



**Diane Roy**  
Vice President, Regulatory Affairs

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November 7, 2022

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

Attention: Ms. Sara Hardgrave, Acting Commission Secretary

Dear Ms. Hardgrave:

**Re: FortisBC Energy Inc. (FEI)  
Revised Renewable Gas Program Application – Stage 2 (Application)  
Response to the City of Richmond, the City of Surrey, the District of North  
Vancouver, the District of Saanich, the City of Victoria and Lulu Island Energy  
Company Ltd. (CoR) In Scope Information Request (IR) No. 2 – Questions 19.1,  
19.3, 19.5, 19.7 and 19.8 (Exhibit B-48) – Attachments 19.1 and 19.5**

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In response to CoR's letter dated November 7, 2022, FEI had intended to provide the working excel spreadsheets for the tables supporting its responses to in-scope CoR IR2 filed on November 3, 2022 in Exhibit B-48. FEI attaches to this letter the two live spreadsheets in support of the responses to in-scope CoR IR2. Attachment 19.1 contains the live spreadsheet in support of the response to CoR IR2 19.3 for which FEI provided its response to in CoR IR2 19.1 and Attachment 19.5 contains the live spreadsheet in support of the response to CoR IR2 19.7 for which FEI provided its response to in CoR IR2 19.5.

If further information is required, please contact the undersigned.

Sincerely,

**FORTISBC ENERGY INC.**

***Original signed:***

Diane Roy

cc (email only): Registered Interveners

## **Attachment 19.1**

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### **REFER TO LIVE SPREADSHEET MODELS**

