Diane Roy
Director, Regulatory Affairs

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

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

July 31, 2014

Via Email
Original via Mail

B.C. Sustainable Energy Association
c/o William J. Andrews, Barrister & Solicitor
1958 Parkside Lane
North Vancouver, B.C.
V7G 1X5

Attention: Mr. William J. Andrews

Dear Mr. Andrews:

Re: FortisBC Energy Utilities[1] (FEU)

2014 Long Term Resource Plan (the Application)

Response to the B.C. Sustainable Energy Association and the Sierra Club British Columbia (BCSEA) Information Request (IR) No. 2

On March 25, 2014, the FEU filed the Application as referenced above. In accordance with the British Columbia Utilities Commission Order G-56-14 setting out the Regulatory Timetable for review of the Application, the FEU respectfully submit the attached response to BCSEA IR No. 2.

If further information is required, please contact the undersigned.

Sincerely,

on behalf of the FORTISBC ENERGY UTILITIES

Original signed:

Diane Roy

Attachments

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

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[1] comprised of FortisBC Energy Inc., FortisBC Energy (Vancouver Island) Inc. and FortisBC Energy (Whistler) Inc.

22.0 Topic: Natural Gas for Transportation (NGT)

Reference: Exhibit B-4, BCSEA IR 1.12.3

"12.3 What responsibility does FEU have to determine or verify whether a project, program, contract or expenditure undertaken pursuant to the GGRR [Greenhouse Gas Reduction Regulation] does in fact reduce greenhouse gas emissions (GHG) in British Columbia?

Response:

Any initiative under consideration pursuant to the GGRR includes examination of GHG emissions reductions."

22.1 Please provide a recent example of an initiative under consideration pursuant to the GGRR and the FEU's examination of GHG remissions reductions.

Response:

For clarity, 'initiative' is in reference to the development of a new application for natural gas, be it for buses, vocational trucks, heavy duty Class 8 trucks, or marine vessels.

Under the GGRR, the FEU are permitted to provide financial incentives to customers switching to natural gas. An example is the FEU's customer BFI, which is a waste hauling company that converted a number of their trucks to CNG, consumes about 80,000 GJ per year. In the case of BFI, if they consume 80,000 GJ per year, this would be equivalent to reducing GHG emissions by about 1,960,000 kg of CO2e per year.[1]

[1] 1,960,000 kg of CO2e per year = (93.55 kgCO2e/GJ – 69.04 kgCO2e/GJ) * 80,000 GJ per year

23.0 Topic: NGT

Reference: Exhibit B-4, BCSEA IR 1.13.2

"...The FEU are obligated to report semi-annually with the BC Ministry of Energy and Mines with respect to its NGT Program operated under the GGRR. As part of this reporting, the FEU detail the quantity of GHG emissions that it has displaced as a result of increased natural gas use, and what it expects to displace over the next several years using the methodology described above. It would then be up to the government to determine if the information and methodologies contained within the report are reasonable."

23.1 Please provide copies of the FEU's semi-annual reports to the Ministry of Energy and Mines with respect to the NGT Program operated under the GGRR.

Response:

Please refer to Attachment 23.1 for a copy of the FEI GGRR Section 18 2014 Annual Report, filed with the Commission on May 30, 2014.

23.2 What response have the FEU had from the Ministry regarding whether the information and methodologies contained within the NGT reports are reasonable? Please provide copies.

Response:

The FEU have had no response from the Ministry on the methodologies and the GHG emission reduction values as contained in the semiannual report filed on May 30, 2014.

24.0 Topic: NGT

Reference: Exhibit B-4, BCSEA IR 1.13.2

"The FEU rely on carbon intensity values that are verified through the GHGenius model. GHGenius is the designated model used by both the provincial and federal governments to determine GHG emissions. The FEU have measured the reduction in GHG emissions on a comparative basis using the metric of carbon dioxide equivalent (CO2e). That is, it measures the amount of CO2e emissions generated by the fuel currently being consumed and compares that to the amount of CO2e emissions generated by a CNG or LNG fueled vehicle based on accepted carbon intensity values."

24.1 Please confirm that the analysis of the GHG emissions consequences of substituting natural gas for another fuel such as diesel for transportation requires consideration of the engine efficiency of the fuel in question, as well as the carbon intensity of the fuel. If not confirmed, please explain.

Response:

Confirmed.

24.2 Please confirm that GHGenius analyzes both carbon intensity and engine efficiency in comparing the GHG emissions consequences of using alternative fuel/engine configurations.

Response:

Confirmed.

25.0 Topic: NGT

Reference: Exhibit B-4, BCSEA IR 1.13.3, 1.13.2

In their response to BCSEA IR1.13.3, the FEU state, "...Please refer to the response to BCSEA IR 1.13.2 for a description of FEU's methodology for calculating GHG emission reductions." The response to BCSEA IR 1.13.2 refers to carbon intensity values from GHGenius but does not refer to engine efficiency.

25.1 Do the FEU have their own methodology for calculating GHG emission reductions that relies only on carbon intensity values for particular fuels from GHGenius? Or, do the FEU calculate GHG emission reductions fully using the GHGenius program together with input data specific to the FEU NGT program such as the number of vehicles/vessels, types, and annual mileage?

Response:

The FEU use the GHGenius model which is embedded with the carbon intensity values.

26.0 Topic: NGT

Reference: Exhibit B-4, BCSEA IR 1.13.4, 1.13.2

"13.4 Please describe the analysis FEU uses to determine whether an NGT project, program, contract or expenditure that it undertakes reduces GHGs.

Response:

Please refer to the response to BCSEA IR 1.13.2."

It is BCSEA-SCBC's view that the FEU's response to BCSEA IR 1.13.2 does not "describe the analysis FEU uses to determine whether an NGT project, program, contract or expenditure that it undertakes reduces GHGs" – unless the FEU analyze GHG emission reductions without reference to the different engine efficiencies of engines designed for the fuels under comparison, which seems unlikely.

26.1 Please describe the analysis the FEU use to determine whether an NGT project, program, contract or expenditure that they undertake reduces GHGs. To what extent does FEU use GHGenius and to what extent does FEU use its own methodology?

Response:

As stated in the response to BCSEA IR 2.25.1, the FEU use the GHGenius model and apply these values to the quantity of natural gas that a prospective customer would consume. This calculation generates a quantity of CO2 emissions that the customer would reduce as a result of adopting natural gas as a transport fuel. The FEU do not use its own methodology in determining carbon intensity values.

27.0 Topic: NGT

Reference: Exhibit B-4, BCSEA IR 1.13.5

"13.5 Please provide FEU's current analysis of NGT GHG emissions relative to the alternatives.

Response:

The FEU's current analysis of NGT GHG emissions is based on the latest carbon intensity values approved by the BC Ministry of Energy and Mines, which are derived from the GHGenius model v4.03.

Diesel is the most common fuel used by the fleet operators targeted by the NGT program; therefore the carbon intensity for diesel is compared to that of CNG and LNG. The amount of GHG emission reduction is measured as the net 1 reduction in CO2 emissions between diesel and CNG or diesel and LNG.

The carbon intensity values for each fuel type used in the GHG emission analysis is summarized in the table below:

Fuel	gCO2e per GJ
Compressed Natural Gas	62,140
Liquefied Natural Gas	63,260
Diesel	93,550

"

27.1 Is the FEU's current analysis of NGT GHG emissions relative to the alternatives based exclusively on fuel carbon intensity with no consideration of engine efficiency?

Response:

Yes, the FEU's analysis on GHG emissions reductions was limited to the approved carbon intensities as stated in the table of the preamble. As stated in the response to BCSEA IR 2.24.2, CNG is assigned an energy effectiveness ratio of 0.9 and LNG of 1.0. Therefore, the carbon intensity, when accounting for engine efficiencies for CNG, must be grossed up by the following calculation:

Carbon Intensity (CNG) = [62,140 gCO2e/GJ] / [0.9] = 69,044 gCO2e/GJ for CNG

27.2 If "Diesel is the most common fuel used by the fleet operators targeted by the NGT program," what are the other fuels used by fleet operators targeted by the NGT program?

Response:

The FEU NGT program is targeted towards mostly heavy duty, vocational and bus type applications, as well as marine and mine haul applications. These applications consume diesel as their primary fuel. The FEU target this sector as these return to base and site specific fleets consume sufficient quantities of natural gas to economically justify the switch from diesel. All projects that have been executed to date under FEI's NGT program have been projects which have displaced diesel fuel consumption.

27.3 Please identify the cells within GHGenius from which the figures in the table are obtained. If the figures in the table have been adjusted from the GHGenius data, please provide the working spreadsheet showing the adjustment.

Response:

As indicated in the referenced response to this series of questions, the values shown come from the BC government's Renewable and Low Carbon Fuels Regulation. These values were arrived at using the GH Genius model.

The Regulation and the Carbon Intensity values can be found here:

http://www.bclaws.ca/civix/document/id/complete/statreg/394_2008

27.4 Please provide a working version of GHGenius v.4.03 with the FEU's data entered into it.

Response:

The input assumptions for the GHGenius model are out of scope in this proceeding. Please refer to Exhibit A-6.

28.0 Topic: NGT

Reference: Exhibit B-4, BCSEA IR 1.13.5.1

"13.5.1 Please provide information on a per-vehicle basis and on a per-vehicle type (or vessel-type) basis.

Response:

In the table below, FEI has provided forecast consumption for each type of transportation application and the resultant reduction in GHG emission on a CO2e basis using the approved carbon intensity values from the GHGenius v4.03 model. The figures shown in column (f) represent the quantity of CO2e GHG emissions in kilograms that are reduced for each type of transport application each year by switching from diesel to natural gas.

