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October 27, 2025

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

Dear Registrar:

Re: British Columbia Utilities Commission (BCUC) Review of Renewable Natural Gas (RNG) Definition and Accounting (Inquiry)

FortisBC Energy Inc. (FEI) Response to BCUC Information Request (IR) No. 1 to All Interveners / Intervener Groups

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In accordance with the regulatory timetable established in BCUC Order G-231-25 for the Inquiry, FEI respectfully submits the attached response to BCUC IR No. 1 to All Interveners / Intervener Groups.[1]

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Sarah Walsh

Attachments

cc (email only): Registered Interveners

[1] For convenience and efficiency, if FEI has provided an internet address for referenced reports instead of attaching the documents to its IR responses, FEI intends for the referenced documents to form part of its IR responses and the evidentiary record in this proceeding.

A. DISPLACEMENT OF THE PRODUCTION AND USE OF NATURAL GAS DERIVED FROM FOSSIL FUELS

1.0 Reference: GGRR DEFINTION OF ENVIRONMENTAL ATTRIBUTES

Exhibit C1-2 (FEI Appendix B Submission), p. 4; Exhibit C3-2 (Metro Vancouver Appendix B Submission), p. 4; Section 71 Filing of Biomethane Purchase Agreement between FEI and Shell North America (Canada) Inc., Exhibit B-4, BCUC IR 7.3; Decision and Order G-212-22, Inquiry into the Acquisition of Renewable Natural Gas (RNG) by Public Utilities in British Columbia (RNG Inquiry – Phase 1 Decision), p. 18;

Greenhouse Gas Reductions (Clean Energy) Regulation (GGRR), Sections 1 and 2.2(3)

Displacement of Fossil Gas

On page 18 of the RNG Inquiry – Phase 1 Decision[1], dated July 28, 2022, the BCUC stated that:

> We find no requirement in the GGRR for the source of biomethane to be connected to the same pipeline system as the acquiring utility. […] That gas does not have to be delivered by displacement or otherwise acquired from the same party as the Environmental Attributes are acquired from. Further, to acquire Renewable Natural Gas the associated biomethane does not need to be injected into a pipeline that had a physical connection to the purchaser's LDS [Local Distribution System].

On July 1, 2024, section 2.2(3) of the Greenhouse Gas Reductions (Clean Energy) Regulation (GGRR) was amended to include the following additional requirements for a public utility acquiring renewable natural gas (RNG) as a prescribed undertaking:

> 2.2(3) The public utility…
>
> (c) acquires and sells or transfers to its customers the environmental attributes of the renewable natural gas it purchases or produces, and
>
> (d) the environmental attributes described in paragraph (c) are retired at the time of sale or transfer to the customers of the public utility.

A new defintion [*sic*] of "environmental attribute" was also added to section 1 of the GGRR, as follows:

> "environmental attribute" means any credit, benefit, greenhouse gas emissions reduction, offset or allowance attributable to

[1] https://docs.bcuc.com/documents/other/2022/doc_67309_g-212-22-bcuc-rng-inquiry-phase1-decision.pdf.

> (a) the production and use of renewable natural gas, hydrogen, synthesis gas or lignin, and
>
> (b) the displacement, by the production and use described in paragraph (a), of the production and use of natural gas derived from fossil fuels; [emphasis added]

On page 4 of the Metro Vancouver Appendix B Submission, Metro Vancouver states:

> […] the Commission's definition does not seem to directly mandate the displacement component of the definitions contained in the GGRR. This distinction may allow a public utility to acquire transferable environmental attributes from, for example, a biogas supplier that ultimately sells its output for direct electricity production. In certain jurisdictions, this could mean that the displacement is not of fossil gas, but rather of clean electricity. This could defeat the GHG reduction intent of the GGRR and is therefore inconsistent.

In the BCUC's 2021 review of FortisBC Energy Inc.'s (FEI) section 71 filing of a biomethane purchase agreement with Shell North America (Canada) Inc., FEI stated that:

> Displacement refers to the idea that there is one contiguous gas system across North America and that, when gas is injected somewhere on the system from a new location, less gas is injected somewhere else to provide the same volume to all the users on the entire system. The original source is displaced.
>
> The RNG produced at the facilities in Iowa will cause an equivalent reduction in the amount of gas that generally flows West to East, thereby displacing conventional natural gas molecules and reducing the amount of conventional natural gas that is produced and injected into the system.

1.1 Please explain the meaning of "displacement" as used in the definition of Environmental Attributes (EAs) in section 1 and section 2.2 of the GGRR. As part of the response, please include references to any relevant industry standards, case law, and/or legislation.

Response:

The well-established legal principles governing the modern approach to statutory interpretation – namely, reading the words of the statutory scheme "in their entire context and in their grammatical and ordinary sense harmoniously with the scheme of the Act, the object of the Act, and the intention of Parliament."[2] – apply when interpreting the *Clean Energy Act* and the GGRR. This requires first examining the grammatical and ordinary meaning of the word "displacement" as it is

[2] *Rizzo & Rizzo Shoes Ltd. (Re)*, [1998] 1 S.C.R. 27.

used in the GGRR, recognizing that the legislative text remains the "anchor" of the interpretative exercise.[3]

Displacement is not defined in the GGRR and is only used in a single, limited context – within the definition of "environmental attribute" under the GGRR.

The grammatical and ordinary sense of "displacement" as used in the definition of an "environmental attribute" in the GGRR means the replacement or substitution of one thing (the production and use of natural gas derived from fossil fuels) with another thing (the production and use of RNG).

This is supported by dictionary definitions of "displacement". For example, the Canadian Oxford Dictionary defines the noun "displacement" as "the act of displacing or the process of being displaced",[4] and the verb "displace" as "replac[ing] (a thing) with another". As another example, the New Shorter Oxford English Dictionary defines "displace" as to: "Replace with something else; take the place of, supplant."

As noted above, the immediate context of the word displacement in the GGRR is the definition of environmental attribute. In this context, displacement must mean replacement or substitution because it is the substitution of the production and use of RNG, for the production and use of natural gas derived from fossil fuels, that results in a greenhouse gas emission reduction or potential credits, benefits, offsets or allowance. In short, it is the substitution of natural gas derived from fossil fuels for RNG that results in the environmental attribute.

All of the RNG that FEI acquires under the GGRR that is sold to FEI's customers displaces the production and use of natural gas derived from fossil fuels, with the production and use of RNG and, therefore, gives rise to environmental attributes as defined in the GGRR.

This interpretation is consistent with the concept of displacement as it is commonly used in the energy industry. For example, the Federal Energy Regulatory Commission (FERC) has described the nature of gas and electric grids as displacement networks, stating:[5]

> **The grids are displacement networks**. The transmission grid need not (indeed cannot) deliver specific packets of gas or power from a given producer to a given customer. In this, they differ from package delivery services or airlines that deliver specific packages or people to specific places. Delivery by displacement makes it possible to deliver more of a commodity with substantially less actual physical movement and in that sense offers considerable scope for cost savings. [Emphasis in original.]

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[3] *Quebec (Commission des droits de la personne et des droits de la jeunesse) v. Directrice de la protection de la jeunesse du CISSS A*, 2024 SCC 43, at para. 24.

[4] Katherine Barber, *Canadian Oxford Dictionary*, 2nd ed (Toronto: Oxford University Press, 2004).

[5] FERC Discussion Paper 96-08, "The Governance of Energy Displacement Network Oligopolies", October, 1996, at p. vi: https://www.ferc.gov/sites/default/files/2020-05/oligoply.pdf.

The National Energy Board (the predecessor to the Canada Energy Regulator) has defined displacement as follows:[6]

> Displacement: in pipeline transportation, the substitution of a source of natural gas at one point for another source of natural gas at another point. Through displacement, natural gas can be transported by backhaul or exchange.

Consistent with the above, all of the RNG that FEI acquires is delivered by displacement, both for RNG produced inside of BC and outside of BC. When RNG is produced and injected into one part of the contiguous natural gas system, the RNG can be delivered to FEI and its customers via the displacement of natural gas in the system.

1.2 Please explain the impact, if any, the meaning of "displacement" as discussed in response to the IR above, has on the BCUC's finding in the RNG Inquiry – Phase 1 Decision that there is "no requirement in the GGRR for the source of biomethane to be connected to the same pipeline system as the acquiring utility."

Response:

The meaning of displacement in the definition of "environmental attribute" has no impact on the BCUC's findings that there is "no requirement in the GGRR for the source of biomethane to be connected to the same pipeline system as the acquiring utility." There are no words in the GGRR that require the source of biomethane to be connected to the same pipeline system as the acquiring utility. If the government wished to prescribe that RNG must be delivered by displacement via a connected pipeline system, then it would need clear words in the GGRR to spell out that requirement.

The premise of the question appears to be that the word "displacement" in the definition of "environmental attribute" means that RNG must be delivered by displacement where the source of biomethane must be connected to the same pipeline system as the acquiring utility. However, the premise of this question is mistaken for at least two reasons.