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Particulars	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		-	1	2	3	4	5	6	7	8	9	10	11
<b>Rate Escalations</b>													
FEL Delivery Margin Escalation Rate	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Midstream Escalation Rate	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Renewable Gas Supply Assumptions</b>													
<i>Volume</i>													
RNG	TJ	700	4,000	13,041	18,354	21,091	24,633	26,565	28,336	30,268	32,200	21,500	23,000
Hydrogen	TJ	-	-	-	2,800	5,600	8,400	11,600	14,400	17,200	20,000	9,000	13,000
Syn Gas	TJ	-	-	-	-	-	-	-	930	2,790	4,650	2,800	3,000
Lignin	TJ	-	-	-	-	670	1,340	2,680	3,350	3,350	3,350	2,500	2,500
Carbon Offsets	TJ	-	-	-	-	-	-	-	-	-	-	-	-
Total	TJ	700	4,000	13,041	21,154	27,361	34,373	40,845	47,016	53,608	60,200	35,800	41,500
<i>Acquisition Costs</i>													
Supply Team	\$ 1,000's	2,056	2,683	3,277	3,502	3,572	3,809	3,885	3,963	4,042	4,123	4,205	4,290
Customer Education Costs			89	389	306	312	318	325	331	338	345	351	359
<i>Price</i>													
RNG	\$/GJ	22.13	22.60	23.07	23.55	24.05	24.55	25.07	25.60	26.13	26.68	27.24	27.82
Hydrogen	\$/GJ	-	-	-	30.50	30.50	30.50	30.50	15.00	15.00	15.00	15.00	15.00
Syn Gas	\$/GJ	-	-	-	-	22.00	22.25	22.50	22.75	23.00	23.25	23.50	23.75
Lignin	\$/GJ	-	-	-	-	22.00	22.25	22.50	22.75	23.00	23.25	23.50	23.75
Carbon Offsets	\$/GJ	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Cost of Supply		25.07	23.29	23.35	24.65	25.46	26.03	26.55	22.19	22.28	22.42	23.74	23.38
Percent change to Midstream Costs	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Carbon Tax</b>													
\$/tonne	\$/tonne	40	50	65	80	95	110	125	140	155	170	170	170
\$/GJ NG	\$/GJ NG	2.3514	2.5588	3.0736	3.5673	4.0404	4.4936	4.9275	5.3426	5.7396	7.1693	7.0287	6.8909
\$/GJ NG (Nominal)	\$/GJ NG	2.305	2.559	3.1351	3.7114	4.2877	4.8641	5.4404	6.0167	6.5930	8.4000	8.4000	8.4000
<b>Basic Charge</b>													
Re Rate Schedule 1	\$/Day	0.4085											
Co Rate Schedule 2	\$/Day	0.9485											
Co Rate Schedule 3	\$/Day	4.7895											
Co Rate Schedule 23	\$/Day	4.7895											
Inc Rate Schedule 5	\$/Day	15.4086											
Inc Rate Schedule 25	\$/Day	15.4086											
Inc Rate Schedule 7	\$/Day	28.9117											
Inc Rate Schedule 27	\$/Day	28.9117											
Inc Rate Schedule 4	\$/Day	14.4230											
Inc Rate Schedule 22	\$/Day	120.3778											
Inc Rate Schedule 22A	\$/Day	158.0287											
Inc Rate Schedule 22B	\$/Day	149.0595											
<b>Delivery Rates</b>													
Re Rate Schedule 1	\$/GJ	4.915											
Co Rate Schedule 2	\$/GJ	3.773											
Co Rate Schedule 3	\$/GJ	3.279											
Co Rate Schedule 23	\$/GJ	3.279											
Inc Rate Schedule 5	\$/GJ	2.422											
Inc Rate Schedule 25	\$/GJ	2.236											
Inc Rate Schedule 7	\$/GJ	1.487											
Inc Rate Schedule 27	\$/GJ	1.487											
Inc Rate Schedule 4	\$/GJ	1.536											
Inc Rate Schedule 22	\$/GJ	1.068											
Inc Rate Schedule 22A	\$/GJ	1.021											
Inc Rate Schedule 22B	\$/GJ	0.461											
<b>Midstream Rates</b>													
Re Rate Schedule 1	\$/GJ	1.350											
Co Rate Schedule 2	\$/GJ	1.373											
Co Rate Schedule 3	\$/GJ	1.148											
Co Rate Schedule 23	\$/GJ	-											
Inc Rate Schedule 5	\$/GJ	0.830											
Inc Rate Schedule 25	\$/GJ	-											
Inc Rate Schedule 7	\$/GJ	0.830											
Inc Rate Schedule 27	\$/GJ	-											
Inc Rate Schedule 4	\$/GJ	0.830											
Inc Rate Schedule 22	\$/GJ	-											
Inc Rate Schedule 22A	\$/GJ	-											
Inc Rate Schedule 22B	\$/GJ	-											
<b>Delivery Margin</b>													
Re Rate Schedule 1	\$000	532,207											
Co Rate Schedule 2	\$000	140,254											
Co Rate Schedule 3	\$000	98,837											
Co Rate Schedule 23	\$000	17,934											
Inc Rate Schedule 5	\$000	22,837											
Inc Rate Schedule 25	\$000	24,950											
Inc Rate Schedule 7	\$000	9,284											
Inc Rate Schedule 27	\$000	7,859											
Inc Rate Schedule 4	\$000	342											
Inc Rate Schedule 22	\$000	12,856											
Inc Rate Schedule 22A	\$000	8,218											
Inc Rate Schedule 22B	\$000	3,822											
Total		879,400											
<b>Commodity Rate</b>													
	\$/GJ	3.844	4.832	3.955	3.526	3.660	3.802	3.874	4.016	4.178	4.285	4.407	4.467

