

October 15, 2012

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British Columbia Utilities Commission  
Sixth Floor  
900 Howe Street  
Vancouver, B.C.  
V6Z 2N3

Attention: Ms. Erica M. Hamilton, Commission Secretary

Dear Ms. Hamilton:

**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 Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1**

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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-125-12 for Phase 1 and Order No. G-127-12 for Phase 2, FEI respectfully submits the attached response to BCUC IR No. 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): 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")	Submission Date: October 15, 2012
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## **1.0 Reference: Greenhouse Gas Reduction (Clean Energy) Regulation**

### **Exhibit B-1, Appendix B**

#### **Effective Date, Start Date and End Date of Expenditures under the GGRR**

The Greenhouse Gas Reduction Regulation (GGRR) was approved and ordered by Order in Council 295/2012 on May 14, 2012 and by definition in the regulation the undertaking period for the GGRR ends on March 31, 2017. Section 2(1)(b) identifies 6 years of undertaking in determining the eligible grant or loan.

- 1.1 For each section and subsection of the GGRR, please identify when the undertaking period begins and when it ends. Specifically, what action is required by a "person" identified in the GGRR or FortisBC Energy Inc. (FEI) to represent the start of the undertaking period and do all expenditures have to be completed by March 31, 2017 or some other date?

#### **Response:**

The GGRR does not set out a start date for the prescribed undertaking expenditures, but specifies that the undertaking period ends on March 31, 2017. The lack of a specified start date for prescribed undertaking expenditures provides discretion to the public utility as to when within the "undertaking period" to begin making expenditures under any of the three prescribed undertakings. For instance, a public utility may decide to offer its first vehicle incentives under the GGRR on some date between April 1, 2014 and March 31, 2015, which will then be year 1 of the undertaking. Year 2 of the undertaking would then be April 1, 2015 – March 31, 2016, and year 3 would be April 1, 2016-March 31, 2017. As the GGRR undertaking period expires on March 31, 2017, the public utility will thus be forgoing the remaining years of the incentive undertakings.

In terms of whether all expenditures must be completed by March 31, 2017, FEI believes that the public utility must be under a binding commitment prior to March 31, 2017, to make the expenditures a part of the GGRR prescribed undertaking, but the actual expenditures may occur after March 31, 2017, and still be covered. For instance, if FEI has made a contractual commitment prior to March 31, 2017, to provide grants to a particular company for the purchase of eligible vehicles under the GGRR but the vehicles did not arrive and go into service until after March 31, 2017 (and the grants were only provided in full when the vehicles entered service) these grants would be considered part of the prescribed undertaking. Some administration costs to implement these firm commitments could also extend beyond March 31, 2017, but should still be recoverable within the parameters of the GGRR.

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In the case of the prescribed undertakings for fueling stations, a similar situation exists. The investment in the fueling station needs to be supported by a customer's take-or-pay commitments for at least 80% of the energy provided from the station for a period of at least 5 years. The contractual commitments with customers must be entered into prior to March 31, 2017, and must conform to these minimum requirements, but the usage of the station shall continue beyond the March 31, 2017 date.

- 1.2 Who determines when FEI has reached the limit under the GGRR? Is it the utility, the Minister of Energy and Mines or some other party?

**Response:**

FEI will manage its programs and expenditures to remain within all prescribed limits in the three prescribed undertakings, including the per station spending limits for CNG/LNG stations, the year-to-year limits on the percentage differences between the cost of the eligible vehicle and the cost of a comparable vehicle that uses gasoline or diesel that may be awarded, spending caps on administration, marketing and other expenditures, and the overall spending limits within each of the prescribed undertakings. FEI expects that the prescribed undertaking report established by the Minister under CEA sections 18 (4) and (5) will include, among other requirements, reporting on FEI's compliance with specified spending limits under the GGRR, which, in turn will allow the Minister to confirm FEI's compliance with specified limits under the GGRR.

If required by the Commission, FEI can submit the above mentioned report to the Commission to demonstrate that the utility has acted in accordance with the regulatory provisions.

- 1.3 If an expenditure made under the GGRR exceeds a limitation specified in the GGRR does the GGRR end at that time or only that section or subsection of the GGRR where the over-expenditure occurred? If yes does that determination rest with the Ministry? Please explain.

**Response:**

The Minister will determine whether the expenditures fall within the parameters of the GGRR.

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The GGRR would not "end" (to use the phraseology in the question) irrespective of how much a public utility spends. A more accurate characterization of what would happen in a circumstance where the Minister concludes that the expenditure exceeds a limitation in the GGRR would be that the treatment accorded by the GGRR would not extend to the excess. The net result would be that the Commission would consider the eligibility of those excess expenditures for recovery in rates by applying its normal test (i.e. the prudency test).

However, as stated in the response to BCUC IR 1.1.2, FEI intends to keep its spending within the prescribed limits. If circumstances arise where it became apparent that an expenditure limit is going to be exceeded or that additional expenditures above the current set limits may be valuable in achieving the intent and goals of the GGRR, FEI would have to seek an amendment to the Regulation to accommodate these circumstances within the framework of the GGRR or pursue those expenditures and seek the Commission's approval to recover the costs above the limit in the normal course.

- 1.4 Can the GGRR authorize expenditures incurred prior to May 14, 2012 be recoverable by the utility?

**Response:**

The GGRR does not explicitly state that it has retroactive effect. However, as will be addressed in Phase 3 of this proceeding, the policy behind the GGRR equally supports recovery of the expenditures incurred prior to the GGRR coming into force.

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## 2.0 Reference: Greenhouse Gas Reduction (Clean Energy) Regulation

### Exhibit B-1, Appendix B

#### Class Defined

The three prescribed undertakings in the GGRR separately refer to "the class defined" in 2(1), 2(2) and 2(3).

- 2.1 In FEI's view does the GGRR require separate classes to be established for all eligible expenditures allowed under 2(1), 2(2) and 2(3)? Please explain.

#### **Response:**

The phrase "the class defined" in GGRR sections 2(1), 2(2) and 2(3) is based on the wording of *Clean Energy Act* section 18(1), which states:

*"In this section, "**prescribed undertaking**" means a project, program, contract or expenditure that is in a class of projects, programs, contracts or expenditures prescribed for the purpose of reducing greenhouse gas emissions in British Columbia."* [Emphasis added.]

Sections 2(1), 2(2) and 2(3) of the GGRR each prescribe a "class of programs" or "class of expenditures" for the purposes of section 18 of the *Clean Energy Act*. Specifically, these sections detail the requirements for each "class of expenditures", such as setting up the spending limits in each class. These sections of the GGRR, however, do not establish how each class of expenditures should be recovered in rates.

The phrase "class of projects, programs, contracts or expenditures" used in section 18(1) of the *Clean Energy Act* is unrelated to the concept of "class of service" in section 60(1)(c) of the UCA. Thus, the Commission's obligation in UCA section 60(1)(c) to treat different classes of service as self-contained units does not extend to these three "classes of expenditures" prescribed by the GGRR.

In fact, the whole scheme of the GGRR speaks against having any separate classes of service under section 60(1)(c) of the UCA. If the concept of "self-contained unit" were applied to each "class of expenditures" under the GGRR, the Commission would have no option but to require that each class of expenditures be recovered from the parties receiving the benefit of the specific class expenditures. This is contrary to the general intent of CEA section 18, allowing recovery of program costs from all non-bypass FEI customers, because all non-bypass customers receive benefits through lower delivery rates and reduced GHG emissions and the program is consistent with government policy.

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- 2.2 Does the GGRR require that the "class defined" is to be included in the FEI natural gas system? If not, does the Commission have discretion under the GGRR to decide whether the "class defined" can be segregated from the natural gas system? Please explain.

**Response:**

For this response, FEI assumes that the phrase "the natural gas system" means "the natural gas class of service." Please refer to the response to BCUC IR 1.2.1 for an explanation of why the reference to the "class defined" in the GGRR is unrelated to the concept of "class of service" under the UCA.

Although the GGRR does not expressly state whether the three prescribed undertakings under section 18 of the CEA are included within FEI's natural gas class of service, it implicitly requires a single class of service. The reasons for including Prescribed Undertakings 2 and 3 (CNG Fueling Stations and LNG Fueling Stations) within FEI's natural gas class of service were articulated by FEI in its submission of May 25, 2012 in the AES Inquiry (at paragraphs 14-26 – an extract provided in Attachment 2.2 for ease of reference). In summary,

- a) Portions of the Regulation are only meaningful if the CNG/LNG Fuelling Service is included within the broader natural gas class of service.
- b) Separate classes of service impair the achievement of the legislative objective, contrary to section 18(3) of the CEA.
- c) Maintaining separate classes of service for CNG/LNG Fuelling Service forecloses a source of revenue from these prescribed undertakings that would otherwise flow to core customers, and thus can be expected to have the perverse effect of being detrimental to core customers.

Similar reasoning applies to including Prescribed Undertaking 1 expenditures – Grants and Loans for Eligible Vehicles – within the natural gas class of service. In particular,

- (a) Similar to the funding limits for CNG/LNG fueling services, the funding limits and the year-to-year cost differentials specified in section 2(1)(b) of the GGRR also serve to limit the risk and impact of the prescribed undertakings on utility ratepayers. This makes creating a separate class of service for this prescribed undertaking to insulate utility ratepayers unnecessary.

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- (b) Segregating Prescribed Undertaking 1 from FEI's natural gas class of service will be at odds with one of the purposes of the GGRR, which is to make it easier for a public utility to justify providing financial support for the investment in the eligible vehicles.
- (c) As FEI explained in section 5.2.3 of the Application, non-bypass customers benefit directly from the additional throughput on the distribution system as a result of the implementation of Prescribed Undertaking 1.

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**3.0 Reference: Greenhouse Gas Reduction (Clean Energy) Regulation  
Exhibit B-1, Sections 4.5 and 5, Appendix B and Appendix V  
Reporting**

FEI states in section 4.5 of the Application that the timing and reporting requirements of sections 18(4) and (5) of the *Clean Energy Act (CEA)* whereby a utility must report on the prescribed undertakings to the Minister of Energy and Mines are still to be determined. FEI also states in section 5 of the Application that it is only seeking approval at this time of generic regulatory accounting and rate recovery treatment of these expenditures.

- 3.1 Please confirm that FEI is not seeking approval of or looking for the establishment of reporting requirements for the three prescribed undertakings in the review of this Application.

**Response:**

FEI confirms that it is not seeking approval of or the establishment of reporting requirements for the three prescribed undertakings in this application to the Commission. FEI is seeking approval of the generic regulatory accounting and rate recovery treatment of expenditures related to the three prescribed undertakings, which are the matters that are left to the Commission to determine under the GGRR.



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#### **4.0 Reference: Exhibit B-1, Sections 3, 4 and 5, Appendix B and Appendix V**

##### **Cost Recovery**

Section 3.3 of the Application describes the legal framework to establish the rate structures and rate design to allow the recovery of FEI's costs that are incurred with respect to the three prescribed undertakings and refers to section 18(2) of the *CEA* where the Commission must set rates that allow a public utility carrying out a prescribed undertaking to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect of the prescribed undertaking.

- 4.1 The term "costs" does not appear to be defined in section 18 of the *CEA*. Please explain FEI's view if "costs" under section 18 of the *CEA* allows the Commission to have discretion as to the level of financing costs for expenditures made on the prescribed undertakings. Specifically, does the Commission have discretion to determine if the financing costs could range from no return, short-term interest only, long-term interest only, weighted short-term and long-term debt only, and the allowed return on rate base?

##### **Response:**

As noted on page 17 of the Application, FEI interprets section 18(2) of the *CEA* to mean that rates must be set in such a way that the utility is not only allowed to recover its costs, but also that rates are to be established so that there is fair and reasonable compensation for the utility on its investments.

To the extent that a prudently incurred expenditure is approved to be included in rate base, FEI does not believe that the Commission has the discretion to determine utility financing costs to be anything other than the allowed return on rate base. In theory, financing costs for non-rate base deferral accounts may be short-term interest, long-term interest, weighted short-term and long-term interest or the after-tax weighted average cost of capital (i.e. AFUDC rate), but the choice of financing for a particular non-rate base deferral should reflect the intended purpose of the investments. In this case the weighted average cost of capital, or AFUDC rate, is appropriate for amounts carried in the non-rate base deferral account because the Company is expending funds in support of a longer-term government-initiated program with long lasting benefits similar to a fixed asset (AFUDC is used for fixed assets). The proposed treatment of the amounts in the non-rate base deferral account for GGRR costs is also consistent with the financial treatment of EEC expenditures, which have a similar purpose.

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- 4.2 In section 5.1 of the Application FEI interprets section 18(2) to mean that rates must be set in such a way that the utility is not only allowed to recover its costs but also a fair and reasonable compensation for the utility including a return on rate base. Please confirm that section 18 of the CEA and section 59 of the *Utilities Commission Act (UCA)* does not require the Commission to establish a rate base deferral account for the recovery of deferred costs.

**Response:**

FEI agrees that section 18 of the CEA and section 59 of the UCA do not require the Commission to establish a rate base deferral account for the recovery of deferred costs. It should be noted that the utility does incur costs to raise the funds to carry out the prescribed undertakings and incurs carrying costs while the funds are being recovered in rates. The requested approach in the Application of employing a rate base deferral account properly recognizes these costs and furthermore is consistent with past regulatory treatment of similar deferral accounts, is familiar to the Commission and intervenor groups, and results in the utility recovering its costs and a fair and reasonable return .

- 4.3 Does the calculation of the spending limitations of the prescribed undertakings include the financing costs allowed by the Commission? Please explain.

**Response:**

No, the spending limitations of the prescribed undertakings do not include financing costs.

Section 18 of the CEA differentiates between "costs" and "expenditures", with "expenditures" being a sub-set of costs.

*"18 (1) In this section, "prescribed undertaking" means a project, program, contract or expenditure that is in a class of projects, programs, contracts or expenditures prescribed for the purpose of reducing greenhouse gas emissions in British Columbia.*

*(2) In setting rates under the Utilities Commission Act for a public utility carrying out a prescribed undertaking, the commission must set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking; [Emphasis added.]*

The GGRR spending limitations relate to expenditures. Generally, in the regulatory context, the term "expenditures" refers to an outlay of cash for capital assets or operating and maintenance

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costs and is not inclusive of associated cost of service items such as rate base return or taxes. This is consistent with the treatment of approved FEU EEC expenditures, where the approved EEC expenditures for a test period are exclusive of financing costs.

4.4 FEI states in section 5.1 of the Application that the costs incurred for the prescribed undertakings will be incremental expenditures to the levels of deferral, capital, operating and maintenance expenditures approved for the 2012-2013 Revenue Requirement Application (RRA) in the Commission's Decision dated May 11, 2012 and Order G-44-12.

4.4.1 Please identify which sections of the GGRR and the Commission Decision for the 2012 2013 RRA support FEI's interpretation that all of the costs in the three prescribed undertakings are incremental.

**Response:**

This response also addresses BCUC IR 1.4.4.2.

Expenditures associated with the GGRR were not contemplated or included in the FEU 2012-2013 Revenue Requirement and Rates Application (the "RRA") and should be considered incremental to the RRA as evident by:

- The timing of the RRA and the GGRR – the GGRR was enacted on May 14, 2012, more than a full year following the RRA, which was filed on May 4, 2011. Thus, the deferral, capital and operating and maintenance expenditures included in the RRA were forecast a year prior to the GGRR and as such could not have included the impacts of the GGRR;
- The removal of forecast NGV incentives of \$10 million per year from the initial RRA forecasts in accordance with Commission Order No. G-145-11 as outlined in Exhibit B-21, pages 2 and 3 of the RRA, which resulted in a forecast of zero NGV incentives included in the RRA. Thus, in Order No. G-44-12 the Commission approved rates that excluded NGV incentives. Therefore, the incentives permitted under Prescribed Undertaking 1 of the GGRR must be incremental to those approved in the RRA; and
- The Commission acceptance of a forecast of zero capital investments in NGV fueling assets in 2012 and 2013 as noted on page 100 of Appendix A to BCUC Order No. G-44-12. In comparison, Prescribed Undertakings 2 and 3 of the GGRR refer to fueling

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station assets and administration costs applicable to each year of the undertaking period, which as noted above, includes the RRA period. Therefore, it follows that the fueling station costs permitted under the GGRR must be incremental to those approved in the RRA.

Finally, it is also important to note that in accordance with Order No. G-1-12, which specified a CPCN threshold of zero for NGV fueling stations and Order No. G-145-11 determining that NGV incentives could not be provided in the context of the existing EEC portfolio, it would not be possible for FEI to consider the expenditures associated with the prescribed undertakings under the GGRR as anything other than incremental to the forecasts included in the RRA.

- 4.4.2 Considering that the Commission Decision was issued on May 11, 2012 and the GGRR was issued on May 14, 2012 why is it not reasonable to consider that there is overlap in the spending allowed in the Commission Decision and the GGRR?

**Response:**

Please refer to the response to BCUC IR 1.4.4.1.

- 4.4.3 The BFI CNG Fueling Station CPCN Application, page 19 states "In FEU's 2012-2013 RRA, Appendix I, FEI provided a cost estimate for overall NGT development during 2010 and 2011. These amounts, \$480,275 and \$551,637 respectively, represent the cost associated with contracting, signing up customers to FEI Rate Schedules and fuelling station agreements, customer education, as well as short run and long term business development activities." In Exhibit B-3, BCUC IR 1.51.9 of the BFI Application, FEI forecast these costs to increase to \$569,396 in 2012 and \$601,119 in 2013.

If the 6 years of undertaking are to end on March 31, 2017 then shouldn't the NGT development costs that are included in revenue requirements for those 6 years also be allocated in whole or in part to the administration,

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marketing, training and education expenditures allowed under the three prescribed undertakings?

**Response:**

No, as discussed in the response to BCUC IR 1.4.4.1, all expenditures associated with the GGRR (i.e. including operating and maintenance expenses such as administration, marketing, training and education) are incremental to the forecasts included in the RRA. The NGT development costs included in the RRA were to support the levels of NGT activity contemplated in the RRA period. The enactment of the GGRR results in a substantial ramp-up in NGT activities, including vehicle incentives (not included at all in the RRA) and a large increase in the number of stations to support the increased adoption of natural gas as a fuel in vehicles in the target market segments. The Commission will be reviewing O&M levels in the next RRA, including O&M for NGT activities. This will include the appropriate O&M allowance for base NGT activities included in O&M as distinct from activities and costs required to support the GGRR prescribed undertakings.

4.5 FEI states in section 4.1 that "Expenditures made, or contracts entered into, pursuant to a prescribed undertaking are prudent expenditures and the prudency continues for the life of the assets or contracts, as the case made be."

4.5.1 Section 7 of the *CEA* exempts BC Hydro from sections 45 to 47 and 71 of the *UCA* and section 8 of the *CEA* requires the Commission to set rates that allow BC Hydro to recover its costs incurred. In Transcript Volume 1, pages 31-32 and 116-117 of the BC Hydro F2011 RRA, BC Hydro characterizes an exempt project as a CPCN where the aspect of need is exempt from Commission review but the aspect of prudent execution can be subject to Commission review.

Please explain why FEI is not subject to possible Commission review on the prudent execution of expenditures allowed under the GGRR.

