



Diane Roy
Vice President, Regulatory Affairs

Gas Regulatory Affairs Correspondence
Email: gas.regulatory.affairs@fortisbc.com

Electric Regulatory Affairs Correspondence
Email: electricity.regulatory.affairs@fortisbc.com

FortisBC
16705 Fraser Highway
Surrey, B.C. V4N 0E8
Tel: (604) 576-7349
Cell: (604) 908-2790
Fax: (604) 576-7074
Email: diane.roy@fortisbc.com
www.fortisbc.com

November 8, 2018

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC
V6Z 2N3

Attention: Mr. Patrick Wruck, Commission Secretary and Manager, Regulatory Support

Dear Mr. Wruck:

Re: FortisBC Energy Inc. (FEI)

Section 71 of *Utilities Commission Act* (UCA) and British Columbia Utilities Commission (the BCUC) Rules for Natural Gas Energy Supply Contracts

Filing of a Biogas Purchase Agreement between FEI and the City of Vancouver (the City or COV) (the Application) - REDACTED

On September 21, 2018, FEI filed the Application noted above. On October 31, 2018, the BCUC issued a letter directing FEI to file a redacted version of the Application, pursuant to section 18.01(b) of the BCUC's Rules of Practice and Procedure (Rules) regarding confidential documents, and to include a brief description of the nature of the confidential information in the Application and the reasons for the request for confidentiality.

In accordance with the BCUC's request and section 18.01(b) of the Rules, FEI has attached a redacted public version of the Application. FEI respectfully provides the following description of the nature of the commercially sensitive and customer confidential information which has been redacted in the Application and reasons for confidentiality.

First, financial information such as the acquisition price, the raw gas price, and the cost of service in the Application have been redacted as they are commercially sensitive. Given that FEI enters into commercial negotiations regarding supply projects in order to obtain the lowest possible price for RNG supply, public disclosure of this commercially sensitive information will hamper FEI's ability to negotiate favourable pricing for future RNG supply. As such, public disclosure of this sensitive financial information has the potential to increase the overall costs of the Biomethane Program to the detriment of all FEI non-bypass customers.

Second, FEI has redacted the capital and operating cost estimate as disclosure of this commercially sensitive information will prejudice or hamper FEI's ability to negotiate commercially favourable terms and prices with potential contractors and negatively impact the competitive bidding process for this and future projects, which would result in higher overall costs.

Third, FEI has redacted any reference to the COV's existing relationship with another counterparty at the landfill because that information is sensitive to the COV and FEI does not have explicit permission from the COV to disclose this relationship.

Finally, FEI has redacted the COV's volumes and associated calculation of greenhouse gas reductions as that information is commercially sensitive to the COV as it discloses information and forecasts that are specific and sensitive to the COV.

If further information is required, please contact Sarah Smith, Director NGT, RNG, and Regional LNG at (604) 582-7528.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments



Diane Roy
Vice President, Regulatory Affairs

Gas Regulatory Affairs Correspondence
Email: gas.regulatory.affairs@fortisbc.com

Electric Regulatory Affairs Correspondence
Email: electricity.regulatory.affairs@fortisbc.com

FortisBC
16705 Fraser Highway
Surrey, B.C. V4N 0E8
Tel: (604) 576-7349
Cell: (604) 908-2790
Fax: (604) 576-7074
Email: diane.roy@fortisbc.com
www.fortisbc.com

September 21, 2018

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC
V6Z 2N3

Attention: Mr. Patrick Wruck, Commission Secretary and Manager, Regulatory Support

Dear Mr. Wruck:

Re: FortisBC Energy Inc. (FEI)

Section 71 of *Utilities Commission Act* (UCA) and British Columbia Utilities Commission (the Commission) Rules for Natural Gas Energy Supply Contracts

Filing of a Biogas Purchase Agreement between FEI and the City of Vancouver (the City or COV) - REDACTED

In accordance with section 71 of the UCA and the Commission Rules for Natural Gas Energy Supply Contracts, FEI respectfully files for acceptance by the Commission the attached fully executed copy of a Biogas Purchase Agreement between FEI and the COV dated July 30, 2018 (the COV BPA). A copy of the COV BPA is provided in Appendix A. Under the COV BPA, FEI will purchase raw biogas from the COV landfill (landfill gas or LFG) and will construct and operate facilities on COV land to upgrade the LFG to pipeline quality biomethane, which is also referred to as renewable natural gas (RNG), for injection into FEI's natural gas system. The cost of these facilities will be included in FEI's rate base with the resulting cost of service accounted for in the Biomethane Variance Account (BVA), consistent with the treatment for other recent biomethane projects. The acquisition of the LFG and construction of the facilities is together referred to as the Project.

1. PROJECT SUMMARY

The Project is located in Delta, British Columbia, at the landfill owned and operated by the City. The Project will consist of connecting to the existing landfill gas collection system, installing an upgrading plant, and connecting to existing FEI natural gas distribution infrastructure through an interconnect station. The Project will build upon previous FEI experience upgrading raw biogas or LFG to pipeline quality RNG.

The structure of the BPA and the infrastructure will be similar to the FEI-owned LFG upgrading projects located in Salmon Arm and Kelowna. The City will be responsible for facilities necessary to collect the raw biogas at the landfill. FEI will be responsible for the plant (system and equipment) required for upgrading the LFG, the interconnection, compression, and pipeline necessary to inject the RNG into FEI's natural gas distribution system.

The total cost to acquire RNG under the COV BPA qualifies as a prescribed undertaking under section 18 of the *Clean Energy Act*, pursuant to Sections 2(3.7) and 2(3.8) of the of the Greenhouse Gas Reduction (Clean Energy) Regulation (GGRR)¹. The total cost to acquire RNG under the COV BPA is less than the maximum price of \$30 per GJ set out in section 2(3.8)(a) of the GGRR and the increase in biomethane production from the COV biomethane facility will be well within the annual maximum supply volume set out in section 2(3.8)(b) of the GGRR. Specifically, the total cost of the infrastructure included within rate base using the cost of service components plus the raw LFG costs is [REDACTED] per GJ, which is less than the allowable maximum of \$30 per GJ as a GGRR prescribed undertaking. The cost components have been itemized in section 3 below.

Pursuant to section 18 of the *Clean Energy Act* (CEA), the Commission must not exercise a power under the UCA in a way that would directly or indirectly prevent a public utility from carrying out a prescribed undertaking. The following section provides the legislative and regulatory background and context in more detail.

2. LEGISLATIVE AND REGULATORY CONTEXT AND BACKGROUND

The Provincial Government has enacted a number of pieces of legislation that support energy efficiency and conservation and the use of clean and renewable energy sources,

¹ Pursuant to Order in Council (OIC) 161/2017 issued by the Lieutenant Governor in Council (LGIC) on March 21, 2017, and deposited on March 22, 2017 under B.C. Reg. 114/2017. Refer to Appendix B.

including the use of renewable natural gas as a strategy for reducing greenhouse gas (GHG) emissions.

On April 18, 2010, the Provincial Government enacted the CEA. One of the key features of the CEA is the establishment of a number of legislated provincial energy objectives.² The CEA also provides that the Lieutenant Governor in Council (LGIC) can enact “prescribed undertakings” that are intended to encourage public utilities to pursue certain GHG reducing initiatives.

Section 18 of the CEA establishes the concept of a “prescribed undertaking” for the purposes of the CEA as follows:

18 (1) In this section, "prescribed undertaking" means a project, program, contract or expenditure that is in a class of projects, programs, contracts or expenditures prescribed for the purpose of reducing greenhouse gas emissions in British Columbia.

In addition, section 18 of the CEA establish the Commission's role in the setting of rates related to prescribed undertakings as follows:

(2) In setting rates under the *Utilities Commission Act* for a public utility carrying out a prescribed undertaking, the commission must set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking.

(3) The commission must not exercise a power under the *Utilities Commission Act* in a way that would directly or indirectly prevent a public utility referred to in subsection (2) from carrying out a prescribed undertaking.

In section 35 of the CEA provides that the LGIC can enact regulations:

(n) for the purposes of the definition of "prescribed undertaking" in section 18, prescribing classes of projects, programs, contracts or expenditures that encourage

(i) the use of

(A) electricity, or

² CEA, s. 2.

(B) energy directly from a clean or renewable resource
instead of the use of other energy sources that produce higher
greenhouse gas emissions...

On May 14, 2012, the LGIC issued Order in Council (OIC) 295/2012, approving the GGRR which described classes of prescribed undertakings pursuant to section 18 of the CEA.

On April 11, 2013, in the Commission's Decision and Order G-56-13 in the matter of an *Application by FEI for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation*, the Commission determined that because the GGRR establishes the need for prescribed undertakings, "these projects are exempt from the Certificate of Public Convenience and Necessity requirements for term of the Regulation"³

On August 1, 2013, the LGIC issued OIC 347/2013, approving the Commission to exempt suppliers of renewable natural gas to a public utility from certain sections of the UCA. On August 20, 2013, the Commission issued Order G-126-13, setting out the parameters for the entities that qualify for the exemption. Since the purchaser of renewable natural gas in these cases is a public utility, the Commission has the opportunity to review the supply arrangements through the public utility's filing of the energy supply contract under section 71 of the UCA. Specifically, Order G-126-13 states the exemption for suppliers of RNG as follows:

1. Subject to Directive 2 of this Order, the Commission hereby exempts:
 - i. a person who owns or operates equipment, facilities, plant, projects, or systems used for the production and sale of biogas or biomethane to a public utility, where the Commission can review or has reviewed the purchase of biogas or biomethane by a public utility through an energy supply contract under section 71 of the Utilities Commission Act (UCA);

Further, on March 21, 2017, the LGIC issued OIC 161/2017⁴, approving amendments to the GGRR. OIC 161/2017 approved an amendment to the GGRR which, among other things, classified renewable natural gas as a prescribed undertaking. Sections 2(3.7) and 2(3.8) of the GGRR, as amended by OIC 161/2017, state that:

³ Order G-56-13, Directive 1.

⁴ Appendix B.

(3.7) A public utility's undertaking that is in the class defined in subsection (3.8) is a prescribed undertaking for the purposes of section 18 of the Act.

(3.8) The public utility acquires renewable natural gas

- (a) for which the public utility pays no more than \$30 per GJ, and
- (b) that, subject to subsection (3.9), in a calendar year, does not exceed 5% of the total volume of natural gas provided by the public utility to its non-bypass customers in 2015.

On February 15, 2018, the Commission issued Order E-8-18 in the matter of a *Filing of an Amending Agreement to the Biomethane Purchase Agreement between FEI and Seabreeze Farm Ltd.* The Commission summarized the effect of the GGRR on the biomethane purchase agreement in the recitals to Order E-8-18 as follows:

- G. On March 22, 2017, by OIC 161/2017, the LGIC approved an amendment to the GGRR, which among other things, indicated that the acquisition of renewable natural gas (RNG) is a prescribed undertaking subject to:
- the public utility paying no more than \$30/GJ; and
 - the total volume of RNG purchased in a calendar year not exceeding 5% of the total volume of natural gas provided by a public utility to its non-bypass customers in 2015.
- H. Section 18(1) of the *Clean Energy Act* (CEA) describes a prescribed undertaking as "...a project, program, contract or expenditure that is in a class of projects, programs, contracts or expenditures prescribed for the purpose of reducing greenhouse gas emissions in British Columbia."
- I. Section 18(3) of the CEA states that "the commission must not exercise a power under the UCA in a way that would directly or indirectly prevent a public utility...from carrying out a prescribed undertaking.";

In accepting the amending agreement to the biomethane purchase agreement in Order E-8-18, the Commission also stated that it "has not reviewed the Application from a public interest perspective as it is a prescribed undertaking"⁵.

⁵ Order E-8-18, recital L.

3. THE COV BPA IS A PRESCRIBED UNDERTAKING AND ADDITIONAL SUPPLY IS WITHIN APPROVED LIMITS

The COV BPA meets the two criteria for RNG projects as prescribed undertakings as set out in section 2(3.8)(a) and 2(3.8)(b) of the GGRR in terms of total cost to acquire RNG and total volume threshold.

Section 2(3.8)(a) of the GGRR specifies a \$30 per GJ maximum acquisition price. The COV BPA meets this criterion. The raw biogas or LFG supply purchase price in the COV BPA is [REDACTED] per GJ, plus [REDACTED]. [REDACTED] FEI has projected an expected annual LFG supply of approximately [REDACTED]. Using the expected gas composition and plant performance, the resulting amount of RNG or biomethane is expected to be approximately [REDACTED]⁶. FEI derived the cost of acquisition by adding the LFG cost to the levelized cost of upgrading and interconnection facilities. The resulting acquisition price is [REDACTED] per GJ as set out in Table 1 below, which is well below the maximum acquisition price of \$30 per GJ as established in section 2(3.8)(a) of the GGRR.

To determine the acquisition price, FEI first determined the adjusted LFG price of [REDACTED] per GJ⁷. The cost of service attributable to the upgrading and interconnection facilities and activities is calculated by adding the cost of LFG purchased ([REDACTED] per GJ) and the cost of service to upgrade the LFG to RNG and inject that RNG into FEI's natural gas distribution system ([REDACTED] per GJ), for a total of [REDACTED] per GJ. To calculate the Project's cost of service (COS), the revenue requirement⁸ is first determined, and discounted using FEI's weighted average cost of capital of 5.61 percent to arrive at the present value (PV) COS. The PV COS is then divided by the PV of the total finished RNG supply volume from the plant⁹.

