in FEI's view, the price of biomethane eliminates the need for a review of policies and practices of other gas distribution facilities related to the treatment of capital and operating costs associated with the interconnections facilities. The Panel considers the issue of cost allocation to be germane to the design of the program. Accordingly, the Panel notes the approach taken by Enbridge and Union Gas in Ontario and further considers the specifics of the interconnection costs in FEI's Biomethane Program as follows:

(i) Interconnection Test

The Panel observes the following facts from the records of this proceeding and the Biomethane Third-Party Suppliers proceeding:

- Interconnection costs for the seven projects range from $504,000 to $1,189,000 per project;
- For Earth Renu, Seabreeze and Dicklands Farm projects, the total and average gross plant costs by account are as follows:

	Total ($000)	**Average ($000)**
Mains, incl. Pipe, excavation, pipe laying etc.	$1,186	$395
Measuring & Regulating Equipment, Meters	$1,621	$540
Structures & Improvements, Overhead	$308	$103
Total	**$3,115**	**$1,038**

- The **Mains** capital costs for the six projects, excluding Metro Vancouver range from $73,000 to $607,000;
- The length of the pipe for the six projects ranges from 400 meters to 4,000 meters;
- Cost per meter of the pipe for the six projects ranges from $49 to $379; and
- Some of the large differences are due to the fact that FEI is connecting to the intermediate pressure system which operates at a higher pressure and is constructed with steel pipe (an example is Seabreeze Farm). Compared to the Fraser Valley Biogas and Kelowna Landfill projects, there is a higher cost associated with the installation of steel pipe (rather than the PE) at a higher pressure and some additional costs associated with pavement cutting and repair (Exhibit B-15, CEC 1.23.1; Biomethane Third-Party Suppliers Proceeding, Exhibit B1-4, BCUC 1.6, BCUC 2.2).

The Commission Panel notes the AES Inquiry Report finding that at the moment there is no set test for economic feasibility regarding the pipe connecting from the upgrader to the traditional gas distribution utility system. Furthermore, the Inquiry Panel recommended that the Panel reviewing the Biomethane Post Implementation Report relating to the Biomethane Pilot may wish to establish rules or parameters covering pipeline connections to upgraders.

The Panel agrees in principle with the FEI proposal to introduce an Interconnection Test. However, we do not accept the principle of selecting the highest capital cost per GJ as a reasonable basis for the test. Accordingly, we find the current proposal too broad and high level. In the view of the Panel, the proposed interconnection test does not adequately consider the differences among comparative projects. There are large discrepancies in pipe costs between the current projects. A proper comparison of the economic viability of two projects is problematic as the pipe lengths and the pipe material required can affect costs in such different ways. In addition, the Panel notes that projected volumes from the projects are an important factor and vary significantly among the projects approved to date.

In contrast to the pipe costs, the Panel finds that the cost of measuring and regulating equipment and meters is fairly standard. Based on the projects reviewed, an average interconnection metering package is approximately $600,000. Based on the 20-year supply

projections for the seven projects provided by FEI, the average supply of a project is 1,072, 440 GJ. This translates into a metering component for the Interconnection Test of $.56/GJ.

In order to improve the assessment of the comparative economic viability of different projects, the Panel considers the pipe costs in absolute dollars, the pipe length and the projected volumes for the twenty-year period to be key determinants. **The Commission Panel rejects the FEI proposal for the Interconnection Test for reasons addressed above. FEI is directed to file a new, more comprehensive, proposal for a two-part Interconnection Test by March 31, 2014, which addresses metering and the pipe separately.** The rules and parameters covering the test for the pipe could, for example, introduce variables such as maximum pipe length or minimum volume over a 20-year period.

(ii) Interconnection Cost Allocation Model

The Commission Panel concurs with the findings of the AES Inquiry Report which concluded that the introduction of biomethane to the system is comparable to the introduction of a new supply of fuel. The Panel also agrees with the finding that biogas upgrading facilities are analogous to gas plants that treat conventional "raw gas" to ensure the natural gas is of pipeline quality. To continue with this comparison, in the traditional utility, gas is received from a provincial or interprovincial mainline transmission system. The FEI distribution system consists of the interconnection facilities to the mainline transmission system, a large diameter pipe moving the gas to various parts of the distribution system, and small diameter pipes taking the gas to specific customers. **Accordingly, the Commission Panel finds that biogas upgrader is analogous to a gas plant and that the pipe connecting it to FEI metering/interconnection facilities is similar to the pipe connecting the gas plant to the mainline transmission system which in turn leads to the FEI system.**

The Panel disagrees with the FEI characterization of the interconnection facilities as being similar to the FEI large diameter pipeline system. **Because the pipe connecting the upgrader to the FEI system is outside the traditional natural gas distribution utility configuration, the**

Panel finds that the pipe costs are part of the cost to acquire supply. In the gas distribution system, the interconnection metering facilities are usually considered part of the FEI system. However, in the traditional FEI system, there are only a few connections required to hook up either to the West Coast or Trans Canada System to access large quantities of supply. On the other hand, in the case of biomethane, each upgrading facility, however small, requires its own pipe and metering interconnection facilities. The Panel considers these connections to be significantly different from those connecting natural gas producers to the FEI pipeline system. **Therefore, the Panel finds that the cost of biomethane metering interconnection facilities are more appropriately considered part of the cost of supply.** Accordingly, they should be allocated to the Biomethane Program.

The Commission Panel acknowledges BCPSO's concern regarding cross-subsidization and its emphasis on cost causation. The Panel is also aware of the support from other Interveners for the proposed Cost Allocation and Recovery Model proposed by FEI. Furthermore, the Panel has already found that the Biomethane Program advances government policy, and provides benefits which accrue to all customers. The Panel has also found that public interest is served by this program being successful. Nonetheless, the Commission Panel considers the need for transparency and an understanding of the true cost of the program to be of utmost importance. As stated earlier, green is good, but not at any cost. We will make further determinations on the recovery of these costs in Section 4.4 of this Decision.

4.4 Cost Recovery

Having considered the allocation of biomethane related costs, the Panel now considers the question "Who Should Pay for the Program?" In considering this question, the Panel in part looks at who benefits. FEI submits that "all customers benefit from the Biomethane Program through such factors as the development of renewable energy resources and the reduction of waste and GHG emissions. FEI has received strong support from its customers, the Provincial Government and local governments for its pursuit of these objectives through the Biomethane

Program." In FEI's submission, it is fair for all customers to bear some cost risk for the benefits that are achieved through the Biomethane Program (FEI Reply Submission, p. 72).

The Panel accepts FEI's argument that its customers should bear some risk. However, the Panel is of the view this risk should be minimized and should only exist to the extent it is required to prevent the program from failing. Program failure, in the Panel's view could occur if the price of biomethane is set too high. Accordingly, the Panel is of the view that deviations from cost causation provisions, which would allocate some costs to FEI's ratepayers, are justified. However, there is little in the way of evidence of price elasticity information, other than from customer surveys, to guide the Panel.

The discussion below highlights some of the conflicting drivers of the Program. It is not always clear, what principle is driving what recommendation. In other words, does policy trump economics or vice versa. In order to arrive at its findings, the Commission Panel considers the exposure to the FEI's customers in the worst case scenarios, assuming that the FEI proposal is accepted. The Panel agrees with the submissions of the parties the rate impact would be small and, therefore, should not influence the ultimate findings to a large degree. In this Section, the Panel also considers three risk mitigation strategies, put forward by FEI, strategies as these strategies involve, in part, the allocation of costs and risk to FEI's ratepayers.

4.4.1 The Biomethane Variance Account and the BERC Rate

The Cost Allocation and Recovery Model originally approved in the 2010 Biomethane Decision provides for supply costs, along with direct administration costs and the cost of IT upgrades to be recorded in the BVA. Costs accumulated in the BVA are recovered from biomethane customers through the BERC. If revenues are consistently less than costs, a balance accrues in the BVA. FEI's most recent Quarterly Gas Report projects the BVA balance is expected to be $1.198 million (before tax) at December 31, 2013 representing 95.1 TJ (0.095 PJ (Exhibit A2-18). Assuming an October 1, 2013 effective date and forecasts for the 15 month prospective period

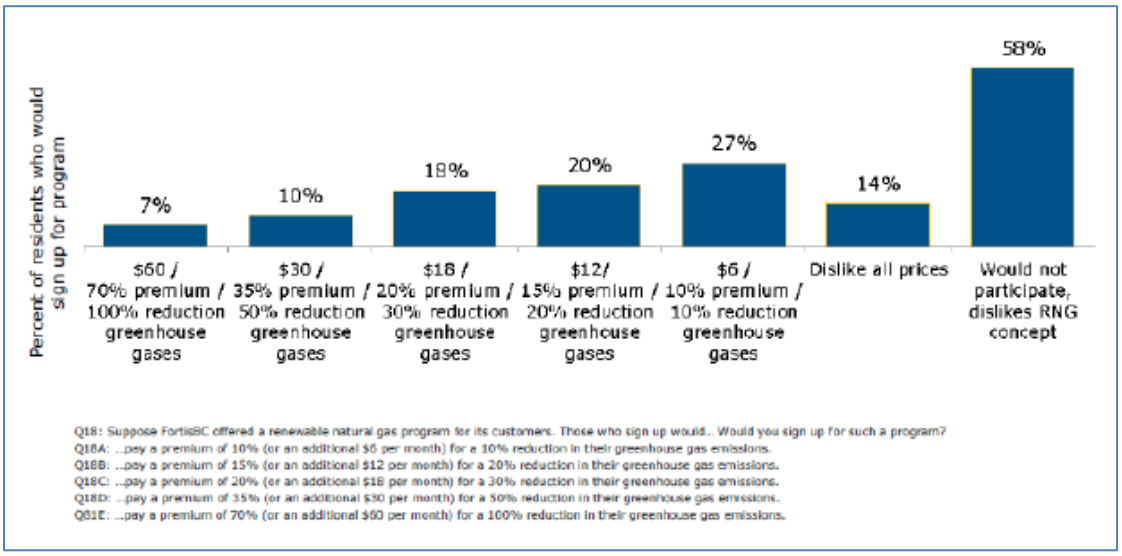
of October 1, 2013 through December 31, 2014 FEI calculated the BERC rate to be $13.504 per GJ (Exhibit B-19, BCUC 2.1.1; Exhibit A2-18, Tab 4, pp. 1-3).

Currently, interconnection costs, along with education and marketing costs are included in FEI's revenue requirement and allocated to all non-bypass ratepayers. FEI indicates that if, for example, suppliers must recover their interconnection costs in the price charged to FEI for biomethane, this requirement would add approximately $3 per GJ to the cost of supply, which can be expected to reduce adoption rates. On the other hand, FEI submits, recovery of these costs from all FEI non-bypass customers would cost $.002 per GJ. Accordingly, FEI submits given that the Biomethane Program advances government policy to the benefit of the entire province, it is in the public interest for the price of biomethane to remain reasonable in order for the program to succeed (FEI Final Submission, pp. 38-39; Exhibit B-19, BCUC 2.12.2; Exhibit B-17, BCUC 1.61.6).

FEI stated that its research shows price to be the largest point of contention and barrier for the RNG program. It submits that "[c]ustomers generally oppose the idea of increases to their gas bill and the research estimated an acceptable level of price increase by testing various concepts and questions. In summary, 7 percent of customers indicated that they would take 100 percent biomethane at a 70 percent price premium and 27 percent indicated that they would be willing to take 10 percent biomethane at a 10 percent price premium." Results of FEI's research are summarized in Figure 3 (Exhibit B-19, BCUC IR 2.12.2).

Figure 3

Results of FEI's Research into Biomethane Demand



FEI also noted that generally, cost can be a barrier for commercial customers to buy any new product or service. Accordingly, FEI concluded that cost is a barrier for some businesses to participate in the RNG offering. However, FEI has also found that most of the commercial participants who signed up for the Biomethane Program did so because it aligns with their core brand value and corporate sustainability goals despite the higher cost (Exhibit B-19, BCUC IR 2.12.1).

Table 2 shows the rate impact of recovering interconnection and education and marketing costs from FEI's non-bypass ratepayers.

Table 2

Rate Impact of Interconnection, Education and Marketing costs on Non-Bypass Ratepayers[1]

	2014	2015	2016	2017	2018	2019	2020	2021
$/GJ	.0059	.0101	.0119	.0124	.0130	.0132	.0130	.0127
Annual Rate Impact (%)	0.06	0.11	0.13	0.13	0.14	0.14	0.14	0.14

The BERC rate is currently set annually, as the result of a calculation, based on a number of factors, including: the volume of unsold biomethane in the BVA; the unrecovered costs in the BVA; and with consideration for expected sales and acquisitions over the forecast period. However, the BERC rate is sensitive to the length of the forecast period. For example, in its 2012 Q4 Gas Cost Report, FEI calculates the BERC rate, using a 12-month prospective period, showing a decrease of $0.773/GJ from the current $11.696/GJ to $10.923/GJ, effective January 1, 2013 (Tab 4, p. 5, column 3, line 18). The BERC rate, calculated using a 24-month prospective period covering January 1, 2013 to December 31, 2014, is $12.001/GJ (Tab 4, p. 6, Column 3, Line 18), which equates to an increase of $0.305/GJ from the current $11.696/GJ, effective January 1, 2013.

FEI stated that the BERC rate setting mechanism is consistent with the Company's existing gas cost reporting and rate setting mechanisms as set out the "Guidelines for Setting Gas Recovery Rates and Managing the Gas Cost Reconciliation Account Balance" established pursuant to Commission Letter L-5-01 (Exhibit B-17, BCUC IR 1.74.1). However, when asked about the use of the thresholds in setting gas cost rates, FEI replied that although they may be useful, it is important, "and not inconsistent with past practice, to give consideration to the full circumstances in establishing rates, including such factors as the current deferral balance and

[1] Table 3 derived by BCUC staff. Rate impact is based on the average annual residential customer consumption of 95 GJ at a cost of $889, not adjusted for inflation or escalation.

the appropriateness of any rate proposals over the 24-month timeframe." FEI believes that rate stability, price transparency, implications for the expected size of the deferral account and efficiency of process; are valid considerations in establishing gas cost rates (Exhibit B-17, 1.74.3.1).

FEI proposes that Biomethane Program activities and BVA balances continue to be reported to the Commission on a quarterly basis, as part of the quarterly CCRA and MCRA gas cost review process, and that the BERC rate will be adjusted on an annual basis with a January 1 effective date. FEI also requests that the BERC rate be reset based on an updated BVA report and BERC rate proposal either filed on its own or as part of the next quarterly gas cost report on the first quarter after the Decision in this Application (Exhibit B-1, pp. 7-8; Exhibit B-17, BCUC IR 1.74.6; Exhibit B-19, BCUC IR 2.1.1).

4.4.2 Oversupply Risk Mitigation

In the Application, FEI identifies three risk mitigation strategies it currently has for dealing with over-supply risk:

- Notionally banking the biomethane for sale at a later date;
- Selling the biomethane off-system to a third party as a sale under Rate Schedule 30 at the full BERC rate plus the Rate Schedule 27 transportation rate; and
- Selling the biomethane to on-system transportation customers through Rate Schedule 11B at the BERC rate (Exhibit B-1, pp. 112-114).

These three risk mitigation strategies are currently available to FEI under the biomethane pilot program. To date, FEI has relied upon banking the biomethane for sale at a later date.

Recently FEI has begun to contract for the sale of significant on-system sales under Rate Schedule 11B with sales to municipalities such as the City of Vancouver and Richmond as it is clear there is a market for sales of 100 percent biomethane to municipalities who view this as a means to meet their greenhouse gas emissions targets. In the event biomethane cannot be sold

at the established BERC rate, FEI is seeking approval to introduce a "final mitigation of last resort"; specifically cost recovery through the Midstream Cost Recovery Account (MCRA) (Exhibit B-1, p.15).