**Response:**

Section 18 and the GGRR establish a framework whereby the Minister, and not the Commission, reviews the utility's expenditures with respect to prescribed undertakings. The Commission's role has been altered such that the Commission must set rates that recover expenditures with respect to prescribed undertakings. There is nothing in the Regulation that

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would provide a basis for the Commission to review the process for allocating grants or loans for the purchase of vehicles. Therefore, if the Minister determines that the costs incurred by the utility meet the definition of a prescribed undertaking as outlined in the GGRR, the Commission must set rates for the utility to recover those costs.

The MEMNG evidently shares this view. In MEMNG's June 8, 2012 letter to the AES Inquiry or Exhibit B-1, Appendix P, states that:

**"Commission Oversight**

*Ferus LNG suggests that the Regulation does not materially affect the question of "how" the commission should regulate the prescribed undertakings. Ferus LNG also notes that, "the Regulation also clearly requires that the Commission be responsible for setting out the basic terms and conditions for any loans or other incentives that may be provided by FortisBC to the owners of "eligible vehicles". Similarly, Clean Energy Fuels notes that, "it is imperative for the commission to implement a standard, completely objective formula or methodology for determining how NGV incentives are awarded."; Clean Energy Fuels, in referencing section 18 (3) of the Clean Energy Act, notes that, "only 'prevention' of the prescribed undertaking is barred, however, anything less than prevention would therefore, be within the commission's discretion.*

*In response to the assertion made by Ferus LNG on page 14 of its submission, the Ministry submits that there is nothing in the Regulation, and in particular s. 2(1), that would give the commission the ability to set the competitive process or methodology for allocating grants or loans that may be provided by a public utility for the purchase of eligible vehicles.*

*Section 18 of the Clean Energy Act, along with the Regulation, also changes the commission's role with regard to activities or expenditures that are prescribed undertakings. Section 18 makes it clear that the commission is obliged to "set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking." The Ministry submits that this provision removes commission discretion concerning the recovery of costs incurred with respect to prescribed undertakings. The Regulation has now prescribed certain undertakings, and thereby given effect to section 18. Section 18 also provides that "the commission must not exercise a power under the Utilities Commission Act in a way that would directly or indirectly prevent a public utility referred to in subsection (2) from carrying out a prescribed undertaking". [Emphasis added.]*

Were BC Hydro's position (which was articulated in the context of a project) to be applied in the current context it would still support FEI's view as a practical matter. The need for the

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incentives and the prudent execution of those incentives are part and parcel of the decision to pay out the funds. It is difficult to foresee a situation where the execution of a payment could be imprudent if the need for the payment to that party had been established by the Minister.

- 4.6 Table 7-1: Commercial Natural Gas Vehicle (NGV) Demonstration Program-2010/2011 Incentives Committed is referenced from the 2011 NGV Incentive Review (2011 Review) but the headings of "Estimated Fuel Savings to Customer" and "Estimated Revenue to FortisBC Energy" in the 2011 Review were also identified as "\$ per year".

- 4.6.1 Please confirm whether the column headings of Table 7-1 in the GGRR Application for Estimated Fuel Savings to Customer and Estimated Revenue to FortisBC Energy should be for \$ per year or for some other time period.

**Response:**

Confirmed. The column headings of the Table 7-1 for Estimated Fuel Savings to Customer, Estimated Revenue to FEI (as well as Customer Estimated Avoided Diesel and Customer Estimated GHG Reductions) should be expressed on an annual basis.

- 4.6.2 In section 2 of the Application FEI is seeking approval of the accounting and rate treatment methodology. FEI states that the methodology entails recovering program costs from all non-bypass FEI customers. If the identified customers in Table 7-1 that are participating in the GGRR program are expected to have fuel savings that total \$2,116,793 per year but the non-bypass customers are to receive a total of \$614,687 per year, why doesn't the proposed recovery of the incentives and other program costs consider the relative benefits of the participating customers and non-bypass customers?

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**Response:**

The GGRR is aimed at generating GHG emission reductions through the promotion of NGT, and the government has determined that the level of expenditures is appropriate to encourage CNG/LNG customers to participate in the GGRR program in order to realize that objective.

The relative benefit between customers' cost savings (\$2,116,793) that participate in the Program and the value received by non-bypass customers (\$614,687) for the four customers in Table 7-1 are also not comparable on a relative basis since the risks for target heavy duty vehicle markets is substantially higher. There must be significant cost savings to encourage this group to participate in this program.

Potential customers in the target segments already have diesel vehicle fleets and are familiar with diesel technology and how to operate and maintain their fleets using this widely available fuel and engine technology. They do not have to convert to NGV unless they perceive a significant return on investment commensurate with the risk they are taking in relying on a new unfamiliar fuel for their business, or a portion thereof. They must assess whether the technology change, operations risk and the fuel cost savings potential is sufficient to make a substantial investment in converting some or all of their truck fleet to natural gas. Once committed to the program, they then must manage the NGV fleet to capture the estimated savings as they have little experience with this technology. If the natural gas technology does not perform as expected or if there is a fuel supply interruption this may have material consequences for their business.

The resultant benefit to non-bypass customers is substantial in its own right relative to the objective that is being pursued. With throughput decreasing on the natural gas distribution system, it is anticipated that the delivery charge will increase over time if the deterioration of load continues. The objective is to increase throughput with limited risk as the natural gas system is already established in place and fixed costs can be spread over a larger volume when NGV customers attach to the system.

The analogy between vehicle incentives under the GGRR and incentives granted under FEI's EEC programs has been mentioned in other responses but bears mentioning in this response as well. Energy efficiency and conservation programs are put in place to accomplish policies and objectives that the Province has determined are important enough to include in legislation such the Clean Energy Act and the Utilities Commission Act. EEC programs involve providing incentives to have customer undertake measures to improve their energy efficiency and reduce their energy consumption. EEC program participants receive the incentive when they undertake a measure set out in an EEC and they have the benefit of reduced natural gas bills going forward. All ratepayers pay for the costs of the EEC incentives (and other program costs) and EEC program participants are not required to repay the incentives they have been provided. In



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FEI's view EEC program participants have less risk attached to the benefits they will receive (i.e. reduced energy bills) than fleet operators have in converting their fleets to natural gas..

FEI has provided analyses in Appendices G and H that demonstrate the natural gas ratepayers will be better off and have lower rates if the GGRR NGT Incentives program is undertaken than if it is not. FEI believes that its proposal of recovering the costs of the GGRR vehicle incentives from all ratepayers, and not from the incentive recipients, is both warranted and appropriate.

- 4.6.3 In section 7.3.4 FEI states that the revenue from Vedder of \$548,460 provides a delivery margin benefit of \$263,261 when assuming that service is provided under the current Rate Schedule 16. Please provide the delivery margin benefit from the service to each of the four customers listed in Table 7-1.

**Response:**

In the table below FEI has provided the expected annual delivery margin benefit using 2011 Delivery Rates (for consistency with the Application) and applicable section references from the Application for all four customers.

Customer	Fuel consumption (GJ per year)	Rate Schedule	2011 Delivery Rate (per GJ)	Delivery Margin (per year)	Application Section Reference
<b>City of Surrey</b>	1,538	6	\$3.648	\$5,611	7.3.1
<b>Kelowna School District</b>	6,000	6	\$3.648	\$21,888	7.3.2
<b>Waste Management</b>	21,140	25	\$0.645/GJ + \$15.554/GJ demand charge	\$38,728	7.3.3
<b>Vedder Transport</b>	138,500	16	\$3.96	\$263,261	7.3.4

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## 5.0 Reference: Cost Allocation for Prescribed Undertaking 1

### Exhibit B-1, Section 7.3, p. 31

#### Cost Recovery

5.1 Please add columns to Table 7-1: Commercial NGV Demonstration Program – 2010/2011 Incentives Committed<sup>26</sup> to show:

- (i) Measure life;
- (ii) Total Fuel Savings (Measure life X Estimated Fuel Savings per Customer).

#### Response:

The past incentives are to be addressed in Phase 3 of this proceeding. However, FEI has provided a revised version of Table 7-1 below to include columns which indicate (i) Measure life in years, and (ii) Total Fuel Savings (Estimated Fuel Savings per Customer multiplied by Measure life). The Measure life value is the same input used in the TRC test calculation for each customer.

Customer Receiving NGV Incentive	Incentive Amount Committed (\$)	Date of Agreement for EEC Incentive Funding (MM/DD/YYYY)	Estimated Fuel Savings to Customer (\$ per year)	Customer Estimated Avoided Diesel (L per year)	Customer Estimated GHG Reductions (tonnes per year)	Estimated Revenue to FortisBC Energy (\$ per year)	Total Resource Cost (TRC) Test Ratio	Measure Life (years)	Total Fuel Savings (Est. Fuel Savings x Measure life)
City of Surrey	\$ 26,700	9/15/2010	\$ 18,566	34,000	13	\$ 5,611	1.7	8	\$ 148,530
Kelowna School District	\$ 363,286	3/17/2011	\$ 17,587	95,436	120	\$ 21,888	1.1	15	\$ 263,808
Waste Management	\$ 803,560	12/3/2010	\$ 202,651	468,000	214	\$ 38,728	1.4	10	\$ 2,026,509
Vedder Transport	\$ 4,393,300	12/10/2010	\$ 1,877,989	3,582,850	3,754	\$ 548,460	1.4	5	\$ 9,389,944
Total	\$ 5,586,846		\$ 2,116,793	4,180,286	4,100	\$ 614,687			\$ 11,828,791

The column "Estimated Revenue to FortisBC Energy" is expressed as a gross value and calculated by the volume of gas multiplied by the delivery charge in the corresponding Rate Schedule. In response to BCUC IR 1.4.6.3, FEI explains the delivery margin benefit each customer, including the delivery margin estimate of \$263,261 for Vedder (compared to revenue estimate of \$548,460).

The delivery margin benefits occur annually and during each year the vehicle is in operation. Since FEI has "take-or-pay" contracts for fueling station service, FEI expects that customers (such as Vedder) will replace their vehicles at the end of their useful life and to match the length of their fueling contract, at minimum. At a high level, these delivery margin benefits calculate to:

City of Surrey \$5,611 @ 8 years = \$44,888

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KSD \$21,888 @ 15 years = \$328,320

WM \$38,728 @ 10 years = \$387,280

Vedder \$263,261 @ 10 years = \$2,632,610

These delivery margin benefits total \$3.39 million which partially offsets incentive expenditures of \$5.87 million. Actual fuel consumption from these fleets (shown in the response to CEC IR 1.11.2) has been greater than contracted which translates to greater delivery margins. Based on Vedder's current volume forecast of 180,000 GJ/yr, at \$4.05/GJ, this equates to gross revenues of \$729,000 per year. Using the cost methodology presented in the recently submitted Rate Schedule 16 Application, the expected delivery margin under Rate Schedule 16 is \$3.25 per GJ (out of the \$4.05). For Vedder this calculates to \$585,000 per year or \$5.85 million over a 10 year period which more than offsets the incentives provided.

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**6.0 Reference: Cost Allocation for Prescribed Undertaking 1**  
**Greenhouse Gas Reduction (Clean Energy) Regulation**  
**Cost Recovery**

- 6.1 The term "implement safety practices" does not appear to be defined in section 18 of the CEA. Please provide FEI's definition of the activities included in "implement safety practices". Also provide a breakdown of the activities by year and resource.

**Response:**

The text referenced in the GGRR at in section 2(1)(ii) reads as follows:

*"2(a) the public utility provides, through an open and competitive application process,*

*...*

*(ii) grants to persons in British Columbia*

*(A) to implement safety practices, or*

*(B) to improve maintenance facilities*

*to meet safety guidelines for operating and maintaining an eligible vehicle;"*

This paragraph indicates that grants can be provided to implement safety practices to meet safety guidelines for operating and maintaining an eligible vehicle. Such safety guidelines are set from time to time by the relevant regulating authorities such as the BC Safety Authority and may include such items as training requirements, emergency response plans and maintenance procedures. As the use of natural gas powered vehicles is an emerging market it is anticipated that such guidelines will continue to develop and change over the course of the prescribed undertaking. The Regulation as drafted is inclusive with respect to including required safety practices as they emerge so there is no specific defined list of safety practices defined in the Regulation. As such there is no forecast breakdown of activities or costs by year of the program under the GGRR.

In this Application, FEI has created an estimate of these annual expenditures for the purposes of quantifying potential rate impacts. In practice, actual expenditures will vary year to year and will be captured in the proposed deferral account (NGV Incentives Account). Appendix G – Scenario 1 (Planned Growth) at page 3 shows FEI's forecast of costs related to Safety and Maintenance ("Maintenance Upgrades & Safety").

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- 6.2 Please explain how the "implement safety practices" incentive funding will be administered.

**Response:**

FEI has not yet developed the details of the safety and maintenance incentive program. The program design, process and evaluation criteria will be firmed up once FEI finalizes fund disbursement for the current round of the vehicle incentive program.

Similar to the vehicle incentive program, FEI will be designing and administering the safety practices and maintenance facilities incentive program in consultation with the fairness advisor to ensure the process is open, competitive and fair to all applicants.

From a rate standpoint, the safety incentives are part of the \$62 million in funding for which FEI is proposing rate base deferral treatment and 10 year amortization.

- 6.3 The term "improve maintenance facilities" does not appear to be defined in section 18 of the CEA. Please provide FEI's definition of the activities included in "improve maintenance facilities". Also provide a breakdown of the activities by year and resource.

**Response:**

The text referenced in the GGRR at Page 2 reads as follows:

*"[2(1)](a) the public utility provides, through an open and competitive application process,*

*(ii) grants to persons in British Columbia*

*(A) to implement safety practices, or*

*(B) to improve maintenance facilities*

*to meet safety guidelines for operating and maintaining an eligible vehicle;"*

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This paragraph indicates that grants can be provided to improve maintenance facilities to meet safety guidelines for operating and maintaining an eligible vehicle. Such safety guidelines are set from time to time by the relevant regulating authorities such as the BC Safety Authority and may include such items as requirements to conduct vehicle maintenance in gas safe facilities. To establish gas safe maintenance facilities capital upgrades to maintenance facilities are required. These may include modification of ventilation systems, addition of emergency shutdown systems, modification of lighting systems etc.

As the use of natural gas powered vehicles is an emerging market it is anticipated that such guidelines will continue to develop and change over the course of the prescribed undertaking. The Regulation as drafted is inclusive with respect to including required improvements to maintenance facilities as they emerge so there is no specific defined list of maintenance facility improvements defined in the Regulation and does not provide a breakdown of activities by year and resource

In this Application, FEI has created an estimate of annual expenditures for the purposes of quantifying potential rate impacts. In practice, actual expenditures will vary year to year and will be captured in the proposed deferral account (NGV Incentives Account). Appendix G – Scenario 1 (Planned Growth) at Page 3 shows FEI's forecast of costs related to Safety and Maintenance ("Maintenance Upgrades & Safety").

- 6.4 Please explain how the "improve maintenance facilities" incentive funding will be administered.

**Response:**

Please refer to the response to BCUC IR 1.6.2.

- 6.5 The terms in the phrase "expenditures on administration, marketing, training and education" do not appear to be defined in section 18 of the CEA. Please provide FEI's definition of the activities included in each of the categories listed below:
- administration;
  - marketing;

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- training;
- education.

**Response:**

Please refer to the response to BCUC IR 1.6.5.1 for FEI's definition of the activities listed in the question.

- 6.5.1 Also provide for each of the categories a breakdown of the activities by year and resource.

**Response:**

The expenditures associated in each of the Marketing, Training, Education and Administration up to a total of \$3.1 million over the period of the Regulation are incremental to the FEU 2012-2013 RRA, as stated in the response to BCUC IR 1.4.4.1. All of the costs associated with developing the program until the time the GGRR was enacted are already captured under the overall NGT development costs as stated in the response to BCUC IR 1.4.4.3. The utility will manage the \$3.1 million during the undertaking period to achieve FEI's program objectives and report to the Minister. In the event that funding is not entirely expended within the undertaking period, then any amounts remaining can be redirected to additional grants or zero-interest loans for specified vehicles subject to the overall cap remaining at \$62 million. For clarity, FEI is not seeking Commission approval to spend up to \$3.1 million in this category nor is FEI seeking approval of how amounts are spent in this category; for example, how much is spent on administration versus safety.

The following table provides a high level breakdown of the definitions, activities undertaken and budgeted resource cost from 2012 through 2016. The resource costs in the table below are only planned as of now and will likely change on a go forward basis to reflect customer and business needs during the undertaking period. In addition the Regulation does not specify limits on the yearly spending so the actual spending by year will most likely vary from that presented in the Appendix G at Pages 2-3, under section 4 - Incentive award and Payout Schedule. Any variances will be captured in the proposed deferral account, NGT Incentives Account.

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	Definition	Activities	Budget / Resources ('000 \$)					
			2012	2013	2014	2015	2016	Total
Administration	All activities undertaken by FEI to manage and administer the NGT program.	This includes developing program design, evaluation criteria, administering the evaluation process, conducting due diligence, awarding and managing the fund disbursement process and government reporting. Other expenses in the category also include fees for legal consultation and the fairness advisor and regulatory costs.	\$ 186	\$ 148	\$ 150	\$ 153	\$ 155	\$ 792
Marketing	All activities undertaken by FEI to communicate and promote the NGT program.	Activities include: website maintenance and updates, public communication, information sessions, answering customer enquiries.	\$ 45	\$ 46	\$ 47	\$ 48	\$ 49	\$ 237
Education & Training	All activities undertaken by FEI to provide required training for fleet operators and employees.	Activities include: provincial implementation & coordination of the national training program and FEI internal training program. Develop training material, coordinate with government and colleges, deliver training to applicants and program verification.	\$ -	\$ 201	\$ 205	\$ 209	\$ 213	\$ 828
<b>Total</b>			<b>\$ 232</b>	<b>\$ 395</b>	<b>\$ 403</b>	<b>\$ 410</b>	<b>\$ 417</b>	<b>\$ 1,857</b>

This table is based on the following assumptions:

- 2012 assumes approximately 1.5 FTE on Administration and Marketing with 70% of the time spent on Administration activities and 30% on Marketing.
- 2013 assumes approximately two additional FTE for Training and Education.
- The table above illustrates only the current planned resource costs and does not include any additional costs that FEI may incur during the undertaking period. Hence the total expenditures in each year in the table above may not match up to the forecast provided in Appendix G under section 4 - Incentive award and Payout Schedule.

6.6 Please explain how FEU will segregate expenditures on administration, marketing, training and education costs to be included in the maximum limit of \$3.1 million that is available under Prescribed Undertaking 1 and expenditures on administration, marketing, training and education costs included in the 2012-2013



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FEU RRA for heavy-duty vehicles, medium-duty vehicles, school buses, transit buses and marine vehicles.

**Response:**

As described in section 5 of the Application, by capturing the incremental 2012 and 2013 administration, marketing, training and education costs related to Prescribed Undertaking 1 programs and activities on an actual as-incurred basis in the proposed NGT Incentives deferral account, these costs will be segregated from those included in the 2012-2013 FEU RRA.

- 6.7 Please explain if the expenditure: (A) to implement safety practices, or (B) to improve maintenance facilities, are out of pocket costs and the fully-loaded labour costs?

**Response:**

Yes. Expenditures for grants to implement safety practices and improve maintenance facilities are "out of pocket". FEI will record the fully-loaded labour costs for such expenditures if internal FEI resources are used.