When determining the levelized cost of [REDACTED] per GJ referenced above, FEI used its approved depreciation rates for the assets being constructed. Using approved depreciation rates, the biomethane Upgrader, Structure and Improvements, Compressor Equipment, Distribution Mains and Meters will all depreciate over a longer period than 20 years. To ensure the Project is below the maximum acquisition price in section 2(3.8)(a) of the GGRR, FEI also calculated the levelized cost of service per GJ using 5 percent depreciation for all assets. The 5 percent depreciation rate is aligned with the term of the COV BPA of 20 years.

⁶ [REDACTED] percent recovery = [REDACTED] GJ.

⁷ [REDACTED] divided by [REDACTED] percent recovery = [REDACTED], which over the contract term equates to [REDACTED] on a 20 year levelized basis.

⁸ 20 years of revenue requirement.

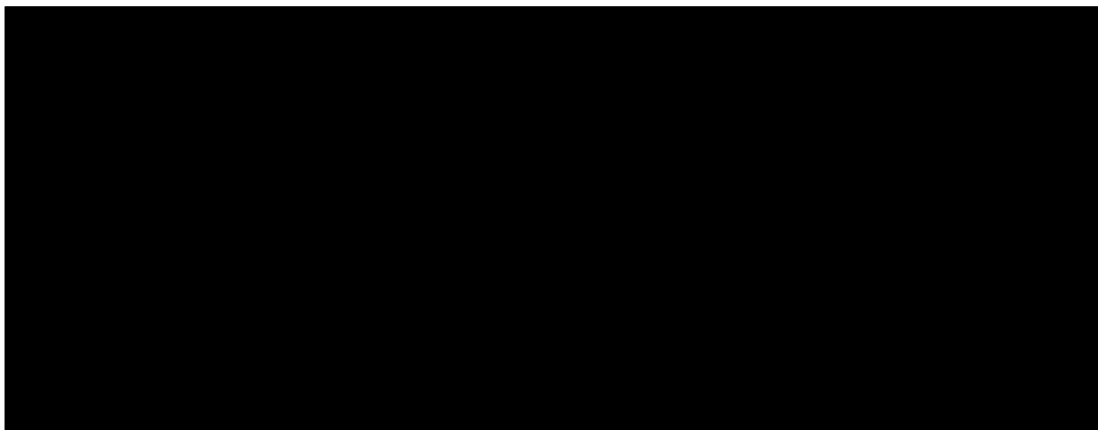
⁹ 20 years of RNG supply volume.

The resulting cost of service per GJ is [REDACTED], which again is well below the maximum acquisition price of \$30 per GJ as established in section 2(3.8)(a) of the GGRR.

Cost of service components (excluding raw LFG purchase cost) consists of O&M, property taxes, earned return including equity and debt components, depreciation, amortization, net salvage, and income taxes. Detailed financial schedules are provided in Appendix C.

Table 1 below provides a summarized breakdown of the calculation.

Table 1: Total Acquisition Price of COV RNG Including Levelized COS of Upgrading & Interconnection Facilities



As shown in the table above, using expected gas volume, gas composition, plant performance, capital and operating costs, the resulting acquisition price based on a levelized cost of service is [REDACTED] per GJ.

The maximum annual volume of RNG acquisition that would qualify under section 2(3.8)(b) of the GGRR as a prescribed undertaking for FEI is approximately 8,900,000 GJ. The current maximum supply of RNG contracted by FEI, not including the COV BPA, is 639,000 GJ annually. The estimated annual amount of RNG for this Project is approximately [REDACTED] GJ. Therefore, the COV BPA will increase the total expected amount for FEI to [REDACTED] GJ annually. This amount is below the maximum volume of 8,900,000 GJ as prescribed by the GGRR.

4. PROJECT OVERVIEW

4.1 Project Background

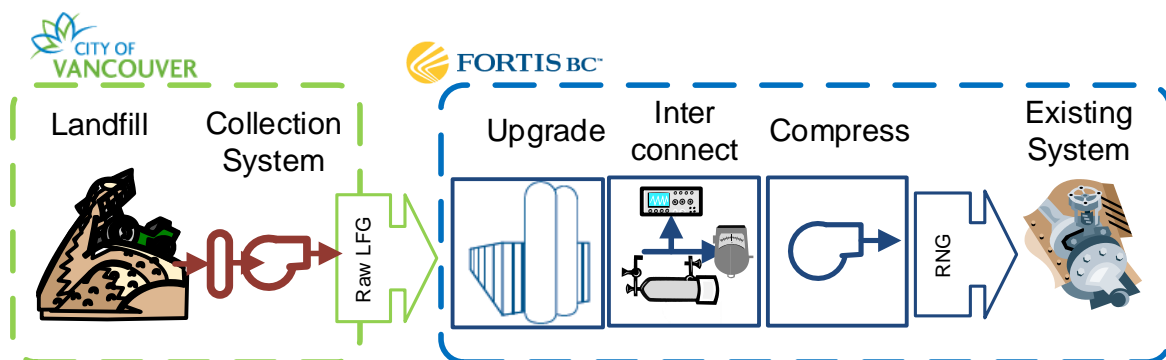
The City currently owns and operates a landfill located in Delta, BC. The landfill has a gas capture system in place and it currently provides a portion of the captured LFG to [REDACTED]. The remainder of the LFG is flared.

In the summer of 2012, the City wished to find a beneficial use for the flared LFG and issued a Request for Expression of Interest (RFEOI). FEI responded with a general proposal to purchase the LFG and purify (upgrade) it to biomethane or RNG for injection into FEI's natural gas system. In the fall of 2012, FEI's proposal was selected for further discussion and ultimately as the preferred solution. Since 2012, FEI has worked with the City to develop the Project, which included performing studies to determine the technical, economic, and financial feasibility of purchasing and upgrading the LFG.

4.2 Project Description

FEI will purchase the raw LFG gas from the City's existing landfill and upgrade it to meet its biomethane quality requirements. The biomethane will then be compressed and injected into FEI's natural gas distribution system. A simple block diagram of this arrangement is shown below in Figure 1.

Figure 1: Project Arrangement



The Project will be located on the existing City-owned property in proximity to the City's flare station. As shown in Figure 2 below, an interconnection pipeline approximately 500 metres in length will be installed to connect to the existing FEI transmission pipeline (TP) within the existing transmission right-of-way adjacent to the City's property.

Figure 2: Project Location



4.3 Summary of COV BPA

The COV BPA sets out terms that govern the ownership of respective facilities, access and use of the land, biomethane delivery quantities and qualities, relevant prices and fees, termination and insurance requirements, as well as other general terms similar to those contained in previous biomethane agreements.

A summary of the key information regarding the COV BPA including price for raw biogas and expected volume is provided in Table 1 below.

Table 2: COV BPA Highlights

Item	Amount	Contract Clause	Comment
Contract Term	20 Years	Clause 2.1	Renewal period is for 5 additional years upon mutual agreement. The Agreement is subject to Supply-based reviews, which may affect renewal.

Item	Amount	Contract Clause	Comment
Anniversary Reviews	10 Years and 18 years		10 Year review will re-base expectations with respect to volume and LFG composition. 18 Year review will evaluate Project with focus on extending term beyond 20 years.
Maximum Volume	██████████ GJ/Yr	Clause 5.4 Schedule C	This represents the maximum amount of LFG volume FEI may purchase. The amount of injected RNG will depend on upgrade plant performance.
Minimum Volume	██████████ GJ/6 month period	Clause 5.3 (ii)	The City must meet this amount or a supply-based review is triggered which may result in termination.
Price (LFG)	██████████ ██████████	Clause 6.1	Fixed rate subject to ██████████ ██ ██████████.
LFG Composition		Schedule A	LFG must meet a minimum specification for composition. FEI may accept raw biogas outside of specification. If biogas does not meet specification, it is subject to a discount on price.
Termination Payment	██████████ ██████████	Clause 9.2	In event of termination, FEI is entitled to removal costs.

The COV BPA includes the concept of a supply-based review. In the event that the City is unable to provide the minimum contractual supply volumes, the COV BPA provides a mechanism to re-evaluate the ongoing viability of the Project. In the event that the City does not meet the minimum volume requirement, a review is triggered. The review will determine if the Project remains economically viable, and the review allows for renegotiation.

The intention of the anniversary reviews is to evaluate biogas volume and composition and determine whether the COV BPA may need adjustment. The review may include, among other things, a recalculated cost of service to ensure that the RNG acquisition price remains within expectations. FEI and COV may agree to amend the agreement to improve the viability, for example, by lowering the price of LFG. In the event an agreement cannot be reached, FEI may terminate the BPA.

4.4 Projected Supply

The volume of available LFG is required to determine the Project's economic viability and to aid in the selection and sizing of appropriate upgrading and interconnection equipment. This section discusses the amount of LFG estimated to be available for use by FEI.

The City captured an estimated 64 million cubic metres of gas in 2016 with an average methane concentration of 50 percent. Of the total volume collected, the City allocated about [REDACTED] to [REDACTED] and flared the remaining LFG. The remaining [REDACTED] cubic metres of LFG is equal to about [REDACTED] of energy on an annual basis assuming a 50 percent average methane content.

Based on discussions with the City, it was determined that this full amount will not always be available over the duration of the COV BPA due to a number of factors including the mix of expected future waste and the natural characteristics of LFG generation at this landfill. Therefore, the City has agreed to allocate up to [REDACTED] GJ annually based on an estimated 50 percent methane content. FEI will use this maximum amount to define the size of the upgrading plant.

The maximum annual LFG of [REDACTED] GJ translates to a conservative contractual maximum of finished RNG equal to about [REDACTED] GJ¹⁰. Despite this maximum allocation, FEI has based its projected long-run supply on a more conservative anticipated LFG of about [REDACTED] GJ (equal to about 85 percent of the maximum). Once upgraded, this amount equals about [REDACTED] GJ of RNG¹¹ per year based on a 50 percent methane content.

The amount of estimated LFG generated on an annual basis for the length of the COV BPA is well above the contractual minimum of [REDACTED] GJ per six months of LFG. Based on this, FEI is confident that there will be sufficient volume to meet the minimum contractual requirements for biogas supply.

With respect to GHG benefits, FEI has estimated the impact based on the expected displacement of conventional natural gas which has an emission factor of approximately 0.050 tonne CO₂e per GJ. [REDACTED] GJ of RNG will reduce annual GHG emissions by [REDACTED] tonnes CO₂e, and over the 20-year contract term [REDACTED] tonnes CO₂e cumulatively.

¹⁰ [REDACTED] x 80 percent recovery.

¹¹ [REDACTED] x 80 percent recovery

4.5 Biomethane Upgrading Facilities

This section summarizes the expected gas composition of the LFG, a brief overview of biogas upgrading and a short summary of possible technologies that may be used for upgrading LFG for this Project.

LFG from the COV landfill contains methane, carbon dioxide, air, water, and other trace contaminants that are a natural by-product of the anaerobic digestion of municipal landfill waste. The average composition of the COV LFG is presented in Table 3 below.

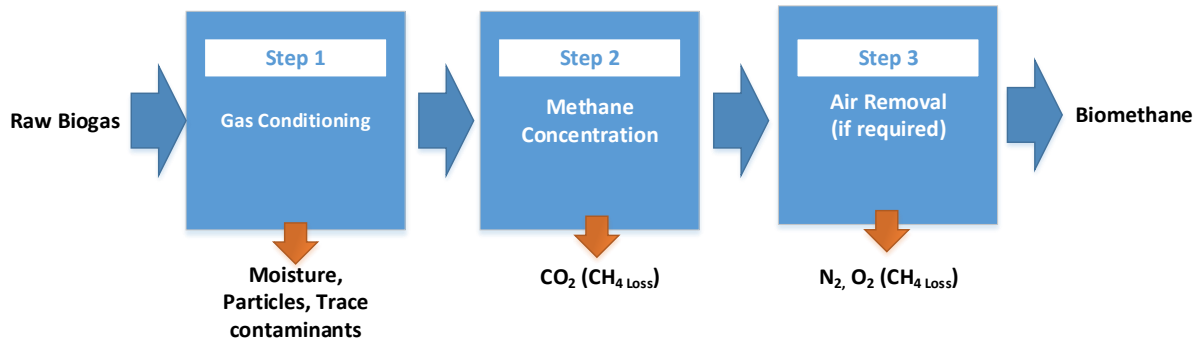
Table 3: Average Landfill Gas Composition

LFG Major Components	UNITS	VALUE
CH ₄ - Methane	%v/v	51.8
CO ₂ - Carbon dioxide	%v/v	37.52
O ₂ - Oxygen	%v/v	0.49
N ₂ - Nitrogen	%v/v	8.66
H ₂ O - Water vapor	%v/v	1.53
LFG Trace Contaminants	UNITS	VALUE
H ₂ S - Hydrogen sulfide	ppmv	200
Siloxanes	ppmv	3.1
Volatile Organic Compounds	ppmv	144

In order to get a better representation of the variation in gas composition over time, FEI took additional samples and evaluated historical data. This analysis was used to define the contractual limits on the gas composition. It was determined that a low limit of 48 percent methane and a high limit of 12 percent nitrogen would maximize the expected future operational time for the upgrading plant. FEI confirmed with LFG technology suppliers that these limits are reasonable.

