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December 22, 2021

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

Attention: Mr. Patrick Wruck, Commission Secretary

Dear Mr. Wruck:

**Re: FortisBC Energy Inc. (FEI)**

**Section 71 of the *Utilities Commission Act* (UCA) and British Columbia Utilities Commission (BCUC) Rules for Natural Gas Energy Supply Contracts**  
**Filing of a Biomethane Purchase Agreement (BPA) between FEI and Regional District of Fraser-Fort George (RDFFG) (Application)**

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In accordance with section 71 of the UCA and the BCUC's Rules for Natural Gas Energy Supply Contracts (Rules), FEI files the attached fully executed BPA between FEI and Regional District of Fraser-Fort George dated September 18, 2019 (RDFFG BPA). A copy of the executed RDFFG BPA is provided in Appendix A.

Under the RDFFG BPA, FEI will purchase raw biogas from the RDFFG landfill (landfill gas or LFG). Furthermore, FEI will construct and operate facilities (the "FEI Facilities") on RDFFG land to upgrade the LFG to pipeline quality biomethane, or renewable natural gas (RNG)<sup>1</sup>, and inject the RNG into FEI's natural gas system. Collectively, the RDFFG BPA and the FEI Facilities will be referred to as the Project.

The acquisition of biomethane under the RDFFG BPA qualifies as a prescribed undertaking under section 18 of the *Clean Energy Act* (CEA) and section 2(3.7) to (3.9) of the *Greenhouse Gas Reduction (Clean Energy) Regulation* (GGRR).

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<sup>1</sup> RNG is a synonym for biomethane.

## **1. APPROVALS SOUGHT**

FEI is seeking acceptance from the BCUC of the RDFFG BPA, pursuant to section 71 of the UCA and the BCUC's Rules for Natural Gas Energy Supply Contracts. As the RDFFG BPA is a prescribed undertaking under section 18 of the CEA and the GGRR, FEI respectfully submits that the BCUC should accept the BPA with minimal regulatory process. FEI acquires Renewable Gas (RG) in an increasingly competitive market, and unnecessary regulatory process can adversely impact FEI's ability to negotiate acquisitions of RG at the lowest reasonable cost.

FEI further requests that the confidential, unredacted version of this Application, including the unredacted version of the RDFFG BPA attached as Appendix A, the confidential financial schedules attached as Appendix B, the BPA Project Summary attached as Appendix C, and the Memo attached as Appendix E, be treated as confidential by the BCUC pursuant to section 71(5) of the UCA, Section 18 of the BCUC's Rules of Practice and Procedure regarding confidential documents adopted by Order G-15-19, and Section 6.0 of the Rules for Natural Gas Energy Supply Contracts.

The RDFFG BPA contains confidential and commercially sensitive terms, including negotiated rates and volumes. The public disclosure of this information could compromise FEI's ability to negotiate favourable terms with other Biomethane suppliers which could serve to increase overall costs of the Renewable Gas Program and potentially impact rates for all non-bypass customers. FEI has redacted the confidential information from the public version of this Application. Keeping this information confidential will ensure that market sensitive information is protected, preserving FEI's ability to negotiate competitive pricing for RG in the future.

A draft form of Order sought is provided in Appendix D.

## **2. LEGAL COUNSEL**

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## **3. LEGISLATIVE AND REGULATORY FRAMEWORK**

On April 18, 2010, the Province of BC enacted the CEA. The CEA established a number of energy objectives and provided that the Lieutenant Governor in Council (LGIC) can prescribe

undertakings to encourage public utilities to pursue certain greenhouse gas (GHG) reducing initiatives. Section 18 of the CEA states:

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.

(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.

(4) A public utility referred to in subsection (2) must submit to the minister, on the minister's request, a report respecting the prescribed undertaking.

(5) A report to be submitted under subsection (4) must include the information the minister specifies and be submitted in the form and by the time the minister specifies.

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 March 21, 2017, the LGIC issued OIC 161/2017 approving an amendment to the GGRR related to RNG as follows:

(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 [gigajoule],  
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.

(3.9) The volume referred to in subsection (3.8) (b) does not include renewable natural gas acquired by the public utility that the public utility provides to a customer in accordance with a rate under which the full cost of the following is recovered from the customer:

- (a) the acquisition of the renewable natural gas;
- (b) the service related to the provision of the renewable natural gas.

The Ministry has stated that the “amendments were made to the Greenhouse Gas Reduction (Clean Energy) Regulation in the spring of 2017 to increase incentives for using renewable natural gas in transportation and to establish measures to increase the supply of RNG.”<sup>2</sup>

The BCUC in its Decision and Order G-122-193 determined that for a project to qualify as a prescribed undertaking under section 2(3.8) of the GGRR as written at that time, it must satisfy the following three-part test:

- The public utility must be acquiring renewable natural gas (as opposed to some other form of commodity);
- The utility must pay no more than \$30 per GJ for that renewable natural gas; and
- Subject to certain exceptions, the annual volume of renewable natural gas acquired must not exceed 5% of the total volume of natural gas the utility provided to its non-bypass customers in 2015.<sup>4</sup>

On May 25, 2021 the LGIC issued OIC 306/2021 which further amended section 2 to the GGRR related to RNG, including as follows:

*(a) by adding the following subsection:*

(3.71) For the purposes of subsection (3.8), “acquires renewable natural gas” includes producing renewable natural gas by producing or purchasing biogas and upgrading it to renewable natural gas, and

*(b) by repealing subsection (3.8) and substituting the following:*

(3.8) The public utility acquires renewable natural gas

(a) at costs that meet the following criteria, as applicable:

(i) if the public utility acquires renewable natural gas by purchasing it, the price of the renewable natural gas does not exceed the maximum amount, determined in accordance with section 9, in effect in the fiscal year in which the contract for purchase is signed;

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<sup>2</sup> In the Matter of FEI’s Application for Acceptance of the Biogas Purchase Agreement between FEI and the City of Vancouver, Exhibit C1-2.

<sup>3</sup> In the Matter of FEI’s Application for Acceptance of the Biogas Purchase Agreement between FEI and the City of Vancouver.

<sup>4</sup> Decision and Order G-122-19, page 8.



(ii) if the public utility acquires renewable natural gas by producing it, the levelized cost of production reasonably expected by the public utility does not exceed the maximum amount, determined in accordance with section 9, in effect in the fiscal year in which the public utility decides to construct or purchase the production facility, and

(b) that, in a calendar year, does not exceed 15% of the total amount, in GJ, of natural gas provided by the public utility to its non-bypass customers in 2019, subject to subsection (3.9) and section 10.

OIC 306/2021 also added section 9 of the GGRR, which sets a maximum price of \$31 dollars for fiscal year 2021/22.<sup>5</sup> The maximum price increases each fiscal year.

OIC 306/2021 also added section 10 of the GGRR, which indicates that acquisitions of hydrogen, synthesis gas, and lignin under sections 6, 7 and 8 of the GGRR also count towards the maximum volume.

The maximum volume of 15 percent in the GGRR is the implementation of the Province's CleanBC plan. The CleanBC plan states that it will put in place a minimum requirement for 15 per cent renewable content in natural gas by 2030, stating:<sup>6</sup>

As part of CleanBC, we will work with natural gas providers to put in place a minimum requirement for 15 per cent renewable content in natural gas by 2030. That means the gas we use in our furnaces, water heaters, dryers, stoves and other gas appliances will have less impact on the environment, and the methane that is wasted from agriculture, sewage and landfills will be significantly reduced. Waste hydrogen can also be mixed with the natural gas we use in our homes and will provide additional renewable natural gas for our needs.

The purpose of this class of prescribed undertaking is to facilitate FEI acquiring RNG, or other renewable gases, up to the maximum amount so that the Province can realize its greenhouse gas reduction goals in the CleanBC plan.

#### **4. THE RDFFG BPA IS A PRESCRIBED UNDERTAKING**

Under the amended GGRR, the three part-test for a BPA or project to qualify as a prescribed undertaking can be restated as follows:

- The public utility must be acquiring RNG (as opposed to some other form of commodity);

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<sup>5</sup> Beginning April 1, 2021 and ending March 31, 2022.

<sup>6</sup> CleanBC plan, at page 36. Online: [CleanBC: our nature. our power. our future. \(gov.bc.ca\)](https://gov.bc.ca/cleanbc)

- The public utility must pay no more than the applicable maximum price for that RNG; and
- The volume of RNG, hydrogen, synthesis gas, and lignin that the public utility acquires in a calendar year must not exceed 15 percent of the total amount, in GJ, of natural gas provided by the public utility to its non-bypass customers in 2019, subject to subsection (3.9) and section 10 of the GGRR.

The RDFFG BPA satisfies the three-part test and qualifies as a prescribed undertaking based on the following:

1. Under the RDFFG BPA, FEI is acquiring RNG by producing it from the landfill gas at the RDFFG landfill.

As noted in by the BCUC in its Reasons for Decision accompanying Order E-14-21, there are two aspects to this portion of the test: “that FEI is acquiring something, and that what is being acquired is RNG.”

The GGRR explicitly contemplates acquisition through the production of RNG. Section 3.71 states “For the purposes of subsection (3.8), “acquires renewable natural gas” includes producing renewable natural gas by producing or purchasing biogas and upgrading it to renewable natural gas.” Purchasing the raw biogas from RDFFG landfill and producing the RNG therefore satisfies the first portion of this test.

As for the second aspect of this part of the test, FEI will be acquiring RNG. FEI will be first purchasing biogas (landfill gas or LFG) produced by the RDFFG facilities, which is derived from the decomposition of organic waste material at the landfill. FEI will then upgrade the biogas into RNG for injection into the gas distribution system, as described in section 5.4 of the Application. This is consistent with the definition of biomethane in the *Carbon Tax Act*, which states that biomethane is methane produced from biomass. This is also consistent with how FEI has defined RNG since the beginning of its Renewable Gas Program over a decade ago, as embedded in FEI’s BCUC-approved General Tariff Terms and Conditions. As with its other BPAs, FEI is acquiring all environmental attributes associated with the biogas, as specified in Section 8.1 of the RDFFG BPA.

It is therefore clear that FEI is acquiring RNG through the RDFFG BPA.

2. As FEI is acquiring renewable natural gas by producing it, section 3(a)(ii) of the GGRR is applicable. It states: “if the public utility acquires renewable natural gas by producing it, the levelized cost of production reasonably expected by the public utility does not exceed the maximum amount, determined in accordance with section 9, in effect in the fiscal year in which the public utility decides to construct or purchase the production facility,...” FEI decided to construct the production facility described in section 5.4 below in the 2021/2022 fiscal year (subject to BCUC acceptance of the RDFFG BPA). While the RDFFG BPA was signed in September 2019, it was not until the supply

projections and analysis described in section 6 of the Application were complete that FEI decided it would construct the production facility. Therefore, the applicable maximum price is \$31.

FEI expects the levelized cost of RNG to be [REDACTED] per GJ which is well below the \$31 per GJ maximum acquisition price. The levelized cost of RNG is based on the price of raw landfill gas in the RDFFG BPA as described in section 6.1 below, the class 3 capital cost estimate for the FEI Facilities as set out in section 6.3 below, and the expected volumes of RNG from the Project as explained in section 6.4 below. As discussed in section 6.5, the levelized cost of RNG remains well below the \$31 per GJ maximum acquisition price in a range of scenarios, including in a high capital costs - low volume scenario. Therefore, the levelized cost of production reasonably expected by the public utility does not exceed the maximum amount and it meets this part of the test.

3. FEI will manage its RNG acquisitions in each calendar year to be within the maximum amount specified in the GGRR. Specifically, if FEI were to acquire more than the maximum amount of RNG in any calendar year, FEI would sell an amount of RNG equivalent to the overage at full cost such that this amount would not count towards the cap per s. 2(3.9) of the GGRR. FEI reports regularly to the BCUC on its RNG acquisitions. As such, FEI's compliance with the cap on RNG acquisitions can be overseen. In any case, FEI's total capacity to acquire RNG is well below the calculated maximum volume set out in section 2(3.8)(b) in the GGRR for FEI of approximately 30.079 PJs. The contractual maximum volume of biogas under the RDFFG BPA is [REDACTED] GJ which is equivalent to approximately [REDACTED] GJ of RNG. The total maximum of FEI's contracted RNG volume in its portfolio, if the RDFFG BPA is accepted, would be [REDACTED] GJ annually. A summary of approved BPAs and contracted volumes is included in Appendix C. FEI has not yet acquired any hydrogen, synthesis gas, or lignin.

As FEI has demonstrated above, the three-part test under Section 2(3.8) of the GGRR is satisfied.

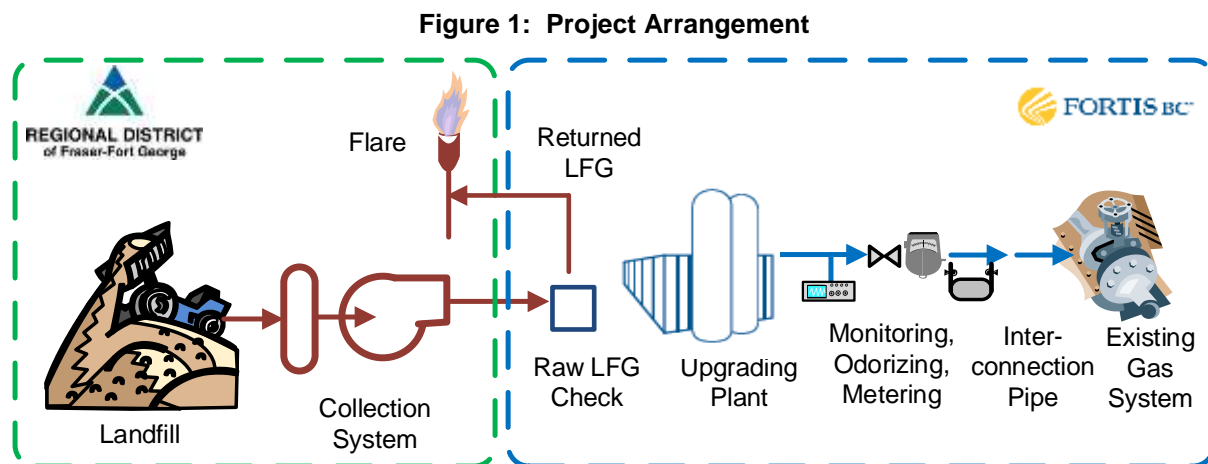
## **5. PROJECT OVERVIEW**

This section provides a high-level overview of the Project that will supply RNG to FEI under the RDFFG BPA and the operation of the FEI Facilities.

The FEI Facilities will consist of connecting to the existing LFG collection system, installing a biogas upgrading plant, and connecting to existing FEI natural gas distribution infrastructure through a new 900 metre interconnection pipeline and an interconnection station.

The structure of the BPA and the required infrastructure will be similar to the FEI-owned LFG upgrading projects located in Salmon Arm, Kelowna, and Delta. RDFFG 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 to Biomethane, the interconnection, measurement equipment, and pipeline necessary to inject the RNG into FEI's natural gas distribution system. The Project arrangement and location are summarized in Figure 1 below.