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## **7.0 Reference: Cost Allocation for Prescribed Undertaking 1**

### **Exhibit B-1, Section 4.2, p. 14**

#### **Cost Recovery**

"It is at the discretion of the utility whether a grant or an interest free loan is provided, and at this time FEI intends to provide grants for the purchase of a CNG/LNG eligible. The rationale for providing grants as opposed to interest free loans is discussed in Section 5.2.3. Applications will be judged on a competitive evaluation process based on specified criteria. As experience is gained during the prescribed undertaking period, FEI may make modifications to its programs, including the offering of interest-free loans in particular circumstances, if FEI believes that would be beneficial."

- 7.1 Please provide the cost of developing the evaluation process and specified criteria for the review of grant and interest free loan applications.

#### **Response:**

Please refer to the response to BCUC IR 1.7.2.

- 7.2 Please provide the cost of administering evaluation process by year, the expected number of applications each year, average time to evaluate each application.

#### **Response:**

At this stage of the Incentive Program, it is difficult for FEI to break down the cost of developing and administering the evaluation process by year as it is all lumped under the "administration" part of the incentive program budget (which also includes program design, due diligence, awarding and managing the fund disbursement process and government reporting). It is also difficult for FEI to predict how many applications FEI would receive and the average time required to evaluate each application. For the current round of vehicle incentive funding, FEI received 19 applications and it took approximately 4 weeks for FEI to enter the data, evaluate the applications based on the specified criteria and come up with a short list of candidates. However, this does not include any additional due diligence required which includes document verification, developing contribution agreements, answering customer enquiries, conducting information sessions and fund disbursement.

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Please refer to the response to BCUC IR 1.6.5.1 for a breakdown of definition, activities undertaken and preliminary budgeted resources from 2012 through 2016 for administration, marketing, education and training.

FEI will manage the \$3.1 million during the undertaking period to achieve the program Objectives, and will be reporting to the Minister.

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## 8.0 Reference: **Cost Allocation for Prescribed Undertaking 1**

**Exhibit B-1, Section 5, pp. 17, 19;**

**FEI Application for Approval of a Temporary Service Agreement for LNG Service, for Approval of a Service Agreement for LNG Delivery, for Approval of a Daily Charge for the Use of a LNG Tanker and for Approval of a Daily Charge for the Use of a Mobile LNG Refueling Station (Vedder Temporary LNG Station), FEI Reply Argument, pp. 2-3**

### **Cost Recovery**

"Costs incurred by FEI as prescribed undertakings will be incremental expenditures to the levels of deferral, capital and operating and maintenance expenses approved for the 2012-2013 RRA in the Commission's Decision dated May 11, 2012 and Order G-44-12. The expenditures set out in the GGRR dated May 14, 2012, were not included in the 2012-2013 RRA requests." (Exhibit B-1, p. 17)

"FEI believes that it is appropriate to recover the costs of Prescribed Undertaking 1 from all non-bypass natural gas customers because non-bypass customers will benefit directly from the additional throughput on the distribution system." (Exhibit B-1, p. 19)

"The incremental cost-based rate design is founded in principles of cost causality. The cost of the two existing LNG tankers is driven or caused by the regulatory requirements associated with serving FEI's non-bypass customers, not by the provision of transport service to Vedder. Not only are FEI's non-bypass customers kept whole by an incremental cost rate when assessed against cost causality principles, the LNG tanker service revenue also represents a contribution to reducing the overall costs paid by non-bypass customers.<sup>9</sup> As FEI has acknowledged in the quoted IR response, the above rationale would not be applicable where new tankers are purchased solely for the purposes of serving LNG customers: "When FEI acquires more tankers that are solely for LNG deliveries, a different costing approach will be required."<sup>10</sup> That is, the principle of cost causality requires costs driven by the service to LNG customers to be allocated to LNG transport service customers rather than the non-bypass customers. " (Vedder Temporary LNG Station, FEI Reply Argument, para 7, pp. 2-3)

8.1 Given that the customers receiving grants and loans under Prescribed Undertaking 1 benefit directly from the expenditures on administration, marketing, training and education costs to be included in the maximum limit of \$3.1 million, please explain why these costs should not be recovered from customers receiving grants and loans under Prescribed Undertaking 1.

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### **Response:**

The GGRR does not make a distinction between the costs of grants, zero-interest loans or expenditures for administration, marketing, training and education. They are all considered costs of the prescribed undertaking. In the case of Prescribed Undertaking 1, this amounts to \$62 million and would be available until the program expires. Section 18(2) of the *Clean Energy Act* states that:

*"(2) In setting rates under the Utilities Commission Act for a public utility carrying out a prescribed undertaking, the commission must set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking."*

The premise of all of the prescribed undertaking expenditures is to encourage uptake by means beyond the operating cost savings or GHG reductions that the customer would see from conversion in any event. It recognizes that the customer is taking on considerable risk in adopting a new fuel and fueling technology and there may still be barriers to take up despite the benefits. If costs for the Prescribed Undertaking 1 were recovered from customer receiving grants in each fiscal year, the rates to these customers would reduce the cost savings from the NGV program and would undermine the purpose of providing the incentives in the first place. This has implications for section 18(3).

FEI notes that the applied for treatment of administration, marketing, training and education costs pertaining to vehicle incentives under the GGRR is, in effect, the same as the Commission-approved treatment of similar costs pertaining to the FEU's EEC programs. EEC administration, program development and marketing costs are all given the same deferral account and rate recovery treatment as the EEC incentives provided and are not charged to the program participants, even though it is program participants that get the benefit of lower natural gas bills going forward. Charging program administration and marketing costs to EEC program participants would reduce program participation and the overall success of the program.

- 8.2 Is the FEI proposal to recover the costs of Prescribed Undertaking 1 from all non-bypass natural gas customers inconsistent with rate design principles of cost causality noted in the Vedder Temporary LNG Station, FEI Reply Argument, para 7, pp. 2-3? Please explain why or why not.

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**Response:**

FEI does not agree that the proposed rate treatment of GGRR vehicles incentives is inconsistent with the principles being espoused in the quote from the Vedder Temporary Station proceeding. The quote focuses mainly on cost causality but consideration must also be given to which parties are receiving benefits related to the costs. In the Vedder Temporary Station reply submission the existing LNG tankers are noted as providing benefits to natural gas ratepayers because they are necessary for the safe and reliable operation of the natural gas system. If new tankers are acquired that are not used to provide these benefits to natural gas ratepayers in general, but are only being used beneficially in providing LNG fueling service for transportation, it is reasonable, and consistent with established cost allocation principles, to allocate the costs of those new tankers to the transportation service. This is comparable to the practice in fully allocated cost of service studies of making direct cost allocations to customers or customer classes where those costs pertain only to those customers. The GGRR vehicle incentives, on the other hand, are providing benefits to natural gas ratepayers by creating additional throughput to mitigate delivery rate increases from declining throughput. Cost causality is an important consideration in rate design, but it should not be separated from the consideration of benefits.

Secondly, the GGRR is seeking to achieve a particular policy objective of the government: the reduction in GHGs from the promotion of NGVs, and it is a legitimate rate design consideration to give effect to legislated government policy. The ratepayer funding of the Prescribed Undertaking 1 incentives is most analogous to ratepayer funding of the FEU's EEC programs. EEC programs are established to serve BC's energy objectives and energy conservation and efficiency policies that the government has determined are important objectives for public utilities to pursue. As noted on page 19 of the Application incentive funding provided to customers under the Companies' EEC programs provide benefits to the participating customer in terms of enabling them to acquire more energy efficient equipment to reduce their utility bills going forward but the costs of the EEC program including recovery of the incentives is charged to all customers. The proposed treatment of Prescribed Undertaking 1 incentives is directly analogous to this. With either prescribed undertakings or EEC expenditures, collecting the incentives from the customer undermines the purpose of providing the incentive to begin with.

In MEMNG's letter dated June 8, 2012 submitted in the AES Inquiry and Exhibit B-1, Appendix P, the MEMNG stated that in reference to grants and zero interest loans that:

***"Grants or Zero-Interest Loans***

*Clean Energy Fuels argues that the formula for providing loans or grants should not take into consideration whether the applicant is in the utility's service territory, and that this would "corrupt the intent of the Clean Energy Act and the Regulation". Similarly, Ferus LNG argues that Government is requiring, in prescribing grants or loans to be provided*

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*to persons in British Columbia for an eligible vehicle to be operated in British Columbia, that "incentives are clearly not limited to FortisBC service sectors." The Ministry submits that the Regulation is permissive in this regard. The public utility, through its open and competitive process for providing grants or zero-interest loans, may limit the provision of its ratepayer-funded loans or grants to those in its service territory to ensure its ratepayers also receive the benefits from these investments. Provision of such loans or grants would remain within the undertaking prescribed in the Regulation."*

The description above makes it clear that MEM considers these to be "ratepayer-funded loans or grants" recovered from ratepayers (i.e. non-bypass customers). This decision was linked to the ratepayers receiving the benefits.

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## **9.0 Reference: Cost Allocation for Prescribed Undertaking 1**

### **Exhibit B-1, Section 6.1.1, p. 25**

#### **Cost Recovery**

"At this time, FEI intends to hold one call to fund projects for the 2012 period, and at least one call process per year in subsequent years. The overall program design, terms and conditions, and evaluation criteria will be assessed in conjunction with the annual reports to the Minister in order to make any adjustments for the next funding period."

- 9.1 Please provide the cost expected of assessing the program design, terms and conditions and evaluation criteria, and preparing the annual reports to the Minister by year and resource.

#### **Response:**

The labor costs associated with program design, terms and conditions and evaluation criteria and preparing the annual reports to the ministry by year are captured under the "administration" part of the \$3.1 Million program budget. Please refer to the response BCUC IR 1.6.5.1 for more details on the activities undertaken by FEI in the administration category and the associated resource costs.

"A fairness advisor has been selected to oversee the incentive funding process. The application approval process is conducted in stages, and includes three main categories."

- 9.2 Please provide the expected cost of the fairness advisor by year.

#### **Response:**

The table below provides the expected cost for the fairness advisor. The costs illustrated in the table below are only forecast and the actuals may vary based on many factors including unanticipated fairness issues, review of additional program materials, process and communication not already planned. In the first year FEI expects a higher involvement of the fairness advisor as the program is being developed and processes are established. In subsequent years, FEI expects the fairness advisor to provide reports and provide guidance as needed to ensure fairness in the selection process. These costs are already captured under the Administration category in the table provided in the response to BCUC IR 1.6.5.1.



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2012	2013	2014	2015	2016
<b>\$60,000</b>	\$30,000	\$30,000	\$30,000	\$30,000

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## **10.0 Reference: Amortization Period**

### **Exhibit B-1, Section 5.2 Prescribed Undertaking 1 – Vehicle Incentives or Zero Interest Loans**

#### **Amortization Period**

- 10.1 FEI proposes a ten year amortization period as it approximates the expected life of the CNG/LNG vehicles as well as the period over which the benefits of the program are experienced. Considering that the take-or-pay agreement for energy provided through a CNG or LNG station is to be a minimum of five years, please calculate the impact on non-bypass customer rates from a five year amortization versus a ten year amortization.

#### **Response:**

Scenarios 1 and 2 have been recalculated using a five year amortization term as requested. As expected, with a five-year amortization (vs ten-year) the percentage rate impacts up to 2020 are much higher (about twice as large) because the shorter amortization period leads to higher amortization expense in rates. After that, the rate decreases are greater for the five-year amortization case in the middle years (2021 – 2027) because the incentives have been fully amortized in the five-year amortization case but are not in the ten-year amortization case. Finally the percentage rate impacts are the same for the last three years since the incentives have been fully amortized in both cases.

The minimum five-year term for station agreements is not a strong basis for setting the amortization period because it does not align well with the period that the vehicles are expected to operate and create throughput benefits. In addition, the five year take-or-pay agreement only applies to the FEU-owned prescribed undertaking stations. Customers may build their own stations or contract with third parties for fueling service and may or may not be serving vehicles that received incentives. The incentives will result in vehicles having a life cycle of 5 to 30 years (please refer to the response to BCUC IR 1.19.3) and FEI assumes that the operators will replace the vehicles at the end of their life cycle (please refer to the response to BCUC IR 1.19.1). Further, the applied-for ten year amortization period performs better than the five-year amortization in aligning costs with benefits and as such addresses inter-generational equity, as well as reduces rate volatility more effectively.

The results are presented in the following table:

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Annual FEI Delivery (Reduction) Increase: 10 & 5 Year Amortization

	Scenario 1		Scenario 2	
	Planned Growth		GGRR Load Growth Only	
	10 Year <sup>1</sup>	5 Year	10 Year <sup>2</sup>	5 Year
2014	0.14%	0.44%	0.14%	0.44%
2015	0.24%	0.72%	0.24%	0.72%
2016	0.20%	0.83%	0.20%	0.83%
2017	0.08%	0.82%	(0.01)%	0.73%
2018	0.68%	1.46%	0.05%	0.83%
2019	0.31%	0.46%	(0.04)%	0.11%
2020	(0.11)%	(0.37)%	(0.13)%	(0.39)%
2021	(0.58)%	(1.17)%	(0.22)%	(0.81)%
2022	(1.12)%	(1.99)%	(0.30)%	(1.17)%
2023	(1.18)%	(2.18)%	(0.38)%	(1.39)%
2024	(1.60)%	(2.28)%	(0.71)%	(1.39)%
2025	(2.02)%	(2.48)%	(0.94)%	(1.39)%
2026	(2.57)%	(2.83)%	(1.13)%	(1.39)%
2027	(3.23)%	(3.33)%	(1.29)%	(1.39)%
2028	(4.04)%	(4.04)%	(1.39)%	(1.39)%
2029	(4.95)%	(4.95)%	(1.39)%	(1.39)%
2030	(5.59)%	(5.59)%	(1.39)%	(1.39)%

Note 1: Appendix G - Scenario 1, Schedule 1, Line 13

Note 2: Appendix H - Scenario 2, Schedule 1, Line 13

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## 11.0 Reference: Forecast Impacts for Prescribed Undertaking 1

**Exhibit B-1, Appendix J, p. 2; Waste Management Application, Appendix A-1, p. 13**

**Customer Benefits**

**Table 3-1: Natural Gas Consumption, Average Distance Travelled, and Station Capacity for B.C. Vehicle Categories**

Category	Scenario Assumptions		
	Annual Consumption (GJ)	Total Average Number of Kms per Year	Station Capacity
Passenger Cars	100	17,500	150
Light Duty Trucks	170	20,000	75
Medium Duty Trucks	450	20,000	50
Heavy Vocational Trucks	880	40,000	50
Heavy Duty Trucks	2,500	300,000	30
Buses	1,840	70,000	50
Marine	92,000	65,000	1

Note: Does not include school buses

(Waste Management Application, Appendix A-1, p. 13)

- 11.1 Using the average number of kilometers per year in Table 3-1 above, please complete the Table below for each Incentive Funding Level (80%- 40%). Also provide the \$/GJ, \$/litre of diesel and the Diesel Litre Equivalents assumptions used in each table. Please explain all LNG supply assumptions using existing supply, dedicated supply additions and third party sources.

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### Net Customer Benefit (\$000's) - 80% Incentive Funding Level

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H= J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	39.0	31.2	7.8								
Transit Bus	48.7	39.0	9.7								
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	77.9	62.4	15.5								
Marine Vessels											

### Response:

FEI has completed five tables, one for each year of incentive funding level (80% - 40%) in the response below. The forecast is based on the following assumptions in year one. For simplicity, FEI has not escalated the price of diesel or natural gas over the undertaking period.

**(D) Total average number of KMs per year per vehicle** – As noted by the BCUC in Table 3 in IR 1.11.0, FEI previously stated its assumptions in the CNG/LNG Application at Appendix A-1, page 13. For the purposes of responding to this question, FEI has used the same assumptions.

**(E) Annual consumption (GJ) per vehicle** – FEI has used the same assumptions for energy use in Table 3-1 in of BCUC 1.11.0.

**(F) Annual Cost of CNG/LNG per vehicle (\$)** – FEI's fueling station business model calculated fueling charges on each specific station, thus FEI has used general estimates for each category. These include:

- Vocational trucks - \$15.50/GJ
  - Fueling station charge of \$5.00/GJ
  - Rate Schedule 25 fixed (\$665/yr), delivery (\$0.702/GJ), variable charges (\$16.996/GJ) sums approximately \$4.50/GJ per vehicle per year, assumes fleet of approximately 10 vehicles.
  - Rate Schedule 25 commodity charge \$3.00/GJ

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- Carbon tax \$1.50/GJ
- Transit buses -\$16.50/GJ
  - Fueling station charge of \$6.00/GJ
  - Rate Schedule 25 fixed (\$665/yr), delivery (\$0.702/GJ), variable charges (\$16.996/GJ) sums approximately \$4.50/GJ per vehicle per year, assumes fleet of approximately 10 vehicles.
  - Rate Schedule 25 commodity charge \$3.00/GJ
  - Carbon tax \$1.50/GJ
- Class 8 tractors - \$15.05/GJ
  - Fueling station charge of \$4.00/GJ
  - Rate Schedule 16 delivery - \$4.05/GJ
  - Rate Schedule 16 commodity - \$3.00/GJ
  - LNG Transport - \$2.50/GJ
  - Carbon Tax - \$1.50/GJ
- Marine vessels - \$11.05/GJ
  - Rate Schedule 16 delivery - \$4.05/GJ
  - Rate Schedule 16 commodity - \$3.00/GJ
  - LNG Transport - \$2.50/GJ
  - Carbon Tax - \$1.50/GJ

**(G) Annual Cost of Diesel per vehicle (\$)** – The cost of diesel is FEI's best estimate at this time. MJ Ervin & Associates maintains a database of historic diesel fuel costs, which range from \$1.30 to \$1.50 per litre for 2012 in the Vancouver area. FEI estimates that large fleets pay slightly lower costs due to their superior buying power.

- Vocational trucks \$1.20 per litre (\$31.0 per GJ)
- Transit buses \$1.20 per litre (\$31.0 per GJ)
- Class 8 tractors \$1.10 per litre (\$28.5 per GJ)

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- Marine vessels \$1.10 per litre (\$28.5 per GJ)

These costs were multiplied by 25.9 for conversion into GJ for inclusion in each table below.