With respect to upgrading LFG, the process typically uses three basic steps to convert the raw biogas (or LFG) to biomethane. Figure 3 below depicts the steps in the process.

Figure 3: Biogas Upgrading Process Steps



The first step conditions the LFG to remove moisture and trace contaminants such as hydrogen sulfide, volatile organic compounds (VOCs) and siloxanes. The second step concentrates the methane content of the biogas by removing the bulk of the carbon dioxide content. The third step consists of removing components such as oxygen and nitrogen (or air), which have been concentrated simultaneously with the methane in the second step.

Different process technologies to convert the LFG to RNG are commercially available to accomplish these three steps and supply a product that meets FEI's biomethane specifications. While it is necessary to remove all impurities, the most crucial operation is the separation of the carbon dioxide from the biogas in step 2. As a result, technologies used for upgrading are typically categorized according to the method used for step 2.

To establish a short list of the most suitable or appropriate technology, FEI conducted a review of the LFG upgrading technologies currently in commercial operation and injecting RNG into pipelines in North America. Based on this review and FEI's experience, three technologies were identified as the best candidates for upgrading LFG to biomethane. These three technologies are pressure swing adsorption (PSA), water wash and membrane-based processes. FEI has direct experience owning PSA upgrading equipment and indirect experience interfacing with water wash technology owned by other suppliers.

Of the three technologies, a preliminary assessment concluded that a combined membrane separation and PSA technology is recommended based on the LFG composition. As such the cost estimate was based on a combination of membrane separation and PSA technology. The final selection of upgrading technology will be made at the time of Project execution after further evaluating the available technologies and completing the final design. The selection will balance effectiveness of the technology, capital cost, operating cost, and the potential to expand in future.

4.6 *Interconnection Facilities*

The key functions of the interconnect facilities are to monitor gas quality, meter, odorize, compress, connect to, and inject the upgraded RNG into FEI's natural gas distribution system. The facilities include the interconnect station, a gas compressor, and a pipeline.

The interconnect station will be constructed within the existing COV raw biogas plant footprint, and it will be connected to FEI's natural gas distribution system located adjacent to the COV landfill – approximately 500 metres west of the upgrader.

The interconnect station will be connected to the outlet of the upgrader plant and its design will be similar to other existing FEI biogas interconnection stations. Its key functions are to measure and monitor the flow rate and the composition of the incoming RNG as well as odorize the gas.

RNG will be injected into FEI's natural gas distribution system via its transmission pressure (TP) pipeline. The RNG leaves the upgrader at a pressure lower than the transmission pressure and will need to be compressed to higher pressures in order to be injected into the TP pipeline.

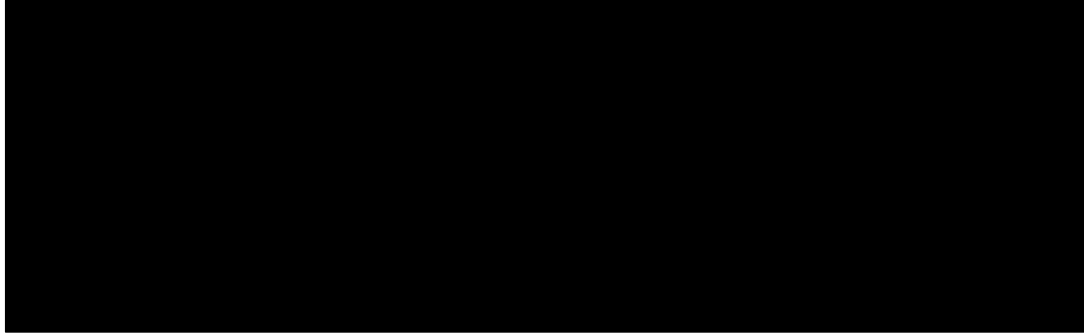
FEI plans to construct a new 114 mm steel pipeline to connect the interconnection facilities to the existing Tilbury to Benson TP pipeline located adjacent to the west of the landfill in a north-south alignment along 72nd Street. The route for the pipeline will be through the COV landfill running primarily in an east-west direction in the access road. The entire route will be on the COV landfill property within a licence area incorporated into the COV BPA.

4.7 *Estimated Capital and Operating & Maintenance Costs*

FEI has prepared the cost estimate for the completion of this Project. This section provides a capital cost estimate, an operating cost estimate, and a brief description of estimating methodology.

The total cost of the Project is estimated to be [REDACTED] (including Allowance for Funds Used During Construction (AFUDC) of [REDACTED] and project development costs of [REDACTED] before tax). The cost estimate are in accordance with the AACE International Class 3 guidelines with an accuracy range of +30/-20 percent.

Table 4: Project Summary of Forecast Capital Costs (\$000)



To derive the estimates, FEI developed the Interconnection internally and engaged Tetra Tech to develop the preliminary upgrader design. The degree of completion of the preliminary designs for the Project are in accordance with the AACE International Class 3 guidelines.

In the case of the upgrader, the preliminary design was developed from a conceptual process flow based on a combined membrane separation and PSA technology. . From the process flow, the process engineering was completed and the biogas upgrading system chosen based on the inlet LFG characteristics and the outlet parameters required for injection into the FEI system. Similarly, for the interconnection facility, the inlet and outlet conditions were determined and preliminary piping and instrumentation drawings (P&ID) were developed.

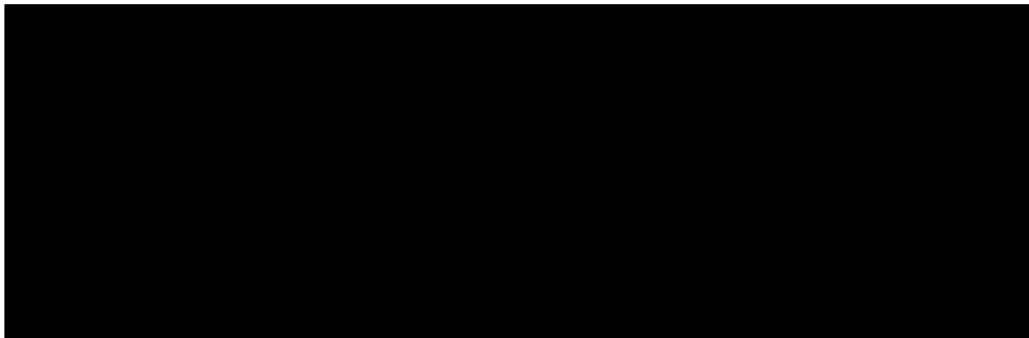
Using the chosen technology, an equipment layout was created. This layout provided enough of a basis to estimate the costs associated with installation such as foundations piping connections between major components.

The estimates were developed using a bottom-up estimating approach. That is, a list of materials with quantities and types required (material take off) to build the upgrader and the interconnection were estimated from the preliminary design drawings and sketches, and provided to estimators for material and installation pricing. The estimate includes all costs to engineer, procure, construct and commission the LFG Upgrader and Interconnection facilities.

Annual operating and maintenance (O&M) costs for the Project were developed by an external consultant and by equipment vendors, and validated by FEI. O&M consists of variable costs driven by the raw biogas or LFG throughput (e.g. cost of electricity and changeable filtration materials) and fixed costs based on expected upgrader maintenance. O&M is forecast to be about \$1.0 million annually.

For cost modelling purposes, the O&M has been escalated by [REDACTED] per year to represent material, electricity, maintenance and other O&M inflation, and [REDACTED] per year for labour inflation. The breakdown of the O&M costs in year 1 is provided in Table 5 below. The details of these components are contained in Appendix C, Schedule 2.

Table 5: Operating & Maintenance (O&M) Costs (\$000)

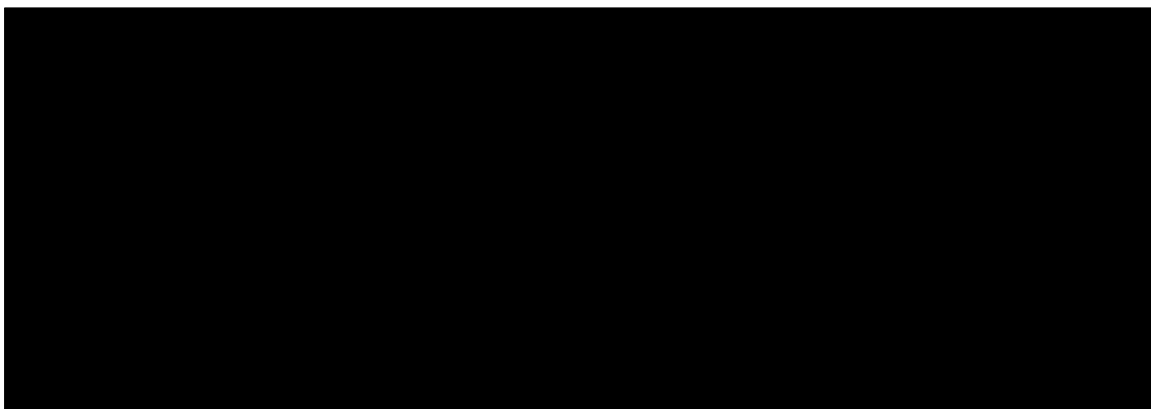


4.8 Treatment of Capital Costs

The Project is estimated at a capital cost of [REDACTED] plus project development [REDACTED] million, and will be held in WIP attracting AFUDC until it is complete, at which time it will be added to rate base and depreciated using FEI's approved depreciation rates.

The following table provides a breakdown of the Project's cost (by major components) consisting of capital costs, AFUDC, contingency, and development. The details of these components are contained in Upgrader Cost Estimate (Appendix D) and the Interconnection Facilities Cost Estimate (Appendix E).

Table 6: Summary of Forecast Capital Cost (\$000)



Subject to Commission acceptance of the COV BPA, FEI plans to initiate construction of the Project in 2019.

4.9 *Rate Impact*

Beginning in 2021 (when the Project is in service and the total Project cost enters rate base) the incremental rate impact on non-bypass customers is estimated to be approximately \$0.011 per GJ. For a typical FEI residential customer consuming an average of 90 GJ per year, the bill impact would equate to approximately \$1.03 per year.

The incremental impact to non-bypass customer rates was calculated using the cost of service for the COV BPA, the selling price for biomethane and the projected volume. The difference creates an unrecovered cost that is applied across the non-bypass volume to calculate an incremental cost per GJ. FEI evaluated the incremental cost of service and rate impact over a 20-year period plus an additional year to capture the planning and construction phase of the Project. A 20-year evaluation period was used because it is consistent with the COV BPA contract terms. The current BERC Rate of \$10.04 per GJ was used to forecast recoveries.

5. RISKS AND MITIGATION

As with other approved biogas or biomethane projects, the risks associated with FEI's capital investment are reasonably low and have been addressed in the COV BPA. The measures taken to mitigate risk are consistent with previous projects and FEI has met established criteria for biogas or biomethane purchase agreements. The mitigation measures taken to address the commercial risks are:

- FEI has the full control of its facilities and will have full access to them.
- FEI will use an upgrader technology that has been sufficiently proven to reduce performance risk.
- The above ground facilities used may be removed and used for other projects. The biogas upgrading facilities owned by FEI will be designed to maximize the ability of FEI to relocate them.
- COV is subject to a termination payment that will cover the costs of relocating equipment, [REDACTED].
- The contract term is 20 years, which provides a reasonable period over which to recover equipment costs.

- FEI considered the long-term financial viability of the supplier in this agreement and its ability to pay the termination payment in the event of default. According to previously established criteria for biogas purchase agreements, because the counterparty is a municipality, FEI does not require any additional security against the long-term risk of financial viability.

With respect to the engineering and construction risks, FEI has identified technology and ground condition risk. Some mitigation measures taken are:

- FEI identified that there was geotechnical risk associated with the short- and long-term settlement of the underlying peat and silt deposits. FEI mitigated this risk by completing a preliminary geotechnical investigation in order to understand the foundation and site preparation requirements to mitigate the impact of post-construction settlement.
- FEI identified that there was risk associated with placing the interconnection gas line inside the landfill by using directional drilling. FEI mitigated this risk by getting agreement from the COV to place the interconnecting gas line along the existing roadway
- FEI identified that there may be some risk with technology selection. FEI mitigated this risk by conducting a comprehensive technology review to identify the proven feasible options.