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Storage / Transport	\$/GJ	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
RG in Storage / Transport	\$/GJ	0.046	0.192	0.079	4.818	5.085	6.639	8.518	8.598	10.302	12.186	7.561	9.179
Cost of Gas	\$/GJ	3.844	4.832	3.955	3.526	3.660	3.802	3.874	4.016	4.178	4.285	4.407	4.467
RG Cost of Gas - Voluntary	\$/GJ	13.195	14.390	14.029	14.093	14.700	15.296	15.801	16.359	16.918	18.455	18.436	18.358
RG Cost of Gas - LCG	\$/GJ												
RG Consumed - Voluntary *****	GJ	3,555.5	3,464.5	3,375.8	2,663.5	2,593.9	2,356.0	2,095.4	1,840.3	1,570.6	1,297.5	1,883.9	1,639.3
RG Consumed - LCG *****	GJ	-	-	-	625.8	611.3	767.1	947.8	1,125.0	1,318.7	1,517.8	859.4	1,033.8
Conventional Gas Consumed	GJ	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tax	\$/GJ	2.351	2.559	3.074	3.567	4.040	4.494	4.928	5.343	5.740	7.169	7.029	6.891
Basic Charge	\$	1,749	1,749	1,749	1,749	1,749	1,749	1,749	1,749	1,749	1,749	1,749	1,749
Delivery Charge	\$	11,658	11,932	12,211	12,496	12,787	13,084	13,386	13,695	14,010	14,332	14,660	14,995
Storage / Transport	\$	4,082	3,977	3,875	3,776	3,680	3,585	3,494	3,404	3,317	3,232	3,149	3,069
RG in Storage / Transport	\$	164	667	267	15,849	16,297	20,734	25,921	25,494	29,766	34,307	20,742	24,536
Cost of Gas	\$	-	-	-	-	-	-	-	-	-	-	-	-
RG in Cost of Gas	\$	46,916	49,855	47,358	37,538	38,130	36,037	33,110	30,104	26,572	23,946	34,730	30,095
Total Bill (excl Clean levy, carbon tax, GST)	\$	64,570	68,181	65,461	71,409	72,644	75,189	77,661	74,447	75,415	77,566	75,032	74,443
Carbon Tax	\$	8,360	8,865	10,376	11,734	12,950	14,034	14,995	15,842	16,584	20,184	19,282	18,420
Change in Carbon Tax from RG	\$	(8,360)	(8,865)	(10,376)	(11,734)	(12,950)	(14,034)	(14,995)	(15,842)	(16,584)	(20,184)	(19,282)	(18,420)
Total Bill - Rate Schedule 3 - Voluntary RG	\$	64,570	68,181	65,461	71,409	72,644	75,189	77,661	74,447	75,415	77,566	75,032	74,443



Year	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
RNG Supply	PJ	0.7	4.0	13.0	18.4	21.1	24.6	26.6	28.3	30.3	32.2	21.5	23.0
H2, SynGas, Lignin	PJ	0.0	0.0	0.0	2.8	6.3	9.7	14.3	18.7	23.3	28.0	14.3	18.5
New Residential Connections	PJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Voluntary - Sales Customers	PJ	0.6	1.9	2.3	2.9	2.8	2.8	2.7	2.7	2.6	2.6	2.6	2.5
Voluntary - NGV	PJ	0.1	0.8	0.9	1.4	1.6	1.7	1.8	2.0	2.1	2.2	2.2	2.2
Voluntary - Generation	PJ	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Voluntary - T Service	PJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dearbonize Gas Supply	PJ	0.0	0.0	0.0	24.9	23.9	29.6	36.0	42.1	48.6	55.2	30.8	36.5

CCG as % of total Sales Cust

0%	10%	20%	30%	40%	50%	60%
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Year	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
RNG Supply	PJ	0.7	4.0	13.0	18.4	21.1	24.6	26.6	28.3	30.3	32.2	21.5	23.0
H2, SynGas, Lignin	PJ	0.0	0.0	0.0	2.8	6.3	9.7	14.3	18.7	23.3	28.0	14.3	18.5
Renewable Gas Connections	PJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Voluntary - Sales Customers	PJ	0.6	1.9	2.3	2.9	2.8	2.8	2.7	2.7	2.6	2.6	2.6	2.5
Voluntary - Full Gas	PJ	0.0	1.1	1.2	1.7	1.9	2.0	2.1	2.3	2.4	2.4	2.4	2.4
Renewable Gas Blend	PJ	0.0	0.0	0.0	24.9	23.9	29.6	36.0	42.1	48.6	55.2	30.8	36.5

