

November 23, 2012

British Columbia Public Interest Advocacy Centre  
Suite 209 – 1090 West Pender Street  
Vancouver, BC  
V6E 2N7

Attention: Ms. Leigha Worth, Executive Director

Dear Ms. Worth:

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

**Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR") and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application")**

**Response to the British Columbia Public Interest Advocacy Centre on behalf of the British Columbia Pensioners' and Seniors' Organization *et al* ("BCPSO") Information Request ("IR") No. 2**

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On August 21, 2012, FEI filed the Application as referenced above. In accordance with the Regulatory Timetables set out by Commission Order No. G-154-12 for Phase 3, FEI respectfully submits the attached response to BCPSO IR No. 2.

In addition, Appendix W of the Application has been amended to correct the volume assumption used for Waste Management in the derivation of the delivery rate benefit. The Amended Appendix W has been included as Attachment 4.1 provided in the response to the Commercial Energy Consumers Association of British Columbia ("CEC") IR 2.4.1.

If there are any questions regarding the attached, please contact the undersigned.

Yours very truly,

**FORTISBC ENERGY INC.**

***Original signed by: Shawn Hill***

**For:** Diane Roy

Attachment

cc (e-mail only): Commission Secretary  
Registered Parties



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**1.0 Reference: Exhibit B-1, page 31, Table 7-1**

- 1.1 Please add one column beside the column titled "Incentive Amount Committed" that indicates the respective contribution made by each customer towards the purchase of the heavy duty and return-to-base fleets that was subsidized by the incentive grants.

**Response:**

This response contains commercially sensitive information and is therefore being filed confidentially under separate cover with the Commission and interveners representing customer groups whom have executed an undertaking of confidentiality.

- 1.2 Is it FEI's understanding that the incentive paid by FEI plus the contribution made by each customer completely paid for the vehicle purchases made under FEI's 2010-11 NGV Incentives program?

**Response:**

This response also addresses BCPSO IR 2.1.3.

With the exception of Kelowna School District, it is FEI's understanding that the incentive paid by FEI plus the customer's contribution represent the net price paid for the vehicles (excluding GST/PST/HST). FEI's contribution to City of Surrey, WM and Vedder represents 100% of the incremental cost.

It is FEI's understanding that the Central Okanagan School District No. 23 ("Kelowna School District", or "KSD") received budget approval in 2010 from the Ministry of Education ("MOE") to purchase school buses to replace a portion of their fleet. The MOE allocation also covered a portion of the incremental vehicle cost (\$9,055 per bus, 22%) while FEI's contribution covered the majority (\$33,026 per vehicle, 78%) of the incremental cost (\$42,081 per bus, 100%) between diesel and CNG. KSD's decision to move forward with their purchase of CNG buses was dependent upon FEI's funding contribution. KSD has informed FEI they would have purchased diesel buses to replace their fleet had the incentive not been provided.

FEI's contribution agreements with its four CNG/LNG customers contain terms and conditions which limit the customer's ability to receive incentive funding above 100% of the incremental price differential. For example, KSD's contribution agreement contains the following:



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### *"3 Stacking of Contribution"*

*3.1 The School District may solicit and accept capital funding towards the purchase cost of the Buses from the Ministry of Education, British Columbia ("Ministry Funding"), provided the School District immediately notifies FortisBC of the amount of Ministry Funding received. The School District acknowledges and agrees that it shall accept such capital funding only to the extent that the combined total of the Ministry Funding and the NGV Contribution (the "Total Funding") does not exceed 100% of the purchase cost of the Buses, including delivery (the Purchase Price"). The parties agree that for the purposes of this section, Ministry Funding does not include operating funding received from the Ministry of Education, British Columbia, for the purposes of operation and maintenance of the Buses."*

Therefore if customers receive funding from third-party sources, the customer must inform FEI and FEI will reduce its incentive contribution by the amount funded by third party. This ensures customers will not receive funding in excess of the incremental price differential.

- 1.3 To FEI's knowledge, were any of the recipients of FEI's incentive payments also the recipients of other grants, subsidies, tax breaks, etc., that would assist in the purchase of heavy duty and return-to-base fleets? If so, please provide details.

#### **Response:**

Please refer to the response to BCPSO IR 2.1.2.

- 1.4 Does FEI agree that a necessary requirement for finding that expenditures made were prudent is that in each case, the monies expended represented the minimum amount required to elicit the customer's decision to purchase NGVs? If not, please explain fully.

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**Response:**

FEI does not agree that the prudence test imposes the approach described in this question as a "necessary requirement". For a discussion of the prudence test, and the factors to be considered in a prudence inquiry, see FEI's response to BCSEA 2.22.1 and BCUC 2.4.4.