"The essential purpose of this cost recovery mechanism is to provide certainty with respect to what would happen to balances in the BVA that cannot be sold at the BERC rate" (FEI Final Argument, p. 44). This strategy would involve either a sale of some quantity of biomethane at a discounted rate either through a discounted Rate Schedule 11B or Rate Schedule 30 sale with the corresponding transfer of the MCRA of the cost difference between the BERC rate and the selling price or a transfer of unsold volumes to the MCRA at the BERC rate.

4.4.2.1 Off-System Sales (RS 30) and Unbundling Environmental Attributes

The emergence of mandatory renewable power portfolios has caused electric utilities across North America to seek out biomethane supply for their natural gas fired power production. Accordingly, FEI submits that the Company could sell the gas to third parties through an off-system transaction. Such a sale would be done through FEI Rate Schedule 30, which sets out the terms and conditions for notionally biomethane gas sold on the spot market. In addition, the US and Canadian markets have Low Carbon Fuel Standards established or in progress whereby renewable energy credits could be sold (Exhibit B-1, p. 113).

FEI was asked for additional details on what protocols are in place (or in development) for recognising biomethane under BC or Canadian Low Carbon Fuel Standards for compliance purposes. It responded that at this time, the potential for off-system sales of low carbon compliance credits from biomethane is limited to the US. FEI reported that in the US, 80 states and local governments "were purchasing green power" and more than 25 state and local governments have green power purchasing policies; specifically, FEI cites Maine, Texas, New York and Hawaii as jurisdictions where "off-system sales would work" (Exhibit B-17, BCUC 1.47.2.2, 1.65.1).

Although FEI described Clean Energy's success with selling RNG in 33 states, it provided no specific evidence of any impediments it may face, steps it has taken, or needs to take, in order to make similar sales to the US (Exhibit B-17, BCUC 1.47.3.2).

4.4.2.2 Notional Banking

FEI submits that since the product is a notional delivery of biomethane rather than the actual, physical supply of the product, it has the option of notionally banking the biomethane and selling it to customers at a later point in time. "The demand for the 'banked' biomethane could come from a resurgence in the customer base for the biomethane product offering caused by additional marketing efforts or from an expansion of the program into other rate classes or markets or sold into projects where large volumes of demand are expected at a later date" (Exhibit B-1, pp. 112-113).

Notional banking is intended to manage short-term mismatch in supply and demand. "FEI would generally consider the volume of unsold biomethane to be unmanageable when FEI has large volumes of unsold biomethane for a period of time in its current portfolio with no large volume buyer commitments in the near term...FEI currently believes holding a cumulative inventory in excess of 250,000 GJ for a consecutive 24 month period would be considered unmanageable" (FEI Final Submission, p. 45; Exhibit B-17, pp. 112-113).

When asked for how long biomethane can be banked, FEI replied that "[r]enewable natural gas sales for pipeline do not have a defined protocol or time limit in Canada. FEI intends to maintain a suitable 'bank' or inventory in order to meet customer demand in the short term and manage risk associated with supplier failure. The amount and timeline will fluctuate according to market conditions" (Exhibit B-17, BCUC 1.64.1).

FEI stated that it does not does not currently explicitly report the vintage of the unsold

biomethane and associated environmental attributes although it tracks the vintage tonnes (i.e. GJ of RNG) on a first in, first out basis in the BVA. It also states that renewable natural gas sales for pipelines do not have a defined protocol or time limit in Canada (Exhibit B-17, BCUC 1.64.1, 1.64.2).

4.4.2.3 Oversupply and Use of the MCRA

FEI proposes to introduce a MCRA cost recovery mechanism as a risk mitigation strategy of last resort. This mechanism will be used as a final method for the cost recovery of biomethane that cannot be sold at the BERC rate. This strategy would involve either:

- a sale of some quantity of biomethane at a discounted rate either through a discounted Rate Schedule 11B or Rate Schedule 30 sale with the corresponding transfer of the MCRA of the cost difference between the BERC rate and the selling price, or
- a transfer of unsold volumes to the MCRA at the BERC rate.

(Exhibit B-1, pp. 115-116)

FEI submits that the risk to the MCRA is small and unlikely to be used as the mechanism will only be used after exhausting the sales of biomethane at the full BERC rate through all other channels which include sales to the residential and commercial sectors and emerging markets and both on and off system sales customers such as WestPac (FEI Final Argument, pp. 44-45).

FEI believes this risk mitigation strategy is just and reasonable and provides a number of policy reasons to support it:

- The risk is limited
- It is beneficial for the Biomethane Program to have assurance that the costs will be recovered from all customers
- It is consistent with the electricity supply model
- It is consistent with the treatment of the other gas supply
- It is consistent with the regulatory compact (FEI Final Submission, pp. 46-50).

However, FEI's proposed recovery of the cost of unsold biomethane through the MCRA has the effect of recovering all biomethane acquisition related costs only from FEI's sales customers. Sales customers represent only a portion of FEI total customers. In 2013, FEI sales customers are projected to take 114,012 TJ compared to 55,928 TJ taken by transportation customers. Bypass and special rates customers are expected to take 41,927 TJ (FEI Performance Based Ratemaking Revenue Requirements 2014-2018, Exhibit B-15, FEI Evidentiary Update, Section E, Schedule 5).

The risk to FEI's sales customers has been quantified in the Proceeding and will vary depending on the unsold volumes being moved to the MCRA. FEI suggests that holding a 250 TJ balance for more than 24 months in the BVA could trigger consideration of a move to the MCRA (Exhibit B-17, BCUC IR 1.70.3.1). FEI estimates a 0.1 percent annual impact to the typical residential customer if FEI were to transfer 250 TJ of unsold biomethane to the MCRA at a BERC rate of $12.001 per GJ. This represents a bill increase of $0.86 per year. FEI categorizes this as "an extreme worst case scenario." FEI stated that it would "most likely employ the MCRA if it found the inventory in the Biomethane Variance Account to be unmanageable in that it reached 250,000 GJ for a consecutive 24 month period" (Exhibit B-19, BCUC 2.44.1; Exhibit B-15, CEC 1.27.2).

However, FEI's estimate of a 0.1 percent annual bill impact does not include the fully allocated costs of the Biomethane Program. Commission staff prepared an estimate of approximately $0.10 per GJ impact on the MCRA from the fully allocated costs once all the existing customers are on stream. Given an average consumption of 95GJ or $860 per customer (FEI Final Submission, p. 47), this translates to an annual rate impact of $9.50 or 1.1 percent for a typical lower mainland residential customer.

FEI originally requested approval to move costs to the MCRA would be included as part of a regular quarterly gas cost filing (Exhibit B-1, p. 116). However, it refined its proposed MCRA cost recovery mechanism in response to BCUC 1.70.3.1 and BCUC 2.52.1 to confirm that "FEI

would seek Commission approval of any proposals to sell biomethane volumes at a discounted rate prior to execution of such sale." As the timing of the application would be driven by the sale, FEI indicates the request for Commission approval would be separate from the quarterly gas cost report filing and may require an expedited review process (Exhibit B-19, BCUC 2.52.1).

Upon approval of the discounted sale, the sale and loss on the sale would be booked to the BVA. At the same time, FEI would seek approval to transfer the loss (there would no longer be any volume) to the MCRA. In the case of discounted sales, FEI contemplates the application may need to be expedited to accommodate the sale. FEI also contemplates the risk mitigation strategy could be the transfer of unsold volumes at the BERC rate to the MCRA in the event the volume of unsold biomethane became too large. In either case, FEI proposes to file an application to the Commission for approval to transfer all or a portion of the balance in the BVA, including any loss on discounted biomethane sales into the MCRA. Once transferred, FEI proposes that the balance would be recovered from all customers in the midstream rate (FEI Final Submission, pp. 45-46).

Positions of the Parties

CEC and BCSEA are in full support of FEI's proposed use of the MCRA. CEC submits that specific risk to natural gas customers is very minor and appropriately justified (CEC Final Submission, pp. 24-25).

"BCPSO is opposed to the use of the MCRA mechanism at this time.... In BCPSO's submission, the effect of the MCRA mechanism is to alleviate FEI of risk of oversupply of Biomethane, placing the risk entirely on customers. In BCPSO's submission, this is an inappropriate allocation of risk, as it reduces FEI's incentive to source supply in a reasonable manner" (BCPSO Final Argument, p. 6).

FEI submits that its proposed approach to have non-biomethane customers continue to bear some costs and back stop the Biomethane Program through the MCRA cost recovery mechanism allows the BERC rate to remain reasonable. This allows the user-pay aspect of the model to remain viable and expand, which in turn lowers any risk that the MCRA cost-recovery mechanism would need to be utilized (FEI Final Submission, pp. 71-72).

FEI further submits that its proposed cost and risk allocation to its customers is just and reasonable and in the public interest because all customers benefit from the Biomethane Program through such factors as the development of renewable energy resources and the reduction of waste and GHG emissions. FEI states it has received strong support from its customers, the Provincial Government and local governments for its pursuit of these objectives through the Biomethane Program. In FEI's submission, "it is fair for all customers to bear some cost risk for the benefits that are achieved through the Biomethane Program" (FEI Final Submission, pp. 71-72).

Commission Determination

Recovery of Fully Allocated Costs

The Panel has previously allocated the following costs to the Biomethane Program:

- Cost of supply;
- Interconnection between the biomethane plant and FEI's distribution system;
- Biomethane Program Overhead Costs.

Cost causation principles suggest that interconnection costs be paid by the biomethane supplier and recovered in the price charged for the biogas or biomethane. In that way the risk of recovering these costs is borne by the supplier. However, FEI is the sole customer for each supplier and proposes to sign long term supply agreements, thus the risk will be effectively transferred to FEI's ratepayers. Accordingly, the Panel has no objection to FEI actually paying the interconnection costs. With regard to the Biomethane Program overhead costs, FEI directly

incurs and pays these expenditures. Since FEI is undertaking the marketing, education and other activities, the Panel supports FEI paying these costs.

Although interconnection and Biomethane Program Overhead Costs are incurred by FEI, the Panel has previously found they are incurred on behalf of the Biomethane Program. The Panel has previously discussed the need for transparency in the Biomethane Program. In the Panel's view all of these biomethane related costs should be treated in a transparent fashion**. Accordingly, the Panel directs all interconnection and Biomethane Program Costs are to be recorded in the BVA along with the cost of supply.**

Recording these costs in the BVA provides FEI with the opportunity to recover all of the Biomethane Program costs from biomethane customers and the Panel expects it will make every effort to do so. However, the Panel does consider it appropriate that FEI's ratepayers assume some risk for unsold or unsalable biomethane and makes further determinations on this issue below. In the Panel's view this is a more appropriate approach to cost recovery than automatically transferring some costs to all non-bypass ratepayers as does FEI's approach to recovering interconnection and some Biomethane Program Overhead Costs.

With respect to arguments from parties that the cost to ratepayers of interconnection and program overhead is small and therefore recovery is justified, the Panel does not entirely agree. The materiality of the amount may be one consideration when determining who should pay. However, the Panel must consider all of the relevant factors, including cost allocation principles, fairness and the ability of biomethane customers to pay, in addition to British Columbia's energy objectives.

The BERC Rate

Although the BERC and the acquisition costs are decoupled to the extent that at any particular point in time the acquisition costs are not necessarily equal to the BERC rate, the current BERC rate setting mechanism ensures that costs recorded in the BVA are eventually recovered from

biomethane customers. Accordingly, assuming a continuation of the present BERC rate setting mechanism, as FEI has requested, these fully allocated costs will be reflected in the BERC rate.

The Panel is mindful that including the fully allocated costs, as opposed to only those costs approved in the pilot will, all else equal, increase the BERC rate beyond that anticipated by FEI in this Application. The estimated BERC rate impacts are shown in Tables 3 and 4.

Table 3

Impact of Interconnection Costs on the BERC Rate $/GJ[2]

2014	2015	2016	2017	2018	2019	2020	2021
2.63	2.35	1.92	1.59	1.61	1.58	1.55	1.54

Table 4

Impact of Interconnection and Marketing Costs on the BERC Rate $/GJ[3]

2014	2015	2016	2017	2018	2019	2020	2021
4.56	3.12	2.43	1.99	1.99	1.95	1.92	1.92

The Panel acknowledges that a higher BERC rate could result in a reduction in the adoption rates for the Biomethame Program. The Panel has approved a range of biomethane blends that FEI can offer to customers. This will allow FEI to offer biomethane at price points, both higher and lower than the 10 percent blend, that were not possible during the pilot when it offered only the 10 percent blend. In the Panel's view, offering a range of blends, to allow a customer to select a blend suited to their ability and willingness to pay, may help to mitigate any potential erosion of FEI's biomethane customer base that may be caused by an increase in the

[2] Table 4 derived by BCUC staff from assumptions about timing and anticipated volumes of seven approved projects plus future projects described in section 5.9.1 and 5.9.2 of the Application using volumes, the approved interconnect costs to date and the assumed per project total interconnection cost to calculate the COS using the live model that was filed by FEI in the GVS&DD proceeding.

[3] Table 5 assumes interconnect costs as in Table 4 plus marketing costs of $402,000 per year.

BERC. Further, there is evidence on the record[4] that a significant percentage of existing customers are willing to pay more for a higher concentration biomethane blend. It may also be the case that some customers will be willing to pay more for a 10 percent blend provided the reason for the increase is communicated effectively to them.

The potential impact on the BERC of Biomethane Program Overhead Costs are more significant in the early years of the program because in these early years, a relatively fixed cost is recovered from a lower volume of biomethane sold. To assist FEI to smooth the effect of this, the Panel is prepared to approve an account in which some overhead costs can be deferred for recovery as sales volumes increase. **In the event that FEI wishes to smooth the effect of these costs, FEI is directed to propose an approach to the Commission for the deferral of some Biomethane Program Overhead Costs.**

Similarly, the impact of interconnection costs is greater in the earlier years, in part because of lower volumes and in part the higher cost of rate base in the earlier years. The Panel is supportive of FEI bringing forward a proposal to levelize interconnection costs before they are transferred to the BERC. **In the event that FEI wishes to levelize interconnection costs, FEI is directed to propose an approach to the Commission.**

Later in this Decision, the Panel will consider whether, in the event that the BERC rate is too high to allow FEI to maximize the recovery of the BVA from biomethane customers, the BERC should be set at a lower rate.

BVA Reporting and BERC Rate Setting

The Panel approves the continuation of annual BERC setting using the calculation FEI is currently utilizing. However, the Panel is not persuaded that the reset of the BERC should

[4] Figure 3 in this Decision.

necessarily be restricted to only once annually. Generally, commodity costs are set quarterly, and the Panel finds no reason the BERC should not also be subject to potential quarterly changes. **The Panel directs that for the quarterly BVA review, FEI provide the Commission with a BVA Report containing a re-calculation of the BERC, along with any recommendation that the re-calculated BERC be adopted.**

The Panel is of the view the BVA review and rate setting process should not be included as part of the quarterly gas cost reporting and rate setting for the MCRA as these are reviewed on an expedited basis to accommodate the inclusion of timely forward market price information in the CCRA and MCRA. **Accordingly, the Panel directs FEI to file the quarterly BVA Report by the 15th of the month preceding the final month of the quarter.**

FEI is also directed to file an updated calculation of the BERC rate by no later than February 15, with any change to the BERC rate to be effective on April 1, 2014.

Recovery of Unsold Biomethane through the MCRA

In the event of a persistent inability to sell biomethane, the Panel is supportive of FEI's proposal to transfer balances from the BVA to the MCRA, although as a last resort only. However, the Panel is concerned that by transferring BVA balances to the MCRA, only FEI's sales customers will be backstopping the program. The Panel has previously approved the continuation of the Biomethane Program because it meets the Province's energy objectives. In doing so, we noted that the decision to continue the program was not made on the economic merits of the program. There is abundant availability of natural gas at rates considerably lower than the rate at which biomethane can be acquired. Accordingly, the Panel considers the primary purpose of the program to be to develop a market for biomethane, and not to secure a gas supply for FEI's sales customers.