The remaining engineering, construction and commissioning risks were quantified in accordance with AACE International Recommended Practice No. 40R-08, *Contingency Estimating – General Principles* and AACE International Recommended Practice No. 44R-08, *Risk Analysis and Contingency Determination Using Expected Value*. The Expected Value method is described in AACE 40R as: “*The expected value method directly estimates the cost or schedule impact of each significant identified risk. The model starts with a list of risks. The probability of occurrence of each risk is estimated. Then the cost or schedule impact, if the risk happens, is estimated.*” This expected value methodology was used to provide a contingency estimate¹² for the Upgrader and the contingency estimate for the Interconnection was computed using Expert Judgment. The total contingency equates to

¹² AACE 44R-08 states: “Expected value has two other significant advantages; it does not require that the team change its basic risk quantification methods between decision analysis, risk screening and control, and it can provide a contingency estimate without using Monte-Carlo (however, its use is recommended).” The methodology used to establish the contingency estimate is therefore appropriate.

approximately [REDACTED] of the Capital Cost, which is appropriate for a project with high technology requirements and low-medium complexity.

FEI also believes that there is little incentive for the COV to terminate the COV BPA in part because the Project reduces GHG emissions by [REDACTED] tonnes of CO₂e over the next 20 years. The COV BPA aligns well with COV objectives and the COV has actively supported the development of this Project since 2013¹³.

6. CONCLUSION AND APPROVAL SOUGHT

The COV BPA purchase price for the LFG, when added to the total costs associated with the upgrading and interconnection facilities, results in an acquisition price for RNG or biomethane that is below the prescribed undertaking maximum acquisition price of \$30 per GJ. In addition, with the estimated volumes from the Project, FEI's annual volumes of biomethane supply will remain well below the maximum volume as prescribed by section 2(3.8)(b) of the GGRR. As such, the COV BPA satisfies the identified criteria for RNG acquisition in the GGRR and is a prescribed undertaking pursuant to section 18 of the *Clean Energy Act*.

Therefore, FEI respectfully requests Commission acceptance of the COV BPA under section 71 of the UCA. A draft form of the order sought is provided in Appendix F.

Request for Confidentiality

FEI is submitting this filing on a confidential basis pursuant to Section 18 of the Commission's Rules of Practice and Procedure regarding confidential documents established by Order G-1-16, and Section 71(5) of the *Utilities Commission Act*, and the Commission's discretion under Section 6.0 of the Rules for Natural Gas Energy Supply Contracts. FEI requests that the Commission hold and keep confidential the filing as it contains commercially sensitive information which, if disclosed, may impair FEI's ability to negotiate future agreements. Maintaining confidentiality will ensure that market sensitive information is protected, preserving FEI's ability in the future to negotiate competitive pricing with other biomethane suppliers in an effort to minimize the overall costs of the Biomethane Program.

¹³ 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), Exhibit C7-3, filed June 14, 2013.

If you require further information or have any questions regarding this submission, please contact Sarah Smith, Director NGT, RNG, and Regional LNG at (604) 582-7528.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

BIOGAS PURCHASE AGREEMENT

THIS AGREEMENT made as of June 30th, 2018 (the "Agreement Date")

BETWEEN:

July
FORTISBC ENERGY INC., 16705 Fraser Highway, Surrey, British Columbia V4N 0E8
("FEI")

AND:

CITY OF VANCOUVER, 453 West 12th Avenue, Vancouver, British Columbia V5Y 1V4
(the "Owner")

WHEREAS:

- A. FEI is a natural gas utility with a distribution system in British Columbia.
- B. The Owner owns and operates a landfill located in Delta, British Columbia on lands legally described as follows:

PID: 008-452-989
Legal Description: Lot 9, Sections 5 and 6, Township 4, NWD Plan 38013

(the "Lands"), on which the Owner owns, operates and maintains facilities to capture biogas produced on the Lands through an anaerobic process (the "Biogas").
- C. The Owner, from time to time, by written agreement, sells Biogas to third parties.
- D. FEI wishes to finance, construct and operate facilities on the Lands to connect to the Owner's facilities in order to enable FEI to purchase the Biogas from the Owner and purify and upgrade the Biogas to pipeline quality biomethane for injection into FEI's existing natural gas distribution system adjacent to the Lands (the "Project").
- E. The Owner has agreed to sell a portion of the Biogas to FEI and to grant FEI continued access to and use of a portion of the Lands for the purpose of operating and maintaining its facilities on the Lands on the terms and conditions provided in this Agreement.

NOW THEREFORE, in consideration of the mutual promises set out herein and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged) the parties agree as follows:

ARTICLE 1 - CONDITIONS PRECEDENT

- 1.1 **BCUC Condition Precedent.** Except for ARTICLE 1 [*Conditions Precedent*], ARTICLE 14 [*Confidentiality*], ARTICLE 15 [*Representations and Warranties*] and ARTICLE 16 [*General*], this Agreement shall not come into effect and shall not bind the parties until FEI has received the

necessary acceptance and approval of this Agreement from the British Columbia Utilities Commission ("BCUC"), on the terms and conditions contained herein or such other terms and conditions which are acceptable to FEI and the Owner (the date of such acceptance and approval, the "Acceptance Date"). If such condition is not met by the first anniversary of the Agreement Date, or such later date as agreed by the parties in writing, then the parties' obligations under this Agreement will be at an end, and thereafter neither party shall have any further or continuing obligation to the other under this agreement, except for those obligations and provisions which are specifically stated to survive the expiration or termination of this Agreement.

- 1.2 **Costs Incurred Prior to Condition Removal.** Except as provided in section 1.3 (*Obligation for Preliminary Costs*), the parties acknowledge and agree that if either party elects to undertake any work or incur any costs with respect to this Agreement prior to the satisfaction of the foregoing condition precedent, such party will be solely responsible for all costs so incurred.
- 1.3 **Obligation for Preliminary Costs.** The Owner acknowledges that, as part of its application to BCUC, FEI will be required to submit cost estimates to BCUC, which requires FEI to retain third parties to conduct preliminary engineering and design work (the "Preliminary Work"). Provided FEI has obtained the written agreement of the Owner with respect to the scope and cost of the Preliminary Work, the Owner covenants and agrees to reimburse FEI for documented costs paid or payable by FEI for the Preliminary Work (the "Preliminary Costs") in the following circumstances and in such amounts:
- (a) if the Owner terminates this Agreement prior to fulfilment of the condition precedent set out in section 1.1 (*BCUC Condition Precedent*) for reasons other than as a result of a default of FEI, 100% of the Preliminary Costs up to a maximum reimbursement of \$100,000;
 - (b) if the parties, by mutual agreement, terminate this Agreement prior to fulfilment of the condition precedent set out in section 1.1 (*BCUC Condition Precedent*), 50% of the Preliminary Costs, up to a maximum reimbursement of \$100,000.

This section 1.3 sets out each party's sole and exclusive remedy if this Agreement is terminated pursuant to section 1.3.

- 1.4 **Filing and Approval Obligations.**
- (a) FEI will promptly file an application for approval of this Agreement with the BCUC and will thereafter take all steps reasonably required to secure BCUC acceptance and approval, including those procedural steps related to filing the Agreement and providing argument and witnesses in support of filing.
 - (b) The Owner will, at the request of FEI, provide any assistance reasonably required by FEI to secure BCUC acceptance and approval, including filing documents in support of FEI's application to the BCUC and providing argument and witnesses in support of filing.

ARTICLE 2 - TERM

- 2.1 **Term.** Subject to sections 1.1 (*BCUC Condition Precedent*), this Agreement will be for a period commencing on the Agreement Date and expiring on the December 31st following the twentieth (20th) anniversary of the First Delivery Date (the “Initial Term”), unless terminated earlier or renewed in accordance with the terms of this Agreement (the “Term”) where “First Delivery Date” means the business day after the FEI Facilities are declared Functional by FEI, where “Functional” means the FEI Facilities have produced biomethane for a period of fourteen (14) consecutive days as determined by FEI acting reasonably.
- 2.2 **Renewal.** This Agreement may be renewed upon written agreement between parties for a further term of five (5) years on the same terms and conditions, save and except the purchase price payable pursuant to section 6.1 (*Purchase Price*), and such other amendments agreed between the parties following completion of the 18th Anniversary Review undertaken pursuant to section 5.8 (*Anniversary Reviews*).

ARTICLE 3- DIVISION OF RESPONSIBILITIES**3.1 Owner Facilities.**

- (a) The Owner, as at the Agreement Date owns certain facilities on the Lands, and will design and build additional facilities for the purpose of connecting to the FEI Facilities (the “Additional Facilities”) hereunder, and will continually operate, maintain, repair, upgrade, replace and support all of such facilities, as more particularly identified in Schedule C (collectively, the “Owner Facilities”), to capture Biogas and make it available for passage to the FEI Facilities.
- (b) The Owner hereby covenants to use commercially reasonable efforts to complete the construction of the Additional Facilities in a manner and within such timeframe to support FEI’s construction of the FEI Facilities.

3.2 FEI Facilities

- (a) FEI will design, build, operate, maintain, repair, upgrade, replace and support facilities on the Lands, as more particularly identified in Schedule C (the “FEI Facilities”), to connect to the Owner Facilities, to receive, measure and monitor Biogas quantity and quality and to accept, purify and upgrade Biogas to biomethane for injection into FEI’s existing gas distribution system. FEI will operate, regularly calibrate, maintain and, as applicable, certify the FEI Facilities in accordance with manufacturer’s specifications, applicable laws and industry standards.
- (b) FEI acknowledges and agrees that it has inspected the Lands, the Owner Facilities and the non-financial encumbrances registered on title to the Lands as at the Agreement Date (the “Prior Encumbrances”) and has satisfied itself of their appropriateness and suitability for the installation, connection, operation and maintenance of the FEI Facilities, and further agrees that FEI is solely responsible for the FEI Facilities, including in light of any subsurface conditions and the Prior Encumbrances.

- (c) FEI may, by separate agreement, retain the Owner to undertake a portion of the construction of the FEI Facilities on a "fee for service" basis.
- 3.3 **Prime Contractor.** For the purposes of the *Workers Compensation Act* (British Columbia) and the regulations thereunder, FEI is designated the prime contractor in relation to the construction, operation, maintenance and support of the FEI Facilities.
- 3.4 **FEI Approvals.** FEI shall obtain and maintain any consents, permits, filings, orders or other approvals, including governmental consents and approvals, building and construction permits, environmental permits, zoning changes or variances (collectively, "Approvals") required, affecting or necessary for the construction, installation, ownership, maintenance and operation of the FEI Facilities.
- 3.5 **Owner Approvals.** The Owner shall obtain and maintain the Approvals required, affecting or necessary for the ownership, upgrading, maintenance or operation of the Owner Facilities.
- 3.6 **Existing Operating Certificates.** The Owner will ensure any relevant permits or operating certificates are updated (as required) to reflect the operation of the FEI Facilities on the Lands.
- 3.7 **Assistance.** Each party shall, upon request, use commercially reasonable efforts to advise and assist the other party in obtaining any relevant Approvals.
- 3.8 **Application of *Utility Commission Act*.** The Owner acknowledges FEI is a public utility as defined in the *Utilities Commission Act* (British Columbia), and this Agreement, including the terms and conditions contained herein and in any amendments hereto, is subject to BCUC approval. If BCUC approval of any amendment hereto is granted subject to terms and conditions which are not satisfactory to FEI or the Owner having regard to their bona fide interests, the parties may negotiate options to obtain BCUC approval on terms satisfactory to both parties, which terms shall, in respect of the Owner, be commercially reasonable, and in respect of FEI, be acceptable to BCUC and in compliance with the *Utilities Commission Act* (British Columbia).
- 3.9 **Ownership of FEI Facilities.** The FEI Facilities are, and shall at all times remain, personalty and the property of FEI, despite the degree to which they may be annexed or affixed to the Lands and despite any rule of law or equity to the contrary. FEI shall be entitled at any time and from time to time to remove or replace the FEI Facilities in whole or in part, and the FEI Facilities shall be freely alienable by FEI as its own property. FEI shall be entitled to install notices on the FEI Facilities identifying FEI's ownership.
- 3.10 **System Improvement.** Recognizing the value in continued improvement in operating efficiency and Biogas and biomethane production, the parties agree to meet at least once during each 12 month period, or at such other frequency as agreed between the parties, to discuss methods and future initiatives that may improve system operability or improve the environmental benefit of the project.
- 3.11 **Utilities.**
- (a) The Owner will, at no cost to FEI, provide a telephone line connection to the limits of the FEI Facilities. In addition, the Owner shall, at no cost to FEI, permit FEI to connect to the existing 25kV electrical supply on the Lands, for FEI's own metered service; provided

however, the Owner will not be obligated to provide any back-up power supply. FEI shall be responsible for the connection of the telephone line and the electrical supply to the FEI Facilities.

- (b) FEI will pay for electrical consumption and telephone services used in the operation of the FEI Facilities as directly invoiced to FEI by each service provider, or, in the event such utilities are obtained through the Owner, as may be reasonable allocated by the Owner to FEI based on consumption or usage, which amounts will be subject to review, verification and audit by FEI.
- (c) The Owner shall not be liable for any disruptions in electrical or telephone services, unless caused by any negligent act or omission of the Owner. Despite any other provision hereof, the Owner will not be liable for any disruptions to the electrical supply or telephone communications caused by bird strikes.

