



Diane Roy
Vice President, Regulatory Affairs

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

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

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

March 15, 2021

British Columbia Public Interest Advocacy Centre
Suite 803 470 Granville Street
Vancouver, B.C.
V6C 1V5

Attention: Ms. Leigha Worth, Executive Director

Dear Ms. Worth:

Re: FortisBC Energy Inc. (FEI)

Biomethane Energy Recovery Charge (BERC) Rate Methodology – British Columbia Utilities Commission (BCUC) Decision and Order G-133-16 Compliance Filing – BERC Rate Assessment Report

Response to the British Columbia Public Interest Advocacy Centre representing the British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Council of Senior Citizens' Organizations of BC, and the Tenant Resource and Advisory Centre *et al.* (BCOAPO) Information Request (IR) No. 1

On August 12, 2020, FEI filed the Application referenced above. In accordance with the BCUC Order G-35-21 setting out the Regulatory Timetable for the review of the Application, FEI respectfully submits the attached response to BCOAPO IR No. 1.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

FortisBC Energy Inc. (FEI or the Company) Biomethane Energy Recovery Charge (BERC) Rate Assessment Report (Report)	Submission Date: March 15, 2021
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1.0 Reference: Exhibit B-1, page 4

Preamble: The referenced page states:

“FEI stated that the BERC rate methodology proposed in the 2015 Application (and ultimately approved in the Decision) would reduce the risk to non-RNG customers of the cost of unsold biomethane volumes. The concept was to sell most or all of the available RNG supply at a lower price instead of selling less volume at a higher price. This higher volume at a lower price approach was proposed to help avoid the transfer of a greater amount of unsold RNG to the MCRA and thus the potential for transferring all the costs associated with any unsold RNG volumes to non- RNG customers.

[Emphasis added]

1.1 With respect to the text underlined in the excerpt above, does FEI have an estimate of the price elasticity of demand for RNG at the current price of RNG? If so, please provide this estimate; if not, does the underlined text just reflect the usual result that with a downward sloping demand curve, quantity demanded of RNG increases as the price of RNG decreases?

Response:

FEI provided evidence in the 2015 BERC Rate Application describing how the appropriate premium for the RNG program was \$7 per GJ or less¹, and how at prices which exceed this level the number of RNG program additions declined markedly. FEI also demonstrated that the optimum premium to maximize participation appeared to be \$6 per GJ based on customer feedback. FEI has not conducted any price elasticity research since the filing of the 2015 BERC Rate application. FEI is conducting a comprehensive review and assessment of the RNG Program, and believes that customer willingness to pay at various price points is an issue that is appropriately addressed in that filing.

As such, FEI confirms that the underlined text does suggest that the RNG demand is a downward sloping curve; the quantity of RNG consumed increases as the price of RNG decreases and RNG can be readily substituted by conventional gas. In FEI’s experience to date, the closer the price of RNG is to conventional gas, the more volumes of RNG will be sold, and vice versa.

¹ Application for Approval of Biomethane Energy Recovery Charge (BERC) Rate Methodology (the Application), Section 5.2, pg 32.

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1.2 Does FEI believe that the demand for RNG is price elastic at the current price charged for RNG?

Response:

As indicated in response to BCOAPO IR1 1.1, FEI has previously presented evidence showing that when the price premium for RNG exceeded \$7/GJ, the number of RNG program additions declined markedly, suggesting a fairly abrupt drop off in interest above this price. As also noted in the response to BCOAPO IR1 1.1, FEI has not performed any analysis into pricing elasticity since the 2016 BERC Rate Decision. As part of its comprehensive review and assessment of the RNG Program, FEI will analyze pricing options and factors affecting uptake, including elasticity and other market factors.

1.3 Under the current approved methodology, can FEI confirm that none of the costs associated with unsold RNG volumes are borne by RNG customers?

Response:

This response addresses BCOAPO IR1 1.3 and 1.4.

Not confirmed. Unsold RNG, assuming it has not aged out nor is greater than 250 TJs, remains in the BVA at the BERC rate to be sold to RNG customers.

There are three mechanisms for the recovery of biomethane costs from both RNG customers and non-RNG customers. First is the sale of RNG to RNG customers at the BERC rate (in this case RNG customers pay a portion of the total costs to acquire and purchase RNG and to administer the RNG program). Second is the transfer of RNG acquisition and purchase costs, as well as the program administration costs, greater than the BERC rate recoveries to non-RNG customers by way of the BVA rate rider. Third is the transfer of aged RNG, or RNG inventory greater than 250 TJs, to FEI's MCRA which is recovered from non-RNG customers through the Storage & Transport charge. Since the inception of the program in 2010, the third cost recovery mechanism has not been used.

1.4 Does FEI agree that with respect to non-RNG customers, there are two financial impacts associated with RNG volumes and prices: (i) the costs they bear due to

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providing RNG volumes to RNG customers at prices below cost, and (ii) the potential costs of unsold RNG in the MCRA?

Response:

Please refer to the response to BCOAPO IR1 1.3.

1.5 Does FEI agree that if the objective is to maximize total revenues from RNG sales, then the appropriate price would be the price at which the demand for RNG were unit elastic (i.e., the price at which a 1% increase in price would lead to a 1% decrease in quantity demanded)?

Response:

FEI agrees that on a downward sloping demand curve revenue is maximized at the point at which demand is unit elastic, in accordance with micro economic theory.

However, FEI also notes that the price point that creates revenue maximization is not static in real world applications. Demand curves are in flux as consumers are influenced by, and respond to factors such as advertising and promotions, changes in income, changes in regulations, competitor prices, substitute availability, technology change and product availability. As described in the responses to BCOAPO IR1 1.1 and 1.2, FEI provided evidence in the 2015 BERC Rate Application describing how the appropriate premium for the RNG program was \$7 per GJ or less, and how it observed a fairly abrupt drop off in interest above this price. FEI believes the comprehensive review and assessment of the RNG Program would be the appropriate opportunity to review its pricing model.

1.6 Does FEI agree that maximizing revenues from RNG sales to RNG customers will not maximize recovery of RNG program costs from RNG customers unless program costs are assumed fixed regardless of volumes procured and program costs do not include any costs associated with unsold RNG volumes? If not, please explain fully.

Response:

Contrary to the assumption in the question, the costs of the program, which includes the cost to procure RNG, are not fixed "regardless of volumes procured".

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1 However, given the assumptions imposed by the question, maximizing program recovery costs
2 would occur when RNG customers pay the highest price obtainable that would sell all the
3 available supply of RNG at a given point in time. As noted in the response to BCOAPO IR1
4 1.5, this “point in time” theoretical maximum price must also in theory decrease as the supply of
5 RNG increases in order to ensure that all RNG available for sale is purchased by customers.

6

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1 **2.0 Reference: Exhibit B-1, page 7, Figure 2**

2 2.1 Please provide the information found in the referenced figure in a tabular form
3 and augment the table with an extra column with the comparable non-RNG rate.

4
5 **Response:**

6 Please see below the data in tabular form. Note FEI updated Figure 2 to include data to the end
7 of December 2020. Please refer to the response to BCOAPO IR1 6.1 for the updated Figure 2.

8 Note that the data shows a limited number of customer drops and some net customer additions
9 after the program closure until November 2019. This is due to the limited ability of FEI's
10 Account Online system to quickly adapt to the program closure. Please refer to the response to
11 BCUC IR1 4.3 for further discussion.

<p style="text-align: center;">FortisBC Energy Inc. (FEI or the Company) Biomethane Energy Recovery Charge (BERC) Rate Assessment Report (Report)</p>	<p>Submission Date: March 15, 2021</p>
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Month	Net Customer Additions	Short Term BERC Rate	FEI Cost of Gas (Commodity Cost Recovery Charge) per GJ
Jan-15	6	\$14.414	\$3.781
Feb-15	-103	\$14.414	\$3.781
Mar-15	-24	\$14.414	\$3.781
Apr-15	-14	\$14.414	\$2.486
May-15	-11	\$14.414	\$2.486
Jun-15	-35	\$14.414	\$2.486
Jul-15	-3	\$14.414	\$2.486
Aug-15	42	\$14.414	\$2.486
Sep-15	38	\$14.414	\$2.486
Oct-15	3	\$14.414	\$2.486
Nov-15	14	\$14.414	\$2.486
Dec-15	33	\$14.414	\$2.486
Jan-16	3	\$14.414	\$1.719
Feb-16	9	\$14.414	\$1.719
Mar-16	-11	\$14.414	\$1.719
Apr-16	8	\$14.414	\$1.141
May-16	31	\$14.414	\$1.141
Jun-16	45	\$14.414	\$1.141
Jul-16	59	\$14.414	\$1.141
Aug-16	68	\$14.414	\$1.141
Sep-16	85	\$14.414	\$1.141
Oct-16	26	\$10.209	\$2.050
Nov-16	185	\$10.209	\$2.050
Dec-16	203	\$10.209	\$2.050
Jan-17	149	\$10.540	\$2.050
Feb-17	111	\$10.540	\$2.050
Mar-17	57	\$10.540	\$2.050
Apr-17	70	\$10.540	\$2.050
May-17	91	\$10.540	\$2.050
Jun-17	126	\$10.540	\$2.050
Jul-17	145	\$10.540	\$2.050
Aug-17	126	\$10.540	\$2.050
Sep-17	137	\$10.540	\$2.050
Oct-17	184	\$10.540	\$2.050
Nov-17	147	\$10.540	\$2.050
Dec-17	161	\$10.540	\$2.050
Jan-18	119	\$10.039	\$1.549
Feb-18	136	\$10.039	\$1.549
Mar-18	68	\$10.039	\$1.549
Apr-18	111	\$10.039	\$1.549
May-18	88	\$10.039	\$1.549
Jun-18	86	\$10.039	\$1.549
Jul-18	108	\$10.039	\$1.549
Aug-18	95	\$10.039	\$1.549
Sep-18	140	\$10.039	\$1.549
Oct-18	133	\$10.039	\$1.549
Nov-18	138	\$10.039	\$1.549
Dec-18	128	\$10.039	\$1.549
Jan-19	107	\$10.287	\$1.549
Feb-19	120	\$10.287	\$1.549
Mar-19	49	\$10.287	\$1.549
Apr-19	83	\$10.287	\$1.549
May-19	111	\$10.287	\$1.549
Jun-19	128	\$10.287	\$1.549
Jul-19	156	\$10.287	\$1.549
Aug-19	100	\$10.287	\$1.549
Sep-19	-7	\$10.287	\$1.549
Oct-19	0	\$10.287	\$1.549
Nov-19	74	\$10.287	\$1.549
Dec-19	-46	\$10.287	\$1.549
Jan-20	-56	\$10.535	\$1.549
Feb-20	-64	\$10.535	\$1.549
Mar-20	-67	\$10.535	\$1.549
Apr-20	-63	\$10.535	\$1.549
May-20	-63	\$10.535	\$1.549
Jun-20	-87	\$10.535	\$1.549
Jul-20	-85	\$10.535	\$1.549
Aug-20	-88	\$10.535	\$2.279
Sep-20	-86	\$10.535	\$2.279
Oct-20	-80	\$10.535	\$2.844
Nov-20	-81	\$10.535	\$2.844
Dec-20	-53	\$10.535	\$2.844
Jan-21	-69	\$11.830	\$2.844

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3.0 Reference: Exhibit B-1, page 9, Figure 3

3.1 Please provide the information shown in the referenced Figure in a tabular form and add two columns, one for UBC and another for the City of Vancouver, showing their respective sales volumes.

Response:

Please refer to the table below.

RNG Annual Sales Volume (TJ)

Year	Annual Sales Volume from ST BERC	Annual Sales Volume from LT BERC	UBC	City of Vancouver
2015	150	0	65	4
2016	163	0	63	4
2017	216	17	66	27
2018	178	98	77	50
2019	188	127	62	40

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4.0 Reference: Exhibit B-1, page 14, Figure 5; page 15, Table 4; and page 16, Table 8

4.1 Please provide forecasts of the BVA balance and the BVA Balance Transfer to January 2023.

Response:

The forecasts for the BVA and BVA Balance Transfer summarized in the table below are based on the biomethane supply and demand forecasts for 2021 and 2022 that were included in the FEI 2020 Fourth Quarter Gas Cost Report filed on November 25, 2020. Consistent with the amounts reflected in the BERC Rate Assessment Report, the BVA balances and activities are shown as pre-tax amounts.

Forecast Activity (Amounts shown in \$000)	2021F	2022F	2023F
BVA Opening Balance, Jan 1	\$ -	\$ 2,165.5	\$ 8,004.2
Additions	18,785.9	69,893.4	
Reductions	(7,589.0)	(31,772.3)	
BVA Balance Transfer	(9,031.4)	(32,282.4)	
BVA Closing Balance, Dec 31	\$ 2,165.5	\$ 8,004.2	

Please note that there have been updates to the biomethane supply and demand forecasts since the FEI 2020 Fourth Quarter Gas Cost Report was filed. Revised BVA and BVA Balance Transfer forecasts will be included with the new information to be submitted in the November 2021 Q4 Gas Cost Report. The BVA Balance transfer account is forecast and the BVA rate rider is calculated each year in FEI's annual reviews for rates.

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5.0 Reference: Exhibit B-1, pages 2-3; Table 1, Decision Compliance Reporting Requirements

Preamble: Table 1 provides a list of compliance reporting requirements flowing from BCUC Order G-133-16, directive 16. Table 1 does not address directives 1 to 15 of that Order.

5.1 Please provide a table similar to Table 1, that 1) lists directives 1 to 15 flowing from BCUC Order G-133-16; and 2) describes how FEI has complied with each of those directives. In this table, if FEI has not complied with a particular directive, please use the space to explain specifically why.

Response:

Directives		FEI's compliance with the Directives
1.	Given that we consider a revision to the current methodology warranted, in the absence of any evidence suggesting an alternative BERC premium, and noting the support of BCSEA and BCOAPO, the Panel approves a premium of \$7 per GJ above the Conventional Gas Cost as the Short Term BERC Rate.	In compliance. The Short Term BERC rate incorporates the approved \$7 per GJ premium above the Conventional Gas Cost.
2.	Further, the Panel approves the Long Term BERC Rate to be set at a \$1 per GJ discount to the Short Term BERC Rate, subject to the further determinations in section 4.1 of this decision.	In compliance. Subject to the floor price provision, long term contracts offer eligible customers a \$1 discount to the Short Term BERC Rate.
3.	In order for a contract to be eligible for the Long Term BERC Rate, the contract must be for a commitment to purchase no less than 60,000 GJ in aggregate over the term of the contract and must be for a term of no less than five years and no more than ten years.	In compliance. For all the Long-Term BERC Rate contracts the countersigning customers are committed to purchase more than 60,000 GJ in aggregate over the terms of the contracts, and each has a term of no less than five years and no more than ten years.
4.	For the reasons set out below, the Panel determines that long term contracts shall be subject to a Minimum Contract Strike Price of \$10/GJ.	In compliance. All the Long-Term BERC Rate contracts executed are subject to a Minimum Contract Strike Price of \$10/GJ.
5.	The Panel directs that long term contracts must include a Contract Floor Price provision that results in the price of RNG in any period beyond year five of a contract that is not less than the then prevailing Conventional Gas Cost.	In compliance. All the Long-Term BERC Rate contracts executed contain the following Price adjustment after the fifth year, or Renewal Term Charge equal to: the higher of: (a) the Long Term BERC rate or (b) the sum of the following: (i) the approved January 1st CCRA RATE; (ii) carbon tax; (iii) any other taxes applicable to conventional natural gas sales.

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Directives	FEI's compliance with the Directives
<p>6. The Panel directs FEI to make the Long Term Contract offering available to all customers willing to commit to the required minimum take term and quantities. In the event FEI determines there are barriers that prevent FEI from providing access for customers other than transportation service customers, FEI is directed to file a report with the Commission describing the nature of the barriers and a discussion of the proposed method(s) for overcoming these barriers.</p>	<p>In compliance. Subject to the availability of sufficient supplies of RNG, the Long-Term Contract is available to all customers willing to commit to the required minimum take term and quantities.</p>
<p>7. FEI is directed to file blackline changes to section 28 of the FEI GT&C and Rate Schedules 1B, 2B, 3B 5B and 11B reflecting the BERC rate methodology approved in this decision. These tariff pages are to be filed within 30 days of the date of this decision.</p>	<p>Completed.</p>
<p>8. The Panel directs FEI to address the potential loss of the value of environmental attributes in any application to transfer inventory from the BVA to the MCRA, including a discussion of the steps FEI has taken to realize the value of the environmental attributes by other means than through sales to voluntary customers.</p>	<p>In compliance. FEI has not had any transfer of inventory from the BVA to the MCRA.</p>
<p>9. FEI is required to file a formal application with the Commission before unsold biomethane can be transferred from the BVA to the MCRA. The application must not be included as part of a quarterly gas cost review process.</p>	<p>In compliance. FEI has not had any transfer of inventory from the BVA to the MCRA.</p>
<p>10. The application must be copied to the interveners in this proceeding and the Commission will consider whether a public hearing is required once the application has been filed.</p>	<p>In compliance. FEI has not had any transfer of inventory from the BVA to the MCRA.</p>
<p>11. The Panel approves FEI's request to amortize, over a one year period, the forecast December 31 balance in the BVA, net of unsold inventory and remaining supply costs, through the delivery rates of all non-bypass customers effective January 1 of the subsequent year.</p>	<p>In compliance. Annually on December 31st of each year the balance in the BVA net of unsold inventory is transferred to the BVA Balance transfer deferral account. During the annual review process the BVA rate rider is set on a forecast basis to recover the BVA Balance transfer amount.</p>

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Directives	FEI's compliance with the Directives
<p>12. In order to provide the transparency directed in the 2013 Decision the Panel directs that the recovery of the BVA balance be through a rate rider from FEI's non-bypass customers, effective January 1st of the subsequent year (BVA Rate Rider). Furthermore, the continuation of the FEI BVA Balance Transfer mechanism will be reviewed in the earlier of four years or an application for an inventory transfer from the BVA to the MCRA, or FEI's approach to ratemaking (i.e. PBR to cost of service).</p>	<p>In compliance. The Assessment Report was filed on August 12, 2020.</p>
<p>13. FEI is directed to file an annual report concurrently with the fourth quarter CCRA and MCRA commodity cost report setting out the Short Term BERC Rate and Long Term BERC Rate that are to be effective on the next January 1st and the calculation of the respective BERC rates.</p>	<p>In compliance. Approval of the Short Term BERC Rate and Long Term BERC Rate, effective January 1, 2021, was sought within the FEI 2020 Fourth Quarter Gas Cost Report filed on November 25, 2020. Approval was received pursuant to BCUC Order G-314-20.</p> <p>Copies of the fourth quarter reports and BCUC Orders are posted on the FortisBC external website, link provided: https://www.fortisbc.com/about-us/corporate-information/regulatory-affairs/our-gas-utility/gas-bcuc-submissions/fortisbc-energy-inc.-gas-submissions/GasCost</p>
<p>14. The Panel directs FEI to continue to file an annual BVA status report by April 30 of each year with a reconciliation of the BVA for the immediately preceding calendar year.</p>	<p>In compliance. The 2019 BVA Status Report was filed on April 30, 2020. A copy of the report is posted on the FortisBC external website, link provided: https://www.fortisbc.com/about-us/corporate-information/regulatory-affairs/our-gas-utility/gas-bcuc-submissions/fortisbc-energy-inc.-gas-submissions/GasCost</p> <p>The 2020 BVA Status Report is due to be filed by April 30, 2021.</p>

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Directives	FEI's compliance with the Directives
<p>15. In the FEI rate riders section of the annual review or revenue requirements filings, FEI is directed to include the following information:</p> <ul style="list-style-type: none"> • A continuity schedule showing the breakdown of the forecast December 31st balance in the BVA to be recovered by the BVA Rate Rider by year including sufficient supporting details. • The calculation of the BVA Rate Rider by rate schedule. • A continuity schedule showing the forecast, actual and variance (actual – forecast) biomethane revenues and volumes sold (GJ) by rate schedule, type of contract (short term/long term) and year. • Number of customers in each rate schedule. 	<p>In compliance.</p> <p>FEI includes the required information in its Annual Review for Rates each year.</p>

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6.0 Reference: Exhibit B-1, Figures 1, 2,3 and 4, pages 6,7,9 and 10; Appendix A, Tables 1, 2, 3 and 4, pages 1-4

Preamble: Figures 1, 2, 3 and 4 and Tables 1, 2, 3 and 4 provide information on RNG customer participation, sales volumes and total revenues to May of 2020.

6.1 Please update Figures 1, 2, 3 and 4 in the Comprehensive Assessment Report to include data to the end of December 2020.

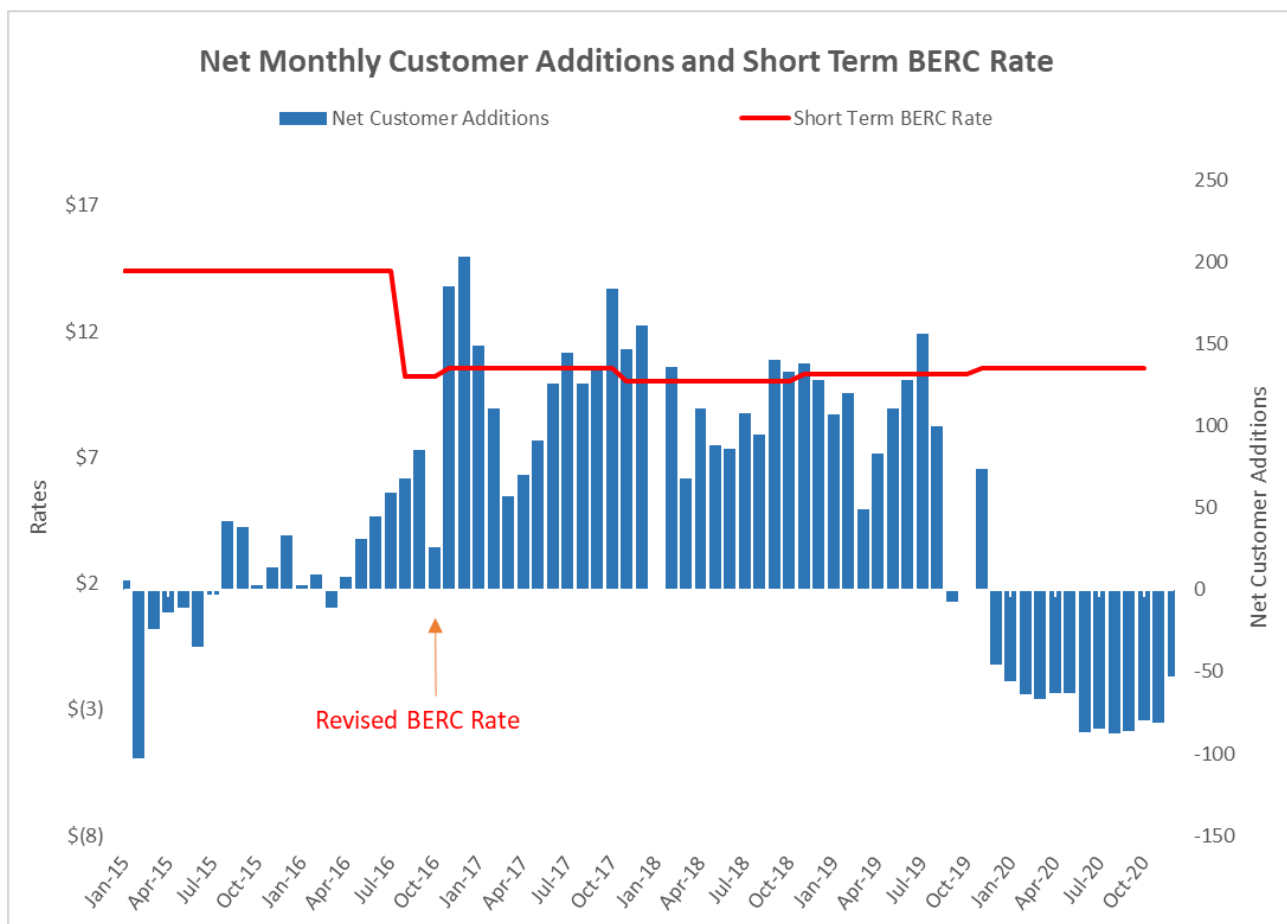
Response:

The following Figures update Figures 2 and 4 in the BERC Rate Assessment Report to include data to the end of December 2020.