**(I) Vehicle Life – please refer to the response to BCUC IR 1.5.1**

**Table 1 - 2012 – 80%**

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H=J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	39	31.2	7.8	40	0.88	13.6	27.4	13.7	10	0.57	129.3
Transit Bus	48.7	39	9.7	70	1.84	30.4	57.2	26.8	15	0.36	392.7
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	77.9	62.4	15.5	300	2.50	37.6	71.2	33.6	5	0.46	152.5
Marine Vessels											

**Table 2 - 2013 – 70%**

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H=J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	36.5	25.6	10.9	40	0.88	13.6	27.4	13.7	10	0.80	126.2
Transit Bus	46.3	32.4	13.9	70	1.84	30.4	57.2	26.8	15	0.52	388.5
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	73.1	51.1	22	300	2.50	37.6	71.2	33.6	5	0.65	146.0
Marine Vessels	3,500.0	3,500.0	0	65	92.00	1,016.6	2,621.1	1,604.5	30	0.00	48,134.4

**Table 3 - 2014 – 60%**

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H=J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	34.1	20.5	13.6	40	0.88	13.6	27.4	13.7	10	0.99	123.5
Transit Bus	43.8	26.3	17.5	70	1.84	30.4	57.2	26.8	15	0.65	384.9
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	68.2	40.9	27.3	300	2.50	37.6	71.2	33.6	5	0.81	140.7
Marine Vessels	3,000.0	3,000.0	0	65	92.00	1,016.6	2,621.1	1,604.5	30	0.00	48,134.4

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**Table 4 - 2015 – 50%**

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H=J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	31.7	15.8	15.9	40	0.88	13.6	27.4	13.7	10	1.16	121.2
Transit Bus	41.4	20.7	20.7	70	1.84	30.4	57.2	26.8	15	0.77	381.7
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	63.3	31.7	31.6	300	2.50	37.6	71.2	33.6	5	0.94	136.4
Marine Vessels	2,500.0	2,500.0	0	65	92.00	1,016.6	2,621.1	1,604.5	30	0.00	48,134.4

**Table 5 - 2016 – 40%**

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H=J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	29.2	11.7	17.5	40	0.88	13.6	27.4	13.7	10	1.28	119.6
Transit Bus	39.0	15.6	23.4	70	1.84	30.4	57.2	26.8	15	0.87	379.0
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	58.5	23.4	35.1	300	2.50	37.6	71.2	33.6	5	1.04	132.9
Marine Vessels	2,000.0	2,000.0	0	65	92.00	1,016.6	2,621.1	1,604.5	30	0.00	48,134.4

The tables above do not show the delivery margin benefits generated by the incentive provisions over the program period.

A more complete analysis would show these benefits, as well as associated costs for fleets to adopting natural gas. It is important to note that fuel cost savings is not the only expense NGT customers are expected to incur. Prior to making a purchase decision for NGVs, fleet operators assess a number of cost and operational risks, not limited to the following:

1) Vehicle costs

- Price premium on NGVs
- Higher net purchase price
- NGV residual value on resale market is very uncertain, hence residual value estimates are low



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## 2) Fuel supply risks

- Commodity uncertainty regarding future price differential between natural gas and diesel
- Risk of LNG supply, interruption
- Risk that Motor Fuel Tax is introduced to natural gas
- Increased diesel price (due to reduced consumption) for balance of fleet

## 3) Technology risks

- Vehicle performance and fuel efficiency – less experience with NGVs
- Vehicle useful life – less experience with NGVs

## 4) Operational costs and risks

- Maintenance shop upgrade costs (\$80 to \$200 thousand per site)
- Emergency Response Plan development, approvals, permitting
- Time and mileage costs associated with traveling to cardlock fueling stations (for corridor operations). Given the limited fueling infrastructure, stations may not be as conveniently located on route.
- Increased driver training costs, certifications
- Incremental sales costs (education to end-use customers)
- Incremental contracting and regulatory costs

FEI cannot quantify all of these costs and risks on behalf of customers, but potential customers have indicated to FEI that these aspects influence their company's decision making. Simply viewing fuel cost savings and the payback period do not provide a complete picture of the present situation.

With respect to LNG supply, FEI recently submitted its Rate Schedule 16 Application which illustrate that if expanded LNG sales volume caps from Tilbury and Mt. Hayes are approved there is sufficient LNG supply available to meet demand over the undertaking period and until 2017. Should FEI choose to increase its LNG liquefaction capability to serve the market growth beyond that projected to 2017, the capital investment would need to be approved through an

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application to the Commission. No dedicated supply additions are contemplated in the Rate Schedule 16 Application.

Other third-party LNG sources may become available within British Columbia and/or neighboring provinces/states over the undertaking period. Since these projects are out of FEI's control, FEI has completed the analysis in this Application under the premise that FEI's current LNG facilities are sufficient to meet the demand generated by the GGRR at this time, if Rate Schedule 16 is approved by the BCUC.

- 11.2 Using the average number of kilometers per year in Table 3-1 above, please complete the table below for each Incentive Funding Level (80%- 40%) assuming that customers only utilize the natural gas vehicles for 5 years. Also provide the \$/GJ, \$/litre of diesel and the Diesel Litre Equivalents assumptions used in each table.

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	5-Year Utilization	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H= J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	39.0	31.2	7.8						5		
Transit Bus	48.7	39.0	9.7						5		
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	77.9	62.4	15.5						5		
Marine Vessels											

For questions 11.1 and 11.2 please explain all LNG supply assumptions using existing supply, dedicated supply additions and third party sources.

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### **Response:**

FEI has used the same underlying assumptions as shown in the response to BCUC IR 1.11.1 to develop the five tables over the undertaking period. The only difference is the vehicle life has been set to 5 years for each vehicle category.

FEI notes that these tables do not present the complete picture when fleets analyze their decision to adopt natural gas. The response to BCUC IR 1.11.1 also lists a number of associated costs which will offset a fleet's fueling savings benefit and subsequent payback period.

Please also refer to the response to BCUC IR 1.11.1 for an explanation of LNG supply assumptions.

**Table 1 - 2012 – 80%, 5 year vehicle life**

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H=J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	39	31.2	7.8	40	0.88	13.6	27.4	13.7	5	0.57	60.8
Transit Bus	48.7	39	9.7	70	1.84	30.4	57.2	26.8	5	0.36	124.4
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	77.9	62.4	15.5	300	2.50	37.6	71.2	33.6	5	0.46	152.5
Marine Vessels											

**Table 2 - 2013 – 70%, 5 year vehicle life**

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H=J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	36.5	25.6	10.9	40	0.88	13.6	27.4	13.7	5	0.80	57.7
Transit Bus	46.3	32.4	13.9	70	1.84	30.4	57.2	26.8	5	0.52	120.2
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	73.1	51.1	22	300	2.50	37.6	71.2	33.6	5	0.65	146.0
Marine Vessels	3,500.0	3,500.0	0	65	92.00	1,016.6	2,621.1	1,604.5	5	0.00	8,022.4

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**Table 3 - 2014 – 60%, 5 year vehicle life**

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H= J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	34.1	20.5	13.6	40	0.88	13.6	27.4	13.7	5	0.99	55.0
Transit Bus	43.8	26.3	17.5	70	1.84	30.4	57.2	26.8	5	0.65	116.6
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	68.2	40.9	27.3	300	2.50	37.6	71.2	33.6	5	0.81	140.7
Marine Vessels	3,000.0	3,000.0	0	65	92.00	1,016.6	2,621.1	1,604.5	5	0.00	8,022.4

**Table 4 - 2015 – 50%, 5 year vehicle life**

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H= J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	31.7	15.8	15.9	40	0.88	13.6	27.4	13.7	5	1.16	52.7
Transit Bus	41.4	20.7	20.7	70	1.84	30.4	57.2	26.8	5	0.77	113.4
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	63.3	31.7	31.6	300	2.50	37.6	71.2	33.6	5	0.94	136.4
Marine Vessels	2,500.0	2,500.0	0	65	92.00	1,016.6	2,621.1	1,604.5	5	0.00	8,022.4

**Table 5 - 2016 – 40%, 5 year vehicle life**

Eligible Vehicle	Price Premium (\$)	Incentive Cap per Vehicle (\$)	Net Customer Cost per Vehicle (\$)	Total Average Number of KMs per Year per Vehicle	Annual Consumption (GJ) per Vehicle	Annual Cost of CNG/LNG per Vehicle (\$)	Annual Cost of Gasoline or Diesel per Vehicle (\$)	Annual Savings per Vehicle (\$)	Vehicle Life	Payback (Years)	Total Net Customer Benefit per Vehicle (\$)
	(A)	(B)	(A)-(B)=(C)	(D)	(E)	(F)	(G)	(G)-(F)=(H)	(I)	C/H= J	(I-J) * H=K
<b>CNG Vehicle Additions</b>											
Vocational Trucks	29.2	11.7	17.5	40	0.88	13.6	27.4	13.7	5	1.28	51.1
Transit Bus	39.0	15.6	23.4	70	1.84	30.4	57.2	26.8	5	0.87	110.7
<b>LNG Vehicle Additions</b>											
Class 8 Tractors	58.5	23.4	35.1	300	2.50	37.6	71.2	33.6	5	1.04	132.9
Marine Vessels	2,000.0	2,000.0	0	65	92.00	1,016.6	2,621.1	1,604.5	5	0.00	8,022.4

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## 12.0 Reference: Forecast Impacts for Prescribed Undertaking 1

### Exhibit B-1, Appendix J, p. 1

#### Forecast Number of Vehicles

- 12.1 Please fill out the information in the table below for each year of the forecast provided in Table 1 of Appendix J. Provide forecast number of vehicle additions for each customer that is included in the forecast and provide support for the forecast.

Vehicle Additions:		2012	Service Agreement Signed / Letter of Interest?
CNG	Vocational trucks:		
	• Waste Management	20	Y / Y
	• City of Surrey	1	Y / Y ?
	Transit/School Buses:		
	• Kelowna School District	11	N / Y ?
	<b>Total CNG</b>	<b>32</b>	
LNG:	Class 8 Tractors:		
	• Vedder Transport	50	?
	• Westport Research	4	?
	Marine Vessels:		
	• BC Ferries?	0	?
	Other Applications		
	• Specify	0	?
	<b>Total LNG</b>	<b>54</b>	
	<b>Total CGN + LNG</b>	<b>86</b>	

#### Response:

FEI has completed the table for 2012 below.

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Vehicle Additions:		2012 Vehicle Additions	Service Agreement Signed / Letter of Interest?
<b>CNG</b>	Vocational trucks:		
	• Waste Management	20	Yes / Not applicable
	• City of Surrey	1	No / Not applicable
	Transit/School Buses:		
	• Kelowna School District	11	Yes / Not applicable
<b>Total CNG</b>		<b>32</b>	
<b>LNG:</b>	Class 8 Tractors:		
	• Vedder Transport	50	Yes / Not applicable
	• Westport Research	4	No / Not applicable
	Marine Vessels:		
	• BC Ferries?	0	No / No
	Other Applications		
	• Specify	0	No / No
<b>Total LNG</b>		<b>54</b>	
<b>Total CNG + LNG</b>		<b>86</b>	

Please note that BFI was awarded a contract for City of Surrey's waste haulage (which started from the one truck pilot) and has signed a fueling station agreement with FEI. Westport Research operates approximately four tractors for demonstration purposes but only purchases LNG supply under Rate Schedule 16 from FEI, not fueling station service.

To date, FEI has not executed letters of intent with existing and future customers. Current customers (Waste Management, BFI, KSD, Vedder) have all executed fueling station agreement with FEI which extend beyond the undertaking period.

FEI is currently in the process of evaluating applications under its NGT Incentive Program. FEI intends to execute contribution agreements to provide vehicle incentives to successful applicants at the conclusion of this Application proceeding, if the BCUC decision on rate treatment is acceptable to FEI. For potential LNG customers, FEI is awaiting the commencement and final determination from the Rate Schedule 16 proceeding before making binding commitments to customers.

FEI has not yet entered into fueling station agreements with any of these prospective customers at this time and the evaluation process has not yet concluded. Thus FEI cannot provide any confirmation on service agreements, letters of intent, or contribution agreements for the years from 2013 through 2016 at this time.

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FEI states that "It is anticipated that there will be a larger number of applicants requesting funding as natural gas engines become more common." (Appendix J, p.2)

12.2 Please provide supporting evidence for the above claim. Has FEI conducted research in other jurisdictions in North America where natural gas engines are "common"?

**Response:**

FEI's statement "...as natural gas engines become more common" should also be expanded to include "natural gas vehicles". The statement should reflect original equipment manufacturer ("OEM") offerings from vehicle manufacturers as well.

Under FEI's current NGT Incentive Program, the number of applicants seeking funding has exceeded the expected funding amount in year one. These results will be publicly available after the evaluation process is concluded.

FEI has not conducted research in other jurisdictions in North America. In the United States a larger number of OEM vehicles are available and are often funded through a variety of state and federal incentive programs (<http://www.ngvc.org/incentives/index.html>). FEI believes it is reasonable to assume that with a greater number of available vehicle options in the marketplace more applicants will apply under FEI's NGT Incentive Program. Finally, if fleets chose not to adopt natural gas FEI will not disperse incentive funding and fueling stations will not be constructed. In the end, the number of subscribers (high or low) to the NGT Incentive Program will not adversely impact natural gas ratepayers.

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### **13.0 Reference: Forecast Impacts for Prescribed Undertaking 1**

#### **Exhibit B-1, Appendix J, p. 2**

#### **Forecast Premiums and Incentive Funding**

FEI provides estimated cost premiums associated with NGV's in Table 2 of Appendix J.

13.1 Please explain the NGV premiums provided in Table 2 of Appendix J. What are these estimated premiums based on? Provide supporting evidence.

#### **Response:**

The premiums defined in Table 2 of Appendix J represent the cost premiums, in thousands of dollars, for three different types of natural gas vehicles versus comparably equipped diesel vehicles. For example in 2012 the cost premiums are:

- Vocational vehicle                \$39.0
- Transit bus                         \$48.7
- Class 8 tractor                    \$77.9

The premiums are estimates developed by FEI but are based on:

- Discussions with vehicle suppliers;
- FEI's own experience in ordering vocational trucks (crane truck); and
- Evidence submitted by applicants in response to previous and current incentive programs.

With respect to previous incentive programs, the price differential per unit for CNG vocational trucks was approximately \$40 thousand and approximately \$88 thousand for LNG Class 8 tractors. FEI is still in the process of validating the price differentials under its current NGT Incentive Program.

From this starting point FEI is projecting that the capital cost premiums for NGVs will continue to decline over the course of the program. The rationale for this is:

- Cost premiums for NGVs have declined in the past few years as production volumes for NGVs have increased so a cost reduction trend has been established.



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- FEI expects that additional cost reductions will be developed as the technologies mature and further market penetration leads to increased production volumes.

The values in the bottom of the table reflect the proposed maximum incentive amounts by vehicle after applying the proposed funding cap. This ranges from 80% in 2012 to 40% in 2016.

- 13.2 Has FEI conducted any research on vehicles purchases and consumer behaviour? If so, summarize the results, particularly what is the relationship between demand for NGVs and the cost of NGV's? Has FEI conducted research on the change in cost for NGVs?

**Response:**

FEI has gathered primary market research regarding the cost premiums for NGV's. Please refer to the response to BCUC IR 1.13.1.

With respect to the relationship NGV demand and the cost of NGVs, the buying decision is very complex and involves a lot more than just the capital cost premium. In general the buying decision will involve consideration of factors including the following:

1. Capital cost
2. Operating cost
3. Maintenance cost
4. Vehicle lifetime
5. Salvage values
6. Perceptions regarding risk
7. Environmental factors
8. Associated capital investments (such as maintenance facility upgrades)
9. Impact on other costs (e.g. fuel pricing for remaining diesel vehicles)

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10. Personnel related costs (e.g. incremental training and certifications)
11. Additional legal costs associated with negotiating new supply chain agreements and understanding the regulated business model

For every vehicle type the assessments will vary and the mix of variables will be different. As the market for vehicles is fragmented into a wide variety of applications, FEI believes that it would not be possible or practical to get useful quantifiable results from further market research into vehicle purchase decision making.

Commission staff utilizes information provided by FEI in Table 1 and Table 2 for the years 2012 and 2014 and provides the following calculations:

		<b>A</b>	<b>B</b>	<b>C</b>
		Incentive		
		# of	Cap per	Incentive
		Vehicles	Vehicle	Funding
<b>2012</b>	Fuel Type	(Table 1)	(Table 2)	(A x B)
Trucks	CNG	21	31.2	655
Bus	CNG	11	39	429
Tractor	LNG	54	62.4	3,370
Marine	LNG	0		-
		86		4,454

		<b>A</b>	<b>B</b>	<b>C</b>
		Incentive		
		# of	Cap per	Incentive
		Vehicles	Vehicle	Funding
<b>2013</b>	Fuel Type	(Table 1)	(Table 2)	(A x B)
Trucks	CNG	64	25.6	1,638
Bus	CNG	40	32.4	1,296
Tractor	LNG	69	51.1	3,526
Marine	LNG	0		-
		173		6,460

- 13.3 Please explain why the figures calculated in column C above do not reconcile with the Vehicle Incentives provided in Table 3. Show the incentive calculations for each year of Table 3.

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### **Response:**

On Page 3 of Appendix J, FEI states that there is a one year lag period built into the forecast to account for the time between granting incentives and the time at which vehicles are placed into operation. Thus the BCUC's interpretation as stated in this question is not accurate.

The footnote at Page 1 of Appendix J describes the 86 vehicles in 2012:

*"2012 vehicle additions include Waste Management (20), City of Surrey (1), Kelowna School District (11), Vedder Transport (50) and Westport Research (4); for Westport Research, no incentives were provided but the volumes are included to forecast LNG demand)."*

These vehicle additions correspond to incentive payments that were provided during the 2010/2011 timeframe (up to 100% of the price differential). This one year lag was anticipated in FEI's forecast and applies to all years in the undertaking period.

For example, the "number of vehicles" for 2013 in Table 1 multiplied by the "proposed incentive caps per vehicle" amount for 2012 in Table 2 produces the incentive funding forecast in Table 3 for 2012.

	Fuel Type	A	B	C
		# of vehicles (Table 1) 2013	Incentive cap per vehicle (Table 2) 2012	Incentive funding (AxB) (Table 3) 2012
	Trucks	64	31.2	1,996.8
	Bus	40	39	1,560.0
	Tractor	69	62.4	4,305.6
	Marine	0	0	-
		173		7,862.4

Thus as FEI issues incentive payments during 2012, vehicle/load additions are not expected until the 2013 timeframe.

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13.3.1 Given that only 1 Marine Vessel is forecast in 2014, please explain the \$3.5 million incentive funding in 2013 for Marine Vessels shown in Table 3.

**Response:**

Please refer to the response to BCUC IR 1.13.3. FEI has built in a one-year lag between the time when the incentive funding is issued (2013) and when the vehicle is expected to be operational and consuming fuel (2014).

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#### 14.0 Reference: Incentive Funding for Prescribed Undertaking 1

##### Exhibit B-1, Appendix J, p. 4

##### Admin and Education / Safety & Maintenance funding

- 14.1 Please explain the Admin and Education funding incentive. What will these funds be used for and how will this be administered?

##### Response:

FEI would like to clarify that the expenditures associated under Administration and Education are not incentive funding but are expenditures by FEI to manage and administer the incentive programs and provide required training to fleet operators and employees. Please refer to the response to BCUC IR 1.6.5.1 for details on the definition and activities under each category. Any of the funding allowance not spent for this and other sub-categories within Prescribed Undertaking 1 are available to be used in providing additional incentives for eligible vehicles, subject to the overall spending limit of \$62 million in the undertaking period.

- 14.2 Please explain the Safety & Maintenance funding incentive. What will these funds be used for and how will this be administered?

##### Response:

The text referenced in the GGRR at Page 2 reads as follows:

GGRR Section 2(1)(a)

*"(a) the public utility provides, through an open and competitive application process,*

*(ii) grants to persons in British Columbia*

*(A) to implement safety practices, or*

*(B) to improve maintenance facilities*

*to meet safety guidelines for operating and maintaining an eligible vehicle"*

The \$4 million will be awarded to retrofit or build repair and maintenance shops servicing compressed natural gas vehicles (NGVs). FEI has not yet developed the details of the safety

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and maintenance incentive programs. The program design, process and evaluation criteria will be firmed up once FEI finalizes fund disbursement for the current round of the vehicle incentive program. Similar to the vehicle incentive program, FEI will be designing and administering the safety practices and maintenance facilities incentive program in consultation with the fairness advisor to ensure the process is open, competitive and fair to all applicants. Please refer to the responses to BCUC IRs 1.6.1 to 1.6.4 for details regarding safety practices and maintenance facility improvements and the related incentive programs.