## 5.1 BACKGROUND ON RDFFG

The Regional District of Fraser-Fort George (RDFFG) is a government body that provides joint or shared services such as solid waste management in municipalities and rural areas within its boundaries. The largest municipality within the district is Prince George and it serves a total population of just under 100 thousand.

RDFFG originally submitted the Project to FEI under the 2014 Request for Expression of Interest for new biomethane supply. At the time the Foothills Regional Landfill was about to undergo an expansion to the LFG collection system and biogas upgrading was being considered as a beneficial use under the district solid waste management plan. RDFFG and FEI decided to postpone Project discussions until revised LFG and technical data could be obtained. Following amendments to the GGRR in 2017 FEI re-engaged in discussions with RDFFG to explore the Project further. A feasibility study was completed in summer of 2018, which included technical feasibility, a cost estimate, and a preliminary cost of service calculation. Following the completion of the feasibility analysis, the two parties negotiated the BPA which was finalized in September 2019.

## 5.2 PROJECT SUMMARY

The following table summarizes the Project and its concordance with the GGRR's three-part test.

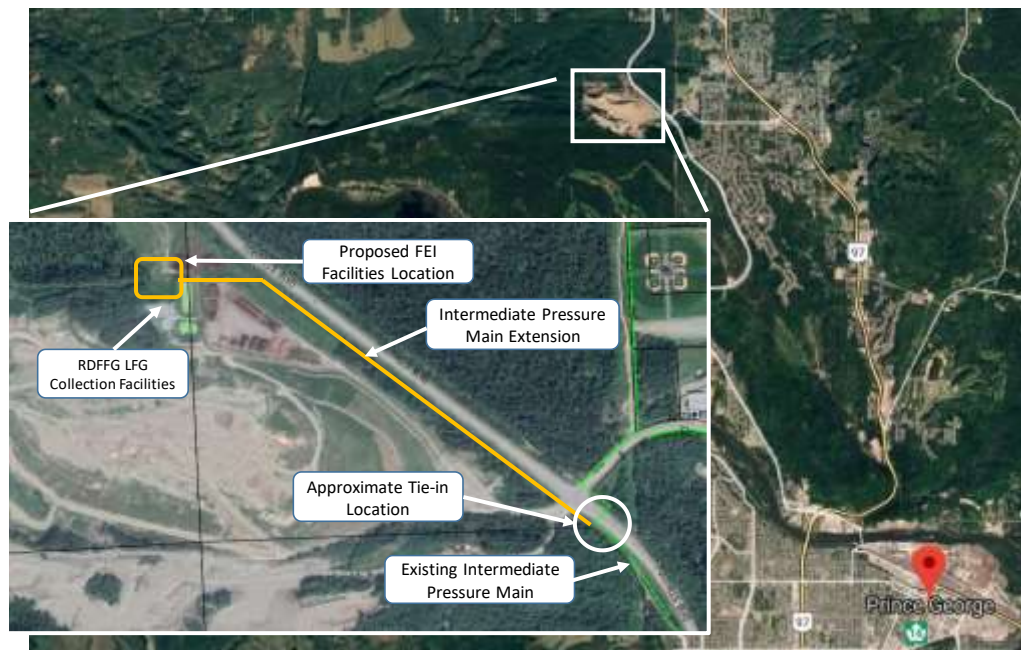
**Table 1: Table of Concordance**

Project Characteristic	Description
Is FEI acquiring biogas or biomethane?	Yes - FEI is purchasing biogas from RDFFG.
Is FEI making a capital investment?	Yes – FEI will construct, own and operate an upgrader and interconnection facility.
Are the costs of the capital investment recovered from the producer (if applicable)?	No – FEI will own and operate the upgrader and interconnection. Capital costs are included in the Cost of Service calculation.
Does the price to acquire biomethane (including any capital or operating costs incurred by FEI) exceed the \$31 per GJ maximum price at any time during the Project term?	No – Section 3.8(a) (ii) of the GGRR Amendment includes that if the public utility acquires renewable natural gas by producing it, the levelized cost of production reasonably expected by the public utility does not exceed the maximum amount.
Will the Project's supply of biogas or biomethane result in FEI's total annual volume of biomethane, hydrogen, synthesis gas, and lignin exceeding 15% of the total volume of natural gas provided by FEI to its non-bypass customers in 2019?	No

### **5.3 PROJECT LOCATION AND FACILITIES**

The Project will be situated on the Foothills Boulevard Regional Landfill owned and operated by the RDFFG located north of Prince George. The landfill has an existing landfill gas collection system installed which captures and flares LFG. The Project locations and Facilities are shown in Figure 2 below.

**Figure 2: Project Location and Facilities**



## 5.4 *FEI BIOGAS 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.

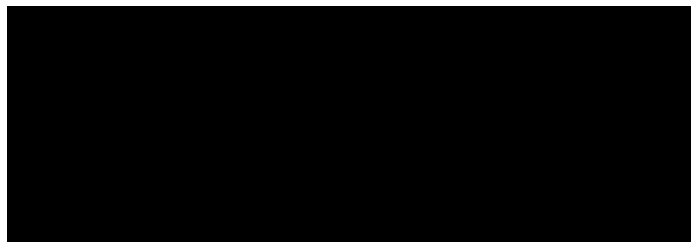
LFG from the RDFFG landfill contains methane, carbon dioxide, air, water, and other trace contaminants that are a natural by-product of the anaerobic digestion of municipal landfill waste. The composition of the LFG at the Foothills landfill is similar to many other landfills, but there are variables that will affect the gas composition. FEI obtained almost five years of data from RDFFG and took additional samples of the LFG over time to develop the expected gas composition parameters necessary to design an upgrader.

By evaluating the gas composition FEI was able to develop an average composition of the RDFFG LFG shown in Table 2 below.

**Table 2: Average Landfill Gas Composition – 2015 to 2019**

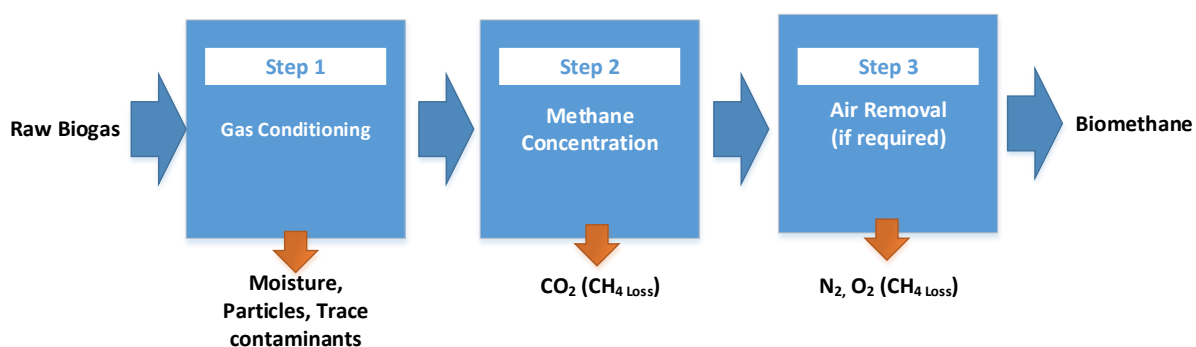
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In order to convert the raw LFG supplied by RDFFG to biomethane, FEI will construct a biogas upgrader. This process involves three main steps as shown in Figure 3.

**Figure 3: Biogas Upgrading Process**



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 biogas upgrading and supply a product that meets FEI's biomethane specifications. In the case of LFG, the Gas Conditioning step (Step 1 in Figure 3) is generally interchangeable between vendors; therefore, technology providers are categorized according to the methods used to purify the LFG in steps 2 and 3, the Methane Concentration and Air Removal steps. The Methane Concentration step can be done using Water Wash, Membrane Separation or using a technology called Pressure Swing Adsorption (PSA). In the case of the RDFFG LFG, there is enough remaining nitrogen in the raw LFG that the Air Removal step will be required. The industry accepted technology for air removal in biogas upgrading is a PSA system. As a result, any technology solution would require a PSA for at least one step in the process.

FEI worked with three equipment suppliers to develop possible solutions for this Project during the feasibility stage. Two of the suppliers proposed pure PSA solutions (for steps 2 and 3 above) and one proposed a combined Membrane Separation-PSA solution (membrane for step 2 and PSA for step 3).

The final selection of upgrading technology and supplier 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 and operating cost. However, based on the solutions proposed, FEI was able to develop a cost estimate.

## **5.5 FEI INTERCONNECTION FACILITIES**

In order to monitor the quantity and quality of the biomethane supplied to FEI from the biogas upgrader facility, and to inject the supplied biomethane into FEI's pipeline, FEI will also construct an interconnection station and compressor on the RDFFG landfill. The interconnection station will connect to the existing natural gas system via a new interconnection pipeline.

The interconnection station will serve the same function as other biomethane injection stations, including the following:

- Gas composition analysis (methane, oxygen, carbon dioxide, carbon monoxide, hydrogen, and hydrogen sulphide);
- Biomethane flow measurement;
- Pressure regulation;
- Safety shutoff and return to customer flow;
- Odourization;
- Communications; and
- Automatic control.

The compression at the interconnection station will increase the injection pressure by approximately 800 kilopascals (greater by a factor of about 3 times). FEI will also install, own and operate approximately 900m of 114mm steel interconnection pipe, which will connect the FEI Interconnect Station to an existing FEI Intermediate Pressure main running parallel to Foothills Boulevard. Figure 2 above shows the approximate location of the FEI Facilities and the tie-in to the natural gas system.

## **6. ANALYSIS OF THE PROJECT**

This section provides an analysis of the Project, including a summary of key terms of the RDFFG BPA, the risks and mitigation measures associated with the Project, the FEI Facilities costs, the incremental rate impact of the Project for FEI's non-bypass customers, the projected volumes and a scenario analysis of the projected RNG volumes.



## 6.1 SUMMARY OF THE RDFFG BPA

The RDFFG BPA is a [REDACTED]-year agreement that allows FEI to acquire biogas from RDFFG. The key elements of the RDFFG BPA are summarized in Table 3 below.

**Table 3: RDFFG BPA Summary**

Item	RDFFG BPA Amount	BPA Clause	Comment
Contract Term	[REDACTED] Years	Section 2.1	
Renewal Term	[REDACTED] Years	Section 2.2	
Minimum Annual Volume	[REDACTED] GJ	Schedule D Section 1.1(b)	Represents the minimum biogas volume that FEI agrees to purchase annually from RDFFG.
Maximum Annual Volume	[REDACTED] GJ	Schedule D Section 1.1(a)	Represents the maximum biogas volume that FEI agrees to purchase annually from RDFFG.
Price (per GJ)	[REDACTED] + Inflation Factor	Schedule D Section 2.1	Represents the price (in CAD), that FEI will pay to RDFFG for biogas.  No adjustment to the purchase price for biogas may cause FEI to exceed the maximum acquisition price in the GGRR as determined by FEI (which includes the purchase price for LFG, the cost of FEI Facilities, and the projected volumes of RNG).
Inflation Factor on Price	[REDACTED]	Schedule D Section 2.2	[REDACTED] adjusted annually each November 1 <sup>st</sup> after the first anniversary of the start date.
Maximum Price	BCUC or BC Government RNG Supply Purchase Price	Schedule D Section 2.1	No adjustment to the purchase price for biogas may cause FEI to exceed the maximum acquisition price in the GGRR as determined by FEI (which includes the purchase price for LFG, the cost of FEI Facilities, and the projected volumes of RNG).
Anniversary Reviews	[REDACTED]	Section 5.10	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]

## 6.2 RISKS AND MITIGATION

FEI has obtained contractual assurances from RDFFG within the BPA to mitigate Project risks on the biomethane volume and FEI stranded assets. Further, the maximum price payable by FEI to RDFFG for biomethane cannot exceed the GGRR maximum acquisition cost.

The risks and associated mitigation measures are summarized in Table 4 below.

**Table 4: Risks and Mitigation**

Risk Item	Description of Risk Item	Risk Mitigation – BPA Clause	Description of Risk Mitigation
Biogas Quality	RDFFG biogas quality changes resulting in a material change to the economics of the project.	Section 5.10 Anniversary Review	Parties will work together to evaluate changes in gas quality and amend the agreement as required. If the parties are unable to amend the agreement, FEI may terminate, and RDFFG will pay for removal costs and net salvage value of unrecoverable assets associated with the FEI Facilities.
Undersupply	RDFFG is not able to deliver the minimum contractual volume of biogas.	Section 5.4 Supply Based Reviews	Parties will work together to evaluate changes in gas volume and amend the agreement as required. If the parties are unable to amend the agreement, FEI may terminate, and RDFFG will pay for removal costs and net salvage value of unrecoverable assets.
Stranded Assets	FEI assets not recoverable in the event the agreement is terminated.	Section 9.1 & 9.2	In the event of default by RDFFG, FEI may terminate at no cost and recover the cost of the FEI Facilities, including the cost of removal.

## 6.3 COST FOR THE FEI FACILITIES

FEI completed a detailed cost estimate to the level of AACE Class 3 for the FEI Facilities with an accuracy of +30%/-20%. The estimated capital cost of the FEI Facilities is [REDACTED] with a high estimate of [REDACTED] (+30%), excluding Allowance for Funds Used During Construction (AFUDC). AFUDC is estimated to be [REDACTED]. The total estimated capital costs using the expected case which includes AFUDC is [REDACTED].

The expected annual operating and maintenance cost for the FEI Facilities is forecast to be approximately [REDACTED]. This amount is primarily comprised of electricity, odourant, parts, and labour costs.