For updated Figure 1, please refer to the response to BCUC IR 1 4.3.

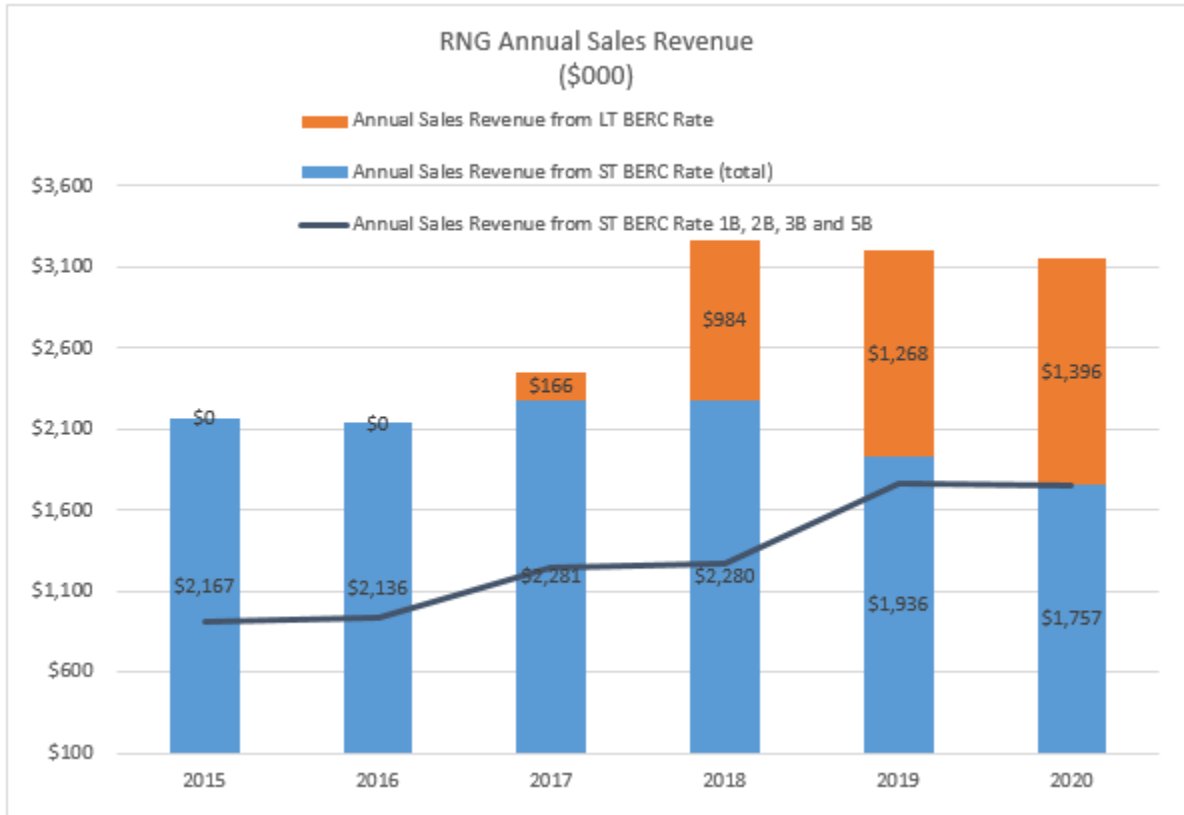
For updated Figure 3, please refer to the response to BCUC IR 1.7.1.

Figure 2: Monthly Net Customers Addition and Short Term BERC Rate



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Figure 4: Annual RNG Revenue by Short Term and Long Term Customers



6.2 Please update Tables 1, 2, 3 and 4 of Appendix A, to include data to the end of December 2020.

Response:

Please refer to the response to BCUC IR1 16.1 for Table 1 and Table 2 of Appendix A.

Please refer to the response to BCUC IR1 17.1 for Table 3 of Appendix A.

Please refer to the response to BCUC IR1 18.1 for Table 4 of Appendix A.

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6.3 Please provide any available FEI analysis of the correlation between the decrease in BERC rates in October 2016 and the increase in RNG customers, volume, and revenues between October of 2016 to the end of 2020.

Response:

FEI provided all of its analysis of the impact that the change to the BERC rate had on RNG customer enrolment, sales volumes, and revenues, between October 2016 to end of 2020, in the Report.²

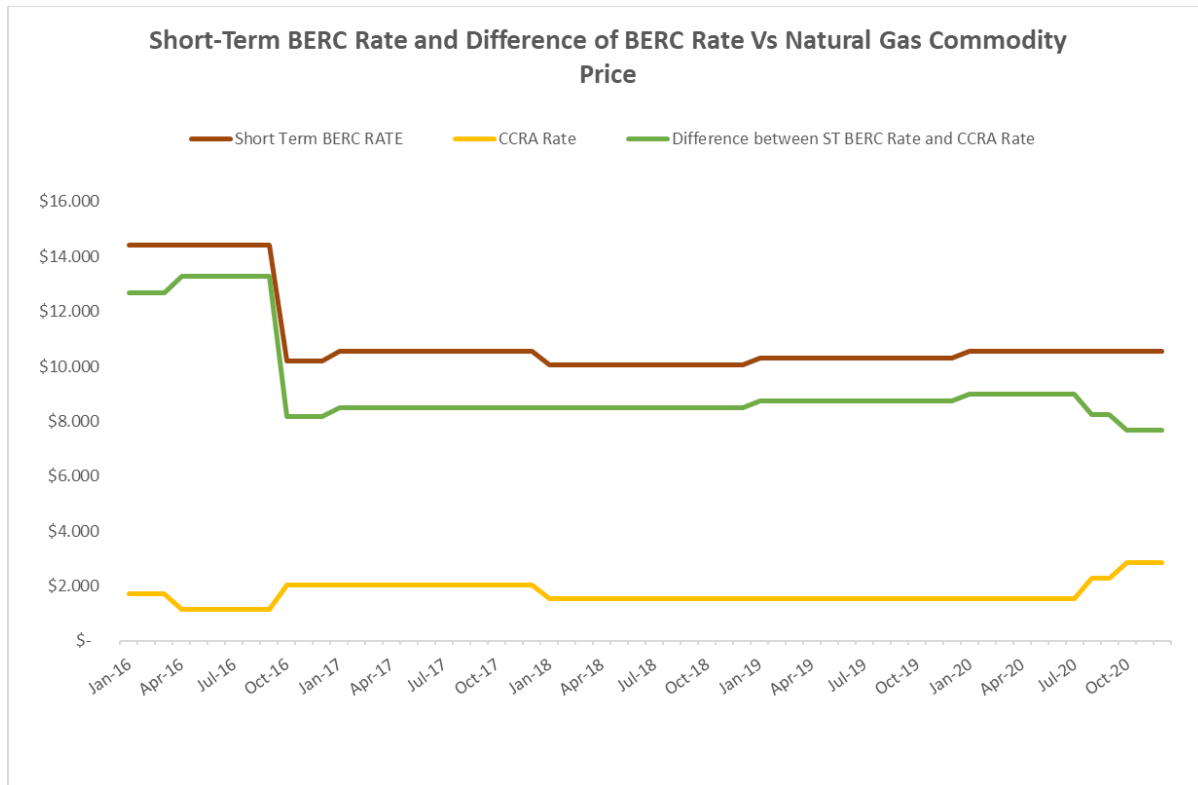
6.4 Please provide any available FEI analysis on the differences in rates between the BERC rate and the non-RNG rates between October of 2016 to the end of 2020.

Response:

Under the current BERC rate mechanism, the difference in rates between the BERC rate and the non-RNG rates is equal to the BERC rate premium plus carbon tax. The following figure shows the Short-Term BERC rate, the CCRA rate (the non-RNG rate), and the difference between the two, for the period between October 2016 and the end of 2020. Note that BERC rates are set annually, whereas CCRA is set quarterly. Therefore, the increases in the CCRA rate, if they remain, will be reflected in a higher BERC rate the following year.

² Exhibit B-1, pp. 3 to 11.

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6.5 Please provide any available FEI analysis on the differences in the growth rates between RNG customer volumes and non-RNG customer volumes between October of 2016 to the end of 2020.

Response:

FEI has not previously analyzed the differential growth rates between RNG sales volumes and non-RNG sales volumes, but understands them to have different drivers for demand. It should be understood that RNG customers are typically also conventional gas customers. That is, these are gas customers that displace a portion of their natural gas consumption with RNG. Growth in RNG volumes, all things equal, reduce the volumes of regular natural gas.

The drivers of consumption of RNG and conventional gas can be quite different, despite the fact that the two commodities can substitute for each other for the purpose of delivering thermal energy. Conventional gas consumption is driven largely by the need for affordable and reliable energy and the comfort and convenience derived when used in natural gas appliances. The growth rate of conventional gas volumes may be affected by population growth, business activity in the province, desire by customers for natural gas and its benefits as well as regulations that seek to restrict the use of natural gas. Consumption of RNG also provides

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energy, but is driven by the customer's desire to reduce their GHG emissions, either of their own volition or to comply with regulations that favour the use of carbon neutral energy types while still providing all the benefits of natural gas (comfort and convenience) and by using the same appliances (therefore entirely new customer appliances are needed to reduce GHG emissions). FEI has no expectation that the growth of RNG consumption is in proportion to the growth of overall natural gas volumes.

Additionally, the number of RNG customers is still very small compared to conventional gas customers. Conclusions based on an analysis of RNG customer data will therefore be more susceptible to variability and extreme values than conclusions based on conventional gas customer data. Notably, FEI had several large volume customers sign long-term contracts during the period which produced significant growth in RNG demand, that would tend to skew the growth rate of RNG customer volumes.

The table below compares the sales volume growth rates for conventional RS 1 and RS 2 customers (over the entire RS 1 and 2 annual volumes excluding RNG), whose consumption of natural gas is relatively consistent year over year, versus similar RNG customers growth (over the RNG volumes). It does appear that there is little to no correlation in the growth rates between the two. Note that the natural gas sales volumes, on which this table is based, are normalized, whereas the RNG volumes are not.

YEAR	Growth rates for RS 1 and RS 2 NG sales volumes excluding RNG	Growth rate for RS 1B and RS 2B RNG sales volumes
2017	-0.3%	29.8%
2018	0.6%	20.2%
2019	-1.9%	10.6%
2020	4.9%	4.5%

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7.0 Reference: Exhibit B1, Figure 3: RNG Annual Sales Volume, page 9; Figure 4:

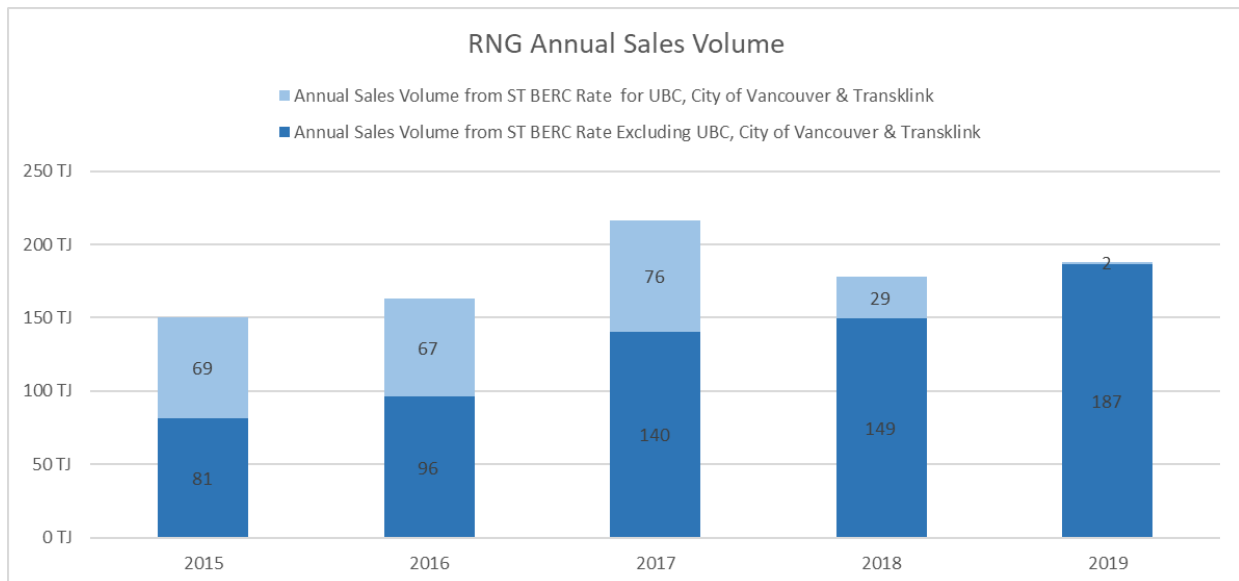
Annual RNG Revenue by Short-Term and Long-Term Customers, page 10

Preamble: On lines 3 to 5 of page 9, FEI indicates that the UBC and City of Vancouver migrated from the Short Term BERC Rate to the Long Term BERC Rate in 2017 and 2018.

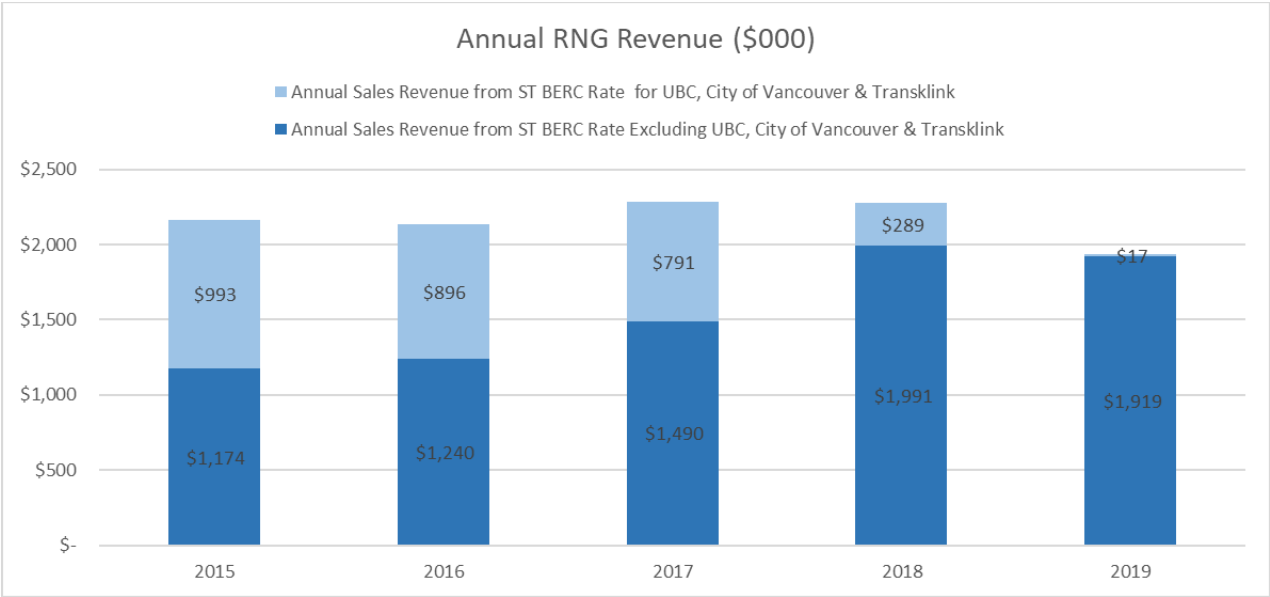
7.1 Please provide an alternate version of Figure 3: RNG Annual Sales Volumes, and Figure 4: Annual RNG Revenue by Short-Term and Long-Term Customers – with two stacked bars, the first with Short Term BERC sales volumes and revenues excluding UBC, the City of Vancouver and Translink and the second with the aggregate sales volumes and revenues from the UBC, the City of Vancouver and Translink – to aid in the comparability of the figures as a result of the migration of these customers between the energy offerings.

Response:

The following figures shows the sales volume and revenue from Short Term BERC Rate customers excluding UBC, City of Vancouver and Translink, and the Short Term BERC Rate sales volume and revenue from UBC, City of Vancouver and Translink before those customers' sales reclassified under the Long-Term Rate 11B contracts.



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8.0 Reference: Exhibit B-1, Section 2.2 Conclusion, page 11, lines 5 to 10

Preamble: FEI states:

"The evidence supports the conclusion that the revised BERC rate methodology has enhanced revenue and the recovery of RNG Program costs from RNG customers...thereby avoiding the need to transfer some RNG Program costs to non-RNG customers"

8.1 Please provide details with respect to (a) the forecast transfer of RNG costs to non-RNG customers for 2016 to 2020 as anticipated in 2016 (that is, assuming no rate methodology change), and (b) the actual transfer of RNG costs to non-RNG customers for each of the years between 2016 and 2020.

Response:

FEI has provided the annual balance transfer (occurring on January 1st) in Table 8 of the Application.

FEI does not have a comparable forecast for a scenario assuming there was no rate methodology change, and FEI cannot speculate what the outcome would have been under this hypothetical scenario.

FEI believes that to date the BERC rate methodology has been successful in achieving the desired outcomes of increased enrolments, volume commitments, and revenues as the Report demonstrates.

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9.0 Reference: Exhibit B-1, Section 3 Supply/Demand Balancing for the RNG Program, page 11, lines 25 to 34

Preamble: FEI states:

"The demand for RNG currently exceeds the available supply from FEI's suppliers. In 2019, as demand was exceeding the available supply, FEI ceased accepting new enrolments in the RNG Program and curtailed the volume of RNG available for sale to large volume, interruptible RNG rate customers under Long Term BERC Rate contracts served through Rate Schedules (RS) 11B.

In 2019, the total volume of RNG sold to meet customer demand was 315 TJ's. The Total RNG supply from existing RNG production facilities was 225 TJ's. The shortfall of 90 TJ's between RNG supply versus RNG sold was fulfilled with the purchase of carbon offsets.

The temporary closure of the RNG program to new participants and the curtailment of volumes under RS 11B are likely to be maintained until late 2021"

9.1 Please elaborate/clarify whether the shortfall was caused by growth in demand that exceeded supply or if there were supply disruptions such that supply was insufficient to meet demand?

Response:

Please refer to the responses in BCUC IR1 2.1

9.2 Please explain if the purchase of carbon offsets in 2019 was a one-time occurrence? Please provide the cost of the carbon offsets and indicate which customer groups are responsible to pay for the costs of the carbon offsets?

Response:

The purchase of carbon offsets in 2019 was not a one-time occurrence. FEI has had to purchase carbon offsets to fulfill a shortfall in biomethane supply for each of 2017, 2018 and 2019 and 2020.

Please refer to the response to BCUC IR1 5.1 for an explanation on the cost of carbon offsets. These costs are added to the Biomethane Variance Account; however, given that the average price for carbon offsets is lower than the price for biomethane, there is a net financial benefit to

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customers because the BERC rate has been higher than carbon offset costs. This benefit is ultimately realized by all natural gas customers

FEI cannot yet confirm if there will be a shortfall in 2021. The total available RNG supply in 2021 depends on several anticipated new biomethane supply projects becoming operational later in the year. If sufficient new supply becomes available in late 2021, FEI will no longer be required to purchase carbon offsets as supply will meet the demand from RNG customers.

9.3 Please explain if FEI is anticipating a shortfall in 2020 that will be supported by the purchase of carbon offsets? If the response is yes, then please provide the cost of the carbon offsets and indicate which customers groups are responsible to pay for the costs of the carbon offsets?

Response:

Please refer to the response to BCOAPO IR1 9.2.

9.4 Please explain if FEI is anticipating a shortfall in 2021 that will be supported by the purchase of carbon offsets? If the response is yes, then please provide the cost of the carbon offsets and indicate which customer groups are responsible to pay for the costs of the carbon offsets?

Response:

Please refer to the response to BCOAPO IR1 9.2.

9.5 Please reconcile the expectation that there will continue to be a shortfall until late 2021 (lines 33-34, page 11) with the expectation that RNG supply volumes in 2021 will increase to 950 TJ (Table 3, page 13).

Response:

FEI is expecting several new RNG supply projects to begin delivering significant new RNG volumes in 2021. However, the majority of these new supply projects will begin delivering RNG



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- 1 only late in the third or in the fourth quarter of the year at the earliest. FEI therefore expects
- 2 there to be a potential shortfall until the later part of 2021.
- 3

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10.0 Reference: Exhibit B-1, Section 3 Supply/Demand Balancing for the RNG Program, page 14, lines 3 to 10; Exhibit B-2, page 4

Preamble: On page 14 of Exhibit B-1, FEI states:

“Figure 5 shows how, beginning in September of 2021, the available supply will grow beyond the demand from FEIs currently enrolled customers. In 2022, FEI expects the demand from currently enrolled customers to be approximately 580 TJs for the year, while the volume of supply is expected to exceed 3,800 TJs, or nearly seven times the volume of demand.”

Although FEI has not permitted new participants to enroll in the RNG Program since 2019, a number of large customers have made their interest in RNG known to FEI. FEI is currently aware of up to 4 PJs of potential incremental demand for RNG from such customers.”

And on page 4 of Exhibit B-2, FEI states:

“As a result, FEI proposes to provide the BCUC and interveners with a status update on or before June 30, 2021, which will include expected timing for its application for RNG Program changes, currently anticipated late in 2021.”

10.1 In Table 3, page 13, FEI indicates that its expected RNG supply in 2021 is 950 TJ. Please provide FEI’s expectation with respect to the RNG demand (TJs) in 2021, and the resulting surplus or shortfall.

Response:

At present, it is not possible to ascertain if FEI will have a supply surplus or shortfall by the end of 2021. FEI is anticipating an increase in RNG supply in 2021. However, this is contingent on the new RNG supply projects and this situation could change as we enter the later part of 2021. Additionally, the volume of RNG for sale to customers is currently being limited by FEI. As new supply materializes and proves reliable FEI will be in a position to increase the volume of RNG sold to its existing customers, in line with any increase in supply, until their demand is fully satisfied. Whether or not there is a surplus or deficit at year-end is dependent on how quickly new supply projects become operational, how much volume they provide, and how reliable their consistency in supply proves to be. Please also refer to the response to BCUC IR1 12.1.

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10.2 If the response to 6.1 indicates a surplus of supply in 2021, then please provide FEI's expectation of how much of the surplus supply cost will be borne by non-RNG customers in 2021.

Response:

FEI assumes this question is referring to BCOAPO IR1 10.1, not 6.1. FEI is unable to ascertain if there will be a supply surplus or shortfall by the end of 2021. Please refer to the responses to BCUC IR1 15.6 and 6.2 for a description of the biomethane mechanisms for cost transfers from the BVA to the BVA Balance transfer account and the impacts to non-bypass customers from 2017 through 2020.

10.3 In 2022, FEI is expecting RNG supply will exceed 3,800 TJs (Table 3, page 13) compared to demand of currently enrolled customers of 580 TJs. However, FEI is also aware of the potential for up to 4,000 TJ of incremental demand. If this magnitude of supply (3,800 TJ's) materializes but the potential incremental demand (up to 4,000 TJ's) does not materialize, what is the expected level of cost to be borne by non-RNG customers in 2022?

Response:

The information below is provided in response to the question being asked and does not represent FEI's expected forecast for 2022. Nor is it reasonable to believe that none of the additional demand will materialize.

To quantify this answer FEI has used the current 2021 BERC rate, the 2022 Forecast cost of RNG purchases as per the 2020 Q4 Gas Cost Report, and FEI's current CCRA Rate. FEI also notes that the net of tax adjustment for the deferrals have been ignored in the answer.

The following table provides the approximate cost that would be borne by non-RNG customers in 2022 given the assumptions imposed by the question.