Year	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply - RNG	PJ	0.7	4.0	13.0	18.4	21.1	24.6	26.6	28.3	30.3	32.2	21.5	23.0
Supply - H2, SynGas, Lignin	PJ	0.0	0.0	0.0	2.8	6.3	9.7	14.3	18.7	23.3	28.0	14.3	18.5
Demand - Voluntary Renewable Gas	PJ	0.7	2.9	3.5	4.6	4.7	4.8	4.9	5.0	5.0	5.0	5.0	5.0
Demand - Renewable Gas Connect	PJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Demand - Renewable Gas Blend	PJ	0.0	0.0	0.0	24.9	23.9	29.6	36.0	42.1	48.6	55.2	30.8	36.5

Year	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Total Supply	PJ	0.7	4.0	13.0	21.2	27.4	34.4	40.8	47.0	53.6	60.2	35.8	41.5
Total Demand	PJ	0.0	0.0	0.0	24.9	23.9	29.6	36.0	42.1	48.6	55.2	30.8	36.5

Year	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply - RNG	PJ	0.7	4.0	13.0	18.4	21.1	24.6	26.6	28.3	30.3	32.2	21.5	23.0
Supply - H2, SynGas, Lignin	PJ	0.0	0.0	0.0	2.8	6.3	9.7	14.3	18.7	23.3	28.0	14.3	18.5
Supply - H2, SynGas, Lignin	PJ	0.7	4.0	8.1	19.8	31.5	43.2	54.9	66.6	78.3	90.0	90.0	90.0

2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032		
Basic Delivery, S&T	679	-	679	697	-	697	736	-	736	758	-	781
S&T IC Rider	16	-	16	370	-	370	596	-	596	802	-	822
Conv CO2 + Carbon Tax	598	-	501	442	-	442	403	-	403	347	-	347
Renewable Gas COG	-	-	190	-	-	-	-	-	-	-	-	-

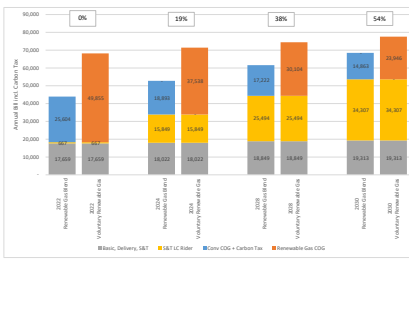
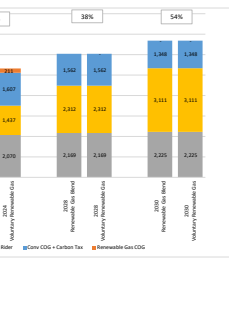
2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Basic Delivery, S&T	2,036	2,036	2,070	2,070	2,169	2,169	2,225	2,225	2,284	2,284
S&T IC Rider	60	60	1,437	1,437	2,312	2,312	3,111	3,111	2,225	2,225
Conv CO2 + Carbon Tax	2,322	1,763	1,713	1,607	1,562	1,562	1,348	1,348	1,688	1,688
Renewable Gas COG	-	1,087	-	211	-	-	-	-	-	-

2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Basic Delivery, S&T	17,659	17,659	18,022	18,022	18,849	18,849	19,313	19,313	19,813	19,813
S&T IC Rider	667	667	15,849	15,849	25,494	25,494	34,307	34,307	24,536	24,536
Conv CO2 + Carbon Tax	21,604	-	18,893	-	17,222	-	14,863	-	18,620	-
Renewable Gas COG	-	49,855	-	37,538	-	30,104	-	23,946	-	30,095

2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Basic Delivery, S&T	679	679	697	697	736	736	758	758	781	781
S&T IC Rider	16	16	370	370	596	596	802	802	573	573
Conv CO2 + Carbon Tax	598	501	442	442	403	403	347	347	435	435
Renewable Gas COG	-	-	190	-	-	-	-	-	-	-