14.3 Please explain if the expenditures are the out of pocket costs and the fully-loaded labour costs?

**Response:**

Yes. Expenditures pertaining to Admin & Education and Safety & Maintenance are incremental or "out of pocket". FEI would record the fully-loaded labour costs for such expenditures if internal FEI resources were used.

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## 15.0 Reference: Prescribed Undertaking 1: Scenario 1 (Planned Growth Case)

### Exhibit B-1, Appendix J, p. 4

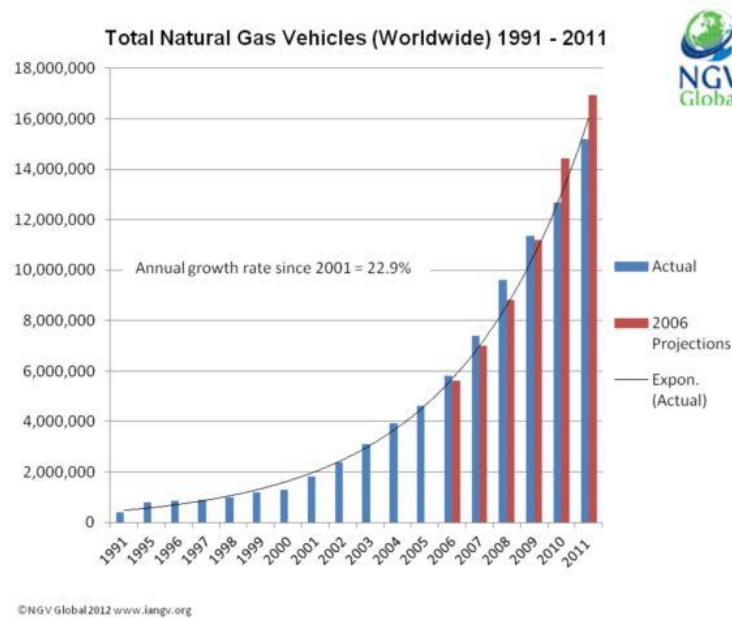
#### Market Expansion

FEI states that "[i]t is expected that natural gas transportation vehicles will increase in the marketplace due to the cost-effectiveness of the vehicles, their increasing presence in the marketplace and the availability of a larger number of fueling stations." (Appendix J, p. 4)

15.1 Please provide supporting evidence to support this claim.

#### Response:

Detailed evidence of the worldwide increasing adoption of NGV's can be accessed at <http://www.iangv.org/>. The figure below shows the worldwide adoption of NGVs from 1991 to 2011.



As of 2011 market penetration reached over 16 million vehicles. The compound annual growth rate since 2001 is 22.9%.

Statistics for each country are provided at: <http://www.iangv.org/current-ngv-stats/>

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## **16.0 Reference: Prescribed Undertaking 1: Natural Gas Volumes**

### **Exhibit B-1, Appendix J, pp. 4-5**

#### **Incremental Demand Volumes**

- 16.1 Please show the calculations to derive the figures for Table 4. What is the assumed GJ of demand for each vehicle type and on what basis is this rate obtained?

#### **Response:**

The assumed values for each vehicle category are as follows:

- CNG Vocational trucks - 1,000 GJ per year;
- CNG Transit buses – 1,000 GJ per year;
- LNG Class 8 tractors – 2,500 GJ per year; and
- Marine vessels – 100,000 GJ per year.

These values are the inputs used to develop the calculations in Table 4 of Appendix J. These fuel consumption estimates were converted from diesel litres (divide diesel by 25.9) and are based on estimates provided by industry fleets in B.C. As noted in the response to BCUC IR 1.11 series, FEI previously used values of 880 GJ/yr for CNG vocational trucks, 1,840 GJ/yr for transit buses, 2,500 GJ/yr for LNG tractors and 92,000 GJ/yr for LNG marine vessels. Thus the calculations presented in this Application are not substantially different than previous assumptions.

FEI has historic actual data from its current NGT projects (Waste Management, Vedder, City of Surrey, Kelowna School District) which indicate much higher consumption values than provided in this Application. Vocational trucks (Waste Management) had average annual fuel consumption of 1,500 GJ per truck (from March 2011 to date) and Class 8 tractors (Vedder) forecast to average annual fuel consumption of 3,840 GJ per tractor (from May 2012 to date). FEI recently received fuel consumption estimates through its NGT Incentive Program application process which further validate FEI's assumptions. Based on the applications received, on a per category basis these are:

- CNG Vocational trucks - 944 GJ per year;
- CNG Transit buses – 1,250 GJ per year;
- LNG Class 8 tractors – 4,431 GJ per year; and
- Marine vessels – 94,000 GJ per year.



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**17.0 Reference: Prescribed Undertaking 1: Scenario 1 (Planned Growth Case)**

**Exhibit B-1, Appendix G**

**Financial Assumptions**

Section 4 of the Financial Assumptions state: "25% of the incentive award paid out when initial terms of the contract have been met, remaining 75% is paid when CNG/LNG vehicles enter service, ranging from 6 to 12 months later." (Appendix G, p. 1)

17.1 Please explain the above assumption. What are the initial terms of the contract?

**Response:**

FEI shall pay 25% of the FEI contribution to the award recipient subject to fulfillment of the following conditions:

- i) Successful completion of the due diligence process with the award recipient;
- ii) Successful execution of the contribution agreement between FEI and the award recipient; and
- iii) Receipt of a natural gas vehicle purchase commitment satisfactory to FEI from the award recipient.

All payments, both the initial 25% and remaining 75% will be captured in a non-rate base deferral account and will be incorporated into rate base effective January 1, 2014. See also section 5.2.2 of the application for more details on how the cost will be recovered to carry out the prescribed undertaking. Detail of the payment schedule can be found in section 2.6 - Payment of the Draft Natural Gas Vehicle Contribution Agreement provided in Attachment 17.1.

17.2 Please explain the incremental LNG Capital additions highlighted in section 9 of the Financial Assumptions. Is this total capital addition dollars or capital dollar per LNG facility? How does this coincide with the figures shown in Line 75 of Schedule 3 (Cost of Service)?

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**Response:**

Incremental LNG capital spent in each year in section 9 of the Financial Assumptions represents total capital spent on LNG facilities. The LNG facilities include liquefaction and storage to serve the natural gas for transportation market. The number of facilities and amount are high level estimates and further detailed study is required. The related cost of service impact of these LNG Liquefaction and Storage facilities, where cost of service includes earned return, depreciation, O&M and taxes is shown on Line 75 of Schedule 3.

Note 5 in Section 9 of the Financial Assumptions states: "Incremental LNG capital includes liquefaction and storage facilities."

- 17.3 Please explain whether land purchase and regulatory costs was considered in the above estimates. If not why not? Please revise Cost of Service schedules if required.

**Response:**

Incremental LNG capital is based on high level estimates and represents the estimated total capital needed to build the LNG facilities, including land purchase and regulatory costs.

- 17.4 Please clarify which FEI liquefaction and storage location is Note 5 above referring to?

**Response:**

As LNG demand increases, it is expected that additional LNG liquefaction and storage facilities will be constructed to service that demand. These facilities will be designed to service the LNG market. The location of future FEI liquefaction and storage facilities have not yet been confirmed as further detailed study is required. Selection of the suitable locations for these future LNG facilities will be dependent to some degree on how the market for LNG develops. Expansion at FEI's Tilbury LNG site is a likely option.

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FEI indicates that the non-rate base deferral account will be transferred to a rate base deferral account on January 1, 2014 and will begin amortization starting in year 2014.

- 17.5 Please recalculate and show Schedule 1 of Appendix G (Summary of Costs and Benefits) by excluding the incentive spending in 2011 of \$5.573 million.

**Response:**

Please refer to the following schedule. Note that, if the prudence of the \$5.573M is not approved, FEI will increase the total funding of new incentives under Prescribed Undertaking 1 from \$56.4 million to \$62 million. Schedule 1 of Appendix G has therefore been recalculated with the \$5.573M of 2011 incentive spending excluded, but total additional spending increased to \$62 million.



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**Appendix G - Scenario 1: Planned Growth**

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

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

**Market expands, additional LNG equipment (liquefaction and storage) added to meet demand \$000's, unless otherwise stated**

**BCUC IR1, 17.5**

**Appendix G - Scenario 1: Planned Growth**

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

**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)	Sch 2, Line 8	178	458	917	1,416	2,032	2,882	3,407	4,027	4,760	5,626
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	Sch 2, Line 40, Note 2,4	538	1,284	2,662	4,044	5,958	8,690	12,964	15,628	18,842	22,719
10 Annual Incentive Funding COS	Sch 3, -Line 76			(2,764)	(4,984)	(6,906)	(9,089)	(17,346)	(17,671)	(18,150)	(18,818)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	538	1,284	(102)	(940)	(948)	(399)	(4,382)	(2,043)	692	3,901
12											
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 3			0.02%	0.16%	0.15%	0.06%	0.69%	0.31%	(0.10)%	(0.58)%
14											
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	504	1,126	(84)	(722)	(682)	(269)	(2,762)	(1,206)	382	2,018
16											
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	504	1,629	1,546	824	142	(126)	(2,888)	(4,094)	(3,712)	(1,694)
18											
19 NPV of Net COS Benefit (Cost) 2012 to 2030 (19 Years)		66,812									

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 does not include any impact of the prescribed undertaking expenditures or prior incentives

23 2: 2012 & 2013 incremental margin added to non rate base deferral account in Schedule 3: Cost of Service Line 32

24 3: Cumulative FEI Delivery (Reduction) increase, FEI delivery margin does not include any impact of the prescribed undertaking expenditures or prior incentives

25 4: 2012 & 2013 includes some margin already included in the 2012/13 RRA



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**Appendix G - Scenario 1: Planned Growth**

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

**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**

**Market expands, additional LNG equipment (liquefaction and storage) added to meet demand \$000's, unless otherwise stated**

**BCUC IR1, 17.5**

**Appendix G - Scenario 1: Planned Growth**

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

**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**

	Reference	2022	2023	2024	2025	2026	2027	2028	2029	2030
1 Annual NG Volume (TJ)	Sch 2, Line 8	6,650	7,861	9,291	10,982	12,981	15,344	18,136	21,437	25,338
2 Discount Rate	2014 FEI After-Tax WACC									
3 Discount Period (years)		11	12	13	14	15	16	17	18	19
4										
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	Sch 2, Line 40, Note 2,4	27,388	33,024	39,812	47,999	57,872	69,768	84,123	101,417	122,281
10 Annual Incentive Funding COS	Sch 3, -Line 76	(19,717)	(24,797)	(28,827)	(33,546)	(38,922)	(45,282)	(52,776)	(62,230)	(77,137)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	7,671	8,227	10,985	14,454	18,950	24,486	31,347	39,187	45,144
12										
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 3	(1.11)%	(1.17)%	(1.53)%	(1.98)%	(2.54)%	(3.22)%	(4.04)%	(4.95)%	(5.59)%
14										
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	3,715	3,729	4,662	5,743	7,049	8,527	10,220	11,961	12,900
16										
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	2,021	5,750	10,412	16,155	23,204	31,731	41,951	53,912	66,812

**Note:**

- 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, does not include any impact of the prescribed undertaking expenditures or prior incentives
- 2: 2012 & 2013 incremental margin added to non rate base deferral account in Schedule 3: Cost of Service Line 32
- 3: Cumulative FEI Delivery (Reduction) increase, FEI delivery margin does not include any impact of the prescribed undertaking expenditures or prior incentives
- 4: 2012 & 2013 includes some margin already included in the 2012/13 RRA

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## 18.0 Reference: Prescribed Undertaking 1: Scenario 1 (Planned Growth Case)

### Exhibit B-1, Appendix G

#### Sensitivity Analysis

18.1 For each of the following parameters below, please recalculate and show Lines 13, 17, and 19 of Schedule 1 (NPV of net COS Benefit (Cost)). Each parameter change calculated should be shown independently of each other.

- + / - 1% in ROE
- + / - 1% in Long Term Debt Rate
- + / - 10% change in Incremental Demand Volume
- + / - 10% change in Number of Vehicle Additions

Your table should look like the following format:

	+1% ROE	-%ROE	+1% LTD Rate	-1% LTD Rate	+10% Incremental Demand Volume	-10% Incremental Demand Volume	+10% # Vehicle Additions	-10% # Vehicle Additions
Approx. Annual FEI Delivery (Reduction) Increase %								
NPV of Net COS Benefit (Cost) '000\$								
NPV of Net COS Benefit (Cost) 2012 - 2030								

#### **Response:**

The table below provides the results of lines 13, 17 and 19 from Appendix G, Schedule 1 based on the requested sensitivity cases. Please note that +/- 10% Change in the Incremental Demand Volume has the same effect for modeling purposes as +/- 10% Change in the Number of Vehicle Additions.



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**19.0 Reference: Prescribed Undertaking 1**

**Scenario 1 (Planned Growth)**

**Scenario 2 (GGRR Load Growth Only)**

**Exhibit B-1, Appendix G, Appendix H and Appendix J**

FEI states that "Scenario 2 is based on the assumption that although no additional vehicles will be purchased, existing vehicles purchased as part of this program will be replaced at the end of their life cycle." (Appendix J, p. 6)

- 19.1 Please explain why FEI assumes that existing vehicles purchased as part of this program will be replaced at the end of their life cycle, particularly when the GGRR will be repealed on April 1, 2017.

**Response:**

As with any emerging market, the toughest sale to make is the first one. Convincing a vehicle operator to adopt NGV for his fleet when the industry is almost exclusively using diesel fuel is a difficult challenge. There is generally a lot of skepticism regarding potential economic benefits (e.g. fuel cost savings) and a tendency to focus on real and/or perceived potential risks. Historically, inertia is difficult to overcome and the operator chooses to remain with diesel. That is the reason incentives are essential to overcome initial resistance and to get operators real experience with NGVs.

The decision process for a renewal of an NGV is much different. By the time the operator is evaluating whether to replace the old NGV with a comparable new NGV, he will have firsthand experience seeing how the vehicles performed in his fleet. Experience to date (e.g. Vedder, Waste Management, FortisBC, City of Surrey and the Kelowna School District) indicates that those that have utilized NGVs are satisfied with their performance and wish to continue using them. The risk and uncertainty is replaced with firsthand experience, so there is no need for an incentive to continue to use the NGV. Furthermore, switching back to diesel would be a decision to return to a more polluting fuel. FEI expects that operators would do this only if there was a strong economic incentive to move back to diesel.

- 19.2 Please explain why FEI has not considered potential technology changes to vehicles such as electric vehicle/hybrids within the next decade that could alter customer choice for NGVs.



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**Response:**

FEI has considered this possibility within the overall NGT business plan that was provided as part of the CNG and LNG Service for Vehicles Application that was submitted on December 1, 2010.

At the present time FEI's assessment is that electric vehicles and hybrids are not significant competitive threats to the heavy duty market that FEI is targeting. There are three primary reasons:

1. Such vehicles typically have capital cost premiums far exceeding the cost premiums for NGV. (e.g. electric trucks such as those purchased with major subsidies for the Novex courier fleet are twice the capital cost of conventional vehicles).
2. The operating performance of these vehicles is not comparable to diesel or NGV.
3. Such vehicles are not supported through the vehicle OEM sales and support network as is the case with NGVs.

19.3 Please provide the Rate Impact for a Scenario 3 which assumes no vehicle replacements of NGV's after the end their life cycle. Also provide the information in a fully functional Excel spreadsheet with detail by year.

**Response:**

The rate impact is presented in the following Schedule 1. An Excel spreadsheet has been provided in Attachment 19.3.

The expected life cycle for each class of NGV are:

- Vocational Trucks: 10 Years
- Transit / School Buses: 15 Years
- Class 8 Tractors: 5 Years
- Marine Vessels: 30 Years

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While this question looks at the scenario of no vehicle replacement after the end of their life cycle, FEI believes that this is a worst case scenario and unlikely to occur. It is reasonable to expect the vehicles will be renewed as the customers gain experience using natural gas, including benefitting from the fuel cost savings and that they will still have access to a usable fueling station for 20 years.



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**Scenario 3: No Replacement of NGV Vehicles After End of Life Cycle**

**BCUC IR1, 19.3**

**Scenario 3: No Replacement of NGV Vehicles After End of Life Cycle**

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

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

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

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

**Market does not expand after incentives, NGV vehicles replaced at end of product cycle and volumes maintained**

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

	Reference	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1 Annual NG Volume (TJ)	Sch 2, Line 8	178	458	917	1,416	2,032	2,732	2,561	2,284	2,046	1,700
2 Discount Rate	2014 FEI After-Tax WACC	6.81%									
4 Discount Period (years)		1	2	3	4	5	6	7	8	9	10
6 FEI Total Delivery Margin Projections \$Millions	Note 1	575	577	588	600	612	624	637	649	662	676
8 Net COS Benefit (Cost) to Existing FEI Natural Gas Customers											
9 Annual Incremental Margin from additional NGT volumes	Sch 2, Line 40, Note 2,4	538	1,284	2,662	4,044	5,958	8,170	7,725	6,884	6,145	4,969
10 Annual Incentive Funding COS	Sch 3, -Line 75	-	-	(3,488)	(5,471)	(7,181)	(8,604)	(9,192)	(8,770)	(8,348)	(7,926)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	538	1,284	(826)	(1,427)	(1,223)	(434)	(1,466)	(1,886)	(2,202)	(2,957)
12											
13 Approximate Annual FEI Delivery / (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 3			0.14%	0.24%	0.20%	0.07%	0.23%	0.29%	0.33%	0.44%
14 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	504	1,126	(678)	(1,096)	(879)	(292)	(924)	(1,113)	(1,217)	(1,529)
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	504	1,629	952	(144)	(1,024)	(1,316)	(2,240)	(3,354)	(4,570)	(6,100)
18											
19 NPV of Net COS Benefit (Cost) 2012 to 2030 (19 Years)					(8,490)						

Note:

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,

does not include any impact of the prescribed undertaking expenditures or prior incentives

2: 2012 & 2013 incremental margin added to non rate base deferral account in Schedule 3: Cost of Service Line 32

3: Cumulative FEI Delivery (Reduction) increase, FEI delivery margin does not include any impact of the prescribed undertaking expenditures or prior incentives

4: 2012 & 2013 includes some margin already included in the 2012/13 RRA



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**Scenario 3: No Replacement of NGV Vehicles After End of Life Cycle**

**BCUC IR1, 19.3**

**Scenario 3: No Replacement of NGV Vehicles After End of Life Cycle**

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

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

**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**

**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**

**Market does not expand after incentives, NGV vehicles replaced at end of product cycle and volumes maintained**

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

	Reference	2022	2023	2024	2025	2026	2027	2028	2029	2030
1 Annual NG Volume (TJ)	Sch 2, Line 8	1,157	1,094	1,041	917	794	622	577	547	510
2 Discount Rate	2014 FEI After-Tax WACC									
3 Discount Period (years)		11	12	13	14	15	16	17	18	19
4										
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 FEI Natural Gas Customers										
9 Annual Incremental Margin from additional NGT volumes	Sch 2, Line 40, Note 2,4	3,034	2,975	2,933	2,741	2,541	2,231	2,175	2,147	2,102
10 Annual Incentive Funding COS	Sch 3, -Line 75	(7,504)	(7,082)	(4,876)	(3,318)	(1,971)	(760)	(0)	(0)	(0)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	(4,470)	(4,107)	(1,943)	(578)	570	1,472	2,175	2,147	2,102
12										
13 Approximate Annual FEI Delivery / (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 3	0.65%	0.58%	0.27%	0.08%	(0.08)%	(0.19)%	(0.28)%	(0.27)%	(0.26)%
14										
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	(2,164)	(1,862)	(825)	(230)	212	513	709	655	601
16										
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	(8,264)	(10,126)	(10,950)	(11,180)	(10,968)	(10,455)	(9,746)	(9,091)	(8,490)

**Note:**

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,

does not include any impact of the prescribed undertaking expenditures or prior incentives

2: 2012 & 2013 incremental margin added to non rate base deferral account in Schedule 3: Cost of Service Line 32

3: Cumulative FEI Delivery (Reduction) increase, FEI delivery margin does not include any impact of the prescribed undertaking expenditures or prior incentives

4: 2012 & 2013 includes some margin already included in the 2012/13 RRA

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- 19.4 Please provide the Rate Impact for a Scenario 4 which assumes that customers stop consuming natural gas at the end of the 5-year take or pay period. Also provide the information in a fully functional Excel spreadsheet with detail by year.