## **6.4 PROJECTED SUPPLY**

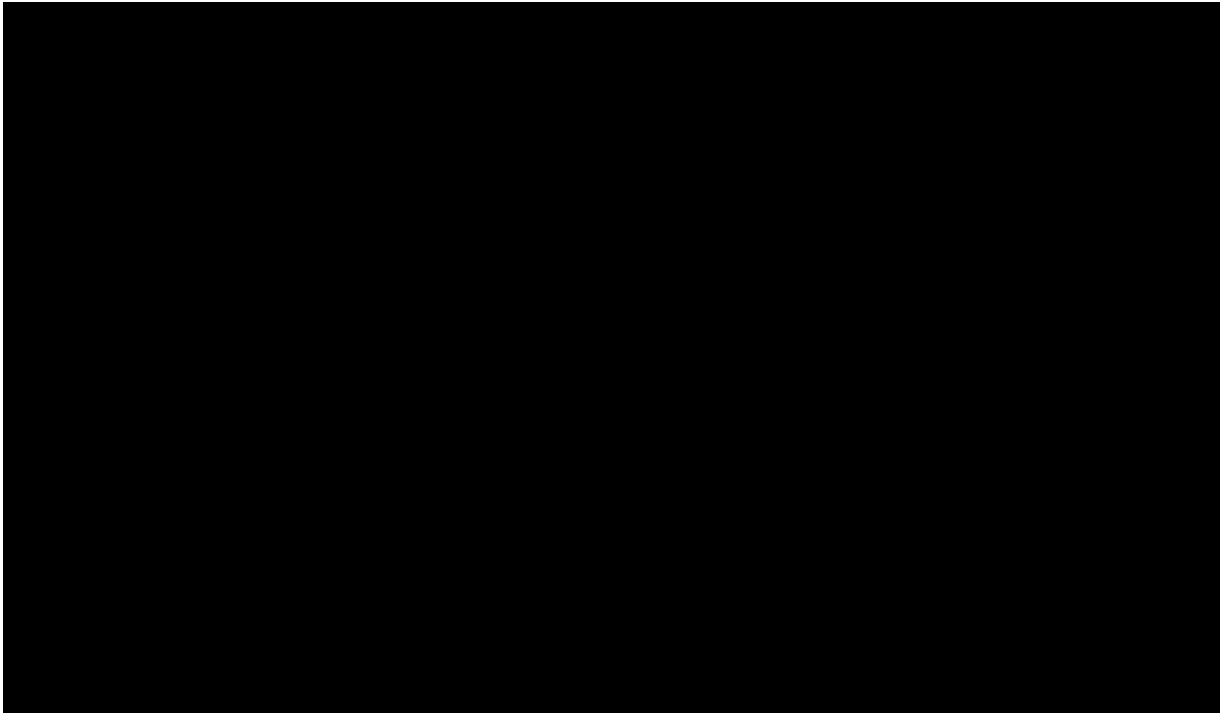
The volume of available LFG is required to determine the Project's ability to deliver RNG within the maximum cost amount in the GGRR. This section discusses the amount of LFG estimated to be collected by the RDFFG and available for use by FEI to produce RNG.

FEI worked in conjunction with the RDFFG to develop LFG volume projections. The forecast volumes are based on projections from the RDFFG for overall gas collection and take into account the expected build out of gas collection infrastructure and collection efficiency. FEI had access to more than five years of actual historical data and the projections done by engineering consultants specializing in landfill management hired by the RDFFG to develop the estimates. Today, the RDFFG is collecting approximately [REDACTED] GJs of raw LFG per year with an expected maximum volume of 1 [REDACTED] GJs of LFG per year.

Growth in LFG volumes above the current levels will come from new waste added to the landfill over the next twenty years. In order to capture the gas generated from the new waste, RDFFG will make investments in new LFG collection infrastructure as it continues to add waste to the site. Capturing the LFG is incrementally increased by adding wells to the collection system into parts of the landfill that have not previously been collecting LFG.

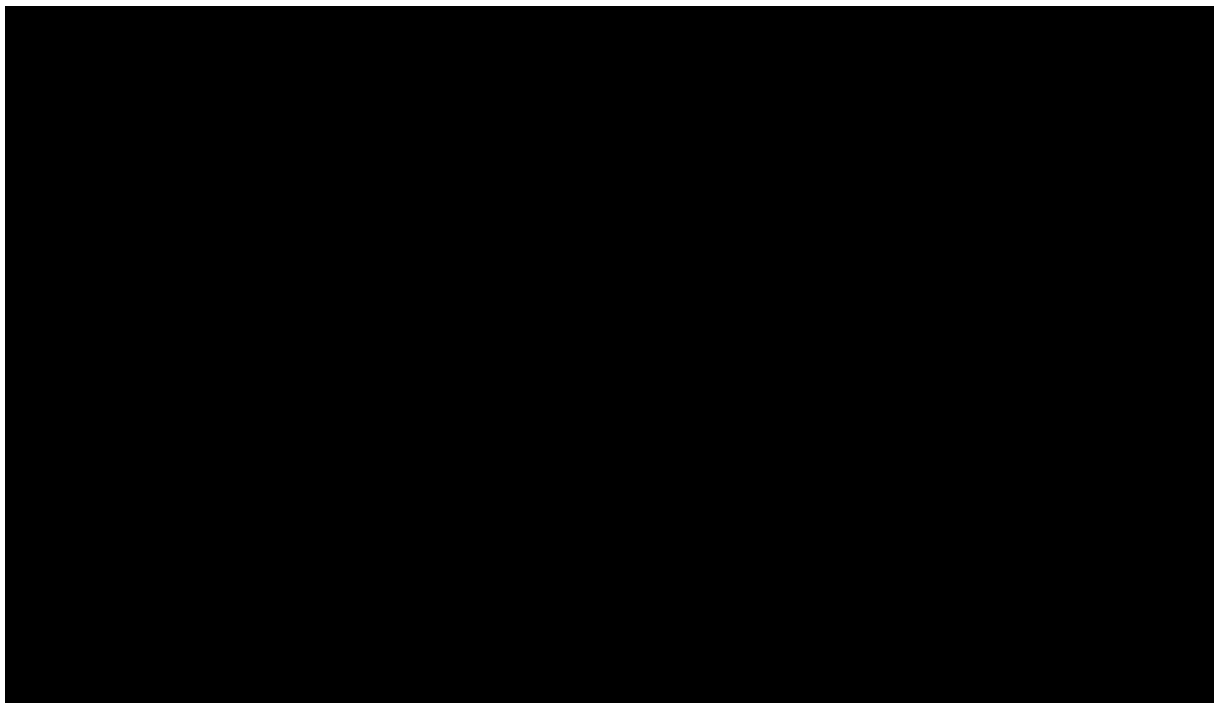
The raw LFG volume collection projections are shown below in Figure 4. The dashed (Current) line represents approximately [REDACTED] GJs of LFG that the RDFFG is collecting today. The solid (Expected) line includes potential changes to the amount of organic waste material expected to be received at the landfill in the future. The second dashed (Low) line considers a reduced level of expansion to the LFG collection equipment, thereby reducing the volume of LFG collected. FEI developed these volume scenarios based on LFG collection data, and confirmed with the RDFFG that the scenarios are reasonable. The RDFFG confirmed, in the form of a memo, that all of the LFG volume projections in Figure 4 are reasonable based on the known data, the RDFFG's experience, and projections by the RDFFG's consultants. This memo is included in Appendix E, which discusses the expected and low scenarios in greater detail.

**Figure 4: Projected LFG Available to FEI**



The output of RNG from the FEI Upgrading plant was calculated by FEI based on the expected recovery efficiency of the upgrader, where the recovery efficiency is a measure of RNG out versus the amount of raw LFG into the plant. The projected output of RNG on an annual basis, which includes an Expected and Low scenario, is shown below in Figure 5.

**Figure 5: Projected Annual RNG**



## **6.5 COST OF SERVICE & SCENARIO ANALYSIS**

FEI forecasts the total levelized cost of RNG over a ■-year period (i.e. the ■-year term of the RDFFG BPA plus ■ for the initial ramp up period) to be ■ per GJ, which includes ■ per GJ for FEI's interconnection and upgrading facilities and ■ per GJ for the cost of the LFG purchases. This is based on the price paid to the RDFFG for biogas of ■ per GJ escalated annually ■ per Schedule D of the RDFFG BPA, and as described in section 6.1 above. The AACE Class 3 cost estimate for the FEI Facilities described in section 6.3 above is depreciated at the currently approved depreciation rates of each asset class<sup>8</sup> over the analysis period, and an average annual expected volume of biogas purchases of ■ GJs<sup>9</sup> and finished RNG volumes of ■ GJs<sup>10</sup>, in alignment with the expected projections set out in section 6.4.

Based on the expected annual raw LFG and corresponding output of RNG over the term of the Agreement, FEI developed its cost of service and scenario analysis. FEI developed four scenarios that include changes to capital costs and volumes to show that the forecast levelized cost of service is reasonable and is below the GGRR threshold. The results are described further below.

<sup>8</sup> FEI's 2017 Depreciation Study, approved per BCUC Order G-165-20 as part of FEI's 2020-2024 MRP Decision.

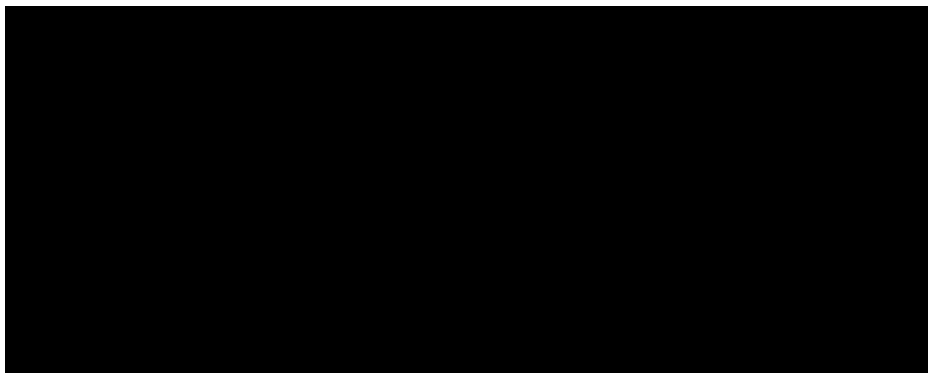
<sup>9</sup> Average of Appendix B, Schedule 11, Line 1.

<sup>10</sup> Average of Appendix B, Schedule 10, Line 27.

- **Scenario 1: Expected Scenario** – FEI Facilities cost [REDACTED] and the input volumes average approximately [REDACTED] GJs of biogas (LFG) per year (approximately [REDACTED] GJs of RNG) according to the Expected input volumes shown in Figure 4. The annual O&M for FEI facilities is expected to be [REDACTED] per year starting the year after installation is complete and is forecast to escalate by [REDACTED] per annum.
- **Scenario 2: Expected Volume/High Capital** – FEI Facilities cost [REDACTED] and the input volumes average approximately [REDACTED] GJs as in the Expected scenario. The annual O&M is the same as the Expected scenario because the raw LFG volumes are the same. This includes the same variables in Scenario 1 with the exception that the capital cost is higher. The volumes follow the Expected input volumes as shown in Figure 4.
- **Scenario 3: Low Volume/Expected Capital** – FEI Facilities cost [REDACTED] and the average input volumes match the lowest projected output volumes of approximately [REDACTED] GJs of RNG in 2023 when the Project is anticipated to start. This is consistent with LFG projections in Appendix E. The annual O&M is reduced to [REDACTED] initially to account for lower operating costs of the upgrader when operating at lower volumes.
- **Scenario 4: Low Volume/High Capital** – FEI Facilities cost [REDACTED] and the average input volumes match the lowest projected output volumes of approximately [REDACTED] GJs as in the Low scenario as shown in Figure 5. The annual O&M is reduced [REDACTED] initially to account for lower operating costs of the upgrader when operating at lower volumes.

Table 5 below summarizes the impact of the four scenarios with the corresponding cost of service presented in \$/GJ.

**Table 5: Summary of RDFFG Scenario Analysis**



Based on the range of scenarios, FEI can conclude that in all scenarios, the reasonable expected levelized cost of production is well below the threshold of \$31 per GJ.

## **6.6 INCREMENTAL RATE IMPACT**

Using Scenario 1, the incremental rate impact associated with the RDFFG BPA is the difference between the biomethane acquisition cost (the cost of the LFG and the cost of service of the FEI Facilities) and the amount recovered from biomethane customers at the current Biomethane Energy Recovery Charge (BERC) rate. FEI has calculated the average delivery rate impact to non-bypass residential customers due to the difference between costs and recoveries to be 0.046 percent or \$0.002 per GJ<sup>11</sup>, resulting in an average annual bill impact of \$0.20. This analysis is based on an average residential customer consuming 90 GJs per year.

## **7. CONCLUSION**

The CleanBC plan provides policy direction in BC to increase renewable gas supply to 15 percent by 2030. To help achieve that policy goal, the recent amendments to the GGRR facilitate the acquisition of renewable gases, including RNG, hydrogen, synthesis gas, and lignin, up to 15 percent of the total amount, in GJ, of natural gas provided by FEI to its non-bypass customers in 2019.

The RDFFG BPA will help achieve the Province's 15 percent target as the expected annual average RNG that will be delivered to FEI under the BPA is approximately [REDACTED] GJ/year. Further, the RDFFG BPA enables FEI to acquire RNG for its customers beginning in 2023, thus expediting FEI's ability to re-open its RG Program to new enrollments and meet demand for RG from its customers.

The RDFFG BPA satisfies the three-part test to be a prescribed undertaking under section 2(3.8) of the GGRR. The RDFFG BPA includes the purchase price for raw biogas, the cost of FEI Facilities, and the projected volume of RNG to calculate the reasonably expected levelized cost of production for RNG that cannot exceed the GGRR maximum price. While FEI's current capacity to acquire RNG, hydrogen, synthesis gas, and lignin does not approach the maximum volume in the GGRR at this time, in the future FEI will manage its volumes of RG supply to be within the maximum volume allowed by the GGRR each calendar year.

FEI has filed a copy of the RDFFG BPA with the BCUC pursuant to FEI's obligation under section 71 of the UCA to file energy supply contracts. RNG is methane and, therefore, the RDFFG BPA is an energy supply contract as defined in section 68 of the UCA. As the acquisition of RNG under the RDFFG BPA is a prescribed undertaking, the BCUC must accept the BPA under section 71 of the UCA due to section 18 of the *Clean Energy Act*, which forbids the BCUC from exercising its powers in any way that would directly or indirectly prevent FEI from carrying out a prescribed undertaking. Therefore, FEI respectfully requests that the BCUC accept the BPA under section 71 of the UCA without regulatory process.

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<sup>11</sup> Appendix B, Schedule 12, Line 12.

If further information is required, please contact Scott Gramm, Senior Manager, Renewable & Low Carbon Fuel Development, at (604) 576-7242.

Sincerely,

**FORTISBC ENERGY INC.**

***Original signed:***

Diane Roy

Attachments



**Appendix A**

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**FEI-REGIONAL DISTRICT OF FRASER-FORT GEORGE  
BIOMETHANE PURCHASE AGREEMENT**

## BIOGAS PURCHASE AGREEMENT

THIS AGREEMENT made as of September 18, 2019 (the "Execution Date")

**BETWEEN:**

**FORTISBC ENERGY INC., 16705 Fraser Highway, Surrey, British Columbia, V4N 0E8**

**("FEI")**

**AND:**

**REGIONAL DISTRICT OF FRASER-FORT GEORGE, 155 George Street, Prince George, British Columbia, V2L 1P8**

**(the "Supplier")**

**WHEREAS:**

- A. The Supplier owns and operates a regional landfill at the 6595 Foothills Boulevard in Prince George, British Columbia on lands legally described as follows:

PID: 027-398-897

Block A of the Northeast ¼ of District Lot 4053, Cariboo District; and

PID: 027-398-889

Block A of the Northwest ¼ of District Lot 4048, Cariboo District.

(collectively, the "Lands"), and which produces landfill gas through the anaerobic digestion process (the "Biogas").

- B. FEI intends to finance, construct and operate facilities on the Lands to connect the Supplier's facilities to enable FEI to purchase the Biogas and purify and upgrade the Biogas to pipeline quantity biomethane for injection into FEI's natural gas distribution system adjacent to the Lands (the "Project").
- C. The Supplier has agreed to sell 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 is hereby acknowledged) the Supplier and FEI (collectively the "Parties" and either of them a "Party") agree as follows:

### ARTICLE 1 – REGULATORY REVIEW

- 1.1 **BCUC Condition Precedent.** The Supplier acknowledges FEI is a public utility as defined in the British Columbia *Utilities Commission Act* and this Agreement, and any amendments thereto, are subject to acceptance and approval by the British Columbia Utilities Commission ("BCUC") in accordance with the *Utilities Commission Act*.