(a)	(b)	(c)	(d)	(e)	(f)
NGT Application	**Fuel Used**	**Natural Gas Consumption (GJ/year)**	**Diesel Fuel (kg of CO2e)**	**Natural Gas (kg of CO2e)**	**Reduction in CO2e (kg/vessel/year)**
Buses	CNG	1,000	93,550	62,140	31,410
Vocational Truck	CNG	1,000	93,550	62,140	31,410
Class 8 Tractor	LNG	4,000	374,200	253,040	121,160
Marine Vessel	LNG	100,000	9,355,000	6,326,000	3,029,000
Mine Haul Truck	LNG	18,000	1,683,900	1,138,680	545,220

Fuel	Carbon Intensity (kg CO2e/GJ)
CNG	62.14
LNG	63.26
Diesel	93.55

"

28.1 Please provide a working spreadsheet showing the derivation of the figures in the table in BCSEA 1.13.5.1.

Response:

Please refer to Attachment 28.1 for the live Excel spreadsheet.

28.1.1 If not already indicated in the spreadsheet, please identify the cells within GHGenius from which the figures in the table are obtained.

Response:

The only figures that the FEU used, which would have been calculated and approved by the Ministry of Energy and Mines using GHGenius, to calculate the reduction in CO2e emissions were the carbon intensity figures stated in the second table of the preamble.

As stated in the response to BCSEA IR 2.27.1, the carbon intensity for CNG would need to be grossed up by 0.9 to account for the energy effectiveness ratio of CNG from 62.14 kgCO2e/GJ to 69.04 kgCO2e/GJ (= 62.14 / 0.9). The energy effectiveness ratio of LNG is 1.0, thus no adjustment is required for LNG.

The table in the preamble is restated below using the grossed up CNG carbon intensity value of 69.04 kgCO2e/GJ.

Table: Restated Carbon Intensity Value for CNG (Energy Effectiveness Ratio of 0.9)

a	b	c	d	e	f
NGT Application	**Fuel Used**	**Natural Gas Consumption (GJ/year)**	**Diesel Fuel (kg of CO2e)**	**Natural Gas (kg of CO2e)**	**Reduction in CO2e (kg/vessel/year)**
Bus	CNG	1,000	93,550	69,044	24,506
Vocational Truck	CNG	1,000	93,550	69,044	24,506
Class 8 Tractor	LNG	4,000	374,200	276,178	98,022
Marine Vessel	LNG	100,000	9,355,000	6,904,444	2,450,556
Mine Haul Truck	LNG	18,000	1,683,900	1,242,800	441,100

Fuel	**Carbon Intensity (kgCO2e/GJ)**
CNG	69.04
LNG	63.26
Diesel	93.55

28.2 Please confirm that in the table in BCSEA 1.13.5.1 column (f) "Reduction in CO2e (kg/vessel/year)" is based exclusively on the carbon intensity figures shown in the table in BCSEA 1.13.5.

Response:

Confirmed.

28.2.1 If not confirmed, please explain.

Response:

Please refer to the response to BCSEA IR 2.28.2.

28.2.2 If confirmed, please explain the rationale for omitting engine efficiency from the analysis.

Response:

Please refer to the responses to BCSEA IRs 2.27.1 and 2.28.1.1.

28.3 BCSEA-SCBC wish to reproduce the GHGenius analysis that the FEU rely on to assess the GHG emissions of their NGT program. Please provide any and all information that the FEU input into GHGenius or added to the output of the GHGenius model. Please provide this information in spreadsheet form.

Response:

Please refer to the Attachment 28.1 provided in response to BCSEA IR 2.28.1

29.0 Topic: NGT

Reference: Exhibit B-4, BCSEA IR 1.13.5.2

"13.5.2 Please provide a breakdown of emissions assessments according to: (a) "upstream" emissions, i.e. from the drilling, production and upgrading of the fuel; (b) the storage, long-distance transportation and distribution of the fuel; and (c) the end use of the fuel to power transportation.

Response:

The FEU rely on GHGenius model that has been accepted both provincially and federally as the model to measure the total lifecycle amount of greenhouse gas emissions for various sources of fuel. Accordingly, the FEU use the CO2e intensity results for various fuel sources produced by GHGenius.

The FEU use these figures to calculate the reduction in CO2e emissions for natural gas vs the comparable alternative fuel that has been displaced; which is diesel in the case of NGT applications. The FEU are not involved in the back end functions of the model, and is therefore not able to provide the analysis requested.

29.1 Are the FEU not sufficiently familiar with GHGenius to provide a breakdown of NGT GHG emissions reductions by segments of the fuel life cycle?

Response:

The breakdown of emission reductions by segment is contained within the GHGenius model. The input assumptions of the GHGenius model are out of scope in this proceeding. Please refer to Exhibit A-6.

29.2 If the FEU are able to, please a breakdown of NGT GHG emissions reductions by segments of the fuel life cycle.

Response:

Please refer to the response to BCSEA IR 2.29.1.

29.3 Have the FEU made any efforts to compare or reconcile the FEU facility GHG emissions with the corresponding estimates within GHGenius?

Response:

The input assumptions of the GHGenius model are out of scope in this proceeding. Please refer to Exhibit A-6.

29.3.1 If so, please provide the results.

Response:

Please refer to the response to BCSEA IR 2.29.3.

29.3.2 If not, why not?

Response:

Please refer to the response to BCSEA IR 2.29.3.

30.0 Topic: NGT

Reference: Exhibit B-4, BCSEA IR 1.13.5.3

"13.5.3 If FEU relies on GHGenius or some other authority for FEU's GHG assessment of NGV, please provide the most current assessment by that authority.

Response:

Please refer to the response to BCSEA IR 1.13.5."

30.1 Do the FEU have any written documentation of an analysis of the GHG emissions consequences of the NGT program based on GHGenius and parameters specific to the NGT program? If so, please provide it.

Response:

The analysis of the GHG emissions consequences of the NGT program are provided in the 2014 LTRP and in the FEI GGRR Section 18 2014 Annual Report submitted in response to BCSEA IR 2.23.1. The input assumptions for the GHGenius model are out of scope in this proceeding. Please refer to Exhibit A-6.

31.0 Topic: FEU facility GHG emissions

Reference: Exhibit B-4, BCSEA IR 1.18.1, 1.18.3

31.1 Please provide an expanded version of the table in BCSEA 1.18.1 showing GHG Emissions by type for each of 2009 to 2013.

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

31.2 At the BC MOE website referenced by the FEU, the 2013 GHG Emissions reports are provided for 2013. Please confirm or correct the following summary of the results reported for the FEU for 2013:

2013 FEU GHG Emissions (tCO_2e)		
FEI	FEVI	Total FEU
83,551	44,551	128,102
Source: http://www2.gov.bc.ca/gov/topic.page?id=14C1FA7186124D1C8CABA452C9DFCA56		

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

31.3 Please provide a table showing FEI, FEVI and FEU (i.e., total FEI and FEVI) GHG Emissions, Throughput, and GHG Emissions as a Percentage of Throughput, for 2009 to 2013.

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

31.4 For each of the types of GHG Emissions shown in the table in BCSEA 1.18.1, please discuss the reasons for the differences between FEI and FEVI on an absolute basis and as a percentage of throughput. For example, Stationary Combustion GHG Emissions for FEVI are more than double the figure for FEI; Venting for FEVI is about one third the figure for FEI; and Fugitive GHG Emissions for FEVI are only about one eighth of the figure for FEI. Why?

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

31.5 What are the reasons for the annual decline in reported FEU annual GHG emissions from 2009 to 2013?

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

31.5.1 Can the reasons for the decline in annual GHG emissions be expected to continue to apply in future years?

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

31.6 Please confirm that FortisBC Energy's Whistler system is included within FEVI for the purpose of GHG Emissions reporting. Alternatively, please explain.

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

32.0 Topic: FEU facility GHG emissions

Reference: Exhibit B-4, BCSEA IR 1.18.5

"18.5 Please describe any internal or external targets or expectations applicable to FEU's own GHG emissions during the plan period.

Response:

The FEU consider managing 'own use' operational emissions are part of the company's ongoing operations, and not a matter for the 2014 Long Term Resource Plan. Where emissions are relevant to resource planning, such as how emissions' regulation may or does impact forecasted demand, information has been provided in the 2014 LTRP."

32.1 Noting that the FEU consider managing FEU facility GHG emissions to be part of operations, please describe what internal targets or expectations the FEU have for their annual GHG emissions going forward.

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

32.2 Acknowledging that the FEU are not currently subject to legally binding GHG emissions limits, are the FEU currently subject to any external non-legally binding expectations or targets for their annual GHG emissions going forward? If so, please describe them.

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

33.0 Topic: FEU facility GHG emissions

Reference: Exhibit B-4, BCSEA IR 1.18.9, 1.18.10

"The FEU acknowledge that there are fugitive methane emissions within the FEU operating infrastructure."

"18.10 Please provide copies of any reports concerning fugitive methane emissions from the FEU infrastructure.

Response:

The FEU consider managing 'own use' emissions are part of its ongoing operations and not a matter for resource planning. Please refer to the response to BCSEA IR 1.18.1 for a summary of the total fugitive emissions for the organization and the location where the requested information is publicly available."

33.1 Do the FEU agree that reducing methane emissions from the FEU system in the categories of venting, fugitive and third-party strikes is in accordance with the B.C. energy objectives to reduce BC GHG emissions and to conserve energy?

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

33.2 Please provide copies of any reports concerning methane emissions from the FEU infrastructure in the categories of venting, fugitive and third-party strikes.

Response:

GHG emissions from the FEU's own facilities, including Stationary Combustion, Venting, Flaring, Fugitive Methane Emissions, and Third Party Line Hits are out of scope in this proceeding. Please refer to Exhibit A-6.

34.0 Topic: BC Policy

Reference: Exhibit B-4, BCSEA IR 1.6.1

"6.1 Does FEU agree that in B.C. electricity is a generally a clean or renewable energy source, that natural gas is more carbon-intensive than electricity, and that natural gas along with electricity and hydrogen are preferable alternatives to higher-carbon emitting fuels such as gasoline and diesel?