First, delivery by displacement does not require a contiguous gas system, as a displacement can be completed via an exchange. An exchange refers to the transportation of natural gas by displacement over two pipelines, each of which takes and retains possession of gas contractually allocated to the other. The exchange is verified by pipeline and storage statements, which account

[6] National Energy Board, "Canadian Natural Gas Market Dynamics and Pricing, An Energy Market Assessment", p. 59: https://publications.gc.ca/Collection/NE23-93-2000E.pdf.

and track the commercial and physical delivery of the exchange of product for accounting and regulatory reporting purposes.

As found by the Panel in the Phase 1 Decision, biomethane, like conventional natural gas, can be injected into the gas transmission and distribution system and, once injected and comingled or blended, the biomethane is indistinguishable from, and fungible with, conventional natural gas.[7] All gas molecules are interchangeable and specific gas molecules injected by the biomethane supplier do not necessarily physically travel from the point of injection to the point of sale. This is true irrespective of whether the biomethane production facility is in BC or not, as even biomethane produced in BC and injected on FEI's system is generally delivered to customers by displacement. Therefore, displacement of natural gas in FEI's pipeline occurs in all instances of injection of biomethane, whether from within BC or from out-of-province.

Second, it would be improper to read into the definition of "environmental attribute" in the GGRR a substantive requirement that RNG acquired under the GGRR must be delivered by displacement via a connected pipeline system. Delivery by displacement via a connected pipeline system is not necessary to give rise to an "environmental attribute" as defined in the GGRR. For instance, if RNG were delivered directly by a dedicated pipe or truck to be used instead of natural gas derived from fossil fuels, it would still replace natural gas derived by fossil fuels and reduce greenhouse gas emissions. The GGRR is silent as to the mode of delivery of RNG.

The use of the word displacement in other environmental legislation is not equated with delivery by displacement via a connected pipeline system. For example, in the *Clean Fuel Regulations*, SOR/2022-140, displacement is referred to in the context of gaseous fuels or electricity displacing liquid fuels, either contractually or physically. It is plain that in these contexts the displacement is not via delivery by displacement via a connected pipeline but is simply the replacement or substitution of one for the other. For example, Section 99(1) contemplates RNG being used to displace the use of liquid fuel in a vehicle:

> 99 (1) The owner or operator of a fuelling station who, during a compliance period, displaces the use of a fuel in the liquid class by supplying low-carbon-intensity fuel that is renewable propane, co-processed low-carbon intensity propane, compressed renewable natural gas or liquefied renewable natural gas for use in Canada as a fuel for a vehicle must not create provisional compliance credits in respect of the liquid class for the compliance period unless they possess the supporting documents that are referred to in subsection (2). [Emphasis added.]

The use of the word displacement in the GGRR is similar. It is simply referring to the substitution of RNG for natural gas derived from fossil fuels and is not requiring a particular mode of delivery.

[7] Phase 1 Report, p. 11.

1.3 Please discuss whether, to demonstrate that displacement of natural gas derived from fossil fuels (i.e. fossil gas) has occurred, it is required that gas flows or is likely to flow from the point of injection of biomethane to the point of consumption.

Response:

No, demonstration of displacement does not require that gas flows or is likely to flow from the point of injection of biomethane to the point of consumption.

The direction of gas flow in the system is not required for delivery by displacement. As long as the injection of RNG replaces the injection of natural gas somewhere on the system, then there is displacement on the system. The direction of flow is irrelevant. Furthermore, even if the direction of flow were to the point of sale, it would be highly unlikely that the RNG molecules would ever reach that point. Instead, the RNG molecules would be consumed by the end uses closest to the point of injection. Any flow requirement, therefore, has no meaningful impact or purpose, other than an artificial barrier to the delivery of low carbon energy.

Notably, even RNG projects in BC could not meet such a flow restriction. FEI's RNG production from in-province projects injected into FEI's distribution system do not always flow in the direction of the point of sale. For example, FEI's in-province supply received near Victoria cannot flow northward towards Nanaimo or any other part of the Vancouver Island or the Mainland systems, yet the RNG from that supplier is used to displace natural gas derived from fossil fuels through FEI's RNG program.

At the time of the BCUC's 2021 review of FEI's BPA with Shell, FEI provided the description of displacement in the preamble as an example to assist with the understanding of how the natural gas market functions and to demonstrate that, in some cases, production located within BC could be directly displaced. When FEI referenced that "gas generally flows West to East", it was not intended to indicate that there is, or should be, a requirement that gas flows, or is likely to flow, in a specified direction.

The displacement of natural gas derived from fossil fuels with RNG is contingent on the following factors, irrespective of the direction of the flow of that RNG:

- **RNG is substituting conventional natural gas supply:** The RNG must be injected into the gas system or used in a way to meet energy service demand that would otherwise have needed to be satisfied by end-use conventional natural gas consumption without the provision of that RNG.
- **The RNG volumes injected into the system are being claimed only once:** Contractual and other practices must provide reasonable assurance that the RNG supply (conventional natural gas paired with EAs from biomethane production) is being injected and used, and FEI is accounting for it. FEI's RNG inventory is being increased when RNG volumes are injected, and FEI's RNG inventory is being reduced (EAs are effectively retired) when the RNG is delivered and consumed by FEI's customers. Thus, the EAs are being claimed for only one use and are not being counted more than once.

These factors are not unique to RNG; they are applicable to any low-carbon energy source operating in a pooled commodity market or energy network. Sustainable aviation fuel and renewable electricity are other markets where the "flow" of the commodity need not be a precondition to recognizing that displacement has occurred.

1.4 Please discuss any factors, aside from connection to a contiguous gas system and/or the likelihood that biomethane from a seller's facility will physically flow to the British Columbia natural gas system, that may be relevant to the BCUC's assessment regarding whether displacement has occurred.

Response:

As discussed in FEI's responses to BCUC-All IR1 1.1 to 1.3, the use of the word "displacement" in the definition of "environmental attribute" cannot be reasonably interpreted as requiring delivery of RNG via connection to a contiguous gas system with gas flow moving towards British Columbia. Furthermore, this very particular mode of delivery is not necessary for displacement to occur.

As noted in FEI's response to BCUC-All IR1 1.3, what is key for displacement is that RNG is used as a substitute for conventional natural gas supply. It is this substitution that gives rise to the environmental attribute. Thus, the RNG must be injected into the gas system or otherwise delivered and used to meet energy service demand that would otherwise have needed to be satisfied by end-use conventional natural gas consumption without the provision of that RNG.

What makes displacement work is strong contracting and other commercial practices, which FEI has demonstrated, such as through its chain of custody practices.

1.5 Please discuss your views on Metro Vancouver's submission that the BCUC's current definition of RNG allows for a circumstance where clean electricity is displaced rather than fossil gas.

Response:

The scenario contemplated by Metro Vancouver in which a public utility acquires the EAs from a biogas supplier that sells its output for direct electricity production would not be allowed by the BCUC's current definition of RNG, as EAs from biogas would not qualify as RNG.

The BCUC's current definition of RNG includes "Biomethane…acquired with its associated environmental attributes" and "Conventional natural gas (i.e., fossil gas)…acquired along with an

appropriate quantum of transferable environmental attributes arising from the production of biomethane elsewhere."[8] The BCUC is clear that biomethane is not biogas. Rather, biomethane is pipeline quality gas derived from upgrading and processing biogas or biomass.[9] Moreover, the BCUC found that bundling conventional natural gas with EAs that arise from anything other than the production of biomethane does not satisfy the definition of RNG for the purpose of the GGRR.[10] Therefore, the use of EAs from the production of biogas does not satisfy the BCUC's definition of RNG for the purpose of the GGRR.

FEI notes that biogas is suitable for electricity generation and biogas producers would not incur the material costs to upgrade the biogas to pipeline quality biomethane if it were to be used for electricity generation. However, in a hypothetical scenario where pipeline quality biomethane were to be used for electricity generation, and a public utility were to acquire the EAs associated with that biomethane, this does not pose a challenge to the BCUC's definition of RNG. In this hypothetical scenario, the electricity generated by the biomethane could not claim the EAs of the biomethane used to produce it, and the carbon intensity of the electricity would be commensurately higher (i.e., it would be as if the electricity were generated using conventional natural gas). At the same time, natural gas paired with the EAs of the biomethane could be used to displace the use of natural gas derived from fossil fuels elsewhere. This scenario is not realistic, economic or feasible, but it does not pose a challenge to the BCUC's definition of RNG.

1.6 Please discuss whether, in your view, based on the responses to the above IRs, any revisions to the BCUC's definition of RNG or the BCUC's compliance requirements[11] are nessary [*sic*] to maintain consistency with the GGRR.

Response:

Based on FEI's responses to the preceding IRs, no changes to the BCUC's definition of RNG or the BCUC's compliance requirements are necessary to maintain consistency with the GGRR.

[8] https://docs.bcuc.com/documents/proceedings/2025/doc_82215_a-2-g-137-25-timetable.pdf.

[9] Phase 1, p. 31. Accessed at https://docs.bcuc.com/documents/other/2022/doc_67310_final-rng-report.pdf.

[10] Phase 2, p. 24. Accessed at: https://docs.bcuc.com/documents/other/2023/doc_71871_bcucrnginquiryphase2finalreport.pdf.

[11] See Order E-14-21 and Exhibit A2-1, BCUC Letter dated July 11, 2022.