**1.2 Filing with BCUC.**

- (a) FEI will file this Agreement with the BCUC within a reasonable period of time after the Execution Date and, recognizing the Supplier's timeline to have the project operational by December 31, 2020, will take all steps reasonably required to secure BCUC acceptance and approval as soon as possible to enable the project timelines to be achieved, including those procedural steps related to filing the Agreement and providing argument and witnesses in support of the filing.
- (b) The Supplier 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 the filing.

**1.3 Regulatory Review Termination.**

- (a) Either Party may terminate this Agreement if, within one (1) year of the date this Agreement is filed with the BCUC, or such later date as agreed by the Parties in writing, this Agreement has not been accepted and approved by the BCUC on the terms and conditions contained herein or such other terms and conditions which are acceptable to each Party having regard to its *bona fide* business interests.
- (b) If BCUC approval is not granted, or is granted on terms and conditions which are not reasonably satisfactory to the Parties having regard to their *bona fide* business interests, the Parties agree to negotiate in good faith to address the impacts thereof, including mitigation of costs; provided that if the Parties are unable to reach an agreement as to the manner in which to address such terms and conditions, either Party may terminate this Agreement upon written notice of termination to the other Party.
- (c) If the Agreement is terminated under this section, 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.

**1.4 Costs Incurred Prior to BCUC Acceptance.** 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 BCUC approval, such Party will be solely responsible for all costs so incurred.

**ARTICLE 2 - TERM**

- 2.1 **Term.** Subject to sections 1.1 (*BCUC Condition Precedent*), this Agreement will be for a period commencing on the Execution Date and expiring on the [REDACTED] following the [REDACTED] anniversary of the In-Service Date (the "Initial Term"), unless terminated earlier or renewed in accordance with the terms of this Agreement (the "Term"); where "In-Service 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 will renew automatically for [REDACTED] term (the "Renewal Term") on the same terms and conditions, save and except as to any amendments

agreed between the parties following completion of the [REDACTED] Anniversary Review undertaken pursuant to section 5.10 (*Anniversary Reviews*), unless a Party provides the other Party with written notice of its intention to terminate this Agreement at least one (1) year prior to the expiry of the Initial Term.

### ARTICLE 3 - DIVISION OF RESPONSIBILITIES

- 3.1 **Supplier Facilities.** The Supplier will design, build, operate, maintain, repair, upgrade, replace and support facilities on the Lands, as more particularly identified in Schedule C (the "Supplier Facilities").
- 3.2 **FEI Facilities.** FEI will design, build, operate, maintain, repair, upgrade, replace and support facilities on the License Area (as defined below), as more particularly identified in Schedule C (the "FEI Facilities").
- 3.3 **Prime Contractor.** For the purposes of the *Workers Compensation Act* (British Columbia), 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 the "Approvals") required, affecting or necessary for the ownership, installation, maintenance and operation of the FEI Facilities.
- 3.5 **Supplier Approvals.** The Supplier shall obtain and maintain the Approvals required, affecting or necessary for the ownership, installation, maintenance and operation of the Supplier Facilities.
- 3.6 **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 and 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.
- 3.7 **Existing Supplier Approvals.** If any existing Approvals issued to the Supplier need to be updated to reflect the operation of the FEI Facilities on the Lands, and FEI is not able to update such Approvals in accordance with section 3.4 [*FEI Approvals*], the Supplier shall ensure such approvals are updated as required.
- 3.8 **Utilities.** The Supplier will, at no cost to FEI, provide the electrical and telephone connections to the limits of the FEI Facilities. FEI will pay for utility consumption as directly invoiced to FEI by the service provider. The Supplier shall not be liable for any disruptions in such services, unless caused by any negligent act or omission of the Supplier.
- 3.9 **Cooperation.** To facilitate the connectivity between the Supplier Facilities and the FEI Facilities, 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 comment on, any design drawings, by the other

Party, each Party shall be solely responsible for the design and construction of their respective facilities;

- (b) share operating data and data related to the interface between the FEI Facilities and the Supplier Facilities, and work together to optimize operation of their respective facilities; and
- (c) notify each other in advance of proposed operational changes or system modifications or upgrades to their respective facilities and cooperate in the design of upgrades and modifications to the respective facilities, to ensure such changes, modifications or upgrades do not negatively impact the operation of the other Party's facilities; provided that despite the exchange or review of, or comment on, any design drawings, by the other Party, each Party shall be solely responsible for the design, construction and maintenance of their own facilities.

#### **ARTICLE 4 – ACCESS TO AND USE OF LANDS**

- 4.1 **Grant of License.** The Supplier, hereby grants to FEI, at no cost, a non-exclusive irrevocable license 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, abandon, remove or replace the FEI Facilities, in whole or in part.
- 4.2 **Access over the Lands.** The Supplier, hereby grants to FEI, at no cost, the free and unobstructed 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 Supplier from 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 Supplier for the safety and security of the Lands, including as to access points and limitation on access to normal working hours except in the case of emergency.
- 4.3 **Grant of Rights to Third Parties.** Subject to section 4.5 [*Non-Interference*], the grant of rights to FEI hereunder does not preclude or prevent the Supplier from granting easements, statutory rights of way or other grants, leases or licences over the Lands to any other person.
- 4.4 **Use of License Area.** 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;
  - (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, property taxes, levies, charges and assessments, permit and license fees, repair and maintenance costs, administration and service fees, gas, water, sewage disposal 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 applicable laws from time to time in force, and to obtain all required approvals and permits thereunder, and not to do or omit to do anything in, on or from the License Area in contravention thereof;
- (f) not erect or place any sign or advertising within the License Area (save and except signage identifying FEI's ownership of the FEI Facilities in accordance with section 3.6 [*Ownership of FEI Facilities*] without the prior written approval of the Supplier, acting reasonably; not to bring on or deposit any soil or fill onto the License Area except with the written consent of the Supplier;
- (g) co-ordinate all installation and construction activities on the License Area with the Supplier;
- (h) cover all below ground works and restore the surface of the License Area to the same condition that existed at the commencement of the works to the reasonable satisfaction of the Supplier; and
- (i) discharge any builders' 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 Non-Interference.** The Supplier will not do or knowingly permit to be done anything in, under, over, upon or with respect to the Lands which, in the reasonable opinion of FEI, may interfere with, diminish or injure FEI's rights hereunder or the installation, maintenance use or operation of the FEI Facilities, including but not limited to, anything which:

- (a) interrupts, endangers, impedes, disturbs or causes damage to the FEI Facilities or its 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; and
- (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;

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

- 4.6 **Sale of the Lands.** The Supplier shall not sell or otherwise transfer its interest in and to the Lands, unless, with the written consent of FEI in accordance with section 16.9 *[Assignment]*, the transferee assumes all the terms and conditions of this Agreement.

#### **ARTICLE 5 – QUALITY, QUANTITY, TITLE AND INDEMNITY**

##### **5.1 Quality and Delivery Quantity.**

- (a) Subject to section 5.2 *(Additional Verification)*, FEI will monitor biogas quality and quantity at the interconnection point between the Supplier Facilities and the FEI Facilities, as generally shown in the schematic drawing attached as part of Schedule C (the “Interconnection Point”) to determine whether the biogas meets the Specifications and the Volumetric Limits.
- (b) FEI agrees to accept any biogas made available by the Supplier which:
  - (i) meets the specifications as prescribed by FEI from time to time, acting reasonably, (the “Specifications”), the current of which are set out in Schedule A; and
  - (ii) subject to the volumetric requirements set out in Schedule D (the “Volumetric Limits”).
- (c) Any biogas not accepted by FEI will be returned to the Supplier Facilities or will be prevented from entering the FEI Facilities at the Interconnection Point.

##### **5.2 Additional Verification.**

- (a) Despite the Supplier installing and operating any measurement and monitoring equipment as part of the Supplier Facilities, the FEI Facilities will be used to determine biogas compliance with the Specifications and Volumetric Limits and will take precedence over any results generated by the Supplier’s Facilities, save and except where FEI’s measurement or monitoring equipment is inoperable in which event the data generated by the Supplier’s Facilities may be used.
- (b) Where there are significant differences between the qualitative or quantitative data generated by the FEI Facilities and that generated by the Supplier’s Facilities, the Parties will work together to determine and, to the extent possible, eliminate the cause of the discrepancies.

- 5.3 **Non-Compliant Biogas.** FEI, at its sole discretion and without any obligation to do so, may accept Biogas that does not meet the Specifications or is outside the Volumetric Limits. Any such Biogas accepted by FEI into the FEI Facilities will be deemed to meet the Specifications and FEI shall be deemed to have waived any failure to satisfy the Volumetric Limits in relation thereto.



**5.4 Supply Based Reviews.**

- (a) Subject to subsection 5.4((d)), the parties will undertake a joint review of the Project, to be completed within [REDACTED], to enable the parties to determine ongoing Project viability, if after the In-Service Date, the Supplier 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, the parties may negotiate options to obtain BCUC approval, including amendments to the Agreement which are acceptable to each Party having regard to its *bona fide* business interests.
- (c) If: (1) upon completion of the review, the parties are unable to agree whether the Project is viable; or (2) [REDACTED] of commencing negotiations pursuant to subsection (b) above the parties are unable to agree to amendments to the Agreement, FEI may, at its option, terminate this Agreement upon written notice to the Owner, whereupon the provisions of ARTICLE 9 will apply.
- (d) The parties will not initiate a review while a review or resulting negotiations are already underway.

**5.5 Minimum Annual Supply.** If the Supplier does not supply:

- (a) the Minimum Annual Quantity (as defined in Schedule D (*Commercial Terms*)) for any two (2) consecutive years, or
- (b) the Minimum Monthly Quantity (as defined in Schedule D (*Commercial Terms*)) for any six (6) consecutive months;

FEI, at its option, may:

- (c) reduce the Minimum Annual Quantity and/or the Minimum Monthly Quantity, as the case may be, to such quantities as established by FEI in its sole discretion.
- (d) terminate this Agreement upon written notice to the Supplier, whereupon the provisions of ARTICLE 9 will apply.

**5.6 Increased Production Volume** –The Supplier will notify FEI of any proposed changes or improvements to the Supplier Facilities or the Lands or any other activity or circumstance which may result in a long-term increase to Biogas flow by more than 10% above the Maximum Yearly Quantity to allow FEI to evaluate the impacts of such increase on the FEI Facilities and its gas distribution system and FEI's ability to accommodate and accept such increased production volume. Provided such Biogas meets the Specifications, FEI may, in its discretion and upon notice to the Supplier, accept and purchase all or any portion of the additional production volume at the rates determined by Schedule D (*Commercial Terms*) either temporarily or permanently.

**5.7 Exclusivity.** In addition to its obligations to supply the minimum quantities of Biogas as established in Schedule D (*Commercial Terms*), the Supplier covenants and agrees to exclusively



sell any additional Biogas available (the "Excess Biogas") to FEI; provided that if FEI is, from time to time, unable to accommodate and accept all the Excess Biogas, the Supplier shall be entitled to use, sell or otherwise dispose of the excess production in a commercially and environmentally reasonable manner after consultation with FEI.

**5.8 Excuse from Non-Performance for Maintenance.** Neither Party will be considered to be in default under this Agreement where such Party's non-performance is as a result of undertaking maintenance or repair on their respective facilities provided that such Party is diligently undertaking such maintenance or repair to minimize its impacts and it being the intention of the Parties that maintenance or repair work will not exceed 5 days per month and 20 days per year in aggregate.

**5.9 Title and Warranty.** Provided the Biogas meets the Specifications, or having failed to meet the Specifications, is accepted by FEI pursuant to section 5.2 [*Non-Compliant Biogas*], title to and responsibility for the Biogas shall pass from the Supplier to FEI at the Interconnection Point. Any Biogas rejected by FEI will be redirected back to the Supplier Facilities and title to and responsibility for such Biogas shall not pass to FEI. The Supplier warrants that it has the right to convey and will transfer good and merchantable title to the Biogas free and clear of all liens, encumbrances and claims.

**5.10 Anniversary Reviews.**

(a) In addition to any reviews conducted pursuant to section 5.4 (*Supply Based Reviews*), at the [REDACTED] [REDACTED] In-Service 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 [REDACTED] and the [REDACTED] [REDACTED] respectively). The [REDACTED] 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 [REDACTED] [REDACTED] Term and whether to extend this Agreement beyond the Initial Term.

(b) If, as a result of the [REDACTED] [REDACTED], the parties determine the Supplier will be unable to consistently supply the Supply Minimum for the balance of the Term, the parties may negotiate amendments to the Agreement, including as to price payable by FEI, to enable the continuation of the Project. If, [REDACTED] the parties are unable to agree whether the Supplier will be able to supply the Supply Minimum, or if the parties are unable to agree to amendments to the Agreement within [REDACTED] of commencing the negotiations, FEI may, at its option, terminate this Agreement upon written notice to the Supplier, whereupon the provisions of ARTICLE 9 will apply.

(c) [REDACTED]

- (i) the parties decide to renew the Agreement, this Agreement will be renewed for a further term in accordance with section 2.2 (*Renewal*).
- (ii) the parties determine the Supplier 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.

- 5.11 **Indemnity.** The Supplier 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, personal injury or property damage from the Biogas or other charges thereon ("Claims") which attach before title passes to FEI. FEI hereby agrees to indemnify and save the Supplier harmless from all Claims which attach after title passes to FEI. Despite the foregoing, the Supplier will be liable for all Claims arising from the failure to deliver title to the Biogas to FEI free and clear of any encumbrances. Despite the foregoing, the Supplier will be liable for all Claims arising from the failure to deliver title to the Biogas to FEI free and clear of any encumbrances.
- 5.12 **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 **Payment.** Commencing from the In-Service Date and each month during the Term thereafter, FEI shall pay the Supplier for the quantity of Biogas accepted by FEI into the FEI Facilities, as determined by meter readings, at the rates and subject to the adjustments and any deductions set out in Schedule D, plus applicable taxes thereon. The Supplier shall not be entitled to receive any payment from FEI for any Biogas rejected by FEI and returned to the Supplier Facilities.
- 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 accepted by FEI in GJ, the applicable rates and adjustments, the net amount payable and the cumulative quantity of Biogas accepted for the then current year up to that month. If the quantity of Biogas accepted is not known by the billing 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 date.
  - (b) FEI will pay the net amount payable within 30 days of delivery of the statement to the Supplier.
  - (c) Any errors in any statement or disputes as to amounts due shall be promptly reported to FEI and any resulting underpayments or overpayments identified will be refunded or repaid with accrued interest at the rate of 1.5% per month (19.56% per annum).