Response:

The FEU believe that electricity generated in B.C. can be considered a relatively clean or renewable energy source. However, B.C. trades electricity with neighbouring jurisdictions and imports electricity that is produced from coal-fired power generation that is more carbon intensive than electricity produced from natural gas or direct use of natural gas. Therefore, from both and economic and GHG perspective, using natural gas for efficient end use heating frees up clean electricity to be sold in the market displacing coal (less efficient) fired electrical generation. This has the impact of both reducing energy costs for consumers in BC while at the same time reducing GHG emissions overall."

34.1 Please provide any evidence FEU have that displacing electricity usage with natural gas in BC would actually lead to increased exports of electricity in the long term.

Response:

The FEU do not have evidence that displacing electricity usage with natural gas in B.C. would definitively lead to increased exports of electricity in the long term or that such exports would definitively displace coal fired electricity generation. The FEU's response to BCSEA IR 1.6.1 is intended to state from a theoretical perspective that using natural gas efficiently in direct use applications frees up B.C.'s clean electricity which can be sold to neighbouring jurisdictions whose power generation is more carbon intensive. The FEU note that item (n) of British Columbia's energy objectives in the *Clean Energy Act* states the goal for British Columbia to be a net exporter of electricity from clean or renewable resources to both benefit British Columbians and to reduce greenhouse gas emissions in regions in which BC trades electricity. To the extent that British Columbia pursues this objective over the long term the efficient use of natural gas within BC will leave more of the province's clean and renewable electricity potential available for such exports.

34.2 Please provide any evidence FEU have that increased exports of BC electricity due to displacement by natural gas would have the effect of displacing coal-fired

power, as opposed to displacing energy conservation or renewable energy, or stimulating more usage of energy by driving down prices?

Response:

Please refer to the response to BCSEA IR 2.34.1.

Attachment 23.1

Jason Wolfe
Director, Market Development

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

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

May 30, 2014

Via Email
Original via Mail

Ministry of Energy and Mines
GHG Reduction (Clean Energy) regulation Reporting
Electricity and Alternative Energy Division
P.O. Box 9069
STN PROV GOVT
Victoria, BC
V8W 9E2
Attention: Ms. Christina Ianniciello

Dear Ms. Ianniciello

Re: FortisBC Energy Inc. (FEI)
Reporting Requirements under Section 18(4) of the Clean Energy Act

Section 18 of the *Clean Energy Act* (CEA) relates to greenhouse gas reduction prescribed undertakings to be undertaken by public utilities. Specifically, section 18(4) states that:

> *"A report to be submitted under section (4) must include the information the minister specifies and be submitted in the form and by the time the minister specifies."*

On March 28, 2014, the Ministry of Energy and Mines (the Ministry) issued a document outlining the requirements for the report, including the format and submission timelines.

The reporting frequency included an annual report for the period from April 1 to March 31 for each year of the prescribed undertaking. The report is to be filed by May 31, and includes a number of reporting measures for both incentive funding and fueling station expenditures permitted under the regulation.

This submission constitutes FEI's 2014 Annual Report and covers the period from May 2012 to March 31, 2014 for the prescribed undertaking reporting requirements under section 18(4) of the CEA.

Business Information and Declaration

Full Legal and Operating Name	Address Including Postal Code and Email	Telephone
FortisBC Energy Inc.	16705 Fraser Highway Surrey, B.C. V4N 0E8 gas.regulatory.affairs@fortisbc.com	Tel: (604) 576-7349

Reporting Period:

I understand that the information in this report is collected for the purposes of administering the Greenhouse Gas Reduction (Clean Energy) Regulation under the authority of the *Clean Energy Act* and section 26 of the *Freedom of Information and Protection of Privacy Act*.

I certify that records evidencing each matter reported under the Greenhouse Gas Reduction (Clean Energy) Regulation (the Regulation) Reporting Requirements are available on request.

I certify that a record evidencing my authority to submit this report on behalf of the public utility is available on request.

I certify that the information in this report is true and complete to the best of my knowledge and I understand that I may be required to provide to the Ministry of Energy and Mines or the Commission records evidencing the truth of that information.

Signature of Authorized Signing Authority	Name and Title of Authorized Signing Authority (please print)	Date Signed YYYY/MM/DD
	Original Signed by: Arvind Ramakrishnan For: Jason Wolfe Director, Market Development	2014/05/30

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed by: Arvind Ramakrishnan

For: Jason Wolfe

Attachment

cc (email only): BC Utilities Commission GHG reduction (Clean Energy) Regulation Reporting Commission.secretary@bcuc.com

FORTISBC ENERGY INC.

Greenhouse Gas Reductions (Clean Energy) Regulation (GGRR) March 31, 2014 Annual Report covering the 2010 - 2011 Commercial NGV Demonstration Program and GGRR Program up to March 31, 2014

Reporting Requirements under Section 18(4) of the Clean Energy Act

May 30, 2014

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List of Appendices

EXECUTIVE SUMMARY

The GGRR was enacted in May 2012 with the goal of reducing GHG emissions by displacing diesel fuel with natural gas in selected transportation applications. The GGRR allowed any public Utility in BC to provide incentives to eligible vehicle operators and permitted the construction of natural gas fuelling stations within the prescribed limits.

When the program was introduced FEI projected that cumulative diesel fuel displacement over the course of the entire program would be approximately 74 million diesel litres/year and GHG emissions would be reduced by 91,000 tons/year. FEI is on track to achieve the goals of the funding program. To date FEI has made $29 million in incentive commitments to assist in the purchase of approximately 400 heavy duty vehicles and 5 marine vessels. These actions will displace approximately 33 million litres/year of diesel fuel consumption and reduce CO2e emissions by 37,000 tons/year.

For comparison purposes, the 33 million litres of diesel fuel is the equivalent of adding 1.3 PJ[1] of cumulative additional natural gas throughput in the FEI distribution system. The 1.3 PJ demand addition is the equivalent of the addition of about 26,000 new homes[2] . Although the addition of some of the 1.3 PJ of demand will be phased in over time as these vehicles and marine vessels come into service in the next 2 to 3 years, once fully operational, the volumes are significant. Further the load from NGT applications is flat over the course of the year which helps increase overall system utilization.

The load addition from NGT demand is substantial when compared to FEI's load additions for residential and commercial services. For reference, FEI added about 22,460 net new home attachments between 2011 and 2013. This demonstrates that the NGT initiative is of strategic importance to the organization in terms of demand management, efficient utilization of system assets and the resulting impact on FEI's delivery rates.

FEI's residential use per customer is declining, attributable in part to more efficient appliances and smaller dwellings. NGT demand growth from the GGRR program can partially mitigate the impact of lower volumes on the system.

FEI has achieved considerable success in both the CNG and LNG markets. In the CNG segment, FEI has been able to penetrate the refuse and transit markets as these are ideal customer segments which consume large amounts of fuel, travel intracity and return back to base. Transit and refuse operators also have large fleets, and are motivated to position themselves as green leaders in their respective industries. To replicate this success across other market segments, FEI is conducting research and market analysis on other types of applications best suited for regional haul applications.

[1] Assuming a conversion factor of 25.9 from GJ to DLE based on GHGenius Model V4.3
[2] Assuming average user per customer of 50 GJ for new homes built in the last three years

In the LNG segment, FEI has had strong initial success in heavy B train transportation applications hauling vehicle combinations with gross combination weight of 140,000 pounds. Vehicles added in this segment have been utilizing Westport's 15 Litre High Pressure Direct Injection (HPDI) engine. This engine was discontinued in 2013; hence further penetration in this segment will not be possible until a suitable replacement is available from OEM suppliers. At this time it appears that a suitable replacement will be offered by Volvo in late 2015. In the meantime FEI's development efforts will be focused on the lighter duty 12 Litre spark ignited engine which is offered by several OEMs.

FEI is conducting research and exploring alternative market segments which could be potential adopters of LNG in transportation applications. For example FEI is developing applications in the mining industry demonstrating the use of LNG to power heavy duty mine-haul trucks.

The NGT program has made considerable advancements in shifting the transportation industry to adopt natural gas fuelled vehicles. The incentive funding provided by the NGT program for vehicle purchases and fuelling station construction overcomes the barriers that typically prevent fleet operators from converting to natural gas. It is anticipated that these initiatives will continue to increase the adoption of natural gas applications in the market.

1. NGT PROGRAM OVERVIEW

1.1 *INCENTIVE FUNDING*

To date, FEI has committed and issued approximately $18 million in vehicle incentives of the $41.9 million that is available for "on-road" vehicles.[3] The remaining limit, equal to approximately $24 million, will be committed over the next three years before the end date of the GGRR, which is March 31, 2017.

In addition to adding on-road vehicles, FEI has committed to awarding the entire allocated limit of $11 million under the marine category towards the purchase of 5 LNG powered marine vessels. These 5 marine vessels are expected to displace about 12.4 million litres of diesel fuel on an annual basis once in operation. It is forecast that these vessels will enter service in 2017.

The following table summarizes the incentive funding by number of vehicles and vehicle type for the demonstration period as well as for the two years following the enactment of the GGRR.

Table 1: Incentive Funding Breakdown by Vehicle Type

	Heavy Duty Truck	Vocational Truck	Waste Hauler	Buses	Marine	**Total**
Fuel Type	LNG	CNG	CNG	CNG	LNG	
Pilot Round	50		21	11		**82**
2012	55	10	36	27	1	**129**
2013	18	14	86	72	4	**194**

As highlighted in Table 1, in each successive round of incentive funding the number of applicants and vehicles committing to move forward with natural gas for their fleet has increased, particularly for CNG vehicles. LNG adoption has slowed due to the discontinuation of the Westport 15L HPDI engine

The benefits associated with the incentive funding detailed in Table 1 are summarized in Table 2 below.

Table 2: Incentive Funding Details

	# of Applicants	# of Vehicles	Funding (millions)	Fuel Displaced (millions)	Emissions Reduction
Pilot Round	4	82	$5.6	5,673	6679
2012	10	129	$9.2	11,121	13163
2013	18	194	$15.0	15,904	17,873

[3] The $18 million issued to date includes the $5.6 million that was issued in the demonstration period before the enactment of the GGRR.