2.0 Reference: CHAIN OF CUSTODY FRAMEWORK

Exhibit C1-2 (FEI Appendix B Submission), p. 19–20, p. 31; Exhibit C18-1 (Intervener Group 2 Appendix B Submission), p. 18; Exhibit C3-2 (Metro Vancouver Appendix B Submission), p. 4

Confirmation of Displacement

On page 19 of the FEI Appendix B Submission, FEI states that it has developed a robust chain of custody framework for out-of-province RNG purchases. Further, on pages 19–20, FEI states that:

> The documentation of the chain of custody is mandatory for all of FEI's RNG suppliers located outside of BC. RNG suppliers provide the documentation for the chain of custody on a monthly basis to FEI, which includes the following:
>
> - The RNG suppliers [*sic*] monthly RNG production records, which is the metering report (sometimes referred to as pipeline receipts) of the local utility where the RNG plant is located and into whose gas system the produced RNG is injected. The metering report identifies the local utility, provides the quantity of monthly RNG production and serves as proof of delivery into the local gas system;
> - The RNG supplier or designated party (some suppliers work with gas marketers) must demonstrate that the sale of RNG to FEI is supported by RNG production. That is, in any given month, the RNG production must be equal to or greater than the sale of RNG to FEI. The monthly metering report of the local gas utility is required as proof; and
> - The supplier must deliver gaseous energy to FEI at a designated location (hub) in the same quantity as the sale of RNG to FEI. The delivery by displacement is completed when FEI takes custody of the gaseous energy (at the designated hub) which is paired with the EAs in the same quantity as the RNG produced and injected as conventional natural gas into the local gas utility.

2.1 Please discuss the sufficiency of FEI's existing chain of custody framework for determining whether fossil gas has been displaced.

2.1.1 Please discuss whether a clear chain of custody for all points along the route between injection of biomethane to consumption by the end customer (i.e. transportation contracts, storage contracts, etc.) is required to demonstrate that displacement of fossil gas has occurred.

Response:

It is not necessary or feasible to have a chain of custody for all points along dedicated pipelines to demonstrate that the displacement of conventional natural gas has occurred. The acquisition of RNG would not be feasible if physical delivery of biomethane to the point of sale were required

as this would require the construction and operation of dedicated pipelines directly from biomethane production facilities to an end use customer. Such physical delivery requirements are inconsistent with market principles of renewable energy trading, including renewable electricity.

FEI's chain of custody framework is sufficient in establishing the two conditions to ensure displacement is occurring by:

i) ensuring that RNG is displacing natural gas in the gas system by contractually mandating verification that RNG is being injected; and

ii) ensuring that there is no double counting of RNG through contractual warrants and the exclusive transfer of custody of RNG (with EAs attached) to FEI's system for final retirement of the EAs once consumed.

FEI's chain of custody framework ensures that conventional natural gas is displaced in FEI's pipeline through evidence of the chain of custody at key points. FEI's chain of custody framework commences with its contract or biomethane purchase agreement (BPA) and follows the key points in the transaction along with the associated documentation from biomethane production to final end use consumption. This ensures FEI is purchasing a specified amount of RNG (conventional natural gas with biomethane EAs attached) for consumption by FEI's customers.

The typical steps for the chain of custody for RNG delivered to FEI by displacement are as follows:

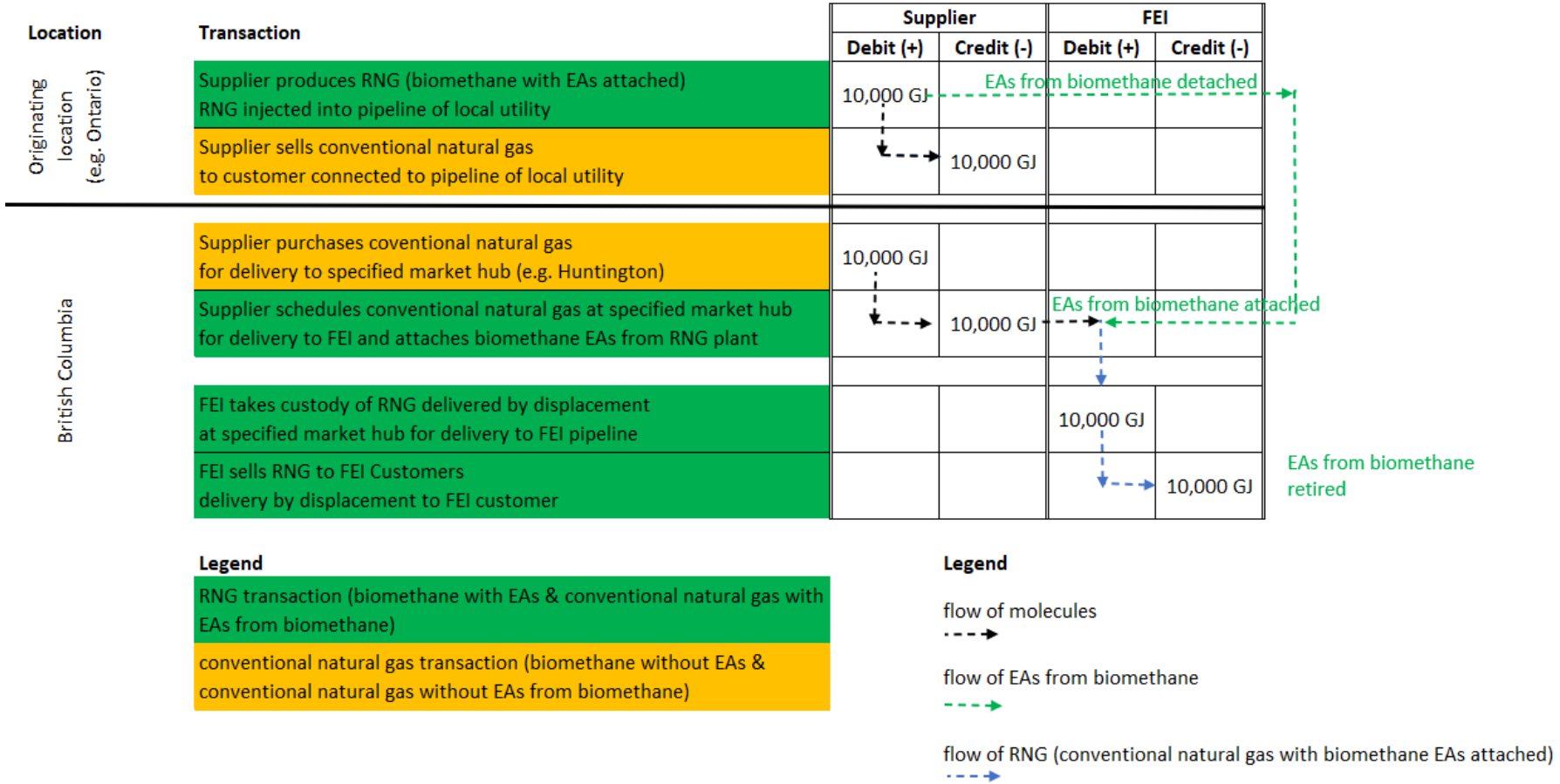
1. FEI and the supplier have a BPA (contract) for FEI to purchase from the supplier an amount (usually a range with a minimum and maximum) of RNG (biomethane with EAs attached or conventional natural gas with biomethane EAs attached) for a specified price.
2. The supplier has quantities of biomethane to sell to FEI under the terms of the BPA (the supplier either produces biomethane from its production facility or otherwise purchases the biomethane with the associated EAs attached).
3. The production facilities produce the biomethane with the EAs attached and at the point of injection into the local distribution system pipeline, the EAs are separated or detached from the biomethane. The biomethane without the EAs effectively becomes conventional natural gas in that local distribution pipeline system.
4. The supplier reports to FEI the quantity of biomethane, without EAs attached, injected into the local distribution system pipeline in the jurisdiction where the biomethane is produced and provides pipeline receipts. These pipeline receipts show the quantity of biomethane without the separated EAs injected into the local distribution system.
5. The supplier purchases an equivalent amount of conventional natural gas for delivery to a specified market hub. The biomethane EAs that were separated (from Step 3 above) are attached to the conventional natural gas by the supplier, which then completes the delivery by displacement to FEI when FEI takes custody of RNG (conventional natural gas with biomethane EAs attached) at the specified market hub.
6. FEI increases its RNG inventory by the specified amount of RNG (conventional natural gas with biomethane EAs attached) it has received by displacement.

7. FEI sells the RNG (conventional natural gas with biomethane EAs attached) to its customers either through the RNG Blend or through its Voluntary RNG Program and reduces its RNG inventory by the amount of RNG sold to, and consumed by, its customers, retiring the EAs associated with the quantity of RNG consumed by the end use customer.

FEI requires that all of its biomethane suppliers located outside of BC provide to FEI, on a monthly basis, the specified documentation to support the chain of custody. Settlement of the RNG volumes in FEI's RNG inventory and payment of the invoices to suppliers by FEI for the acquisition of the RNG only occurs when the required documentation is received, reviewed and confirmed by FEI. FEI's review of the chain of custody documentation includes a review for completeness (all required documents must be provided) and consistency (all figures must be supported), and the reporting period is for the respective billing month.