Furthermore, FEI does not agree with the suggested approach for the following reasons:

1. It is impossible to know with any certainty the exact amount of incentive that would motivate a customer to acquire a natural gas vehicle versus a conventionally fuelled vehicle. For example, each customer's situation is different with respect to fuel consumption and resulting savings. In addition, each customer faces somewhat different challenges regarding adoption including training costs, maintenance costs, maintenance facility upgrades, etc. Perhaps most importantly, each customer may have a different view with respect to how risky the decision is to acquire NGVs. This involves things such as views on differential commodity price risk (diesel versus natural gas) and with respect to LNG the security of continued fuel supply as FEI's LNG supply tariff is a pilot offering that expires in 2014. Soliciting customer input to determine the minimum amount required to incent the change would likely not be successful because customers would have an incentive to request more than might be needed.
2. Even if it were possible to determine the exact amount that would tip the customer towards purchasing NGVs there would be issues of fairness to consider. For example consider two carriers who are considering acquiring NGVs. Each faces the same incremental capital cost to acquire a vehicle, but they have different views regarding the future fuel price spread. One may be willing to purchase with a \$40,000 incentive while the other may need \$50,000. FEI believes that it would not be fair to award one a larger incentive than the other.
3. The approach suggested in the question is also inconsistent with utility practice regarding other incentive programs. FEI, for example, does not evaluate each specific customer who is interested in a high efficiency furnace to determine the exact incentive amount that would motivate them to make the purchase.
4. As described in section 7.7 of the Application, the incentive awards at issue were for 100% of the vehicle price differentials between a natural gas vehicle and the comparable diesel or gasoline-fuelled vehicle<sup>1</sup>. The amount of the incentive was reasonable in the context of the

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<sup>1</sup> The 4 initial incentives were established at the 100% level. The Kelowna School District's award was subsequently reduced as they were able to obtain a small amount of funding from other sources and FEI's program contains protection against stacking of funding to achieve greater than 100% funding. The City of Surrey was awarded 100% but failed to follow through on the requirements to receive the second payment of the award.



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TRC calculations that were performed with all awards generating projected TRC results ranging from 1.1 to 1.7. In practice the TRC results using actual fuel consumption values ranged from 1.3 to 2.1. FEI decided to set the initial grant level at 100% of the differential because it was reasonable in light of the TRC test and because FEI believed that a grant at this level was required to stimulate the first projects. The question appears to be directed at the issue of managing the concern about free riders, which is a potential issue with respect to all utility incentive programs. FEI has taken a prudent approach in this regard by setting up the program to have a declining percentage amount of funding available in each year. FEI started at 100% of the cost premium for the first incentives as there was no market in BC for heavy duty NGVs prior to FEI's incentive program and because the perceived risk for the first adopters is very high. It is not possible to determine whether customers would have taken up the program at 80% or 90% but it is possible to ramp down incentives as experience is gained and demand for the program can be determined by the number of applications received.

- 1.5 Can FEI demonstrate that in each case (of the four) that is the subject of phase 3 of this proceeding, it ensured that it spent the minimum amount in incentive payments that were required for each customer's participation in the NGV program? If so, please present all relevant evidence in support.

**Response:**

Please refer to the response to BCPSO IR 2.1.4.

- 1.6 Has FEI received any feedback from any of the four customers in respect of any aspect of the 2010-11 incentives program, other than the information contained in the response to CEC IR 1.11.4? If so, please provide details.

**Response:**

Feedback from the recipients of the initial four grants indicates that the vehicles are operating as expected and that the fuel saving benefits and GHG reductions are in fact being realized. This has been confirmed through FEI's records of actual fuel consumption.



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For both the WM and Vedder projects the customers have indicated that they are using the vehicles more than projected. Projected use was based on average fleet utilization. Actual use is higher as these vehicles are the lowest operating cost vehicles in the customers' fleet.

Overall feedback from the customers indicates that they are satisfied with the decision to adopt NGVs and these customers are now available as "reference accounts" to help others become comfortable with the decision to adopt NGVs in their fleets. The existence of such satisfied customers has allowed FEI to reduce the percentage funding for the next round of the grant program. (Provisional grants have been reduced to 75% of the premium cost of the NGV.) This validates that the grant program is working as designed. A small number of early adopters have demonstrated a successful path that is now being followed by others at a reduced level of funding. This approach is a prudent means of achieving a high level of adoption while managing overall program area spending.



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**2.0 Reference: Exhibit B-1, Section 7.3.1, page 32, City of Surrey**

- 2.1 Can FEI confirm that the vehicle Surrey purchased with the assistance of FEI's incentive fund provision did not enter regular service within the 2010-11 timeframe?

**Response:**

Not confirmed. The vehicle entered regular service during 2011. Fifty (50) percent of the grant was provided to City of Surrey in September 2010 upon receipt of confirming evidence that the vehicle had been purchased.

The CNG garbage truck was operated by Emterra servicing 2,000 homes in a pilot organics recycling operation. Fuel for the truck was provided at City of Surrey's works yard using an existing CNG fueling station.

The timing of the vehicle entering into service was consistent with the program design. There can be a significant gap between a vehicle being ordered and it entering service as the supply chain timing for delivery of natural gas vehicles is longer than for conventional vehicles.