Table 2 highlights the progress of the NGT program to date. The volume of diesel fuel displaced as well as the associated GHG emission reductions have increased in each successive round of funding.

1.2 *FUELLING STATIONS*

FEI has constructed a total of five fuelling stations under the GGRR; two CNG stations and three LNG stations. A fourth LNG station is expected to be operational by August 2014. The following table highlights the volume and expenditures for each of the stations which are currently in service.

Table 3: CNG & LNG Fuelling Station Summary

Name of Station	Type of Station	Location	Term of Agreement (Years)	Minimum Take or Pay Volume	Total Expenditure ($000)
Smithrite	CNG	Coquitlam	10	17,400	$ 1,192
Coldstar	CNG	Langford	5	15,000	$ 1,022
Denwill	LNG	Burnaby	10	24,000	$ 751
Arrow	LNG	Kamloops	5	70,000	$ 725
Wheeler	LNG	Coquitlam	5	30,000	$ 648
TOTAL				**156,400**	**$ 4,338**

As shown in the table, the fuelling stations have been constructed throughout British Columbia consistent with the objectives of the program.

Detailed excel spreadsheets are filed confidentially as Appendix D and provide the details of the NGT incentive program for every applicant for each incentive round.

2. INCENTIVE FUNDING DETAILS

2.1 *2010/2011 PILOT ROUND*

Prior to the enactment of the GGRR, FEI issued approximately $5.6[4] million in natural gas vehicle incentives to four different fleet operators as part of the NGV demonstration program. The $5.6 million dollars in incentive funds led to the purchase of 82 natural gas vehicles and the displacement of approximately 5.7 million liters of diesel fuel. This translates to a decrease of almost 7,000 tonnes of CO2e emissions per year.

The $5.6 Million is now included as part of the approved $62 million expenditure cap for Prescribed Undertaking 1. Although in accounting terms expenditures generally refer to actual spending, the Special Direction defined an expenditure as a binding commitment to incur expenditures in the future. This definition applies to all three prescribed undertakings of the GGRR, with the exception of marketing & admin expenditures.

2.2 *2012 PROGRAM DETAILS*

In the period from the introduction of the GGRR on May 1, 2012 to March 31, 2013, FEI issued a total of $6.2 million in incentive commitments, providing funding to nine on-road applicants and $3.0 million in incentive commitments for one marine vessel applicant. The funding led to the purchase commitment of 128 natural gas fuelled vehicles and 1 marine vessel, and the displacement of approximately 11.1 million litres of diesel fuel. There is generally a time lag, and some attrition, between the signing of the contribution agreement, the issuing of a vehicle purchase order and the date when vehicles are put into service.

Of the 128 vehicles that committed to moving forward in the 2012 round of funding, 55 were LNG vehicles.

2.3 *2013 PROGRAM DETAILS*

In the following year, defined within the GGRR as the period from April 1, 2013 to March 31, 2014, FEI issued two calls for funding requests in April and September of 2013.

During this period, $7 million in incentive funding was committed to 18 fleet operators. If the funding is awarded as forecast (note that some attrition is expected), it is anticipated that 190 natural gas fuelled vehicles will be purchased and approximately 5.9 million litres of diesel fuel will be displaced as a result.Of the 190 vehicles, 18 are expected to be LNG. The number of applicants and vehicles for LNG as a transportation fuel dropped from 2012 to 2013 due to the discontinuation of the 15L HPDI Westport engine.

[4] Although in accounting terms expenditures generally refer to actual spending, the Special Direction defined expenditure as a binding commitment to incur expenditures in the future. This definition applies to all three prescribed undertakings of the GGRR, with the exception of marketing and admin expenditures.

In addition to the incentive funding provided to fleet operators, FEI committed to award an additional 4 LNG powered vessels at $8 million, displacing an additional 10 million litres of diesel fuel. With this commitment FEI has reached the maximum authorized limit for vessels under the prescribed undertaking.

3. NGT PROGRAM CHALLENGES

3.1 *HEAVY DUTY OEM ENGINE AVAILABILITY*

Despite the success of the NGT program, there have been a number of external factors outside of FEI's control that have delayed the adoption of natural gas vehicles, particularly LNG as a transport fuel. The discontinuance of the Westport 15L HPDI engine has been a significant setback to the continued development of LNG as a transport fuel.

To date, Westport Innovations has been the only supplier of LNG based engines suitable for the higher gross vehicle weights and demanding terrain conditions in the BC market. In 2013, Westport Innovations made an operational decision to discontinue the production of the 15L HPDI LNG engine. This has had a major impact on FEI's NGT program as LNG fleet operators require the horsepower provided by this engine, which is not available at present from other suppliers.

Westport's decision reflects the fact that they are a component supplier, rather than an engine production company. Now that the Westport technology has been proven in the 15L engines Westport is pursuing a business strategy to provide the required components and knowledge to engine production companies (OEM's) who will produce complete engines that incorporate the Westport technology. Unfortunately this business transition is not seamless and there will be an interim period where suitable engines are not available to the market. It is expected that OEM engine products incorporating Westport's technology will be available to the market again in late 2015.

For example, a 13L engine with similar capabilities to the 15L model is currently being developed under a strategic relationship between Westport and Volvo. This model is expected to be introduced in late 2015.

Without a suitable engine, incentive funding applications for Class 8 LNG applications have decreased. Until the market can provide certainty regarding the availability of a suitable engine model, it will be difficult to continue to add natural gas demand from this sector.

3.2 *IMPACT OF REGULATORY DEVELOPMENTS*

Rate Schedule 16 (RS16), which was the tariff applicable to LNG service prior to Rate Schedule 46 (RS46), was a temporary tariff with supply limited to 1,040 GJ/day. Under RS16, FEI was unable to guarantee customers that LNG would be supplied in the amounts required to support customers' needs for the life time of their vehicles. This had the impact of delaying adoption of LNG vehicles due both to price and to uncertainty of long term LNG supply.

Special Direction No. 5, issued in November 2013, established RS46 as a permanent rate tariff with no supply limits imposed on FEI and no expiry date. With the supply and rate certainty required by the market, FEI is now able to focus efforts on targeting suitable fleets (both on-road

and off-road) towards the adoption of LNG for their transportation needs. This change has had a positive impact on market adoption.

3.3 *OTHER CHALLENGES*

The availability of convenient fuelling stations has also presented a challenge to the NGT program for customers with smaller consumption demands as smaller fleets do not have the required demand to justify their own fuelling station. Other customers prefer to go slow by purchasing a relatively small number of vehicles in order to get more comfortable with a new fuel. In both cases the result is a relatively low overall demand for natural gas from each fleet, which results in a prohibitively high station cost for customers.

3.3.1 Program Strategy

As a way to address this challenge and provide fuelling solutions to operators of smaller fleets, FEI continues to work with existing fleet operators to make their fuelling stations available to other fleet operators and aggregate demand where applicable. In addition, FEI is developing opportunities to work with established fleet operators to add CNG or LNG options at existing fuelling stations to make fuelling solutions available to these operators of smaller fleets.

FEI is also proactively developing solutions and continuing to promote and expand the NGT program for market segments that FEI has not had much adoption from in the past. For instance, these efforts include exploring new market segments for CNG applications in the day cab market for pickup and delivery service and regional hauls such as Vancouver/Seattle and Vancouver/Kamloops corridors.

In terms of LNG, absent a suitable engine alternative, FEI is focusing development efforts on off-road applications such as; marine vessel operators, mine haul truck operators, locomotives and industrial and power generation applications.

4. NGT RELATED INCENTIVES

4.1 VEHICLE INCENTIVE PROCESS AND EVALUATION CRITERIA

A Fairness Advisor has been appointed to oversee the incentive funding process. Copies of the reports from the Fairness Advisor for 2012 and 2013 are attached as Appendix A and Appendix B respectively. The reports from the Fairness Advisor highlight how the process ensures that all decisions made by FEI are made objectively and encompass the elements of openness, competitiveness, transparency and compliance.

The following table summarizes the deadline dates and incentive funding % since the start of the program in 2012.

Table 4: Summary of Deadline Dates and Incentive Funding Percentages

	2012 call	2013 call	2014 call			
			Q1	Q2	Q3	Q4
Application Period	June- July 31st, 2012	Jan- May31st, September -October	Jan 1-Mar 31, 2014	Apr 1-June 30, 2014	July 1-Sept 30, 2014	Oct 1-Dec 31,2014
Incentive %	Up to 75%	up to 70%	Up to 60%			
Application Deadline	July 31st, 2012	May 31st, Oct31st	31-Mar-14	30-Jun-14	30-Sep-14	31-Dec-14
CA Deadline	N/A	N/A	30-Jun-14	30-Sep-14	31-Dec-14	31-Mar-15
PO Deadline	Dec31st, 2013	March 31st, 2014	30-Sep-14	31-Dec-14	31-Mar-15	30-Jun-15

For the 2012 call, the deadline date was extended to the end of 2013 due to the regulatory delays and uncertainty in establishing the RS 46 LNG tariff.

Details of the application process including accepting, reviewing and evaluating applications are described in Appendix C.

4.2 PRESCRIBED UNDERTAKING 1: SAFETY PRACTICES AND MAINTENANCE FACILITIES UPGRADES

Special Direction No. 5 increased the eligible grants in this category to $6 million from the existing $4 million. FEI is on track to spend the full $6 million on maintenance and repair facilities to service the CNG/LNG vehicles introduced under the program.

For safety and maintenance upgrades of eligible facilities, FEI allows all applicants that have been previously approved through the open and competitive call process for incentive funding to be automatically eligible to apply for feasibility studies, engineering analysis and shop upgrades. OEM authorized dealers are also eligible for the funding provided they have a contract with successful recipients from the NGT incentive program to service their vehicles.