The following figure demonstrates the steps to FEI's chain of custody model using 10,000 GJ of biomethane with EAs attached (RNG) as an example.

1


Location
Transaction
Supplier
FEI
Debit (+)
Credit (-)
Debit (+)
Credit (-)
Originating location (e.g. Ontario)
Supplier produces RNG (biomethane with EAs attached) RNG injected into pipeline of local utility
10,000 GJ
EAs from biomethane detached
Supplier sells conventional natural gas to customer connected to pipeline of local utility
10,000 GJ
British Columbia
Supplier purchases coventional natural gas for delivery to specified market hub (e.g. Huntington)
10,000 GJ
Supplier schedules conventional natural gas at specified market hub for delivery to FEI and attaches biomethane EAs from RNG plant
10,000 GJ
EAs from biomethane attached
FEI takes custody of RNG delivered by displacement at specified market hub for delivery to FEI pipeline
10,000 GJ
FEI sells RNG to FEI Customers delivery by displacement to FEI customer
10,000 GJ
EAs from biomethane retired
Legend
RNG transaction (biomethane with EAs & conventional natural gas with EAs from biomethane)
conventional natural gas transaction (biomethane without EAs & conventional natural gas without EAs from biomethane)
Legend
flow of molecules
flow of EAs from biomethane
flow of RNG (conventional natural gas with biomethane EAs attached)

2

3

FEI provides the following example of the transactions and chain of custody followed for its BPA with Shell for actual volumes of biomethane with EAs attached. These volumes were delivered to FEI by displacement in November 2024. The chain of custody demonstrates that 45,900 GJ of conventional natural gas was displaced in FEI's pipeline through the delivery by displacement of conventional natural gas with biomethane EAs attached as a result of the biomethane production at the Des Moines Waste Water Treatment Plant (WWTP) facility. FEI's example demonstrates a clear chain of custody for key points between injection of biomethane (by Des Moines WWTP into MidAmerican Energy Company's pipeline) to delivery to FEI at Huntingdon, for consumption by FEI's end use customers.

FEI's BPA with Shell Chain of Custody Example:

Parties:

- **Supplier/Seller of RNG:** Shell North America (Canada) Inc.
- **Producer of RNG:** Des Moines WWTP (and upstream seller of RNG).
- **Purchaser of RNG:** FEI (also referred to as the off-taker).
- **Local Distribution Company:** MidAmerican Energy Company in Iowa. (The Des Moines WWTP injects their biomethane production into MidAmerican Energy Company's pipeline system).
- **World Energy** is a customer on the MidAmerican Energy Company's pipeline system who is the purchaser of conventional natural gas (biomethane without EAs) which Des Moines WWTP injects into MidAmerican Energy Company's pipeline.

Description of the Transactions:

- Des Moines WWTP (upstream seller) produces biomethane at their regional wastewater treatment plant.
- The biomethane produced at Des Moines WWTP (biomethane with EAs attached) is injected into MidAmerican Energy Company's pipeline, the local distribution company in Iowa.
- MidAmerican Energy Company issues a monthly statement to Des Moines WWTP for the injection of biomethane into their pipeline.
- Shell purchases the biomethane with the EAs attached from Des Moines WWTP (upstream seller) at the meter at the injection point of MidAmerican Energy Company's pipeline.
- The EAs are detached by Shell from the biomethane at the point of injection into MidAmerican Energy Company's pipeline.
- Shell sells the biomethane without EAs as conventional natural gas to World Energy and the MidAmerican Energy Company's pipeline transports the natural gas (biomethane

without EAs) to World Energy. The MidAmerican Energy Company's "Pipeline Scheduled Volume" report identifies Des Moines WWTP as the origin of the natural gas (biomethane without EAs attached) which is transported to World Energy for sale as conventional natural gas.

- Shell purchases conventional natural gas from natural gas producers who have the ability to deliver natural gas to the Huntington market hub, as specified in the BPA.
- At Huntington, the EAs from Des Moines WWTP are attached to the conventional natural gas that Shell has scheduled for delivery to FEI, and Shell delivers biomethane (conventional natural gas with EAs reattached) to FEI (delivery by displacement).
- Delivery of RNG (conventional natural gas with biomethane EAs attached) to FEI from Huntingdon is through Enbridge, as shipper, with Shell providing the Enbridge statement that demonstrates the delivery of RNG (conventional natural gas with biomethane EAs attached) at Huntingdon to FEI.
- FEI takes custody of RNG (conventional natural gas with biomethane EAs attached) which completes the delivery of RNG by displacement.
- The RNG (conventional natural gas with biomethane EAs attached) is injected into FEI's pipeline at Huntingdon which displaces the need for the equivalent amount of conventional natural gas.

To further build on this example, in November 2024, Des Moines WWTP RNG production displaced 45,900 GJ of conventional natural gas delivered to FEI. In the absence of FEI receiving the RNG (conventional natural gas with biomethane EAs attached), FEI would have required 45,900 GJ more conventional natural gas supply to meet the needs of its customers. Therefore, the RNG FEI acquired through the Shell BPA in November 2024 displaced 45,900 GJ of conventional natural gas at Huntingdon that would otherwise have been required.

In summary, FEI's existing chain of custody framework demonstrates that it meets the two conditions to ensure displacement is occurring: i) ensuring that RNG is displacing natural gas in the gas system by contractually mandating the verification that RNG is being injected; and ii) ensuring that there is no double counting of RNG through contractual warrants and the exclusive transfer of custody of RNG to FEI's system for final retirement of the EAs once consumed. FEI's chain of custody framework and accounting entries meet these two conditions by starting at the point of RNG production, through to the point of delivery by displacement to FEI, and when ultimately consumed by FEI's customers. FEI accounts for RNG by increasing FEI's RNG inventory with the receipt of RNG (conventional natural gas with EAs attached) by displacement and decreasing FEI's RNG inventory when delivered to FEI's customers for consumption. The balancing of FEI's gas supply with its gas demand on the system verifies that displacement has taken place because FEI's conventional natural gas supply is reduced by the equivalent amount of RNG it receives delivered by displacement through its BPAs.

On page 31 of the FEI Appendix B Submission, FEI states that the Canadian Gas Association (CGA) is leading the process of establishing the Canadian Low-Emission Energy Registry (CLEER), a central repository of production data from all low emission energy produced in, or imported into, Canada. FEI submits that:

> The CLEER would establish a registry to support a book-and-claim transactional model for the EAs associated with RNG analogous to the power industry's approach, establishing [Renewable Energy Certificates (RECs)] to capture the attributes of renewable power over 20 years ago. The foundational element of the registry is ensuring the integrity and credibility of the EACs [EA certificates] generated by RNG producers. To do this, the CLEER would put in place a governance and certification process for RNG that encompasses the entire lifecycle of the EAC, from creation, through trades between various parties in the value chain, and finally to retirement as the environmental benefits are claimed by the end user.

2.2 Please compare and contrast book-and-claim transactional models to FEI's existing chain of custody framework for the purposes of verifying whether displacement of fossil gas has occurred.

Response:

FEI clarifies that it employs a book-and-claim transactional model. FEI, therefore, understands this question to be asking for a comparison between FEI's book-and-claim system to a book-and-claim system that uses a formal registry.

The foundation of book-and-claim is an accounting system where environmental or other attributes are "booked" from the physical use of a product and are then claimed by the entity that purchases the product without having to physically consume it. This is how FEI's current model works.

As the market for low-carbon energy expands, more formal and independently governed book-and-claim systems are developing to effectively and efficiently match willing buyers of low-carbon goods with willing producers, while strengthening the integrity of booked and claimed benefits. In practice, this means that book-and-claim systems are using independent registries which verify, issue, track and retire environmental attributes and associated certificates. Since there is not yet a functioning registry system available in Canada, FEI's chain of custody framework is FEI's book-and-claim system that it administers itself.

FEI's existing chain of custody framework tracks EAs using documentation and internal inventory accounting. RNG volumes are added to FEI's inventory upon acquisition and removed upon delivery to end-use customers for consumption. This framework ensures that each EA is accounted for and retired once consumed, thereby preventing double counting.

With the chain of custody framework FEI uses to receive gas from out-of-province suppliers, FEI demonstrates that:

- The amount of RNG received in BC by FEI is equivalent to the amount that is produced by the supplier.
- The supplier is contractually obligated to exclusively provide FEI with all the EAs associated with the RNG acquired, addressing double counting risk.
- The physical molecules of gas produced by the supplier are consumed locally (i.e., if the supply is from Ontario, the molecules of gas are consumed in Ontario), such that FEI does not receive the physical molecules of gas in BC. Instead, FEI receives conventional natural gas plus the EAs of the RNG at a BC trading hub.

As a result, FEI's chain of custody framework is more complex and costly than a formal book-and-claim registry but achieves a comparable level of integrity. Further, book-and-claim transactional models with formal registries separate EAs from the physical gas molecules in a manner similar to FEI's existing chain of custody framework.