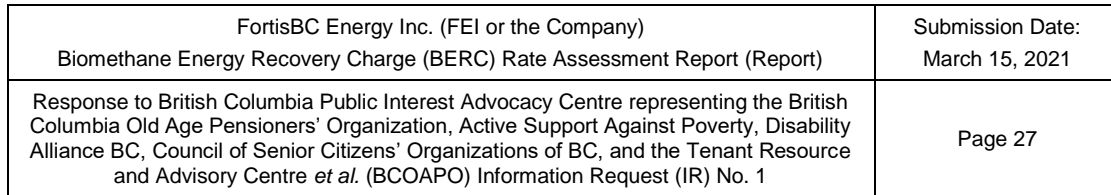
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Line	Detail	Amount	Reference
1	2021 BERC Rate - \$/GJ	\$ 11.83	2021 Approved Rate
2	2022 forecast cost of RNG - \$/GJ	\$ 21.98	2022 Forecast from 2020 Q4-Gas Cost Report
3	2021 CCRA Rate - \$/GJ	\$ 2.84	2021 Approved Rate
4			
5	2022 Forecast RNG Supply - TJs	3,800	From Question
6	2022 Assumed Demand - TJs	580	From Question
7	2022 Excess Supply - TJs	3,220	Line 4 + Line 5
8			
9	Max level of RNG in Inventory - TJs	250	BERC Guidelines
10			
11	Total Supply Cost (3,800 TJs) - \$000s	83,541	Line 2 X Line 5
12	Less BERC Recoveries (580 TJs) - \$000s	(6,861)	Line 1 X Line 6
13	Costs Less BERC Recoveries - \$000s	76,680	Line 11 + Line 12
14			
15	Excess Supply Transferred to MCRA - TJs	2,970	Line 7 - Line 9
16	Excess Supply to Remain in the BVA - TJs	250	Line 9
17	Total Excess Supply - TJs	3,220	Line 15 + Line 16
18			
19	Inventory Cost to Remain in BVA - \$000's	2,958	Line 1 X Line 16
20	Inventory to Transfer to MCRA - \$000's	8,447	Line 1 X Line 15
21	Excess cost to BVA Balance Transfer Account - \$000's	65,276	Line 13 - Line 19 - Line 20
22	Costs Less BERC Recoveries - \$000s	76,680	Line 19 + Line 20 + Line 21
23			
24	Estimated Expected Cost Borne non-RNG Customers - \$000s	65,276	Line 21

As set out in the table above, given the assumptions in the question, the cost borne by non-RNG customers would be \$65.276 million (Line 24). The \$65.276 million is the cost of excess inventory exceeding 250 TJs being transferred to the MCRA plus the portion of acquisition cost greater than the BERC rate transferred to the BVA Balance transfer account. These costs would be collected from non-RNG customers in the following year, 2023, through FEI's Storage and Transfer charges (for costs transferred to the MCRA) and the BVA rate rider (for costs transferred to the BVA Balance transfer account).

The 250 TJs remaining in the BVA is addressed in the BERC guidelines in the clause, "FEI may apply to transfer unsold biomethane supply that is greater than 18 months in age and/or 250,000 GJs in the BVA to the MCRA at the prevailing CCRA rate on January 1 each year." FEI notes from the hypothetical scenario posed in the question the inventory would be less than 18 months, but recognizes supply outweighs demand and would trigger a review of the inventory and the possible need to transfer excess supply to the MCRA. The transfer would not be automatic and FEI would apply to the BCUC before processing the transfer. The value of the transfer would be at the current CCRA rate and displaces the need to purchase offsetting conventional gas, as such this portion of cost transfer is not considered incremental or additional cost borne by non-RNG customers.

In this scenario, the additional cost borne by non-RNG customers results in the \$65.276 million, which is the BVA costs for the year less BERC recoveries, less ending inventory remaining in BVA, and less inventory transferred to the MCRA.



Preamble: Section 4 of the Comprehensive Assessment Report provides the closing BVA balances, BERC rates, CCRA rates and carbon tax for the period of January 1, 2016 to January 1, 2020. There is no indication of the impact of the BVA balances on non-RNG customers for the years between 2017 and 2020.

Response:

11.2 Please provide continuity schedules that include the opening balances, the additions into the accounts, the reductions to the accounts, as well the closing balances that reconcile to Table 4 (BVA Balance) and Table 8 (BVA Balance Transfer) for the period of January 1, 2016 to January 1, 2021.

Response:

11.3 Please explain the impact of the BVA balance transfer rate base deferral account on the non-RNG customer rates for each year between 2017 and 2020.

Response:

Please refer to the response to BCUC IR1 6.2.

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12.0 Reference: Exhibit B-1, Section 7, Customer Awareness and Education, pages 17- 18

Preamble: FEI indicates that it contracted a customer research firm in 2016 to garner a better understanding of customer perceptions related to RNG. The resulting customer research study indicated low familiarity of the RNG program among FEI customers, identified barriers to participation and identified certain customer segments that had a higher potential for program participation. The customer research study provided insights into the development of new customer outreach and awareness campaigns for the RNG program, that were launched into the market in 2017.

12.1 Please provide the customer research study that was prepared in 2016.

Response:

Please refer to Attachment 12.1 for a copy of the referenced study.

12.2 (a) Please explain if FEI established any metrics and targets to evaluate the effectiveness of the new RNG campaign. If so, please provide the metrics and targets that were established in advance of the new campaign, as well as the assessment of the actual outcomes compared to the metrics and targets established for 2017 to 2020. (b) If not, please explain why no metrics and targets were set to evaluate the effectiveness of the new campaign.

Response:

FEI assessed the success of the campaign based on a number of measures such as total customer enrollments, customer enrollments by target segments, webpage views and response/click view rates. There was no ability to establish meaningful metrics in advance of the campaign as the RNG program is only a small subset of FEI's total customer base and hence there was no reference or history to provide for levels at which metrics should be established which would allow for an effective measure of success. FEI believes the campaign was successful based on the metrics (customer participation and unique webpage views) described on page 18 of the Report (Table 9). Additional success measures assessed after the campaign ran in market are described below.

As a result of the 2017 RNG program campaign, there was an increase in program participation from key customer segments that were targeted. Enrollment for Millennials increased by 32 percent, Gen Xers by 14 percent and Retirees by 7 percent.

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As a result of the 2018 campaign, where the focus was to learn more about RNG rather than encouraging customers to enroll into the program, the campaign performed well against industry benchmarks. Display banners achieved a very strong response rate of 2.04 percent, Google paid search achieved a 13 percent click-through-rate (well above the industry average of 1 to 2 percent), and YouTubeMogul and YouTube achieved a total of 610,000 completed RNG video views.

Throughout 2019 and 2020, customer knowledge and awareness expenditures were focused on sponsorship of educational events targeting commercial and residential customer segments.

12.3 FEI states that it scaled back its customer awareness campaign as it became apparent that the demand for RNG exceeded available supply. Given FEI's plans for a significant ramp up in the RNG program supply, please explain why FEI has not re-focused its awareness campaign on the launch of its enhanced RNG program commencing later in 2021.

Response:

Please refer to the responses to BCUC IR1 4.1.1 and 21.2.

12.4 Please revise Table 10 (page 18), RNG Program Customer Awareness Expenditures to include the year 2020.

Response:

Please refer to the response to BCUC IR1 21.1.

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13.0 Reference: Exhibit B-2, FEI request to rescind BCUC Order G-292-20, dated November 17, 2020

Preamble: In its letter of November 17, 2020, FEI indicates that it has commenced planning for a comprehensive assessment of the RNG program and the expected timing of an Application to the BCUC for resulting RNG program changes is anticipated to be late in 2021.

13.1 Please provide the Terms of Reference or Project Charter for FEI's Comprehensive Review of the RNG Program, including the scope of the review, project plan, project milestones and project risks.

Response:

A Project Charter/Terms of Reference has been initiated, but not yet finalized for the comprehensive review and assessment of the RNG Program. FEI has assembled a cross-functional project team and established a steering committee. Also, various third party work is currently underway, along with the early elements of the consultation and engagement plan.

13.2 Please provide FEI's consultation and engagement plan for the Comprehensive Review of the RNG Program.

Response:

Please refer to the response to BCOAPO IR1 13.1.

13.3 Please provide FEI's current anticipated timing related to its Application for changes to the RNG Program.

Response:

FEI currently anticipates filling the results of its comprehensive review and assessment of the RNG Program late in 2021. FEI will be able to provide a status update on or before June 30, 2021.

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13.4 FEI expects that the supply of the RNG program will significantly ramp up commencing in the fall of 2021, before the filing of the comprehensive review of the RNG program and associated rate application (later in 2021) and in advance of the corresponding BCUC regulatory review process and decision, which will most likely be conducted well into 2022. Given these expectations, please explain if FEI has contemplated reporting to the BCUC during the interim period in late 2021 and 2022 to keep it abreast of the results of the RNG program and the potential rate impacts to non-RNG customers?

13.4.1 Has the Utility made such a report and if so, when? Please provide the date and content of that report.

Response:

FEI files a Fourth Quarter Gas Cost Report in November of each year, and an Annual Biomethane Variance Account Report in April of each year, and sets the BVA rate rider through the Annual Review process, filed in August of each year. These reports provide details on actual biomethane purchase costs and sales revenues, as well the same details for forecast periods. Given that the comprehensive review and assessment of the RNG Program process will be underway later in 2021, and in that process the BCUC will gain insight into the status of the program, FEI does not contemplate filing additional reports.

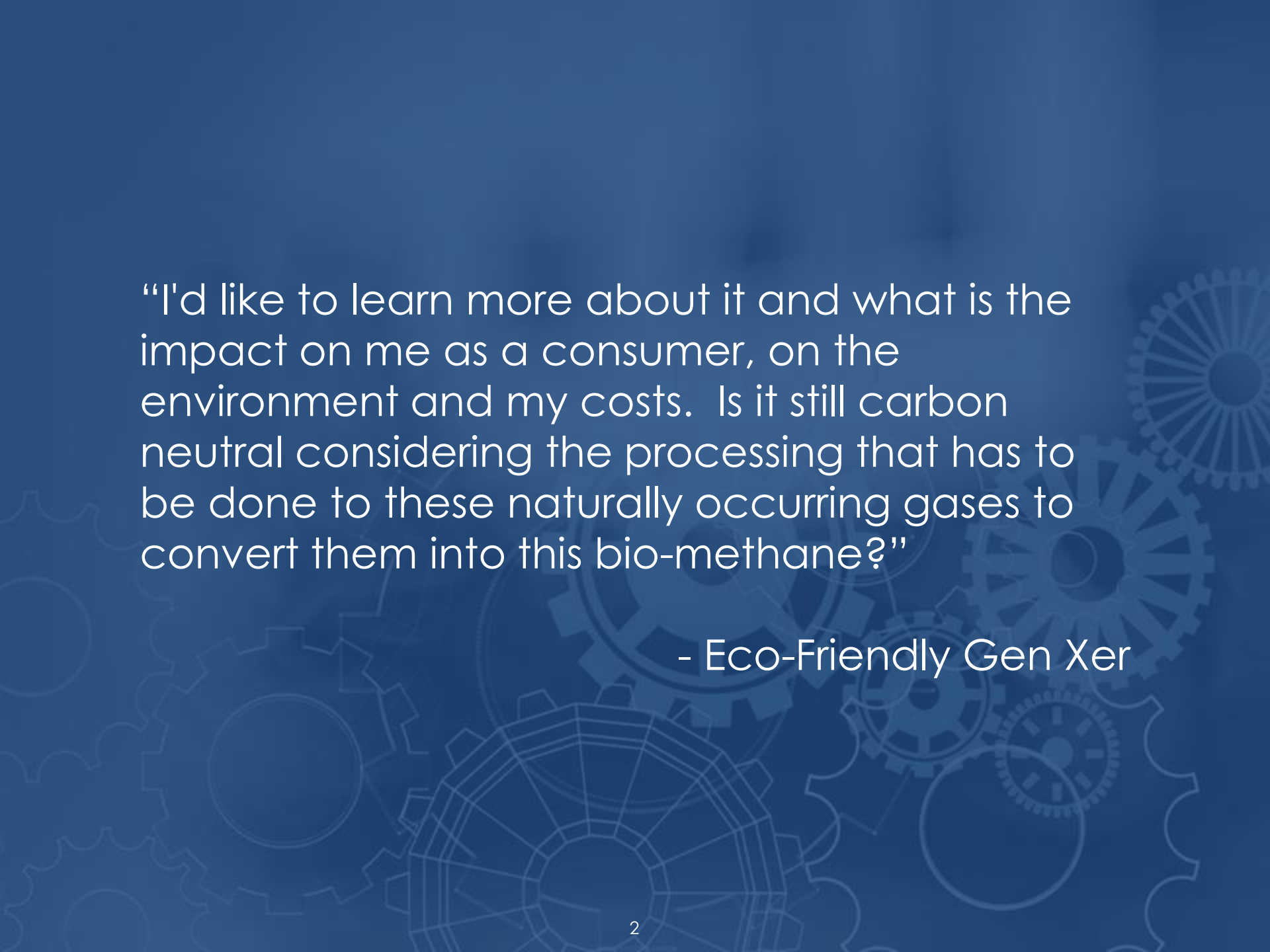
Attachment 12.1

FortisBC Renewable Natural Gas



Identifying Target Customers to Increase RNG Program Participation

Insight Report
February 13, 2017



“I'd like to learn more about it and what is the impact on me as a consumer, on the environment and my costs. Is it still carbon neutral considering the processing that has to be done to these naturally occurring gases to convert them into this bio-methane?”

- Eco-Friendly Gen Xer

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Research Objectives & Methodology

1,160 surveys were conducted with FortisBC residential natural gas customers.

RESEARCH OBJECTIVES

To identify customers who are more likely to participate in the Renewable Natural Gas (RNG) program and specific messages and communication channels that will resonate best.

Specifically, provide FortisBC with an understanding of following:

 **Familiarity** with FortisBC's RNG Program

 **Level of interest** in the program

 **Demographic & psychographic** characteristics of interested consumers

 Primary **communication channels** used

 **Motivations and barriers** for participation

METHODOLOGY

- Online survey
- 13-15 minutes
- December 15, 2016 - January 4, 2017
- FortisBC natural gas customers who are not also Renewable Natural Gas customers
- n=1,160 Total
 - n=185 **Vancouver Island & Sunshine Coast**
 - n=700 **Lower Mainland & Fraser Valley**
 - n=375 **Interior** (Excluding Revelstoke)

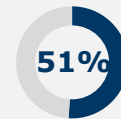
Market Overview

About half the market is unwilling to pay extra to participate in the RNG Program.

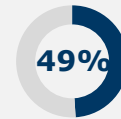
BACKGROUND

- FortisBC has offered Renewable Natural Gas (RNG) to residential customers since 2011 and commercial customers since 2012.
- Historical research suggested that potentially one-in-five residential customers would be interested in participating.
- FortisBC decided on a more conservative estimate of 1-2%, in line with industry norms for green energy offerings.
- The current participation level is 0.7% of eligible customers, slightly lower than the base level estimate of 1%.

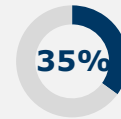
CURRENT MARKET



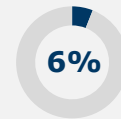
Unwilling to pay extra to participate.
Price is the top barrier.



Demonstrate interest in RNG and a willingness to pay extra to participate in program.



Will seek out more information about RNG.



Very familiar with RNG.
(3% very familiar with RNG in 2012*)

KEY FINDINGS

Key Takeaways

The following outlines key takeaways from this research.



RNG Market Potential

Half the market is open to the idea of supporting RNG.

Younger people, females, and those with higher levels of education have the highest potential to enroll at some level.

Three target customer segments have high to moderate potential to participate in the RNG program:

- RNG Enthusiasts
- Eco-Friendly Millennials
- Eco-Friendly Gen Xers

See the next slide for an overview of each segment.

The **estimated market potential is about 2.3%** among the target segments of RNG Enthusiasts, Eco-Friendly Millennials and Eco-Friendly Gen Xers.



Motivators for Participation

- 1. Helping the environment,** reducing pollution and reducing their carbon footprint resonates with target segments.
- 2. Innovation and change** that helps the environment excites target segments.
- 3. Affordable options for participation** allows the opportunity for almost anyone to get involved because the cost of entry is low.



Barriers for Participation

- 1. Cost** is the top barrier. Low cost options up to 10% will result in the highest participation.
- 2. Lack of program understanding** is also a major barrier. Google (search engine optimization), the FortisBC website and bill inserts are channels to educate and increase familiarity with RNG among the target segments.
- 3. Skepticism about the program** is voiced suggesting that continued education about the program is needed including transparency on how revenues are reinvested into program.
 - Does it actually make an environmental difference?
 - Is RNG being delivered as promised by FortisBC?
 - Is the RNG program just a PR initiative to make more money?



Key Messages to Communicate

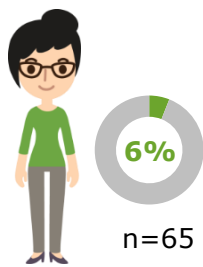
Communications should **answer key customer questions:**

- **How do I Switch?** Message focus is about ease of participation: "It's easy to switch! No upgrades or installations are required."
- **Why should I switch?** Message focus is about the cost and benefits of program: "It's an affordable way to contribute to doing something better for the environment."
- **What's in it for me?** Message focus is about benefits to the customer: "Reduce your BC Carbon Tax and feel good about helping protect BC resources"

Online channels (e.g., Google, FortisBC's website, email and social media) are **cost effective opportunities to communicate key messages to target segments** compared to more traditional channels (e.g., print, radio, TV).

Segment Executive Summary

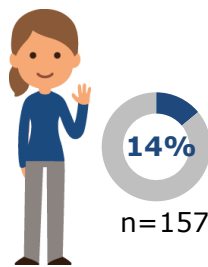
The following five segments were identified based on intent to participate and willingness to pay to participate in the RNG program.



RNG Enthusiasts

HIGH POTENTIAL

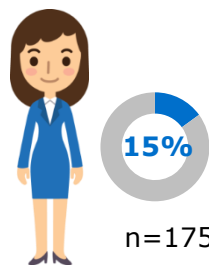
This is the **primary target** for the FortisBC RNG program. They are **educated** with **higher incomes** and the **highest program familiarity**. They are **enthusiastic** about **helping the planet** and **willing to pay**. **Easy sign-up** and quick **easy access** to **information online** may facilitate participation.



Eco-Friendly Millennials

MODERATE POTENTIAL

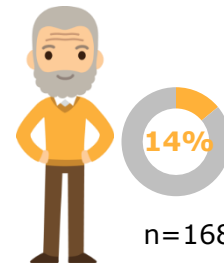
This segment is **younger, highly educated** but with **lower incomes** and are more likely to **rent**. They want to **help the environment** but the main **barriers** to participation are **cost** and some **skepticism whether RNG is carbon neutral and/or better for the environment**. This segment is more inclined to **use social media and online sources for information**.



Eco-Friendly Gen Xers

MODERATE POTENTIAL

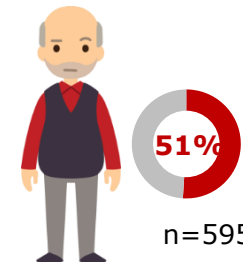
This is a **higher income segment** who wants to **create a better environment** in **budget friendly** ways. They have a **lower understanding** of the RNG program. As a result, they have a lot of **unanswered questions** and are **skeptical whether RNG is better for environment**. They are most likely to **use the FortisBC website** to seek more information.



Eco-Friendly Retirees

LOW POTENTIAL

These are **retirees** with **lower incomes** who **own their own home**. This segment is very positive about **helping the environment** and **reducing their carbon footprint**; however, they have **low familiarity** with the RNG program. **Cost is a major barrier** as many are on **fixed incomes**. They are reached best through **traditional channels** (inserts, print and TV).








Price Focused Skeptics

NO POTENTIAL

This segment is **not a target** for the FortisBC RNG program as they are **unwilling to pay** to participate. While there is **interest in helping the environment, cost is a major barrier**. They have **lower trust** in energy companies and are **skeptical whether RNG is added into the system or if it is really better for the environment**.

True Market Potential

Customers within each segment have varying degrees of willingness to pay more for RNG. By overlaying this willingness to pay with intent to enroll, it is estimated that the true market potential for RNG is 2.3%.

	Will Pay More for Environmentally Friendly*		Weighted Intent to Enroll in RNG		Market Potential
 Price Focused Skeptics (51%)	2%	x	7%	=	0.2%
 Eco-Friendly Retirees (14%)	3%	x	15%	=	0.4%
 Eco-Friendly Gen Xers (15%)	2%	x	15%	=	0.3%
 Eco-Friendly Millennials (14%)	3%	x	16%	=	0.4%
 RNG Enthusiasts (6%)	3%	x	51%	=	1.6%
True Potential**					2.3%

Detailed calculation as follows using RNG Enthusiasts as an example:

[Customers with 9 or 10 out of 10 rating (37) / Total respondents (1160)] X Weighted Intent to Enroll (51%) = 1.6%

DETAILED FINDINGS

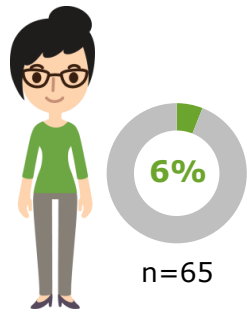
The background of the slide features a complex arrangement of interlocking gears. Some gears are rendered as white outlines, while others are filled with a light blue color. A large gear in the center is particularly prominent. In the upper right corner, there is a gear with many thin, radiating lines, resembling a sun or a fan. The overall aesthetic is technical and mechanical.



The Five Segments

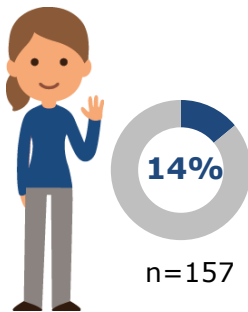
Demographic Overview of Five Segments

Overview of “who” the five segments are.



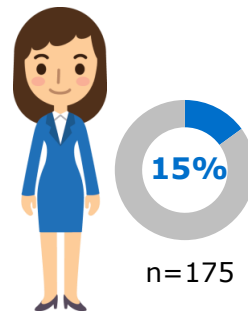
RNG Enthusiasts

- 3 in 5 are **women**
- Most are age **18-54 years**
- Over half have **university or post-graduate** degrees
- 3 in 5 have a household **income over \$75,000**
- No kids or families with young kids
- Live in **Lower Mainland, Fraser Valley, Vancouver Island or Sunshine Coast**



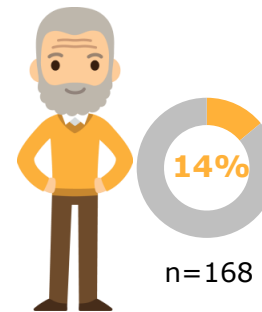
Eco-Friendly Millennials

- 3 in 5 are **women**
- Age **18-34 years**
- Over half have **university or post-graduate** degrees
- Majority with **income under \$75,000**
- Most have **no kids**
- Majority live in **Lower Mainland or Fraser Valley**
- 2 in 5 **rent**



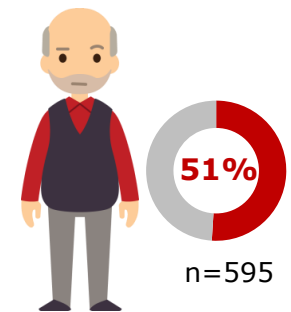
Eco-Friendly Gen Xers

- Equal **gender split**
- Age **35-54 years**
- Primarily **college grads** with some university grads
- 3 in 5 have a household **income over \$75,000**
- Families with kids** of all ages and **empty nesters**
- Majority live in **Lower Mainland or Fraser Valley**



Eco-Friendly Retirees

- Equal **gender split**
- Age **55+ years**
- Half are **college or technical school grads**
- 7 in 10 with **income under \$100,000**
- 7 in 10 are **retired**
- Empty nesters**
- Half live in **Lower Mainland or Fraser Valley**
- 3 in 10 live in **Interior**

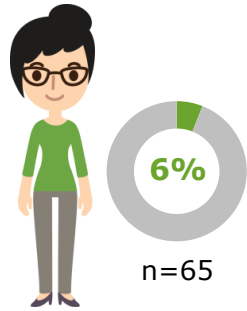


Price Focused Skeptics

- Equal **gender split**
- Age **35+ years**
- Half have **college diplomas, university or post graduate** degrees
- 3 in 5 with **income under \$75,000**
- One-third **retired**
- Empty Nesters** and some **families with kids**
- Live in **Lower Mainland/Fraser Valley or Interior**

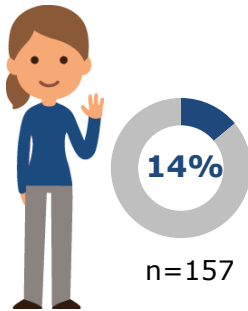
Overview of What's Important to Five Segments

Below outlines similarities and differences in what is important to the five segments.