The process is similar to the vehicle incentives, where applicants first apply for a feasibility assessment. Upon approval, applicants proceed with the actual assessment by a BC registered engineering firm and then submit the analysis to FEI for approval. FEI will assess the eligibility of the project and require applicants to sign the contribution agreement before proceeding with

the actual upgrade. Upon completion of the facility upgrade, FEI will review and verify the work, necessary permits and actual costs incurred before disbursing the funds.

The detailed criteria and incentive calculation with a cost cap on the facility upgrades are detailed on the FEI website[5].

Applicants such as BFI and Smithrite have their own shops in their facilities while other customers such as Vedder Transport rely on OEM authorized dealerships such as Peterbilt Pacific to make the required upgrades to service their vehicles.

To date, mainly applicants from the 2012 round of funding have applied for the feasibility assessments and upgrade funding. Additional maintenance facility applications are expected as vehicles are delivered to customers. Applicants from the 2013 incentive call round submitted their purchase orders and should be applying for their shop upgrade incentives or start the feasibility assessments regarding their own facilities later in 2014.

Based on the current vehicle forecast FEI expects to fully disburse the $6 million during the undertaking period.

4.3 *PRESCRIBED UNDERTAKING 1: ADMINISTRATION, MARKETING, TRAINING AND EDUCATION*

The expenditure allowance of $3.1 million for administration, marketing, training and education allows FEI to administer its NGT Incentive Program and further promote natural gas as a transportation fuel.

FEI plans to use the allocated amount of $3.1 million to create awareness of the NGT program and promote the safe use of the fuel through continued customer education campaigns and engagement.

FEI is currently using these funds to manage and administer the GGRR program, ensure provincial and national coordination of the training programs, provide fleet training, driver training, development of codes and standards and to deliver training materials to customers.

In addition FEI is also using the funds to pay for legal fees and for the Fairness Advisor . FEI has also used the funds to produce a document for safety upgrade guidelines and practices, which has been published on the FEI website and is used by customers and engineering firms as a reference while implementing safety practices.

Specifically, for marketing-related expenditures, FEI uses the funds to create awareness and promote the NGT incentive program through an integrated marketing approach. FEI uses a variety of channels such as targeted niche publications, corporate websites, social media outlets, industry events and participation in conferences where appropriate. FEI is also in the

[5] http://fortisbc.com/NaturalGas/Business/NaturalGasVehicles/Incentives/Pages/default.aspx

process of developing marketing support materials such as a video featuring early NGT adopters and case studies to further promote the NGT initiative.

In the event that funding under this category is not entirely expended in the undertaking period, any remaining amount will be allocated to provide additional grants for specified vehicles subject to the overall cap for Prescribed Undertaking 1 remaining at $62 million.

5. CNG FUELLING STATION PROGRAM RESULTS

FEI has constructed four CNG fuelling stations in BC for its NGT customers and FEVI has constructed one CNG fuelling station in Victoria. To date, FEI and FEVI have jointly constructed a total of five CNG fuelling stations.

Of the five total CNG stations, two stations were constructed under Prescribed Undertaking 2 of the GGRR.

The following table summarizes the details of the GGRR fuelling stations that FEI has constructed.

Table 5: CNG Fuelling Station Summary

Name of Station	Location	Term of Agreement (Years)	Minimum Take or Pay Volume	Total Expenditure ($000)
Smithrite	Coquitlam	10	17,400	$ 1,192
Coldstar	Langford	5	15,000	$ 1,022
TOTAL			**32,400**	**$ 2,214**

The Smithrite fuelling station is located at Smithrite's site in Coquitlam, while the Cold Star fleet fuels its vehicles at FEVI's fuelling site in Langford. Both fuelling stations have been operating successfully with no significant safety, customer, or operational concerns.

All of the terms of the fuelling station contracts that FEI and FEVI execute with CNG customers conform to the minimum GGRR requirements. These requirements include adhering to the $2 million limit per CNG fuelling station, a minimum 5 year term and a minimum take or pay provision equal to at least 80% of the energy provided from each station is provided to one customer.

The table below provides details of average and total CNG fuelling station expenditures to date as well as expenditures for marketing & admin activities.

Table 6: CNG Annual Fuelling Station Expenditure Details

Fueling Station Expenditures by Year ($000)	Year 1 Actual (To Mar 31, 2012)	Year 2 Actual (Apr 2012 - Mar 2013)	Year 3 Actual (Apr 2013 - Mar 2014)	Year 3 Projected (Apr 2013 - Mar 2014)	Years 4 - 7 Projected	Cumulative Total	Balance Remaining	Maximum Limits
Number of CNG Stations	0	0	2	2	9	11	N/A	N/A
Average CNG Station Expenditure	$ -	$ -	$ 1,107	$ 1,107	$ 1,100	$ 1,100	N/A	$2,000
Total CNG Station Expenditures	$ -	$ -	$ 2,214	$ 2,214	$ 9,900	$ 12,114	$ (354)	$11,760
Administration	$ -	$ 4	$ -	$ -	$ 116	$ 4	N/A	N/A
Marketing	$ -	$ -	$ -	$ -	$ 120	$ -	N/A	N/A
Total Marketing & Admin Expenditures	$ -	$ 4	$ -	$ -	$ 236	$ 4	$ 236	$240
Total CNG Program Expenditures	$ -	$ 4	$ 2,214	$ 2,214	$ 10,136	$ 12,118	$ (118)	$12,000

Total expenditures for the two stations constructed under the GGRR are approximately $2.2 million, which is an average expenditure of $1.1 million per station. That leaves a balance of $8.8 million available for the construction of future CNG stations under prescribed undertaking 2. It is anticipated that a further 9 CNG stations will be constructed over the term of the GGRR based on FEI's forecast of CNG vehicle additions and will require approximately $354 thousand more than the $11.76 million allocated to CNG fueling station expenditures. FEI will monitor total cumulative fuelling station costs and strive to remain within the limit set by prescribed undertaking 2.

All marketing & admin expenditures related to CNG fuelling station expenditures are recorded in a specially designated account. Expenses are recorded as they are incurred. To date, a total of approximately $4 thousand has been spent on marketing and admin costs as part of prescribed undertakings 2 and 3.

6. LNG FUELLING STATION PROGRAM RESULTS

FEI has constructed one permanent LNG fuelling station and four mobile refuelling units (MRU) for its LNG customers. Of the five LNG stations, four were constructed under the GGRR, and all four of these stations are MRUs.

The following table summarizes the details for each of the 4 GGRR LNG fuelling stations.

Table 7: LNG Fuelling Station Summary

Name of Station	Location	Term of Agreement	Minimum Take or Pay Volume	Total Expenditure ($000)
Denwill	Burnaby	10	24,000	$ 751
Denwill (Bridgeway)	Vancouver Island	10	24,000	$ 682
Arrow	Kamloops	5	70,000	$ 725
Wheeler	Coquitlam	5	30,000	$ 648
TOTAL			**148,000**	**$ 2,806**

The MRU at the Denwill station in Burnaby was put into service at the customer site in August 2013, while the MRU's at the Arrow and Wheeler sites were placed into service in March 2014. The fourth MRU will be located at Denwills' second site on Vancouver Island and is expected to be operational in July or August 2014.

Expenditures to date for the four GGRR LNG stations total $2.8 million. Although the majority of costs for these stations have been recorded, there are still outstanding costs that have yet to be recorded. These additional costs are expected to add approximately $500 thousand, for total expenditures of $3.3 million on these four stations.

The table below summarizes LNG station expenditures for the LNG stations, the tanker truck load-out facility that is under construction at the Mt. Hayes LNG facility and total LNG station expenditures to date.

Table 8: LNG Annual Fuelling Station Expenditure Details

Fueling Station Expenditures by Year ($000)	Year 1 Actual (To Mar 31, 2012)	Year 2 Actual (Apr 2012 - Mar 2013)	Year 3 Actual (Apr 2013 - Mar 2014)	Year 3 Projected (Apr 2013 - Mar 2014)	Years 4 - 7 Projected	Cumulative Total	Balance Remaining	Maximum Limits
Number of LNG Stations	0	0	3	3	3	6	N/A	N/A
Highest Individual LNG Station Expenditure	$ -	$ -	$ 751	N/A	N/A	N/A	N/A	**$ 2,750**
Total LNG Station Expenditures	**$ -**	**$ -**	**$ 2,806**	**$ 3,300**	**$ 6,400**	**$ 9,700**	**$ 15,050**	**$ 24,750**
Number of Tanker Truck Load-Outs	$ -	$ -	$ 1	$ 1	$ -	$ -	N/A	N/A
Total Expenditures on Tanker Truck Load-Outs	**$ -**	**$ 17**	**$ 350**	**$ 350**	**$ 5,133**	**$ 5,500**	**$ -**	**$ 5,500**
Administration	$ -	$ -	$ -	$ -	$ 125	$ -	N/A	N/A
Marketing	$ -	$ -	$ -	$ -	$ 125	$ -	N/A	N/A
Total Admin & Marketing Expenditures	**$ -**	**$ -**	**$ -**	**$ -**	**$ 250**	**$ -**	**$ 250**	**$ 250**
Total LNG Program Expenditures	**$ -**	**$ 17**	**$ 3,156**	**$ 3,650**	**$ 11,783**	**$ 15,200**	**$ 15,300**	**$ 30,500**

Since the Denwill fuelling station is anticipated to be operational in July or August 2014, most costs have been incurred and the costs are recorded in the Year 3 Actual column. However as the station will be placed into service during Year 4 of the program, the addition of the station is included in the 'Number of LNG Stations' row in the Years 4 – 7 column.

All contracts conform to the minimum requirements of GGRR, including an expenditure limit of $2.75 million on an LNG station in any year of the undertaking period, a minimum 5 year term and a minimum take or pay provision equal to at least 80% of the energy provided from each station is provided to one customer.

Special Direction No. 5 revised the maximum expenditure that could be spent on the construction of a tanker truck load-out facility to $5.5 million. FEI is currently in the process of constructing such a facility at its Mt. Hayes facility located on Vancouver Island. Costs to date for the tanker truck load-out are $367 thousand and total costs are projected to be approximately $5.5 million. The tanker truck load-out is estimated to be completed by December 2014.