In this circumstance, the Panel considers it appropriate that all of FEI's customers assume the risk for unsold biomethane. The Panel notes FEI's submission that all customers benefit from

the Biomethane Program. Further, in FEI's proposed Cost allocation and Recovery Model, all Interconnection and Program Costs are recovered from non-bypass ratepayers.

Accordingly, Panel directs that if, as and when volumes of unsold and unsalable biomethane are moved to the MCRA, the dollar balance transferred be calculated using the prevailing Commodity Cost Recovery Charge at the time of the transfer. The difference between the commodity value of the balance to be transferred to the MCRA and the selling price of that balance at the BERC must be recovered from as broad a base of FEI's customers as possible. Table 5 illustrates the Biomethane Program Cost Recovery Model approved by the Panel.

For further clarity on the MCRA recovery mechanism, the Panel provides the following numerical example: If the BERC rate is $14 /GJ; the prevailing commodity gas rate is $4.00 and 10,000 GJ is to be moved from the BVA to the MCRA, then along with the 10,000 GJ, $40,000 ($4 * 40,000) would be moved to the MCRA for recovery from FEI's sales customers. The remaining $100,000 must be recovered from all non-bypass customers. **To facilitate this recovery, the Panel approves the establishment of an "Unsold Biomethane Premium" deferral account (UBPDA) to which, in this example, $100,000 would be transferred. FEI is directed to recover any balance in the Unsold Biomethane Premium deferral account from all FEI non-bypass customers, through a rate rider, on a timely basis. If, as and when a balance is transferred into this account, FEI is directed to bring forward to the Commission an application containing the proposed specific terms of the rate rider.**

Table 5

Biomethane Service Offering
Cost Recovery Model – Going Forward

Biomethane variance account (BVA)	
• Cost of procuring biogas	Biomethane Customer
• Cost of upgrading	Biomethane Customer
• Interconnection costs including the pipe	Biomethane Customer shared with Supplier based on Interconnection Test
• Biomethane Program Overhead Costs	Biomethane Customer
LESS	
• REVENUES collected through BERC rates	Biomethane Customer
= Variance may be transferred to MCRA for recovery from all non - bypass customers and the BPDA on the terms directed by the Commission Panel	
MCRA/UBPDA COST RECOVERY MECHANISM	
• Variance from BVA due to difference between cost of supply and selling price	
• Final method for the cost recovery of Biomethane that cannot be sold at the BERC rate, or cannot be sold at all.	
• Subject to a separate BCUC approval	

With regard to FEI's comments that a balance of 250 TJ should trigger a move of the BVA balance to the MCRA, the Panel takes no position at this time, although it does not consider the rate impact from a move of 250 TJ to be unacceptable provided the circumstances justified the move.

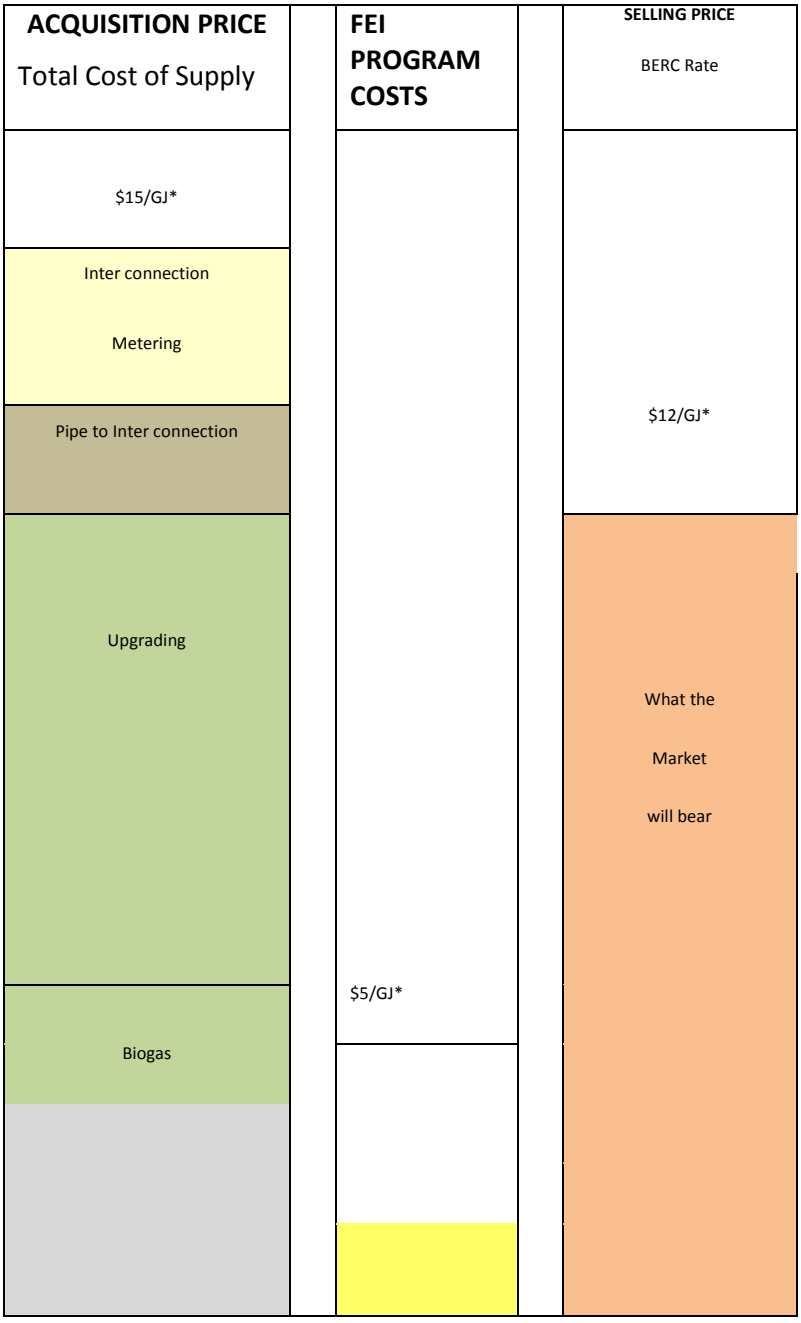
Other BERC Rate Setting Mechanisms

Figure 2 illustrates the cost allocation as previously determined by the Panel. The Panel acknowledges that the arithmetic rate setting process may result in a BERC rate that is higher than the rate that the market can bear, as shown in the example in Figure 4.

Figure 4

BIOMETHANE SERVICE OFFERING

Cost of Supply vs. Selling Price



*Note: Prices per GJ shown for illustration purposes only.

This situation could occur given FEI's Cost Allocation and Recovery model. In this regard, the Panel note the current unsold balance of 95 TJ at a time when this amount is a significant

proportion of the annual biomethane supply. Accordingly, it is presumably even more likely to occur given a higher BERC - one that recovers the fully allocated costs. In this circumstance, the Panel is of the view that it may be appropriate to set the BERC at a lower rate, and recover the difference between the BERC and the fully allocated costs of acquiring the biomethane through the Biomethane Premium deferral account previously discussed. This strategy may enable FEI to maximize the revenues from the Biomethane Program.

However, as previously noted, there is no evidence before this proceeding concerning what rate the market will bear. While there is some history of sales of a 10 percent blend of biomethane, there is no history of sales of other blend rates and in particular of 100 percent blends. The Panel expects that, as the program ramps up, FEI will gain further experience selling different blends of biomethane, including 100 percent blends to emerging markets. This will enable a fuller understanding of what BERC rate maximizes income to FEI from the Biomethane Program.

Therefore, in the event FEI considers it necessary to set a lower BERC rate than would be set using the BERC rate setting methodology which includes all costs FEI is directed to include in this Decision, FEI is directed to bring before the Commission an application for approval of the lower BERC rate. The application should provide an analysis of the full circumstances, and sufficient evidence to support that analysis.

Off System Sales

There does not appear to be a well-established market whereby FEI can sell biomethane off – system. Although it states there are jurisdictions where sales "would work," there is no evidence before the Panel of exactly how these sales will be made, how much can be sold and at what price. Further, it is not clear whether the sales are notional, whether they require the environmental attributes to be unbundled and what, if any provenance FEI will be required to provide.

The Panel is particularly concerned about the price at which an off-system sale would be made. Offering discounted (in relation to the prevailing BERC) biomethane to an off system customer within the province may constitute a rate that is not just and reasonable, when compared to the full BERC rate charged to other customers. In addition discounted sales could potentially erode the base of customers paying the full BERC rate, which may in turn lead to the need to reduce the BERC rate.

Accordingly, the Panel denies discounted off-system sales at this time. Should the need for a discounted off-a system sale or sales arise, FEI is directed to make an application to the Commission at that time.

In making this determination, the Panel notes statements made in FEI's Final Submission concerning potential discounted sales to Element Markets (FEI Final Submission, p. 68). This evidence, which is introduced by way of a submission, has not been tested in this proceeding and the Panel will consider it no further.

Sales to On-System Transportation Customers

In the Panel's view, it appears inappropriate to continue to refer to this strategy as a risk mitigation strategy as the sale of on-system biomethane to transportation customers is now one of the primary emerging markets that FEI is pursuing.

Banking

The Panel is not persuaded that banking is an appropriate way to mitigate the risk of supplier failure or from a surge in demand caused by additional marketing efforts or the expansion of the program to other rate classes. There are other means to manage the risk of under supply which should be employed by FEI. This issue is dealt with further in Section 5.3 of this Decision: Biomethane Undersupply Risks.

In the Panel's view, while the BVA is an appropriate way to mitigate supplier risk or surges in demand in the short term, it should not be used for long term 'banking'. The Panel generally considers short term to include up to 24 months, but recognizes that there may be exceptions to this. **If FEI can establish an expectation for market development beyond the forecast period, it is directed to bring forward an application to bank a specific amount for a specific time-frame.**

With regard to banking to provide for a possible future expansion of the program into other markets, the Panel has previously found a lack of evidence in this proceeding with regard to off-system sales. Accordingly, the Panel makes no determination on the need to bank any biomethane for potential off-system sales.

4.5 Supply Model

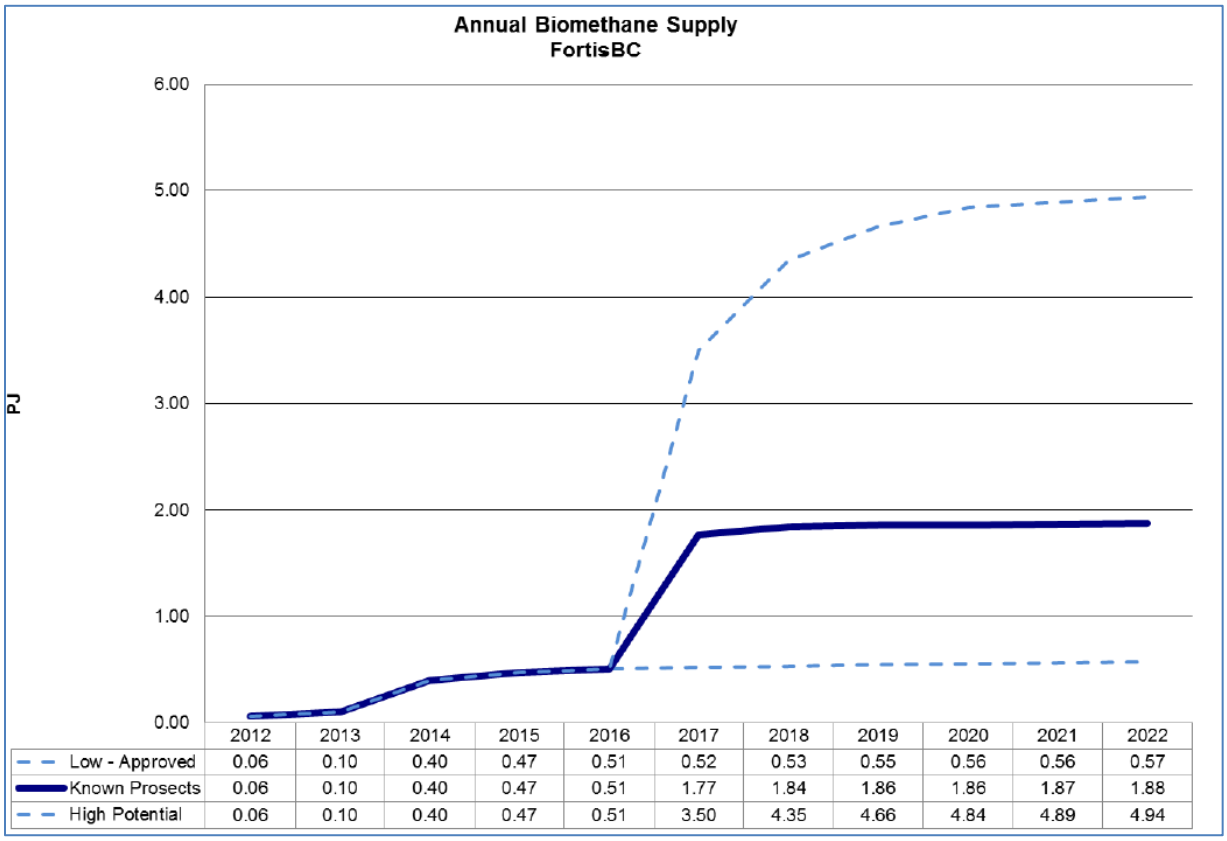
4.5.1 Potential Supply

Previous forecasts, from the Terasen Gas Forecast for Annual Biomethane Supply, submitted as part of the 2010 Biomethane Application, estimated annual biomethane supply volumes by 2020 are "2.24 PJ on the low end, 4.2 PJ expected and 5.6 PJ on the high end" (Exhibit B-1, Appendix A, p. 65). Currently, FEI believes "the current market potential for biomethane is over 3 PJ" and is proposing to change the supply cap to a new maximum annual purchase of 3.0 PJ.

FEI provide the update to the 2010 forecast, which is reproduced in Figure 5.

Figure 5

Annual Biomethane Supply Potential in BC



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Low - Approved	0.06	0.10	0.40	0.47	0.51	0.52	0.53	0.55	0.56	0.56	0.57
Known Prosects	0.06	0.10	0.40	0.47	0.51	1.77	1.84	1.86	1.86	1.87	1.88
High Potential	0.06	0.10	0.40	0.47	0.51	3.50	4.35	4.66	4.84	4.89	4.94

(Source: Exhibit B-17, BCUC 1.53.1)

When asked to provide supporting documentation, FEI submitted a report dated December 2012, entitled "Biomethane Potential in FortisBC Service Areas 1 and 2." The report was prepared for FEI by CH4, who is also an Intervener in this proceeding (Exhibit B-1, pp. 56, 88; Exhibit B-17, Attachment 1.53.2.1).

This report states that "there is a relatively untapped market for biomethane production from anaerobic digestion in BC, and suggests that a more in-depth study surrounding all feedstocks, but particularly [Industrial, Commercial and Institutional (IC&I)] the current waste streams would be highly beneficial in more accurately and completely assessing the market" (Exhibit B-17, Attachment 1.53.2.1, p. i).

Specifically, the report suggests that the theoretical biomethane yield could be as high as 5,433,864 GJ/year or 35 to 37 500kW equivalent anaerobic digesters. However, based on the information recorded and documented in this report, "between 1,929,172 and 2,375,935 GJ of biomethane can realistically be injected into the natural gas pipeline yearly." This equates to13 to 16 500kW equivalent biomethane facilities in Service Areas 1 and 2. Of this amount, 292,513 GJ is from Service Area 1, which roughly equates to the FEVI service territory (Exhibit B-17, Attachment 1.53.2.1, p. 28).