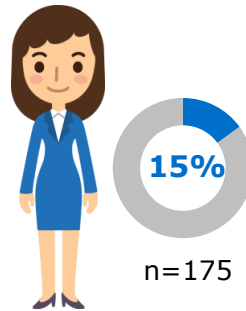
RNG Enthusiasts

- Less price sensitive
- No upgrades or installations
- Helping the planet (broader idealism)
- Reducing carbon footprint
- Contact with nature
- Environmentally friendly products
- Excited by new technologies
- Working with others on a common goal
- Revenues reinvested into RNG program



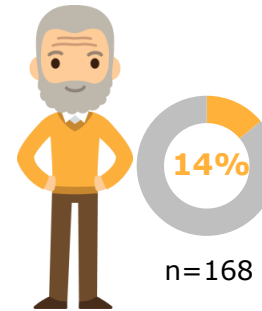
Eco-Friendly Millennials

- Price
- No upgrades or installations
- Helping the planet (broader idealism)
- Reducing pollution
- Contributing to solve a problem
- Excited by new technologies
- RNG is cost competitive
- Transparency on how revenues are reinvested back into RNG program



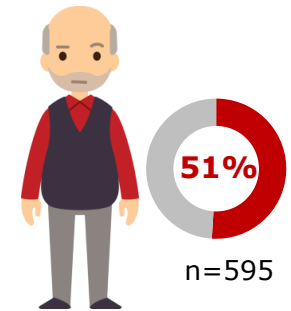
Eco-Friendly Gen Xers

- Price
- No upgrades or installations
- Creating a better environment (specific purposeful action)
- Reducing pollution
- Working with others on a common goal



Eco-Friendly Retirees

- Price
- No upgrades or installations
- Creating a better environment (specific purposeful action)
- Reducing carbon footprint
- Contact with nature
- Working with others on a common goal
- RNG is cost competitive
- RNG supports local agriculture and municipalities



Price Focused Skeptics

- Price
- No upgrades or installations
- Skeptical about helping the environment



Familiarity and Interest in the RNG Program

The RNG Program

RNG Enthusiasts are familiar with RNG, will seek of more information and one-half intend to enroll.

PRIMARY TARGET

RNG Enthusiasts
(6% n=65)

SECONDARY TARGET

Eco-Friendly Millennials
(14% n=157)

Eco-Friendly Gen Xers
(15% n=175)

NOT A TARGET

Eco-Friendly Retirees
(14% n=168)

Price Focused Skeptics
(51% n=595)

FAMILIARITY WITH RNG PROGRAM

51% Familiar

43% Familiar

37% Familiar

29% Familiar

32% Familiar

WILLINGNESS TO SEEK OUT MORE INFORMATION (DEFINITELY + PROBABLY WILL)

High
71%

Moderate
43%

Moderate
46%

Moderate
40%

Low
24%

TOP EMOTIONS ABOUT RNG PROGRAM

- Enthusiastic
- Excited
- Interested
- Happy

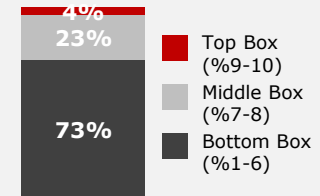
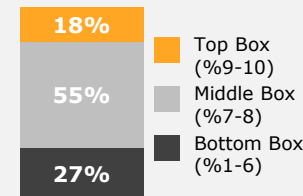
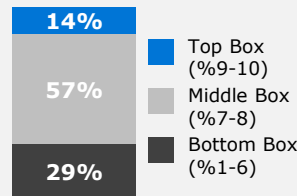
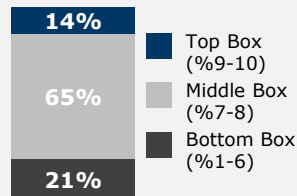
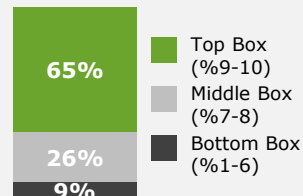
- Interested
- Excited
- Happy
- Neutral

- Interested
- Happy
- Enthusiastic
- Neutral

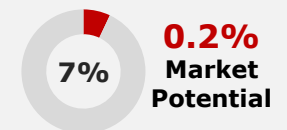
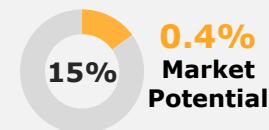
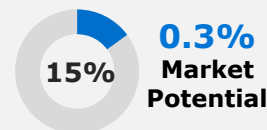
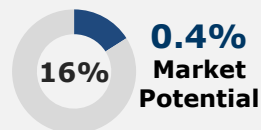
- Interested
- Enthusiastic
- Happy
- Excited

- Neutral
- Interested
- Happy
- Suspicious

OVERALL RATING OF RNG PROGRAM



WEIGHTED INTENT TO ENROLL IN RNG PROGRAM



Optimal Blend for Highest Participation in RNG Program

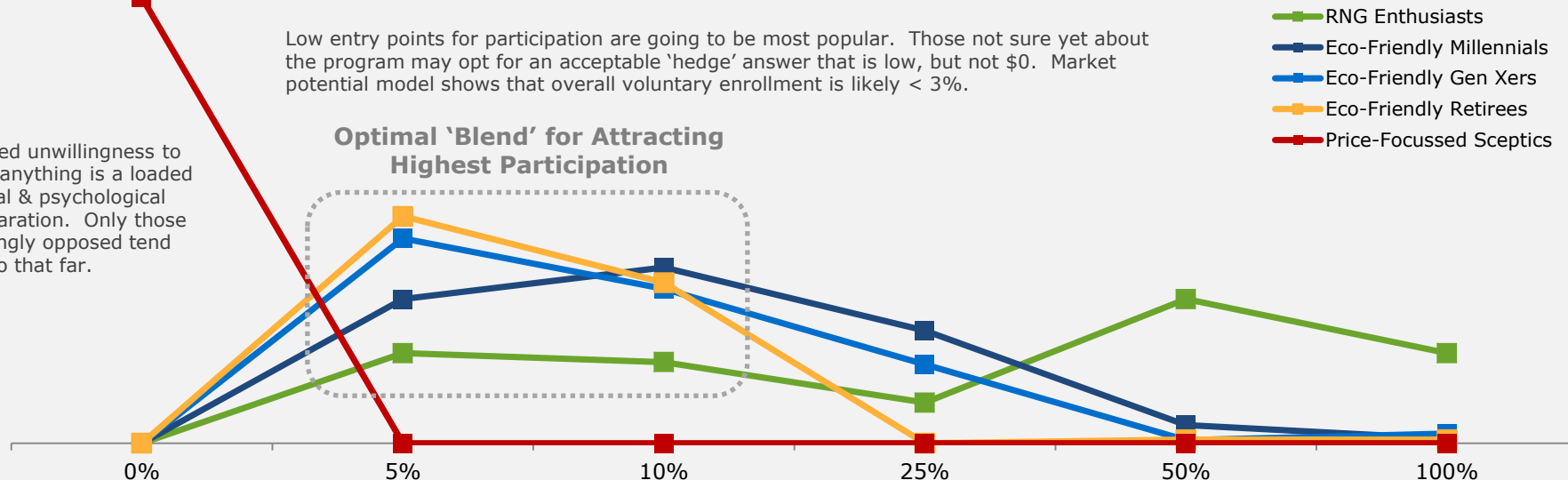
Consumer willingness to pay impacts participation in RNG program. Offering options on how much they can contribute will appeal to consumers but very few will sign up for more than 10% blend.

Customer Willingness to Pay to Participate in RNG Program

Low entry points for participation are going to be most popular. Those not sure yet about the program may opt for an acceptable 'hedge' answer that is low, but not \$0. Market potential model shows that overall voluntary enrollment is likely < 3%.

Optimal 'Blend' for Attracting Highest Participation

Stated unwillingness to pay anything is a loaded social & psychological declaration. Only those strongly opposed tend to go that far.



- Some (2%) mention **RNG should cost less** than non-renewable natural gas because it involves recycling of landfill waste rather than drilling for natural gas and it would encourage people to support eco-friendly initiatives.
- This perception is highest among Eco-Friendly Gen Xers (3%) and Eco-Friendly Retirees (5%).



Impact of Welcome Packages on RNG Program Participation

Partnership with Province of BC

Two welcome packages were tested to determine if a welcome package will improve participation in the RNG program.

Two Welcome Packages Tested

FortisBC may partner with the Province of BC to aid in the reforestation of areas adversely affected by the Pine Beetle and Wildfire. Under the partnership, FortisBC would sponsor the planting of trees on behalf of new and existing RNG customers, while the Province of BC would ensure that the total number of trees being sponsored are planted in an impacted BC Forest.

1

One-Time Sponsorship of Tree Planting

A one-time “Welcome Package” for new customers who join the RNG program where FortisBC sponsors the planting of trees in their name in a BC forest impacted by the Pine Beetle or wildfire.

2

Annual Greenhouse Gas Report

An annual Greenhouse Gas (GHG) report would be prepared for each supporter of the RNG initiative. Based on the percentage of your natural gas usage that is displaced by your support for the RNG program, FortisBC would use a formula to calculate, purchase and plant a specific number of trees (between 3 and 5) every year in your name and inform you on your statement.

Partnership with Province of BC

Welcome packages are not a strong motivator, but somewhat appealing to Eco-Friendly Millennials.

More Excited about Welcome Packages

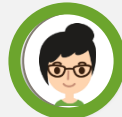
Less Motivated By the Welcome Packages

Not Excited about Welcome Packages

WHO



Eco-Friendly Millennials
(14% n=157)



RNG Enthusiasts
(6% n=65)



Eco-Friendly Gen Xers
(15% n=175)

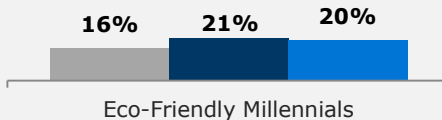


Eco-Friendly Retirees
(14% n=168)

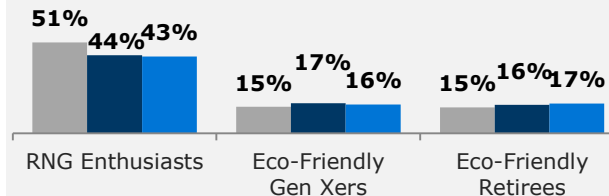


Price Focused Skeptics
(51% n=595)

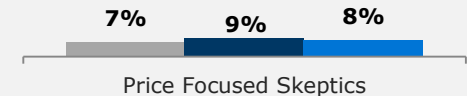
INTENT TO ENROLL



- Intent to Enroll Prior to Knowledge of Welcome Packages
- Intent to Enroll with Knowledge of One-Time Sponsorship of Tree Planting
- Intent to Enroll with Knowledge of Annual Greenhouse Gas Report



- Intent to Enroll Prior to Knowledge of Welcome Packages
- Intent to Enroll with Knowledge of One-Time Sponsorship of Tree Planting
- Intent to Enroll with Knowledge of Annual Greenhouse Gas Report



- Intent to Enroll Prior to Knowledge of Welcome Packages
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- Intent to Enroll with Knowledge of Annual Greenhouse Gas Report



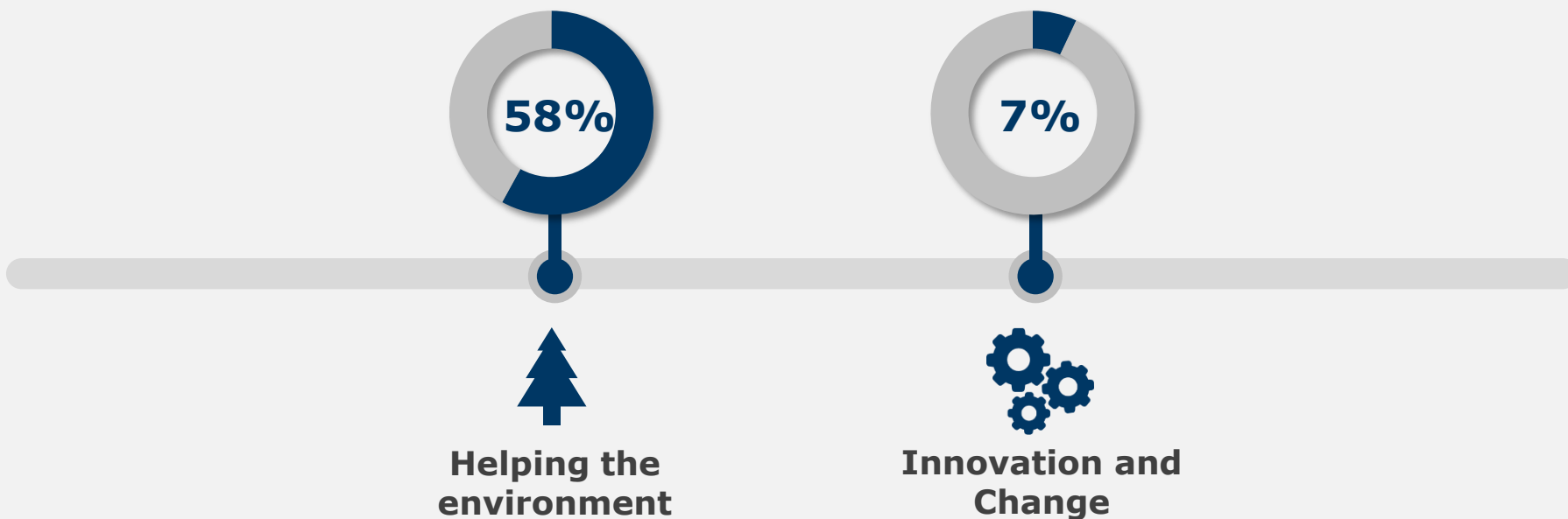
- Customers express concerns that the welcome/recognition packages will result in higher costs for the RNG program. Any partnership with the Province of BC should be messaged carefully to reassure customers that their investment in the RNG program is not being diverted to administration and execution of the forestry project.



Motivators of Participation in RNG Program

Motivators of Participation in RNG Program

There are two universal motivators mentioned by all segments.





Motivator: Helping the Environment

Almost six in ten customers mention that helping the environment is appealing.

Strongly Care about Helping the Environment



RNG Enthusiasts
(6% n=65)



Eco-Friendly Millennials
(14% n=157)



Eco-Friendly Retirees
(14% n=168)

Moderately Care about Helping the Environment



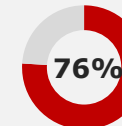
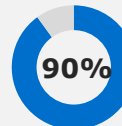
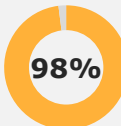
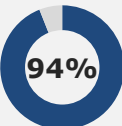
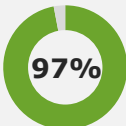
Eco-Friendly Gen Xers
(15% n=175)

Slightly Care about Helping the Environment



Price Focused Skeptics
(51% n=595)

POSITIVE INFLUENCE OF "HELPING TO CREATE A BETTER ENVIRONMENT" ON OPINION OF RNG



REASONS FOR HELPING THE ENVIRONMENT AS A MOTIVATOR

- Believe it is **everyone's duty** to take care of the planet and future generations.
- Think **switching to carbon-neutral energy sources is necessary** and the **way of the future**.
- Eco-Friendly Retirees **approve of how the RNG program reuses waste** to create renewable energy.

- Feel it is an **opportunity to help the environment** at a **small additional cost** (5%-10%).

- Express an interest in helping the environment but **not willing to pay more** to do so.

"It's all **our part to do whatever we can** to use this and take care of our planet for us and many future generations."
- RNG Enthusiast

"In general, it's **better to capture and reuse** gas than to extract it from the ground. Of course, what's even better is to reduce use overall."
- Eco-Friendly Gen Xer

"I think **using renewable resources is great, this is going to be a good start!** Hopefully it is successful and can be implemented across Canada."
- Price Focused Skeptic



Motivator: Innovation and Change

Desire to be at the forefront of innovation and change may motivate some to enroll in RNG.

More Excited about Innovation and Change



RNG Enthusiasts

(6% n=65)



Eco-Friendly Millennials

(14% n=157)



Eco-Friendly Gen Xers

(15% n=175)



Eco-Friendly Retirees

(14% n=168)

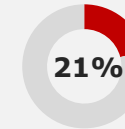
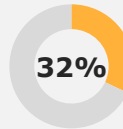
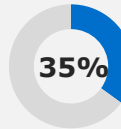
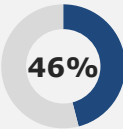
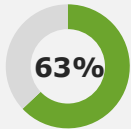
Less Excited about Innovation and Change



Price Focused Skeptics

(51% n=595)

TOP BOX (%9-10) RATINGS FOR "EXCITED BY THE POSSIBILITIES PRESENTED BY NEW TECHNOLOGIES"



REASONS FOR INNOVATION AND CHANGE AS A MOTIVATOR

- **Excited about the opportunities provided** by new technologies, in particular those helping the environment.
- Are **impressed that FortisBC and BC in general** are at the forefront of change in switching to RNG.

- **More skeptical about innovation** helping the environment.
- **Not as interested in keeping up with technological progress.**
- Some Price Focused Skeptics **feel that changes in services tend to cost more.**

"I have a **general interest in new technology**, especially if it is environmentally and economically beneficial."
-Eco-Friendly Millennial

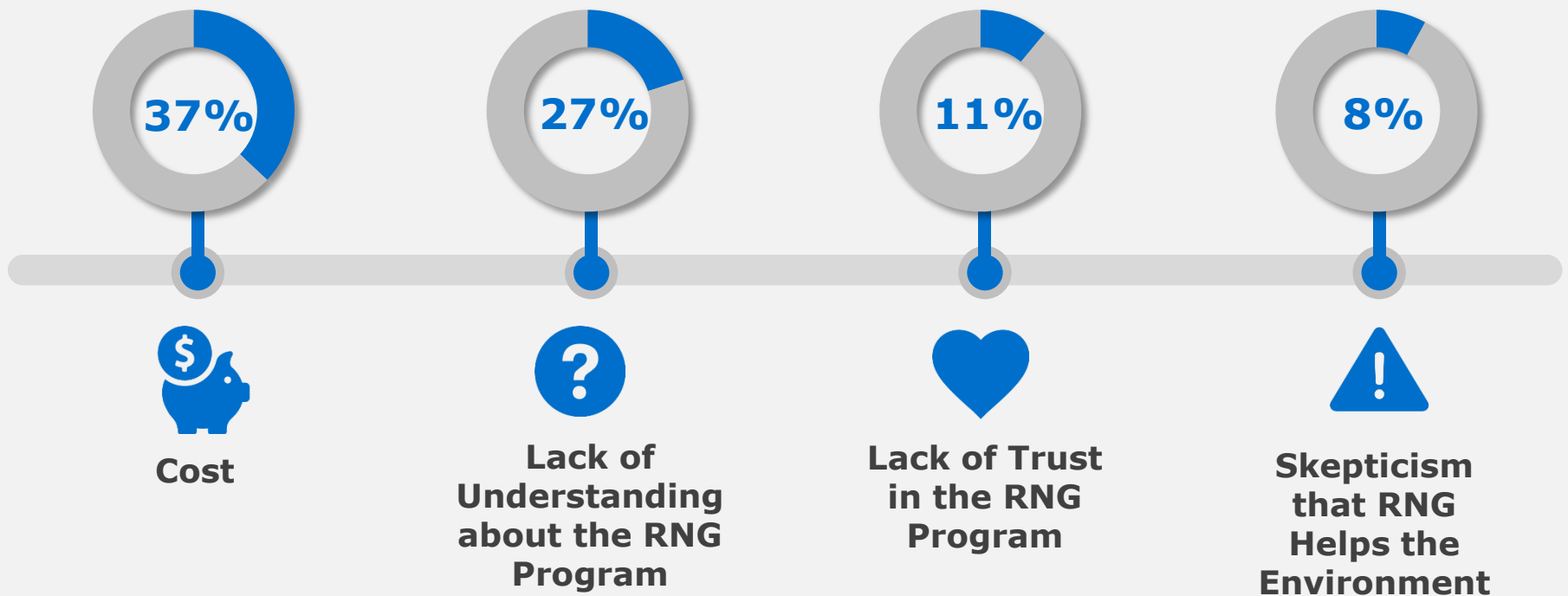
"**Not sure it makes a big difference** to climate change prevention."
-Price Focused Skeptic



Barriers to Participation in RNG Program

Barriers to Participation in RNG Program

There are 4 barriers mentioned by all segments.





Barrier: Cost

Cost is the number one barrier for all five segments, even among RNG Enthusiasts.

Less Price Sensitive



RNG Enthusiasts
(6% n=65)

Moderately Price Sensitive



Eco-Friendly Millennials
(14% n=157)



Eco-Friendly Gen Xers
(15% n=175)



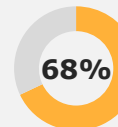
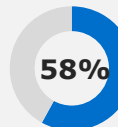
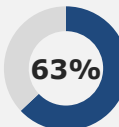
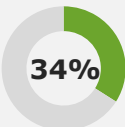
Eco-Friendly Retirees
(14% n=168)

Most Price Sensitive



Price Focused Skeptics
(51% n=595)

PERCENTAGE OF CUSTOMERS FOR WHOM COST NEGATIVELY IMPACTS OPINION OF RNG



REASONS FOR COST AS A BARRIER

- Some express **frustration that their income is insufficient** for supporting such an excellent initiative.
- Some feel that it is **unfair that those who do the right thing are charged more**.