As indicated in the above table, total forecast expenditures on LNG stations are currently forecast to be $9.7 million. The discontinuation of the 15L Westport LNG engine has impacted the adoption of LNG vehicles in the near term future and therefore LNG fuelling station construction is also impacted for this market segment.

However as FEI is focusing market development efforts on other LNG uses such as mining, marine and locomotive applications, further progress on these applications may result in FEI spending up to the Prescribed Undertaking 3 limit of $24.75 million for LNG stations. Further, if the Volvo 13L LNG engine is brought to market as anticipated by 2015, this may spur further growth in the Class 8 heavy duty LNG market segment, which would result in a further need to construct LNG fuelling stations.

7. CONCLUSION

FEI has made considerable progress in converting fleet vehicles from diesel to natural gas fuelled vehicles in the first three years of the GGRR program. To date, approximiately $18 million has been committed towards the purchases of 277 CNG vehicles and 123 LNG vehicles. The conversion of these vehicles has resulted in FEI constructing 2 CNG and 4 LNG fuelling stations to date to serve customers that have converted their fleets from diesel.

In addition, $11 million has been committed for 5 marine vessels, which, once operational, will translate into a total displacement of about 34 million litres of diesel fuel and a decrease equal to about 37 thousand tonnes of CO2e emissions.

Further, there is potential to add load from locomotive and mine-haul applications as development efforts by FEI progress with potential customers in these market segments.

The GGRR program is also helping to establish a natural gas fuelling infrastructure throughout British Columbia, whereby FEI is able to leverage existing fuelling stations to provide fuelling to relatively smaller fleet operators that otherwise may not have had access to an economical natural gas fuelling solution on their own.

FEI will continue to focus its efforts on the NGT program and the ongoing transition to natural gas fuelled vehicles. The GGRR has been instrumental in initiating the shift to natural gas transportation applications and will remain essential to the future success of the program.

Appendix A

FAIRNESS ADVISOR REPORT ON THE COMPETITIVENESS OF THE 2012 CALL PROCESS

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FortisBC Natural Gas for Transportation Incentive Program

Fairness Advisor's Report

FortisBC

December 2012

pwc

December 21, 2012

Private and Confidential

Jason Wolfe
Director, Market Development
FortisBC Energy Inc.
16705 Fraser Highway
Surrey, BC V4N 0E8

Dear Mr. Wolfe:

Re: Fairness Advisor's Report on FortisBC's Natural Gas for Transportation Incentive Program for the 2012/13 Fiscal Year.

This report has been prepared in accordance with FortisBC Energy Inc. Contract Reference #4500037881 and the Terms and Conditions contained therein. The report summarizes the results of the Fairness Advisor's review of FortisBC's Natural Gas for Transportation Incentive Program for the 2012/13 Fiscal Year.

We thank FortisBC's personnel for their cooperation and assistance during our evaluation. Dan O'Brien (604) 484-3478 or I would be pleased to discuss any questions or comments, at your convenience.

Yours truly,

Ian Brown
Associate Partner
604-484-3480

cc. Christina Ianniciello, Ministry of Energy, Mines and Natural Gas

PricewaterhouseCoopers LLP
PricewaterhouseCoopers Place, 250 Howe Street, Suite 700, Vancouver BC V6C 3S7
T: +1 604-484-3480, F: +1 604 806 7806, www.pwc.com/ca

Background

FortisBC's Natural Gas for Transportation ("NGT") Incentive Program provides incentives to offset a percentage of the incremental capital cost of a qualifying new factory-built natural gas vehicles ("NGV") or qualified conversion over the cost of a comparably equipped diesel powered vehicle. The NGT program is authorized by regulation under the Clean Energy Act, which requires that applications be evaluated by FortisBC in an open and competitive process and measured against defined program criteria which are established by FortisBC.

To ensure fairness in this process, FortisBC engaged PwC as a fairness advisor. This report covers the activities of the fairness advisor from:

- an initial review of the application documents and process;
- the call for applications;
- the application review, selection process; and
- applicant due-diligence review and incentive awards.

The report includes our attestation of assurance, a summary of the scope and objectives of the assignment, the methodologies applied and any relevant findings from the activitise undertaken.

Attestation of Assurance

As the Fairness Advisor, we hereby provide the following unqualified assurance statement concerning the conduct of the FortisBC's Natural Gas for Transportation call for proposals, through to the completion of the evaluation, selection and award process:

It is our professional opinion that the competitive process that we observed was conducted in a fair, open and transparent manner. From what we observed, decisions were made objectively, free from personal favouritism and political influence, and encompassed the elements of openness, competitiveness, transparency and compliance.

PricewaterhouseCoopers LLP

_____

Ian Brown
Associate Partner
PricewaterhouseCoopers LLP

Role and Approach

PwC's role as fairness advisor is to carry out an independent assessment of the NGT incentive award program and provide advice to the FortisBC team on matters of fairness. PwC is an independent third party with respect to FortisBC and the NGT Incentive Program.

The activities of the fairness adviser were to observe and monitor:

- The Call for Proposals process, including communications and responses undertaken during the application competitive selection process;
- Collaborative discussions and meetings where proponent comparisons were made and the criteria weighting and rating systems were applied; and
- Review correspondence between applicants and FortisBC staff regarding various issues related to the application and award processes, and to evaluate subsequent resolutions made by FortisBC.

PwC commenced working with FortisBC on June 4, 2012. The first phase involved a review of the program information documents and application evaluation process. Following the initiation of the Call for Proposals on June 8th, 2012, the Fairness Advisor was involved in reviewing email communications with potential applicants, reviewing responses to questions and advising on matters of fairness relating to the development of the process for application review and scoring criteria. During this period, the Fairness Advisor monitored the conference call for interested applicant's on July 12, 2012. Following the close of the Call for Proposals on July 31, 2012, the Fairness Advisor reviewed several issues regarding applicant eligibility and process and advised on matters of fairness related to the review and selection process. During application review and selection process, the Fairness Adivisor attended and monitored FortisBC review meetings on August 20th, 2012 with the Stratgic Fit Committee, and on August 22nd, 2012 with the Executive Steering Committee. Following the notification of successful applicants, the Fairness Advisor also monitored a conference call with successful Applicants on September 27th, 2012 and reviewed several issues leading up to the execution of the contribution agreements.

Fairness Advisor Activities and Observations

Activities and observations prior to the Call for Proposals

Monitoring of the July 12, 2012 applicants information conference call.

- An online meeting was held on July 12th, 2012 with interested applicants who had submitted a notification of intent. The Fairness Advisor attended the online meeting to monitor communications and respond to any issues of fairness that arose. The Fairness Advisor monitored the online meeting and reviewed the questions and answers provided with meeting attendees. No fairness issues were noted regarding the meeting and any follow-up correspondence with participants.

Review of the NGT Incentive Program application form, communication protocols, and information packages.

- The Fairness Advisor reviewed NGT program information documents, the draft application form, and applicant communication protocols and provided FortisBC with feedback and suggested revisions to address fairness-related concerns. All suggested revisions were implemented by FortisBC.

Activities and observations during the Call for Proposals

Review of the NGT Incentive Program evaluation procedures and review criteria.

- The Fairness Advisor met with FortisBC to review application review procedures and evaluation criteria. The Fairness Advisor worked closely with FortisBC to develop procedures and review criteria that were objective, effective and fair. The Fairness Advisor advised against introducing a new mandatory criterion requiring greater than 50% vehicle usage in B.C. as it would have potentially excluded applicants who were previously eligible. To address the issue, a decision was made to include a requirement in the contribution agreement that vehicles registered outside of BC must have be greater than 50% vehicle usage in B.C.

Eligibility of applications where a commitment to purchase NGVs was made prior to the award of incentive funding.

- An application was received requesting incentive funds to purchase vehicles that were specified as a requirement under a pre-existing services contract, which would have in-service dates prior to the NGT program award. FortisBC was concerned that incentive awards should not be made where the decision to purchase a NGV was not the direct result of the program award. In this case, the commitment to purchase NGVs was made prior to the initiation of the incentive program and the Applicant's decision to purchase NGVs was therefore not a direct result of the NGT incentive program. As the intent of the NGT program is to encourage adoption of NGV and initiate a market transformation, FortisBC decided to reject the application for funds to support the purchase of NGVs under the pre-existing services contract. The decision and subsequent policy clarification was reviewed by the Fairness Advisor and was considered to be consistent with the Program's intent and no fairness issues were raised.

Activities and observations during the evaluation process

Monitoring of the NGT Strategic Fit Committee meeting.

- A meeting was held on August 20th, 2012 with the Strategic Fit Committee to discuss feasibility and strategic fit of NGT applications received. The Fairness Advisor attended the meeting to monitor communications and provide feedback on any fairness related issues. A condition of the regulation authorizing the NGT program that Recipients not be bound to enter into fuelling infrastructure agreements with FortisBC and that they be free to partner with third party suppliers, provided the natural gas is sourced from FortisBC. The Strategic Fit Committee included members from FortisBC's Sales and Business Development group who have an interest in developing fuelling infrastructure for NGVs. Therefore, a potential conflict of interest was identified by FortisBC, and members from this group were not directly involved in the selection of applicants for the NGT program. However, as this group has the best knowledge of the Applicant's business operations and understanding of the logistics surrounding proposed applications, their review comments and input were considered when determining strategic fit and feasibility of the proposals received. The Strategic Fit Committee was not involved in rating or selecting applications. Rather, their comments and concerns discussed during this meeting were summarized and their advice provided to the executive committee to assist in their decision. No fairness related issues were identified during the meeting and in the consideration and inclusion of review comments from the Strategic Fit Committee.

Monitoring of the NGT Executive Steering Committee meeting.