FEI sells the RNG to its customers either through the RNG Blend or through its Voluntary RNG Program and reduces its RNG inventory by the amount of RNG sold to and consumed by its customers, effectively retiring the EAs associated with the quantity of RNG consumed by the end use customer. This is a key difference when compared to a book-and-claim system with a formal registry which often uses formal certificates to track and retire environmental attributes. However, the absence of certificates does not compromise the integrity of FEI's system because the attributes are still tracked and retired.

2.3 Please discuss the additional advantages, if any, a book-and-claim transactional model would be expected to deliver over FEI's existing chain of custody framework for RNG accounting.

Response:

As FEI already uses a book-and-claim system, FEI understands this question to be asking about the additional advantages, if any, that would be expected from a book-and-claim transactional model that uses a formal registry.

A book-and-claim transactional model provides flexibility and scalability by allowing participation in renewable energy markets regardless of geographic location. Book-and-claim models that utilize a formal registry use common rules and protocols in a transparent system and can have lower administrative and logistical costs compared to physical traceability systems like FEI's existing chain of custody framework. Through a common framework, the issuance and trade of

EAs is facilitated and buyers and sellers can be more easily matched, which builds integrity and confidence around markets for EAs, supports market growth, and encourages more entities to invest in carbon abatement. These systems can also provide greater transparency into market dynamics and open the scope of opportunities for buyers and sellers from specific regions to broader geographies. As more market players join and become familiar with the system's protocols, rules and other requirements, FEI expects that these systems will ultimately help reduce transaction costs.

FEI's chain of custody framework is robust and provides the same assurance as book-and-claim systems that use a formal registry; however, FEI's chain of custody framework does not enjoy the potential benefits of market scale with multiple participants and a common ruleset.

On page 18 of the Intervener Group 2 Appendix B Submission, My Sea to Sky (MS2S) states that California has "recognized the problem with accrediting and accounting for RNG from out-of-state sources and has enacted legislation (Senate Bill 1440) to counteract it."

In footnote 1 on page 18, MS2S references California's Public Utilities Code 651 (b)(3), as amended by Senate Bill 1440, stating as follows:

> Ensure that biomethane eligible for any procurement program meets one of the following conditions:
>
> (A) The biomethane is delivered to California through a dedicated pipeline.
>
> (B) The biomethane is delivered to California through a common carrier pipeline and meets both of the following requirements:
>
> (i) The source of biomethane injects the biomethane into a common carrier pipeline that physically flows within California, or toward the end user in California for which the biomethane was produced.
>
> (ii) The seller or purchaser of the biomethane demonstrates that the capture or production of biomethane directly results in at least one of the following environmental benefits to California:
>
> (I) The reduction or avoidance of the emission of any criteria air pollutant, toxic air contaminant, or greenhouse gas in California.
>
> (II) The reduction or avoidance of pollutants that could have an adverse impact on waters of the state.

(III) The alleviation of a local nuisance within California that is associated with the emission of odors.

2.4 Please discuss the pros and cons of the eligibility requirements for out-of-state biomethane purchases adopted by California's Public Utilities Code 651 (b)(3).

2.4.1 Please compare and contrast California's Public Utilities Code 651 (b)(3) to FEI's existing chain of custody framework for the purposes of verifying whether displacement of fossil gas has occurred.

2.4.2 Please discuss the potential impacts, if any, that may arise if requirements similar to the California's Public Utilities Code 651 (b)(3) were to be implemented for the acquisition of RNG as a prescribed undertaking in British Columbia.

Response:

FEI notes that the BCUC is prohibited from exercising its jurisdiction to directly or indirectly prevent a public utility from carrying out a prescribed undertaking and, therefore, it is not within the BCUC's jurisdiction to adopt requirements similar to California's Public Utilities Code (CPUC) 651 (b)(3).

Further, there would be no benefits if the BC government were to adopt eligibility requirements similar to the out-of-state biomethane purchase requirements in California's Public Utilities Code (CPUC) 651 (b)(3). These eligibility requirements set up artificial barriers to the acquisition of low-carbon fuels that decrease the efficiency of the markets, restrict the volumes available and increase costs for customers.

First, requiring a dedicated pipeline for RNG into BC (akin to CPUC 651 (b)(3)(A)) is not a feasible delivery option as the cost of the dedicated pipeline would render any project uneconomic or outside of the price threshold mandated by the GGRR.

Second, as discussed in FEI's response to BCUC-All IR1 1.3, flow direction is not necessary to displace natural gas derived from fossil fuels or delivery by displacement and, therefore, the flow direction requirement provides no benefits. FEI notes that the flow direction requirement in CPUC 651(b)(3)(B)(i) does not align with any other common energy practice and is not an effective means of ensuring that RNG fuel will reach or be consumed in California. This is because the farther the biomethane is injected into the common carrier pipeline from the California border, the less likely it is that any of it will actually reach California. Instead, the biomethane molecules will most likely be used by the most proximal consumers.

Third, a flow direction requirement for BC would make most out-of-province RNG acquisitions infeasible. California imports 90 percent of its natural gas from outside of the state (including from BC),[12] which means that the direction of flow of gas pipelines in California is from outside-in, making the flow condition potentially achievable. While California is a significant gas importer, BC is a significant exporter. Only 10 percent of the gas production in BC goes to domestic

[12] https://www.nytimes.com/2023/02/16/us/california-natural-gas-prices.html.

consumption and 90 percent is exported to Alberta and the US.[13] This means that gas in most pipelines flows outward from BC and a flow requirement would effectively ban most projects. Put more generally, a flow requirement would effectively limit RNG as a solution to only natural gas importing jurisdictions regardless of their ambition to expand renewable energy supply and reduce GHG emissions. This illustrates how a flow requirement is arbitrary, with its impact largely determined by whether the jurisdiction is a net importer or exporter of gas.

Fourth, if a flow direction requirement were required for imports, it is unclear why similar flow direction requirements would not apply to RNG projects within BC, effectively prohibiting projects that are not suitably located on the BC pipeline system such that the injected biomethane flows towards the point of consumption. This illustrates again how a flow requirement would be an arbitrary barrier to RNG acquisition, only serving to restrict supply and increase costs for customers.

Finally, if implemented in BC, the requirement in CPUC 651 (b)(3)(B)(ii) for the seller or purchaser of biomethane to demonstrate that its capture or production directly results in one of the three listed environmental benefits could have no impact or restrict RNG projects to those within BC, depending on how they are interpreted. If these requirements recognize the biogenic nature of emissions from RNG, then all RNG production meets the requirement to reduce GHG emissions. However, if they do not, then they would appear to be aimed at ensuring RNG production is in California.

The CPUC 651 (b)(3) is not a chain of custody framework and, therefore, cannot be reasonably compared and contrasted to FEI's chain of custody framework.

On page 4 of the Metro Vancouver Appendix B Submission, Metro Vancouver states:

> The GGRR relies on the idea that the injection of RNG into a pipeline somewhere leads directly (and predictably) to an equivalent reduction of fossil gas being injected into that pipeline system. This displacement is the source of the assumed GHG reduction.
>
> […] it is not necessarily the case that the demand for total energy would remain constant in the face of new RNG supply, causing total energy supply to also remain constant. Instead, in some cases, one could expect the two supplies (new RNG plus old fossil gas) to be additive, resulting in greater supply, lower prices, and higher overall energy use.

2.5 Please discuss whether, in your view, the risk that the two supplies might be additive is material with respect to the displacement of fossil gas.

[13] British-Columbias-Oil-and-Natural-Gas-Industry-357681-1.pdf.

2.5.1 If yes, please discuss whether a chain-of-custody framework can mitigate this risk and, if so, how.

Response:

This question is exploring a policy position that would favour restricting total demand on the gas system, which is entirely extraneous to the GGRR and, therefore, of questionable relevance to this Inquiry. The GGRR is intended to *encourage* public utilities to acquire RNG, which is inherently a replacement fuel for conventional natural gas which results in reduced GHG emissions. The GGRR sets the parameters for the acquisition of RNG, but does not set out any parameters regarding the end-use of RNG or total energy supply or demand. The BCUC is prohibited from taking any action, direct or indirect, that would interfere with the carrying out of a prescribed undertaking, including creating conditions for the acquisition of RNG based on the end use of RNG.

Nonetheless, there is no real risk that adding RNG to the overall supply of natural gas in the common carrier pipeline system would increase overall energy demand for natural gas such that RNG would not substitute and replace conventional natural gas.

First, given that RNG is a higher-cost commodity than conventional natural gas, its incorporation into the supply mix increases the average cost of gas. This can be observed in BC where FEI's acquisition of RNG is leading to otherwise higher rates for the energy it delivers to customers. While demand for natural gas is well known to be fairly price inelastic especially in the short term, the increase in the price of gas as a result of the addition of higher-cost RNG sends a price signal to end-use customers that acts as an incentive to conserve where possible to manage their overall energy costs.

Second, the overall demand for natural gas is shaped by a more complex set of factors than price elasticity. New use cases and demand for gas, such as in the power sector, to meet rising electricity demand, demand in international markets for liquefied natural gas, and policies have a much larger role in determining the overall level of demand for natural gas than the availability of RNG supply.