The report suggests the following reasons that predicted yield is about half the theoretical yield:

1. The theoretical yield requires 40 percent organics diversion from all landfills. This assumption of 45 percent is an exaggeration of the likely realty – it includes yard waste that cannot be used as a feedstock and requires full participation on green bin programs that do not yet exist.
2. The maximum allowed off-farm allowed material of 49 percent.
3. The maximum price of $15.28 set by the BCUC (Exhibit B-17, Attachment 53.2.1, pp. 20-22).

With regard to on-farm produced biomethane, the report states that given a price cap of $15.28, typically 49 percent off-farm organics must be brought on-site. The BC On-Farm Anerobic Digestion Benchmark Study states that FEIs biomethane tariff of $15.28/GJ "can be sufficient to enable economic viability. However, because on-farm AD systems must be in locations favourable to the FortisBC grid, this option is only feasible for a small percentage of on-farm AD systems" (Exhibit A2-1, p. 46). Although on-farm AD systems are most often established in conjunction with a supply of agricultural waste, the use of non-agricultural feedstocks enables significantly higher biogas yields with similar capital inputs. As a result, non-agricultural feedstocks play a critical role in increasing the economic viability of on-farm AD systems.... Although on-farm AD systems are most often established in conjunction with a supply of agricultural waste, the use of non-agricultural feedstocks enables significantly higher biogas yields with similar capital inputs. As a result, non-agricultural feedstocks play a critical role in increasing the economic viability of on-farm AD systems. Non-agricultural feedstocks

include Source Separated Organics; Fats, Oils & Grease; Dissolved Air flotation; Abattor Residues; Bakery; and Brewery Residues (Exhibit A2-1, pp. 21-22).

The CH4 report states on page 16 that "Information regarding the biomethane potential from Municipal Solid Waste (MSW) was gathered and synthesized from three main sources – the Recycling Council of British Columbia's (RCBC) general webpage, the *B.C. Municipal Solid Waste Tracking Report 2006* prepared by the RCBC, and from the *Inventory of Greenhouse Gas Generation from BC Landfills* authored by Golder and Associates. The RCBC website contains pertinent information relating to the state of landfills and organics diversion in the province."

FEI submits that it used the CH4 study as a basis to validate the original estimates of potential in the province. In its Executive Summary, the CH4 report states that "This assessment includes a review of past relevant reports regarding biomethane and biogas production in British Columbia and Canada and a preliminary assessment of agricultural, industrial, commercial and institutional (IC&I) and municipal waste available within the parts of the province that are serviced by FortisBC. A brief overview of biogas production from wood-based biomass is included." However, FEI submits that "the report ignored *existing* waste in landfills and ICI waste, which typically has a very high biogas yield per ton. Therefore, FEI adjusted the total potential upwards to include these sources of energy." Accordingly, FEI added 2.5 PJs to account for landfill gas (includes Delta Landfill), ICI waste and wastewater plants for a total of approximately 4.9 PJs. FEI submits that it "believes this is a reasonable estimate based on the report by CH4 and its original assessment of potential done for the 2010 Biomethane Application" (Exhibit B-17, BCUC 1.53.1).

With regard to biogas from existing waste, the CH4 report is silent. The report does, however, consider ICI waste, stating "To evaluate biomethane potential from industrial, commercial and institutional (IC&I) sources, a province wide assessment of food processing operations was undertaken using Statistics Canada's Business Register (BR)." The report contains a summary of the number of companies, broken down by number of employees, in each of 33 categories of

food processing and manufacturing. The report concludes that "In order to accurately assess the biomethane potential of these food manufactures, a more in-depth study carried out over a significant time-frame of at least six to twelve months would be beneficial. It would require significant time and dedication to accurately assess the availability and suitability of these feedstocks for anaerobic digestion. In the Electrigaz BC Study from 2007, an attempt to assess these waste streams was made, but they had limited success in gaining results. Generally a manufacturer is unlikely to share this information unless there is a viable project being presented" (Exhibit B-17, Attachment 1.53.1, pp. 13-15).

FEI submits that the "Known Prospects" are a sum of all known prospects that have been in contact with FEI over the past 2 years. It includes two major projects mentioned already in the Application: The City of Vancouver (Delta Landfill) and the City of Surrey Digester Project. The remainder is a combination of potential sources of supply. FEI has neither completed feasibility studies nor entered into contract discussions with these prospects at this time (Exhibit B-17, BCUC 1.53.2.1).

The CH4 report examines the potential of farm-based biomethane production, concluding that a herd size of over 100 cattle or pigs are needed to make a project economically feasible. Further, beef cattle are typically not present in high enough density to sustain a digester of their own. According to the report, "The amount of time and capital required by interested owners of farm-based biomethane systems is prohibitive in many instances… With the current price for biomethane ($15.28/GJ maximum) anaerobic digesters operating solely on manure are not feasible. According to the *Biogas Anaerobic Digestion Benchmark Study for British Columbia*, all 12 of the case studies required about 49% off-farm material to be economically feasible" (Exhibit B-17, Attachment 1.53.1, pp. 12-22).

Commission Discussion

The Commission Panel is not persuaded that FEI's 3 PJ supply estimate can be relied upon given the information in the CH4 report.

FEI submits that CH4's report understates the actual amount of biomethane available because it does not consider existing waste in landfills and IC&I waste. The Panel has reviewed the CH4 report, the RCBC webpage and the Golder report, all referred to in the CH4 report, and agrees with FEI that these reports don't consider these two additional sources. However, the Panel questions the evidentiary basis for FEI's assertion that 2.5 PJs as a reasonable estimate to account for these sources. The Panel notes that this amount alone exceeds the upper limit of 2.376 PJ of biomethane that is identified in the report that can realistically be injected into the natural gas pipeline annually.

The CH4 report states that in order to more fully realize the potential of farm-use biomethane, some diversion of IC&I waste to farms is required. In addition, there is evidence that recycling programs may divert to composting programs some organic waste that may otherwise end up in landfills. Given this potential for over-counting, or double-counting the Panel is not persuaded that the report understates the actual potential for biomethane by 2.5 PJs, as FEI asserts.

Given the lack of evidentiary support available with regard to the potential of existing landfill and IC&I waste, the Panel considers 2.375 PJ to be the upper limit of biomethane realistically available. The Panel also notes that this figure includes some 0.292 PJ of biomethane sourced in the Vancouver Island-Coast census region, which is generally within the territory of FEVI and not near the FEI pipeline system.

4.5.2 Alternate Uses for Organic Waste

The CH4 report identifies a number of other uses for organic waste that would otherwise be a candidate for anaerobic digestion and conversion to biomethane for injection into the FEI system:

1. The most common is incineration, which is widely used throughout British Columbia and Canada. There is currently one municipal solid waste incinerator and approvals for an additional one in the Fraser Valley
2. Conversion to "syngas," which can be used as a fuel. There are several such plants in BC
3. Composting, which converts organic material into a soil amendment. There are currently a number of "large scale composting facilities in BC for materials that range from yard waste to commercial food waste to curbside collection of organics"
4. Anaerobic digestion for creation of biogas for electricity generation (Exhibit B-17, Attachment 1.53.1, pp. 6-7).

With regard to the creation of biogas for electricity generation, the CEC submits that "the development and expansion of the Biomethane Program must be viewed in the context of the BC energy environment which includes significant interest on the part of BC biogas suppliers to develop supply, significant market demand, the BC Hydro Standing Offer Program and other BC Hydro programs competing for biogas supply during an electricity surplus predicted to last for almost a decade" (CEC Final Submission, pp. 2-3).

It further submits that "significantly expanding the Biomethane Program reduces risk for energy consumers and contributes to lower, fairer energy rates than would otherwise occur in this environment. The CEC views the FortisBC Biomethane Program as an optional, premium service that moderates the adverse impact of relatively expensive energy that would otherwise be developed and sold into the electricity system through the BC Hydro Standing Offer Program and other Biogas programs and borne compulsorily by all BC Hydro electricity customers" (CEC Final Submission, pp. 2-3).

The CEC views the Biomethane Program as the best and most efficient use of an existing energy source in the province of BC and provides additional options for prospective suppliers. Biogas suppliers have the options of flaring, selling into the electricity program, upgrading to biomethane and selling into the program or upgrading to biomethane and using locally. The option of flaring is wasteful and does not contribute to the energy objectives of the province. It does not meet municipal requirements and does not earn income for the supplier.

Commission Discussion

The Panel has previously expressed concern over the potential of double counting the potential sources of supply. That there are competing uses for organic waste also increases the risk of overestimating the potential supply of biomethane in the province.

While the CH4 report has described other applications for organic waste, there is no evidence on the record of the quantities that may be diverted to other uses. In the absence of such quantification, the Panel is reluctant to make any modification to the estimate provided by CH4 of between 1.93 PJ and 2.38 PJ of biomethane that can realistically be injected into the natural gas pipeline yearly.

With regard to the submissions of the CEC, the Panel notes that whether the biogas is converted to biomethane and sold to FEI, or converted to electricity and sold to BC Hydro, the ratepayers of each respective utility may potentially bear the economic risk associated with the production of biogas. **However, the Panel finds there is insufficient evidence on the record concerning what the relative costs are and who bears them and will therefore consider this matter no further.**

4.5.3 Supply Cap

FEI seeks an increased supply cap of 3 PJ, "in order to improve its ability to respond to both customers (demand) and project developers (supply)" (Exhibit B-1, p. 88).

In support of this request, it cites estimates of demand both from the existing program and from "Emerging Markets." With regard to the existing program, FEI submits that the current results of the RNG Offering are in line with the trends shown by similar programs across North America. FEI believes that "as the RNG Offering matures in the market place, and awareness of the RNG Offering grows, the achievable market potential will increase and ramp up to 2.1% in 5 years" (Exhibit B-1, p. 53).

This represents potential sale of RNG, under rate schedules 1B, 2B and 3B of approximately 0.148 PJ by 2018 (Exhibit B-17, BCUC 1.38.0).

FEI also estimates an additional approximately 3 PJ from "Large Demand Projects," or Emerging Markets. Table 6 shows the estimated potential of these projects (Exhibit B-1, p. 53).

Table 6

Large Demand Projects total over 3,000,000 GJ per year

Customer	Annual Biomethane Demand (GJ)
City of Vancouver	9,000
City of Richmond	10,000
UBC	500,000 to 1,500,000
District Energy Systems (FAES Projects)	155,000
Haida Gwaii	280,000
WesPac Energy (export market)	1,500,000
Total	**2,454,000 – 3,454,000**

(Source: Exhibit B-1, p. 53)

However, when asked to provide a 10 year forecast in tabular form for low, medium and high demand growth scenarios, the grand total volume (demand expected from all sources) by 2022 is 1.458 PJ. This includes a total emerging market volume of 1.227 PJ (Exhibit B-17, BCUC 1.38.0).

Not included in the emerging market volume of 1.227 PJ is the potential demand from WesPac Energy Group, a developer, owner and operator of midstream energy infrastructure. FEI states that it has been in discussions with WesPac to buy biomethane for power generation. It submits that WesPac is looking at purchasing up to 1.5 PJ of biomethane per year to meet the demand of its customers. "This demand is driven largely by renewable portfolio standards (RPS) by the jurisdiction under consideration and the competitive costs of biomethane relative to that of oil based fuels" (Exhibit B-1, Appendix G-1, p. 1). FEI expects this transaction will be executed through a future modified Rate Schedule 16 that allows for biomethane sales or through Rate Schedule 30 for off system sales. FEI states that it has not incorporated the 1.5 million GJs into its current demand forecast and instead is using this as a risk mitigation mechanism in the event any of the large power generation projects, such as UBC, does not come on as expected (Exhibit B-1, p. 54).

FEI submits that the current supply cap slows the development of new supply agreements, limits the ability to meet demand of emerging biomethane markets and reduces supply reliability because of the lack of diversity of suppliers. It cites as an example of supplier-perceived risk the notion of curtailment due to an artificial cap.

> "In this case, a supplier may need to provide a certain minimum volume for the project to be viable economically, but the supply cap could force FEI to accept only a portion of the volume of gas required in order to have a viable business case for the project. This would ultimately lead to a missed opportunity for new supply which in turn limits the amount of biomethane available for customers" (Exhibit B-1, p. 88).

FEI also argues that an increased supply cap will allow it to meet potential larger demand customers, stating that the supply cap currently limits FEI's ability to respond to demand. In its

view, “FEI cannot freely negotiate supply to these customers with the current supply cap in place” (Exhibit B-1., p. 88).

FEI also submits that it has experienced lower-than expected volumes from its existing supply contracts; “to date, that volume has been approximately 60 percent of the expected volumes” (Exhibit B-17, BCUC 1.53.4).

The CEC “agrees with FEI as to the benefits of the proposed 3 PJ supply cap as laid out in the Final Arguments and recommends approval by the Commission” (CEC Final Argument, p. 19).

The BCSEA submits that “the proposed supply cap of 3 PJ per year is reasonable in relation to the substantial forecast demand for Biomethane and the evidence of potential Biomethane supply,” and notes that the 3 PJ per year supply is nominal, not actual (BCSEA Final Argument, p. 10).

Commission Determination

The Panel is prepared to increase the supply cap and finds 1.5 PJ to be an appropriate amount of supply for the Biomethane Program. The Panel is not persuaded that there is sufficient justification for an increase of the supply cap to 3 PJ. FEI’s forecast “High Demand Scenario” is less than 1.5 PJ. Further, there is insufficient evidence of a reliable supply, at the price that FEI proposes to pay, of amounts in excess of a little over 2 PJ annually.

The amount of 1.5 PJ will meet FEI’s high demand scenario through 2022. In the Panel’s view, it will provide FEI with sufficient flexibility to bring supply on-stream on an as-needed basis. For any emerging market demand in excess of 1.5 PJ, FEI is encouraged to negotiate take or pay contracts or consider providing transportation service only.

The Panel takes no position on future sales to WesPac through either Rate Schedule 16 or Rate Schedule 30. However, the Panel notes that FEI is not requesting that this potential demand be provided for in the supply cap. The Panel is encouraged that FEI is pursuing this opportunity as a risk mitigation strategy in the event of the loss of supply from a large power generation project. However, there is no evidence concerning the potential effectiveness of this risk mitigation strategy. For example, FEI states, "demand is driven largely by renewable portfolio standards (RPS) by the jurisdiction under consideration and the competitive costs of Biomethane relative to that of oil based fuels" (Exhibit B-1, Appendix G-1, p. 1). There is no evidence of the jurisdictions that have renewable portfolio standards and what sort of provenance FEI would be required to provide for acceptance of its biomethane in that jurisdiction. Further, there is no evidence on the record showing that at the current BERC rate, biomethane is competitively priced in comparison to oil based fuels. Further, it is entirely possible that in a distress sale scenario, FEI may well be forced to sell biomethane at less than the BERC rate, as it may be bargaining from a position of weakness.

The Panel notes FEI's submission regarding lower than expected volumes from existing supply contracts. Accordingly, **when calculating the maximum amount that can be contracted for the purpose of determining if the Supply Cap has been reached, the Panel directs that the total contracted maximum amount must not exceed 2 PJ.**

4.5.4 Supply Price

FEI proposes to negotiate with each individual supplier up to a BCUC approved supply price cap which has been set out on a confidential basis in Appendix J of the 2012 Biomethane Application.

The pilot program supply price cap of $15.28 was set in 2010 on the basis of BC Hydro's Residential Step 2 rate. FEI cited the following reasons that the Step 2 rate was used as a basis for the supply price cap:

- Biomethane is in the early stages of development as a new renewable energy resource and there is no established market price or other public benchmark for biomethane to use in setting the price;
- The Residential Inclining Block (RIB) Step 2 rate is a proxy for the price signal that residential energy consumers in BC are facing with respect to the cost of renewable energy. This is deduced from the fact that the RIB Step 2 rate is derived from BC Hydro's marginal cost of new electricity supply and that BC Hydro's recent calls for power, from which the marginal supply cost is derived, have been for clean and renewable power;
- The RIB Step 2 rate is publicly available and approved by the Commission. Even if the RIB Step 2 price resetting process involves a phase-in to a new level for the marginal supply cost it is still the competitive price signal being experienced by residential energy consumers with respect to the cost of new and renewable resources (Exhibit B-17, BCUC 1.49.3).