## ARTICLE 7 – ENVIRONMENTAL ATTRIBUTES AND REPORTING

7.1 **FEI Offsets.** The parties agree FEI shall have the sole right, benefit, title and interest in and to, arising out of or resulting from the environmental benefits associated with the purification of biogas to biomethane, and the displacement of traditional natural gas by biomethane in FEI's natural gas distribution system ("FEI GHG Reductions"), whether such right, benefit, title or interest is in existence as of the Effective Date or arises thereafter, including:

- (a) the sole right to claim title to, interest in, the benefit of or the responsibility for the FEI GHG Reductions;
- (b) the sole right to register, certify or apply for the issuance or validation of any current or future credits, allowance, instrument, offset, certificate, right, benefit or advantage or proprietary or contractual right, whether or not tradable, (a "Credit") associated with the FEI GHG Reductions;
- (c) the sole right to hold and to transfer or assign to any person its title to, benefit of or responsibility for the FEI GHG Reductions or the associated Credits;
- (d) the sole right to apply the FEI GHG Reductions against its own or a third party's greenhouse gas emissions or to net those emissions to zero, whether or not as part of a legal obligation to reduce greenhouse gas emissions;
- (e) all revenues, entitlement, benefits and other proceeds arising from or related to the foregoing;

(collectively, the "FEI Environmental Attributes").

7.2

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

- 7.3 **Support and Assistance.** The Supplier will, at FEI's expense, support FEI in all applications for the FEI Environmental Attributes and provide any assistance, authorizations, documentation and information FEI reasonably requires in this regard, including:
- (a) the quantification and verification of the carbon intensity of the Biomethane produced at the Supplier's Facilities; and
  - (b) authorization enabling FEI to apply on the Supplier's behalf for designation as a Part 3 fuel supplier with respect to resulting biogas for the purposes of the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act* and its regulations.
- 7.4 **Reporting Requirements.** Subject to section 7.1 [FEI Offsets] and section 7.2 [Supplier Offsets], 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 **Default.** 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:
- (a) the other Party (the "Non-Defaulting Party") provides the Defaulting Party with a written notice of such default and a 10-day period within which to cure such a default (the "Cure Period"); and
  - (b) 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, fails in good faith to commence the curing of such default upon receipt of notice of default and to continue to diligently pursue the curing of such default thereafter until cured.
- 8.2 **Effect of Default.** Upon default, the Non-Defaulting Party may, at its option and in addition to and without liability therefore or prejudice to any other right or remedy it may have:
- (a) cease performing its obligations under this Agreement, including suspending or refusing to make any payment due hereunder, until the default has been fully remedied, and no such action shall relieve the Defaulting Party from any of its obligations under this Agreement;
  - (b) 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
  - (c) terminate this Agreement immediately upon notice to the other Party, whereupon the provisions of ARTICLE 9 shall apply.

#### **ARTICLE 9 - EFFECT OF EXPIRY OR TERMINATION.**

**9.1 Removal of FEI Facilities.** Upon the expiry or termination of this Agreement, unless otherwise agreed by the Parties, FEI will, within 90 days following the expiry date or termination date, as the case may be, remove the FEI Facilities from the Lands and repair any damage to the Lands arising from such removal; provided that FEI will be obligated to remove only those portions of the FEI Facilities located above surface level and may leave any un-removed portions in a safe manner in accordance with FEI standard practice. Any portion of the FEI Facilities not removed by FEI will become the property of the Supplier at no cost to the Supplier.

**9.2 Termination Payment.** If:

- (a) FEI terminates this Agreement pursuant to 8.2(c) as a result of default of the Supplier; or
- (b) the Supplier sells or otherwise transfers its interest in and to the Lands.

in addition to any other amounts due and owing by the Supplier to FEI, the Supplier shall pay to FEI, within thirty (30) days of invoicing, the following amounts (plus applicable taxes thereon):

- (i) FEI's net costs associated with removing the FEI Facilities, plus
- (ii) the unrecovered net book value of the FEI Facilities that will be stranded, adjusted for the positive or negative salvage value of the FEI Facilities.

#### **ARTICLE 10 - INSURANCE REQUIREMENTS**

**10.1 Insurance.** Each Party shall obtain and maintain the following insurance coverage and provide proof of coverage to the other Party:

- (a) General Commercial Liability Insurance from insurers registered in and licensed to underwrite insurance in British Columbia for bodily injury, death and property damage in the amount of \$5,000,000 per occurrence naming the other Party as an additional insured with respect to this Agreement; and
- (b) Such other insurance as reasonably required by the other Party from time to time.

Each Party shall be responsible for payment of any deductibles of their policies. All such policies shall provide that the insurance shall not be cancelled or changed in any way without the insurer giving at least 10 calendar days' written notice to the other Party.

#### **ARTICLE 11 - ENVIRONMENTAL RELEASE AND INDEMNITY**

**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,

defoliant, or any other solid, liquid, gas, vapour, odour or any 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 **Supplier Release and Indemnity.** Despite any other provision of this Agreement, the Supplier 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 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 on or off the Lands before or after the Execution Date;

except with respect to any Contaminants brought onto the Lands by FEI or any Contaminants released from the Lands as a result of any negligent act or omission of FEI.

- 11.3 **FEI Release and Indemnity.** Despite any other provision of this Agreement, FEI shall release and indemnify the Supplier 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 to any Contaminants brought onto the Lands by FEI or any Contaminants released from the Lands as a result of any negligent act or omission of 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) the negligence or wilful misconduct of such Party, its employees, directors, officers or contractors; 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. 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 or any third party arising out of or related to this Agreement even if the loss is directly attributable to the gross negligence or wilful misconduct of such Party, its employees, or 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 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 any Party to this Agreement and which, by the exercise of its reasonable efforts, such Party is unable to prevent or overcome, including, acts of God, war, riots, intervention by civil or military authority, 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 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 notification to the other Party of the occurrence of such event as soon as reasonably possible.

#### **ARTICLE 14 - DISPUTE RESOLUTION**

- 14.1 **Dispute Resolution.** The Parties will make a *bona fide* attempt to settle any dispute which may arise under, out of, in connection with or in relation to this Agreement by amicable negotiations between their respective senior representatives and will provide frank and timely disclosure to one another of all relevant facts and information to facilitate negotiations. If the Parties are unable to resolve the dispute within fifteen (15) days, or if the Parties agree to waive such discussions in respect of a particular issue, either Party may refer the dispute to a single arbitrator who is appointed and renders a decision in accordance with the then current "Domestic Commercial Arbitration Shorter Rules of Procedure" or similar rules of the British Columbia International Commercial Arbitration Centre ("BCICAC"). The decision of the arbitrator shall be final and binding. The costs and expenses of the arbitration, but not those incurred by the Parties, shall be shared equally, unless the arbitrator determines that a specific Party prevailed, and in such a case the non-prevailing Party shall pay all costs and expenses of the arbitration, but not those of the prevailing Party. The arbitration will take place in Vancouver, British Columbia and be conducted in English.
- 14.2 **Performance of Obligations.** The Parties shall continue to fulfill their respective obligations pursuant to this Agreement during the resolution of any dispute in accordance with this section.
- 14.3 **Litigation.** Nothing contained in this Article precludes either Party from:

- (a) having a dispute determined by the BCUC if the dispute is within the jurisdiction of the BCUC; and
- (b) having a dispute that has not been referred to arbitration be determined by a court of competent jurisdiction in the Province of British Columbia.

#### **ARTICLE 15 - CONFIDENTIALITY**

**15.1 Confidentiality.** All information or documentation (no matter in what form or media) received by a Party (the "Receiving Party") which has been specifically marked by other Party (the "Disclosing Party") as confidential (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 Disclosing Party for the purposes of this MOU and the activities described herein;

who need to know such information for the proper performance of the Parties' respective obligations contemplated herein.

**15.2 Exception for Regulatory Submission.** Despite the foregoing, the Receiving Party may use the Information in connection with the preparation for and conduct of submissions to regulatory agencies, subject to requesting that the regulatory agency treat the Information as confidential in accordance with the agency's rules of procedure for confidential filings.

**15.3 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 thereof; (2) is generally available to the public; (3) has been obtained from a third party which has the right to disclose the same; and (4) is required by law to be disclosed, provided that where disclosure is required by law, 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 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 regarding the terms of this Agreement without the agreement and approval of the other Party, not to be unreasonably withheld or delayed.

**16.3 Compliance with Laws.** Each Party covenants, as a material provision of this Agreement, it will comply with all applicable codes, statutes, by-laws, regulations or other laws in force in British Columbia 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. To the extent ARTICLE 14 [*Dispute Resolution*] is not applicable to a dispute between the Parties, the Parties hereby attorn to the jurisdiction of the courts of British Columbia and all courts competent to hear appeals therefrom.
- 16.5 Notice.** Any invoices, payments, notices or other communication required to be given or made pursuant to the Agreement shall, unless otherwise expressly provided herein, shall be in writing and shall be personally delivered to or sent by facsimile to either Party at its address set forth below and deemed to have been received the next business day following delivery or facsimile transmittal:
- |  |   |
|--|---|
| <b>If to: FortisBC Energy Inc.</b><br>16705 Fraser Highway, Surrey, BC V4N 0E8 | <b>If to: Regional District of Fraser-Fort George</b><br>155 George St., Prince George, BC, V2L 1P8 |
| <b>Attention: Director, Natural Gas for Transportation and Regional LNG</b>    | <b>Attention: General Manager of Environmental Services</b>   |
| <b>Fax: 604 592 7444</b>   | <b>Fax: 250-563-7520</b>  |
| <b>With a copy to:</b><br>renewablenaturalgas@fortisBC.com                     |   |
- 16.6 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.
- 16.7 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, and accepted by the BCUC if required pursuant to the *Utilities Commission Act*.
- 16.8 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.
- 16.9 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.
- 16.10 Enurement.** This Agreement enures to the benefit of and is binding on the Parties and their respective successors and permitted assigns.
- 16.11 Survival.** The following provisions shall survive the termination or expiration of this Agreement: Section 5.11 [*Indemnity*], ARTICLE 11 [*Environmental Release and Indemnity*], ARTICLE 12 [*Indemnification and Limitation of Liability*], ARTICLE 14 [*Dispute Resolution*], ARTICLE 15 [*Confidentiality*], Section 16.4 [*Governing Law*] and Section 16.5 [*Notice*].

- 16.12 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.
- 16.13 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.
- 16.14 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 to give full effect to this Agreement.
- 16.15 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.
- 16.16 Time is of the essence.** Time is of the essence of this Agreement.
- 16.17 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.
- 16.18 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.

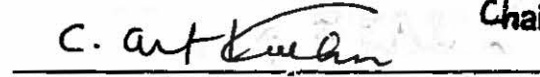
**FORTISBC ENERGY INC.**  
by its authorized signatory(ies):



**Roger Dall'Antonia**  
**President & CEO**  
**FortisBC**

*Schedules attached:*  
*Schedule A – Biogas Acceptance Specifications*  
*Schedule B – Drawing of License Area*  
*Schedule C – Description of Supplier Facilities and FEI Facilities*  
*Schedule D – Commercial Terms*

**REGIONAL DISTRICT OF FRASER-FORT GEORGE**  
by its authorized signatory(ies):



**ART KAEHN**  
**Chairperson**

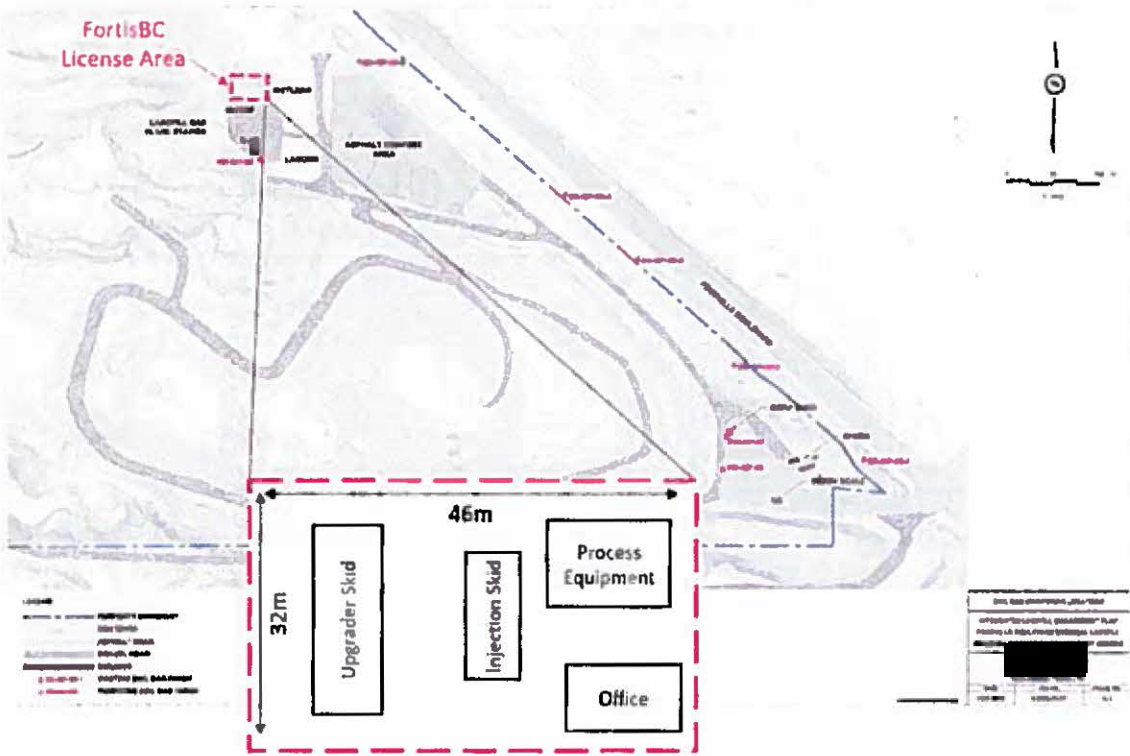


**Karla A. Jensen**  
**General Manager of**  
**Legislative and**  
**Corporate Services**

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

- be free of liquid water;
- have a minimum methane content of [REDACTED] by volume;
- have a maximum nitrogen content of [REDACTED] by volume; and
- have a maximum oxygen content of [REDACTED] by volume.