B. GHG EMISSIONS ACCOUNTING PRINCIPLES

3.0 Reference: PROVINCIAL INVENTORY OF GREENHOUSE GAS EMISSIONS

Exhibit C17-1, pp. 15–16, 18; Clean Energy Act, Section 2, British Columbia's Energy Objectives

Inclusions and Exclusions Within BC's Provincial Inventory of Greenhouse Gas Emissions

On page 15 of Intervener Group 3's Appendix B Submission, Intervener Group 3 states:

> Territorial inventories such as British Columbia's Provincial Inventory of Greenhouse Gas Emissions (Provincial Inventory) and Canada's National Inventory Report (NIR) employ location-based accounting, which typically accounts for biogenic carbon at the point of combustion.
>
> […]
>
> [B]iogenic carbon emitted during the combustion of RNG is understood to be less harmful to the climate than an equivalent amount of carbon emitted during the combustion of fossil gas. Conceptually, location-based accounts like the NIR (from which the Provincial Inventory is derived) should recognize this by not including biogenic carbon emissions in totals.

On pages 16 and 18, Intervener Group 3 states:

> A full accounting of the contributions of RNG to the fight against climate change must also consider a project's methane benefit; that is, the GWP [global warming potential] of the avoided methane that could have been trapping heat in the troposphere, but is instead being used in your stove to boil water for tonight's spaghetti dinner.
>
> […]
>
> [W]hen a BC public utility enters into a BPA [biomethane purchase agreement] with a producer in another province, only a portion of the emissions reductions – that is to say, those associated with the biogenic carbon dioxide – will appear in BC's inventory because of the BPA. This does not mean that the avoided methane benefits did not occur or cannot be tracked or recognized in market-based accounting frameworks by the buyer. Nor does it mean that the emissions reductions can't be attributed to BC, for it was BC buyers enabled by BC policy that created that market demand for the RNG in the first place.

3.1 Please provide evidence, if any, to support or refute Intervener Group 3's submission regarding the employment of a location-based accounting system for BC's Provincial Inventory.

3.1.1 Please confirm, or explain otherwise, that BC's Provincial Inventory does not include biogenic carbon emissions from out-of-province RNG that is delivered by notional delivery.

Response:

FEI understands that the Province of BC follows the principle of location-based quantification accounting. The BC Provincial Inventory Methodology Report indicates that it follows the reporting structure set out by the Intergovernmental Panel on Climate Change (IPCC) for estimating emissions and removals of specified GHGs (IPCC Guidelines), which have been adopted by the United Nations Framework Convention on Climate Change (UNFCCC).[14] The IPCC Guidelines include the principle of territoriality, which the BC Provincial Inventory Methodology Report describes as follows:[15]

> The UNFCCC reporting requirements use a strict geographic territoriality approach to the reporting of GHG emissions. A jurisdiction is responsible to report only those emissions that occur within its boundaries. For an imported product, the related emissions that occur within the source jurisdiction (e.g., as a result of the production process) would be reported in the source jurisdiction. For an exported product, the related emissions that occur within the receiving jurisdiction (e.g., combustion of exported coal) would be reported in the receiving jurisdiction. This is a production-based inventory methodology as emissions from the production of goods are reported where production occurs; the alternative is consumption-based, in which emissions from the production of goods are reported in the jurisdiction where the goods are used.

As FEI explained in its initial submission, following the IPCC Guidelines, the GHG emissions associated with the production of RNG are to be recorded in the jurisdiction where the RNG is produced, whereas the GHG emissions resulting from the consumption of the RNG should be recorded in the jurisdiction where that RNG is used. Moreover, the carbon dioxide component of those GHG emissions should not show up in the consuming jurisdiction's overall GHG emissions because RNG is methane produced from biogenic feedstocks, which means the carbon dioxide that is released when the RNG is combusted is balanced by the carbon drawn out of the atmosphere to create its raw materials. The carbon dioxide associated with the combustion of RNG is already part of the carbon cycle and, therefore, does not result in incremental emissions of carbon dioxide to the atmosphere.

However, FEI clarifies that it understands that Canada's National Inventory Report (NIR) does not yet track and account for the biogenic nature of carbon emissions from RNG. As the BC Provincial Inventory Report relies on the NIR, FEI's understanding is that BC's Provincial Inventory currently

[14] Methodology Report for the British Columbia Provincial Inventory of Greenhouse Gas Emissions 1990-2022, p. 1: provincial_inventory_of_greenhouse_gas_emissions_1990-2022_-_methodology_report.pdf.

[15] Methodology Report for the British Columbia Provincial Inventory of Greenhouse Gas Emissions 1990-2022, p. 2: provincial_inventory_of_greenhouse_gas_emissions_1990-2022_-_methodology_report.pdf.

counts the CO_2 emissions from RNG regardless of whether it is biogenic or produced as anthropogenic CO_2, whether from inside or outside of the province.

Nonetheless, FEI expects that, in time, improvements will be made to the NIR and, therefore, BC's Provincial Inventory, to reflect the biogenic nature of carbon emissions from RNG. FEI has several reasons to be optimistic in this regard.

First, as set out above, the IPCC Guidelines already support the approach of recognizing the biogenic nature of carbon emissions from RNG.

Second, the BC Provincial Inventory generally follows Canada's NIR, which follows this approach in principle. The BC Provincial Inventory Methodology Report states that BC has adopted emissions data from Canada's NIR for all line items in the stationary combustion (energy) category.[16] Canada's NIR (1990–2023) states on page 78 that only the CH_4 and N_2O emissions from the combustion of biomass and biofuels are included, "while their CO_2 emissions appear as a memo item in the UNFCCC inventory reporting tables".[17] This means that the CO_2 emissions from the combustion of biomethane with EAs attached and conventional natural gas with EAs from biomethane attached should not be included in the inventory, but noted as a memo item only.

Consistent with the NIR, Canada's 2025 Common Reporting Table to the UNFCCC includes biomass as one of the fuels reporting in the GHG Source and Sink Category 1.A Fuel Combustion – biomass, and states in a footnote:[18]

> Although CO_2 emissions from biomass are reported in this table, they will not be included in the total CO_2 emissions from fuel combustion. The value for total CO_2 emissions from biomass is recorded in table1 under the memo items.

Third, the NIR (1990–2023) states that "work is underway to enhance tracking and allocation of emissions associated with low-carbon fuel (e.g., bio-ethanol, biodiesel, renewable natural gas, etc.) production and combustion."[19] This explicitly recognizes RNG as a low-carbon fuel and an intent to improve tracking and allocation of emissions associated with RNG.

Further to the above, Statistics Canada has begun collecting data to support improved tracking and allocation of emissions associated with RNG in its Monthly Renewable Fuel and Hydrogen Survey (MRFHS).[20] While the survey initially tracked only ethanol and renewable diesel, in 2024 the survey was expanded and now requires reporting on ethanol, biodiesel, renewable diesel, biocrude/bio-oil, alternative aviation fuel, other liquid renewable fuels, biogas, RNG, low carbon

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[16] Methodology Report for the British Columbia Provincial Inventory of Greenhouse Gas Emissions 1990-2022, p. 6: provincial_inventory_of_greenhouse_gas_emissions_1990-2022_-_methodology_report.pdf.

[17] NIR (1990–2023), p. 78. https://publications.gc.ca/collections/collection_2025/eccc/En81-4-2023-1-eng.pdf.

[18] Canada's 2025 Common Reporting Table to the UNFCCC, TABLE 1.A(a) SECTORAL BACKGROUND FOR ENERGY (sheet 4 of 4), note 3: https://unfccc.int/documents/646188.

[19] NIR (1990–2023), Table 8-5 Summary of Canada's Inventory Improvement Plan, IPCC Sector Energy, Fuel Combustion (1.A). https://publications.gc.ca/collections/collection_2025/eccc/En81-4-2023-1-eng.pdf.

[20] Surveys and statistical programs - Monthly Renewable Fuel and Hydrogen Survey (MRFHS).

hydrogen, other gaseous renewable fuels and wood pellets. Through the MRFHS, the owner/operator of an RNG production facility is required to report on inputs into RNG production, quantification of RNG production, and the province or territory to which the RNG is shipped. FEI understands that all of its out-of-province RNG suppliers located in Canada report that the RNG production sold to FEI is shipped to BC. It is FEI's understanding that the MRFHS is a data source that informs the NIR, which is the input to BC's Provincial Inventory. As reporting on RNG supplies matures for Statistics Canada, FEI expects that RNG volumes and associated GHG abatement will be incorporated into the NIR and BC's Provincial Inventory.

Finally, BC's Climate Action Secretariat's Carbon Neutral Government Program already recognizes the biogenic nature of carbon emissions from FEI's RNG Program, regardless of where the RNG is produced. The reporting guidance provided by the Climate Action Secretariat's Carbon Neutral Government Program for the quantification of combustion emissions of natural gas states:[21]

> As of July 1, 2024, all natural gas purchased from FortisBC include 1% renewable natural gas (RNG). Organization purchasing natural gas from FortisBC shall use both emissions factors available for FortisBC in 2024, for gas purchase to June 30, 2024 and for gas purchase on July 1, 2024 and after. Clients of other natural gas suppliers that do not offer 1% RNG (e.g. Pacific Northern Gas, Shell) should use the January to June emissions factor for the entirety of 2024.