3.12 Excuse for Maintenance, Repair or Owner Shutdown.

- (a) Neither party will be considered to be in default under this Agreement where its non-performance is as a result of:
 - (i) in the case of either party, undertaking maintenance or repair on its respective facilities provided such party is diligently undertaking such maintenance or repair to minimize its impacts and using commercially reasonable efforts so the duration of the maintenance or repair, excluding emergency work, does not exceed 3 days per month to a maximum of 20 days per year; and
 - (ii) in the case of the Owner, the temporary shutdown of the Owner Facilities to enable the Owner to connect additional Biogas collection infrastructure to the Owner Facilities as sections of the landfill reach capacity and are closed; provided the Owner provides to FEI at least thirty (30) days prior notice of such temporary shutdown, and coordinates the duration and scheduling of the shutdown with FEI to minimize its impacts, recognizing the work schedule may vary during the course of the work depending on the circumstances at such time.
- (b) During such periods of maintenance, repair or temporary shutdown:
 - (i) FEI is not obligated to, but may, accept Biogas, regardless of its compliance with the Specifications (and FEI shall pay the Owner for Biogas that it accepts); and
 - (ii) the Owner shall not be bound to make Biogas available to FEI and such periods shall not be counted for the purpose of calculating the Supply Minimum.

3.13 Cooperation. To facilitate the connectivity between the Owner Facilities and the FEI Facilities and maximize the production of Biogas, the parties agree to:

- (a) cooperate in the design, permitting, construction and connection of the respective facilities, including any upgrades and modifications to such facilities; provided that despite the exchange or review of, or any comment on, any design drawings by the

other party, each party shall be solely responsible for the design and construction of its respective facilities;

- (b) share operating data and work together to optimize the operation of their respective facilities;
- (c) except in the event of an emergency, provide each other with at least three (3) business days' prior written notice of any maintenance or repair of their respective facilities that will affect the quality of Biogas or the quantity of Biogas available to or to be accepted by FEI, including the scheduled start and end dates and reasonably detailed information concerning the impact of the maintenance or repair on the quality of Biogas or the quantity of Biogas available to or to be accepted by FEI; provided however, prior notice is not required under this sub-section for routine maintenance or repair having no effect on Biogas quality, quantity, conveyance or acceptance;
- (d) notify each other at least three (3) business days in advance of proposed operational changes or system modifications or upgrades to their respective facilities to ensure such changes, modifications or upgrades do not negatively impact the operation of the other party's facilities;
- (e) promptly notify each other of any circumstance or event which causes or may reasonably be expected to cause their respective facilities to cease to be or to operate in accordance with any applicable laws;
- (f) provide each other with twenty-four (24) hour emergency contact numbers which can be used to notify the other party of emergencies; and
- (g) in the event of emergency repair, provide verbal notice to the other party as soon as possible and follow-up with written details as soon as practical thereafter.

3.14 Purchase of Biomethane from FEI.

- (a) Any purchase of biomethane by the Owner from FEI will be subject to the terms and conditions of the applicable FEI Rate Schedules as established or amended from time to time. Except as specifically identified in this section 3.14, nothing contained in this Agreement applies to the purchase of biomethane by the Owner, or will be construed in any way to alter the terms of the applicable Rate Schedules.
- (b) In consideration of the sale of Biogas to FEI, on the First Delivery Date, FEI agrees to reserve up to 100% of the estimated production of biomethane available from the Project for sale to the Owner at the applicable FEI Rate Schedules. If, within six (6) months from First Delivery Date, the Owner has not entered into an agreement with FEI for the purchase of biomethane up to 100% of the estimated production available from the Project, the Owner's ability to purchase biomethane from FEI will be subject to availability.

ARTICLE 4- ACCESS TO AND USE OF LANDS

- 4.1 **Grant of License.** The Owner hereby grants to FEI, subject to the Prior Encumbrances, a non-exclusive license, irrevocable during the Term, to those portions of the Lands shown outlined on the drawings attached as Schedule B (the "License Area") at all times and from time to time, with or without vehicles, machinery and equipment, for FEI and its authorized employees, contractors and agents, to excavate, install, place, construct, renew, alter, repair, maintain, use, remove or replace the FEI Facilities, in whole or in part; provided that when exercising such right, FEI will not unreasonably interfere with, impair or disrupt the Owner's operations on the Lands or the operations of [REDACTED] or any successor (together the "Existing Plant Operator") related to the Existing Plant Operator's use or purchase of Biogas from the Owner pursuant to a written long term agreement between the Owner and the Existing Plant Operator as exists on the Agreement Date (the "Plant Operator Contract"). The Owner confirms that the FEI Facilities, FEI's operations under this Agreement, the use of the License Area by FEI, and access over the Lands, all in accordance with this Agreement, will not, to the best of the Owner's knowledge, cause unreasonable interference or disruption in contravention of this section.
- 4.2 **Access over the Lands.** The Owner hereby grants to FEI, subject to the Prior Encumbrances, the free and unobstructed, non-exclusive, right to access over and across the Lands, with or without vehicles, machinery and equipment, as required from time to time, for FEI and its authorized employees, contractors and agents to access the FEI Facilities; provided however this right shall in no way restrict the Owner from using, operating upon, maintaining, changing or improving the Lands as long as FEI and its authorized employees, contractors and agents continue to have access to the FEI Facilities. FEI's right of access over the Lands is subject to FEI's compliance with the reasonable requirements of the Owner for the safety and security of the Lands, including as to access points, notification requirements and limitations on working hours except in the case of emergency.
- 4.3 **Grant of Rights to Third Parties.** Subject to section 4.6 (*Non-Interference*), the grant of rights to FEI hereunder does not preclude or prevent the Owner from granting easements, statutory rights of way or other grants, leases or licences over the Lands to any other person.
- 4.4 **Use of Lands.** FEI shall:
- (a) not do, suffer or permit anything in, on or from the License Area that may be or become a nuisance or annoyance to the owners, occupiers or users of land or premises adjacent to or near the Lands or to the public, including the accumulation of rubbish or unused personal property of any kind;
 - (b) not do, suffer or permit any act or neglect that may in any manner directly or indirectly cause injury to the License Area or the Owner's or the Existing Plant Operator's property;
 - (c) use the License Area only for the purposes set out in this Agreement;
 - (d) except as otherwise provided in this Agreement, pay all costs and expenses of any kind whatsoever associated with and payable in respect of FEI's use of the License Area, the FEI Facilities and all equipment, furniture and other personal property brought onto the

License Area by FEI, including without limitation, levies, charges and assessments, permit and license fees, repair and maintenance costs, administration and service fees, gas, water, sewage disposal, electricity, leachate conveyance and other utility and service charges and payments for work and materials;

- (e) carry on and conduct its activities in, on and from the License Area in compliance with any and all laws from time to time in force, and obtain all required approvals and permits thereunder, and not do or omit to do anything in, on or from the License Area in contravention thereof;
- (f) not permit or do or cause to be done anything which would allow any lien, certificate of pending litigation, judgment or certificate of any court or any personal property security interest or other encumbrance of any nature to be imposed or to remain on title to the Lands;
- (g) not do or cause to be done, or fail to do or cause not to be done, anything so as to:
 - (i) impair in any way the ability of the Owner to capture or collect Biogas;
 - (ii) impair in any way the ability of the Owner to comply with all applicable laws governing the operation of a landfill;
 - (iii) contravene any of the Prior Encumbrances.
- (h) minimize any disruption of the Owner's and the Existing Plant Operator's activities on the Lands; and
- (i) discharge any builder's lien which may be filed against the title to the Lands within 30 days of filing, and comply at all times with the Builders Lien Act (British Columbia), in respect of any improvements, work or other activities undertaken by or on behalf of FEI.

4.5 **Property Taxes.** FEI will be responsible for the payment of property taxes with respect to its use of the License Area. FEI agrees to proportionately contribute to the property taxes levied by the City of Delta against the Owner with respect to the Lands based on the size of the License Area relative to the size of the Lands. FEI will pay a prorated allocation of the taxes for the License Area based on an invoice from the Owner showing the calculation of the prorated allocation.

4.6 **Non-Interference.** The Owner will not do or knowingly permit to be done anything in, under, over, upon or with respect to the Lands which interferes with, diminishes or injures FEI's rights hereunder or the installation, maintenance, use or operation of the FEI Facilities, including but not limited to, anything which:

- (a) endangers, impedes or interrupts or causes damage to the FEI Facilities or their operation, use, security or functionality;
- (b) removes, diminishes or impairs any vertical or lateral support for, or causes the movement or settlement of, the FEI Facilities;
- (c) causes, permits or suffers any structure, equipment, act or function to exert any vertical load or lateral load upon or against, or impair the structural integrity of, the FEI Facilities; or

- (d) impairs in any way the ability of FEI to comply with all applicable laws;

in each case, without the prior written consent of FEI and in accordance with any conditions FEI may specify as a condition of such consent.

ARTICLE 5- QUALITY, QUANTITY, TITLE AND INDEMNITY

5.1 **Biogas Quality and Monitoring.** Subject to section 5.2 (*Non-Compliant Biogas*), FEI agrees to accept into FEI's Facilities the Biogas made available by the Owner at the connection point between the Owner Facilities and the FEI Facilities (the "**Connection Point**"), subject to the Biogas meeting the composition specifications set out in Schedule A (the "**Specifications**"). FEI shall monitor Biogas quality, quantity and flow rate at the Connection Point to determine whether Biogas meets the Specifications prior to injection into the FEI Facilities.

5.2 **Non-Compliant Biogas.** FEI is not required to accept any Biogas that does not meet the Specifications (the "**Non-Compliant Biogas**"). FEI may, in its sole discretion,

- (a) reject the Non-Compliant Biogas and return the Non-Compliant Biogas to the Owner Facilities, in substantially the same condition as delivered by the Owner to FEI and meeting the flow and pressure requirements of the Owner Facilities; or

- (b) accept the Non-Compliant Biogas into the FEI Facilities.

5.3 **Supply Based Reviews.**

- (a) Subject to subsection 5.3(d), the parties will undertake a joint review of the Project, to be completed within ninety (90) days of the triggering event, to enable the parties to determine ongoing Project viability, if:

- (i) at the 4th anniversary of the Acceptance Date, the First Delivery Date has not occurred despite the Owner having the Supply Minimum available and meeting the Specifications in Schedule A; or
- (ii) after the First Delivery Date, the Owner does not deliver at least the aggregate of [REDACTED] GJ of Biogas meeting the Specifications over any period of six (6) consecutive months (collectively the "**Supply Minimum**") and FEI requests a review be conducted.

- (b) If, upon completion of the review, the parties determine the Project is no longer financially viable based on historic and projected supply of Biogas at the then current pricing, the parties may negotiate options to obtain BCUC approval including amendments to the Agreement that are satisfactory to both parties, which terms shall, in respect of the Owner, be commercially reasonable, and in respect of FEI, be acceptable to BCUC and in compliance with the *Utilities Commission Act* (British Columbia), including as to price payable by FEI and/or the calculation of the Supply Minimum, to enable the continuation of the Project.

- (c) If: (1) upon completion of the review, the parties are unable to agree whether the Project is viable; or (2) within 180 days of commencing negotiations pursuant to subsection (b) above the parties are unable to agree to amendments to the Agreement:
 - (i) for a review initiated pursuant to subsection 5.3(a)(i), the Owner may, at its option, terminate this Agreement upon written notice to FEI, whereupon the provisions of ARTICLE 9 will apply, excluding section 9.2 (*Termination Payment*). This right of termination shall be the Owner's sole and exclusive remedy for early termination pursuant to this section.
 - (ii) for a review initiated pursuant to subsection 5.3(a)(ii), FEI, may at its option, terminate this Agreement upon written notice to the Owner, whereupon the provisions of ARTICLE 9, including section 9.2 (*Termination Payment*), will apply. This right of termination and the right to receive the termination payment shall be FEI's sole and exclusive remedy for early termination pursuant to this section.
- (d) The parties will not initiate a review while a review or resulting negotiations are already underway.

5.4 Commitment re: Supply.

- (a) FEI acknowledges the Owner has pre-existing commitments and own-use requirements for Biogas as follows (the "**Pre-Committed Biogas**"):
 - (i) pursuant to the Existing Plant Operator Contract, the Existing Plant Operator is entitled to purchase up to [REDACTED] cubic metres of Biogas per day defined as 50% methane at STP (where "STP" means standard temperature and pressure and is defined as 15 degrees Celsius and 101.325 kPa) from the Owner;
 - (ii) the Owner uses Biogas for heating the Owner's improvements located on the Lands, in an amount estimated at 408 cubic metres of Biogas per day defined as 50% methane at STP; and
 - (iii) the Owner needs to maintain a minimum flow of 12,200 cubic meters of Biogas per day (300 cfm) at STP to maintain the flares in operational condition.
- (b) The Owner agrees to sell to FEI all Biogas produced by the Owner's operations on the Lands and meeting the Specifications, except Pre-Committed Biogas, up to [REDACTED] GJ/annum (the "**FEI Commitment**").

5.5 Additional Biogas – Right of First Refusal. If, from time to time, the Owner has, or anticipates the Owner will have, additional Biogas available beyond the Pre-Committed Biogas and the FEI Commitment, whether as a result of excess production, or reduced supply to, or shortfall in acceptance by, the Existing Plant Operator, or reduced or under-utilized consumption by the Owner for heating its improvements (the "**Additional Biogas**"), the Owner must first offer in writing the Additional Biogas in an amount up to the capacity of the FEI Facilities for sale to FEI at the rates set out in section 6.1 (*Purchase Price*). FEI shall, within 180 days of receipt of the

Owner's offer, give written notice to the Owner of whether FEI will purchase all or part of the Additional Biogas. Should there be Additional Biogas beyond the capacity of the FEI Facilities, the parties may negotiate the terms of purchase of such excess Additional Biogas.