FEI provided an update of the supply price cap if it were set on the current Step 2 rate of 10.34 cents per kWh. This is shown in Table 7.

Table 7

Supply Cap based on BC Hydro's Current Tier 2 Rate

BC Hydro Tier 2 Rate:		10.34 ¢/kWh		
Conversion to Gigajoules	*	277.778	=	$28.722/GJ
90% Efficiency Adjustment	*	0.90	=	$25.850/GJ
FEI Rate Schedule 1 (LML) Basic Charge	-	$1.49/GJ21	=	$24.360/GJ
FEI Rate 1 (LML) Delivery Charge	-	$3.691/GJ	=	$20.669/GJ
FEI Rate 1 (LML) Midstream Charge	-	$1.192/GJ	=	$19.477/GJ

(Source: Exhibit B-17, BCUC 1.49.2)

While FEI believes the rationale for the BC Hydro RIB rate still applies, FEI does not propose revising the maximum supply price criteria to the derived equivalent to the current BC Hydro RIB rate ($19.48/GJ). FEI does not believe it is necessary to increase the maximum supply price to this level to attract additional supply. FEI notes it has successfully negotiated seven contracts at prices below the pilot program maximum supply price of $15.28 per GJ. FEI believes it is not necessary to increase the maximum price to this level. FEI have provided the

proposed biomethane maximum price criteria on a confidential basis and believe this approach is appropriate to ensure FEI can negotiate the best price for biomethane supply.

In addition, the pricing for electricity under the SOP, i.e. the competitive alternative, has recently been reset. FEI is confident that it can succeed in attracting in attracting new biomethane supply contracts without having to raise the biomethane maximum price to the level implied by the current RIB Step 2 rate" (Exhibit B-17, BCUC 1.49.3).

When asked to discuss alternative methodologies to establish a supply price, FEI commented on two alternative methodologies:

- **Fixed Offer**: FEI could adopt fixed pricing for all potential suppliers based on a typical business case for biogas projects. The method could apply some basic factors to distinguish between characteristics such as location and/or source of organic material. This method was adopted by Union Gas and Enbridge in their application (Exhibit A2-4). In this scenario, there is a clear price signal and a clear threshold for project economics, allowing project developers to self-select based upon their ability to develop an economic project.

  On the negative side, FEI loses the ability to potentially negotiate lower prices which benefits RNG customers (Exhibit B-17, BCUC 1.49.3).

- **Supply Call**: FEI could issue a call for projects and select the best priced projects. This scenario should theoretically provide a competitive process and potentially provide for lower prices than the option above.

  However, it could lead to possible supplier failure in cases where suppliers have bid aggressively to win the project and accept rates that are too low to successfully operate over the long run. There may also be issues with not having enough projects bidding into the call and therefore not being able to conclude that it was a competitive process.

In the situation where there are few bidders pricing may be high due to lack of competition. Over the past three years, FEI has advanced only projects to the point of contract completion which indicates that there may be insufficient project potential for a competitive call to be successful (Exhibit B-17, BCUC 1.49.3).

In FEI's view, biomethane gas supply has not evolved to being a competitive market, referring in general to the fact that there are not a large number of project developers or projects that would potentially drive down the costs associated with development. In other words, there are not a significant number of project developers competing for a limited amount of biomethane purchase agreements (Exhibit B-17, BCUC 1.58.1).

For a competitive market, FEI would expect the following conditions:

1. A larger number of supplier/developers (competition to meet demand);
2. Willing purchaser of biomethane (demand); and
3. Clear market signals built around a permanent program (clarity of ground rules) (Exhibit B-17, BCUC 1.58.1.1).

FEI contrasts the biomethane supply market with the IPP market for electricity, which, in comparison, has between 50 and 100 projects representing almost as many different project proponents. Two additional factors cited by FEI are that it has recently worked to clarify demand, but has not widely communicated this demand to potential developers, and "[m]ost importantly, there is uncertainty for project developers in regard to a securing a long-term purchase agreement" (Exhibit B-17, BCUC 1.58.1.1).

Commission Determination

As previously discussed, there is disconnect between the supply potential, as outlined in the CH4 report, and the amount of demand that FEI intends to serve. The Panel acknowledges CH4's suggestion that the amount of supply may be influenced by the price FEI will pay for it.

Accordingly, it may be a challenge for FEI to obtain sufficient supply at a price that will not erode demand to the detriment of the program. The Panel is of the view that more information is required concerning the supply available and the costs of that supply. **Accordingly, FEI is directed to prepare a request for Expressions of Interest (EOI) from potential suppliers and submit it to the Commission for review within six months of this Decision**.

In making this determination, the Panel is mindful that FEI is currently involved in negotiations for supply contracts. **Accordingly, the current supply price cap will remain in place. FEI is directed to provide an update of its supply contract negotiations to the Commission when it files its EOI for review.**

The Panel accepts FEI estimation that new biomethane supply contracts can be entered into without having to raise the biomethane maximum price to the level implied by the current RIB Step 2 rate. Further, the Panel is of the view that an open, transparent process is a more desirable approach than a BCUC mandated maximum price cap. A competitive bidding process, as described in FEI's supply call could potentially bring free market efficiencies to bear, thereby reducing supply price and also will relieve FEI of the burden of negotiating separate prices with each supplier.

With regard to FEI's concern that that there may be insufficient project potential for a competitive call to be successful, the Panel notes CH4's estimate that there is a realistic potential of 13 to 16 digesters in the FEI service territory. In the Panel's view, this may be a sufficient number of potential suppliers to ensure a competitive bidding process. The economics of supply will vary based on a number of factors, including the size of the operation, the distance from the nearest injection point into FEI's system and the nature of the supply (landfill, farm, ICI waste). With respect to the latter, the Panel notes that there are significant differences in economics between the three classes of suppliers.

With regard to the remaining two of the three conditions FEI considers necessary for a competitive supply market, the Panel notes that FEI is a willing purchaser and that this Decision provides clarity of ground rules for the Biomethane Program. The Panel is concerned about the potential for a lack of transparency in the price paid for biomethane generally, and landfill biomethane in particular. Landfills owned by municipalities and regional governments face different economic circumstances than do farms. Environmental and other regulations may result in avoided costs for municipalities and regional districts if they convert otherwise waste landfill gas to biomethane, instead of flaring or simply venting it. In the Panel's view, these considerations could impact the price charged to FEI. The Panel does not find it appropriate for FEI's ratepayers to effectively subsidize local governments. Accordingly, the Panel is of the view that it may be appropriate to conduct a separate call for municipalities. **FEI is directed to address this issue in the EOI it will be developing.**

5.0 OTHER ISSUES

5.1 Education and Marketing Program Effectiveness

The issues to consider with respect to the effectiveness of FEI's education and marketing programs are as follows:

- The appropriate emphasis on education and marketing given FEI five-year sales forecast.
- Whether AIR MILES is appropriate for acquisition and retention of biomethane customers.

FEI has affirmed it intends to continue to use the customer education budget and an integrated marketing approach to increase awareness of the Biomethane Program and achieve its sales forecasts. However, FEI has included in this Application no specific request for funding for its education and marketing programs in support of the Biomethane Program as these types of expenditures are most appropriately dealt with in a revenue requirements proceeding.

Therefore, the Panel while making recommendations with respect to the level of marketing required, will make no determinations or approvals for specific amounts for such programs. However, we will consider the level of marketing required given the volume of sales forecast. Bill inserts have been recognized by FEI as a most effective means of reaching and educating the target audience although an integrated approach has extended the breadth of marketing and created more touch points. In addition, FEI asserts that AIR MILES has been successful in reaching a secondary market that needs something more than environmental benefits for it to participate (FEI Final Submission, p. 9).

Positions of the Parties

BCPSO takes the position that FEI should focus efforts on proven, low cost methods of promotion. It does not support an integrated approach as proposed by FEI (BCPSO Final Submission, p. 5).

FEI takes issue with the submission of BCPSO with respect to the method of marketing and the use of AIR MILES. It submits that based on the evidence an integrated marketing campaign utilizing a variety of channels is supported by the evidence filed in this proceeding. FEI cites the rule of seven (referred to in Section 3.5 of this Decision) and the need to raise awareness levels as reasons why there is a need to continue with the existing program and curtailing activity would be potentially harmful (FEI Reply Submission, pp. 6-8).

Commission Determination

The Commission Panel acknowledges the need for a continuance of Biomethane Program marketing if FEI is to achieve its planned 2 percent participation rate over the next 5 years. The question is: how much investment is appropriate given the sales projections? As noted by the Panel in Section 3.3 of this Decision, the projected penetration rate among residential and commercial customers is a modest 2.1 percent. Assuming a breakdown between commercial and residential customers which is similar to today, this would mean that by the end of 2012 there would be approximately 13,200 Biomethane Program customers. As outlined in Table 1 and excluding Rate Schedule 11B for transportation customers not targeted by the marketing, the projected number of Biomethane sales for residential and commercial customers by the end of 2017 is 145,848 GJ in both moderate and high demand scenarios. Putting this into perspective, the total expected sales for residential and commercial customers will account for approximately 7.3 percent of the revised supply cap of 1.5 PJ which has been approved by the Panel.

Concerning costs, FEI has not requested any specific amount for education and marketing funding in this Application. However, the Panel notes that in the three years the Biomethane Program has been in existence, expenditures for education and marketing have been in the $300,000 range annually. As FEI plans to continue with an integrated marketing program, there is no reason to expect that these marketing costs will be any lower in the future. Further, given FEI's plans to continue to expand the use of AIR MILES it is likely costs will grow significantly if FEI continues to offer the retention bonus of 120 AIR MILES per year.

Considering the low expectations for sales growth and the significant cost of marketing and education, the Panel is concerned whether this is a reasonable use of funds. If, for instance, an additional 8,423 customers are added as has been projected (13,200 projected customers – 4,777 existing customers) over the next five years at a cost of $1.5 million ($300,000 x 5), the average cost per acquisition would be $178.08 per customer. Based upon the average of $6.00 per residential customer per month to participate in the program (as discussed in Section 3.3 of this Decision) it will take just under 2.5 years for the additional amount the customer paid for biomethane to equal the marketing cost of acquiring that customer. In the view of the Panel this is not economically sound. If a private enterprise faced such conversion costs, it would likely withdraw from the business. Greater focus on more productive customer segments like those of emerging markets will likely produce far more cost effective results.

A related issue is that of the use of Air Miles as an acquisition and retention tool. As noted in Section 3.5, the Commission Panel was not concerned about the use of AIR MILES to attract customers at reasonable cost but was concerned about maintaining a retention bonus over time. BCPSO has characterized this as non-biomethane ratepayers paying biomethane customers to participate in the program. The Commission Panel agrees. In our view, the product is in effect being discounted. **Accordingly, the Panel denies the recovery of the costs of the AIR MILES retention program in rates, effective March 1, 2014**.

5.2 Biomethane Undersupply Risks

FEI submits that a risk of under-supply exists, which could potentially be caused by producer failure, delay, or supply disruption, and/or a sudden and unexpected increase in enrolments. It proposes to proactively mitigate this risk by setting sales targets and customer enrolment caps at the minimum. Further, in FEI's view, multiple supply projects now provide improved security of supply through diversification (Exhibit B-1, p. 111).

If there is more consumption of biomethane than there is supply, FEI proposes to purchase carbon offset credits in order to retain the integrity of the GHG reduction. FEI provides the thresholds and prices of carbon offsets shown in Table 8.

Table 8

Carbon Offsets Thresholds and Prices

Tonnes	Price per tonne
1-1,000 tonnes	$15
1,001 to 2,000 tonnes	$14
2,001 to 5,000 tonnes	$13
5,001 to 15,000 tonnes	$12

(Source: Exhibit B-14, BCSEA 1.28.2)

FEI states that the current price premium for biomethane is $7.23 GJ, which translates into $144 tonne / CO2e. In contrast, a carbon offset price per tonne of $15 per tonne is equivalent to $0.75 per GJ. When FEI was asked to compare the cost of offsets to the cost of biomethane, FEI pointed out that a purchase of an offset would not provide the purchaser with any actual energy, so FEI would transfer the appropriate amount of gas from the MCRA at the prevailing natural gas commodity rate (Exhibit B-1, p. 111; Exhibit B-17, BCUC 1.6.1; Exhibit B-14, BCSEA 1.28.2; Exhibit B-15, CEC 1.26.1; Exhibit B-19, 2.53.1.3).

Commission Discussion

FEI has suggested that it would purchase carbon offset credits to mitigate undersupply. The cost of an offset is $0.75 per GJ. Assuming natural gas at approximately $4 per GJ, results in a total price of $4.75 for a product with a carbon footprint to equivalent to that of RNG. This compares very favourably to a BERC rate of biomethane of $12.00 per GJ. In the Panel's view, this form of undersupply risk mitigation is the most cost effective available and also reduces any subsequent risk to FEI's core ratepayers of unsold biomethane. Given the availability of this mechanism, the Panel see no reason for FEI to set sales targets and customer enrolment caps at minimum amounts. The Panel is also of the view that FEI should take a cautious approach to bringing on supply as long as cost effective offsets are available.

5.3 Ownership of Upgrader Facilities

FEI proposes to continue the current ownership model where FEI may or may not own the upgrading facilities required for a biomethane supply project. FEI states its ownership of the upgrading facilities is sometimes necessary to secure supply for its customers, ensure a consistent and reliable supply of biomethane, and provide a signal to the market that biomethane projects can be undertaken with confidence by other project developers (Exhibit B-1, pp. 84-86).

FEI submits that based upon existing and currently proposed projects, it is more likely to own upgrading facilities when there is a municipal or regional government involved as a partner. FEI further submits that in those cases, the partner may have limited internal competence in operating process equipment, such as at landfills, and the motivation for the project may not be purely profit driven. In contrast, FEI submits, independent project developers prefer to own upgrading facilities because in those cases the supplier has either a strong operational background with process equipment or is seeking an opportunity to maximize profit (FEI Final Submission, p. 29; Exhibit B-1, pp. 86-87).

The AES Inquiry Report included the following key findings related to this topic:

- *Extension of Ownership Principle:* The ownership of facilities by a regulated utility outside of the bounds of the traditional gas distribution utility is not recommended where there are viable alternative options and should only be allowed in exceptional circumstances, or where required by legislation (AES Inquiry Report, p. 32).
- To reduce the likelihood of cross-subsidization, ownership of facilities by a utility outside the bounds of the traditional utility system should not be allowed unless there are extenuating circumstances that make such ownership to be in the public interest. The onus is on the utility to prove that extenuating circumstances exist (AES Inquiry Report, p. 32).
- In cases where a viable independent operator model is followed and biomethane is supplied by a third party, the project is regulated through filing of supply contracts under section 71 of the UCA. In cases where FortisBC Energy Utilities (FEU) own the upgrader, the upgrader should be owned and operated in a Regulated Affiliated Business and biogas supplied to FEI under a section 71 contract (AES Inquiry Report, p. 49).

5.3.1 Do Exceptional Circumstances for FEI Owning and Operating Upgrading Facilities Exist?

FEI submits it is in the public interest, and consistent with the recommendations of the AES Inquiry Report, for it to own and operate upgrading facilities in cases where the partnership is with a regional or municipal government and points out that those projects will usually involve landfills. FEI provides the following examples of existing and future projects where its experience has made or will make a difference.

Existing Projects:

(i) Salmon Arm Landfill, where a partnership between the Columbia Shuswap Regional District (CSRD) and FEI ensured that the landfill was fully utilized rather than flared at the site.

(ii) The City of Kelowna partnership with FEI contributed to development of a biomethane project rather than an electricity project (Exhibit B-1, pp. 77, 85; Exhibit B-20, CEC 2.29.3, 2.230.6, Exhibit C7-3).