*"Obviously **cost is an issue for me as a lower income family** already having a hard time with bills, everything else sounds amazing!"*
- Eco-Friendly Millennial

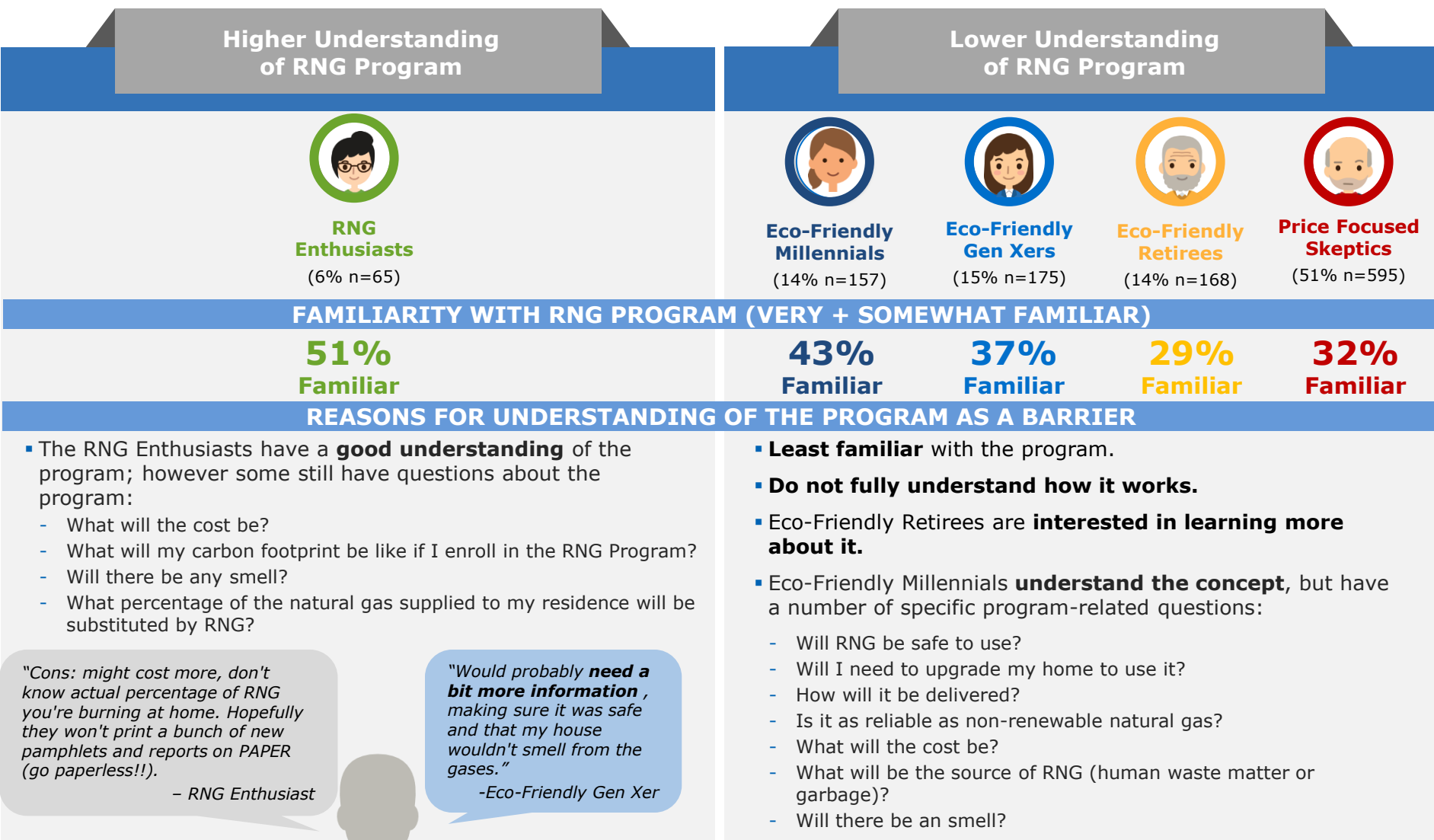
- Some feel that the RNG program should be **mandatory for all: it will be more affordable if everybody pays equally**.
- Some feel that if Fortis BC wants to help the environment, it should **not make its customers offset the cost of this initiative**.
- Some Eco-Friendly Gen Xers are **skeptical that the advantages to the environment** will make up for the cost of the program.
- Some Eco-Friendly Gen Xers and Retirees expect RNG to be **less expensive than non-renewable natural gas**.

- Feel their **gas bill is already too high**.
- One third are retired; many are on a fixed income and **cannot afford to pay for the RNG program**.
- Some expect RNG to be **less expensive** than conventional natural gas.



Barriers: Lack of Understanding of the Program

One-fifth of consumers feel they need more information and have questions about the RNG program.





Barrier: Lack of Trust in the RNG Program

Overall, one in ten consumers believe the RNG Program is either a sham or a PR move by FortisBC.

Higher Trust in RNG Program



RNG Enthusiasts

(6% n=65)



Eco-Friendly Gen Xers

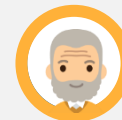
(15% n=175)

Lower Trust in RNG Program



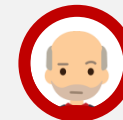
Eco-Friendly Millennials

(14% n=157)



Eco-Friendly Retirees

(14% n=168)



Price Focused Skeptics

(51% n=595)

REASONS FOR TRUST AS A BARRIER

- **Generally trust the company** and the RNG program.

- Think FortisBC is **trying to improve its corporate image** by starting the green initiative while offloading all the costs to consumers.
- **Unsure about the delivery and are skeptical** that RNG is actually being added into the system.
- Eco-Friendly Retirees and Price Focused Skeptics **do not trust energy companies in general.**

*"I trust them as a company and am sure that they will provide the citizens of B.C. with a **safer and better gas program**. That will not only benefit the customer, but also benefit the environment.."*

-RNG Enthusiast

*"It's a **good initiative**, but as a consumer **I still feel like a sucker being just a cash machine..**"*

- Price Focused Skeptic

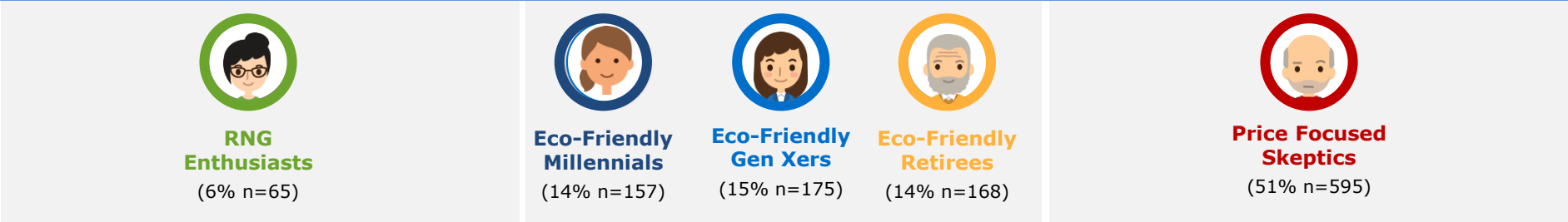


Barrier: Skeptical RNG is Better for the Environment

Overall, one in three consumers are skeptical the RNG program is better for the environment.



SEGMENTS



REASONS FOR SKEPTICISM AS A BARRIER

<ul style="list-style-type: none">Generally believe RNG is an environmentally friendly option.	<ul style="list-style-type: none">Some concerns over carbon dioxide emissions into the atmosphere.Unsure whether waste is a good source for extracting gas.Some feel the release of CO2 is expedited compared to the natural biodegrading process.Some are concerned about the smell of RNG.	<ul style="list-style-type: none">Some feel the process is not carbon-neutral if any amount of carbon is released.Some are concerned about the expedited release of carbon dioxide.
---	---	--

"Any renewable source of energy is great. **Its a great way to get rid of waste from landfills** and doesn't do as much damage to the world we live in."

-RNG Enthusiast

"It sounds **good to recycle** but it turns into carbon dioxide."

- Eco-Friendly Millennial

"Although RNG is considered carbon neutral, from the description it is actually **releasing carbon dioxide faster than it would if allowed to "naturally" be released as waste is decomposed.**"

-Price Focused Skeptic



Messages and Channels to Communicate RNG Program

Communication is Key

Consumer awareness of RNG is good, but knowledge is limited. FortisBC communications need to move consumers beyond awareness into understanding and action.

Communications need to answer key consumer questions.

How do I switch?

It's easy to switch!

- Can **sign up online** or **via phone** in a few minutes; **no installation or changes** to home are needed.
- Works with your **existing appliances**; **no upgrades to furnace, water heater** or other equipment.
- You can **subscribe even if you live in a condo or rental**.**

**If condo dwellers and renters are not able to sign up independently – specific communications may be required to allow consumers easily share information with their condo boards/landlords about the benefits of adopting RNG.

Why should I switch?

It's an affordable way for me to contribute to doing something better for the environment.

SUPPORTING MESSAGES

- Contributions can be as **low as a few dollars a month**.
- Switching to X% renewable natural gas (about \$X/month) **saves X tonnes of greenhouse gas emissions** (the equivalent of taking X cars off the road for a month.)
- Switching to X% renewable natural gas means that **X lbs of waste will be saved from landfills**; since RNG is created from waste using new technologies.
- **Options to do more** (contributions can range from 5% RNG to 100% RNG.)
- All revenues are **reinvested** in building more facilities that use waste to create renewable natural gas.

What's in it for me?

Reduce how much you pay on the BC Carbon Tax and feel good about taking action to protect BC resources.

- A \$X/month subscription to the Renewable Natural Gas program **reduces your Carbon Tax fee by \$X a month**.
- **Share your contribution online** – link to stats posted on social media sites like Facebook, etc.
- To date, Fortis BC's RNG program has **saved X tonnes of greenhouse gas emissions** (the equivalent of taking X cars off the road for a month) and X lbs. of waste from landfills.

Communicating the Messages

Potential RNG adopters are likely seek information online, but broader communications will likely be required to drive interest in doing a google search or going to Fortis BC's website.



Education & News Stories



Google Search & FortisBC Website



Social Media & Word of Mouth



Outdoor Campaign

CHANNELS

- Bill Inserts
- TV
- Newspapers and magazines

- Google
- FortisBC Website

- Facebook
- YouTube
- Word of mouth
- Email

- Billboards and signage

RATIONALE

- **Effective at raising awareness** of RNG
- **To drive interest** to seek out more information through google search or FortisBC website

- **To quickly and easily direct interested consumers** to the right page on Fortis BC's website

- To **reach potential adopters** who are likely to use social media and be influenced by word of mouth

- To **reach potential adopters** who indicate being in contact with nature is important to them

MESSAGE INTENT

- **Create a call to action** to visit the FortisBC website for more information
- **Educate consumers** on renewable natural gas, addressing skepticism on environmental impact and questions about reliability, smell, etc.

- **Reinforce key messages** and provide supporting evidence on FortisBC website
- Make it easy for **consumers to understand impact of participation** on Carbon Tax fee and the environment
- Showcase positive stories from existing RNG **customers about participation in RNG program**






- **Reinforce "good deed" messaging** with consumers
- **Report back** to consumers on how much impact their contribution has made in BC
- **Make it easy for consumers to share their good deed stories** with friends and family via social media and word of mouth
- For example, send an email to all subscribers each month:

- Communicate messages like **"Help preserve BC's natural resources by switching to Renewable Natural Gas"** – see how easy and affordable it is to switch online at FortisBC.com."
- Position signage enroute to nature destinations and prominent recreation sites (beaches, hiking trails, ski hills, aquariums, botanical gardens, etc.)

Thank you for subscribing to Fortis BC's Renewable Natural Gas program. Your contribution to date has saved 5 tonnes of greenhouse gas emissions, which is the equivalent of removing one car from the road each year. Click here to share your contribution on Facebook.

Channels for Communication of RNG

The FortisBC website, natural gas bill inserts and Google have strong usage across all segments while social media is stronger among younger segments (RNG Enthusiasts and Eco-Friendly Millennials).

CHANNEL	PRIMARY TARGET	SECONDARY TARGET		NOT A TARGET	
	WHO				
	 RNG Enthusiasts (6% n=65)	 Eco-Friendly Millennials (14% n=157)	 Eco-Friendly Gen Xers (15% n=175)	 Eco-Friendly Retirees (14% n=168)	 Price Focused Skeptics (51% n=595)
WHAT					
FortisBC website	✓	✓	✓	✓	✓
Natural gas bill inserts	✓	✓	✓	✓	✓
Google	✓	✓	✓	✓	✓
Email	✓	✗	✗	✓	✗
Direct mail	✓	✗	✗	✗	✗
TV	✓	✓	✓	✓	✗
Social media	✓	✓	✗	✗	✗
Newspapers/ magazines	✓	✓	✓	✓	✗
Word of mouth	✓	✓	✗	✗	✗
Radio	✗	✗	✗	✗	✗

Note: TV could include Netflix, PVR's, etc. where consumers don't even watch commercials so this channel may not be a good option if budget is limited.

Note: TV could include Netflix, PVR's, etc. where consumers don't even watch commercials so this channel may not be a good option if budget is limited.

Thoughts for Consideration

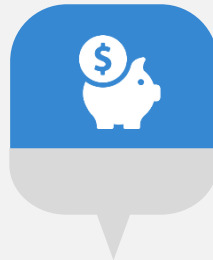
The following are five thoughts for consideration.



FortisBC's communications should **explain the environmental benefits** of using RNG and emphasize that it is a **cost effective method of helping the environment** compared to other alternative energy sources such as wind or solar.



Emphasizing the **innovation in the RNG Program may attract younger customers** and has some appeal to Eco-Friendly Gen Xers and Retirees.



FortisBC may attract more customers if they use the investment planned for provincial partnerships to **increase the personal 'blend' for an anniversary month to reflect that value in specific RNG terms rather than a contribution to a different cause.**



FortisBC must communicate the **positive aspects of the RNG Program** so that the benefits outweigh the costs to customers.



Concrete proof of the RNG Program's success and how RNG revenues are invested must be shared with customers to overcome skepticism.

Segment Detailed Profiles



6%

n=65

RNG Enthusiasts

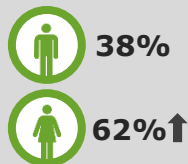
RNG Enthusiasts are educated and have higher incomes. They skew more female, younger and residents of Vancouver Island & Sunshine Coast.

Location

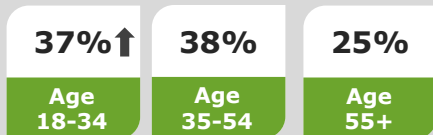


Gender & Age

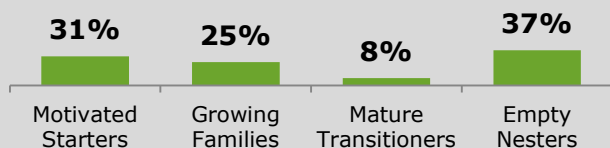
Gender



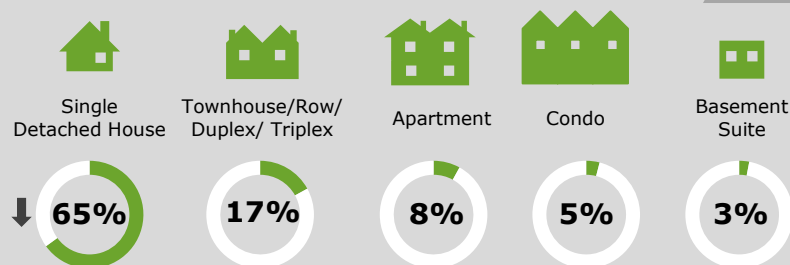
Age



Household Composition

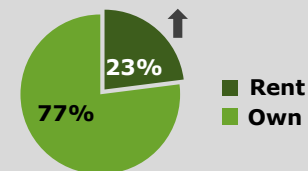


House Type

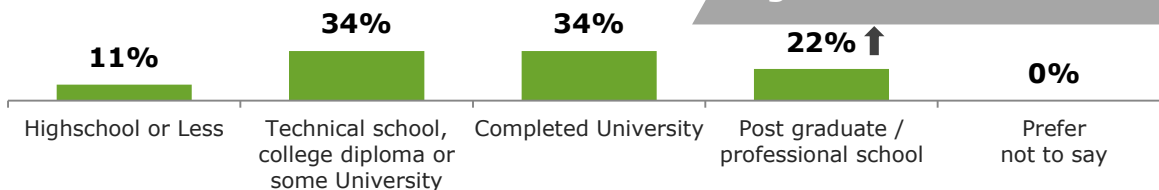


Housing

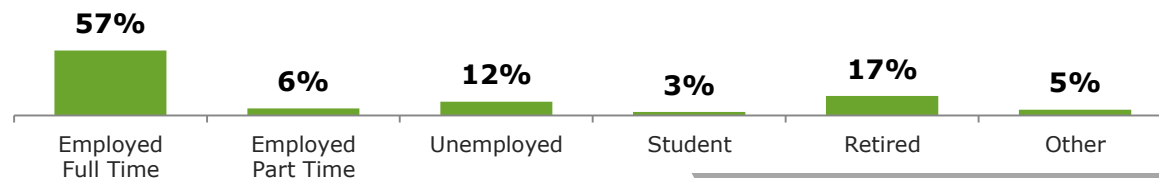
Rent or Own



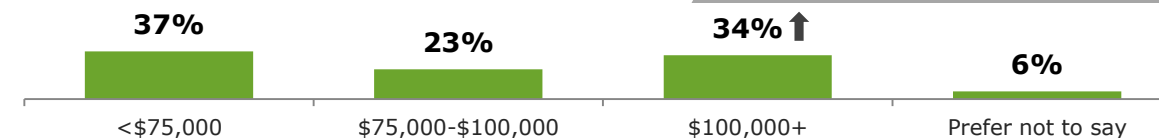
Highest Level of Education



Employment Status



Income



Overview

RNG Enthusiasts are more familiar with Fortis BC's RNG program, but they will seek out more information, primarily through online sources.

They currently have the highest average spend on natural gas.

Natural Gas at Residence

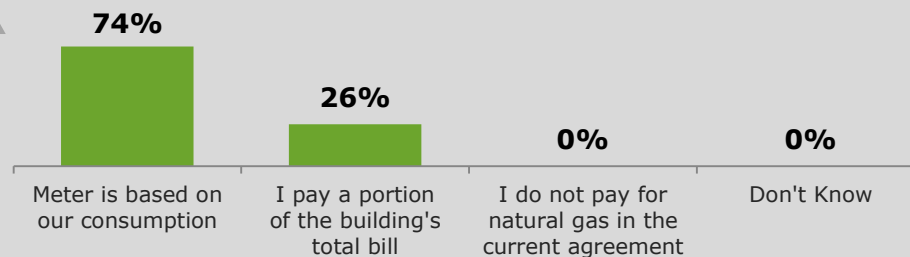
Mean Amount Spent Natural Gas (Residence Monthly)



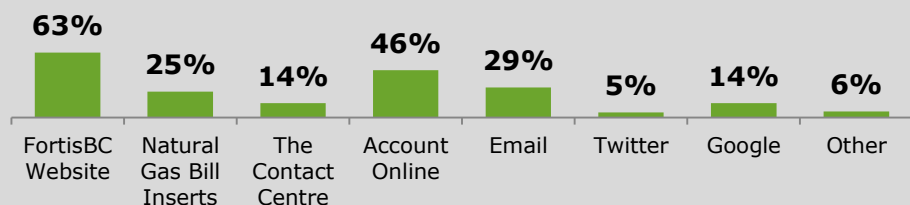
Years as a FortisBC Natural Gas Customer



Portion of Bill Paid for

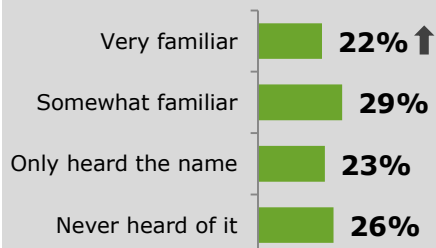


Sources Used to Interact with FortisBC When Looking for Information

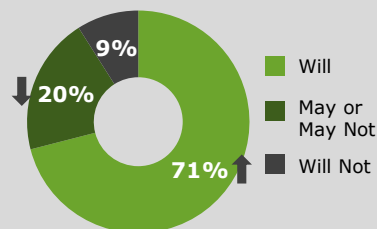


RNG Program

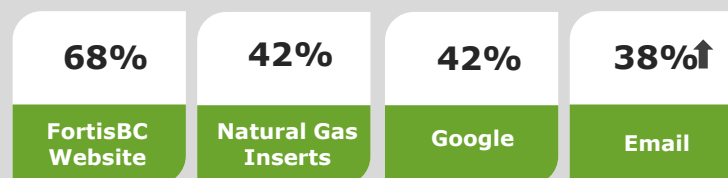
Familiarity with FortisBC's RNG Program



Likelihood to Seek Out More Information about RNG



Top Sources to Learn About FortisBC's RNG Program



14%

n=157

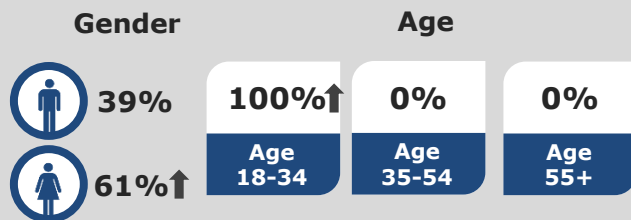
Eco-Friendly Millennials

Eco-Friendly Millennials have lower incomes and include more renters and students. They are younger, skew female and reside in the Lower Mainland or Fraser Valley.

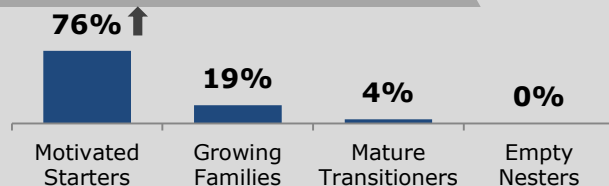
Location



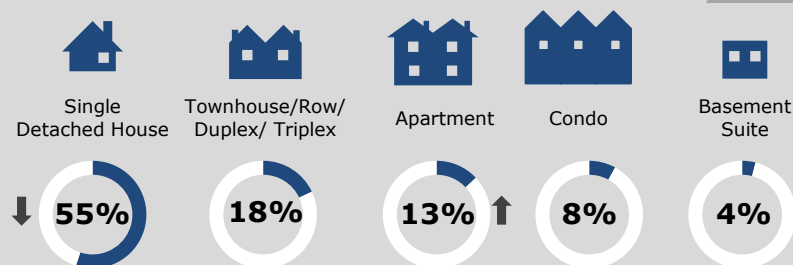
Gender & Age



Household Composition

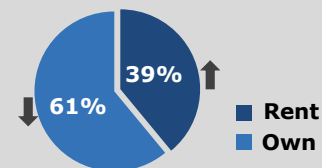


House Type

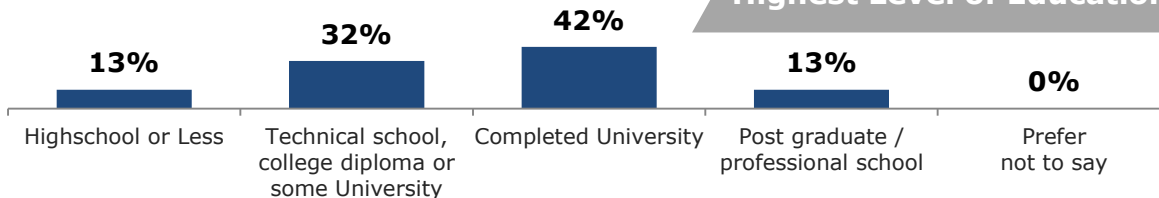


Housing

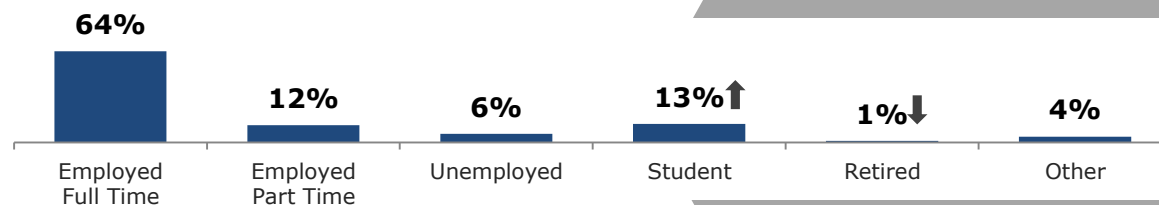
Rent or Own



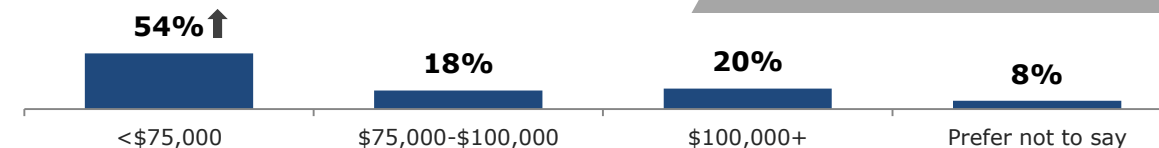
Highest Level of Education



Employment Status



Income



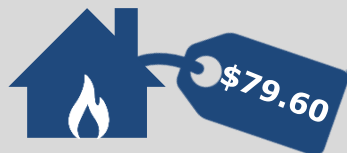
Overview

Eco-Friendly Millennials are newer FortisBC customers and have the second lowest spend on natural gas.

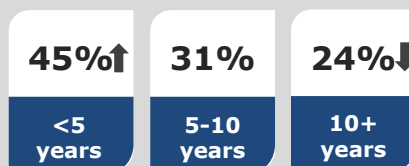
They are somewhat familiar with the RNG Program, but aren't sure if they will seek more information. If interested, they are more inclined to use online and social media sources as well as word of mouth.