- 2.2 Does FEI have any knowledge as to what Surrey did with the residential garbage truck it purchased with the aid of a 50% incentive grant from FEI in 2011 – other than put it into regular service – after Surrey issued the RFP in June 2011 that mandated the use of CNG vehicles for waste haulage service?

**Response:**

The truck that was purchased by City of Surrey was initially provided to Emterra who used it to service a pilot program regarding recycling and organics collection. Emterra's service contract with City of Surrey concluded at the end of September 2012. The truck has subsequently been used by City of Surrey in its overall refuse and recycling programs. The vehicle is still in service consuming gas provided off the FEI distribution system and is still generating incremental delivery rate margin to the benefit of all non-bypass customers.



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- 2.3 To the extent that the responses to the preceding questions 2.1 and 2.2 have not illuminated our understanding, does FEI have any idea as to why Surrey did not apply for the other 50% of incentive funding offered by FEI?

**Response:**

FEI does not know why the City of Surrey did not pursue collection of the 50 percent balance.





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**3.0 Reference: Exhibit B-1, Section 7.3.5, page 34 and Appendix W, Schedule 1, Incentive Funding Benefits**

- 3.1 Notes 1 and 2 of the referenced schedule in Appendix W indicates that lines 6 and 13 of the schedule do not include the impacts of the 2010-2011 NGV Incentives. Unless FEI can confirm that the impacts of the 2010-2011 NGV incentives are fully reflected elsewhere on this schedule, please provide a revised Schedule 1 that includes the impacts of the 2010-2011 NGV incentives.

**Response:**

The impacts of the 2010-2011 NGV incentives are fully included in lines 9, 10, 11 and 13 of Schedule 1 of Appendix W as filed<sup>2</sup>. The phrase 'does not include any impact of 2010-2011 NGV incentives' refers to FEI delivery margin only on line 6.

- 3.2 Please provide an explanation as to how the amounts on line 10 of Schedule 1 are determined.

**Response:**

Line 10 of Schedule 1 (Annual Incentive Funding COS) is based on the \$5.6 million of incentives placed in a deferral account. The treatment of the deferral account is discussed in Section 5.2.2 of the application. The components of the cost of service consist of amortization of deferral account, income tax expense and earned return. A cost of service Schedule 3 based on the amended Appendix W (Attachment 4.1, CEC IR 2.4.1) is found below that shows the calculation of the amounts on Line 10 of Schedule 1<sup>3</sup>.

<sup>2</sup> Also in the amended Appendix W (see Attachment 4.1, CEC IR 2.4.1)

<sup>3</sup> Note that Line 10 of Schedule 1 dealing with the cost of service of the vehicle incentives is unchanged from the original in the amended Appendix W so the detailed schedules provided agree with the original Appendix W also.





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**Appendix W (Amended) : Forecast Results of 2010 - 2011 NGV Incentives**

**Schedule 3, Part B: Cost of Service (2011-2021)**

**City of Surrey, Kelowna School District, Waste Management, Vedder Transport**

**\$000's, Unless Otherwise Stated**

**Appendix W (Amended) : Forecast Results of 2010 - 2011 NGV Incentives**

**Schedule 3, Part B: Cost of Service (2011-2021)**

	Reference	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
25	Rate Base Deferral Account Calculation											
26	Amortization Period (Years)	10										
27	Add NRBDA				4,435							
28	Annual Amortization of NRBDA				443							
29	Opening Deferral Account Balance				4,435	3,991	3,548	3,104	2,661	2,217	1,774	1,330
30	Amortization: NRBDA				(443)	(443)	(443)	(443)	(443)	(443)	(443)	(443)
31	Closing Deferral Account Balance				3,991	3,548	3,104	2,661	2,217	1,774	1,330	887
32	Total Amortization				(443)	(443)	(443)	(443)	(443)	(443)	(443)	(443)
33	Mid Year Rate Base				(Line 29 + Line 31)/2	4,213	3,769	3,326	2,882	2,439	1,996	1,552
34	Income Tax Expense											
35	Equity Earned Return		-	-	-	160	143	126	110	93	76	59
36	Add: Amortization Expense		-	-	-	443	443	443	443	443	443	443
37	Taxable Income After Tax		-	-	-	604	587	570	553	536	519	502
38	Taxable Income		-	-	-	805	782	760	737	715	692	670
39	Income Tax Expense		-	-	-	201	196	190	184	179	173	167
40	Earned Return											
41	Total Rate Base				Line 33	4,213	3,769	3,326	2,882	2,439	1,996	1,552
42	ROE Rate %				Line 3	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%
43	Equity Ratio %				Line 7	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%
44	Equity Return				Line 41 x Line 42 x Line 43	160	143	126	110	93	76	59
45	Total Rate Base				Line 33	4,213	3,769	3,326	2,882	2,439	1,996	1,552
46	Short Term Debt Rate %				Line 4	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
47	Short Term Debt Ratio %				Line 8	3.03%	3.03%	3.03%	3.03%	3.03%	3.03%	3.03%
48	Short Term Debt Component				Line 45 x Line 46 x Line 47	4	4	4	3	3	2	2