Future Potential Projects:

(i) The City of Vancouver has indicated that it wishes FEI to build, own and operate an upgrader at its Vancouver Landfill site located in Delta, BC because of FEI's considerable experience and expertise in this field (FEI Final Submission, pp. 30-33).

5.3.2 Should the Owner be FEI or a Regulated Affiliate?

Should the Commission Panel decide that in certain extenuating circumstances one of FortisBC Energy Utilities companies could own an upgrader facility it then has to decide, whether FEI is permitted to own the facility or should it be owned by a regulated affiliate as recommended by the AES Inquiry Report.

FEI indicated it can arrange for a regulated affiliate, such as FortisBC Alternative Energy Services Inc. (FAES), to own the upgrader but that arrangement would only serve to increase costs for RNG customers. FEI explained that in the affiliate arrangement a contract is required to be established, which in turn require administration, thereby raising costs of the Biomethane Program. Furthermore, FEI stated there will likely be relatively few expected future projects where FEI may own the upgrader. Therefore, in FEI's view, it would be more practical to keep upgraders within FEI. Finally, FEI pointed out that tracking the costs separately, as required by the previous Commission Orders approving the two existing FEI-owned upgraders, will allow any costs of ownership to be traced and recovered appropriately from RNG customers through the BERC rate (Exhibit B-17, BCUC 1.51.1).

FEI further submits there is no competing public interest rationale for having an affiliate own the upgrading facilities nor would the affiliate arrangement protect any potentially competitive market interests. The concern in the AES Inquiry with FEI owning upgrading facilities was cross-subsidization.

In summary, FEI submits the ownership of the upgrader by an affiliate would not lower the cost for the suppliers, who would receive the same deal in either case, and would therefore have no

impact on FEI's competitive position. Instead, the extra administrative costs would be passed on to FEI's biomethane customers (FEI Final Submission, p. 34).

Positions of the Parties

BCPSO accepts that biomethane costs will tend to be lower if FEI owns the upgrading facilities, as opposed to a regulated affiliate business and is willing to accept the proposal on that basis. However, BCPSO submits, it is not convinced FEI has made the case that exceptional circumstances indeed exist in this case. BCPSO points to FEI's observation that it is more likely FEI would own upgraders in cases where regional or municipal governments own and operate a landfill (BCPSO Final Submission, pp. 5-6).

BCSEA supports Commission approval of a Biomethane Supply Model in which biogas upgrading facilities are normally not owned by FEI but can be owned by FEI where that is the only viable supply option, and it is agreed to by both the third-party biogas supplier and FEI. BCSEA submits it believes this hybrid approach is consistent with the recommendation of the AES Inquiry Report (BCSEA Final Submission, pp. 11-12).

The CEC submits FEI has clearly demonstrated that extenuating circumstances exist when it is in the public interest for FEI to own the upgrading facilities. The CEC accepts it is preferable for FEI to own the facilities in instances in which the supplier is unfamiliar with the process and/or is not driven to maximize profits such as with regional or municipal governments. The CEC further submits FEI ownership provides comfort to certain suppliers as being highly qualified. Finally, the CEC recommends that the Commission make an exception to the Extension of Ownership Principle and permit FEI to own and operate upgrading facilities as requested (CEC Final Submission, pp. 21-22).

The City of Vancouver supports FEI ownership of the upgrader facilities because the City lacks the expertise as well as financial and other resources necessary to build and operate an

upgrader. The City submits that in light of FEI's considerable experience and expertise in this field, it wishes FEI to build, own and operate an upgrader at the Vancouver Landfill in Delta, BC in accordance with the FEI proposal to the City. The City also acknowledges the submission of the City of Surrey (Surrey) wherein Surrey describes its plans to finance a new biogas facility through a public-private partnership. The City submits, in this regard, that Surrey's planned project is of a very different nature than the project proposed for the Vancouver Landfill. The Surrey project would be a large "green field" project with a broad scope, spanning all aspects of the receipt and conversion of organic waste. The City believes the Surrey project would therefore require much greater capital investment and expertise than the City landfill project which involves an upgrader alone. The City submits it would argue against any similarity drawn by parties between the two projects (Exhibit C7-3, the City of Vancouver Final Submission, Exhibit D-10-1).

In reply to BCPSO, FEI submits it has not claimed to establish exceptional circumstances generally. Rather, FEI submits it is in the public interest for it to own upgraders when dealing with regional or municipal governments, since the evidence indicates that such projects may otherwise go undeveloped (FEI Reply Submission, p. 9).

FEI asserts that in the case of the two landfill projects where FEI owns the upgrader that the final price of the biomethane is lower than that of the biomethane purchased from independent developers (Exhibit B-17, BCUC 1.50.2; Exhibit B-15, CEC 1.24.1; Exhibit B-17-1, Attachment 72.3). The Commission Panel has been unable to confirm this is the case over the life of these two projects.

Commission Determination

The Commission finds the arguments made by FEI to support its case for owning and operating an upgrader when dealing with regional or municipal governments persuasive. The Panel also

notes that FEI's position is supported by most of the Interveners. The Panel understands that the primary concern of operating landfills is that of odor. FEI has the expertise to deal with the related issues of gas quantity and quality purchased from the landfill. FEI employees have the skill sets and training to deal with piping, safety, gas quality etc. with natural gas distribution as its core competency. FEI is in a position to provide a comprehensive service model.

Accordingly, the Commission Panel finds that FEI or its regulated affiliate may own and operate an upgrader when dealing with regional or municipal governments.

The Panel is also persuaded by the arguments put forward in support of FEI owning the upgrader rather than a regulated affiliate such as FAES. The Panel accepts FEI's submission that there will likely be relatively few projects where it may own the upgrader. Most projects residing now in the FAES are thermal energy systems (TES) projects. Again, the Panel understands that the skill sets required to own and operate a TES are quite different from those required to own and operate an upgrader. In the view of the Panel, the skill sets of employees of a natural gas distributor are closer to those required to operate an upgrader. Furthermore, administration of a separate contract will add to the cost burden. **Accordingly, the Commission Panel finds that in those circumstances where Fortis will be building, owning and operating an upgrader, it should reside inside FEI. Consequently, FEI is directed to continue to track capital and operating costs of an upgrader separately.**

5.4 Supply Contracts

FEI proposes to use essentially the same mechanism for the regulatory review of new supply contracts as used in the pilot program with an increase in the supply cap and a maximum purchase price that is held confidential. In this model FEI negotiates contracts with individual suppliers on a first-come, first-served basis and then files the executed supply contract with the Commission for acceptance under Section 71(1) of the UCA. In order to streamline the Commission review process the supply contracts are reviewed against a pre-determined set of criteria and if the criteria are met, the supply contract is deemed to be in the public interest and

accepted for filing. To-date, the following five supply contracts have been accepted for filing by the Commission by reviewing against the pilot program criteria: City of Kelowna, Seabreaze, Dicklands, EarthRenu and GV&DD via Commission Orders E-19-12, G-79-13 and E-13-13, respectively.

FEI's proposed criteria for determining that biomethane purchase contracts meet the filing requirements in section 71(1)(a) and 71(1)(b) of the UCA for the permanent Biomethane Program are:

- The supply contract is at least 10 years in length;
- FEI has, by agreement, retained final control over injection location;
- FEI is satisfied that the selected upgrader is sufficiently proven;
- FEI has, by agreement, reserved the right to refuse gas if customer safety or asset integrity is at stake;
- The partner is a municipality, regional district or other public authority, or is a private party with a track record in dealings with FEI or that posts security to reduce the risk of stranding;
- The total production of Biomethane for all projects undertaken does not exceed an annual purchase of 3 PJ;
- The price for delivered Biomethane aligns with that proposed in the confidential Appendix J of the 2012 Biomethane Application (Exhibit B-1, p. 92).

FEI believes the key risks are covered by these criteria and that a streamlined efficient approval process is necessary to give suppliers assurance that supply agreements can be accepted in a reasonable time. By establishing these criteria in advance FEI argue it can negotiate contracts with advance knowledge of Commission endorsed parameters and the process will allow projects to be reviewed and evaluated expeditiously.

FEI provided a contract template that it said would be used as the basis for future supply contacts (Exhibit B-17, Attachment 1.2) but later noted that this contract template was drafted for digestor-based biomethane projects and would not be applicable for landfill biogas projects where FEI would build the upgrader (Exhibit B-19, BCUC IR 2.30.2). For example, FEI notes that the minimum supply requirement set out in the digestor-based biomethane contract template

would not be sufficient where FEI owns and operates the upgrader facilities (Exhibit B-19, BCUC IR 2.32.1.2). In the case where FEI is building the upgrader, FEI intends to use the supply contract with the City of Kelowna together with the template provided in Attachment 1.2 to Exhibit B-17.

FEI proposes to explain and justify any variations from the contract template provided in Exhibit B-17, when seeking approval for the individual supply contract (FEI Final Submission, p. 59). In regard to the potential use of contract templates rather than a list of criteria, FEI submits there are too many variations for it to be used as a strict requirement for future supply contracts.

In response to BCUC IR 233.2, FEI states that it was not intended that the proposed streamlined contract review process would consist solely of reviewing the contract against the listed criteria. Although not set out in the criteria, FEI agrees the size of the outstanding balance in the BVA is a factor that could be taken into consideration by the Commission but is of the view that it would not propose new projects unless it believed there was evidence of sufficient demand (Exhibit B-17, BCUC 1.56.2, 1.56.3).

FEI suggests the balance of the BVA should be one consideration for the Commission to consider when accepting a new supply contract. "As part of its quarterly reviews of the BVA the Commission is aware of the BVA balance and can therefore take into consideration this balance when FEI brings forward biomethane contracts for approval." "FEI is responsible to manage the BVA and would not propose new projects unless FEI believed that there was evidence of sufficient demand. Therefore, FEI believes any contracts brought forward for Commission approval would already include appropriate consideration of actual and projected demand" (Exhibit B-17, BCUC 1.56.2, 1.56.3).

The supply contract template provided in Attachment 1.2 to Exhibit B-17 sets out a minimum supply requirement but this is restricted to ensuring a specified minimum quantity of gas is delivered for seven consecutive days at the outset of the term to trigger the determination of

"First Delivery Date." Beyond that, FEI relies on the motivation of the supplier to produce as much biomethane as possible to maintain the viability of their business and to maximize revenues (Exhibit B-17, BCUC 1.56.1; Exhibit B-19, BCUC 2.32.1). The Panel notes that in the proceeding for Approval of the Biomethane Purchase Agreement Between FEI and GVS&DD and Acceptance of FEI Capital Expenditures for related Interconnection Facilities, the Commission noted in the Reasons attached to Order E-13-13 that:

> "The CEC expressed concern that this Biomethane Purchase Agreement does not include any minimum supply requirement, which exposes non-bypass ratepayers to risk of certain costs such as cost of removal of pipe or abandoning it in place. CEC stated that this is not an issue for this agreement given the supplier; however, CEC believes that a minimum supply requirement should be included in all biomethane supply agreements going forward. The Panel agrees that the lack of a minimum supply requirement in the GVS&DD Biomethane Purchase Agreement does not present a concern due to the nature of the supply project and the supplier. Regardless, the Panel concurs with the CEC and urges FEI to include a minimum supply requirement in all future biomethane purchase agreements." (Reasons attached to Commission Order E-13-13, p. 1)

With regard to projects where FEI owns and operates the upgrader, FEI states:

> "All times, FEI will ensure that the price it pays is below the current or any future maximum approved biomethane price as a matter of course in the monitoring of its biomethane contracts. In the case of a biogas purchase where FEI is the owner of the upgrader, the cost for biomethane (upgraded biogas) is the sum of the price paid for raw biogas plus the annual cost of service (based on a calendar year basis) for the upgrading operation. In this situation it is conceivable that the net cost for the biomethane may exceed the cap if the cost of service (COS) exceeds plan. In Commission Order E-19-12 FEI was directed not to recover these costs from ratepayers. These costs, if incurred, would be captured in the BVA; the review and disposition of such variances would be dealt with as part of the routine reporting process and would be subject to Commission approval. FEI does not anticipate incurring any variances where the annual COS will exceed the cap. However, should such an unforeseen result occur, FEI believes the full circumstances should be reviewed prior to determining the ultimate disposition." (Exhibit B-19, BCUC 2.33.4.2)

Although the forecast annual COS amounts are used when determining prospective costs in the determination of the BERC and actual COS amounts are charged to the BVA, FEI believes that for the purposes of determining whether the price for the biogas plus the upgrader COS exceeds the maximum supply price cap, it would be more appropriate to evaluate the levelized cost of service over the project lifetime (Exhibit B-19, BCUC 2.33.4.3.2).

Views of Interveners

BCSEA believes the supply criteria proposed by FEI are "reasonable and necessary for the sustainable long-term development of the Biomethane Progam" (BCSEA Final Submission, p. 10). BCSEA reviewed the confidential maximum purchase price material set out in confidential Appendix J and is satisfied it is reasonable (BCSEA Final Submission, p. 10). CEC "accepts the existing criteria as adequate for mitigating supply risk" and agrees with FEI that an efficient and timely regulatory review process is important (CEC Final Submission, p. 19). BCPSO and COV offer no comments in regard to the continued use of the criteria for reviewing supply contracts.

Commission Determination

The Commission Panel is concerned that the first-come, first-served approach used by FEI to develop projects and the filing of an executed contract for acceptance by the Commission for projects that only need to be negotiated below a particular price cap may not lead to the development of the most cost-effective supply first and will not provide enough information regarding the amount of supply available at a particular price. In addition, the proposed criteria are not sufficient to assess factors such as whether there is open and transparent market pricing and appropriate prioritization of which projects should go first. Accordingly, the Commission directed FEI earlier in this Decision to file with the Commission staff a Request for Expressions of Interest from potential suppliers.

The Commission Panel agrees that establishing criteria in advance promotes regulatory efficiency. The proposed criteria are a reasonable starting point for the minimum requirements in a review process but the Commission must also take into account other factors where necessary. The Commission retains the discretion to depart from the proposed criteria and can require further process to address the public interest on a case-by-case basis.

Although it may not be appropriate at this point in time to implement the use of standardized contracts, in the interests of regulatory efficiency, **FEI is directed to fully describe in each application for section 71 acceptance any departures from the appropriate contract template.** This will assist the Commission in achieving an efficient review process with minimal need for Commission requests for further information.

The Commission Panel directs FEI to revise the contract templates to ensure a minimum supply requirement sufficient to ensure potential stranding of FEI interconnection capital costs is avoided. In the case where FEI owns the upgrader the contract template should also include a minimum supply requirement sufficient to ensure potential stranding of FEI upgrader capital costs is avoided.

The Commission Panel is concerned that for the projects in which FEI builds the upgrader there is a potential for the cost to acquire biogas combined with the upgrading cost could exceed the price supply cap. **Accordingly, the Panel directs, for an individual project of this nature, that the amount by which the annual average cost per GJ exceeds the supply price cap cannot be recovered in rates.** The annual average cost per GJ is to be calculated based upon the total of the cost of acquisition of the biogas and the fully allocated, levelized cost of the upgrading facility.

The Commission Panel directs FEI to provide on an annual basis a calculation of the total per GJ cost of biogas supply costs and the FEI upgrader cost of service, on a confidential basis if necessary, for each supply project with an FEI owned upgrader as part of its annual CCRA,

MCRA, and BVA status report. In the event the sum of the cost of the biogas and the levelized upgrader cost of service exceeds the maximum currently approved biomethane price cap, FEI must also include in the filing a proposed disposition of the costs that exceed the price cap such that these excess costs will not be recovered from any ratepayers.