5.6 **Inability to Accept Biogas.** If FEI is, from time to time, unable or unwilling to accommodate or accept Biogas available pursuant to section 5.5 (*Additional Biogas – Right of First Refusal*), or rejects and returns Non-Compliant Biogas, the Owner shall be entitled to use, sell or otherwise dispose of that Biogas as it determines in its sole discretion, without prejudice to its other rights hereunder.

5.7 **Title and Warranty.** Title to and responsibility for the Biogas accepted by FEI, including Non-Compliant Biogas accepted pursuant to section 5.2(b) (*Non-Compliant Biogas*), shall pass from the Owner to FEI at the Connection Point. Title to and responsibility for any Non-Compliant Biogas rejected by FEI and returned to the Owner Facilities in accordance with section 5.2(a) (*Non-Compliant Biogas*) shall not pass to FEI. The Owner warrants that it has the right to convey and will transfer good and merchantable title to the Biogas sold hereunder free and clear of all liens, encumbrances and claims.

5.8 **Anniversary Reviews.**

(a) In addition to any reviews conducted pursuant to section 5.3 (*Supply Based Reviews*), at the tenth(10th) and eighteen (18th) anniversaries of the First Delivery Date, the parties will undertake a review of the Project, which review will not exceed 90 days, including quantity, flow and quality of the Biogas made available to FEI throughout the Term, and the future projections of quantity, flow and quality (the "10th Anniversary Review" and the "18th Anniversary Review" respectively). The purpose of the 10th Anniversary Review is to determine Project financial viability for the balance of the Term based on historic and projected supply of Biogas at the then current pricing. The purpose of the 18th Anniversary Review is to determine Project financial viability for the balance of the Term and whether to extend this Agreement beyond the Term.

(b) If, as a result of the 10th Anniversary Review, the parties determine the Owner will be unable to consistently supply the Supply Minimum for the balance of the Term, the parties may negotiate amendments to the Agreement that are commercially reasonable to the Owner and, in respect of FEI, that are acceptable to BCUC and in compliance with the *Utilities Commission Act* (British Columbia, including as to price payable by FEI, to enable the continuation of the Project. If, during the 10th Anniversary Review the parties are unable to agree whether the Owner will be able to supply the Supply Minimum, or if the parties are unable to agree to amendments to the Agreement within 180 days of commencing the negotiations, FEI may, at its option, terminate this Agreement upon written notice to the Owner, whereupon the provisions of ARTICLE 9, including section 9.2 (*Termination Payment*), will apply. This right of termination and the right to receive the termination payment shall be FEI's sole and exclusive remedy for early termination pursuant to this section.

(c) If, as a result of the 18th Anniversary Review,

(i) the parties decide to renew the Agreement, this Agreement will be renewed for a further term in accordance with section 2.2 (*Renewal*); or

- (ii) the parties determine the Owner will be unable to consistently supply the Supply Minimum for the balance of the Term, FEI may, at its option, issue written notice that FEI will not renew this Agreement, whereupon this Agreement will terminate at the end of the initial Term, and the provisions of Article 9 will apply, excluding section 9.2 (*Termination Payment*).

5.9 **Indemnity.** The Owner hereby agrees to indemnify and save FEI harmless from all losses, liabilities or claims including reasonable legal fees and costs of court arising from or out of claims of title to Biogas or other charges thereon, or claims of personal injury or property damage from the Biogas ("**Claims**") in each case which attach or arise before title to the Biogas passes to FEI. FEI hereby agrees to indemnify and save the Owner harmless from all such Claims which attach after title passes to FEI. Despite the foregoing, the Owner will be liable for all Claims arising from the failure to deliver title to the Biogas sold hereunder to FEI free and clear of any encumbrances.

5.10 **Audit and Verification.** Each Party will provide access to the other party, from time to time during ordinary business hours, to its records and measurement equipment as reasonably requested by the other party to verify compliance with the terms of this Agreement, including to verify the quality and quantity of Biogas.

ARTICLE 6 - PURCHASE PRICE AND PAYMENT

6.1 Purchase Price.

(a) Commencing from the First Delivery Date, FEI shall pay the Owner:

- (i) [REDACTED] ("**GJ**") for each GJ of Biogas meeting the Specifications and accepted by FEI into the FEI Facilities, adjusted annually on the first of November following each anniversary of the First Delivery Date [REDACTED]
[REDACTED]
from the previous twelve-month period (the "**Base Price**") and
- (ii) for each GJ of Non-Compliant Biogas accepted by FEI into the FEI Facilities, the Base Price will be reduced by the greater of the applicable amounts set out in the table below:

Composition of Non-Compliant Biogas	Reduction to Base Price
Methane is [REDACTED] than Specifications and/or nitrogen is [REDACTED] than Specifications	[REDACTED]
Methane is [REDACTED] than Specifications and/or nitrogen is [REDACTED] than Specifications	[REDACTED]

as determined by meter readings by meters forming part of the FEI Facilities, plus applicable taxes thereon.

- (b) The Owner shall not be entitled to receive any payment from FEI on account of Non-Compliant Biogas returned to the Owner Facilities pursuant to section 5.2(a) (*Non-Compliant Biogas*).

6.2 Payment Terms

- (a) On or about the 15th day of each month, FEI shall generate a statement for the preceding month showing the quantity of Biogas, and Non-Compliant Biogas, accepted by FEI in GJ, the applicable rates and the amount payable.
- (b) If the quantity of Biogas or Non-Compliant Biogas accepted is not known by the statement date, FEI will issue the statement based on a reasonable estimate of the quantity accepted and make the necessary adjustments as soon as practical and in any event by the next billing period. If FEI has not been able to determine the quantity of Biogas received as a result of a malfunction of the meter or other equipment forming part of the FEI Facilities, FEI may rely on data from any meter forming part of the Owner Facilities for the purpose of generating the monthly statement.
- (c) FEI will pay the purchase price to the Owner by electronic funds transfer, or in such other manner as directed by the Owner from time to time in writing and acceptable to FEI, within 30 days of delivery of each statement to the Owner.
- (d) Any errors in any statement or disputes as to amounts due shall be promptly reported by the Owner to FEI and any resulting underpayments or overpayments identified will be paid or refunded with accrued interest thereon at the rate of 1.5% per month (19.56% per annum) calculated from the date of the original statement.
- (e) The statements referred to in section 6.2(a) shall be addressed and delivered to the address given by the Owner to FEI from time to time in writing.

- 6.3 **Meter Verification.** FEI shall, upon request from the Owner from time to time, provide the Owner with confirmation of the calibration and accuracy, in accordance with manufacturer's specifications, applicable laws and industry standards, of the meters forming part of the FEI Facilities.

ARTICLE 7- ENVIRONMENTAL ATTRIBUTES AND EMISSION REPORTING

- 7.1 **Definitions.** For the purposes of this Article, the following definitions apply:

- (a) **"Biomethane Environmental Attributes"** means:
 - (i) all attributes associated with, or that may be derived from, the displacement of traditional natural gas by biomethane in FEI's natural gas distribution system including any existing or future credit, allowance, certificate, right, benefit or advantage or proprietary or contractual right whether or not tradable;
 - (ii) any existing or future instrument, including any environmental emission allowances and reduction credits, reduction right, allowance, certificate or other unit of any kind whatsoever, whether or not tradable and any other proprietary

or contractual right, whether or not tradable, and any resulting from, or otherwise related to the actual or assumed reduction, displacement or offset of emissions associated with, or that may be derived from the displacement of traditional natural gas by biomethane in FEI's natural gas distribution system; and

- (iii) all revenues, entitlement, benefits and other proceeds arising from or related to the foregoing.

(b) **"Methane Environmental Attributes"** means:

- (i) all attributes associated with, or that may be derived from the reduction of greenhouse gas emissions from the Lands as a result of the capture of Biogas by the Owner Facilities, including any existing or future credit, allowance, certificate, right, benefit or advantage or proprietary or contractual right whether or not tradable;
- (ii) any existing or future instrument, including any environmental emission allowances and reduction credits, reduction right, allowance, certificate or other unit of any kind whatsoever, whether or not tradable and any other proprietary or contractual right, whether or not tradable, and any resulting from, or otherwise related to the actual assumed reduction, displacement or offset of emissions associated with, or that may be derived from the elimination of methane discharges into the atmosphere from the Lands as a result of the capture of Biogas by the Owner Facilities ; and
- (iii) all revenues, entitlement, benefits and other proceeds arising from or related to the foregoing.

7.2 Offsets for Natural Gas Displacement. The parties agree FEI will own any Biomethane Environmental Attributes. The Owner will, at FEI's expense, support FEI in all applications for the Biomethane Environmental Attributes and provide any authorizations, documentation and information FEI reasonably requires in this regard.

7.3 Offsets for Methane Destruction. The parties agree the Owner (or third parties with whom it has entered into agreements) will own any Methane Environmental Attributes. FEI will, at the Owner's expense, support the Owner in all applications for the Methane Environmental Attributes and provide any authorizations, documentation and information the Owner reasonably requires in this regard, including providing the Owner with reasonable access to data with respect to the FEI Facilities required to determine the amount of biomethane injected into FEI's natural gas distribution system.

7.4 Reporting Requirements. Each party shall be responsible to comply with reporting requirements of all applicable environmental laws with respect to emissions from their respective facilities.

ARTICLE 8 – DEFAULT

8.1 Termination for Default.

- (a) Subject to section 8.2, either party (the “Defaulting Party”) shall be in default of this Agreement if the Defaulting Party is in breach of any term, covenant, agreement, condition or obligation imposed on it under this Agreement, provided that:
- (i) the other party (the “Non-Defaulting Party”) provides the Defaulting Party with a written notice of such default and a 30-day period within which to cure such default (the “Cure Period”); and
 - (ii) the Defaulting Party fails to cure such default during the Cure Period, or if such default is not capable of being cured within the Cure Period: (i) fails in good faith to commence the curing of such default upon receipt of notice of default or (ii) fails to continue to diligently pursue the curing of such default thereafter until cured or (iii) fails to cure the default within 180 days following the end of the Cure Period.
- (b) Upon default, the Non-Defaulting Party may, at its option and in addition to and without liability therefor or prejudice to any other right or remedy it may have:
- (i) cease performing its obligations under this Agreement, (save and except, if the Owner is the Defaulting Party, FEI shall continue to make payments due to the Owner under section 6.1 (*Purchase Price*) if FEI accepts Biogas or Non-Compliant Biogas during the period of the Owner’s default), until the default has been fully remedied, and no such action shall relieve the Defaulting Party from any of its obligations under this Agreement; or
 - (ii) undertake the necessary steps to remedy the default at the Defaulting Party’s expense, and such action shall not relieve the Defaulting Party from any of its obligations under this Agreement; or
 - (iii) terminate this Agreement immediately upon notice to the other party, whereupon the provisions of ARTICLE 9 shall apply.

8.2 **Excluded Events of Default.** The parties acknowledge and agree that sole and exclusive remedies for the occurrence of each of the following events are provided for in this Agreement and therefore they are not subject to the provisions of this ARTICLE 8:

- (i) failure by the Owner to achieve the Supply Minimum; or
- (ii) failure of the Biogas to meet the Specifications.

ARTICLE 9- EFFECT OF EXPIRY OR TERMINATION

9.1 **Removal of FEI Facilities.** Upon the expiry or early termination of this Agreement, FEI will, within 90 days following the expiry date or termination date, as the case may be, remove the FEI Facilities from the Lands; provided that FEI will be obligated to remove only those portions of the FEI Facilities, not including any concrete pad, located above surface level and may leave any

un-removed portions in a safe manner in accordance with applicable laws and industry and environmental practices in British Columbia. For the purposes of removal of the FEI Facilities, the license rights granted pursuant to sections 4.1 (*Grant of License*) and 4.2 (*Access over Lands*) shall survive the expiry or termination of this Agreement during the period of such removal. Any portion of the FEI Facilities not removed by FEI will become the property of the Owner.

- 9.2 **Termination Payment.** If FEI terminates this Agreement pursuant to 8.1(b)(iii) as a result of default of the Owner, or pursuant to section 5.3 (*Supply Based Reviews*) or 5.8(b) (*Anniversary Reviews*), the Owner shall, within 30 days of the date of invoice from FEI, reimburse FEI for its actual and documented third party costs, without mark-up, of removing the FEI Facilities from the Lands in accordance with section 9.1 (*Removal of FEI Facilities*) up to the maximum amount of [REDACTED]
- 9.3 **Effect of Termination.** Upon expiry or early termination of this Agreement, the parties' obligations under this Agreement shall be at an end and neither party shall have any further obligation to the other party under this Agreement, except for those obligations and provisions which are specifically stated to arise upon or survive the expiration or early termination of this Agreement; provided further that FEI's obligations with respect to removal of any FEI Facilities existing as at the date of such termination shall be governed by section 9.1 (*Removal of FEI Facilities*).