- A meeting was held on August 22nd, 2012 with the Executive Steering Committee meeting to present and discuss the applicant rankings, input from the Strategic Fit Committee and recommendations for awards. The Fairness Advisor attended the meeting to monitor communications and provide feedback on any fairness related issues. An issue was tabled regarding NGV cost caps to avoid pricing inflation in response to the subsidy. It was noted that this could potentially put smaller companies at a disadvantage as they do not have the same buying power as larger companies and therefore cannot negotiate lower prices. Potential solutions to the issue were discussed and it was resolved that costs caps would not be applied. The meeting and review discussion was conducted in a fair and objective manner and no fairness related issues were identified during the meeting discussions or in the subsequent decisions.

Review of the application selection process and award recommendations to the NGT Executive Steering Committee.

- The Fairness Advisor reviewed the award recommendations to the Executive Steering Committee. This included the use of selection criteria, reviewer's comments and rankings, and considerations brought forward by the Strategic Fit Committee. No fairness issues were identified in how the application review and selection process was carried out.

Changes to award decisions following due diligence review.

- FortisBC discussed with the Fairness Advisor whether, as a result of their due diligence review, FortisBC could change their award decision if further information came to light about an applicant that would present a risk to the NGT program and FortisBC. FortisBC was advised that there was not a fairness issue if they altered an award decision following due diligence review, provided the risks were legitimate.

Review of award notification letter, roles and responsibilities and timelines.

- The Fairness Advisor reviewed the draft award notification letter, letters to unsuccessful applicants, responsibilities, and timeline. No fairness concerns were identified.

Activities and observations during the due-diligence review

Inquiry from a fuelling station provider regarding sharing contact information for successful applicants.

- FortisBC received communication from a third-party fuelling service provider requesting that FortisBC release the list of successful applicants so they could contact them to advertise their services. They expressed concern because FortisBC, who also provides fuelling services, were in contact with successful applicants regarding fuelling station planning and therefore had opportunity to advertise their services. At the time, awards were not final, contribution agreements were not in place and FortisBC could not publically disclose information about potential awards. In response, FortisBC published a list of all known fuelling station service providers on the NGT program website and informed applicants of the list so they could contact them at their discretion. FortisBC also requested that applicants who wished to be contacted by service providers provide consent to share their identity and contact information with known service providers. The Fairness Advisor determined there were no fairness issue with FortisBC's response, as no awards had been made at the time, FortisBC did not have consent to share applicant contact information with a third party. FortisBC made sufficient efforts to connect applicants with third-party fuelling station providers: through the NGT website and sharing of applicant contact information for those applicants that provided consent.

Monitoring of the September 27th NGT Successful Applicants Conference Call

- A conference call was held on September 27th, 2012 to review a presentation on the outcomes of the call for applications, the due diligence process and information requirements, and outstanding regulatory approvals. Responses were provided to questions from applicants regarding the funding process and timeline. A summary of questions and answers was also sent to participants of the conference call. The Fairness Advisor monitored the conference call and reviewed the questions and answers provided with meeting attendees. No fairness issues were noted relating to the conference call and follow-up correspondence.

Applicant inquiry regarding vehicle substitutions.

- An applicant inquired as to whether it would be possible to substitute one type of NGV for another after the award notification had been made. FortisBC advised the applicant they could swap vehicle types provided the broad vehicle category remained the same (i.e., CNG), the total number of vehicles granted does not increase, and the litres of fuel displaced per dollar incentive is similar to the previous vehicle type. The Fairness Advisor discussed the request with FortisBC, reviewed correspondence, and advised FortisBC that there was not a fairness issue as the proposed change in vehicle type would not have affected the application review score.

Applicant inquiry regarding reapplication for round 1 and intent for round 2 funding.

- An applicant, who had been disqualified for not meeting the minimum financial criteria, inquired as to whether they could reapply to the Program under a different company, and then lease the vehicles from this company. FortisBC responded that the call for applications had closed, but that they were welcome to submit an application for the second round of funding. At that time FortisBC had not determined the date and process for the second round of funding. The applicant was subsequently advised that if they made a commitment to purchase NGVs prior to an incentive award in the second round, they would not be eligible for the incentive. FortisBC was advised that there was no fairness issue with denying a reapplication in the first round as the applicant had failed to meet eligibility criteria and the application process had closed. Further, FortisBC was advised that there was no fairness issue in disallowing the incentive where a prior purchase commitment had been made as this was not consistent with Program policy.

Applicant inquiry regarding providing an extension for due diligence information submission.

- A request was received for an extension to the deadline for providing due diligence information due to a delay receiving a binding quote from a vehicle supplier. FortisBC was advised that there was no fairness issue with extending the deadline under this circumstance, provided that all applicants were granted the same extension, if requested.

Impacts of BCUC approval of Rate Schedule 16 with respect to LNG sales and dispensing.

- FortisBC made a decision to postpone the award of LNG incentive awards until after the BCUC application approval for Rate Schedule 16, which provides approval for LNG sales and dispensing for the transportation sector. Although some excess LNG capacity was available for sale, uninterrupted supply was not guaranteed and capacity would not have met the demand for all LNG vehicles planned to be purchased under the NGT Program. As such, FortisBC determined that there was not an objective and fair process for allocating existing LNG capacity among interested LNG applicants, and the risk to be assumed by both the applicants and FortisBC would be too large. LNG Applicants were made aware of the timelines for the BCUC approval and were informed that the LNG awards would be postponed until after the approval. The Fairness Advisor agreed with FortisBC's determination, and advised FortisBC that there was no fairness issue with postponing the award.

Ineligibility of NGV purchase made prior to incentive award.

- FortisBC was informed by an applicant that they had initiated the purchase of a NGV after being notified that they were selected to receive the incentive award, but before the execution of the contribution agreement. The applicant had done so because of timing and budget constraints associated with the government funding cycle. FortisBC advised the applicant that the contribution agreement requires that the purchase order be dated after the contribution agreement is signed, and therefore the vehicle purchase would not considered eligible. The applicant was able to cancel the purchase order and re-initiated the purchase after their contribution agreement was signed. As the applicant's decision to purchase the NGV was a direct result of the NGT Program incentive, and there was no prior commitment to purchase a NGV before they were made aware of the incentive award, the purchase was considered to be consistent with the intent the NGT Program and the purchase was allowed. The Fairness Advisor agreed with FortisBC's determination, and advised FortisBC that there was no fairness issue with this decision.

Rights to environmental benefits associated with NGV usage.

- An applicant had concerns about requirements to waive rights to any environmental benefits associated with NGVs purchased under the Program. In this case, the applicant was a BC public sector organization, and is required to meet GHG reduction targets under the Government of BC's Emission Offsets Regulation. As with other FortisBC incentive programs, the requirement to waive rights to environmental benefits is waived if the organization is mandated by legislation to reduce GHG emissions or to meet GHG emission reduction targets. Therefore, the applicant was allowed to claim the GHG reduction benefits associated with NGVs purchased under the Program. FortisBC had considered reducing the incentive award amount by the value of the GHG emission reductions. The Fairness Advisor recommended against this, as it is highly unlikely the applicant will derive any revenue from the sale of carbon credits, as the applicant is required to report GHGs

emissions associated with vehicle usage and any GHG reductions will count towards their emission reduction targets. As such, FortisBC did not reduce the incentive amount.

Impacts of constraints on vehicle procurement on program timelines.

- Public sector procurement policies required that a successful Applicant submit a request for tenders to procure the NGVs awarded under the NGT program. Anticipating execution of the contribution agreement with FortisBC in December 2012, the Applicant would not be able to issue a contract and purchase order (PO) for NGVs until March 2013. The delivery date for NGVs was anticipated to be 10 -14 months from the issuance of the PO. Also, the Applicant opted to request delivery of NGVs in two phases, with the first tranche of vehicles delivered in March 2014, and the remaining vehicles delivered in April 2015. Section 2.7(a)(i) of the contribution agreement requires that the purchase of vehicles complete within one year of the Applicant entering into a purchase commitment with a vendor. FortisBC had specified the end of June 2014 as the deadline that vehicles purchased under the first phase of the NGT program must enter into service. As such, FortisBC determined that only the first tranche of NGVs purchased by the Applicant would eligible for funding under this first phase of the NGT program. A separate application must be made by the Applicant for the second tranche of vehicles in the next phase of the program, and this application will be competitively evaluated against all other applications received in this phase. FortisBC cannot guarantee that the Applicant will receive the same level of funding as in the first phase, but is not constrained from offering the same rate. The Fairness Advisor agreed with FortisBC's determination, and advised FortisBC that there was no fairness issue with this decision.

Reference Documents

As the fairness advisor, PwC reviewed a series of documents in relation to the NGT Incentive Program. The following documents were provided to PwC by FortisBC, and all were also available through their website[1]:

No.	Document	Additional Information
1	Greenhouse Gas Reduction Regulation	Regulation under the BC Clean Energy Act authorizing the NGT program
2	NGT Incentive Program Background – Program Materials	Draft internal PDF document describing in detail the intent and policies of the NGT program
3	Natural Gas for Transportation-FortisBC NGT Incentive Program	Draft internal Powerpoint Slide Deck providing an overview of the NGT program.
4	Natural gas for transportation (NGT) Vehicle Incentive Program - FAQs	Draft internal word document answering frequently asked questions.
5	NGT Incentive Program – Instructions to Applicants	Final. PDF document posted to FortisBC Website
6	NGT Incentive Program – Application Form	Final. PDF document posted to FortisBC Website
7	NGT Incentive Program – FAQs	Final. FortisBC website page
8	Evaluation questions and scoring mechanisms	Draft. Internal Word document documenting application evaluation and scoring process.
9	Evaluation process map	Draft. Internal Excel document illustrating business processes for the application award process.
10	Meeting Minutes with Fairness Advisor Jun 26 2012	Meeting minutes from June 26th meeting to review application evaluation process and review team. Internal Word document.
11	July 12 Presentation to Applicants	Final. PDF document distributed to applicants providing an overview of fuelling station requirements, evaluation criteria and the application review process.
12	NGT Fairness Advisor Meeting Memo - August 22 2012	Meeting minutes from August 22nd meeting between the Fairness Monitor and FortisBC NGT program administrators to review outcomes from Executive Steering Committee meeting.
13	Strategic Fit Committee meeting minutes, Aug 20 2012	Meeting minutes from the Aug 20 Strategic Fit Committee meeting to discuss feasibility and strategic fit of NGT applications received. Internal Word document.
14	NGT Executive Steering Comittee final proposal Aug 27th 2012	Internal memo seeking approval from the Executive Committee for the proposed plan to award incentive funding under the NGT program
15	Award Letter Draft Aug 31 2012	Internal Word document.