5.5 Certificate of Public Convenience and Necessity Threshold for Biomethane Facilities

Regarding Certificate of Public Convenience and Necessity (CPCN) requirements for biomethane supply projects, the AES Inquiry Report made the following determination:

> "The Panel recognizes that the Biomethane Post Implementation Report is due in December 2012 and considers that the appropriate CPCN threshold and regulatory review (i.e. supply agreements reviewed under s. 71 of the UCA) will be dealt with in that Review. The Commission Panel reaffirms the $5 million CPCN threshold until that time" (p. 48).

In Order G-18-13, the Panel states:

> "In these circumstances, the Commission Panel considers the CPCN requirements for a biomethane facility apply to the total costs for the biomethane project upon which the rate is based, and not only the capital cost of the upgrader. This is consistent with the finding of the AES Inquiry that the CPCN should be based on the cost of the 'activities.' Accordingly, applying the CPCN threshold guideline of $5 million, the Commission Panel finds that at this time, a CPCN is required for the Earth Renu project. A CPCN is also required for the Greater Vancouver Sewerage and Drainage District unless it is exempt from regulation as a public utility as defined in the UCA. The Commission Panel further finds that approval of rates for a biomethane project and acceptance of the energy supply agreements between FEI and the biomethane supplier cannot precede the CPCN approval.
>
> The Commission Panel considers issues concerning the size and scope of CPCN requirements for biomethane facilities, and the appropriateness of any exemption to regulation, to be within the scope of the 2012 Biomethane Application review."

On February 19, 2013, FEI requested the Commission reconsider the need for a CPCN for the EarthRenu and GVS&DD projects. In response, in G-29-13, the Panel found that a

reconsideration process was unnecessary because no final determination was been made. Accordingly, the request for reconsideration was denied (G-29-13, Appendix A, p. 7).

No further submissions were received from the parties on this matter.

Commission Determination

As there have been no further submissions received on the issue of a CPCN threshold for biomethane plants, the Panel makes no determination at this time. However, parties are invited to provide submissions, according to the timetable below, and the Panel will make a determination in this matter:

- FEI submission within 30 days of the date of this decision;
- Intervener submissions within 20 days following FEI's submission; and
- FEI Reply submission within 10 days following Intervener submissions.

If no submissions are received, the existing CPCN threshold will remain in place.

DATED at the City of Vancouver, in the Province of British Columbia, this 11th day of December 2013.

Original signed by:

D.M. MORTON
PANEL CHAIR/COMMISSIONER

Original signed by:

D.A. COTE
COMMISSIONER

Original signed by:

L.A. O'HARA
COMMISSIONER

Original signed by:

C. van Wermeskerken
COMMISSIONER

SIXTH FLOOR, 900 HOWE STREET, BOX 250
VANCOUVER, BC V6Z 2N3 CANADA
web site: http://www.bcuc.com

BRITISH COLUMBIA UTILITIES COMMISSION

ORDER NUMBER G-210-13

TELEPHONE: (604) 660-4700
BC TOLL FREE: 1-800-663-1385
FACSIMILE: (604) 660-1102

IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

FortisBC Energy Inc.
Biomethane Service Offering: Post Implementation Report and
Application for Approval of the
Continuation and Modification of the Biomethane Program on a Permanent Basis
(2012 Biomethane Application)

BEFORE: D.M. Morton, Panel Chair/Commissioner
D.A. Cote, Commissioner
L.A. O'Hara, Commissioner
C. van Wermeskerken, Commissioner

December 11, 2013

O R D E R

WHEREAS:

A. On December 19, 2012, FortisBC Energy Inc. (FEI) filed an application with the British Columbia Utilities Commission (Commission) seeking approvals for the continuation of the Biomethane Program on a permanent basis with certain modifications (2012 Biomethane Application). FEI seeks the following approvals, among others, pursuant to sections 59 to 61 of the *Utilities Commission Act* (UCA):

- Continuation of Rate Schedules 1B, 2B and 3B with amendments to provide for additional blends of biomethane;
- Continuation of Section 28 and related Definitions of FEI's General Terms and Conditions (GT&Cs), and amendments to the same;
- Continuation of Rate Schedules 11B and 30 as part of FEI's Biomethane Program;
- Continuation of the cost allocations and accounting treatment for the costs associated with the Biomethane Program, including the continuation of the Biomethane Variance Account (BVA), the quarterly reporting process and the Biomethane Energy Recovery Charge (BERC) rate setting mechanism;
- The resetting of the BERC rate;
- Continuation of FEI's ability to purchase carbon offsets and recover the costs through the Biomethane Variance Account in the event of under-supply of biomethane; and
- Approval of the recovery of costs in the Biomethane Variance Account through transfer to the Midstream Cost Recovery Account (MCRA) as a mitigation strategy in the event of over-supply of biomethane;

…/2

B. Seven Interveners registered for the 2012 Biomethane Application Proceeding: the Commercial Energy Consumers Association of British Columbia (CEC), the British Columbia Pensioners' and Seniors' Organization *et al.* (BCPSO), the B.C. Sustainable Energy Association (BCSEA), the British Columbia Hydro and Power Authority (BC Hydro), Greater Vancouver Sewerage and Drainage District (GVS&DD), CHFour Biogas (CH4), and the City of Vancouver. The City of Vancouver also filed Evidence and responded to one round of Information Requests from the Commission and other Registered Interveners;

C. In Order G-18-13, the Commission Panel stated that issues concerning the size and scope of Certificate of Public Convenience and Necessity (CPCN) requirements for biomethane facilities, and the appropriateness of any exemption to regulation, to be within the scope of the 2012 Biomethane Application review;

D. In the 2012 Biomethane Application FEI also sought acceptance, pursuant to section 71 of the UCA, of four Biomethane Purchase Agreements between FEI and four suppliers. FEI subsequently sought expedited approval of these contracts and an increase in the supply cap to accommodate the amount of supply expected from the four contracts;

E. On February 19, 2013, as part of its submission on the biomethane third-party suppliers regulatory process, FEI requested the Commission reconsider the need for a CPCN for two of the supplier's projects;

F. In Order G-29-13, the Commission:

   i. directed that the review of the contracts would be considered in a separate proceeding;

   ii. determined that the supply cap set for the Biomethane Pilot Program in Commission Order G-194-10 would be increased by an amount sufficient to accommodate the supply from the four contracts, provided FEI confirmed to the Commission by March 6, 2013, that natural gas non-bypass customers bear no actual or potential risk for unsold biomethane, pending the outcome of the 2012 Biomethane Application; and

   iii. denied the request for a reconsideration of the CPCN requirements for biomethane production facilities with capital costs greater than $5 million, finding that a reconsideration process is unnecessary because no final determination has been made;

G. On March 6, 2013, FEI filed its response to Commission Order G-29-13, stating FEI would not assume the economic risk for the unsold biomethane from the four new supply contracts over the lives of the contracts. FEI further requested that the Commission reconsider the need for FEI to assume this risk and submitted its Application for Reconsideration of Commission Order G-29-13 (Reconsideration Application) on March 15, 2013;

H. On March 18, 2013, by Order G-40-13, the Commission suspended the 2012 Biomethane Application proceeding Regulatory Timetable pending the outcome of the Reconsideration Application;

I. On March 28, 2013, by Order G-45-13, the Commission determined that Order G-29-13 should be varied by removing the condition that FEI bear the risk of unsold biomethane;

J. On April 10, 2013, by Order G-53-13, the Commission re-commenced the review of the 2012 Biomethane Application and established a Revised Regulatory Timetable; and

K. The Commission has reviewed and considered the 2012 Biomethane Application including the Post-Implementation Report, the evidence and submissions of the parties and determined that the 2012 Biomethane Application should be approved with certain modifications.

NOW THEREFORE pursuant to sections 59-61 of the *Utilities Commission Act* and for the reasons contained in the Decision to which this Order is attached, the Commission determines as follows:

1. FortisBC Energy Inc. (FEI) must comply with all determinations and directives made within the Decision issued concurrently with this Order.

2. The continuance of the Biomethane Program on a permanent basis is approved with certain modifications as described in the Decision.

3. The FEI proposal for the Interconnection Test is rejected. FEI is directed to file a new, more comprehensive, proposal for a two-part Interconnection Test by March 31, 2014, which addresses metering and the pipe separately.

4. FEI must file an updated calculation of the Biomethane Energy Recovery Charge (BERC) rate by no later than February 15, 2014 with any proposed change to the BERC rate to be effective on April 1, 2014.

5. With regard to the appropriateness of the $5 million threshold for a Certificate of Public Convenience and Necessity (CPCN) for biomethane facilities, parties are invited to provide submission, according to the timetable below, and the Commission will make a determination in this matter. If no submissions are received, the existing CPCN threshold will remain in place.

ACTION	**DATE (2014)**
FEI Submission	Monday, January 13
Intervener Submissions	Monday, February 3
FEI Reply Submission	Thursday, February 13

DATED at the City of Vancouver, in the Province of British Columbia, this 11th day of December 2013.

BY ORDER

Original signed by:

D.M. Morton
Panel Chair/Commissioner

REGULATORY PROCESS

When FortisBC Energy Inc. filed the 2012 Biomethane Application on December 19, 2012, it anticipated that a decision in the FortisBC Energy Inc. Inquiry into the Offering of Products and Services in Alternative Energy Solutions and Other New Initiatives (AES Inquiry) would be released during the course of this proceeding. FEI submitted that it would make any necessary adjustments to its proposals by taking into account any relevant determinations in the AES Inquiry after the decision has been issued. Subsequently, on December 27, 2012, the Commission issued Order G-201-12 and its report on the AES Inquiry (AES Inquiry Report). On January 1, 2013, FEI filed its report on the 2012 Biomethane Application changes resulting from the application of principles in the AES Inquiry Report.

On January 8, 2013, by Order G-1-13, the Commission issued a Preliminary Regulatory Timetable establishing a Workshop on the Post-Implementation Report (PIR) and a Procedural Conference. The Workshop was held on January 17, 2013, and the Procedural Conference was held on January 22, 2013. Order G-1-13 also directed FEI file a summary report providing a comprehensive analysis of the Pilot Program including conclusions for each of the PIR requirements as identified in Order G-194-10. FEI filed its PIR summary report on January 1, 2013.

On February 5, 2013, the Commission issued Order G-18-13 that determined that the PIR and the 2012 Biomethane Application would be reviewed together in a written hearing and established a Regulatory Timetable with two rounds of Information Requests (IRs) and an opportunity for Interveners to provide notice of intent to file Evidence.

The Commission by Order G-18-13 also provided an opportunity for FEI, Interveners and other interested parties to provide comments on the regulatory process to approve rates for biomethane suppliers and other matters related to the four new supply contracts. The 2012 Biomethane Application, as initially filed, included FEI filing for acceptance under section 71 of the *Utilities*

Commission Act (UCA) of biomethane purchase agreements between FEI and each of four suppliers: EarthRenu, GVS&DD, Seabreeze and Dicklands. The proponent for these biomethane supply projects expressed concerns regarding the duration of the regulatory review process and requested expedited review of the supply contracts.

After reviewing the submissions, the Commission issued Order G-29-13 dated February 18, 2013, which directed that the supply cap set for the Pilot Program in Order G-194-10 be increased by an amount sufficient to accommodate supply from the four new biomethane suppliers provided FEI confirmed that the natural gas non-bypass customers bear no actual or potential risk for unsold biomethane pending the outcome of the 2012 Biomethane proceeding.

On March 6, 2013, FEI responded to Order G-29-13, stating that FEI understood Order G-29-13 to be requesting FEI to assume the economic risk for the unsold biomethane from the four new supply contracts over the lives of the four supply contracts subject to the possibility of the Commission absolving it of this risk in the 2012 Biomethane Decision and indicating that FEI would not assume the this risk. FEI requested that the need for FEI to assume the economic risk be reconsidered.

By Order G-40-13 dated March 18, 2013, the Commission suspended the Regulatory Timetable for the 2012 Biomethane Application pending the outcome of the Reconsideration Application.

FEI submitted its application for reconsideration of Order G-29-13 on March 15, 2013 (Reconsideration Application) and on March 18, 2013, by Order G-39-13, the Commission determined the criteria set out in Commission Letter L-14-13 for proceeding to phase 2 of the Reconsideration Application had been met. The Commission reviewed the submissions of the parties and determined on March 28, 2013 via Order G-45-13 that the supply cap set by Order G-194-10 be increased to accommodate up to an additional 280,000 GJ of supply from the four new supply contracts. Commission Order G-45-13 also specified that the risk of unsold amounts of

biomethane up to this new cap would be borne by FEI's ratepayers and not its shareholders, and that any further determination regarding the allocation of risk of unsold biomethane will be made in the review of the 2012 Biomethane Application.

On April 4, 2013, the Commission by Order G-46-13 in the FortisBC Energy Inc. Biomethane Third-Party Suppliers Regulatory Process issued a revised regulatory timetable (FEI Third-Party Suppliers Process). Directive No. 1 of Order G-46-13 states that the Commission will review the proposed rates under sections 58-61 of the UCA and the related supply agreements under subsection 71(1) of the UCA as well as the capital expenditure schedule for the related interconnection facilities under section 44.2(3) of the UCA in one proceeding.

The rates for the Seabreeze, Dicklands and EarthRenu biomethane supply projects were subsequently approved by Commission Order G-79-13 dated May 14, 2013. The Commission also accepted the interconnection facility expenditures related to these three supply projects and set out that, in the event the projects became exempt, the supply contracts would be considered to be accepted for filing under section 71 of the UCA.

Following the issuance of Commission Order G-126-13 dated August 20, 2013, that exempts suppliers selling biogas and biomethane to a public utility from certain sections of the UCA where the Commission can review the supply contract under section 71 of the UCA, FEI filed an application for acceptance of the GVS&DD supply contract and related FEI interconnection facility expenditures. The GVS&DD supply contract and the related FEI interconnection facility expenditures were accepted by Commission Orders E-13-13 dated September 30, 2013 and G-175-13 dated October 24, 2013, respectively.

By Order G-53-13 dated April 10, 2013, the Commission re-commenced the review of the 2012 Biomethane Application and established a Revised Regulatory Timetable.