ARTICLE 10 - INSURANCE REQUIREMENTS

- 10.1 **Insurance until First Delivery Date.** FEI shall obtain and maintain the following insurance coverage from the Agreement Date through to the First Delivery Date:

- (a) Wrap-up Liability insurance policy issued in the names of FEI, the Owner, FEI's contractors, sub-contractors and all participants in all activities pertaining to the construction and commissioning of the FEI Facilities and related work on the Owner Facilities with limits of not less than \$10,000,000 (Ten Million Dollars) on an occurrence basis for bodily injury, death and property damage losses. The coverage shall be primary and any insurance or self-insurance maintained by the Owner shall be in excess and will not contribute. This insurance shall be maintained continuously during construction and commissioning until the First Delivery Date, and thereafter, in the case of completed operations coverage, for a further period of not less than two (2) years after the First Delivery Date and shall contain the following extensions of coverage:

- (1) Broad Form Property Damage and Completed Operations;
- (2) Personal injury;
- (3) Blanket Contractual Liability;
- (4) Cross Liability;
- (5) Contingent Employer's Liability;
- (6) Non-Owned Automobile Liability;

and where such further risks exists, the following extensions of coverage shall be included:

- (7) Shoring, blasting, excavation, underpinning, demolition, removal, pile driving and grading, as applicable;

- (8) Hoist Liability; and
- (9) Operation of Attached Machinery.
- (b) Automobile Liability Insurance on all licensed vehicles used directly or indirectly in the construction and commissioning of the FEI Facilities until the First Delivery Date, protecting against damages arising from bodily injury and from claims for property damage arising from the operations of contractor(s) and subcontractor(s) and their servants, agents or employees. This insurance will be for a minimum amount of \$5,000,000 (Five Million Dollars) inclusive per accident.
- (c) All Risks Course of Construction Insurance on the FEI Facilities, including property FEI may have assumed responsibility for. The insurance policy must contain a waiver of subrogation by the insurer in favour of the Owner.
- (d) Contractor's Equipment Insurance covering all equipment owned or rented by the contractor(s) or subcontractor(s) on an All Risks basis and will contain a waiver of subrogation in favour of the Owner.
- (e) Contractor's Pollution Liability with limits of \$2,000,000 (Two Million Dollars) per occurrence, protecting FEI, its contractors, and sub-contractors against third party bodily injury, property damage and clean-up costs arising from pollution conditions caused by services or operations rendered by or on behalf of FEI, its contractors or sub-contractors.

10.2 Insurance Following First Delivery Date. FEI shall obtain and maintain the following insurance coverage from the First Delivery Date until the end of the Term:

- (a) Commercial General Liability with limits of not less than \$10,000,000 (Ten Million Dollars) per occurrence against bodily injury or property damage which may arise under this Agreement. The policy shall contain a cross liability or severability of interests clause and will name the Owner, its officials, officers, employees and agents as Additional Insureds. The coverage shall include sudden and accidental pollution coverage.
- (b) All Risk form property insurance on the FEI Facilities, insuring for replacement cost. Coverage shall contain a waiver of subrogation in favour of the Owner.
- (c) Electrical/Mechanical Breakdown insurance (also referred to as Boiler and Machinery insurance) covering the FEI Facilities. Coverage shall contain a waiver of subrogation in favour of the Owner. At FEI's option, this insurance can be provided as part of the all-risk property policy in section 10.2(b).

10.3 All the insurance policies shall contain a provision that the coverage cannot be cancelled or have the coverage limits reduced by endorsement without the insurance company providing at least thirty (30) days written notice in accordance with section 16.5 (*Notices*).

10.4 FEI shall provide evidence of the foregoing insurance to the City at the applicable insurance commencement date.

ARTICLE 11- ENVIRONMENTAL PROVISIONS

11.1 Definition of Contaminants. "Contaminants" means collectively, any contaminant, toxic substances, dangerous goods or pollutant or any other substance which when released to the natural environment is likely to cause, at some immediate or future time, material harm or degradation to the natural environment or material risk to human health, and includes any radioactive materials, asbestos materials, urea formaldehyde, underground or aboveground tanks, pollutants, contaminants, deleterious substances, dangerous substances or goods, hazardous, corrosive or toxic substances, hazardous waste or waste of any kind, pesticides, defoliants, or any other solid, liquid, gas, vapour, odour or other substance the storage, manufacture, disposal, handling, treatment, generation, use, transport, remediation or release into the environment of which is now or hereafter prohibited, controlled or regulated by law.

11.2 Owner Release and Indemnity. Despite any other provision of this Agreement, the Owner acknowledges and agrees that FEI is not and shall not be responsible for any Contaminants now present, or present in the future, in, on or under the Lands, or that may migrate or may have migrated on or off the Lands and hereby releases and agrees to indemnify FEI and its directors, officers, employees, successors and permitted assigns, from any and all liabilities, actions, damages, claims (including remediation cost recovery claims), losses, costs, orders, fines, penalties and expenses whatsoever (including all consulting and legal fees and expenses on a solicitor-client basis) arising from or in connection with:

- (a) any release or alleged release of any Contaminants at or from the Lands;
- (b) the presence of any Contaminants in, on or under the Lands, or that may have migrated on or off the Lands before or after the date of execution of this Agreement;

except with respect to any Contaminants brought onto the Lands by FEI or any Contaminants released from the Lands by FEI.

11.3 FEI Release and Indemnity. Despite any other provision of this Agreement, FEI shall release and indemnify the Owner and its directors, officers, employees, successors and permitted assigns, from any and all liabilities, actions, damages, claims (including remediation cost recovery claims), losses, costs, orders, fines, penalties and expenses whatsoever (including all consulting and legal fees and expenses on a solicitor-client basis) arising from or in connection with the presence of any Contaminants brought onto the Lands by FEI or any Contaminants released from the Lands by FEI.

ARTICLE 12 - INDEMNIFICATION AND LIMITATION OF LIABILITY

12.1 Indemnification. Each party hereby indemnifies and holds harmless the other party and its employees, directors and officers from and against any and all adverse claims, losses, suits, actions, judgments, demands, debts, accounts, damages, costs, penalties and expenses (including all legal fees and disbursements) arising from or out of:

- (a) any acts or omissions in carrying out its obligations or exercising its rights under this Agreement; or
- (b) the breach by such party of any of the provisions contained in this Agreement.

- 12.2 **Limitation of Liability.** Each party's liability to the other party under this ARTICLE 12 shall be limited to the payment of direct damages or third party claims. In no event shall either party be responsible or liable to the other party for any indirect, consequential, punitive, exemplary or incidental damages of the other party arising out of or related to this Agreement even if the loss is directly attributable to the negligence or wilful misconduct of such party, its employees or its contractors.
- 12.3 **Duty to Mitigate.** Each party has a duty to mitigate the damages that would otherwise be recoverable from the other party pursuant to this Agreement by taking appropriate and commercially reasonable actions to reduce or limit the amount of such damages or amounts.

ARTICLE 13 - FORCE MAJEURE

- 13.1 **Effect of Force Majeure.** Neither party will be in default of this Agreement or be liable to the other party by reason only of any failure in the performance of such party's obligations pursuant to this Agreement if such failure arises without the fault or negligence of such party and is caused by any event of Force Majeure (as defined below) that makes it commercially impracticable or unreasonable for such party to perform its obligations under this Agreement and, in such event, the obligations of the parties will be suspended to the extent necessary for the period of the Force Majeure condition, save and except neither party will be relieved of or released from its obligations to make payments to the other party as a result of an event of Force Majeure. For the purpose of this section, "Force Majeure" means any cause which is unavoidable or beyond the reasonable control of the party relying on such cause, and which, by the exercise of all commercially reasonable efforts, such party is unable to prevent or overcome, including, acts of God, war, riots, intervention by civil or military authority (including changes in law or regulation), strikes, lockouts, accidents, acts of civil or military authority, or orders of government or regulatory bodies having jurisdiction, or breakage or accident to machinery or lines of pipes, or freezing of wells or pipelines or the failure of gas supply, temporary or otherwise; provided however, the lack of funds or any other financial cause shall not be an event of Force Majeure.
- 13.2 **Notice of Force Majeure.** The party whose performance is prevented by an event of Force Majeure must provide written notification to the other party of the occurrence of such event as soon as reasonably possible.
- 13.3 **Obligation to Mitigate.** The party whose performance is prevented by an event of Force Majeure must take commercially reasonable steps to mitigate the effect of any such event.
- 13.4 **Extended Force Majeure.**

If the duration of an event of Force Majeure exceeds two (2) years, upon request by either party, the parties will undertake a joint review of the Project, to be completed within 90 days from the two year anniversary of the notice of Force Majeure being provided, to enable the parties to determine the ongoing viability of the Project. If, upon completion of the review, either party determines the Project is no longer financially viable, such party may, at its option, terminate this Agreement upon written notice to the other party, whereupon the provisions of ARTICLE 9 will apply excluding section 9.2 (*Termination Payment*), and FEI will remove the FEI Facilities in accordance with section 9.1 (*Removal of FEI Facilities*) to the extent FEI is able to access the FEI Facilities and remove them having regard to the impacts of the Force Majeure on

the FEI Facilities or the Lands. This section 13.4 and FEI's obligation to remove the FEI Facilities under section 9.1 (*Removal of FEI Facilities*) shall survive the termination of this Agreement.

ARTICLE 14 - CONFIDENTIALITY

14.1 **Confidentiality.** All information or documentation received by a party (the "Receiving Party") which has been specifically marked or identified in writing by other party (the "Disclosing Party") as confidential or proprietary (the "Information") shall be deemed to be confidential and proprietary to the Disclosing Party. Except as otherwise provided herein, the Receiving Party shall not directly or indirectly disclose the Information to any third party without the prior written consent of the Disclosing Party. Such consent is not required where the Receiving Party discloses such Confidential Information:

- (a) to its directors, officers, employees, agents, accountants, lawyers, consultants or financial advisers or those of its affiliates; or
- (b) to a third party that is another contractor or consultant retained by the Receiving Party for the purposes of this Agreement and the activities described herein;

who need to know such information for the administration of this Agreement or the proper performance of the parties' respective obligations contemplated herein and who are subject to similar confidentiality obligations.

14.2 **Exclusions.** The obligation of confidentiality set out above shall not apply to material, data or information which: (1) is known to the Receiving Party prior to its receipt of the Information from the Disclosing Party; or (2) is generally available to the public; or (3) has been obtained from a third party which has the right to disclose the same; or (4) is independently developed by the Receiving Party without reliance on the Information supplied by the Disclosing Party.

14.3 **Exception.** Despite the foregoing section 14.1 (*Confidentiality*), the Receiving Party may disclose information as, when and to the extent required to be disclosed by law (including pursuant to the Freedom of Information and Protection of Privacy Act and in submissions to regulatory agencies), provided that the Receiving Party will, unless prohibited by law, forthwith notify the Disclosing Party to enable the Disclosing Party to mount a defense to such disclosure.

ARTICLE 15 - REPRESENTATIONS AND WARRANTIES

15.1 **Mutual Representations and Warranties.** Subject to receipt of approval of this Agreement by BCUC as identified in section 1.1 (*BCUC Condition Precedent*), each party represents and warrants to the other party that, as of the Agreement Date:

- (a) it has the full right, power and authority to enter into this Agreement and all necessary corporate action has been taken to authorize and approve the execution and delivery of this Agreement and performance of obligations hereunder;
- (b) to the best of its knowledge, this Agreement and the performance of its obligations hereunder do not breach any provisions of any other agreement or law that is binding on or applicable to such party; and

- (c) it is not party to any action, suit or legal proceeding, actual or threatened, and there are no circumstances, matters or things known to such party which might give rise to any such action, suit or legal proceeding, and there are no actions, suits or proceedings pending or threatened against such party before or by any governmental authority, which could affect its ability to perform its obligations under this Agreement.

- 15.2 **Additional Representation and Warranty of Owner.** The Owner further represents and warrants that it has the necessary power, capacity and authority to provide the property access rights to FEI as contemplated in this Agreement.