**Response:**

The rate impact is presented in the following schedule 1. Note that FEI expects that most vehicles will have a useful life beyond 5 years and the equipment will be replaced at the end of its life cycle. FEI considers this scenario to be unrealistic and very unlikely to occur. Please refer to the responses to BCUC IRs 1.19.1 and 1.19.3. The requested Excel spreadsheet has also been provided in Attachment 19.3, in the response to BCUC IR 1.19.3.



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**Scenario 4: Five Year Natural Gas Consumption Only**  
**Potential Rate Impact to Existing FEI Natural Gas Customers**

**BCUC IR1, 19.4**

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

**Market expands, additional LNG equipment (liquefaction and storage) added to meet demand \$000's, unless otherwise stated**

**Scenario 4: Five Year Natural Gas Consumption Only**  
**Potential Rate Impact to Existing FEI Natural Gas Customers**

**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)	Sch 2, Line 8	178	458	917	1,416	2,032	2,704	2,424	1,965	1,466	850
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	Sch 2, Line 40, Note 2,4	538	1,284	2,662	4,044	5,958	8,117	7,469	6,086	4,652	2,753
10 Annual Incentive Funding COS	Sch 3, -Line 76			(3,488)	(5,471)	(7,181)	(8,604)	(9,192)	(8,770)	(8,348)	(7,926)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	538	1,284	(826)	(1,427)	(1,223)	(487)	(1,723)	(2,684)	(3,696)	(5,173)
12											
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 3			0.14%	0.24%	0.20%	0.08%	0.27%	0.41%	0.56%	0.77%
14											
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	504	1,126	(678)	(1,096)	(879)	(328)	(1,086)	(1,584)	(2,042)	(2,676)
16											
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	504	1,629	952	(144)	(1,024)	(1,352)	(2,438)	(4,022)	(6,064)	(8,739)
18											
19 NPV of Net COS Benefit (Cost) 2012 to 2030 (19 Years)					(19,969)						

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 does not include any impact of the prescribed undertaking expenditures or prior incentives

23 2: 2012 & 2013 incremental margin added to non rate base deferral account in Schedule 3: Cost of Service Line 32

24 3: Cumulative FEI Delivery (Reduction) increase, FEI delivery margin does not include any impact of the prescribed undertaking expenditures or prior incentives

25 4: 2012 & 2013 includes some margin already included in the 2012/13 RRA



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**Scenario 4: Five Year Natural Gas Consumption Only** **BCUC IR1, 19.4**  
**Potential Rate Impact to Existing FEI Natural Gas Customers**  
**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**  
**Market expands, additional LNG equipment (liquefaction and storage) added to meet demand**  
**\$'000's, unless otherwise stated**

**Scenario 4: Five Year Natural Gas Consumption Only**  
**Potential Rate Impact to Existing FEI Natural Gas Customers**  
**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**

	Reference	2022	2023	2024	2025	2026	2027	2028	2029	2030
1 Annual NG Volume (TJ)	Sch 2, Line 8	-	-	-	-	-	-	-	-	-
2 Discount Rate	2014 FEI After-Tax WACC									
3 Discount Period (years)		11	12	13	14	15	16	17	18	19
4										
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	Sch 2, Line 40, Note 2,4	-	-	-	-	-	-	-	-	-
10 Annual Incentive Funding COS	Sch 3, -Line 76	(7,504)	(7,082)	(4,876)	(3,318)	(1,971)	(760)	(0)	(0)	(0)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	(7,504)	(7,082)	(4,876)	(3,318)	(1,971)	(760)	(0)	(0)	(0)
12										
13 Approximate Annual FEI Delivery (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 3	1.09%	1.01%	0.68%	0.45%	0.26%	0.10%	0.00%	0.00%	0.00%
14										
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	(3,634)	(3,211)	(2,069)	(1,318)	(733)	(265)	(0)	(0)	(0)
16										
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	(12,373)	(15,583)	(17,653)	(18,971)	(19,704)	(19,969)	(19,969)	(19,969)	(19,969)

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 does not include any impact of the prescribed undertaking expenditures or prior incentives  
23 2: 2012 & 2013 incremental margin added to non rate base deferral account in Schedule 3: Cost of Service Line 32  
24 3: Cumulative FEI Delivery (Reduction) increase, FEI delivery margin does not include any impact of the prescribed undertaking expenditures or prior incentives  
25 4: 2012 & 2013 includes some margin already included in the 2012/13 RRA

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19.5 Please provide the Rate Impact of Scenarios 1 and 2 in a fully functional Excel spreadsheet with detail by year.

**Response:**

Excel spreadsheets for Scenarios 1 and 2 have been provided in Attachment 19.5.

"FEI attributes the decline in consumption of natural gas by light duty vehicles over the last decade to a number of factors including:

- The price spread between natural gas and conventional fuels narrowed in the period between 2001-2003 to the point where there was no longer a sufficient economic incentive to switch to natural gas, given the difference in capital costs for the two options;" (Exhibit B-1, Appendix C, Order C 128 11, p. 7)

19.6 Please provide the Rate Impact for a Scenario 5 which assumes that in 2017 the price spread between natural gas and conventional fuels narrows to the point where there was no longer a sufficient economic incentive to switch to natural gas, given the difference in capital costs for the two options.

**Response:**

For this analysis, FEI assumes that the rate spread between natural gas and conventional fuel narrows to the point where there was no longer a sufficient economic incentive to switch to natural gas by 2017. In this situation, it is expected that existing operators will continue consuming natural gas, but will not replace the equipment at the end of their life cycle. As such, the net impact is the same as the result of the scenario requested in the response to BCUC IR 1.19.3. Therefore, please refer to the response to BCUC IR 1.19.3 for the rate impacts of Scenario 5.



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FEI states that: "Although this scenario is not likely to occur, it serves to emphasize the benefits that will accrue to all FEI customers, even in a scenario where there is no uptake in demand volumes upon completion of the program." (Appendix J, p. 7)

19.7 Please provide evidence to support the claim that scenario 2 is not likely to occur.

**Response:**

Please refer to the response to BCUC IR 1.19.6.

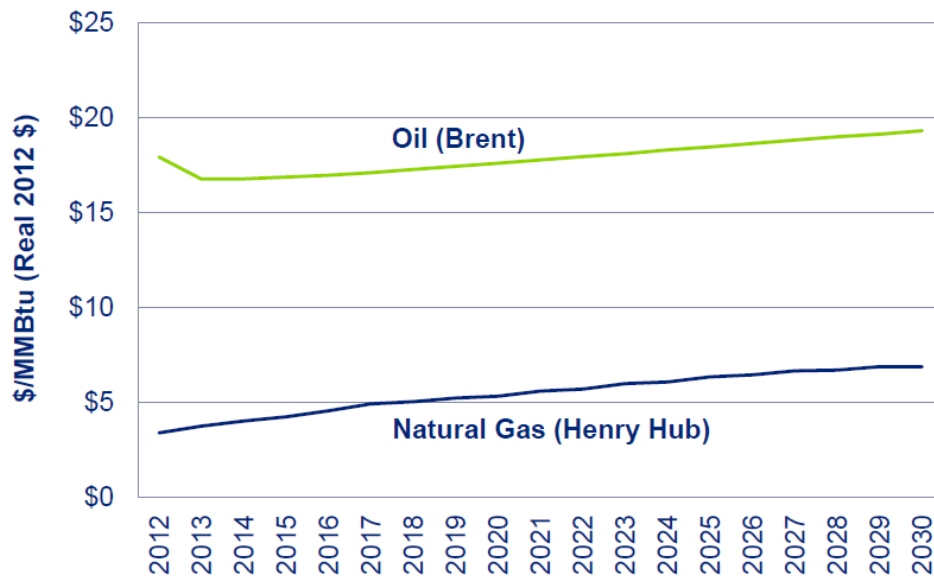
In addition industry statistics show that worldwide growth in NGV usage continues to increase at a rate of over 24% per year. Worldwide there are now more than 16 million NGVs in operation. Please refer to the response to BCUC IR 1.19.1 for additional information and source reference.

The increase in market penetration has been assisted by favourable economics with respect to the spread between diesel fuel and natural gas, as well as the beneficial emissions impact of natural gas relative to diesel. This spread is expected to be positive for the forecasted period, although FEI accepts that this is a forecast. This spread is forecast to continue as shown in the graph produced by Deloitte Development LLP and shown below. The forecast was presented at the High Horsepower Summit Conference held in Houston in September 2012. Of note is that the forecast incorporates additional demand for natural gas in electricity generation (displacing coal) and exports of North American LNG to Asian markets.

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## Projected Prices of Oil and Natural Gas

Prices spreads are projected to remain large



Source: Projections from DMP's World Gas and World Oil Models under Reference Case scenarios

16

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Given that the fundamental economic advantages of natural gas over oil based fuels is expected to continue into the future, FEI believes that it is reasonable to assume that the trend to NGVs will be continued beyond the program period.

- 19.8 Please recalculate and show Schedule 1 of Appendix H (Summary of Costs and Benefits) by excluding the incentive spending in 2011 of \$5.573 million.

### **Response:**

Please refer to the following schedule. Note that, if the \$5.573M is not approved for recovery, FEI will increase the total funding of other permissible expenditures under Prescribed Undertaking 1 from \$56.4 million to \$62 million. Schedule 1 of Appendix H has thus been recalculated with the \$5.573M of 2011 incentive spending excluded, but total spending going forward increased to \$62 million.

The recovery of past incentives is the subject matter of Phase 3 of this proceeding.



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**Appendix H - Scenario 2: GGRR Load Growth Only**  
**Potential Rate Impact to Existing FEI Natural Gas Customers**  
**Schedule 1: Summary of Costs and Benefits (2012-2021)**

**BCUC IR1, 19.8**

**Market does not expand after incentives, NGV vehicles replaced at end of product cycle and volumes maintained**  
**\$000's, unless otherwise stated**

**Appendix H - Scenario 2: GGRR Load Growth Only**  
**Potential Rate Impact to Existing FEI Natural Gas Customers**  
**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)	Sch 2, Line 8	178	458	917	1,416	2,032	2,882	2,882	2,882	2,882	2,882
2 Discount Rate	2014 FEI After-Tax WACC	6.81%									
3 Discount Period (years)		1	2	3	4	5	6	7	8	9	10
4											
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 FEI Natural Gas Customers											
9 Annual Incremental Margin from additional NGT volumes	Sch 2, Line 40, Note 2,4	538	1,284	2,662	4,044	5,958	8,690	8,864	9,041	9,222	9,406
10 Annual Incentive Funding COS	Sch 3, -Line 75	-	-	(2,764)	(4,984)	(6,906)	(8,517)	(9,221)	(8,801)	(8,381)	(7,961)
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	538	1,284	(102)	(940)	(948)	173	(358)	240	840	1,445
12											
13 Approximate Annual FEI Delivery / (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 3			0.02%	0.16%	0.15%	(0.03)%	0.06%	(0.04)%	(0.13)%	(0.21)%
14											
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	504	1,126	(84)	(722)	(682)	116	(225)	141	464	747
16											
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	504	1,629	1,546	824	142	258	33	174	639	1,386
18											
19 NPV of Net COS Benefit (Cost) 2012 to 2030 (19 Years)		24,685									

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 does not include any impact of the prescribed undertaking expenditures or prior incentives  
23 2: 2012 & 2013 incremental margin added to non rate base deferral account in Schedule 3: Cost of Service Line 32  
24 3: Cumulative FEI Delivery (Reduction) increase, FEI delivery margin does not include any impact of the prescribed undertaking expenditures or prior incentives  
25 4: 2012 & 2013 includes some margin already included in the 2012/13 RRA



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**Appendix H - Scenario 2: GGRR Load Growth Only**

**BCUC IR1, 19.8**

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

**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**

**Market does not expand after incentives, NGV vehicles replaced at end of product cycle and volumes maintained**

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

**Appendix H - Scenario 2: GGRR Load Growth Only**

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

**Schedule 1: Summary of Costs and Benefits (continued 2022 - 2030)**

	Reference	2022	2023	2024	2025	2026	2027	2028	2029	2030
1 Annual NG Volume (TJ)	Sch 2, Line 8	2,882	2,882	2,882	2,882	2,882	2,882	2,882	2,882	2,882
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 FEI Natural Gas Customers										
9 Annual Incremental Margin from additional NGT volumes	Sch 2, Line 40, Note 2,4	9,594	9,786	9,982	10,181	10,385	10,593	10,805	11,021	11,241
10 Annual Incentive Funding COS	Sch 3, -Line 75	(7,541)	(7,121)	(5,367)	(3,657)	(2,177)	(845)	0	0	0
11 Net Annual COS Benefit (Cost) '000\$	Line 9 + Line 10	2,053	2,665	4,615	6,524	8,208	9,747	10,805	11,021	11,241
12										
13 Approximate Annual FEI Delivery / (Reduction) Increase, %	-Line 11 / (Line 6 x 1000), Note 3	(0.30)%	(0.38)%	(0.64)%	(0.89)%	(1.10)%	(1.28)%	(1.39)%	(1.39)%	(1.39)%
14										
15 Present Value of Annual Net COS Benefit (Cost)	Line 11/(1+Line 3)^(Line 4)	994	1,208	1,959	2,592	3,053	3,395	3,523	3,364	3,212
16										
17 NPV of Net COS Benefit (Cost) '000\$	Sum Line 15 2012 to year	2,380	3,588	5,546	8,139	11,192	14,586	18,109	21,473	24,685

**Note:**

- 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, does not include any impact of the prescribed undertaking expenditures or prior incentives
- 2: 2012 & 2013 incremental margin added to non rate base deferral account in Schedule 3: Cost of Service Line 32
- 3: Cumulative FEI Delivery (Reduction) increase, FEI delivery margin does not include any impact of the prescribed undertaking expenditures or prior incentives
- 4: 2012 & 2013 includes some margin already included in the 2012/13 RRA

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## **20.0 Reference: Prescribed Undertaking 2 and 3**

### **Exhibit B-1, Appendix J**

FEI states that it: "plans to seek the required approvals in the future as part of a separate application process for each fueling station, whether prescribed undertaking or otherwise." However, it also provides a forecast of the number of fueling station additions required for the period of 2012-2017 (Table 9 of Appendix J) to serve the forecast NGT load.

FEI also states that "Fueling service can be contracted from FEI, a private supplier or through a third party contract with the owner of a fueling station. If an applicant would like to construct a fueling station on their own property, FEI would own, build, construct and maintain the station."

20.1 Based on FEI's experience, what is an order of magnitude estimate for the construction of a CNG station? LNG station?

### **Response:**

FEI has constructed or is nearing completion of three CNG stations and one LNG station to date. These stations and their associated capital costs are noted below.

- 1) Waste Management (20 CNG trucks) – actual capital \$775 thousand;
- 2) Kelowna School District (13 CNG buses) – actual capital \$400 thousand;
- 3) BFI Canada (52 CNG trucks) – forecast capital \$1.9 million; and
- 4) Vedder Transport (50 LNG tractors) – forecast capital \$2.4 million.

The capital expenditure for each fueling station depends upon a number of factors, including customer specifications, vehicle type, operational requirements, fuel consumption, location, and provisions for future vehicle additions. Thus a detailed forecast becomes difficult with such a variety of possibilities. However FEI had used its previous experience in developing forecasts in this Application.

In this Application in Appendix J, Table 9, FEI has provided a forecast number of fueling stations from 2012-2017. This assumption is based on FEI's estimated capital cost to construct a generic fueling station, which is shown below:

- CNG Station - \$1.0 million, capacity to service 50,000 GJ per year (~50 trucks); and

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- LNG Station - \$2.5 million, capacity to serve 140,000 GJ per year (~50 tractors).

These assumptions are reasonable based on FEI's experience to date and are within the expenditure limitations of Prescribed Undertakings 2 and 3.

20.1.1 What is the high level rate impact to natural gas customers, assuming FEI will own, construct, and maintain each of these station additions, based on this estimate? Provide a rate impact calculation for each year of 2012-2017.

**Response:**

Pursuant to section 5.3.2 of this Application FEI can offer fueling station services in compliance with GT&C's Section 12B where the full costs of these stations will be fully recovered from the fueling station operator. However, the Regulation allows for less than full cost recovery from the fueling station customer and it is in this case that natural gas customers will experience a small rate impact. The impact would vary based on the cost of service of the station. The impact to rates reflected in the below table is based on a minimum take-or-pay volume; amounts in excess of the minimum volume will reduce the impact from what is shown in the table below to natural gas customers.

The approximate rate impact is as follows:

- For an LNG station that costs \$2.5 million in capital with \$80 thousand per year in annual O&M and collecting only 80% of the cost of service, natural gas customer's rates would on average increase approximately 0.012% per station.
- For a CNG station that costs \$1.0 million in capital with \$40 thousand per year in annual O&M and collecting only 80% of the cost of service, natural gas customer's rates would on average increase approximately 0.005% per station.

Particulars	2012	2013	2014	2015	2016	2017
CNG Stations (Table 9, Appendix J)	1	3	5	8	12	16
Estimated Rate Impact @ 80% Cost Of Service Recovery	0.006%	0.005%	0.005%	0.005%	0.005%	0.005%
Estimated Total Rate Impact	0.006%	0.014%	0.025%	0.041%	0.062%	0.084%
LNG Stations (Table 9, Appendix J)	1	3	5	7	10	15
Estimated Rate Impact @ 80% Cost Of Service Recovery	0.014%	0.011%	0.011%	0.012%	0.012%	0.012%
Estimated Total Rate Impact	0.014%	0.033%	0.057%	0.082%	0.120%	0.181%

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20.1.2 Does FEI assume that any of the stations are built by a party other than FEI from 2012-2017?

**Response:**

FEI's station addition analysis in this Application (Appendix J, Table 9) represents the NGT industry in general and the overall infrastructure requirement to meet the demand generated by the GGRR. While it is probable that other service providers or individual fleets will own and construct fueling stations from 2012-2017, this forecast does not make any assumptions as to the division of the fueling station market share.