Seven Interveners and a number of Interested Parties registered for the 2012 Biomethane Application proceeding. Registered Interveners included:

- Commercial Energy Consumers Association of British Columbia
- British Columbia Pensioners' and Seniors' Organization *et al.*
- B.C. Sustainable Energy Association
- British Columbia Hydro and Power Authority
- Greater Vancouver Sewerage and Drainage District
- CHFour Biogas
- The City of Vancouver

LIST OF ACRONYMS

2012 Biomethane Application	Biomethane Service Offering: Post Implementation Report and Application for Approval for the Continuation and Modification of the Biomethane Program on a Permanent Basis
AES Inquiry	Alternative Energy Solutions Inquiry
BC Hydro	British Columbia Hydro and Power Authority
BCPSO	British Columbia Pensioners' and Seniors' Organization *et al.*
BCSEA	B.C. Sustainable Energy Association
BERC	Biomethane Energy Recovery Charge
BR	Business Register
BVA	Biomethane Variance Account
Catalyst	Catalyst Power Incorporated
CCRA	Commodity Cost Reconciliation Account
CEA	Clean Energy Act
CEC	Commercial Energy Consumers Association of British Columbia
CH4	CH Four Biogas
CIAC	Contribution-In-Aid-of-Construction
CIS	Customer Information System
Commission or BCUC	British Columbia Utilities Commission
COS	Cost of Service
CPCN	Certificate of Public Convenience and Necessity
CSRD	Columbia Shuswap Regional District
CTA	Carbon Tax Act
Dicklands	Dicklands Farms

LIST OF ACRONYMS

EarthRenu	EarthRenu Energy Corp.
EOI	Expression of Interest
FAES	FortisBC Alternative Energy Services Inc.
FEI	FortisBC Energy Inc.
FEU	FortisBC Energy Utilities
FVB	Fraser Valley Biogas
GGRTA	Greenhouse Gas Reduction Target Act
GHG	Greenhouse Gas
GJ	Gigajoule
GT&Cs	General Terms and Conditions
GVS&DD	Greater Vancouver Sewerage and Drainage District
IC&I	Industrial, Commercial and Institutional
IPPs	Independent Power Producers
IRs	Information Requests
kw	Kilowatt
MCRA	Midstream Cost Reconciliation Account
MSW	Municipal Solid Waste
O&M	Operations and Maintenance
PIR	Post Implementation Report
PJ	Petajoule
POI	Point of Interconnection
RCBC	Recycling Council of British Columbia

LIST OF ACRONYMS

RCBC	Recycling Council of British Columbia
RIB	Residential Inclining Block
RNG	Renewable Natural Gas
RPA	Renewable Portfolio Allowance
RPS	Renewable Portfolio Standard
Seabreeze	Seabreeze Farm Ltd.
SOP	Standing Offer Program
Surrey	City of Surrey
TES	Thermal Energy Systems
The City	City of Vancouver
UBC	University of British Columbia
UBPDA	Unsold Biomethane Premium Deferral Account
UCA	Commission Utilities Act

IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

FortisBC Energy Inc.
Biomethane Service Offering: Post Implementation Report
and
Application for Approval of the Continuation and Modification of the
Biomethane Program on a Permanent Basis

EXHIBIT LIST

Exhibit No.	Description
COMMISSION DOCUMENTS	
A-1	Letter Dated January 4, 2013 – Appointment of Commission Panel
A-2	Letter Dated January 8, 2013 – Establishing Preliminary Regulatory Timetable
A-3	Letter Dated January 14, 2013 – Amendment to the Panel
A-4	Letter Dated January 18, 2013 – Procedural Conference Agenda
A-5	Letter Dated February 5, 2013 and Order G-18-13 – Establishing Written Public Hearing Process and Regulatory Timetable
A-6	Letter L-2-13 dated February 13, 2013 – Amending Filing Dates for Intervener/Stakeholders and FEI Submissions on Biomethane Suppliers Regulatory Process
A-7	Letter Dated February 28, 2013 –Order G-29-13 Reasons for Decision and Revised Regulatory Timetable
A-8	Letter L-Dated March 4, 2013 – Response to FEI Request for Clarification
A-9	Letter L-14-13 dated March 11, 2013 - FEI Biomethane Reconsideration Application Phase 1
A-10	Letter Dated March 18, 2013 – Commission Order G-40-13-2012 - Suspending Regulatory Timetable

EXHIBIT NO.	DESCRIPTION
A-11	Letter Dated April 9, 2013 – Commission Order G-53-13 – Revised Regulatory Timetable
A-12	Letter dated May 2, 2013 – Commission Information Request No. 1 to FEI
A-13	**CONFIDENTIAL** Letter dated May 2, 2013 – Confidential Information Request No. 1 to FEI
A-14	Letter dated June 18, 2013 – Commission Information Request No. 2 to FEI
A-15	**CONFIDENTIAL** Letter dated June 18, 2013 – **Confidential** Information Request No. 2 to FEI
A-16	Letter dated June 20, 2013 – Revised Regulatory Timetable
A-17	Letter dated June 28, 2013 – Commission Information Request No. 1 to the City of Vancouver on its Evidence submission
A-18	Letter dated July 15, 2013 – Commission Order G-107-13 and an amended Regulatory Timetable
A2-1	Letter dated May 2, 2013 – Commission Staff Filing British Columbia On-Farm Anaerobic Digestion Benchmark Study
A2-2	Letter dated May 2, 2013 – Commission Staff Filing BC Hydro SOP-Program Rules-Version 2.1-September 2012
A2-3	Letter dated May 2, 2013 – Commission Staff Filing Ontario Energy Board Interim Decision and Order dated July 12, 2012
A2-4	Letter dated May 2, 2013 – Commission Staff Filing Enbridge Gas Distribution Inc. Renewable Natural Gas Application dated September 30, 2011
A2-5	Letter dated May 2, 2013 – Commission Staff Filing Union Gas Limited Renewable Natural Gas Application dated September 30, 2011
A2-6	Letter dated May 2, 2013 – Commission Staff Filing Public Utility Commission of Oregon Order 11-111 dated April 11, 2011
A2-7	Letter dated May 2, 2013 – Commission Staff Filing FortisBC Energy Inc. Non-Confidential Tab 3 Extract from 2011 CCRA MCRA BVA Reconciliation Report for Year Ended December 31, 2011

EXHIBIT NO.	DESCRIPTION
A2-8	Letter dated May 2, 2013 – Commission Staff Filing Union Gas Presentation: City of Hamilton WWTP Renewable Natural Gas Project Overview and Lessons Learned by Union Gas Ltd.
A2-9	Letter dated May 2, 2013 – Commission Staff Filing FortisBC Energy Inc. and FortisBC Energy (Vancouver Island) Inc. 2011 Mains Extension Year End Report dated July 31, 2012
A2-10	Letter dated May 2, 2013 – Commission Staff Filing-Biomethane Greenhouse Gas Emissions Review - FortisBC dated May 30, 2011
A2-11	Letter dated May 2, 2013 – Commission Staff Filing BC Hydro Haida Gwaii Request for Expressions of Interest (RFEOI) System Needs
A2-12	Letter dated May 2, 2013 – Commission Staff Filing BC Hydro Webpage Haida Gwaii RFEOI (Last Modified: Feb 15, 2013)
A2-13	Letter dated May 2, 2013 – Commission Staff Filing California Energy Commission: Notice Regarding Implementation of Assembly Bill 2196 Pertaining to the Renewables Portfolio Standard; Program Docket No. 11-RPS-01 and 02-REN-1038; October 5, 2012
A2-14	Letter dated May 2, 2013 – Commission Staff Filing National Round Table on the Environment and the Economy. Reality Check: The State of Climate Progress in Canada
A2-15	Letter dated May 2, 2013 – Commission Staff Filing FEI Reconsideration Application of Order G-29-13 - Exhibit B-1
A2-16	Letter dated May 2, 2013 – Commission Staff Filing FEI Reconsideration Application of Order G-29-13, Reply Submission – Exhibit B-2
A2-17	Letter dated May 2, 2013 - Commission Staff Filing the FEI 2013 First Quarter Gas Cost Report (non-confidential portion only)
A2-18	Letter dated June 18, 2013 – Commission Staff filing Excerpt from FortisBC Energy Inc.'s 2013 Second Quarter Gas Cost Report (Tab 4-non-confidential portion only)
A2-19	Letter dated June 18, 2013 – Commission Staff filing Offset Quality Initiative – Maintaining Carbon Market Integrity: Why Renewable Energy Certificates Are not Offsets

EXHIBIT NO.	DESCRIPTION
APPLICANT DOCUMENTS	
B-1	**FORTISBC ENERGY INC. (FEI)** Letter Dated December 19, 2012 - Biomethane Service Offering: Post Implementation Report and Application for Approval of the Continuation and Modification of the Biomethane Program on a Permanent Basis
B-1-1	**CONFIDENTIAL** Letter Dated December 19, 2012 – Confidential Appendix J to the Application
B-2	Letter Dated January 8, 2013 – FEI Submitting Notice of Application
B-3	Letter Dated January 11, 2013 – FEI Submitting Summary Report for the Post-Implementation Report
B-4	Letter Dated January 18, 2013 – FEI Submitting Workshop Presentation Materials
B-5	Letter Dated January 18, 2013 – FEI Submitting Application Changes Resulting from the AES Inquiry Report
B-5-1	**CONFIDENTIAL** Letter Dated January 18, 2012 – Confidential Appendix 1 to the Application
B-6	Submitted at Hearing January 22, 2013 – Outline of Submissions
B-7	Submitted at Hearing January 22, 2013 – Group of extracts from Decision
B-8	Letter Dated January 25, 2013 – FEI Submitting Update on Matters Related to Third-Party Suppliers
B-8-1	Letter Dated January 31, 2013 – FEI Submitting Correction to Update on Third-Party Suppliers
B-9	Letter Dated February 19, 2013 – FEI Submission Regarding Biomethane Third-Party Suppliers Regulatory Process
B-10	**CONFIDENTIAL** Letter Dated February 21, 2013 – FEI Submitting Confidential Amending Agreement Earth Renu Energy Corp.
B-11	Letter Dated March 1, 2013 - FEI Request for Clarification
B-12	Letter Dated March 6, 2013 - FEI Response to Commission Directive No. 1
B-13	Letter Dated May 28, 2013 - FEI Response to BCPSO IR No.1

EXHIBIT NO.	DESCRIPTION
B-14	Letter Dated May 28, 2013 - FEI Response to BCSEA IR No.1
B-14-1	**CONFIDENTIAL** Letter Dated May 28, 2013 - FEI Confidential Response to BCSEA IR No.1
B-15	Letter Dated May 28, 2013 - FEI Response to CEC IR No.1
B-15-1	**CONFIDENTIAL** Letter Dated May 28, 2013 - FEI Confidential Response to CEC IR No.1
B-16	Letter Dated May 28, 2013 - FEI Response to BCUC Confidential IR No.1 - Filed Publicly
B-17	Letter Dated May 28, 2013 - FEI Response to BCUC IR No.1
B-17-1	**CONFIDENTIAL** Letter Dated May 28, 2013 - FEI Confidential Response to BCUC IR No.1
B-18	Letter Dated July 5, 2013 – FEI Response to BCPSO IR No.2
B-19	Letter Dated July 5, 2013 – FEI Response to BCUC IR No.2
B-19-1	**CONFIDENTIAL** Letter Dated July 5, 2013 - FEI Confidential Response to BCUC IR No.2 Question 13.1.1
B-19-2	Moved to Exhibit B-22
B-20	Letter Dated July 5, 2013 – FEI Response to CEC IR No.2
B-21	Letter Dated July 5, 2013 – FEI Response to BCSEA IR No.2
B-22	**CONFIDENTIAL** Letter Dated July 5, 2013 – FEI Response to Confidential BCUC IR No.2
B-23	Letter Dated July 11, 2013 – FEI Request for Extension to Filing Argument
B-23-1	Letter Dated July 11, 2013 – FEI Addendum to Request for Extension to Filing Argument

INTERVENER DOCUMENTS

C1-1	**COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA (CEC)** Letter Dated January 9, 2013 – Request for Intervener Status by Christopher Weafer
C1-2	Submitted at Hearing January 22, 2013 - CEC Proposed Timeline

EXHIBIT NO.	DESCRIPTION
C1-3	Letter Dated February 13, 2013 – Response to Commission Order G-18-13
C1-4	Letter Dated February 18, 2013 – CEC Submitting Amended Submission to Response to Commission Order G-18-13
C1-5	Letter dated April 17, 2013 – CEC Submitting Undertaking of Confidentiality for David Craig
C1-6	Letter Dated May 8, 2013 – CEC Submitting Late Information Request No. 1
C1-7	Letter dated June 18, 2013 – CEC Information Request No. 2 to FEI
C1-8	Letter dated June 28, 2013 – CEC Information Request No. 1 to City of Vancouver
C2-1	**BRITISH COLUMBIA HYDRO AND POWER AUTHORITY (BCH**) Online Registration Dated January 14, 2013 – Request for Intervener Status by Janet Fraser
C3-1	**BRITISH COLUMBIA PENSIONERS' AND SENIORS' ORGANIZATION OF BC (BCPSO ET AL)** Letter Dated January 18, 2013 – Request for Intervener Status by Leigh Worth, Eugene Kung and James Wightman
C3-2	Letter Dated February 12, 2013 – Response to Commission Order G-18-13
C3-3	Letter Dated May 7, 2013 – BCPSO Submitting Information Request No. 1
C3-4	Letter dated June 18, 2013 – BCPSO Information Request No. 2 to FEI
C4-1	**BRITISH COLUMBIA SUSTAINABLE ENERGY ASSOCIATION (BCSEA)** Letter dated January 20, 2013 – Request for Intervener Status by William J. Andrews and Thomas Hackney
C4-2	Letter dated February 12, 2013 – Comments regarding Commission Order G-18-13
C4-3	Letter Dated May 1, 2013 – BCSEA Submitting Undertakings of Confidentiality
C4-4	Letter Dated May 7, 2013 – BCSEA Submitting Information Request No. 1
C4-5	Letter dated June 18, 2013 – BCSEA Information Request No. 2 to FEI
C4-6	Letter dated June 28, 2013 – BCSEA Information Request No. 1 to City of Vancouver
C5-1	**GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT (GVSD)** Online Registration and Letter Dated January 15, 2013 – Request for Interested Party Status by Jeff Carmichael (previously referenced as **METRO VANCOUVER)**

EXHIBIT NO.	DESCRIPTION
C5-2	GVSD - Letter Dated January 30, 2013 – Response to Commission Order G-18-13
C5-3	GVSD - Letter Dated February 13, 2013 – Request to amend Filing Dates for Intervener/Stakeholders and FEI Submissions on biomethane suppliers' regulatory process/Change in status to Intervener, Notice of Counsel, Ian Webb, Lawson Lundell
C5-4	Letter Dated February 18, 2013 - GVSD Submission regarding Appendix A to Order G-18-13.
C6-1	**CH FOUR BIOGAS (CHFB)** Letter Dated April 23, 2013 – Change request from Interested Party to Intervener Status by Ethan Werner
C7-1	**CITY OF VANCOUVER (COV)** Letter and Online Registration Dated May 16, 2013 – Request for Late Intervener Status by Shawn Doyle
C7-2	Letter Dated May 29, 2013 – COV Submitting notice of intention to file evidence
C7-3	Letter Dated June 14, 2013 – COV supporting FEI's Biomethane Application
C7-4	Letter Dated July 9, 2013 – COV Submitting Response to BCSEA IR No. 1
C7-5	Letter Dated July 9, 2013 – COV Submitting Response to BCUC IR No. 1
C7-6	Letter Dated July 9, 2013 – COV Submitting Response to CEC IR No. 1

INTERESTED PARTY DOCUMENTS

D-1	**PARADIGM ENVIRONMENTAL TECHNOLOGIES INC. (PET)** Letter Dated January 8, 2013 – Request for Interested Party Status by Jeff Plato
D-1-1	Letter Dated February 12, 2013 – Response to Commission Order G-18-13
D-2	**Moved to C5-1**
D-2-1	**Moved to C5-2**
D-3	**CH FOUR BIOGAS (CHFB)** Letter and Online Registration Dated January 16, 2013 – Request for Interested Party Status by Claire Allen
D-4	**CH FOUR BIOGAS (CHFB)** Letter and Online Registration Dated January 18, 2013 – Request for Interested Party Status by Ethan Werner **Moved to C6-1**

EXHIBIT NO.	DESCRIPTION
D-5	**DICKLANDS FARMS (DF)** Letter Dated January 28, 2013 - CH Four Biogas Comments on behalf of Dicklands Farms
D-5-1	Letter Dated February 12, 2013 – Response to Commission
D-6	**SEABREEZE FARM (SF)** Letter Dated January 28, 2013 - CH Four Biogas Comments on behalf of Seabreeze Farm
D-6-1	Letter Dated February 12, 2013 – Response to Commission
D-7	**EARTH RENU ENERGY CORP (EREC)** Letter Dated January 30, 2013 - Application letter
D-7-1	Letter Dated February 13, 2013 – Response to Commission Order G-18-13
D-7-2	Letter Dated February 18, 2013 – Additional Submission to Commission Order G-18-13
D-8	**REMOVED**
D-9	**HUMMINGBIRD URBAN BIOMASS LTD. (HUB) -** Online Registration Dated February 13, 2013 – Request for Interested Party Status by Kris Obrigewitsch
D-10	**CITY OF SURREY – (SURREY)**Letter Dated June 17, 2013 and Online Registration - Request for Late Interested Party Status by Burke van Drimmelen
D-10-1	Letter Dated June 17, 2013 – Surrey submitting letter of comment

LETTERS OF COMMENT

E-1	**JUST ENERGY** – Letter of Comment dated January 31, 2013
E-2	**BULLFROG POWER INC.** – Letter of Comment dated February 12, 2013