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**Appendix W (Amended) : Forecast Results of 2010 - 2011 NGV Incentives**

**Schedule 3, Part C: Cost of Service (2011-2021)**

**City of Surrey, Kelowna School District, Waste Management, Vedder Transport**

**\$000's, Unless Otherwise Stated**

**Appendix W (Amended) : Forecast Results of 2010 - 2011 NGV Incentives**

**Schedule 3, Part C: Cost of Service (2011-2021)**

	Reference	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
49	Total Rate Base	Line 33			4,213	3,769	3,326	2,882	2,439	1,996	1,552	1,109
50	Long Term Debt Rate %	Line 5			6.87%	6.87%	6.87%	6.87%	6.87%	6.87%	6.87%	6.87%
51	Long Term Debt Ratio %	Line 9			56.97%	56.97%	56.97%	56.97%	56.97%	56.97%	56.97%	56.97%
52	Long Term Debt Component	Line 49 x Line 50 x Line 51			165	148	130	113	95	78	61	43
53	Total Debt Component	Line 48 + Line 52			169	152	134	116	98	80	62	45
54	Total Earned Return	Line 44 + Line 53			329	295	260	225	191	156	121	87
55	Annual Cost of Service Impact of NGT Incentive Program											
56	Amortization Expense	- Line 32	-	-	-	443	443	443	443	443	443	443
57	Income Tax Expense	Line 39	-	-	-	201	196	190	184	179	173	162
58	Earned Return	Line 54	-	-	-	329	295	260	225	191	156	87
59	Total Cost of Service	Sum of Lines 56 to 58	-	-	-	974	934	893	853	813	773	692

60 Note:

61

62 2: Non rate base deferral account is transferred to the rate base deferral account at the start of 2014

63 3: Non rate base deferral account transferred to rate base deferral account in 2014 and amortized over 10 years starting in 2014

64 4: AFUDC calculated on prior incentives added to non rate base deferral account from the date (forecasted Oct 2012) of the first vehicle and marine incentive payment to end of 2013

65 5: Line 3 x Line 7 + Line 4 x Line 8 + Line 5 x Line 9

66 6: Line 3 x Line 7 + (Line 4 x Line 8 + Line 5 x Line 9) x (1 - Line 13)

67

68 8: 2014 Opening rate base deferral account equals 2013 closing non rate base deferral account of \$4.435 Million, 2015 onwards previous year Line 31

69

70 10: Prior incentive spending in 2011 includes 2010 amounts, totals \$5.573 million

71 11: AFUDC calculated on incentives added to the non rate base deferral account from Aug 2012 to the end of 2013







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**Appendix W (Amended) : Forecast Results of 2010 - 2011 NGV Incentives**

**Schedule 3, Part C: Cost of Service (continued 2022-2030)**

**City of Surrey, Kelowna School District, Waste Management, Vedder Transport**

**\$000's, Unless Otherwise Stated**

**Appendix W (Amended) : Forecast Results of 2010 - 2011 NGV Incentives**

**Schedule 3, Part C: Cost of Service (continued 2022-2030)**

	Reference	2022	2023	2024	2025	2026	2027	2028	2029	2030
49	Total Rate Base	Line 33	665	222	(0)	(0)	(0)	(0)	(0)	(0)
50	Long Term Debt Rate %	Line 5	6.87%	6.87%	6.87%	6.87%	6.87%	6.87%	6.87%	6.87%
51	Long Term Debt Ratio %	Line 9	56.97%	56.97%	56.97%	56.97%	56.97%	56.97%	56.97%	56.97%
52	Long Term Debt Component	Line 49 x Line 50 x Line 51	26	9	(0)	(0)	(0)	(0)	(0)	(0)
53	Total Debt Component	Line 48 + Line 52	27	9	(0)	(0)	(0)	(0)	(0)	(0)
54	Total Earned Return	Line 44 + Line 53	52	17	(0)	(0)	(0)	(0)	(0)	(0)
55	Annual Cost of Service Impact of NGT Incentive Program									
56	Amortization Expense	- Line 32	443	443	-	-	-	-	-	-
57	Income Tax Expense	Line 39	156	151	(0)	(0)	(0)	(0)	(0)	(0)
58	Earned Return	Line 54	52	17	(0)	(0)	(0)	(0)	(0)	(0)
59	Total Cost of Service	Sum of Lines 56 to 58	652	611	(0)	(0)	(0)	(0)	(0)	(0)

60 Note:

61

62 2: Non rate base deferral account is transferred to the rate base deferral account at the start of 2014

63 3: Non rate base deferral account transferred to rate base deferral account in 2014 and amortized over 10 years starting in 2014

64 4: AFUDC calculated on prior incentives added to non rate base deferral account from the date (forecasted Oct 2012) of the first vehicle and marine incentive payment to end of 2013