**Schedule B**  
**Drawing of License Area**

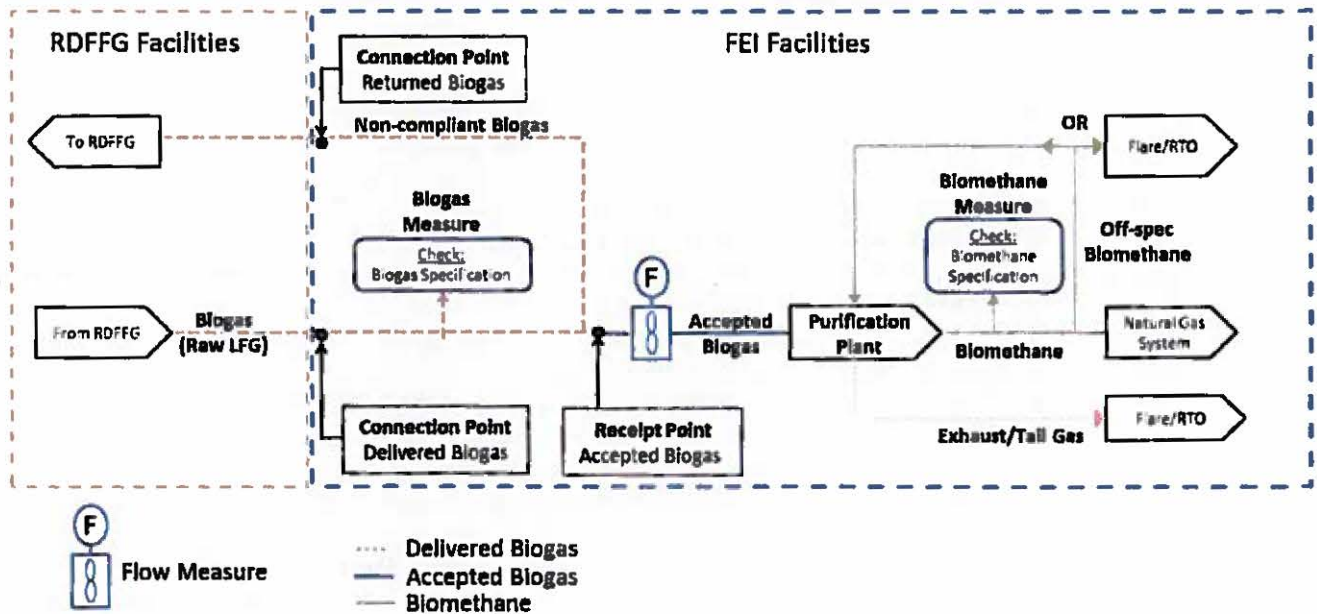


## Description of Supplier Facilities and FEI Facilities

- A. Supplier Facilities** means those facilities necessary to capture Biogas and make it available for passage to the FEI Facilities, including:
- (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 flare station);
  - (j) a flare system for combustion of biogas;
  - (k) piping up to the FEI Facilities for delivery/return of Biogas to/from the connection point;
  - (l) back-up monitoring system, including sensors, to measure the quality and quantity Biogas, methane concentration, gas volume and flow rate; and
  - (m) any upgrades, replacements or modifications thereto
- B. 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;
  - (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) concrete foundations;
  - (p) equipment for metering (certified for commercial use under Canada's *Weights and Measures Act*), composition monitoring and odorizing of biomethane;
  - (q) signage;
  - (r) fencing; and
  - (s) any upgrades, replacements or modifications thereto.
- C. Interconnection Point** - The Interconnection Point between the Supplier Facilities and the FEI Facilities is within the location shown on the schematic diagram attached to this Schedule C.

# Schedule C

## Description of Supplier Facilities and FEI Facilities





**1. VOLUMETRIC LIMITS**

**1.1** The following quantity limitations, as established as a result of the system and capacity limitations of the Supplier Facilities and the limitations and thresholds established by the BCUC and applicable to FEI with respect to acceptance of Biogas, as measured by equipment forming part of the FEI Facilities (the "Volumetric Limits") apply to this Agreement:

- (a) **Maximum Yearly Quantity** - [REDACTED] GJ per Contract Year, where "Contract Year" means the period from November 1<sup>st</sup> to October 31<sup>st</sup> of each year; provided that the Maximum Yearly Quantity will be prorated for part years;
- (b) **Minimum Yearly Quantity** - [REDACTED] GJ per Contract Year.
- (c) **Minimum Monthly Quantity** - [REDACTED] of the Minimum Yearly Quantity.
- (d) **Maximum Hourly Flow - Rate** [REDACTED] (at STP).

**2. PRICE AND ADJUSTMENTS**

**2.1. Purchase Price.** FEI shall pay the Supplier for the quantity of Biogas accepted by FEI per month, commencing from the In-Service Date, at the following rate, subject to annual adjustment pursuant to section 2.2 (*Annual Adjustment*) of this Schedule, plus applicable taxes thereon:

[REDACTED] per GJ (the "Base Rate").

**2.2. Annual Adjustment.** Subject to section 3 (*Maximum Rate*) of this Schedule, the Base Rate shall be adjusted annually on the first of November following each anniversary of the In-Service Date by

[REDACTED]  
[REDACTED]

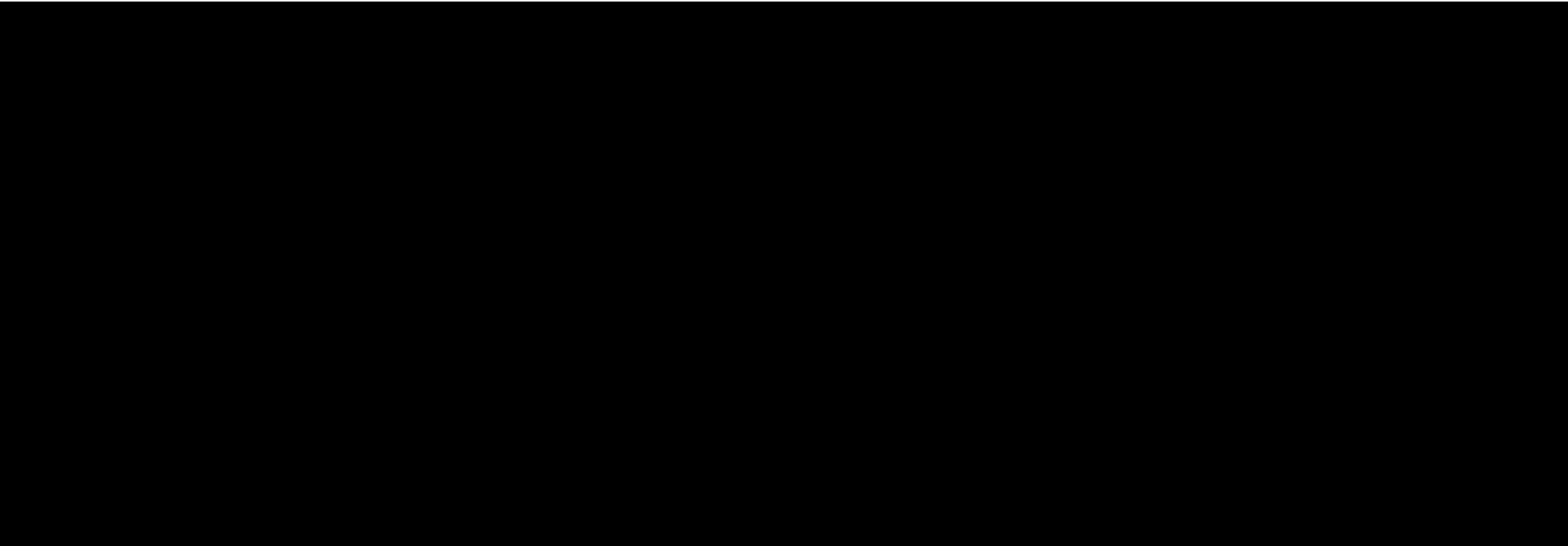
**2.3. Maximum Rate.** No adjustment will be made which results in the applicable rate of finished biomethane, as determined by FEI, exceeding the applicable of:

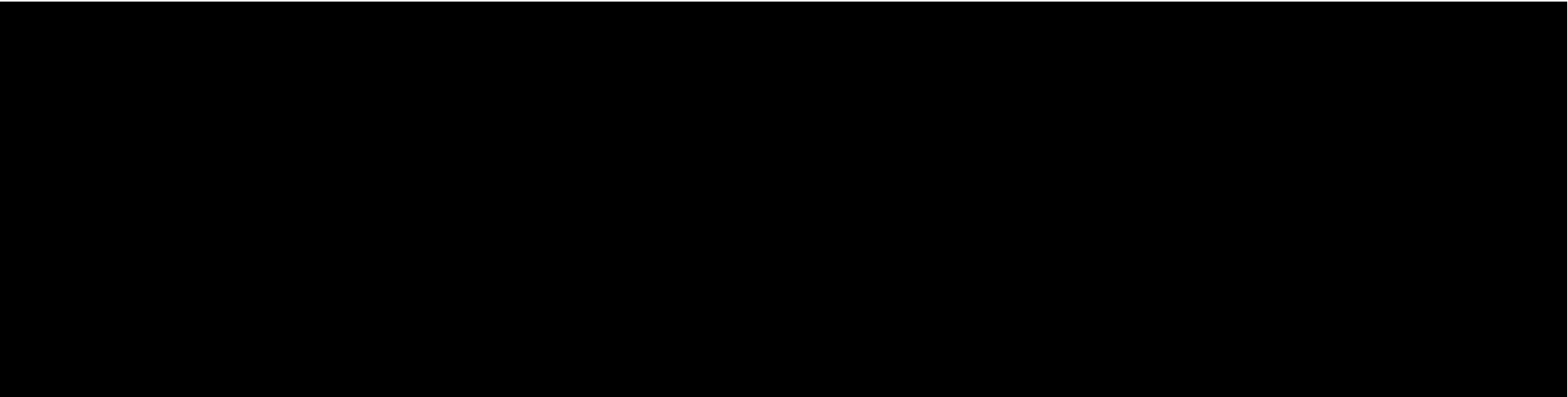
- (a) then current BCUC - approved maximum RNG supply purchase price; or
- (b) the maximum RNG supply purchase price established by provincial regulations.

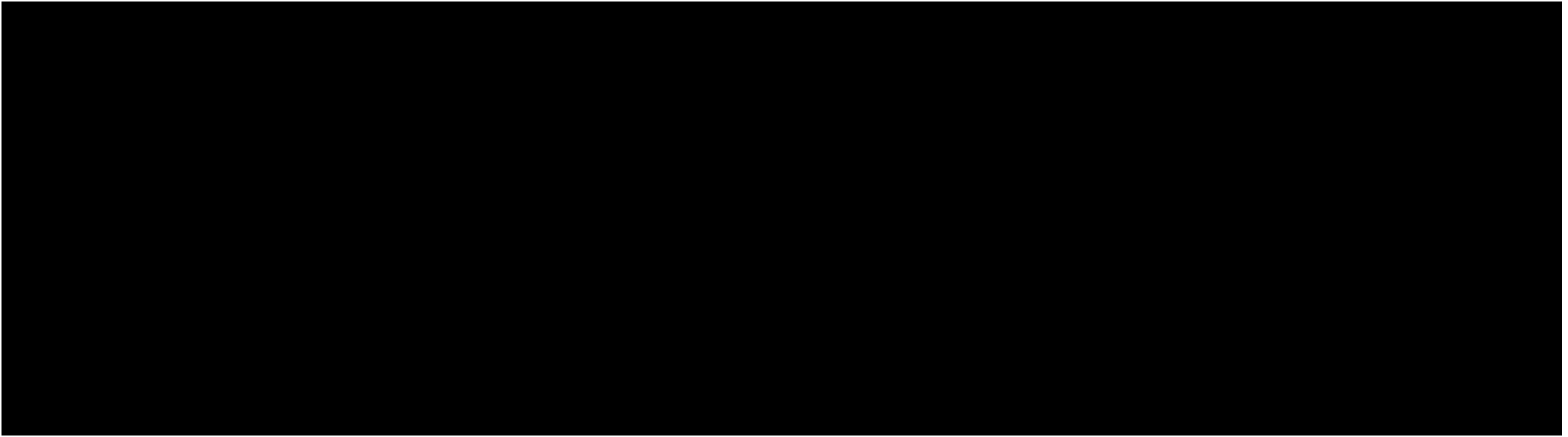
**Appendix B**  
**FINANCIAL SCHEDULES**

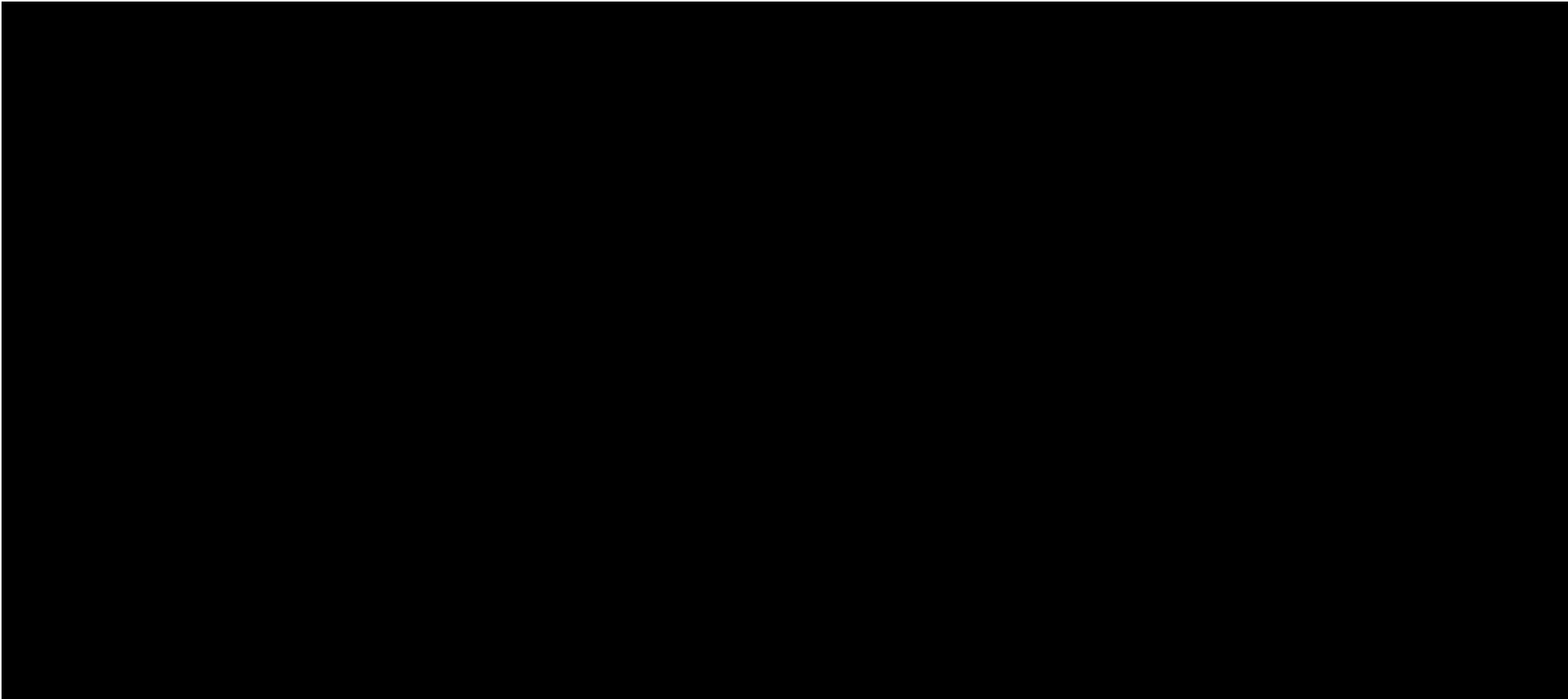
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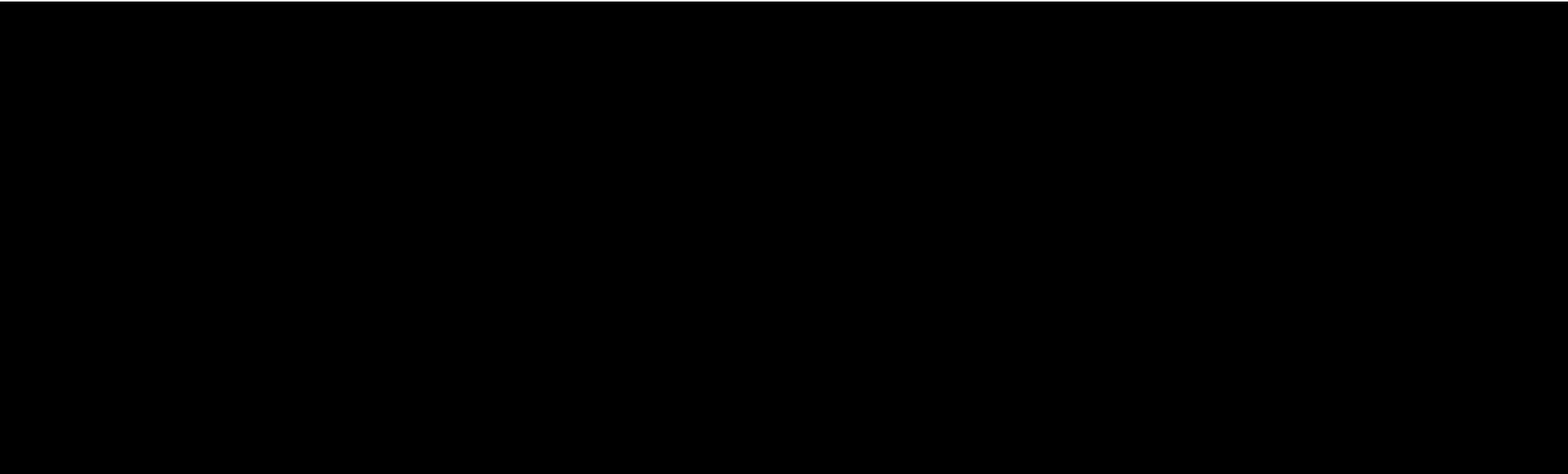
**FILED CONFIDENTIALY**