The above recognizes the benefit of FEI's RNG Blend, which was set at 1 percent on July 1, 2024. The RNG provided through the RNG Blend is sourced from both in-province and out-of-province suppliers.

Therefore, FEI is optimistic that Canada's NIR and BC's Provincial Inventory will evolve to recognize the biogenic nature of carbon emissions of RNG, whether produced in or outside of BC.

3.2 Please comment on Intervener Group 3's submission above that emissions reductions due to avoided methane emissions may be attributable to BC when a BC public utility enters into a BPA with a producer outside of BC.

3.2.1 Please confirm, or explain otherwise, that in the above scenario, emissions reductions due to avoided methane emissions would not be recognized in BC's Provincial Inventory.

[21] https://www2.gov.bc.ca/gov/content/environment/climate-change/public-sector/carbon-neutral, "Emission Factors Catalogue (XLSXS)", Updated Log tab, Item 5.

3.2.1.1 If confirmed, please discuss the appropriateness of any avoided methane emissions reductions being claimed by the RNG producer's jurisdiction.

Response:

FEI does not interpret Intervener Group 3's submission to be saying that avoided methane emissions are recognized in BC's Provincial Inventory. Rather, Intervener Group 3's submission states that only the emissions associated with biogenic carbon dioxide would be recognized in BC's Provincial Inventory. Intervener Group 3 says that, even though avoided emissions are not recognized in BC's Provincial Inventory, the benefit of avoided emissions can be recognized in Market-Based accounting mechanisms.

FEI agrees. This is the case with carbon credit programs such as the BC Low Carbon Fuel Standard (BC LCFS). Under the BC LCFS, the use of RNG as a transportation fuel, such as in vehicles equipped with compressed natural gas (CNG) engines, is eligible for credit generation, provided that its lifecycle carbon intensity (CI) is lower than the target pool fuel intensity (e.g., diesel). FEI participates in the BC LCFS and has obtained credits for avoided emissions for the use of RNG in CNG vehicles.[22]

Lifecycle emissions are all emissions associated with the production of RNG, emissions associated with upstream activities of the RNG facility and emissions related to end use. For example, the conventional natural gas used at the RNG facility includes the emissions from extraction and processing of conventional natural gas. Further, avoided emissions may be relevant where organic waste and manure is used as feedstock.[23] For example:

- Dairy farms typically collect manure in storage ponds (lagoons) which results in methane emissions as manure and other organics partly decompose anaerobically. The RNG CI is credited with the methane avoidance; or
- Packaged waste is processed at an RNG plant by separating the organics from the packaging. The extracted organics are used as feedstock for the RNG production while the packaging waste is disposed of at a landfill. In the absence of the processing at the RNG facility, the packaging waste would be disposed at a landfill, thus producing methane emissions. The RNG CI is credited with the methane avoided as avoided emissions.

[22] BCLCF263.4: approved Carbon Intensity = -20.52 (gCO2e/MJ); and BCLCF717.1: approved Carbon Intensity = -5.25 (gCO2e/MJ): RCLG-012 Approved Carbon Intensities – Current. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/renewable-low-carbon-fuels/rlcf012_approved_carbon_intensities_current_17sept2025.pdf.

[23] Appendix A: Avoided Emissions Baselines https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/renewable-low-carbon-fuels/lcfb_ng_user_guide_and_avoided_emissions__final_2025_08_14.pdf.

3.3 Please provide examples you are aware of, if any, of how other jurisdictions account for emissions associated with out-of-jurisdiction RNG purchases within their jurisdictional inventory. In the response, please specifically discuss the accounting of both biogenic carbon and avoided methane emissions.

3.3.1 Please discuss the pros and cons of these accounting methods compared to the current practice within BC.

Response:

Please refer to FEI's responses to BCUC-All IR1 3.1 and 3.2.

Among Canadian jurisdictions, Quebec has a comprehensive framework to account for emissions associated with out-of-jurisdiction RNG acquisitions.

The Government of Quebec has set a target to reduce GHG emissions by 37.5 percent in 2030 compared to 1990 levels and implemented the 2030 Plan for a Green Economy, as explained in the Government of Quebec's 2022-2027 Implementation Plan.[24] Increasing RNG volumes in the Québec gas distribution network is identified as a key component to achieve these emission reductions. The *Regulation Respecting the Quantity of Gas from Renewable Sources to be Delivered by a Distributor* requires gas distributors in Québec to "deliver for final consumption on their territory" increasing volumes of RNG, up to 10 percent of the total annual volume of natural gas by 2030. This was re-affirmed in the most recent Implementation Plan, the 2025-2030 Implementation Plan[25] issued in June 2025.

Énergir, the main utility in charge of the natural gas distribution network in Québec, is required to report with the Québec government the emissions associated with its operations in accordance with the *Regulation Respecting Mandatory Reporting of Certain Emissions of Contaminants into the Atmosphere* (RMRCECA). The Government of Quebec maintains a dashboard updated (approximately) monthly, which provides information regarding where the government currently stands with respect to its 2030 target, including with respect to increase of RNG injection.[26] The Government of Quebec's "Greenhouse Gas Emissions Registry" (Registre des émissions de gaz à effet de serre) tracks GHG emissions from biogenic sources.

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[24] 2022-2027 Implementation Plan – Government of Quebec https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/finances/publications-adm/changements_climatiques/EN/impact_analysis_implementation_plan_2022_2027.pdf.

[25] 2025-2030 Implementation Plan – Government of Quebec https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/environnement/publications-adm/plan-economie-verte/analyse-impact-plan-mise-oeuvre-2025-2030-en.pdf.

[26] https://app.powerbi.com/view?r=eyJrIjoiMzQyMTYzOGItNDMzNC00MmU5LWI2Y2YtMDQwYjU2OWI1YTQ1IiwidCI6IjQyNjJkNGVjLTVhNjctNDk1Ny1hYmI2LWJmNzhhY2E2YTZmNSJ9.

To meet Quebec's RNG targets, Énergir is sourcing RNG from various North American producers, including a growing number in Quebec. Energir describes how it sources its RNG and delivers it by displacement as follows:[27]

> To meet regulatory targets for RNG deliveries, Energir sources most of its RNG from producers in North America. It is working to increase its supply from producers in Quebec.
>
> The quantity of RNG purchased by Energir from each producer is injected by the latter into the gas network of the region where the producer is located. It can therefore be injected into the gas network of Energir or another distributor in North America, and then mixed with the fossil natural gas circulating in the same gas network. So, as with its natural gas supply or electricity supply, once the purchased energy is injected into the gas or electricity grid, it is not possible to track the gas molecule or electron. The gas molecule or electron is consumed by the various users connected to these networks.
>
> The quantity of RNG purchased by Énergir reduces the quantity of natural gas that Énergir buys as part of its overall supply. Given that RNG and fossil natural gas molecules circulate in the same gas network and mix without it being possible to distinguish between them, Energir has its total annual supply from RNG producers verified by the Bureau de normalisation du Québec to be at least equal to the quantity of RNG purchased by all its customers, and that the RNG purchased is of 100 percent organic origin (and does not include any fossil molecules).

Énergir issued a request for information[28] along with an information guide for renewable gas volumes in 2024 inviting RNG producers located in Quebec or anywhere in North America to propose their RNG production volumes to Énergir. The Request for Information (No 24-004) was issued on October 17, 2024 to identify additional RNG supply to meet increased regulatory percentages of RNG in future years.

Énergir calculates RNG GHG emissions in accordance with the RMRCECA.[29] The methodology is similar between Quebec and BC. FEI notes the following:

- **Emissions Factors:**
  - The Quebec emissions factors are identical between conventional natural gas and RNG, with the difference being that RNG results in biogenic CO_2, biogenic CH_4, and biogenic N_2O.
  - BC specifies that the CO_2 from RNG is biogenic, but not for CH_4 or N_2O.

[27] How does Energir source its RNG? https://energir.com/en/about/our-energies/natural-gas/renewable-natural-gas.

[28] Énergir Request For Information for renewable natural gas volumes https://energir.com/en/rngrfi.

[29] Énergir, Methodologies for Calculating and Demonstrating Greenhouse Gas Emissions Reductions: https://energir.com/en/ghg-emission-reduction-methodologies.

- The emissions factor (numerical) values by greenhouse gas (CO_2, CH_4 and N_2O) are comparable between Quebec and BC.

- **Methodology:**
  - Quebec explains that the biogenic CO_2 is reported separately (not included in Scope 1 direct emissions), while biogenic CH_4 and biogenic N_2O must be reported in Scope 1 direct emissions.
  - BC specifies that biogenic CO_2 is reported separately (not included in Scope 1 direct emissions), while CH_4 and N_2O must be reported in Scope 1 direct emissions.
  - Both methodologies require biogenic CO_2 to be reported separately (not included in Scope 1 emissions) and CH_4 and N_2O to be included in Scope 1 direct emissions.

Biogenic carbon is quantified in accordance with the quantification methodology that the reporting entity has to follow or, in the alternative, IPCC Guidelines.[30]

The GHG Protocol Corporate Standard (GHG Protocol) provides the guidance that biogenic CO_2 shall be reported as a separate item:[31]

> Emissions data for direct CO_2 emissions from biologically sequestered carbon[32] (e.g., CO_2 from burning biomass/biofuels), reported separately from the scopes.