Natural Gas at Residence

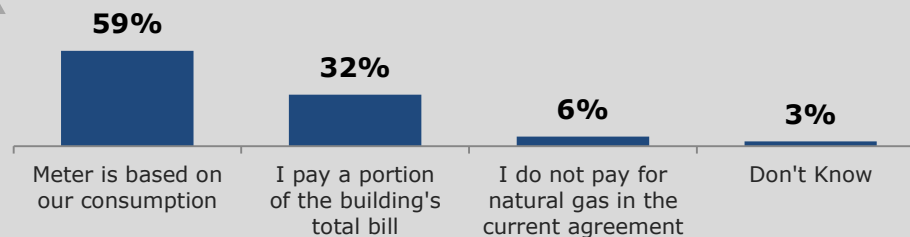
Mean Amount Spent Natural Gas (Residence Monthly)



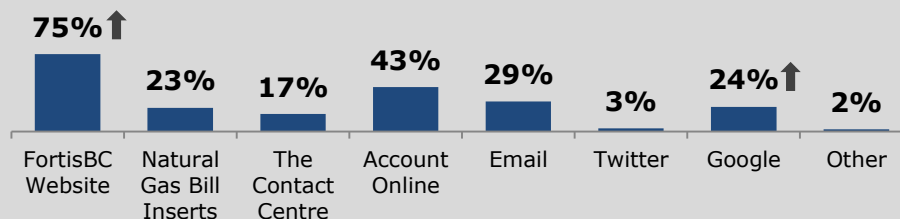
Mean Years as a FortisBC Natural Gas Customer



Portion of Bill Paid for

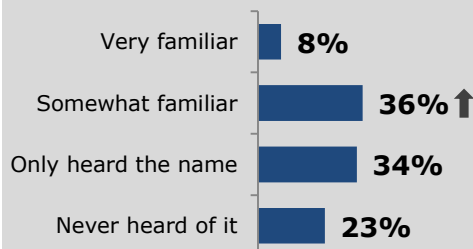


Sources Used to Interact with FortisBC When Looking for Information

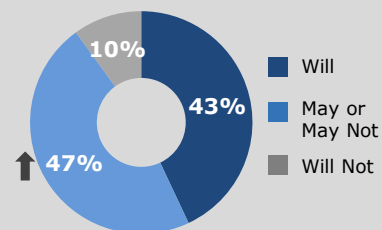


RNG Program

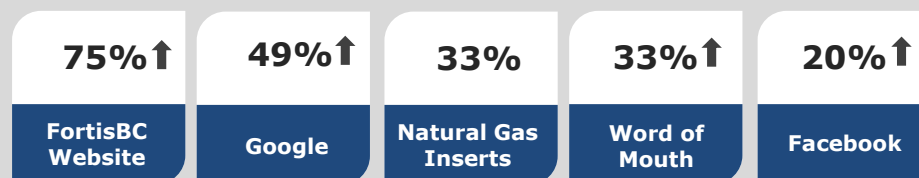
Familiarity with FortisBC's RNG Program



Likelihood to Seek Out More Information about RNG



Top Sources to Learn About FortisBC's RNG Program



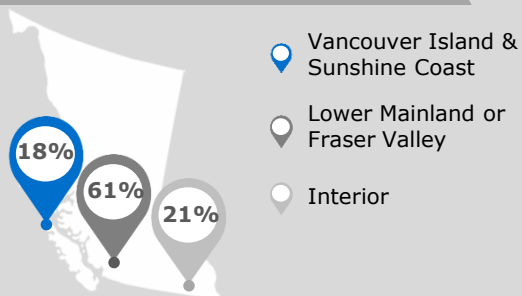
15%

n=175

Eco-Friendly Gen Xers

Eco-Friendly Gen Xers are employed and have higher incomes. They are a mix of life stages and geographically similar to the overall BC population.

Location



Gender & Age

Gender



47%

53%

Age

0%

Age 18-34

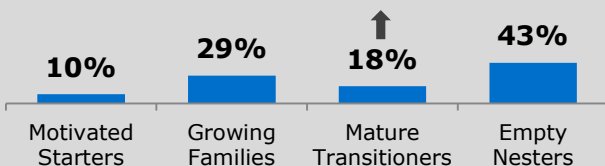
100%↑

Age 35-54

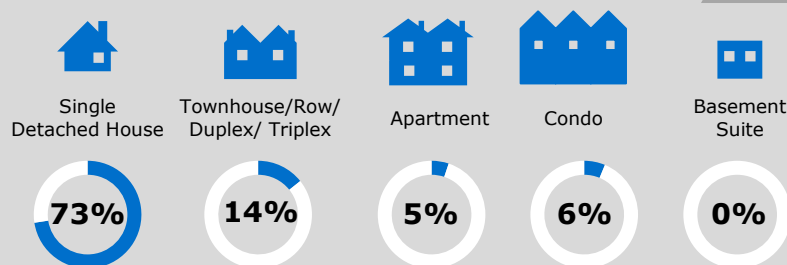
0%

Age 55+

Household Composition

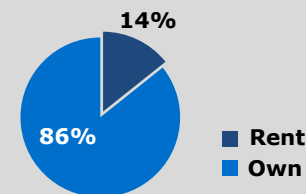


House Type

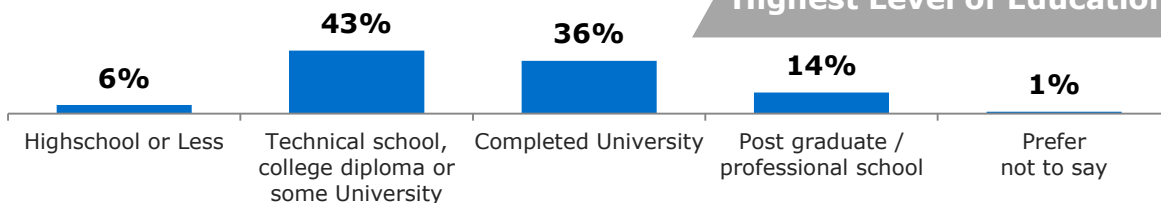


Housing

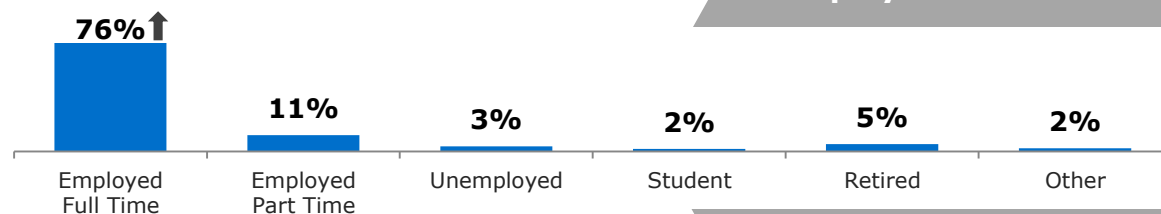
Rent or Own



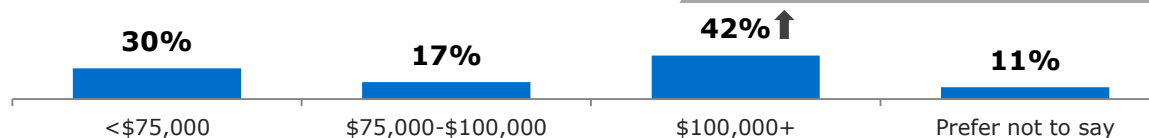
Highest Level of Education



Employment Status



Income



15%

n=175

Eco-Friendly Gen Xers

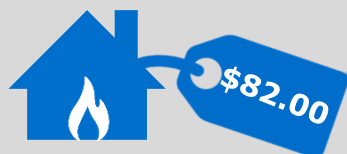
Overview

Eco-Friendly Gen Xers spend the second highest amount on natural gas.

They have average familiarity with the RNG program and may seek more information. They primarily use the FortisBC website for information about FortisBC and RNG. TV communications may drive their interest in going online to learn more.

Natural Gas at Residence

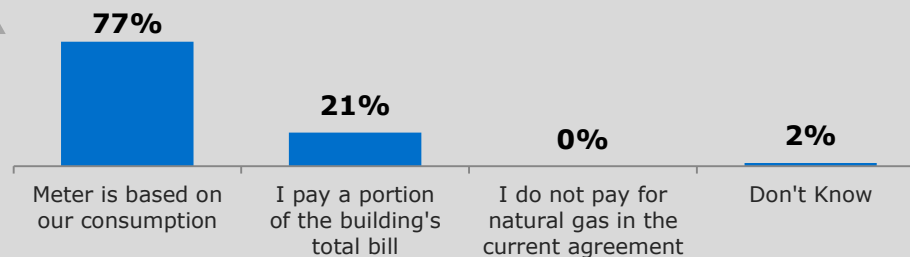
Mean Amount Spent Natural Gas (Residence Monthly)



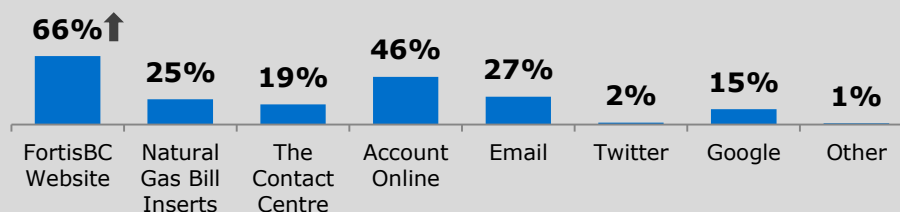
Mean Years as a FortisBC Natural Gas Customer



Portion of Bill Paid for

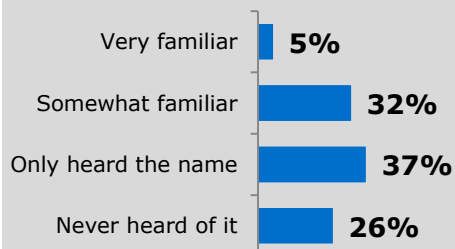


Sources Used to Interact with FortisBC When Looking for Information

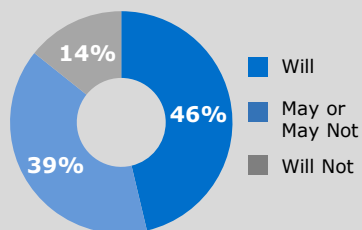


RNG Program

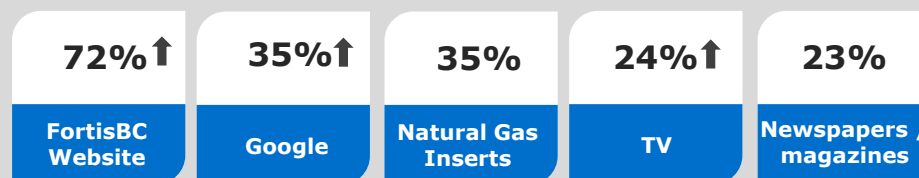
Familiarity with FortisBC's RNG Program



Likelihood to Seek Out More Information about RNG



Top Sources to Learn About FortisBC's RNG Program



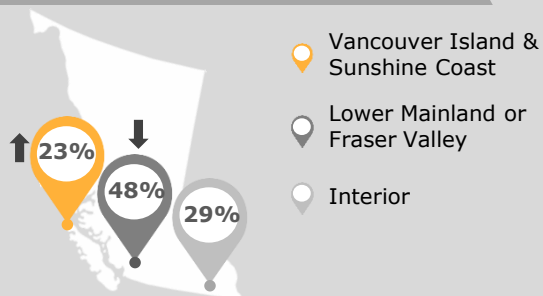
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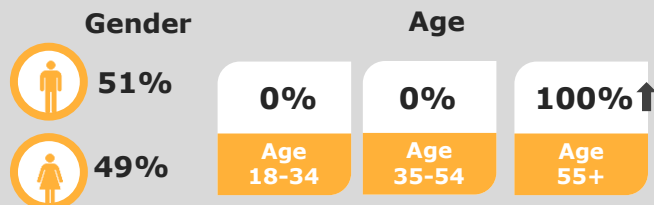
Eco-Friendly Retirees

Eco-Friendly Retirees are older Empty Nesters. They have lower incomes and less education, but most own a detached house. They are more likely to live on the Island or Sunshine Coast.

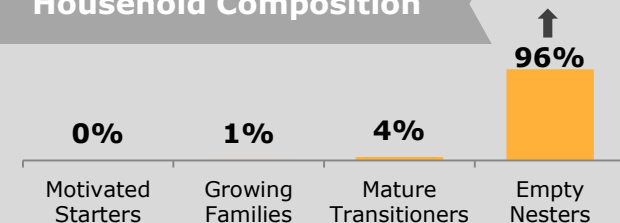
Location



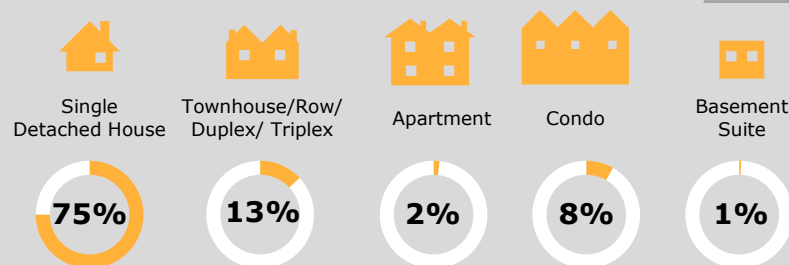
Gender & Age



Household Composition

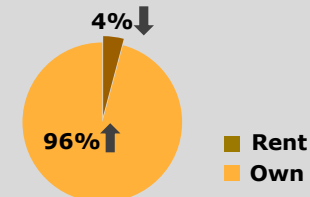


House Type

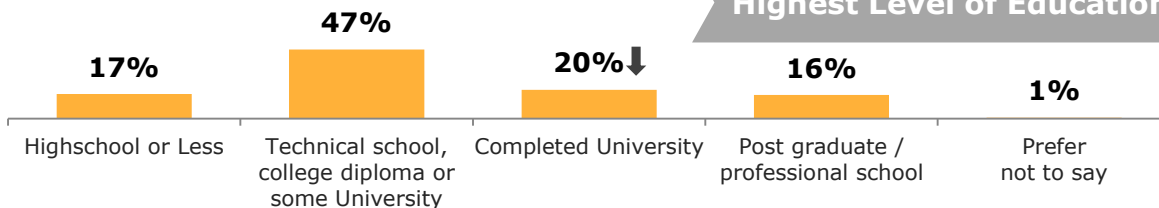


Housing

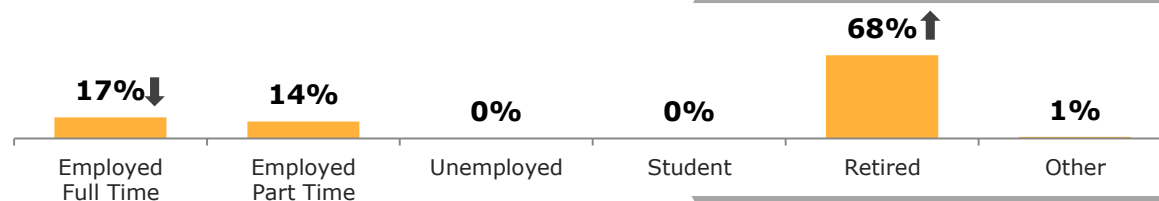
Rent or Own



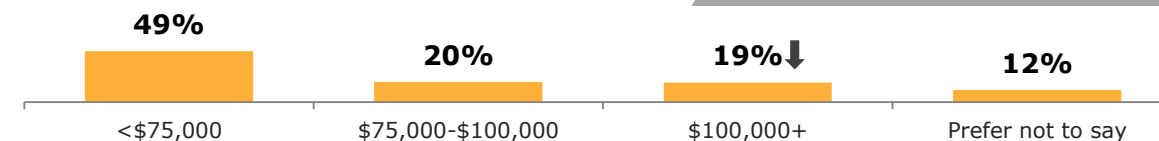
Highest Level of Education



Employment Status



Income



Overview

Eco-Friendly Retirees are long-term customers who spend less on natural gas.

They are less familiar with the RNG Program and aren't sure if they will seek more information. Traditional communications (inserts, print and TV) will likely be needed to drive interest in seeking more information on the website.

Natural Gas at Residence

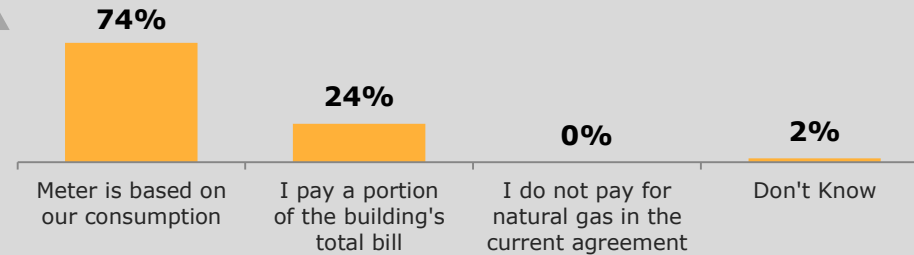
Mean Amount Spent Natural Gas (Residence Monthly)



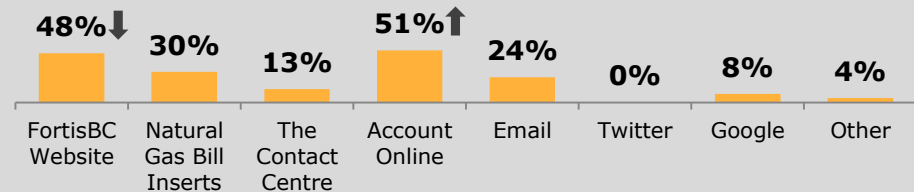
Mean Years as a FortisBC Natural Gas Customer



Portion of Bill Paid for

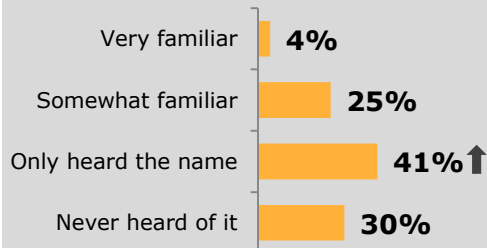


Sources Used to Interact with FortisBC When Looking for Information

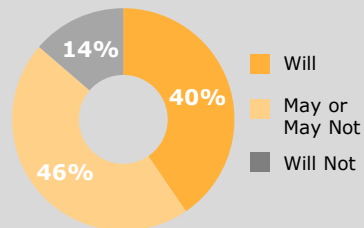


RNG Program

Familiarity with FortisBC's RNG Program



Likelihood to Seek Out More Information about RNG



Top Sources to Learn About FortisBC's RNG Program

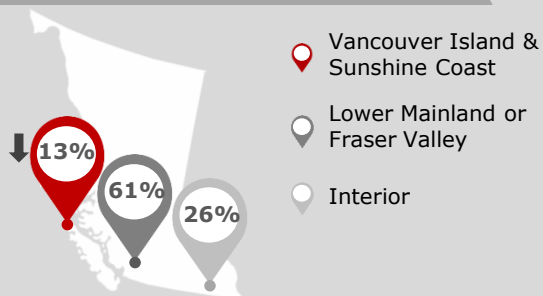


51% n=595

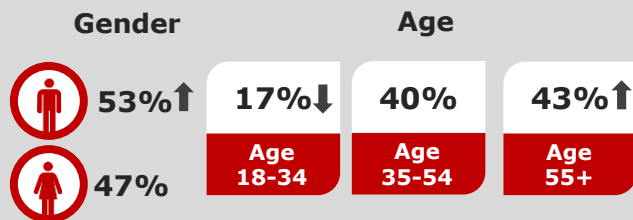
Price Focused Skeptics

Price Focused Skeptics tend to be older, primarily Empty Nesters who reside in the Lower Mainland, Fraser Valley or Interior. Most own a detached home.

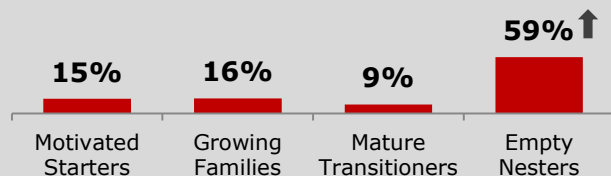
Location



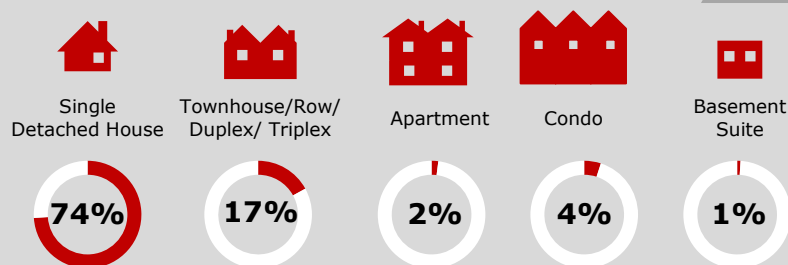
Gender & Age



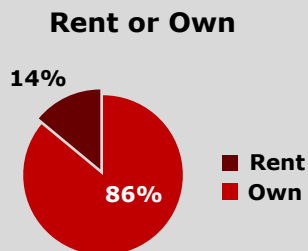
Household Composition



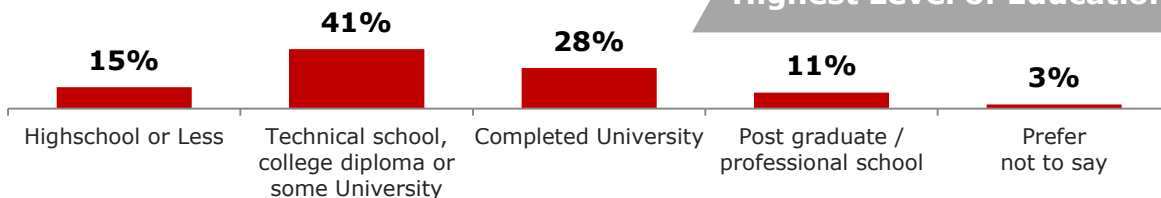
House Type



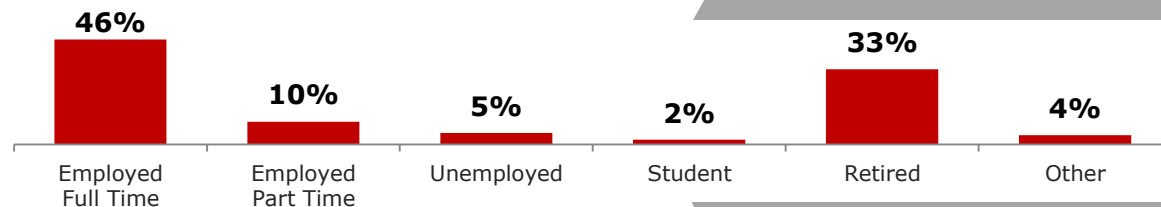
Housing



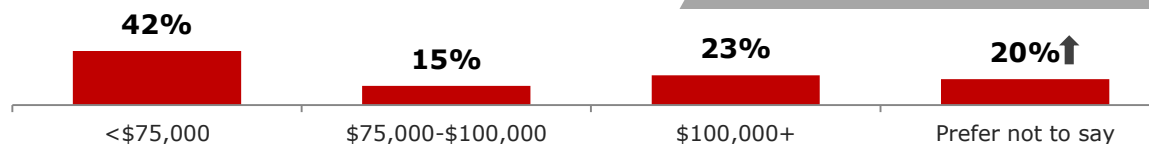
Highest Level of Education



Employment Status



Income



Overview

Price Focused Skeptics have been FortisBC customers for awhile and have an average spend on natural gas.

They are least familiar with the RNG Program and unlikely to seek more information.