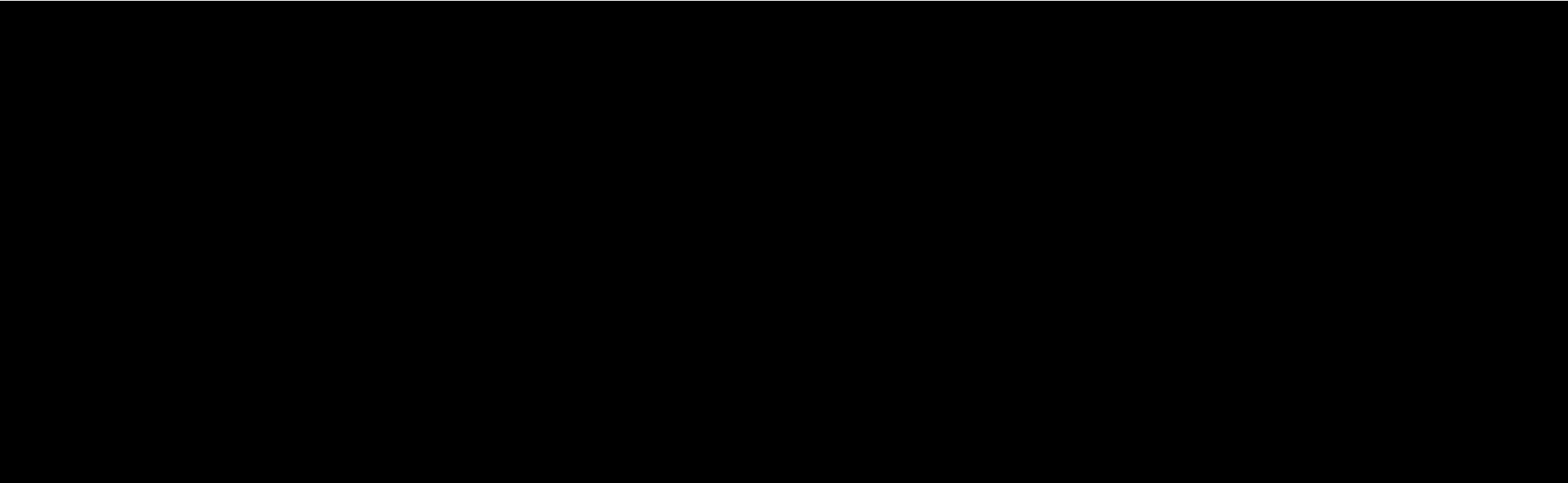






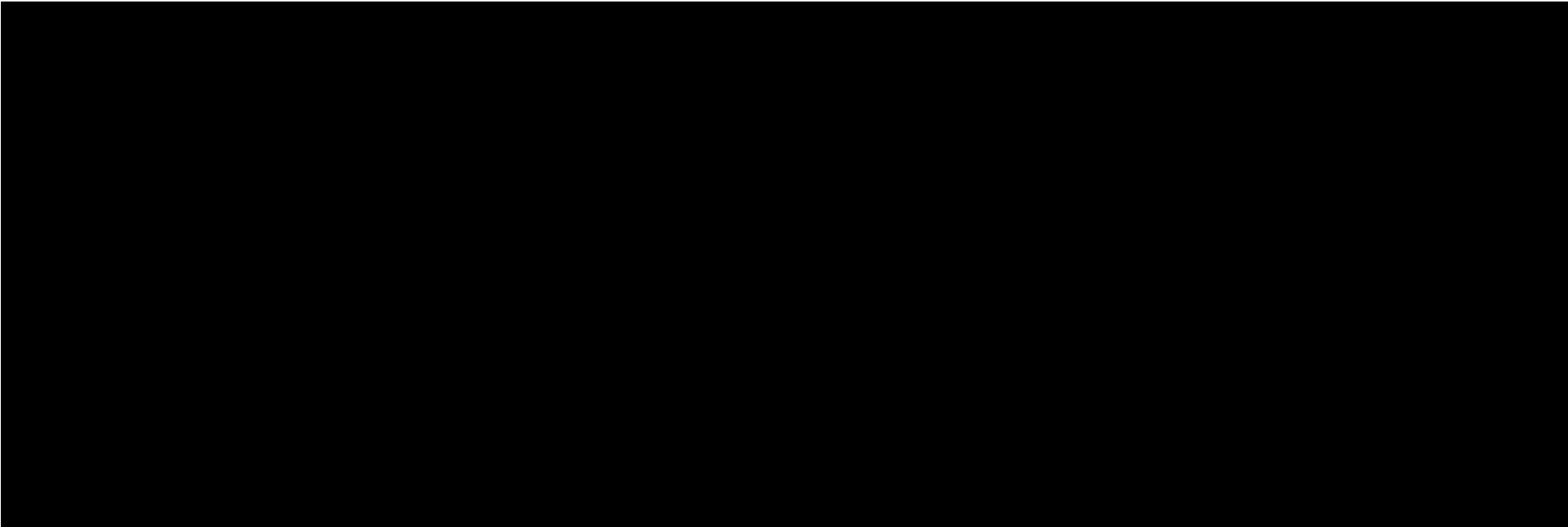


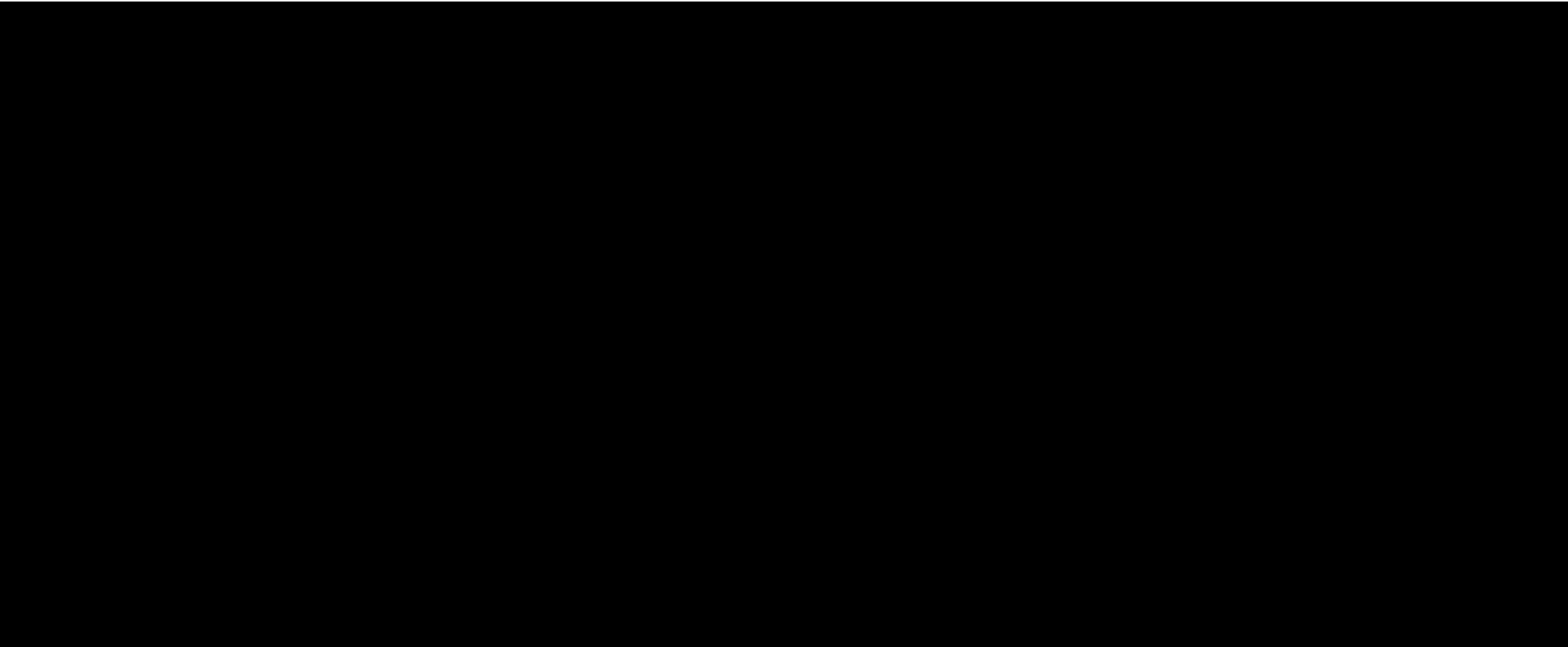


















## Appendix C

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### SUMMARY OF APPROVED BPAS





**ORDER NUMBER**

E-xx-xx

IN THE MATTER OF  
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

FortisBC Energy Inc.

Filing of a Biomethane Purchase Agreement between FortisBC Energy Inc. and Regional District of Fraser-Fort George pursuant to Section 71 of the *Utilities Commission Act* and British Columbia Utilities Commission Rules for Natural Gas Energy Supply Contracts

**BEFORE:**

[Panel Chair]  
Commissioner  
Commissioner

on Date

**ORDER**

**WHEREAS:**

- A. On December 22, 2021, pursuant to section 71 of the *Utilities Commission Act* (UCA) and British Columbia Utilities Commission (BCUC) Rules for Natural Gas Energy Supply Contracts (Rules), FortisBC Energy Inc. (FEI) applied to the BCUC seeking acceptance for a Biomethane Purchase Agreement (BPA) between FEI and Regional District of Fraser-Fort George (RDFFG) (Application);
- B. Section 18(1) of the *Clean Energy Act* (CEA) defines 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”;
- C. 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”;
- D. On May 25, 2021, the Lieutenant Governor in Council, by Order in Council (OIC) 306/2021, approved an amendment to the Greenhouse Gas Reduction (Clean Energy) Regulation (GGRR), which among other things, repealed and replaced section 2 (3.8) to state:

(3.8) The public utility acquires renewable natural gas

a) at costs that meet the following criteria, as applicable:

- i. if the public utility acquires renewable natural gas by purchasing it, the price of the renewable natural gas does not exceed the maximum amount, determined in accordance with section 9, in effect in the fiscal year in which the contract for purchase is signed;

- ii. if the public utility acquires renewable natural gas by producing it, the levelized cost of production reasonably expected by the public utility does not exceed the maximum amount, determined in accordance with section 9, in effect in the fiscal year in which the public utility decides to construct or purchase the production facility, and
  - b) that, in a calendar year, does not exceed 15% of the total amount, in GJ, of natural gas provided by the public utility to its non-bypass customers in 2019, subject to subsection (3.9) and section 10;
- E. Under the BPA, RDFFG will supply biomethane, which is a type of renewable natural gas, processed from a landfill site located north of Prince George, British Columbia, which will be acquired by FEI for injection into FEI's existing natural gas system;
- F. The BCUC has not reviewed the Application from a public interest perspective as the BPA is a prescribed undertakings under section 18(1) of the CEA; and
- G. FEI requests that the redacted portions of the Application and certain appendices be kept confidential due to their commercially sensitive nature; and
- H. The BCUC has reviewed the Application and makes the following determinations.

**NOW THEREFORE** pursuant to section 71 of the UCA and section 18 of the CEA and the GGRR, the BCUC orders as follows:

1. The BCUC accepts for filing the BPA between FEI and RDFFG.
2. The BCUC will keep the redacted portions of the Application and certain appendices confidential as requested by FEI as they contain commercially sensitive information.

**DATED** at the City of Vancouver, in the Province of British Columbia, this (XX) day of (Month Year).

BY ORDER

(X. X. last name)  
Commissioner

Attachment (Yes? No?)

**Appendix E**

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**REGIONAL DISTRICT OF FRASER-FORT GEORGE MEMO**

## MEMO

To	Petra Wildauer, General Manager of Environmental Services, Regional District of Fraser-Fort George	Date	June 3, 2020
		From	Joey Broda, EIT, FortisBC Energy Inc.,
Re	<b>Landfill Gas (LFG) Collection Estimate: Foothills Boulevard Regional Landfill</b>	CC	Colton Aston, FortisBC Energy Inc.  Scott Gramm, FortisBC Energy Inc.

### Background

FortisBC and the Regional District of Fraser Fort-George (“RDFFG”) have signed a ■■■-year agreement for the purchase of landfill gas (“LFG”). FortisBC will build an upgrading plant that will purify the landfill gas to pipeline quality RNG (the “project”). FortisBC must now file an application for approval with the BC Utilities Commission for the agreement and associated construction and operation of the upgrading and injection facilities. The approval will rely upon FortisBC demonstrating that the expected costs and volume of gas (which results in total energy) result in a total cost of RNG that is below the current maximum regulated price set by the province of BC.<sup>1</sup>

The amount of landfill gas available over the ■■■-year lifetime has a significant impact on the overall price of RNG. It is particularly important to have a robust estimate of the low-end of the landfill gas collection. FortisBC will use the low-end collection estimate as a worst-case scenario to calculate the maximum all in price for RNG. FortisBC must demonstrate that it can reasonably expect to have a total cost for RNG that is lower than a regulated maximum price of \$30 per GJ.