65 5: Line 3 x Line 7 + Line 4 x Line 8 + Line 5 x Line 9

66 6: Line 3 x Line 7 + (Line 4 x Line 8 + Line 5 x Line 9) x (1 - Line 13)

67

68 8: 2014 Opening rate base deferral account equals 2013 closing non rate base deferral account of \$4.435 Million, 2015 onwards previous year Line 31

69

70 10: Prior incentive spending in 2011 includes 2010 amounts, totals \$5.573 million

71 11: AFUDC calculated on incentives added to the non rate base deferral account from Aug 2012 to the end of 2013

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- 3.3 Footnote 38 at the bottom of page 34 states that the calculations in Appendix W assume that the vehicles awarded the \$5.6M are replaced at the end of vehicle life without the need for further incentives. Please discuss how the calculated PV delivery rate benefit by 2030 of \$1.2M for FEI's non-bypass customers would be impacted if (i) none of the four customers replaced the subject vehicles at the end of vehicle life, or (ii) if all customers except Vedder replaced the subject vehicles at the end of vehicle life.

**Response:**

If none of the customers replaced their vehicles at the end of their useful lives, the calculated NPV of the net COS benefit drops to -\$2.7 million. This means that in present value terms, FEI's customers will have recovered \$2.9 million (through delivery margin) of the \$5.6 million given as incentives. If all customers except Vedder replaced their vehicles at the end of their useful lives, the calculated NPV of the net COS benefit drops to -\$2.5 million. This means that in present value terms, FEI's customers will have recovered \$3.1 million (through delivery margin) of the \$5.6 million given as incentives.

FEI believes that these are worst case scenarios and unlikely to occur. It is reasonable to expect the vehicles will be renewed as the customers gain experience using natural gas, including benefiting from the fuel cost savings, and that they will still have access to a usable fueling station for 20 years.

Furthermore, these customers have chosen FEI to provide fueling station service to fuel their fleets. Station agreements range from 7 to 15 years with renewal or buyout options extending to 20 years total (in all cases). Since each fleet has a 'take-or-pay' volume commitment it means fleets are motivated to meet minimum consumption levels, thereby securing delivery margin benefits for FEI's natural gas ratepayers until 2030.

In addition, as the use of natural gas vehicles becomes more prevalent in the market place, customers will need to continue using natural gas to maintain their competitiveness with other natural gas-fuelled fleets. The expanded availability of fueling infrastructure that occurs with market growth will also reduce one of the perceived barriers to adoption or the continued use of natural gas.

- 3.4 Can FEI confirm that if any one of the four subject NGV customers declines to replace its NGV Incentives-funded vehicles at the end of their service lives, then





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non-bypass gas customers will be worse off than they would have been had the customer received zero incentive payments from FEI?

**Response:**

If any of the customers decides not to replace its NGV Incentive-funded vehicles at the end of their service lives, non-bypass customers will be worse off with respect to that particular customer.

However, the overall program for these four customers still maintains a positive net benefit over 2012-30 time frame, provided that the LNG customer, Vedder Transport, replaces its NGV incentive-funded vehicles at the end of their service lives. These results are depicted in the following table, where the calculated Net COS Benefit for each particular case assumes that only that particular customer does not replace its vehicles, but that all of the other three customers do:

<b>1 of 4 NGV Customers does not replace vehicles at the end of their service lives.</b>	<b>NPV of Net COS Benefit / (Cost) (All Four Customers)<sup>4</sup> (\$000)</b>
City of Surrey	\$1,040
Kelowna School District	\$1,028
Waste Management	\$889
Vedder Transport	- \$2,477

The positive NPV results for the first three cases of one of four customers not replacing their natural gas vehicles means that the incremental throughput from the four customers recovers the full \$5.6 million of 2010-2011 grants provided plus an additional \$0.9 to \$1.0 million. As stated in BCPSO IR 2.3.3 in the fourth case, where Vedder does not replace its LNG vehicles, the incremental throughput would still recover \$3.1 million or 55% of the \$5.6 million of incentives granted.

3.5 Please provide a version of Schedule 1 – one for each of the four subject customers – that shows the benefits provided by each NGV customer to non-

<sup>4</sup> These NPV results should be compared with the revised Appendix W (refer to Attachment 4.1 to the response to CEC IR 2.4.1) NPV benefit result of \$1,074,000.



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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bypass gas ratepayers. Please include the impacts of the 2010-2011 NGV incentives on each schedule. Also, please include with each schedule the assumed vehicle life.

**Response:**

A version of Schedule 1 has been provided below for each of City of Surrey, Kelowna School District, Waste Management and Vedder Transport. The Waste Management results are based on the volumes used in the revised Appendix W provided in Attachment 4.1 to the response to CEC IR 2.4.1.