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## **21.0 Reference: Prescribed Undertakings**

### **Separate Classes of Service**

Commission Order C-6-12 for the BFI Decision, directs FEI to establish two separate classes of service, one for CNG service and one for LNG service.

Section 18(2) of the *CEA* requires the Commission to "set rates that allow the public utility to collect sufficient revenue in each fiscal year to enable it to recover its costs incurred with respect to the prescribed undertaking" however it is unclear from which customers these recoveries should come from.

- 21.1 If the BFI Decision is upheld by the Commission, please discuss the implications of the GGRR Section 18(2) as it pertains to the separate class of service scenario? Should the prescribed undertakings under the GGRR be recovered from CNG/LNG customers given its separation from other non-bypass natural gas customers, assuming the benefits of additional throughput also accrue to CNG/LNG customers? Please discuss.

### **Response:**

In the situation that the BFI Decision is upheld and CNG is in separate classes of service then all costs and revenues of CNG fuelling stations would fall into that class of service. Expenditures under the GGRR for the prescribed undertakings for CNG and LNG stations would also be contained within the respective class of service. In this scenario if prescribed undertaking stations were established as permitted by the Regulation with only 80% of the volumes being contracted under a take-or-pay commitment of a five year duration and with no buyout provision at the end of term, the revenue shortfalls and the asset stranding risk would have to remain in the respective class of service because of the requirement in UCA s.60 (c)(ii) to treat each class of service as a self-contained unit. The only options would be to recover those shortfalls and stranding risks from all station customers in that class of service, or from the station customer that received the 80% - 5 year – no buyout contract. FEI believes that this arrangement would thwart the public utility's ability to carry out the GGRR prescribed undertaking and would contravene *CEA* section 18(3) which says that the Commission must not exercise its authority in a way that would directly or indirectly prevent a utility from carrying out a prescribed undertaking.

The treatment of the vehicle incentives and other expenditures under Prescribed Undertaking 1 would not fall within either the CNG or LNG fueling class of service since they pertain to vehicles and not to stations. By inference then the vehicle incentives and other Prescribed Undertaking 1 expenditures would remain in the natural gas class of service and be recovered appropriately from ratepayers in the natural gas class of service.



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**22.0 Reference: Forecast Impacts for Prescribed Undertaking 1**

**Exhibit B-1, Appendix J, p. 1**

**Forecast Number of Vehicles**

- 22.1 Please clarify whether the number of vehicle additions, shown in Table 1, represent the number of vehicles who will receive funding in that year or the number of vehicles that are in operation in that year?

**Response:**

The number of vehicle additions shown in Appendix J, Table 1 represent the number of vehicles that are forecast to be in service in that year. The incentive funding for those vehicles will have been provided in the previous year.

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## **23.0 Reference: Exhibit B-1, Section 2**

### **Purpose of Application and Approvals Sought**

- 23.1 FEI is requesting a Fueling Station Variance Account. Is this deferral account the same as the CNG/LNG cost recoveries deferral account approved in the Waste Management decision?

#### **Response:**

To clarify, FEI does not have a "CNG/LNG cost recoveries deferral account". It has two currently approved accounts:

1. The 2011 CNG and LNG Services Costs and Recoveries account, which was limited to capturing the cost of service variance for CNG and LNG capital for 2011 (since rates had already been set); and
2. The CNG and LNG Recoveries deferral account, a currently active account that captures the fueling station recoveries in excess of minimum contract demand.

The FSVA is not the same as either one of these accounts, although it is similar in nature to the first account in that it captures cost of service for a period for which rates have already been set.

The FVSA (please refer to section 5.3.4 of the Application for a full discussion on the account) captures the total revenue surplus or deficiency pertaining to the fueling station facilities which were not forecast as part of the 2012-2013 RRA. In addition, the FVSA will also capture application costs as well as the administrative allowances provided in Prescribed Undertakings 2 and 3. Without this account, FEI would not have a mechanism to return the un-forecast incremental delivery margin or tanker transportation recoveries received in 2012 and 2013 from CNG and LNG customers to all natural gas customers.

To clarify, in addition to the FSVA, FEI will maintain the use of the approved CNG and LNG Recoveries deferral account for recoveries received from fueling station customers attributable to throughput in excess of the minimum contract demand. However, the 2011 CNG and LNG Services Costs and Recoveries deferral account is no longer active and is expected to be fully amortized by the end of 2014.

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- 23.2 Please confirm that the treatment from the 2012-2013 RRA Decision will be used which restricted items going into the deferral account to excess revenue instead of the total revenue surplus or deficiency?

**Response:**

This is not confirmed. As described in section 5.3.4 of the Application, the Fueling Station Variance Account will capture the total revenue surplus or deficiency pertaining to the fueling station facilities and is similar to the 2011 CNG and LNG Service Costs and Recoveries account approved in Order No. G-128-11 in that it is designed to recover a revenue surplus or deficiency associated with capital investment outside of a revenue requirements period.

FEI did request expansion of the CNG and LNG Recoveries account (a different account than the 2011 CNG and LNG Service Costs and Recoveries deferral account) in the 2012-2013 RRA to include variations from the revenue forecast pertaining to Rate Schedule 16 as well as variances to LNG Service and LNG Tanker Revenues, which was denied by the Commission in Order No. G-44-12. FEI did not request that the account be expanded to include the total revenue surplus or deficiency as indicated in the preamble to this question and is not requesting it in this Application.

Please also refer to the response to BCUC IR 1.23.1.

- 23.3 If FEI signs fueling agreements that are similar to BFI does FEI intend to record the buyout features in a separate account with sub-accounts by contract?

**Response:**

FEI interprets the term buyout features to include the following components which are required to be tracked to calculate a buyout amount:

- Fueling Station Capital Costs;
- Fueling Station Accumulated Depreciation;
- Fueling Station Negative Salvage provision;
- Fueling Station Removal Costs; and
- Fueling Station Recoveries in Excess of Minimum Contract Demand.

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FEI intends to account for these features in a manner which will allow FEI to calculate a buyout provision for each contract that fairly represents the buyout defined in FEI's GT&Cs Section 12B.5 as approved by Commission Order No. G-128-11.

If a deferral account is created to track the excess fueling station recoveries (or a component of the excess recoveries) until such time as either a buyout is triggered or the contract comes to an end, then the deferral account will track information at a contract level of detail.

## **Attachment 2.2**

**An Inquiry into**  
**FortisBC Energy Inc. Regarding the Offering of Products and Services in**  
**Alternative Energy Solutions and Other New Initiatives**

**Supplemental Submission of the FortisBC Energy Utilities on the**  
***Greenhouse Gas Reduction (Clean Energy) Regulation***

**May 25, 2012**

**B. PROVISION OF CNG/LNG FUELLING SERVICE WITHIN NATURAL GAS CLASS OF SERVICE**

14. The Commission has, in the course of past proceedings, sought to insulate customers from bearing any cost or risk associated with the FEU offering CNG/LNG Fuelling Service. This culminated in the Commission creating two new classes of service – one for each of CNG and LNG Fuelling Service – with the result that the costs and risks now rest with either the CNG/LNG Fuelling Service customers or, in effect, the shareholder. In this section, the FEU explain why the Regulation implicitly requires the inclusion of CNG/LNG Fuelling Service and LNG tanker load-out facilities within the broader natural gas class of service. Three notable reasons why this is the case are:

- (a) Portions of the Regulation are only meaningful if the CNG/LNG Fuelling Service is included within the broader natural gas class of service; and
- (b) Separate classes of service impair the achievement of the legislative objective, contrary to section 18(3) of the *CEA*; and
- (c) Maintaining separate classes of service for CNG/LNG Fuelling Service forecloses a source of revenue from these prescribed undertakings that would otherwise flow to core customers, and thus can be expected to have the perverse effect of being detrimental to core customers.

**(a) Portions of Regulation Redundant if Multiple Classes of Service**

15. The Regulation defines a funding envelope for CNG Fuelling stations (\$12 million) and LNG Fuelling stations and load-out facilities (\$30.5 million). The Regulation also prescribes an amount for administration and marketing costs (\$240,000 for CNG and \$250,000 for LNG) within the prescribed undertaking. It is reasonable to conclude that the purpose of specifying these amounts in the Regulation is to limit the impact of the prescribed undertakings on utility ratepayers. It would be unnecessary to protect customers in this way if LNG and CNG Fuelling Services were separate classes of service, as the costs would be contained within the class of service.<sup>8</sup> Section 60(1)(c) of the UCA requires separate rate bases for each class of service and rates for a class of service must be fixed by considering each class of service as a “self-contained

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<sup>8</sup> This analysis applies equally to all of those utilities to which the Regulation applies. It is difficult to see how the class of service analysis would be any different for another natural gas utility, for instance.

unit” without regard to the other classes of service. The shareholder backstops a new class of service. There would have been no justification for the Lieutenant Governor in Council to have set any limits had the Regulation been predicated on these prescribed undertakings being part of separate classes of service.

16. Similarly, the Regulation includes the following provision in respect of both CNG (section 2(2)(d)) and LNG (section 2(3)(d)):

(d) at least 80% of the energy provided at each station during the undertaking period is provided to one or more persons under a take-or-pay agreement with a minimum term of 5 years.

It is reasonable to conclude that the purpose of specifying a minimum term and volume was to limit stranding risk facing core customers in relation to LNG and CNG fuelling stations funded under the Regulation. These requirements would be unnecessary if LNG and CNG Fuelling Services were separate classes of service with their own rate bases, as stranding risk does not extend across classes of service. The shareholder would make its investment decisions based on its risk tolerance, irrespective of minimum requirements.

17. Regulations are subject to the same rules and principles of statutory interpretation as statutes.<sup>9</sup> As the FEU stated in their submissions, the fundamental principle of statutory interpretation is that the words of a legislative provision are to be read in their entire context and in their grammatical and ordinary sense, harmoniously with the scheme of the statute, the object of the statute, and the intention of the legislature.<sup>10</sup> The interpretation that accords with these principles is one where core customers are protected by the funding limits and the minimum term and volume requirements in service agreements under section 2(2)(d) and 2(3)(d), not by relegating CNG/LNG Fuelling Service to separate class(es) of service.

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<sup>9</sup> P-A Cote, *The Interpretation of Legislation in Canada*, 4<sup>th</sup> ed. (Toronto: Carswell, 2011), at 26.

<sup>10</sup> *Rizzo & Rizzo Shoes Ltd. (Re)*, [1998] 1 S.C.R. 27, at para. 21.



**(b) Separate Classes of Service Impair Achievement of Legislative Objectives**

18. The FEU's business model has, to date, been to make investments in CNG/LNG Fuelling Service stations only where the firm contract demand is sufficient to cover the cost of service accruing during the contract term. However, the Regulation permits a prescribed expenditure to proceed with only a portion of the capacity subject to firm contract demand. Section 2(2)(c) of the Regulation [for CNG] and 2(3)(c) [for LNG] provide that "at least 80% of the energy provided at each station during the undertaking period is provided to one or more persons under a take-or-pay agreement with a minimum term of 5 years." It is self-evident that the purpose of setting the minimum percentage below 100% is to make it easier for public utilities to justify investing in new CNG/LNG Fuelling Service facilities.

19. Relegating the CNG/LNG Fuelling Service facilities to a new CNG/LNG class(es) of service is at odds with making it easier for a public utility to make a business case for new investments. The corollary of having a firm commitment of "at least 80%" is that up to 20% of the cost of service for a facility accruing during the contract term will be at risk if other customers fail to materialize. The corollary of having a shorter minimum term is that there will be more unrecovered costs at the conclusion of the initial term, and hence greater stranding risk. The creation of a separate class(es) of service for CNG/LNG Fuelling Service means that core natural gas customers are insulated from that risk, and the utility shareholder faces additional risk. The utility shareholder may decline to invest, or a risk premium may be necessary to attract investment. Either way, this mutes the effectiveness of the Regulation and brings section 18(3) into play. Section 18(3) targets "indirect" regulatory impediments, as well as direct obstacles. The FEU submit that the Regulation implicitly assumes that the residual risk where there is less than 100% firm commitments is to be spread amongst the public utility's natural gas customers as a whole.

20. This is not to say that the FEU will take on more risky projects as a matter of course, simply because the risk is spread amongst utility customers. The FEU still intend to pursue service agreements that reflect longer terms and that will permit full recovery of the cost of service accruing during the term of the service agreement. (The FEU still consider GT&C

12B to be the appropriate vehicle, as discussed below.) The point is that, from the perspective of legislative interpretation (i.e. giving meaning and effect to the Regulation), these provisions make the most sense in the context of a single class of service that includes CNG/LNG Fuelling Service.

**(c) Separate Class of Service Model is Detrimental to Core Customers**

21. The FEU describe below why maintaining separate classes of service for CNG and LNG Fuelling Services requires that core customers forego recoveries that they would otherwise stand to receive were the Commission to treat CNG/LNG Fuelling Service as a tariff offering within the broader natural gas class of service. Those foregone contributions take on much greater significance in the context of the Regulation, which contemplates a significant utility investment in CNG/LNG Fuelling Station assets. However, the same analysis applies to projects brought forward outside the scope of the Regulation.

22. The approved GT&C 12B for CNG/LNG Fuelling Service contemplates an appropriate allocation of costs. It can exist and be effective irrespective of whether CNG/LNG Fuelling Service is designated as a separate class(es) of service, i.e. a new class(es) of service is not necessary to ensure rates reflect the fully allocated cost of service. The Commission has, in the course of recent decisions, refined the types of costs to be included in the cost of service analysis under GT&C 12B. The only additional benefit to the core natural gas customers that arises from creating new classes of service for CNG and LNG is to insulate the core customers from stranding risk that arises if three facts exist:

- first, there is unrecovered capital investment in a fuelling station after the contract initial term; *and*
- second, the CNG/LNG Fuelling Service customer is not required under its service agreement to compensate the FEU in such circumstances for the undepreciated capital cost; *and*
- third, in the absence of such a clause, or if the customer becomes insolvent, facilities cannot otherwise be salvaged and put to use elsewhere or sold to third parties.

The stranding risk facing core customers is going to be quite limited. The FEU have, to date, negotiated lengthy service agreements that recover the full cost of service accruing during the contract term. The approved GT&C 12B requires this. The contracts to date have included a provision requiring the customer to pay for any undepreciated capital costs if the agreement is not renewed. The Commission has directed FEI to include similar provisions in future agreements<sup>11</sup>, and acknowledged that these provisions remove most stranding risk.<sup>12</sup> GT&C 12B includes this requirement. The FEU evaluate creditworthiness of potential customers. Portions of fuelling facilities can be moved and reused. The Commission noted in the NGV Decision that none of the customer groups who had intervened in that proceeding had expressed any significant concern with respect to the risk of stranded assets.<sup>13</sup>

23. Insulating core customers from this risk by creating separate classes of service comes at a cost – or rather, a foregone benefit - to core customers that appears to have been overlooked in the BFI Decision. It is true that, all other things being equal, core customers will obtain the same benefit (delivery margin revenue) of increased throughput from a particular FEU project regardless of whether separate classes of service exist. However, the same is not true for *CNG/LNG Fuelling Service recoveries*. Establishing multiple classes of service under section 60 of the UCA means that all CNG/LNG Fuelling Service recoveries (as opposed to the commodity cost) must, at law, remain within the LNG (or CNG) class of service.<sup>14</sup> Rates must be set considering each class of service as a “self-contained unit”. The revenue requirement of one class of service must, under section 60(1)(c)(iii), be determined “without regard to the rates fixed for any other unit”. Both the cost of service and the recoveries must therefore accrue to the same class of service.

24. The CNG/LNG Fuelling Service rate will be fixed to recover the fuelling station cost of service based on a minimum contract demand, meaning that there will be excess

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<sup>11</sup> NGV Decision, p. 22.

<sup>12</sup> NGV Decision, pp. 28-29.

<sup>13</sup> NGV Decision, p. 21.

<sup>14</sup> Hence, in the 2010-2011 RRA NSA, the provision prohibiting cross-subsidization for TES was reciprocal: see Appendix A to Order G-141-09, p. 9 of 110.

revenues any time the LNG or CNG Fuelling Service customer takes volume in excess of the minimum contract demand. This can occur whenever customers are using the NGVs in their fleets more than the average utilization upon which the contract demand was based (which the operator would be motivated to do, since the operating cost of the NGVs is lower than their diesel vehicles) or if the customer decides to add new NGVs to their fleets over time. The excess revenues can only lawfully flow to core customers if the CNG/LNG Fuelling Service customer is treated as being within the same class of service as the core customers.<sup>15</sup> The segregation inherent in the existence of separate classes of service means that excess revenues default to the party currently bearing the risk, i.e. the shareholder, rather than representing a direct contribution to natural gas delivery margin.

25. The foregone contribution to natural gas delivery margin under a class of service framework is real, not theoretical. All of the contracts currently in place have a provision for an excess volume charge. The Commission's order in respect of Waste Management approved a deferral account to capture recoveries associated with volumes these customers are consuming above the minimum contract demand.<sup>16</sup> The potential excess recoveries under the existing service agreements cannot accrue to natural gas class of service customers if the existing service agreements are now to be segregated into a new class(es) of service. Again, under section 60(1)(c) the cost of service and the recoveries must both accrue to the same class of service. Given the scale of the prescribed investment under the Regulation, the potential foregone benefits to natural gas customers under a class of service model stand to exceed the limited stranding risk being avoided by the creation of separate classes of service.

#### **(d) Summary**

26. The FEU submit that the Regulation implicitly requires a single class of service including CNG/LNG Fuelling Service and LNG tanker-truck load-out facilities. It necessitates

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<sup>15</sup> The FEU respectfully submit that the Commission's BFI Decision violated this principle by directing (see item 5(e) of Order C-6-12) that excess revenues flow to core customers despite having created separate classes of service. In other words, the natural gas class of service obtains the benefits with no risk, while the CNG class of service assumes the risks with no benefits. The internal inconsistency is expected to be one of the bases for an application to reconsider and vary the BFI Decision.

<sup>16</sup> See Order G-128-11 and Order G-144-11.

revisiting the approach adopted in the BFI Decision of treating the provision of compressed natural gas and liquefied natural gas as being different classes of services from the provision of natural gas. In any event, maintaining separate classes of service for the protection of core natural gas customers no longer makes sense given the extent of their mandated contribution to the development of the CNG/LNG Fuelling Service and the associated potential for excess recoveries from CNG/LNG Fuelling Service customers.

### **C. IMPLICATIONS FOR GT&C 12B**

27. The FEU have supported, in past applications and in this Inquiry, the general principle reflected in GT&C 12B that the costs of providing CNG/LNG Fuelling Service should be recovered from the CNG/LNG Fuelling Service customer. Although the FEU disagrees with how the Commission has applied GT&C 12B in the case of BFI,<sup>17</sup> the FEU continue to believe that the principle remains sound. GT&C 12B should continue to be the applicable rate schedule for any CNG/LNG Fuelling Service offered by FEI (subject to the modifications described below), whether or not a particular facility was financed as a part of a prescribed undertaking. The cost of service calculation in GT&C 12B.4 remains valid and does not need to be changed in light of the Regulation. However, the Regulation does have three implications for GT&C 12B:

- (a) GT&C 12B.3 should reflect the potential to have firm contracts that recover less than the full cost of service that arises during the contract term;
- (b) GT&C 12B should now include an exemption to the requirement in 12B.5 to include “buy out” provisions, to be exercised in circumstances where the requirement will impede connecting a beneficial customer; and
- (c) the Commission should change the way in which it *applies* the cost of service calculation in GT&C 12B.4 to realize legitimate economies of scope and reflect the savings in CNG/LNG Fuelling Service rates.