2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Basic Delivery, S&T	2,036	2,036	2,070	2,070	2,169	2,169	2,225	2,225	2,284	2,284
S&T IC Rider	60	60	1,437	1,437	2,312	2,312	3,111	3,111	2,225	2,225
Conv CO2 + Carbon Tax	2,322	1,763	1,713	1,607	1,562	1,562	1,348	1,348	1,688	1,688
Renewable Gas COG	-	1,087	-	211	-	-	-	-	-	-

2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Basic Delivery, S&T	17,659	17,659	18,022	18,022	18,849	18,849	19,313	19,313	19,813	19,813
S&T IC Rider	667	667	15,849	15,849	25,494	25,494	34,307	34,307	24,536	24,536
Conv CO2 + Carbon Tax	21,604	-	18,893	-	17,222	-	14,863	-	18,620	-
Renewable Gas COG	-	49,855	-	37,538	-	30,104	-	23,946	-	30,095



## **Attachment 19.5**

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### **REFER TO LIVE SPREADSHEET MODELS**

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Particulars	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Year		-	1	2	3	4	5	6	7	8	9	10	11
<b>Rate Escalations</b>													
F1 Delivery Margin Escalation Rate	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Midstream Escalation Rate	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Renewable Gas Supply Assumptions</b>													
<i>Volume</i>													
RNG	TJ	700	4,000	13,041	18,354	21,091	24,633	26,565	28,336	30,268	32,200	21,500	23,000
Hydrogen	TJ	-	-	-	2,800	5,600	8,400	11,600	14,400	17,200	20,000	9,000	13,000
Syn Gas	TJ	-	-	-	-	-	-	-	930	2,790	4,650	2,800	3,000
Lignin	TJ	-	-	-	-	670	1,340	2,680	3,350	3,350	3,350	2,500	2,500
Carbon Offsets	TJ	-	-	-	-	-	-	-	-	-	-	-	-
Total	TJ	700	4,000	13,041	21,154	27,361	34,373	40,845	47,016	53,608	60,200	35,800	41,500
<i>Acquisition Costs</i>													
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Customer Education Costs			89	389	306	312	318	325	331	338	345	351	359
<i>Price</i>													
Escalated by 2% per year for inflation from 2022													
RNG	\$/GJ	22.13	22.60	23.07	23.55	24.05	24.55	25.07	25.60	26.13	26.68	27.24	27.82
Hydrogen	\$/GJ	-	-	-	30.50	30.50	30.50	30.50	15.00	15.00	15.00	15.00	15.00
Syn Gas	\$/GJ	-	-	-	-	22.00	22.25	22.50	22.75	23.00	23.25	23.50	23.75
Lignin	\$/GJ	-	-	-	-	22.00	22.25	22.50	22.75	23.00	23.25	23.50	23.75
Carbon Offsets	\$/GJ	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Cost of Supply		25.07	23.29	23.35	24.65	25.46	26.03	26.55	22.19	22.28	22.42	23.74	23.38
Percent change to Midstream Costs	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Carbon Tax</b>													
\$/tonne	\$/tonne	40	50	65	80	95	110	125	140	155	170	170	170