Natural Gas at Residence

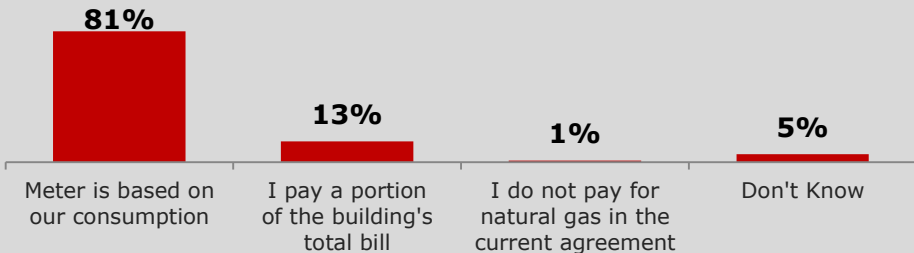
Mean Amount Spent Natural Gas (Residence Monthly)



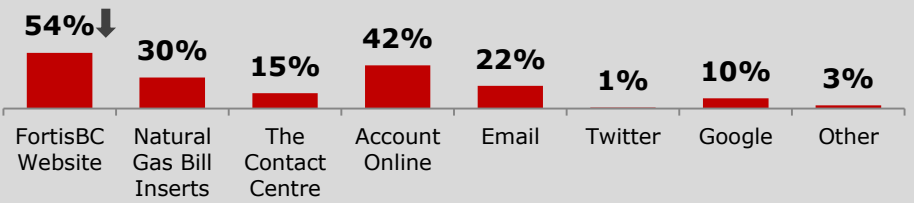
Years as a FortisBC Natural Gas Customer



Portion of Bill Paid for

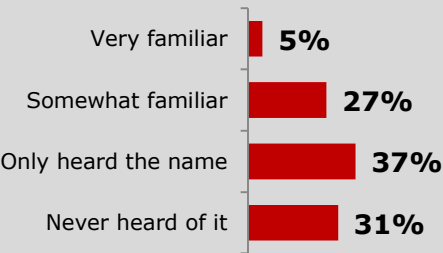


Sources Used to Interact with FortisBC When Looking for Information

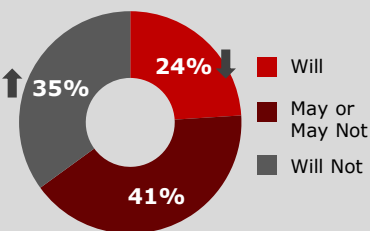


RNG Program

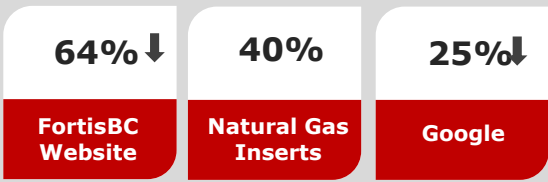
Familiarity with FortisBC's RNG Program



Likelihood to Seek Out More Information about RNG



Top Sources to Learn About FortisBC's RNG Program



Identifying Highest RNG Potential Zones

The background of the slide features a complex, abstract design. It consists of several interlocking gears of various sizes, some rendered in a light blue color and others as white outlines. Overlaid on these gears is a white grid pattern that forms a circular, web-like structure in the lower-left quadrant. The entire design is set against a dark blue gradient background.

Determining RNG Potential Zones

Although base sizes are small, certain directional indicators can be calculated.

Caution must be used when evaluating FSAs due to the very small base sizes. The Green/Red/Grey indicators are a **directional guide only**. Certain zone or regional patterns seem to exist but the reliability is weak as a result of small bases.



CAUTION

FSA	Description of Location	RNG Enthusiasts	Eco-Friendly Millennials	Eco-Friendly Gen Xers	Eco-Friendly Retirees	Price Focused Skeptics	Sum of Respondents in FSA	Members of Target Segments	Target Segment Share	Skeptic Share
V0H	South Okanagan (Summerland)	4	1	2	2	16	25	7	28%	64%
V0E	Central Okanagan and High Country (Revelstoke)	1	1	2	3	14	21	4	19%	67%
V4N	Surrey Northeast	2	4	2	1	11	20	8	40%	55%
V3S	Surrey East	0	2	2	1	14	19	4	21%	74%
V3W	Surrey Upper West	2	4	3	1	8	18	9	50%	44%
V9P	Parksville	2	0	1	10	5	18	3	17%	28%
Grand Total		65	157	175	168	595	1160	397	34%	51%

For each FSA, the total number of respondents from the RNG Potential Survey was determined and that total was divided among the five identified segments.

Target Segment total (RNG Enthusiasts, Eco-Friendly Millennials, Eco-Friendly Gen Xers) was calculated.

The Price Focused Skeptics were tallied and share determined.

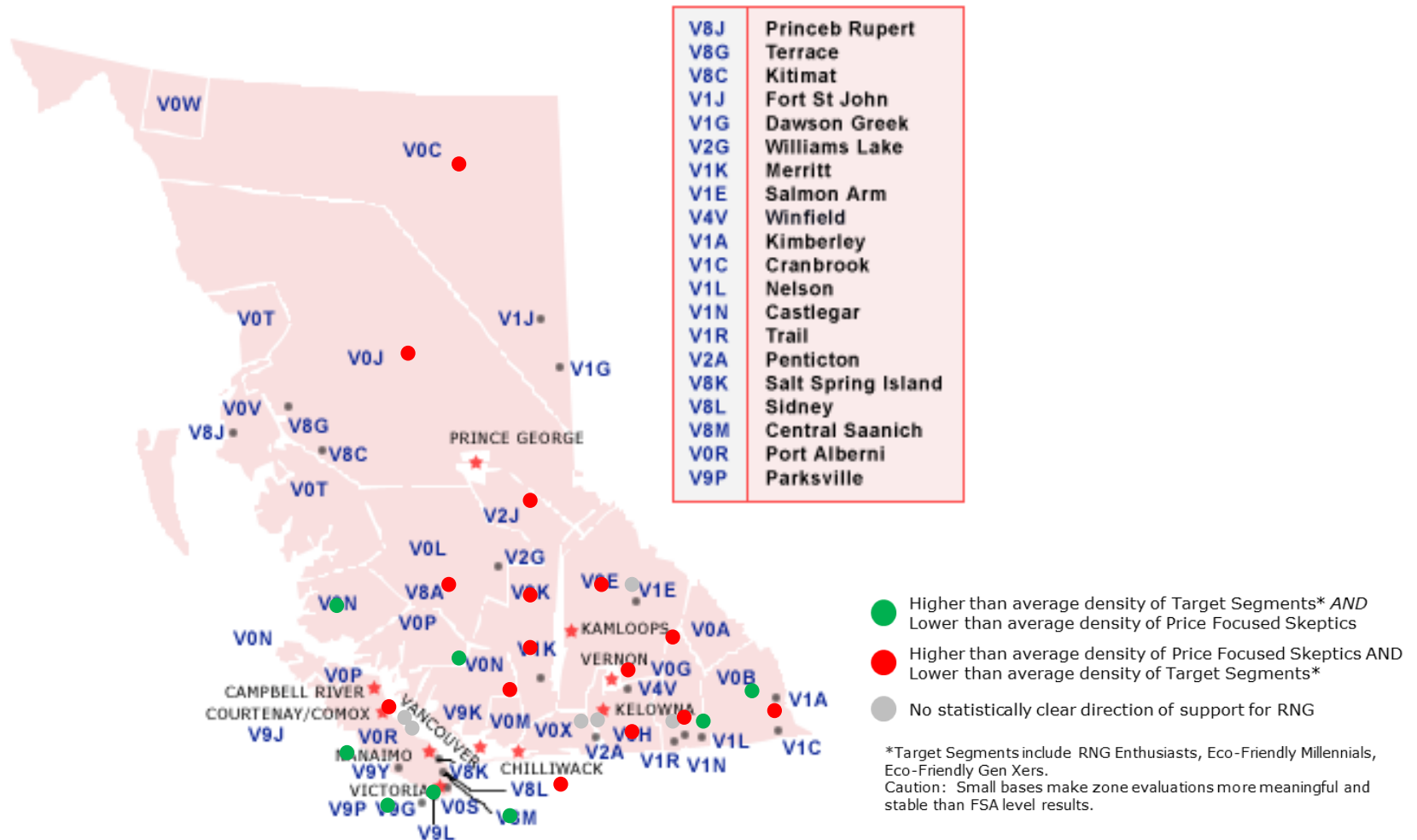
We know that over the entire base of respondents, 34% were members of Target Segments whereas 51% were Price Focused Skeptics. Remainder were tertiary category (Eco-Friendly Retirees). Confidence intervals were built around these averages to apply more strictness to the decision rules that determine a RED or a GREEN value.

- Any FSA with >37% Target could be considered a Better than Average potential target.
- Any FSA with >46% Skepticism could be considered Average or Worse in degree of skepticism

- Where an FSA has only an indicator for HIGH Skeptic share the area is coded **RED**.
- Where an FSA has only an indicator for HIGH Target Segment share the area is coded **GREEN**.
- Where an FSA has only BOTH **OR** NEITHER indicator, the area is coded **GREY**.

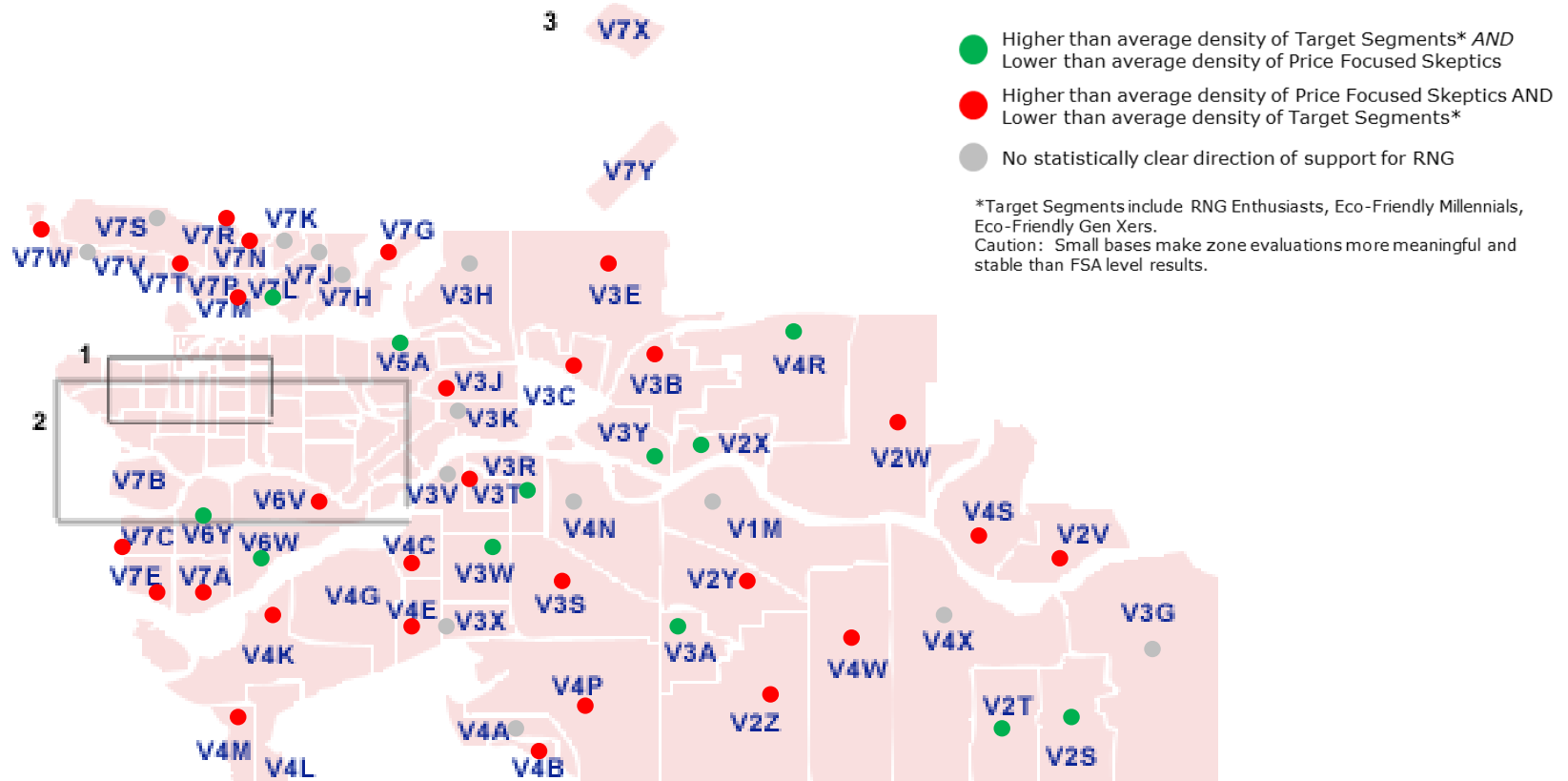
FSA Targeting Potential – BC Overview, Rural and Regional

Most of the interior is over-indexing on Skeptics.



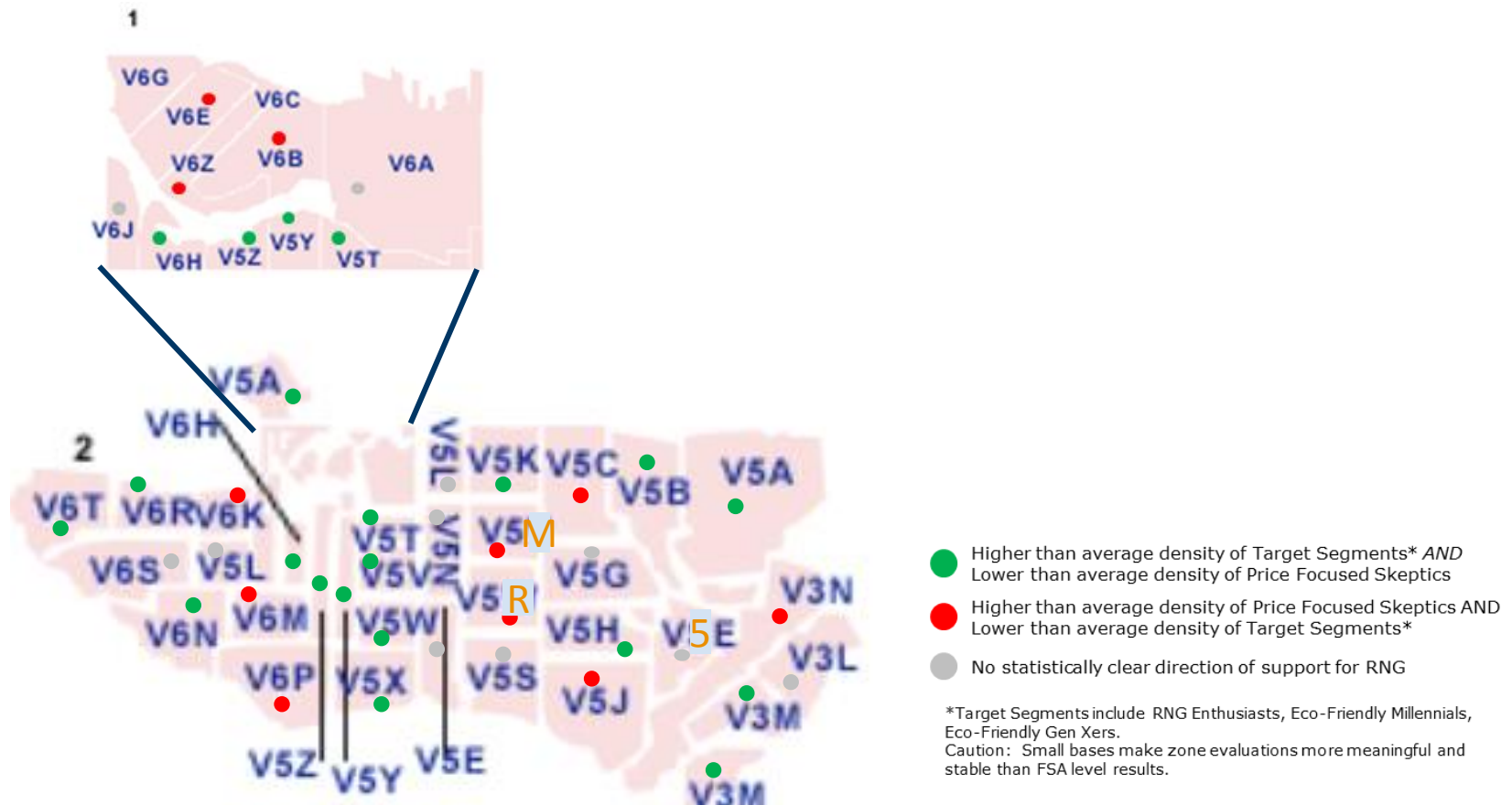
FSA Targeting Potential – Vancouver

Greater Vancouver has potential uptake zones that can provide guidance for marketing focus.



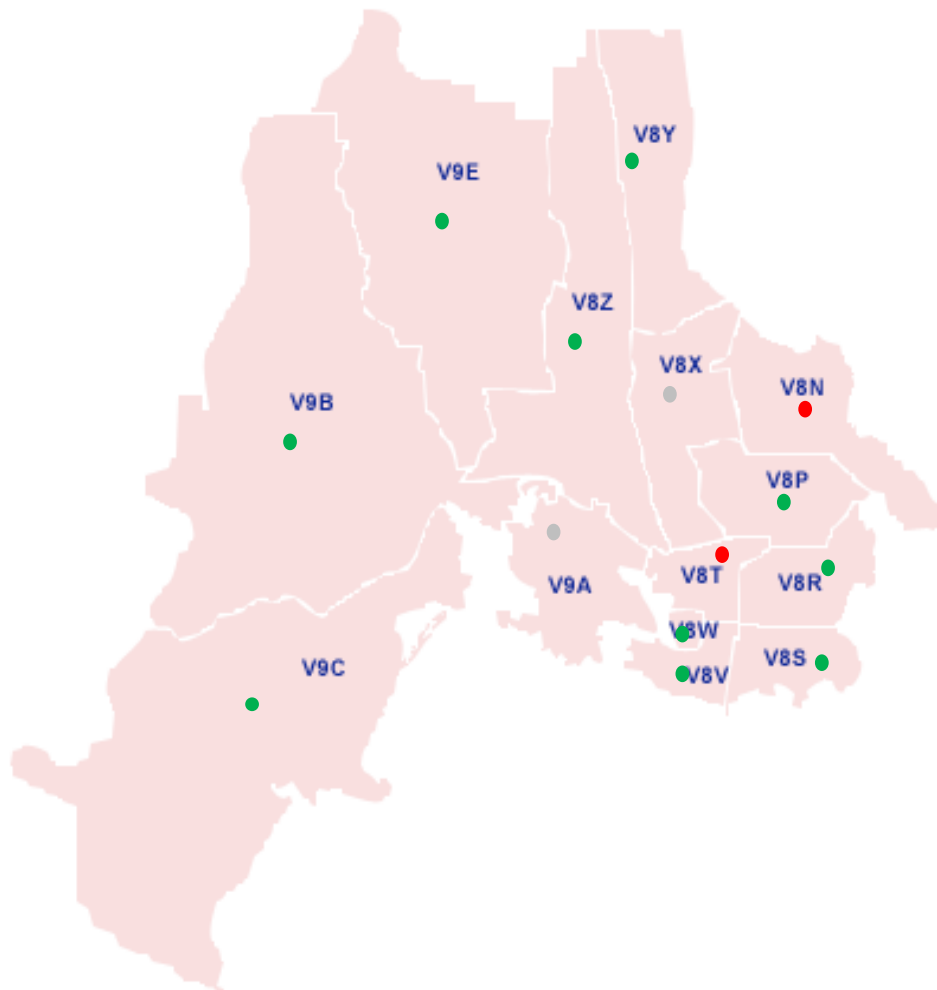
FSA Targeting Potential – Vancouver Downtown (Cut Away)

Downtown has considerable RNG enrollment potential but is not unanimous. Age, education and economics play a role in the segments so we expect a relationship between positivity and high density.



FSA Targeting Potential – Victoria

In general, there is strong support for RNG in Victoria.

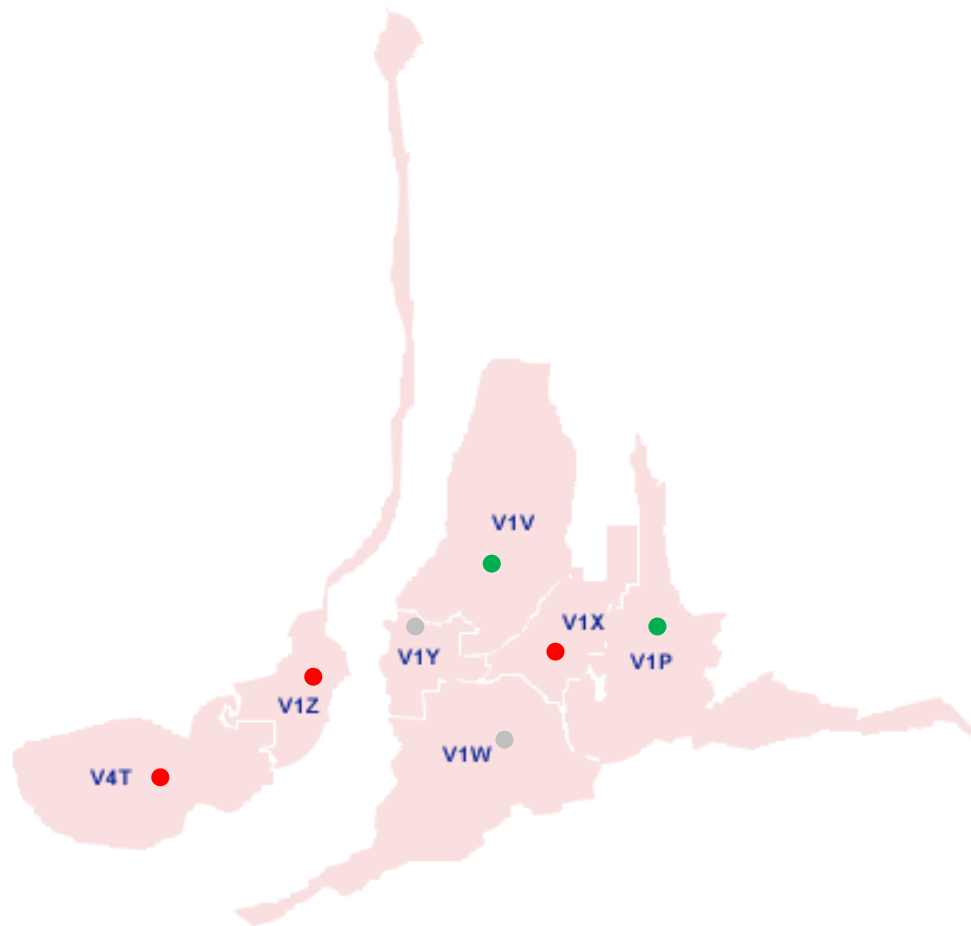


- Higher than average density of Target Segments* AND Lower than average density of Price Focused Skeptics
- Higher than average density of Price Focused Skeptics AND Lower than average density of Target Segments*
- No statistically clear direction of support for RNG

*Target Segments include RNG Enthusiasts, Eco-Friendly Millennials, Eco-Friendly Gen Xers.
Caution: Small bases make zone evaluations more meaningful and stable than FSA level results.

FSA Targeting Potential – Kelowna

Kelowna is a mix of supporters and detractors.