Landfill gas collection depends on the amount of fresh refuse added each year, the climactic conditions, and the placement of landfill gas collection pipes. Forecasting landfill gas volumes is difficult, so RDFFG engaged a consultant ■■■■■ with expertise in the field to develop a long-term estimate. This memo provides a range of estimates based upon data provided by RDFFG, its consultant, and assumptions derived from ongoing discussion with RDFFG.

### Purpose

The aim of this estimate is to provide the range of reasonably expected volumes of landfill gas over the life of the project. Data for this estimate is drawn from historical collection rates and the *Foothills Boulevard Regional Landfill – Landfill Gas Generation Assessment* completed by ■■■■■ in 2018.

<sup>1</sup> Greenhouse Gas Reduction Regulation, Section 3.8  
[http://www.bclaws.ca/civix/document/id/complete/statreg/102\\_2012](http://www.bclaws.ca/civix/document/id/complete/statreg/102_2012)

## Estimate Methodology

Three scenarios are explored in this memo: high, low, and expected. The maximum flow used by FortisBC is capped at [REDACTED] because of the capacity of the upgrader proposed by FortisBC. If [REDACTED] is reached, there may be ways to modify the upgrader for additional flow. The cost and benefits of these modifications are not evaluated at this time.

- High: The high scenario is based on [REDACTED] no organic diversion collection estimate.
- Expected: The expected scenario uses that average of the diversion and no diversion scenarios provided by [REDACTED]. The average is used to account for the potential of a change in policy regarding organics, or a change in organic content of refuse driven by economic circumstances, or individual behavior changes. That value was then scaled by 80% based on the previous average value of actual LFG versus projected LFG.
- Low: The low scenario considers the effect of a delayed or diminished scope of landfill gas capture infrastructure. The [REDACTED] report assumes the construction of additional landfill gas capture wells in 2019, 2021, and 2026. In the low scenario, it is assumed that new wells are only constructed in 2028, and generate only 2/3rds the predicted benefit of the 2026 build-out. This scenario considers the cumulative effect of a diminished scope, delayed timeline, and reduced performance compared to theoretical performance.

## ■-Year Landfill Gas Collection Forecast

The three scenarios of reasonably expected raw LFG collection available for use by FortisBC were forecast using the methodology above. Based on projections, both the high and expected modelled gas collection will exceed [REDACTED] so the data was capped at that value. The forecasted LFG volumes and scenarios are presented in Figure 1 below.

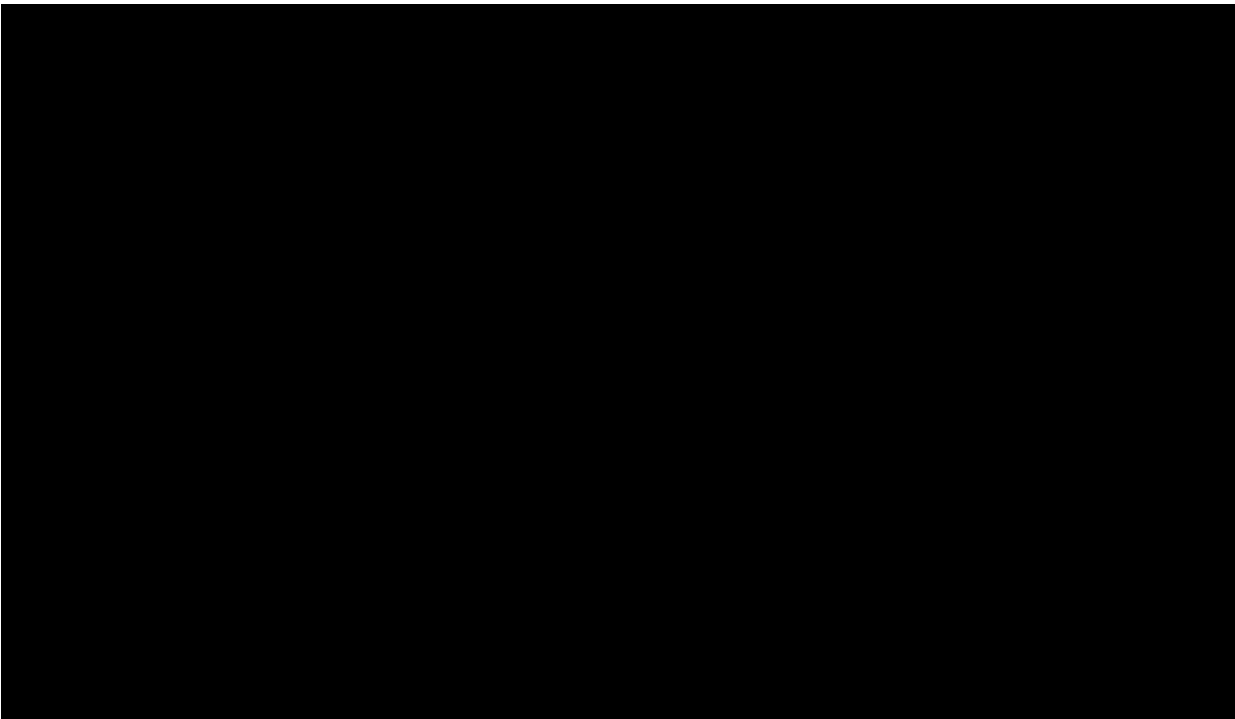


Figure 1: Forecast LFG Volumes - ■ Years



FortisBC calculates its cost based on energy rather than volume. In order to convert the volume of LFG to energy (which is measured in GJ), FortisBC used an average value of [REDACTED] methane content. This is a conservative average value of methane based on the previous data collected by RDFFG and confirmed by FortisBC with independent sampling. Figure 2 shows the annual energy production based on the calculation using the average methane content and the projected LFG volumes.

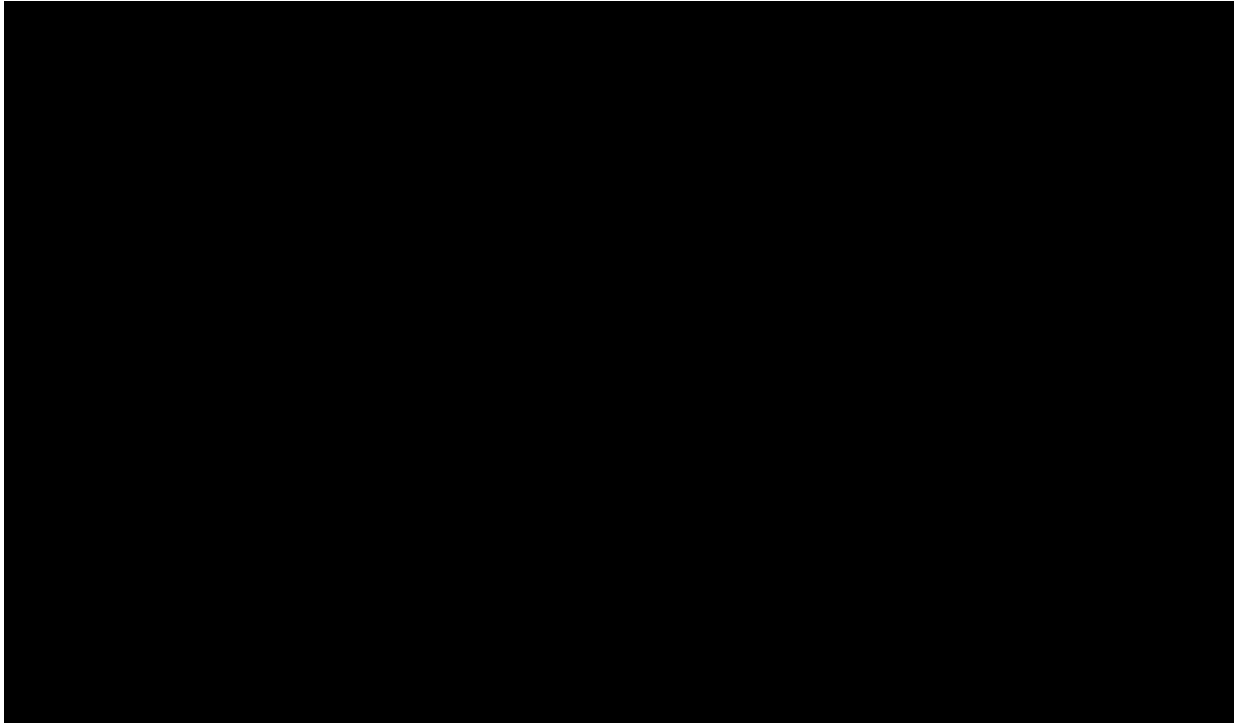
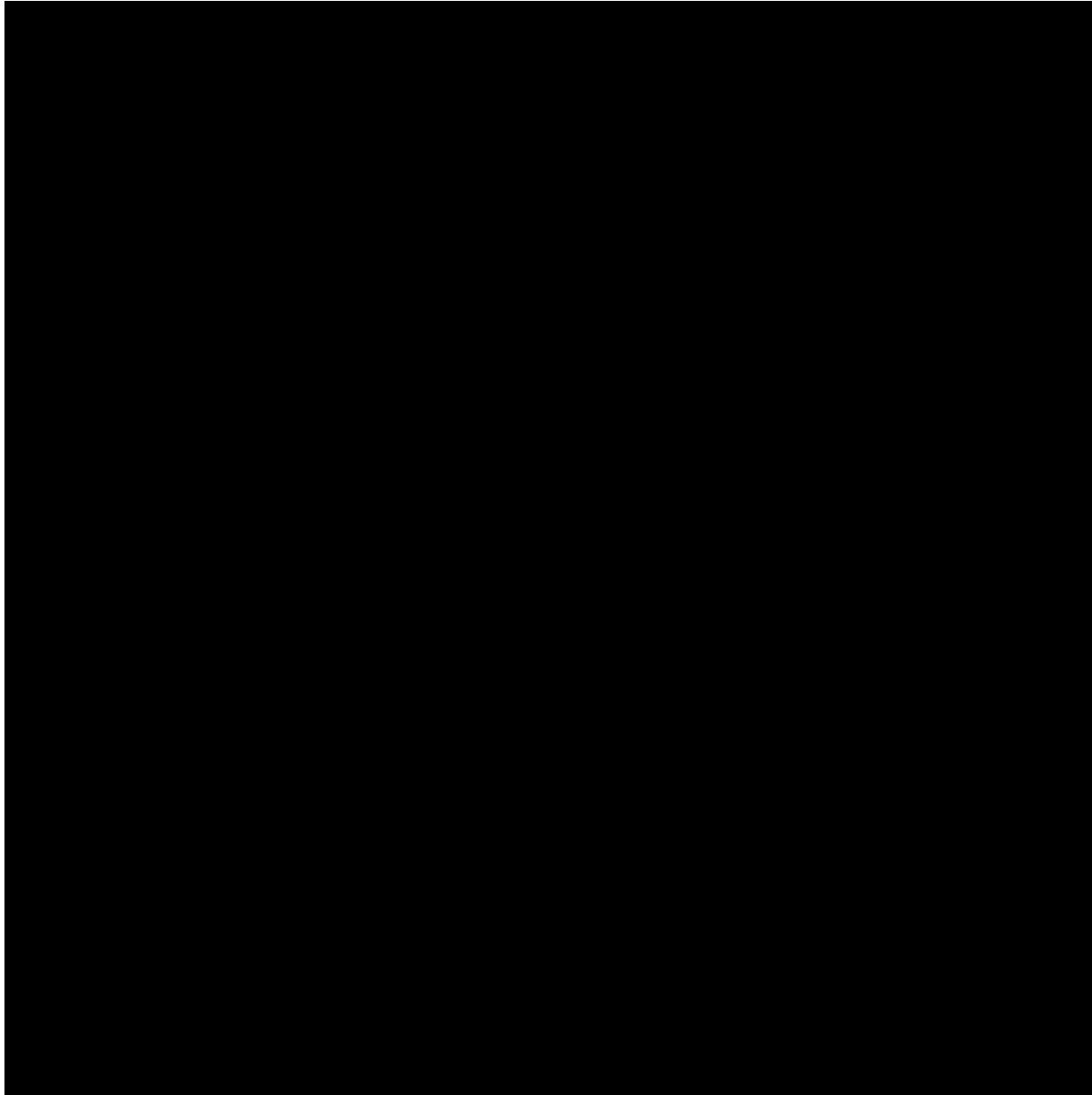


Figure 2: [REDACTED]

**Appendix A:** [REDACTED]

Table 1 below is a summary of the landfill gas collection rates anticipated in the 2018 report. The report considers two scenarios: No diversion of organic waste and initial diversion of organic waste in 2022.

[REDACTED]

**Notes:**

1. The bold values were extracted from the report and the other values are interpolated.
2. For the period between 2021 and 2026 in the no diversion scenario, values have been estimated to increase due to the continued addition of refuse.
3. For the period between 2021 and 2030 in the diversion scenario, a modest increase in volume is assumed to occur because of new refuse.
4. A significant increase in LFG volume occurs when new well construction is anticipated.



## REGIONAL DISTRICT of Fraser-Fort George

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### MEMO

TO: Joey Broda, EIT, FortisBC Energy Inc.

CC: Colton Aston, FortisBC Energy Inc.  
Scott Gramm, FortisBC Energy Inc.

FROM: Petra Wildauer, General Manager of Environmental Services

DATE: June 12, 2020

SUBJECT: **Landfill Gas (LFG) Collection Estimate: Foothills Boulevard Regional Landfill**

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The Regional District of Fraser-Fort George (RDFFG) has reviewed the technical memo that you provided on June 3, 2020. Furthermore, we have reviewed the assumptions you made to projected future estimated landfill gas flows and we are writing in response to the memo.

We are comfortable with the ranges of expected landfill gas volumes shown in the memo. The RDFFG is obligated under the Landfill Gas Regulation to operate and maintain an active collection system to reduce greenhouse gas emissions efficiently and effectively. The regulatory requirement is supportive of beneficial use as it warrants continuous progressive upgrades and improvements to the collection system.

In other words, we will continue to collect more landfill gas which we expect to trend higher in the range of scenarios presented in the memo.

More specifically, we believe that FortisBC has provided a reasonable range of flows in this projection based upon the data that we have on hand. We want to confirm that the expected case, which is based on about 80% of the total estimated landfill gas generation, aligns with our projected expectations. The increased flow over time is also reasonable because it generally matches with our expected future waste collection forecasts and with our plans to add more gas collection wells in the future.

We wanted to note that the 2020 approved budget for Solid Waste Management includes approximately [REDACTED] for advancement and upgrades to the landfill gas collection system over the next two years. This plan may be delayed in the near-term due to the limited availability of some equipment from the United States as a result of the current COVID-19 pandemic, however we fully expect to complete the work. This may result in up to a one-year delay in the increase of landfill gas collection volumes, but when complete, will result in an increase in gas volumes following a similar trend to FEI's expected case.

Overall, we are satisfied that you have provided a reasonable range of future flows in your memo.

We look forward to beginning the construction of this project as soon as practical.