\$/GJ NG	\$/GJ NG	2.3514	2.5588	3.0736	3.5673	4.0404	4.4936	4.9275	5.3426	5.7396	7.1693	7.0287	6.8909
\$/GJ NG (Nominal)	\$/GJ NG	2.305	2.559	3.1351	3.7114	4.2877	4.8641	5.4404	6.0167	6.5930	8.4000	8.4000	8.4000
<b>Basic Charge</b>													
Re Rate Schedule 1	\$/Day	0.4085											
Co Rate Schedule 2	\$/Day	0.9485											
Co Rate Schedule 3	\$/Day	4.7895											
Co Rate Schedule 23	\$/Day	4.7895											
Inc Rate Schedule 5	\$/Day	15.4086											
Inc Rate Schedule 25	\$/Day	15.4086											
Inc Rate Schedule 7	\$/Day	28.9117											
Inc Rate Schedule 27	\$/Day	28.9117											
Inc Rate Schedule 4	\$/Day	14.4230											
Inc Rate Schedule 22	\$/Day	120.3778											
Inc Rate Schedule 22A	\$/Day	158.0287											
Inc Rate Schedule 22B	\$/Day	149.0595											
<b>Delivery Rates</b>													
Re Rate Schedule 1	\$/GJ	4.915											
Co Rate Schedule 2	\$/GJ	3.773											
Co Rate Schedule 3	\$/GJ	3.279											
Co Rate Schedule 23	\$/GJ	3.279											
Inc Rate Schedule 5	\$/GJ	2.422											
Inc Rate Schedule 25	\$/GJ	2.236											
Inc Rate Schedule 7	\$/GJ	1.487											
Inc Rate Schedule 27	\$/GJ	1.487											
Inc Rate Schedule 4	\$/GJ	1.536											
Inc Rate Schedule 22	\$/GJ	1.068											
Inc Rate Schedule 22A	\$/GJ	1.021											
Inc Rate Schedule 22B	\$/GJ	0.461											
<b>Midstream Rates</b>													
Re Rate Schedule 1	\$/GJ	1.350											
Co Rate Schedule 2	\$/GJ	1.373											
Co Rate Schedule 3	\$/GJ	1.148											
Co Rate Schedule 23	\$/GJ	-											
Inc Rate Schedule 5	\$/GJ	0.830											
Inc Rate Schedule 25	\$/GJ	-											
Inc Rate Schedule 7	\$/GJ	0.830											
Inc Rate Schedule 27	\$/GJ	-											
Inc Rate Schedule 4	\$/GJ	0.830											
Inc Rate Schedule 22	\$/GJ	-											
Inc Rate Schedule 22A	\$/GJ	-											
Inc Rate Schedule 22B	\$/GJ	-											
<b>Delivery Margin</b>													
Re Rate Schedule 1	\$000	532,207											
Co Rate Schedule 2	\$000	140,254											
Co Rate Schedule 3	\$000	98,837											
Co Rate Schedule 23	\$000	17,934											
Inc Rate Schedule 5	\$000	22,837											
Inc Rate Schedule 25	\$000	24,950											
Inc Rate Schedule 7	\$000	9,284											
Inc Rate Schedule 27	\$000	7,859											
Inc Rate Schedule 4	\$000	342											
Inc Rate Schedule 22	\$000	12,856											
Inc Rate Schedule 22A	\$000	8,218											
Inc Rate Schedule 22B	\$000	3,822											
Total		879,400											
<b>Commodity Rate</b>													
	\$/GJ	3.844	4.832	3.955	3.526	3.660	3.802	3.874	4.016	4.178	4.285	4.407	4.467