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives**

**Potential Rate Impact to Existing FEI Natural Gas Customers**

**Schedule 1: Summary of Costs and Benefits (2012 - 2021)**

**City of Surrey**

*\$000's, unless otherwise stated*

**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives**

**BCPSO IR2, 3.5**

**Schedule 1: Summary of Costs and Benefits (2012 - 2021)**

City of Surrey

Expected life of CNG garbage trucks: 10 Years

	Reference	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1 Annual NG Volume (TJ)		2	2	2	2	2	2	2	2	2	2
2											
3 Discount Rate	2014 FEI After-Tax WACC	6.81%									
4 Discount Period (years)		1	2	3	4	5	6	7	8	9	10
5											
6 FEI Total Delivery Margin Projections \$Millions	Note 1	575	577	588	600	612	624	637	649	662	676
7											
8 Net COS Benefit (Cost) to Existing Natural Gas Customers											
9 Annual Incremental Margin from additional NGT volume		7	7	7	7	7	8	8	8	8	8
10 Annual Incentive Funding COS				(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	7	7	5	5	5	6	6	6	6	7
12											
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 2			(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%
14											
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	6	6	4	4	4	4	4	4	3	3
16											
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	6	12	16	20	24	28	31	35	38	42
18											
19 NPV of Net COS Benefit (Cost) 2012 to 2030 (19 Years)											71

20 Note:

21 1: 2012, 2013 based on 2012-2013 RRA G-44-12 Compliance Filing May 1, 2012; 2014+ increase at 2%/year reflecting high level long range planning assumptions

22 2: Cumulative FEI Delivery (Reduction) increase



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives Potential Rate Impact to Existing FEI Natural Gas Customers**  
**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**  
 City of Surrey  
 \$'000's, unless otherwise stated

**BCPSO IR2, 3.5**

City of Surrey  
 Expected life of CNG garbage trucks: 10 Years

**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives**  
**Schedule 1: Summary of Costs and Benefits (2012 -2021)**

	Reference	2022	2023	2024	2025	2026	2027	2028	2029	2030
1 Annual NG Volume (TJ)		2	2	2	2	2	2	2	2	2
2										
3 Discount Rate	2014 FEI After-Tax WACC									
4 Discount Period (years)		11	12	13	14	15	16	17	18	19
5										
6 FEI Total Delivery Margin Projections \$Millions	Note 1	689	703	717	731	746	761	776	792	808
7										
8 Net COS Benefit (Cost) to Existing Natural Gas Customers										
9 Annual Incremental Margin from additional NGT volume		8	8	9	9	9	9	9	10	10
10 Annual Incentive Funding COS		(2)	(1)	-	-	-	-	-	-	-
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	7	7	9	9	9	9	9	10	10
12										
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 2	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%
14										
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	3	3	4	4	3	3	3	3	3
16										
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	45	48	52	55	59	62	65	68	71

18  
 19  
 20 Note:

21 1: 2012, 2013 based on 2012-2013 RRA G-44-12 Compliance Filing May 1, 2012; 2014+ increase at 2%/year reflecting high level long range planning assumptions

22 2: Cumulative FEI Delivery (Reduction) increase



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives**  
**Potential Rate Impact to Existing FEI Natural Gas Customers**  
**Schedule 1: Summary of Costs and Benefits (2012 - 2021)**  
**Kelowna School District**  
**\$'000's, unless otherwise stated**

**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives**  
**BCPSO IR2, 3.5**  
**Schedule 1: Summary of Costs and Benefits (2012 - 2021)**  
 Kelowna School District  
 Expected life of CNG school buses: 15 Years

	Reference	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1 Annual NG Volume (TJ)		6	6	6	6	6	6	6	6	6	6
2											
3 Discount Rate	2014 FEI After-Tax WACC	6.81%									
4 Discount Period (years)		1	2	3	4	5	6	7	8	9	10
5											
6 FEI Total Delivery Margin Projections \$Millions	Note 1	575	577	588	600	612	624	637	649	662	676
7											
8 Net COS Benefit (Cost) to Existing Natural Gas Customers											
9 Annual Incremental Margin from additional NGT volume		24	25	26	26	27	27	28	28	29	29
10 Annual Incentive Funding COS				(63)	(61)	(58)	(56)	(53)	(50)	(48)	(45)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	24	25	(38)	(35)	(32)	(28)	(25)	(22)	(19)	(16)
12											
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 2			0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%
14											
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	22	22	(31)	(27)	(23)	(19)	(16)	(13)	(10)	(8)
16											
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	22	44	13	(14)	(36)	(56)	(72)	(85)	(95)	(103)
18											
19 NPV of Net COS Benefit (Cost) 2012 to 2030 (19 Years)											(33)

20 Note:

21 1: 2012, 2013 based on 2012-2013 RRA G-44-12 Compliance Filing May 1, 2012; 2014+ increase at 2%/year reflecting high level long range planning assumptions

22 2: Cumulative FEI Delivery (Reduction) increase



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives Potential Rate Impact to Existing FEI Natural Gas Customers**  
**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**  
**Kelowna School District**  
**\$000's, unless otherwise stated**

**BCPSO IR2, 3.5**

Kelowna School District  
 Expected life of CNG school buses: 15 Years

**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives**  
**Schedule 1: Summary of Costs and Benefits (2012 -2021)**