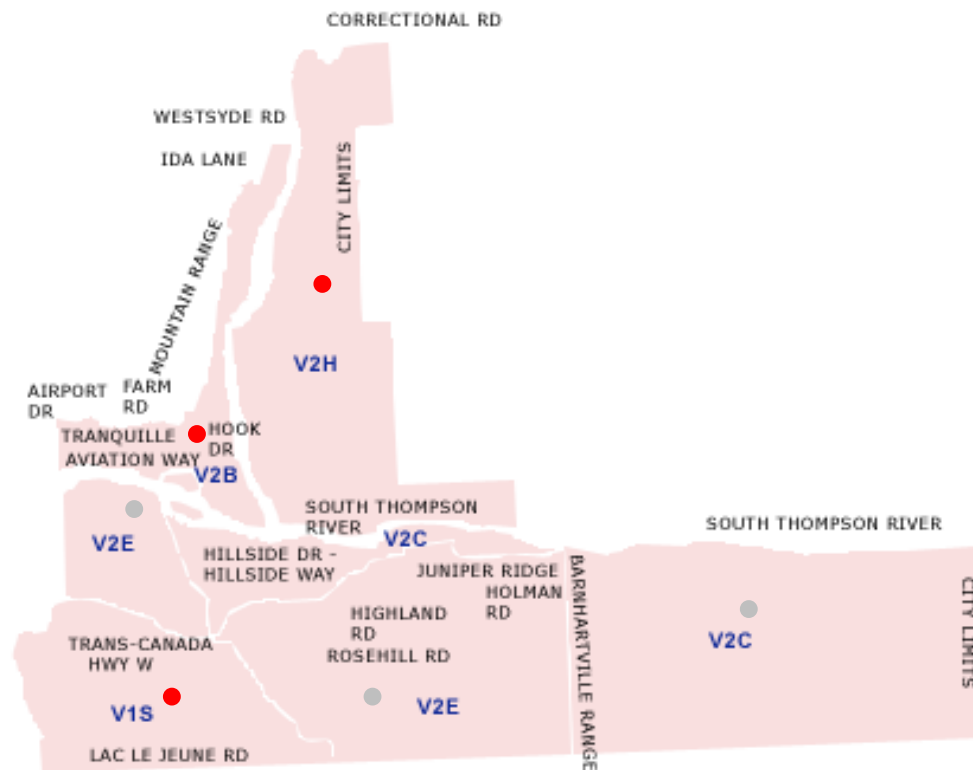


- Higher than average density of Target Segments* AND Lower than average density of Price Focused Skeptics
- Higher than average density of Price Focused Skeptics AND Lower than average density of Target Segments*
- No statistically clear direction of support for RNG

*Target Segments include RNG Enthusiasts, Eco-Friendly Millennials, Eco-Friendly Gen Xers.
Caution: Small bases make zone evaluations more meaningful and stable than FSA level results.

FSA Targeting Potential – Kamloops

Kamloops appears to be opposed or neutral in terms of the potential for RNG enrollment.



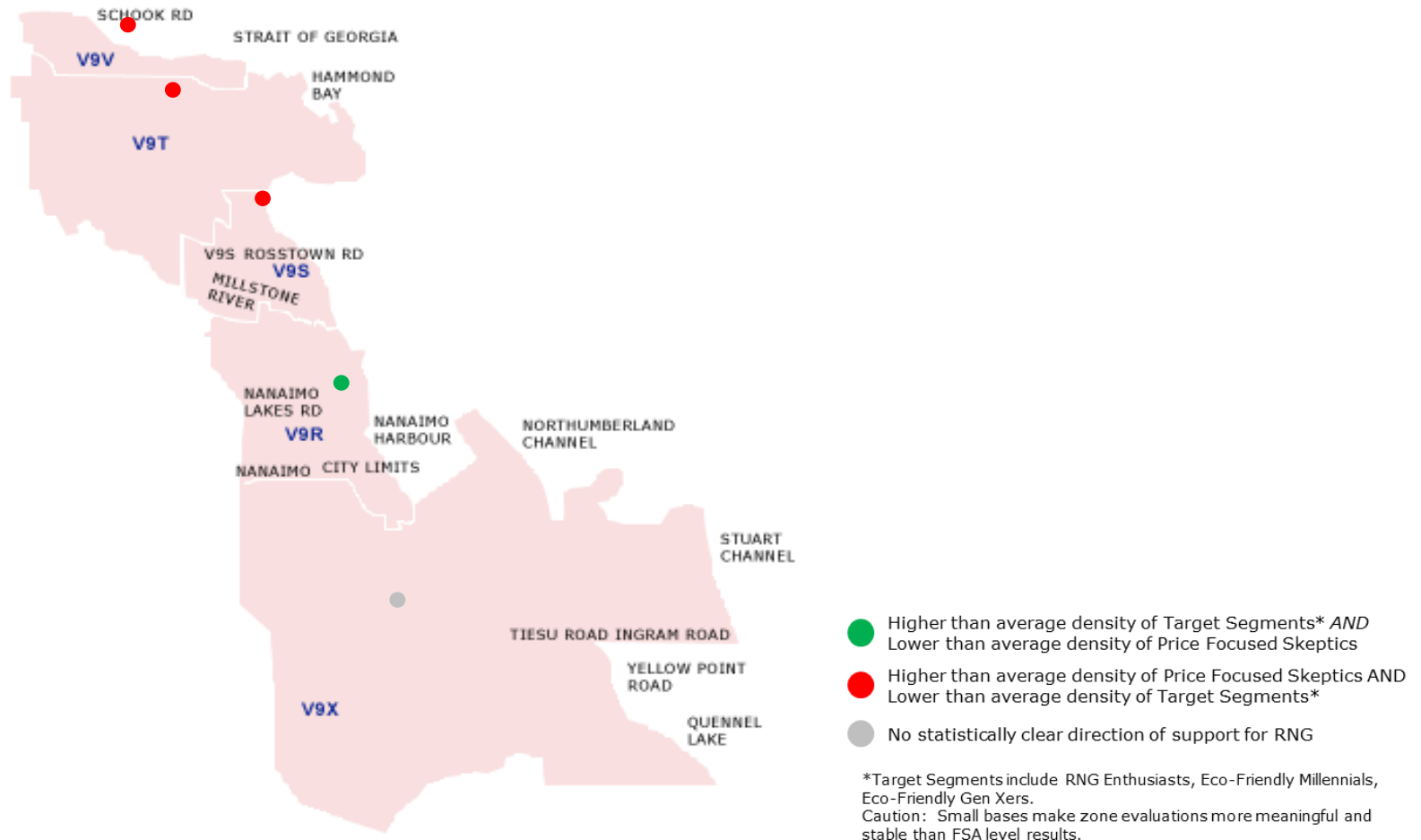
- Higher than average density of Target Segments* AND Lower than average density of Price Focused Skeptics
- Higher than average density of Price Focused Skeptics AND Lower than average density of Target Segments*
- No statistically clear direction of support for RNG

*Target Segments include RNG Enthusiasts, Eco-Friendly Millennials, Eco-Friendly Gen Xers.

Caution: Small bases make zone evaluations more meaningful and stable than FSA level results.

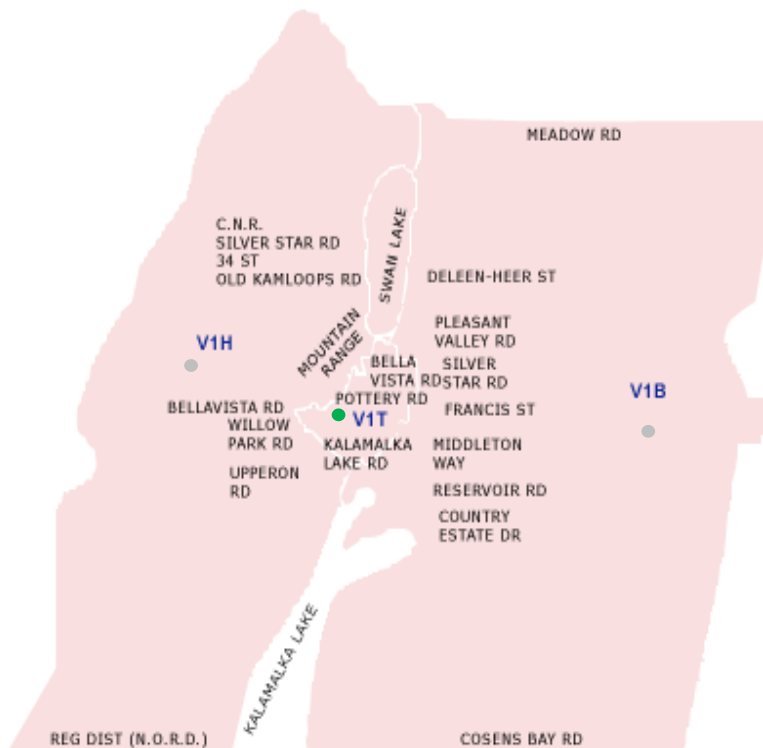
FSA Targeting Potential – Nanaimo

Nanaimo has more non-target FSAs.



FSA Targeting Potential – Vernon

Vernon is unclear with two undetermined FSAs and one Target FSA.



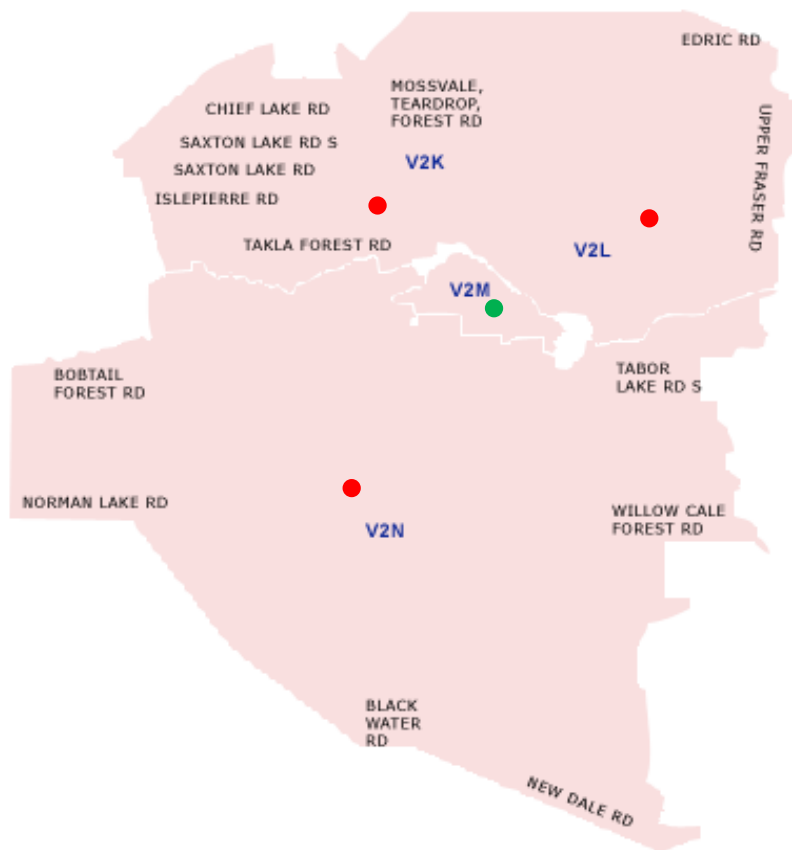
- Higher than average density of Target Segments* AND Lower than average density of Price Focused Skeptics
- Higher than average density of Price Focused Skeptics AND Lower than average density of Target Segments*
- No statistically clear direction of support for RNG

*Target Segments include RNG Enthusiasts, Eco-Friendly Millennials, Eco-Friendly Gen Xers.

Caution: Small bases make zone evaluations more meaningful and stable than FSA level results.

FSA Targeting Potential – Prince George

Prince George has a single Target FSA surrounded by three unlikely FSAs.



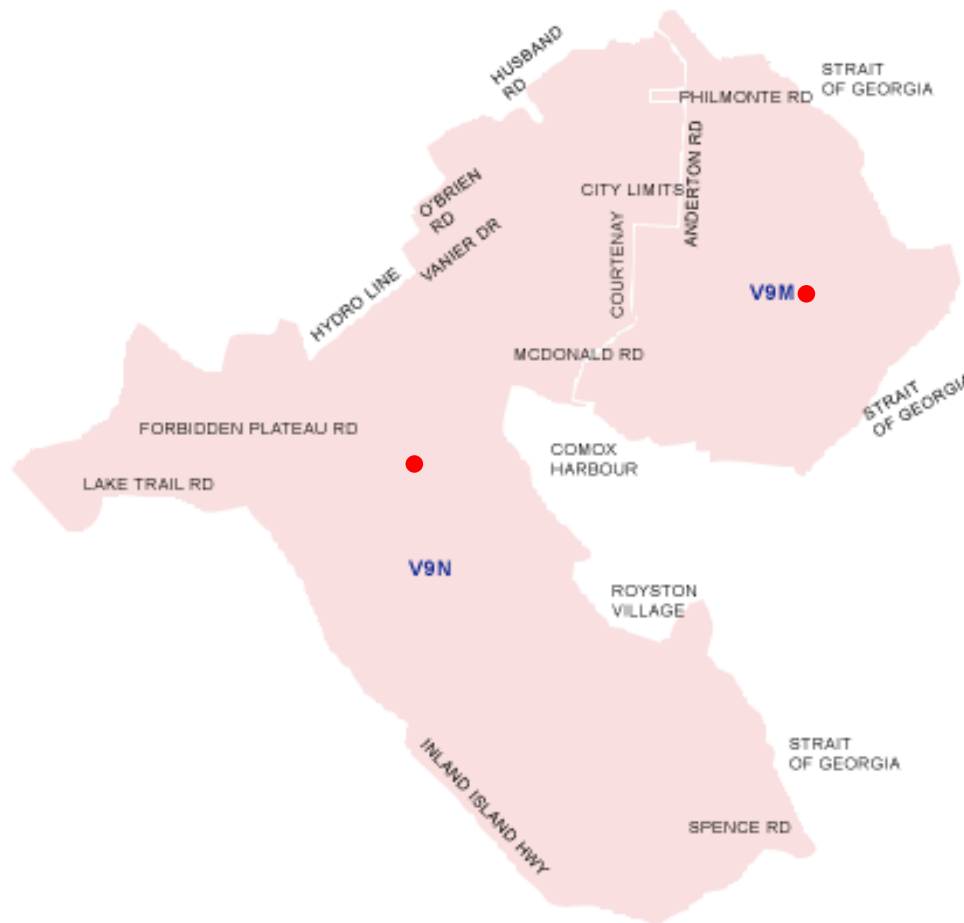
- Higher than average density of Target Segments* AND Lower than average density of Price Focused Skeptics
- Higher than average density of Price Focused Skeptics AND Lower than average density of Target Segments*
- No statistically clear direction of support for RNG

*Target Segments include RNG Enthusiasts, Eco-Friendly Millennials, Eco-Friendly Gen Xers.

Caution: Small bases make zone evaluations more meaningful and stable than FSA level results.

FSA Targeting Potential – Courtenay & Comox

Data indicates poor support for RNG in Courtenay and Comox.



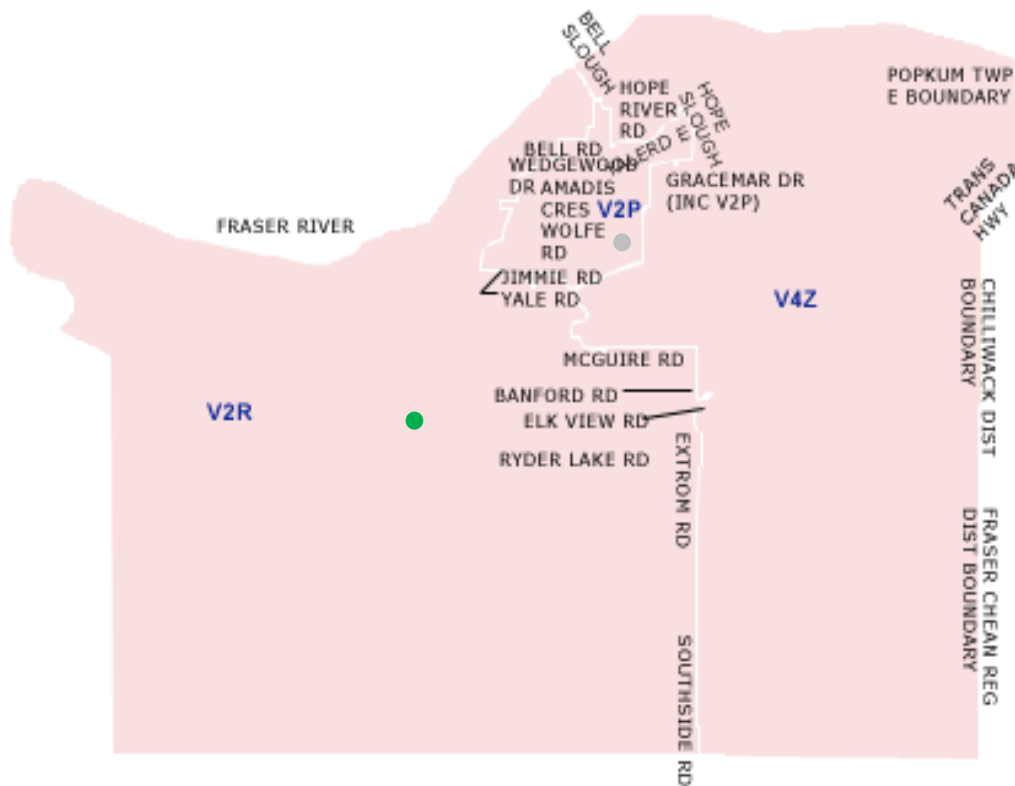
- Higher than average density of Target Segments* AND Lower than average density of Price Focused Skeptics
- Higher than average density of Price Focused Skeptics AND Lower than average density of Target Segments*
- No statistically clear direction of support for RNG

*Target Segments include RNG Enthusiasts, Eco-Friendly Millennials, Eco-Friendly Gen Xers.

Caution: Small bases make zone evaluations more meaningful and stable than FSA level results.

FSA Targeting Potential – Chilliwack

Data in Chilliwack is included only two of three FSAs with a slight positive leaning.



- Higher than average density of Target Segments* AND Lower than average density of Price Focused Skeptics
- Higher than average density of Price Focused Skeptics AND Lower than average density of Target Segments*
- No statistically clear direction of support for RNG

*Target Segments include RNG Enthusiasts, Eco-Friendly Millennials, Eco-Friendly Gen Xers.
Caution: Small bases make zone evaluations more meaningful and stable than FSA level results.

FSA Targeting Potential – Campbell River

Data from Campbell River shows no clear support or detractor in this area.



- Higher than average density of Target Segments* AND Lower than average density of Price Focused Skeptics
- Higher than average density of Price Focused Skeptics AND Lower than average density of Target Segments*
- No statistically clear direction of support for RNG

*Target Segments include RNG Enthusiasts, Eco-Friendly Millennials, Eco-Friendly Gen Xers.

Caution: Small bases make zone evaluations more meaningful and stable than FSA level results.

Appendix

The background of the slide features a complex arrangement of interlocking gears. Some gears are rendered as solid light blue shapes, while others are white outlines. A gear in the top right corner is designed to resemble a sun with many thin rays. The gears are scattered across the slide, with a higher concentration in the lower half.

Determining Profile Groups

Our goal was to find statistically distinct groups that could be targeted to maximize RNG uptake.

1 Assemble Key Variables

Created a list of possible variables to use for determining profile groups.

- C2. Based on this description of renewable natural gas, how would you feel about RNG being used as part of the natural gas supply coming to your residence?
- B5. How likely are you to seek out more information about Renewable Natural Gas?
- D2. How likely are you to enroll in FortisBC's RNG Program to support RNG use?
- D5. Based on your overall impressions, how would you rate FortisBC's RNG Program?
- C4. Based on the information above, and the average natural gas usage for your area, how much more per month would you be willing to pay to offset your greenhouse gas emissions with RNG?

2 Examine Relationships

- Crosstabs for all possible pairs were run and analyzed to compare sample sizes and possible groupings. This also included groups where combinations of three variables were used to determine groupings.
- After discussion among team members, a small set of crosstabs were selected as possible options.

3 Hypothesize Groupings

- Possible profile groups (cut off points) within each crosstab were determined and discussion among team members. These hypotheses were generated based on our preliminary understanding of the data and the overall themes that were observed in the combined dataset.

4 Test and Critique

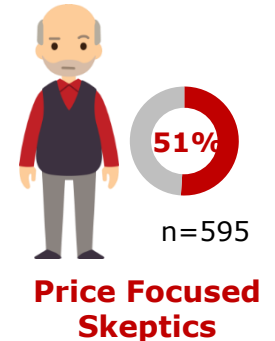
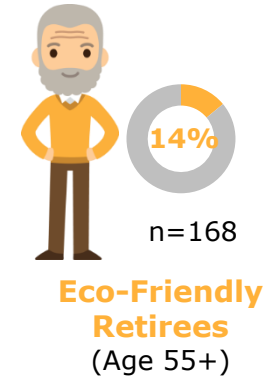
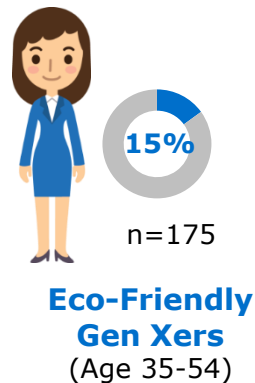
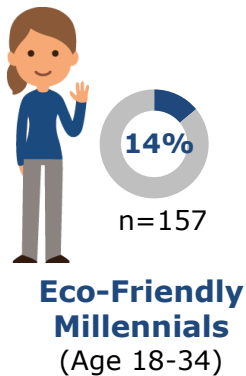
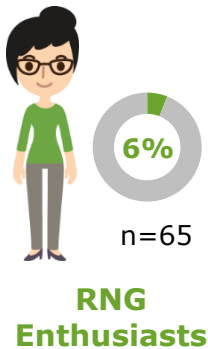
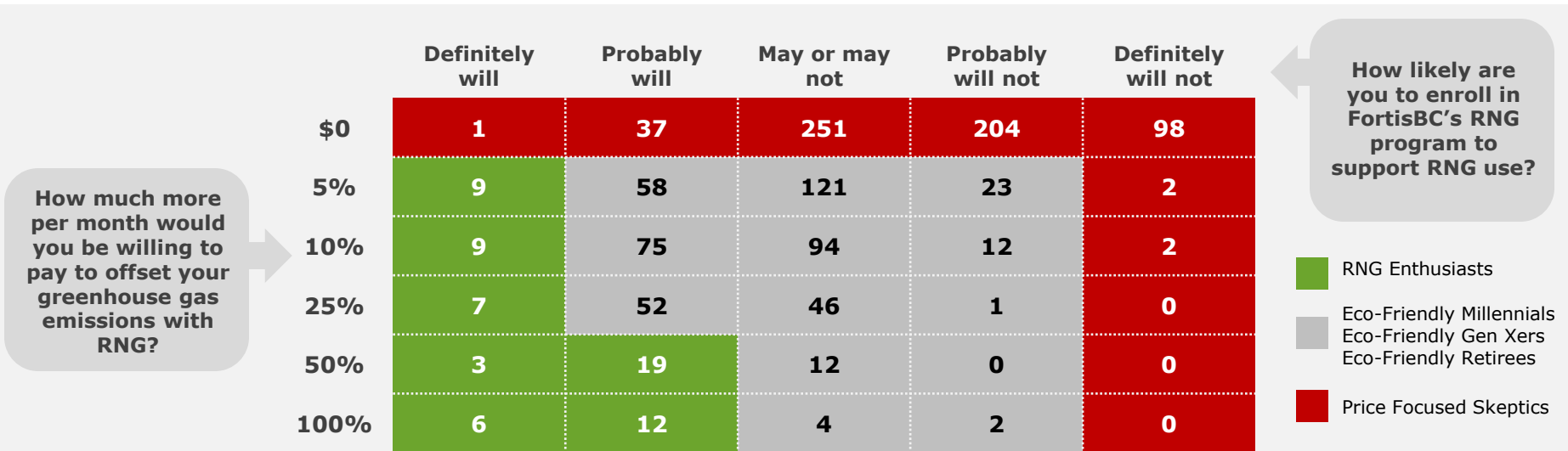
- Tables for the multiple profile groups were run and analyzed to test the hypotheses and visualize the differences that existed between the categories in each scenario.

5 Achieve Consensus

- Profile groups were reviewed, discussed and edited by Illumina staff until consensus was reached on which profile groups to use. Dealing with human responses requires an acceptance that the fit is never perfect. Assessing multiple options gives us confidence that we have arrived at optimal categories.

Technical Segment Definitions

The following illustrates how five segments were identified among current Non-RNG customers based on intent to enroll, willingness to pay and age.



This group who shows some potential for RNG are split by age. These splits show differences in perceptions of RNG, demographics and psychographics.