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Year	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
RNG Supply	PJ	0.7	4.0	13.0	18.4	21.1	24.6	26.6	28.3	30.3	32.2	21.5	23.0
H2, Syngas, Lignin	PJ	0.0	0.0	0.0	2.8	6.3	9.7	14.3	18.7	23.3	28.0	14.3	18.5
New Residential Connections	PJ	0.0	0.0	1.6	3.1	4.6	6.0	7.5	8.9	10.4	11.8	13.2	14.6
Voluntary - Sales Customers	PJ	0.6	1.9	2.4	3.1	3.2	3.2	3.2	3.3	3.3	3.4	3.4	3.5
Voluntary - NGV	PJ	0.1	0.8	2.9	3.4	4.6	5.7	6.9	8.1	9.3	10.4	11.8	13.2
Voluntary - Generation	PJ	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Voluntary - T Service	PJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decarbonizing Gas Supply	PJ	0.0	0.0	0.0	19.9	19.1	23.1	28.0	32.6	37.6	42.6	16.7	20.9

LCC as % of total Sales Cost

0%	14%	25%	33%	17%
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Year	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
RNG Supply	PJ	0.7	4.0	13.0	18.4	21.1	24.6	26.6	28.3	30.3	32.2	21.5	23.0
H2, Syngas, Lignin	PJ	0.0	0.0	0.0	2.8	6.3	9.7	14.3	18.7	23.3	28.0	14.3	18.5
Renewable Gas Connections	PJ	0.0	0.0	1.6	3.1	4.6	6.0	7.5	8.9	10.4	11.8	13.2	14.6
Voluntary - Sales Customers	PJ	0.6	1.9	2.4	3.1	3.2	3.2	3.2	3.3	3.3	3.4	3.4	3.5
Voluntary - Full cost	PJ	0.1	1.1	1.2	1.7	1.9	2.0	2.1	2.3	2.4	2.4	2.4	2.4
Renewable Gas Blend	PJ	0.0	0.0	0.0	19.9	19.1	23.1	28.0	32.6	37.6	42.6	16.7	20.9

Year	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Total Supply	PJ	0.7	4.0	13.0	21.2	27.4	34.4	40.8	47.0	53.6	60.2	35.8	41.5
Total Demand	PJ	0.0	0.0	1.6	23.0	23.6	29.2	35.5	41.5	47.9	54.4	29.9	31.6

Year	Unit	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
RNG Supply	PJ	0.7	4.0	13.0	18.4	21.1	24.6	26.6	28.3	30.3	32.2	21.5	23.0
Syngas - H2, Syngas, Lignin	PJ	0.0	0.0	0.0	2.8	6.3	9.7	14.3	18.7	23.3	28.0	14.3	18.5
Conv CO2 + Carbon Tax	PJ	0.7	4.0	8.1	15.5	22.9	30.3	37.8	45.2	52.6	60.0	60.0	60.0
Renewable Gas Blend	PJ	0.7	4.0	8.1	19.8	31.5	43.2	54.9	66.6	78.3	90.0	90.0	90.0

REAL 2022S

	2022	2022	2022	2024	2024	2024	2028	2028	2028	2030	2030	2030	2032	2032
	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections
R51														
Basic Delivery, S&T	659	659	659	646	646	646	623	623	623	613	613	613	603	603
S&T LC Rider	15	15	15	309	309	309	452	452	452	565	565	565	345	345
Conv CO2 + Carbon Tax	598	-	501	468	-	457	489	-	489	502	-	502	-	589
Renewable Gas COG	-	598	190	-	468	23	-	489	-	-	502	-	-	589

	2022	2022	2022	2024	2024	2024	2028	2028	2028	2030	2030	2030	2032	2032
	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections
R52														
Basic Delivery, S&T	2,051	2,011	2,011	1,952	1,952	1,952	1,843	1,843	1,843	1,792	1,792	1,792	1,742	1,742
S&T LC Rider	59	59	59	1,197	1,197	1,197	1,752	1,752	1,752	2,192	2,192	2,192	1,340	1,340
Conv CO2 + Carbon Tax	2,322	1,763	1,763	1,817	1,607	1,607	1,896	1,896	1,896	1,950	1,950	1,950	2,287	2,091
Renewable Gas COG	-	1,807	-	-	417	-	-	-	-	-	-	-	-	316

	2022	2022	2022	2024	2024	2024	2028	2028	2028	2030	2030	2030	2032	2032
	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections	Renewable Gas	Renewable Gas Blend	Voluntary Connections
R53														
Basic Delivery, S&T	17,531	17,531	17,531	17,014	17,014	17,014	16,052	16,052	16,052	15,598	15,598	15,598	15,163	15,163
S&T LC Rider	651	651	651	13,205	13,205	13,205	19,319	19,319	19,319	24,178	24,178	24,178	14,777	14,777
Conv CO2 + Carbon Tax	25,604	-	20,837	-	-	-	20,907	-	20,907	21,500	-	21,500	25,217	-
Renewable Gas COG	-	49,855	-	39,811	-	-	35,545	-	35,545	34,638	-	34,638	40,758	-