	Reference	2022	2023	2024	2025	2026	2027	2028	2029	2030
1 Annual NG Volume (TJ)		6	6	6	6	6	6	6	6	6
2										
3 Discount Rate	2014 FEI After-Tax WACC									
4 Discount Period (years)		11	12	13	14	15	16	17	18	19
5										
6 FEI Total Delivery Margin Projections \$Millions	Note 1	689	703	717	731	746	761	776	792	808
7										
8 Net COS Benefit (Cost) to Existing Natural Gas Customers										
9 Annual Incremental Margin from additional NGT volume		30	31	31	32	32	33	34	34	35
10 Annual Incentive Funding COS		(42)	(40)	0	0	0	0	0	0	0
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	(13)	(9)	31	32	32	33	34	34	35
12										
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 2	0.00%	0.00%	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%	(0.00)%
14										
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	(6)	(4)	13	13	12	12	11	11	10
16										
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	(109)	(114)	(100)	(88)	(76)	(64)	(53)	(43)	(33)

18  
 19  
 20 Note:

21 1: 2012, 2013 based on 2012-2013 RRA G-44-12 Compliance Filing May 1, 2012; 2014+ increase at 2%/year reflecting high level long range planning assumptions

22 2: Cumulative FEI Delivery (Reduction) increase



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives**

**Potential Rate Impact to Existing FEI Natural Gas Customers**

**Schedule 1: Summary of Costs and Benefits (2012 -2021)**

**Waste Management**

**\$000's, unless otherwise stated**

**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives**

**BCPSO IR2, 3.5**

**Waste Management**

Expected life of CNG garbage trucks: 10 Years

**Schedule 1: Summary of Costs and Benefits (2012 -2021)**

	Reference	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1 Annual NG Volume (TJ)		21	21	21	21	21	21	21	21	21	21
2											
3 Discount Rate	2014 FEI After-Tax WACC	6.81%									
4 Discount Period (years)		1	2	3	4	5	6	7	8	9	10
5											
6 FEI Total Delivery Margin Projections \$Millions	Note 1	575	577	588	600	612	624	637	649	662	676
7											
8 Net COS Benefit (Cost) to Existing Natural Gas Customers											
9 Annual Incremental Margin from additional NGT volume		37	39	40	41	42	42	43	44	45	46
10 Annual Incentive Funding COS				(140)	(135)	(129)	(123)	(117)	(111)	(106)	(100)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	37	39	(101)	(94)	(87)	(81)	(74)	(67)	(61)	(54)
12											
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 2			0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
14											
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	35	34	(82)	(72)	(63)	(54)	(47)	(40)	(34)	(28)
16											
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	35	69	(14)	(86)	(149)	(203)	(249)	(289)	(323)	(351)
18											
19 NPV of Net COS Benefit (Cost) 2012 to 2030 (19 Years)						(265)					

20 Note:

21 1: 2012, 2013 based on 2012-2013 RRA G-44-12 Compliance Filing May 1, 2012; 2014+ increase at 2%/year reflecting high level long range planning assumptions

22 2: Cumulative FEI Delivery (Reduction) increase



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives Potential Rate Impact to Existing FEI Natural Gas Customers**  
**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**  
**Waste Management**  
**\$'000's, unless otherwise stated**

**BCPSO IR2, 3.5**  
 Waste Management  
 Expected life of CNG garbage trucks: 10 Years

**Appendix W (Amended): Forecast Results of 2010 - 2011 NGV Incentives**  
**Schedule 1: Summary of Costs and Benefits (2012 -2021)**

	Reference	2022	2023	2024	2025	2026	2027	2028	2029	2030
1 Annual NG Volume (TJ)		21	21	21	21	21	21	21	21	21
2										
3 Discount Rate	2014 FEI After-Tax WACC									
4 Discount Period (years)		11	12	13	14	15	16	17	18	19
5										
6 FEI Total Delivery Margin Projections \$Millions	Note 1	689	703	717	731	746	761	776	792	808
7										
8 Net COS Benefit (Cost) to Existing Natural Gas Customers										
9 Annual Incremental Margin from additional NGT volume		47	48	49	50	51	52	53	54	55
10 Annual Incentive Funding COS		(94)	(88)	0	0	0	0	0	0	0
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	(47)	(40)	49	50	51	52	53	54	55
12										
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 2	0.01%	0.01%	(0.01)%	(0.01)%	(0.01)%	(0.01)%	(0.01)%	(0.01)%	(0.01)%
14										
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	(23)	(18)	21	20	19	18	17	16	16
16										
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	(373)	(392)	(371)	(351)	(333)	(315)	(297)	(281)	(265)

20 Note:

21 1: 2012, 2013 based on 2012-2013 RRA G-44-12 Compliance Filing May 1, 2012; 2014+ increase at 2%/year reflecting high level long range planning assumptions