#### **(a) GT&C 12B Appropriate For All CNG/LNG Fuelling Service Customers**

28. GT&C 12B should continue to be the applicable rate schedule for any CNG/LNG Fuelling Service offered by FEI, whether or not a particular facility was or is to be financed as a

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<sup>17</sup> A pending application to reconsider the BFI Decision will raise one such instance.

**Attachment 17.1**

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## NATURAL GAS VEHICLE CONTRIBUTION AGREEMENT

THIS AGREEMENT is made effective as of ♦ (the “Effective Date”)

BETWEEN:

♦,  
♦

(the “Recipient”)

AND:

**FORTISBC ENERGY INC.**

16705 Fraser Highway, Surrey, British Columbia, V4N 0E8

(“FEI”)

WHEREAS:

- A. The Recipient wishes to purchase up to ♦ [number and description of vehicles] powered by ♦ [fuel type] natural gas (the “Vehicles”, or individually, a “Vehicle”).
- B. FEI wishes to support the use of energy sources that decrease greenhouse gas emissions and encourage the use of natural gas vehicles in commercial sectors by contributing to the purchase costs of such vehicles utilizing its Natural Gas for Transportation (NGT) incentive funding.
- C. The Recipient has applied to FEI for funding assistance and FEI has agreed to contribute to the purchase price of the Vehicles on the terms and conditions set out in this Agreement.

**NOW THEREFORE**, in consideration of the mutual promises set out herein and other good and valuable consideration (the receipt and sufficiency of which is hereby acknowledged) the parties agree as follows:

1. **Representations and Warranties**

- 1.1 **Recipient Information.** The Recipient acknowledges FEI’s decision to provide funding assistance to the Recipient is based on information provided by the Recipient in its application for NGT funding and obtained by FEI during the application review process. The Recipient represents and warrants to FEI that all such information is true and accurate as of the date of execution of this Agreement. The Recipient shall immediately notify FEI of any changes to the Recipient’s information or, if the representations and warranties contained in this section 1 cease to be true, at any time during the Term.
- 1.2 **Vehicle Use.** The Recipient represents and warrants to FEI the Vehicles will be primarily used in British Columbia; where primary use shall mean at least 75% of total kilometers driven in any year, or as otherwise reasonably determined by FEI.
- 1.3 **Fuel Source** – The Recipient represents and warrants to FEI the Recipient will fuel the Vehicles using a natural gas fueling source approved by FEI, acting reasonably, including:

- (a) directly from FEI; or
- (b) from an FEI owned fueling station;
- (c) from fueling station installed on the Recipient's premises or operated by a third party, which uses natural gas purchased from FEI; or
- (d) from an approved card lock service which uses natural gas purchased from FEI;

and will provide a copy of its fueling plan to FortisBC for approval.

- 1.4 **Quality and Fitness of Vehicles.** Despite any input, information or contribution made by FEI to the Recipient with respect to the purchase of the Vehicles, FEI makes no warranties or representations, express or implied, with respect to the Vehicles or natural gas vehicles in general, including but not limited to any implied warranty of merchantability, fitness for a particular purpose or durability. It is the sole responsibility of the Recipient to determine the suitability of the Vehicles for its purposes and undertake any due diligence the Recipient considers necessary and appropriate.

## 2. **Contribution and Payment**

- 2.1 **Amount of Contribution.** Subject to reduction pursuant to section 2.2 (*Maximum Contribution*) and section 2.4 (*Third Party Funding*), FEI will make a contribution to the purchase of each Vehicle in the amount of \$♦ *[per vehicle contribution]* (the "**FEI Contribution**"). Despite the foregoing, the following conditions shall apply:

- (a) FEI Contributions will be made for the purchase of up to ♦ *[maximum number of vehicles]* Vehicles;
- (b) the aggregate amount of the FEI Contributions shall not exceed \$♦; and
- (c) an FEI Contribution will not be made for any Vehicles:
  - (i) ordered or purchased prior to the Effective Date; and
  - (ii) purchased after ♦ *[deadline date]*.

- 2.2 **Maximum Contribution.** If the FEI Contribution exceeds ♦ percent (♦%) of the Price Differential (the "**Maximum Contribution**"), the Financial Contribution for such Vehicle will be reduced to equal the Maximum Contribution; where "**Price Differential**" means the difference between the purchase price of a comparable diesel powered vehicle and the purchase price of the Vehicle, not including taxes and PDI.

- 2.3 **Determination of Price Differential.** For the purpose of calculating the Price Differential, the Recipient will provide evidence, satisfactory to FEI, identifying the purchase price of a diesel powered vehicle having the same or similar attributes as the Vehicle, which evidence may include recent sales or acquisitions and quotes from dealers or manufacturers. FEI reserves the right to independently verify the purchase



price data and to calculate the Price Differential based on the evidence provided by the Recipient or as otherwise obtained by FEI.

2.4 **Third Party Funding.** This Agreement does not preclude the Recipient or FEI from applying for, soliciting or accepting grants, funding or contributions from other sources towards the purchase or operation of the Vehicles (the “**Third Party Funding**”), provided that if:

- (a) the Recipient accepts Third Party Funding within five (5) years of the Effective Date; and
- (b) such Third Party Funding would not otherwise be available to the Recipient in the ordinary course of business for the purchase of any vehicles; and
- (c) the FEI Contribution set out in section 2.1 plus the Third Party Funding exceeds the Maximum Contribution;

the FEI Contribution will be reduced by the amount the FEI Contribution set out in section 2.1 plus the Third Party Funding exceeds the Maximum Contribution and the Recipient will return that excess amount within five (5) business days of receipt of the Third Party Funding. The Recipient covenants and agrees to immediately provide FEI the details of any applications submitted or offers or opportunities for Third Party Funding and, upon receipt of a commitment for Third Party Funding, the details and amounts thereof. Any Third Party Funding applied for, and received by, FEI shall be incorporated into and become part of the FEI Contribution.

2.5 **Application of FEI Contribution.** The Recipient shall apply the FEI Contribution towards the purchase price of the Vehicle and not towards lease or financing payments. If the Recipient is a vehicle leasing company the FEI Contribution will accrue to the benefit of the lessee of the Vehicle and lease payments adjusted accordingly.

2.6 **Payment.** FEI shall pay the FEI Contribution to the Recipient in the following manner:

- (a) twenty-five (25%) percent within thirty (30) days following receipt of documentation satisfactory to FEI of a purchase commitment for the Vehicle and confirmation of the purchase price of a similar diesel powered vehicle in accordance with section 2.4; and
- (b) the balance within thirty (30) days following receipt of documentation satisfactory to FEI that the purchase of the Vehicle has been completed and the Vehicle is registered and insured in the name of the Recipient;

provided that FEI may, in its discretion, and upon notice to the Recipient, adjust the payment schedule to enable payments of the FEI Contribution to be made for multiple Vehicles concurrently, including upon the completion of the purchase of all the Vehicles.

## 2.7 Return of FEI Contribution.

- (a) In addition to any repayments to be made pursuant to section 2.2 (*Third Party Funding*) and section 7 (*Default*), the Recipient shall return the FEI Contribution made with respect to a Vehicle, in whole or in part in accordance with subsection (b) below, and FEI will be under no obligation to make any further FEI Contribution with respect to such Vehicle, in the following circumstances (each a “**Repayment Event**”):
- (i) the purchase of the Vehicle does not complete within one (1) year of the Recipient entering into the purchase commitment for the Vehicle or such later date approved in writing by FEI;
  - (ii) at any time prior to the end of the ♦ anniversary of the purchase date of the Vehicle (the “**Service Life Term**”), the Recipient receives insurance proceeds as a result of the Vehicle being written off by the insurer, unless the Recipient applies the insurance proceeds to the purchase of a replacement natural gas vehicle having the same or similar attributes as the Vehicle.
  - (iii) at any time prior to the end of the Service Life Term, the Recipient:
    - A. sells or otherwise transfers its right, title or interest in and to the Vehicle to any person;
    - B. removes the Vehicle from regular service, with the exception of temporary removal for the purpose of repair or maintenance;
    - C. does not use the Vehicle primarily in British Columbia;
    - D. removes or replaces the natural gas fuel system components from the Vehicle;
    - E. when fueling the Vehicles, fails to comply with applicable natural gas safety codes, standards and requirements, whether existing at law or in accordance with fueling and fuel management procedures as specified by FEI through training or otherwise or as set out in the Recipient’s approved fueling plan; or
    - F. Ceases to purchase natural gas through FEI for the purpose of fueling the Vehicles.
- (b) The Recipient will notify FEI in writing within five (5) business days of the occurrence of a Repayment Event, and within five (5) business days following such notification, the Recipient will return to FEI:
- (i) the total FEI Contribution, where sub-section 2.7(a)(i) applies;

- (ii) a proportionate share of the insurance proceeds based on the amount of the FEI Contribution relative to the purchase price of the Vehicle, where sub-section 2.7(a)(ii) applies; or
- (iii) the FEI Contribution reduced at the rate of 1/◆ [Service Life Term] for each completed year after the purchase of the Vehicle prior to one or more of the conditions set out in sub-section 2.7(a)(iii) becoming applicable.

2.8 **Overdue Payments.** If the Recipient fails to make any repayment of an FEI Contribution by its due date, such overdue payments will be subject to a late payment charge of 1.5% per month (19.56% per annum) and FEI shall be entitled to deduct such overdue amounts, plus interest thereon, from any future FEI Contribution to the Recipient.

2.9 **Security Interest.** In consideration of FEI making a financial contribution towards the purchase of the Vehicles, the Recipient hereby grants to FEI a security interest in and to the Vehicles to secure the Recipient's obligations under this Agreement and the Recipient hereby consents to the registration of such security interest by FEI in priority to any other general security interest over the Vehicles.

### 3. **Maintenance and Use of Vehicles**

3.1 **Operating and Maintenance.** Except as otherwise provided in this Agreement, at all times during the Service Life Term, the Recipient is responsible for the purchase, use, operation and maintenance of the Vehicles, including any modifications or upgrades required to the Recipient's facilities to accommodate the Vehicles.

3.2 **Vehicle Data and Information.** During the Service Life Term, the Recipient shall provide to FEI all data and information reasonably requested by FEI from time to time with respect to the Vehicles, including mileage, gas consumption and hours of usage (if tracked). FEI shall be entitled to use all such data and information for statistical, marketing and other purposes, to include such data and information in any reports, publications and other records distributed by FEI from time to time and to disclose such data and information to any governmental authority, including the BCUC.

### 4. **Advertising and Marketing**

4.1 **Vehicle Decals.** FEI shall be entitled to affix decals to the exterior of the Vehicles incorporating FEI's corporate logo and web-site information and identifying the Vehicles as powered by natural gas by FEI, all of reasonable size and prominence as approved by the Recipient, which approval will not be unreasonably withheld, delayed or conditioned.

#### 4.2 **Public Announcements.**

- (a) Neither party shall issue a press release, public announcement, or marketing or promotional material with respect to the Vehicles or this Agreement (the "**Marketing Materials**") without the consent of the other party, such consent not to be unreasonably withheld, delayed or conditioned.

- (b) The Recipient shall acknowledge FEI's contribution towards the purchase of the Vehicles in all Marketing Materials issued by or on behalf of the Recipient.
- (c) This section shall not restrict FEI from publicly disclosing the award of funding (including the details thereof), making regulatory submissions with respect to such funding or claiming environmental attributes, without being required to obtain the Recipient's consent.

5. **Environmental Attributes**

5.1 For the purpose of this Agreement, "**Environmental Attributes**" means:

- (a) all attributes associated with, or that may be derived from, the Recipient's acquisition and use of the Vehicles having decreased environmental impacts relative to the use of diesel powered vehicles including any existing or future credit, allowance, certificate, right, benefit or advantage or proprietary or contractual right whether or not tradeable;
- (b) any existing or future instrument, including any environmental emission allowances and environmental emission reduction credits, reduction right, allowance, certificate or other unit of any kind whatsoever, whether or not tradeable and any other proprietary or contractual right, whether or not tradeable, and any resulting from, or otherwise related to the actual or assumed deduction displacement or offset of emission associated with, or that may be derived from, the City's acquisition and use of the Vehicles; and
- (c) all revenues, entitlement, benefits and other proceeds arising from or related to the foregoing.

5.2 Despite any other provision of this Agreement, all right, title and interest in the Environmental Attributes that arise or accrue by virtue of the acquisition and use of the Vehicles will belong to FEI.

6. **Indemnification**

6.1 **Recipient Indemnity.** The Recipient shall indemnify and hold harmless each of FEI, its affiliates and their employees, directors, representatives, agents, officers and contractors from and against any and all adverse claims, losses, suits, actions, judgments, demands, debts, accounts, damages, costs, penalties and expenses (including all legal fees and disbursements) arising from or out of:

- (a) any injury to persons (including death) or loss of or damage to property which may be or be alleged to be caused or suffered as a result of the use or operation of the Vehicles;
- (b) any claim, demand or action made by a third party against it or any of them based upon FEI's capacity as a provider of financial assistance under this Agreement; or

- (c) any breach by the Recipient, its employees, directors, officers, representatives, agents or contractors of any of the provisions contained in this Agreement.

## 7. **Default**

7.1 **Default by the Recipient.** If, in the opinion of FEI, the Recipient has made any misrepresentation under the terms of this Agreement, or has failed to proceed diligently with the purchase of the Vehicles or is otherwise in default on carrying out the terms and conditions of this Agreement, FEI may exercise any or all of the following remedies:

- (a) terminate this Agreement in whole or in part;
- (b) terminate its obligation to pay any FEI Contribution, whether due or accruing due at the time of such termination; and
- (c) require the Recipient to immediately repay all or any part of the FEI Contributions made by FEI to the Recipient.

## 8. **Dispute resolution**

8.1 Where any dispute arises out of or in connection with this Agreement, either party may request the other party to appoint senior representatives to meet and attempt to resolve the dispute either by direct negotiations or mediation. Unresolved disputes may be submitted for final resolution by arbitration administered by the British Columbia International Commercial Arbitration Centre under its "Shorter Rules for Domestic Commercial Arbitration" in Vancouver, British Columbia, Canada. The language of that arbitration will be English. Alternatively, the Parties may agree, within 15 days of request by a party for final resolution, to submit that dispute for final resolution by arbitration in another manner.

8.2 The parties shall continue to fulfill their respective obligations pursuant to this Agreement during the resolution of any dispute in accordance with this section.

## 9. **General**

9.1 **Term.** The term of this Agreement shall commence on the Effective Date and terminate upon the expiration of the Service Life Term of all of the Vehicles, unless terminated earlier pursuant to the terms and conditions of this Agreement (the "**Term**").

9.2 **Inspection and Audit.** The Recipient shall, at all times during the Term, maintain accurate and complete records of its operations, including with respect to the information provided by the Recipient in its application for NGT funding, and the use and activities of the Vehicles (collectively, the "**Records**"). The Recipient agrees FortisBC or its authorized representative shall have access to and the right to examine and audit the Records and the operations of the Recipient at any time during regular business hours to ensure the accuracy of the Recipient's application and compliance with terms of this Agreement.

- 9.3 **Costs.** Except as otherwise set out in this Agreement, each party will be responsible for the payment of its own costs and expenses related to performing its obligations under this Agreement.
- 9.4 **Survival.** The following sections shall survive the termination or expiration of this Agreement: Sections 2.2 [*Third Party Funding*], 2.7 [*Return of FEI Contribution*], 5 [*Environmental Attributes*], 6 [*Indemnification*], 8 [*Dispute Resolution*], 9.5 [*Governing Law*] and 9.8 [*Notice*].
- 9.5 **Governing law.** This Agreement shall be governed by and construed in accordance with the laws of the Province of British Columbia and the laws of Canada. The parties hereby attorn to the jurisdiction of the courts of British Columbia.
- 9.6 **Assignment.** The Recipient shall not assign its rights and obligations under this Agreement without the prior written consent of FEI, which consent shall not be unreasonably withheld. FEI may assign this Agreement, or parts thereof, to any of its affiliated entities.
- 9.7 **Relationship.** Nothing contained in this Agreement shall be construed to place the parties in the role of partners or joint venturers or agents and no party shall have the power to obligate or bind any other party in any manner whatsoever.
- 9.8 **Notice.** Any notices or other communication required to be given or made pursuant to the Agreement shall, unless otherwise expressly provided herein, be in writing and shall be personally delivered to or forwarded by postage prepaid mail to either party at its address set forth below:
- |                                |                   |
|--------------------------------|-------------------|
| TO FEI:                        | TO THE RECIPIENT: |
| <b>FORTISBC ENERGY INC.</b>    | ◆                 |
| 16705 Fraser Highway           | ◆                 |
| Surrey, BC V4N 0E8             |                   |
| <b>Attention:</b>              | Attention: ◆      |
| FortisBC NGT Incentive Program |                   |
| Energy Products & Services     |                   |
- 9.9 **Amendments.** No amendment or variation of the Agreement shall be effective or binding upon the parties unless such amendment or variation is set forth in writing and duly executed by the parties.
- 9.10 **Waiver.** No party is bound by any waiver of any provision of this Agreement unless such waiver is consented to in writing by that party. No waiver of any provisions of this Agreement constitutes a waiver of any other provision, nor does any waiver constitute a continuing waiver unless otherwise provided.
- 9.11 **Enurement.** This Agreement enures to the benefit of and is binding on the parties and their respective successors and permitted assigns.

- 9.12 **Severability.** If any provision of this Agreement is determined by a court of competent jurisdiction to be invalid, illegal or unenforceable in any respect, such determination does not impair or affect the validity, legality or enforceability of any other provision of this Agreement.
- 9.13 **Further Assurances.** The parties shall sign such further and other documents and do and perform and cause to be done and performed such further and other acts and things as may be necessary or desirable in order to give full effect to this Agreement.
- 9.14 **Remedies Cumulative.** All rights and remedies of each party under this Agreement are cumulative and may be exercised at any time and from time to time, independently and in combination.
- 9.15 **Entire Agreement.** This Agreement constitutes the entire agreement between the parties with respect to the subject matter of this Agreement and supersedes all prior agreements, understandings, negotiations and discussions, whether oral or written. There are no conditions, covenants, representations, warranties or other provisions, whether express or implied, collateral, statutory or otherwise, relating to the subject matter of this Agreement except as provided in this Agreement.
- 9.16 **Time is of the essence.** Time is of the essence of this Agreement.
- 9.17 **Execution.** This Agreement may be executed in counterparts, each of which shall be deemed as an original, but all of which shall constitute one and the same instrument. Delivery of an executed counterpart of this Agreement by facsimile or electronic transmission hereof shall be as effective as delivery of an originally executed counterpart hereof.

**IN WITNESS WHEREOF** the parties hereto have executed this Agreement as of the day and year first above written.

**FORTISBC ENERGY INC.**

by its authorized signatory(ies):

◆

by its authorized signatory(ies):

\_\_\_\_\_  
Name:

Title:

\_\_\_\_\_  
Name:

Title:

\_\_\_\_\_  
Name:

Title:

\_\_\_\_\_  
Name:

Title:

## **Attachment 19.3**

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### **REFER TO LIVE SPREADSHEET**

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)



## **Attachment 19.5**

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### **REFER TO LIVE SPREADSHEET**

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)