This means that a reporting entity that uses natural gas and RNG would report two separate CO_2 emissions results: one for anthropogenic CO_2 (natural gas) and another for biogenic CO_2 (biomethane) as an information item. FEI follows this guidance on emissions reporting from RNG in its Sustainability Report.

Ultimately, it is not a matter of weighing the pros and cons of accounting methods amongst jurisdictions. Rather, it is a matter of following fundamental GHG accounting principles for the purpose of establishing a credible emissions inventory.

It is also worth noting that the GHG Protocol and the associated standards are currently undergoing a major update. This process started in 2024 and includes updates to the Corporate Standard, Scope 2 Guidance, Scope 3 Standard and potentially new standards to be introduced through the Action and Market Instruments (AMI) and Forest Carbon Accounting working group (successor of the Land Sector and Removal Initiative).[33]

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[30] 2006 IPCC Guidelines for National Greenhouse Gas Inventories https://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html.

[31] Corporate Standard https://ghgprotocol.org/corporate-standard.

[32] Sequestered atmospheric carbon: Carbon removed from the atmosphere by biological sinks and stored in plant tissue. Sequestered atmospheric carbon does not include GHGs captured through carbon capture and storage. https://ghgprotocol.org/corporate-standard.

[33] GHG Protocol September 2025 Newsletter https://ghgprotocol.org/blog/ghg-protocol-newsletter-september-2025.

The AMI workstream exists because of market mechanisms and instruments, such as with renewable fuels, that did not exist at the time when the GHG Protocol was brought to market in 2004.

The AMI workstream's key topics include but are not limited to:

- Emissions reduction projects;
- Removal enhancement projects;
- Value chain interventions;
- System-wide positive and negative impacts of actions including avoided emissions, leakage and other types of impacts;
- Chain-of-custody certification models; and
- Project based credits.

Developments across the various workstreams are coordinated as there is cross-over and interdependence between the different workstreams. Guidance from the AMI workstream with regard to system-wide negative impacts, such as avoided emissions, will need to be considered with any revised reporting guidance in the updated GHG Standard.

Changes, updates and new guidance may inform how biogenic carbon and avoided emissions will be reported in future GHG inventories compared to current practices.

Section 2 of the *Clean Energy Act* outlines British Columbia's Energy Objectives, which includes objective h as follows:

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

3.4 Please discuss whether BC's current tracking of out-of-province RNG emissions within the BC Provincial Inventory aligns with the above energy objective. In the response, please comment specifically on the inclusion/exclusion of biogenic carbon and avoided methane emissions within the inventory.

Response:

It is unclear to FEI why the BC Provincial Inventory would be expected to align with BC's energy objectives in the *Clean Energy Act*, or what alignment means in this context. The energy objectives defined in the *Clean Energy Act* are applicable only to specific sections of the *Clean Energy Act* and the *Utilities Commission Act*, and have no applicability to the *Climate Change Accountability Act*, which is the legislation which BC's Provincial Inventory supports. The inventory

is needed to track BC's progress towards meeting its GHG reduction targets, but it is unlikely that the inventory itself is intended to be a tool to actually achieve those targets, such as by encouraging certain energy use behaviours.

However, to be responsive, FEI considers that the BC's Provincial Inventory is unlikely to encourage or discourage the switch from one kind of energy source to another. The manner in which the BC Provincial Inventory tracks emissions is complex, highly technical and difficult to understand, and likely to be known and understood by relatively few people in BC. As such, the inventory would not be an effective tool to encourage or discourage specific energy use behaviours. Instead, government policies and programs that provide economic incentives to reduce the investment cost to switch from one kind of energy source to another are likely to have the greatest impact on energy objective (h).

C. ECONOMIC BENEFITS AND JOB CREATION

4.0 Reference: ECONOMIC BENEFITS AND JOB CREATION

Exhibit C3-2, p. 8; BCUC RNG Inquiry – Final Phase 2 Report, p. 48; Powering our Future: BC's Clean Energy Strategy, p. 19; Exhibit C17-1, p. 20; Exhibit C1-2, p. 35

Do out-of-province purchases of RNG provide economic benefits in BC?

On page 8 of the Metro Vancouver Appendix B Submission, Metro Vancouver states:

> Metro Vancouver recommends that the Commission […] Work toward continuous improvement of the RNG program, which may include […] considering whether the ongoing acquisition of notional out-of-province RNG is consistent with the economic development intent of the GGRR and current policy context.

On page 19 of the "Powering our Future: BC's Clean Energy Strategy" (BC's Clean Energy Strategy), the British Columbia Government states that:

> BC is a North American leader with a robust set of policies to encourage the production and use of clean fuels, including the Low Carbon Fuel Standard and Greenhouse Gas Reduction Regulation. Producing more clean fuels like hydrogen, renewable natural gas, and biofuels right here in BC helps us replace fossil fuels with clean energy and make BC more energy independent. These policies also help drive new investment and create good jobs for people. This will be government's priority moving forward, with BC's new Clean Energy & Major Projects Office (CEMPO) helping to fast-track investment in clean energy and create good, sustainable jobs in the transition to a clean economy. [emphasis added]

On page 20 of Intervener Group 3's Appendix B Submission, Intervener Group 3 states:

> It is important to stress that permitting BC utilities to procure gas from out-of-province does not appear to have stunted the development of BC's local RNG sector. The commissioning of significant new landfill gas projects in Victoria, Delta, and Prince George, and the development of the Dicklands RNG project in Chilliwack, indicates that the economic development benefits of RNG production continue to be felt in communities across the province.

On page 35 of FEI's Appendix B Submission, FEI states:

> RNG supply projects, regardless of location, allow the RNG industry to develop, evolve and improve technologies through experience and innovation and thus will support a greater number of future RNG projects both within BC and elsewhere.

4.1 Please discuss whether out-of-province purchases of RNG provide the economic benefits described in BC's Clean Energy Strategy.

4.1.1 If out-of-province RNG purchases do not provide such economic benefits, please discuss the alignment between the Government of BC's policies, as described by BC's Clean Energy Strategy, and the BCUC's current interpretation of the requirements for an RNG prescribed undertaking under the GGRR.

Response:

The GGRR does not impose any requirements for acquisitions of RNG to generate economic benefits and it is not within the jurisdiction of the BCUC to impose additional requirements on RNG acquisitions in addition to those specified in the GGRR. Section 18 of the *Clean Energy Act* prohibits the BCUC from exercising a power under the *Utilities Commission Act* in a way that would directly or indirectly prevent a public utility from carrying out a prescribed undertaking, such as an acquisition of RNG as described in the GGRR.

Nonetheless, acquiring out-of-province RNG does in fact provide direct economic benefits to BC, such as the following.

First, BC-based companies like Greenlane Renewables[34] and Quadrogen Power Systems[35] supply biogas-related equipment globally (not only in BC) and have been able to grow their businesses due to the expansion of the RNG market. The growth of the RNG market is due, in large part, to FEI's participation in the purchase of out-of-province RNG. Businesses like those highlighted above would not be viable if they supplied to projects solely located in BC. They require expansion of the RNG market in North America and beyond.

Second, the expansion of the RNG market through the acquisition of out-of-province RNG has spurred the development of new technologies and technical expertise in BC. For example, the BC-based company Hydron Energy (Hydron)[36] has developed a first-of-its-kind biogas upgrader that will be used by one of FEI's potential suppliers.

Third, supporting services and employment in BC have increased with out-of-province RNG purchases. For example, FEI and its various suppliers (both within BC and out-of-province) employ BC consultants, such as the GHG consulting firm Brightspot Climate which provide critical support services to the industry, including:

- Reviewing facilities and projects and providing carbon market advisory services; and
- Providing independent Canadian GHG verification, lifecycle assessment and Carbon Intensity reporting and review.

[34] Greenlane Renewables - Home.
[35] Quadrogen.
[36] Hydron Energy | The Cleaner Fuel Company.

The expertise in BC required to support out-of-province RNG purchases extends to the field of GHG accounting, legal support for agreements, engineering and direct employment at FEI.

Fourth, the Port of Vancouver is developing and implementing liquefied natural gas (LNG) bunkering to support the maritime industry's transition to cleaner fuels. The first accredited LNG bunkering supplier, Seaspan Energy, is enabling ships to refuel with LNG in the port, and there is significant interest in renewable LNG (RLNG) as a means to further significantly reduce marine emissions and support the port's sustainability goals. Consequently, FEI's RNG Program has a significant role to play in ensuring availability of RNG and providing RLNG to meet these growing needs. This is an example which is driving and will continue to drive significant economic investments, jobs, support services and benefits in BC.

As demonstrated in the above examples, the development of the RNG market generally is important and provides direct economic benefits as described in BC's Clean Energy Strategy.

While economic benefits as described in BC's Clean Energy Strategy are important, they are not the primary driver of the RNG Program. Rather, the purpose of FEI's acquisition of RNG is for GHG abatement and reduction. RNG is a practical, efficient, and flexible approach to GHG abatement as it utilizes the existing investments in the natural gas system across North America as a means to enable GHG abatement at a reasonable cost.