22 2: Cumulative FEI Delivery (Reduction) increase





FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**Appendix W ( Amended): Forecast Results of 2010 - 2011 NGV Incentives**  
**Potential Rate Impact to Existing FEI Natural Gas Customers**  
**Schedule 1: Summary of Costs and Benefits (2012 -2021)**  
**Vedder Transport**  
**\$'000's, unless otherwise stated**

**BCPSO IR2, 3.5**  
 Vedder Transport  
 Expected life of LNG Tractors: 5 Years

**Appendix W ( Amended): Forecast Results of 2010 - 2011 NGV Incentives**  
**Schedule 1: Summary of Costs and Benefits (2012 -2021)**

	Reference	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1 Annual NG Volume (TJ)		139	139	139	139	139	139	139	139	139	139
2											
3 Discount Rate	2014 FEI After-Tax WACC	6.81%									
4 Discount Period (years)		1	2	3	4	5	6	7	8	9	10
5											
6 FEI Total Delivery Margin Projections \$Millions	Note 1	575	577	588	600	612	624	637	649	662	676
7											
8 Net COS Benefit (Cost) to Existing Natural Gas Customers											
9 Annual Incremental Margin from additional NGT volume		450	456	454	453	466	480	490	500	510	520
10 Annual Incentive Funding COS				(768)	(736)	(704)	(673)	(641)	(609)	(577)	(545)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	450	456	(314)	(283)	(238)	(192)	(151)	(109)	(68)	(26)
12											
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 2			0.05%	0.05%	0.04%	0.03%	0.02%	0.02%	0.01%	0.00%
14											
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	421	400	(258)	(218)	(171)	(130)	(95)	(65)	(37)	(13)
16											
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	421	821	563	346	174	45	(50)	(115)	(152)	(166)
18											
19 NPV of Net COS Benefit (Cost) 2012 to 2030 (19 Years)											1,302

20 Note:

21 1: 2012, 2013 based on 2012-2013 RRA G-44-12 Compliance Filing May 1, 2012; 2014+ increase at 2%/year reflecting high level long range planning assumptions

22 2: Cumulative FEI Delivery (Reduction) increase



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**Appendix W ( Amended): Forecast Results of 2010 - 2011 NGV Incentives  
 Potential Rate Impact to Existing FEI Natural Gas Customers  
 Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)  
 Vedder Transport  
 \$'000's, unless otherwise stated**

**BCPSO IR2, 3.5**

Vedder Transport  
 Expected life of LNG Tractors: 5 Years

**Appendix W ( Amended): Forecast Results of 2010 - 2011 NGV Incentives  
 Schedule 1: Summary of Costs and Benefits (2012 -2021)**

	Reference	2022	2023	2024	2025	2026	2027	2028	2029	2030
1 Annual NG Volume (TJ)		139	139	139	139	139	139	139	139	139
2										
3 Discount Rate	2014 FEI After-Tax WACC									
4 Discount Period (years)		11	12	13	14	15	16	17	18	19
5										
6 FEI Total Delivery Margin Projections \$Millions	Note 1	689	703	717	731	746	761	776	792	808
7										
8 Net COS Benefit (Cost) to Existing Natural Gas Customers										
9 Annual Incremental Margin from additional NGT volume		530	541	552	563	574	585	597	609	621
10 Annual Incentive Funding COS		(514)	(482)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	16	59	552	563	574	585	597	609	621
12										
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 2	(0.00)%	(0.01)%	(0.08)%	(0.08)%	(0.08)%	(0.08)%	(0.08)%	(0.08)%	(0.08)%
14										
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	8	27	234	224	213	204	195	186	177
16										
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	(158)	(131)	103	327	540	744	939	1,124	1,302

18  
 19  
 20 Note:

21 1: 2012, 2013 based on 2012-2013 RRA G-44-12 Compliance Filing May 1, 2012; 2014+ increase at 2%/year reflecting high level long range planning assumptions

22 2: Cumulative FEI Delivery (Reduction) increase



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**4.0 Reference: Exhibit B-1, Section 7.3.5, page 34, Table 7-2**

- 4.1 Can FEI confirm that the residential customer addition equivalents shown in this table are load equivalents and not margin equivalents?

**Response:**

The column titled Residential Customer Addition Equivalent represents load additions to FEI's system. This column was calculated by dividing the Additional Annual Load by 90 GJ (average residential consumption in Lower Mainland). Annual delivery margin benefits for each customer are discussed in sections 7.3.1 through 7.3.4 of the Application.



FortisBC Energy Inc. ("FEI" or the "Company") Application for Approval of Rate Treatment of Expenditures under the Greenhouse Gas Reductions (Clean Energy) Regulation ("GGRR"), and Prudency Review of Incentives under the 2010 – 2011 Commercial NGV Demonstration Program (the "Application") – Phase 3	Submission Date: November 23, 2012
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**5.0 Reference: Exhibit B-5, CEC IR 1.14.1**

5.1 Please provide a response to CEC's IR 14.1.

**Response:**

Please refer to the response to CEC IR 2.1.1.