ARTICLE 16 - GENERAL

- 16.1 **Costs.** Except as otherwise set out in this Agreement, each party will be responsible for the payment of its own costs related to performing its obligations under this Agreement.
- 16.2 **Publicity.** Neither party shall initiate any media releases, interviews or presentations to the media relating to this Agreement without the agreement and approval of the other party, not to be unreasonably withheld or delayed.
- 16.3 **Compliance with Laws and Industry Standards.** Each party covenants, as a material provision of this Agreement, it will comply with all codes, statutes, by-laws, regulations or other laws in force in British Columbia, as well as all applicable industry standards, during the Term.
- 16.4 **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the Province of British Columbia and the laws of Canada. The parties hereby attorn to the jurisdiction of the courts of British Columbia and all courts competent to hear appeals therefrom.
- 16.5 **Notices.** Any notice or other communication required to be given or made pursuant to the Agreement shall, unless otherwise expressly provided herein, be deemed to be sufficiently given if given in writing and personally delivered to, sent by registered mail to or sent by facsimile (with delivery confirmation) to the relevant party at its address set forth below (or such other address of which the relevant party has given written notice to the other party in accordance herewith) and shall be deemed to have been received on the next business day following delivery or facsimile transmittal:

If to FEI:

FORTISBC ENERGY INC.
16705 Fraser Highway, Surrey, BC V4N 0E8

Attention: Director - NGT, Regional LNG and
RNG Supply
Fax: 604-592-7444

With a copy to:
renewablenaturalgas@fortisbc.com

If to the Owner:

CITY OF VANCOUVER
453 West 12th Ave., Vancouver, BC V5Y1V4

Attention: Director of Legal Services
Fax: 604-873-7445

With a copy to: General Manager of
Engineering Services
Fax: 604-871-6119

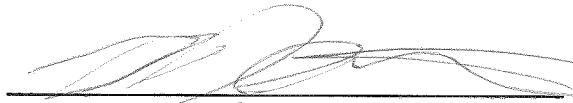
- 16.6 **Operational Communications.** Despite Section 16.5 (*Notices*), each party shall designate, in writing to the other from time to time, operational contact persons, with whom the other party's designated operational contact persons may communicate in respect of operational matters, and the designating party shall provide contact information for such persons, and matters communicated in writing (including by email) between the parties' designated contact persons shall be deemed to be valid communications hereunder and each party shall be deemed to be in receipt of each such communication from the other party on the next business day following delivery or transmittal. In no event, however, may any notice pursuant to ARTICLE 1 (*Conditions Precedent*), ARTICLE 8 (*Default*), ARTICLE 9 (*Effect of Expiry or Termination*), ARTICLE 10 (*Insurance Requirements*), ARTICLE 11 (*Environmental Provisions*), ARTICLE 12 (*Indemnification and Limitation of Liability*), ARTICLE 13 (*Force Majeure*) or ARTICLE 14 (*Confidentiality*) be given pursuant to this section 16.6 (*Operational Communications*).
- 16.7 **Schedules.** The schedules attached to this agreement are an integral part of this Agreement and are hereby incorporated into this Agreement as a part thereof.
- 16.8 **Amendments to be in Writing.** Except as set out in this Agreement, no amendment or variation of the Agreement shall be effective or binding upon the parties unless such amendment or variation is set forth in writing and duly executed by the parties.
- 16.9 **Waiver.** No party is bound by any waiver of any provision of this Agreement unless such waiver is consented to in writing by that party. No waiver of any provisions of this Agreement constitutes a waiver of any other provision, nor does any waiver constitute a continuing waiver unless otherwise provided.
- 16.10 **Assignment.** Neither party shall assign its rights and obligations under this Agreement without the prior written consent of the other party, such consent not to be unreasonably withheld, delayed or conditioned. Despite the foregoing, FEI may assign this Agreement, or parts thereof, to any of its affiliates (as defined in the *Business Corporations Act* (British Columbia)) and the Owner may assign this Agreement to any public body (including any municipality or regional district) without the consent of FEI.
- 16.11 **Relationship.** Nothing in this Agreement will be construed as creating any relationship of partnership, joint venture or agency between the parties.
- 16.12 **Enurement.** This Agreement enures to the benefit of and is binding on the parties and their respective successors and permitted assigns.
- 16.13 **Survival.** The following provisions shall survive the termination or expiration of this Agreement: section 5.9 (*Indemnity*), ARTICLE 9 (*Effect of Expiry or Termination*), ARTICLE 11 (*Environmental Provisions*), ARTICLE 12 (*Indemnification and Limitation of Liability*), ARTICLE 14 (*Confidentiality*) and ARTICLE 16 (*General*).
- 16.14 **Remedies Cumulative.** All rights and remedies of each party under this Agreement are cumulative and may be exercised at any time and from time to time, independently and in combination.

- 16.15 **Severability.** If any provision of this Agreement is determined by a court of competent jurisdiction to be invalid, illegal or unenforceable in any respect, such determination does not impair or affect the validity, legality or enforceability of any other provision of this Agreement.
- 16.16 **Further Assurances.** The parties shall sign such further and other documents and do and perform and cause to be done and performed such further and other acts and things as may be necessary or desirable in order to give full effect to this Agreement.
- 16.17 **Entire Agreement.** This Agreement constitutes the entire agreement between the parties with respect to the subject matter of this Agreement and supersedes all prior agreements, understandings, negotiations and discussions, whether oral or written. There are no conditions, covenants, representations, warranties or other provisions, whether express or implied, collateral, statutory or otherwise, relating to the subject matter of this Agreement except as provided in this Agreement.
- 16.18 **Time is of the essence.** Time is of the essence of this Agreement.
- 16.19 **Execution.** This Agreement may be executed in counterparts, each of which shall be deemed as an original, but all of which shall constitute one and the same instrument. Delivery of an executed counterpart of this Agreement by facsimile or electronic transmission hereof shall be as effective as delivery of an originally executed counterpart hereof.
- 16.20 **Interpretation.** In and for the purpose of this Agreement:
- (a) this “Agreement” means this agreement as the same may from time to time be modified, supplemented or amended in effect;
 - (b) the headings are for convenience only and do not form a part of this Agreement and are not intended to interpret, define or limit the scope, extent or intent of this Agreement; and
 - (c) the singular of any term includes the plural, and vice versa, the use of any term is generally applicable to any gender and, where applicable, a corporation, the word “or” is not exclusive and the word “including” is not limiting (whether or not non-limiting language (such as “without limitation” or “but not limited to” or words of similar import) is used with reference thereto).

IN WITNESS WHEREOF the parties hereto have executed this Agreement as of the day and year first above written.

FORTISBC ENERGY INC.

by its authorized signatory(ies):



Name: Douglas Stout

Title: Vice President, Market Development and
External Relations

Roger Day Antonia
President and CEO

CITY OF VANCOUVER,

by its authorized signatory(ies):



Name: Jerry Dobrovoly

Title: General Manager, Engineering Services



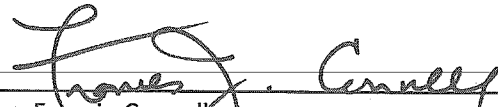
Name: Patrice Impey

Title: Director of Finance



Name: Nick Kassam

Title: Director, Supply Chain Management



Name: Francie Connell

Title: Director, Legal Services

Schedules attached:

Schedule A – Specifications

Schedule B – Drawing of License Area

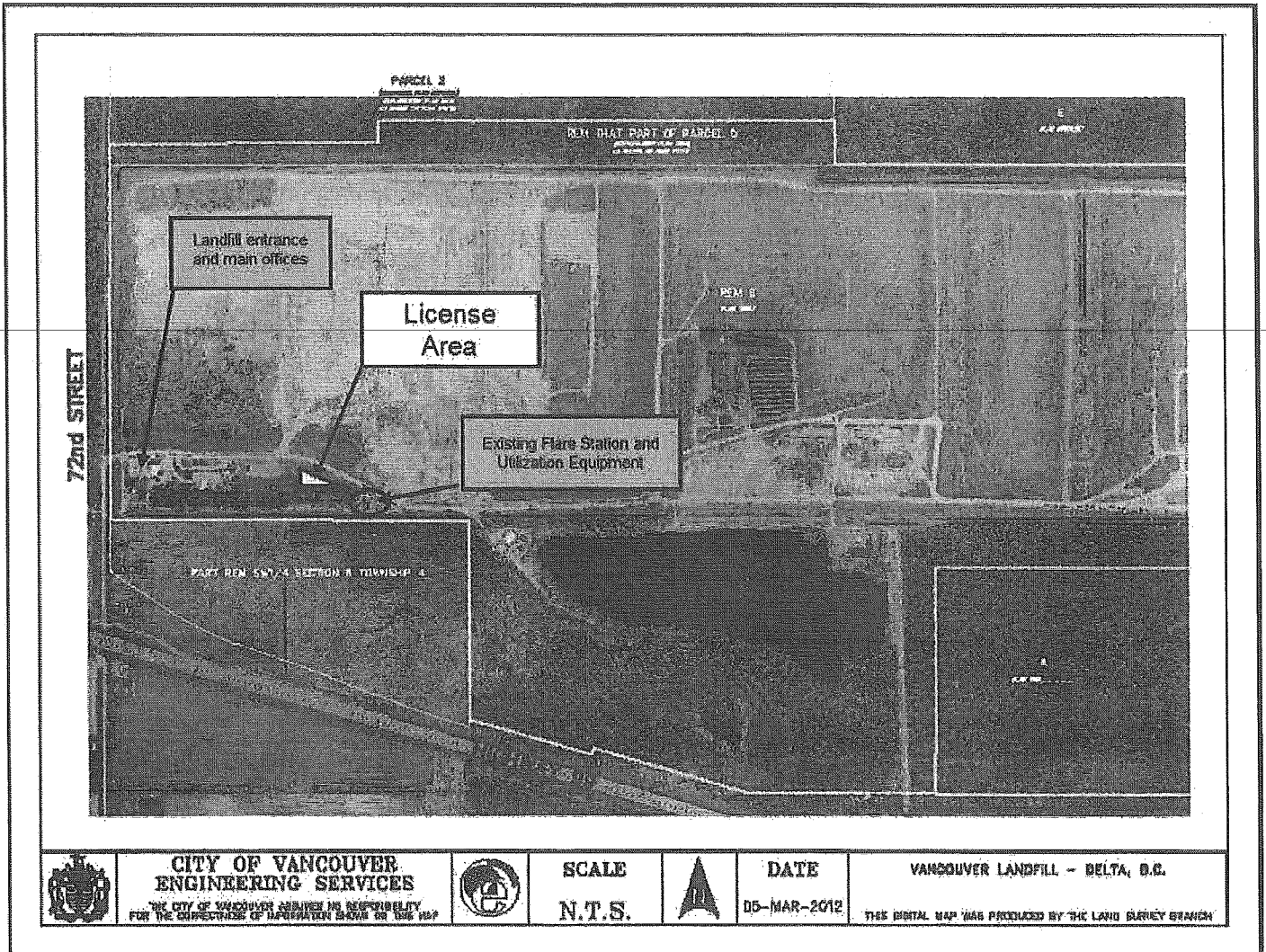
Schedule C – Description of Owner Facilities and FEI Facilities

**SCHEDULE A
SPECIFICATIONS**

To be accepted by FEI, Biogas must meet the following specifications:

- be free of liquid water;
- have a minimum methane content of 48% by volume;
- have a maximum nitrogen content of 12.0% by volume; and
- have a maximum oxygen content of 1.0% by volume.

**SCHEDULE B
DRAWING OF LICENSE AREA**



SCHEDULE C
DESCRIPTION OF OWNER FACILITIES AND FEI FACILITIES

- A. **Facility Sizing.** The Owner Facilities and FEI Facilities will be designed to provide a minimum Biogas flow rate of [REDACTED] and a maximum Biogas flow rate of [REDACTED] which represents a range of raw energy from [REDACTED] based on an average expected methane percentage of 50%.¹
- B. **"Owner Facilities"** means those facilities, including "Additional Facilities," necessary to capture Biogas and make it available for passage to the FEI Facilities, including but not limited to:
- (a) the Biogas collection header;
 - (b) the Biogas collection system (vertical or horizontal wells);
 - (c) all associated valves, monitoring points and supports;
 - (d) a raw Biogas flow meter;
 - (e) a real-time raw Biogas methane level monitor;
 - (f) condensate removal (traps and knockouts);
 - (g) a real-time oxygen level monitor;
 - (h) a blower for the collection system;
 - (i) point of distribution to FEI Facilities (i.e. connection to FEI piping at the Owner flare station);
 - (j) a flare system;
 - (k) piping up to the FEI Facilities for delivery and return of Biogas to/from the connection point; and
 - (l) any upgrades, replacements or modifications thereto.
- C. **"FEI Facilities"** means those facilities connected to the Owner Facilities and necessary to monitor Biogas quality, to accept and measure Biogas and to purify and upgrade Biogas to biomethane, including but not limited to:
- (a) a receipt piping connection (a flange);
 - (b) Biogas measurement instruments;
 - (c) water removal equipment and connections to the existing condensate system;
 - (d) sulfur compound removal equipment;
 - (e) siloxane removal equipment;
 - (f) volatile organic compound removal equipment;
 - (g) carbon dioxide, oxygen and nitrogen removal equipment;

¹ Volume (m3/hr) x 24 hrs/day x 365 days/year x 50% methane x .036 GJ/m3 of methane

- (h) monitoring equipment for safe operation;
- (i) compression equipment;
- (j) upstream shut-off and safety-relief equipment;
- (k) equipment for thermal oxidization of waste gas if required;
- (l) a flare or thermal oxidizer system for any tail gas created by the upgrading process;
- (m) piping between the Owner's flare station connection point and the FEI Facilities;
- (n) interconnection between the FEI Biogas upgrade equipment and the existing FEI natural gas system;
- (o) equipment for metering (certified for commercial use under Canada's *Weights and Measures Act*), composition monitoring and odorizing of biomethane;
- (p) power cable and conditioning from the existing Owner 25kV supply on a pole-line near the FEI Facilities;
- (q) signage and fences; and
- (r) any upgrades, replacements or modifications thereto.

Interface Diagram between Owner and FEI Facilities