[1] http://www.fortisbc.com/NaturalGas/Business/NaturalGasVehicles/IncentivesForYourFleet/Pages/default.aspx

16	Notice of Award Smithrite, Sept 19th, 2012	Final. PDF of sample letter distributed to successful applicants
17	NGT Update Canadian Springs, Sept 19th, 2012	Final. PDF of letter distributed to unsuccessful applicant
18	NGT Update Clean Energy, Sept 19th, 2012	Final. PDF of letter distributed to unsuccessful applicant
19	FortisBC NGT Sept 27 Conference Call,Sept 26, 2012	Conference call presentation to succesful applicants. PDF document distributed to successful applicants.
20	NGT Fairness Advisor Meeting Memo Aug 22 2012	Meeting minutes from Aug 22nd meeting to discuss outcomes from Executive Steering Committee meeting and process/ criteria for award recommendations
21	Questions Raised at Sept 27th, 2012 NGT Vehicle Incentive Conference Call	Answers to questions raised during the successful applicants conference call on September 27th, 2012.
22	Discussion with Fairness Advisor on CoV Oct 2 2012	Answers to questions raised by the City of Vancouver.
23	Natural Gas for Transportation (NGT) Incentive Program Supporting information. Revised V.3191 12/10	Form requesting supporting information for due diligence review.
24	Incentive Program Update Arrow Transport. Nov 20, 2012	Sample status update letter explaining the decision to postpone LNG vehicle awards until after the BCUC Rate Schedule 16 decision.
25	Supplemental Submission Defining the Parameters of a Prescribed Undertaking under the Greenhouse Gas Reduction (Clean Energy) Regulation	Submission letter to BCUC from Fasken Martineau DuMoulin LLP requesting clarification on definitions within the GHG regulation.

Appendix B

FAIRNESS ADVISOR REPORT ON THE COMPETITIVENESS OF THE 2013 CALL PROCESS

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FortisBC Natural Gas for Transportation Incentive Program

Fairness Advisor's Report

FortisBC

December 31, 2013

December 31, 2013

Private and Confidential

Jason Wolfe
Director, Market Development
FortisBC Energy Inc.
16705 Fraser Highway
Surrey, BC V4N 0E8

Dear Mr. Wolfe:

Re: Fairness Advisor's Report on FortisBC's Natural Gas for Transportation Incentive Program for the 2013/14 Fiscal Year.

This report has been prepared in accordance with FortisBC Energy Inc. Contract Reference #4500037881 and the Terms and Conditions contained therein. The report summarizes the results of the Fairness Advisor's review of FortisBC's Natural Gas for Transportation Incentive Program for the 2013/14 Fiscal Year.

We thank FortisBC's personnel for their cooperation and assistance during our evaluation. Dan O'Brien (604) 484-3478 or I would be pleased to discuss any questions or comments, at your convenience.

Yours truly,

Ian Brown
Associate Partner
604-484-3480

PricewaterhouseCoopers LLP
PricewaterhouseCoopers Place, 250 Howe Street, Suite 700, Vancouver BC V6C 3S7
T: +1 604-484-3480, F: +1 604 806 7806, www.pwc.com/ca

Background

FortisBC's Natural Gas for Transportation ("NGT") Incentive Program provides incentives to offset a percentage of the incremental capital cost of a qualifying new factory-built natural gas vehicles ("NGV") or qualified conversion over the cost of a comparably equipped diesel powered vehicle. The NGT program is authorized by regulation under the Clean Energy Act, which requires that applications be evaluated by FortisBC in an open and competitive process and measured against defined program criteria which are established by FortisBC.

To ensure fairness in this process, FortisBC engaged PwC as a Fairness Advisor ("FA"). This report covers the activities of the FA from December 22, 2012 to December 31, 2013, including:

- A review of changes to the application documents and process;
- Activities related to the Round 1 due-diligence process;
- The Round 2 application review and selection process; and
- Round 2 applicant due-diligence review and incentive awards.

The report includes our attestation of assurance, a summary of the scope and objectives of the assignment, the methodologies applied and any relevant findings from the activitise undertaken.

Attestation of Assurance

As the Fairness Advisor, we hereby provide the following unqualified assurance statement concerning the conduct of the FortisBC's Natural Gas for Transportation call for proposals, through to the completion of the evaluation, selection and award process:

It is our professional opinion that the competitive process that we observed was conducted in a fair, open and transparent manner. From what we observed, decisions were made objectively, free from personal favouritism and political influence, and encompassed the elements of openness, competitiveness, transparency and compliance.

PricewaterhouseCoopers LLP

_____

Ian Brown
Associate Partner
PricewaterhouseCoopers LLP

Role and Approach

PwC's role as FA is to carry out an independent assessment of the NGT incentive award program and provide advice to the FortisBC team on matters of fairness. PwC is an independent third party with respect to FortisBC and the NGT Incentive Program.

In 2013, the activities of the fairness adviser were to observe and monitor:

- The Call for Proposals process, including communications and responses undertaken during the application competitive selection process;
- Collaborative discussions and meetings where proponent comparisons were made and the criteria weighting and rating systems were applied; and
- Review correspondence between applicants and FortisBC staff regarding various issues related to the application and award processes, and to evaluate subsequent resolutions made by FortisBC.

Fairness Advisor Activities and Observations

Summary of Activities

Over the year, the Fairness Adivisor monitored program activities and reviewed and responded to a series of potential fairness issues brought forward by FortisBC. These included:

- Consideration of changes to program timelines and modifications to the terms and conditions in contribution agreements;
- A review of the proposed process for awards made under the Vehicle Maintenance Shop Upgrade Program;
- A review of proposed modifications to Program processes prior to the launch of the Round 2 Call for Applications.
- Monitoring of an Information Session for parties interested in submitting an application under the Round 2 CNG Vehicle Incentive Program;
- Attending and monitoring FortisBC review meetings on June 20th, 2013 with the Strategic Fit Committee and July 11th, 2013 with the Executive Steering Committee for the Round 2 application review and selection process.
- A review of issues leading up to the execution of Round 2 contribution agreements, in addition to issues related the execution of contribution agreements and program timelines related to the Round 1 CNG and LNG awards.
- Reviewing the award process for the Marine Vessel component of the program and proposed changes to processes for awards for the 2014 program year.

A detailed description of specific activities and PwC's observations are provided below.

Activities and Observations Related to the Round 1 Call for Applications

Delays in Round 1 LNG Program Awards

- In January 2013 FortisBC delayed signing contribution agreements with successful Round 1 LNG applicants because Rate Schedule 16 to the BC Utilities Commission ("BCUC"), which would secure the LNG supply for program participants, had not been approved. One LNG applicant requested a provisional agreement allowing them to initiate vehicle purchases prior to the Commission's decision. FortisBC subsequently issued a letter informing Applicants of a policy change allowing recipients the option to proceed with a LNG vehicle purchase prior to the BCUC decision. The provisional award letter allowed LNG award recipients to purchase vehicles under the condition that in the event Rate Schedule 16 was not approved, the award recipient would be responsible for paying the full purchase price for the LNG vehicle and would be required to secure their own supply of LNG. FortisBC subsequently imposed a deadline for Round 1 LNG applicants to indicate their interest in moving ahead with vehicle purchases prior to BCUC approval. The FA reviewed the proposed changes in policy and determined that there was no fairness issue.

Shop Upgrade Program

- On January 25, 2013 the FA met with FortisBC to review the award process for the Shop Upgrade Program authorized under BC's Greenhouse Gas Reduction Regulation ("the Regulation"). Section 2(1)(a)(ii) of the Regulation, as written, could be interpreted such that the grants for safety and shop upgrades must also be awarded through an open and competitive application process. FortisBC's proposed approach was to award grants for the safety and shop upgrades only to successful applicants of the vehicle purchase grants, or their designated maintenance service provider. FortisBC's rationale was that the grants were intended to assist in shop improvements only for vehicles purchased under the Program. FortisBC felt that since the shop upgrade program was an add-on for recipients of the vehicle purchase grants, and recipients of the vehicle purchase grants were identified through an open and competitive process, eligibility for shop upgrade program grants can be limited to those recipients. The FA agreed with FortisBC's rationale, but suggested that the wording of the Regulation could lead to different interpretations. The FA notified the Ministry of Energy, Mines and Natural Gas by email on February 1, 2013 and requested confirmation that FortisBC's interpretation above was consistent with the intent of the Regulation. The FA determined there was no fairness issue with FortisBC's interpretation of the Regulation as related to the award process for the Shop Upgrade Program.

Review of Changes to Round 2 CNG Program evaluation procedures and review criteria

- FortisBC proposed changes to the scoring criteria and planned to remove the qualitative assessment criteria for the Round 2 CNG program. FortisBC also considered establishing a maximum cap on the cost differential for incentive awards. FortisBC has discretion as to the amount of the incentive award provided the amount does not exceed the specified percentage of the cost differential specified in the regulation for a given award year. The FA considered the proposed changes and determined that there was no fairness issue.

Request for Expedited Approvals

- During the review phase for the second round of funding a recipient requested that their application review and approval be expedited to allow them enough time to procure vehicles and install fuelling infrastructure. The FA considered the request and advised FortisBC that it would not be fair to grant an award to the applicant before the review and award process for all other applicants in the second round had completed. FortisBC agreed with the assessment and informed the applicant of the outcome.

Treatment of Environmental Attributes Arising from Program Awards

- In FortisBC's contribution agreement with Program recipients, FortisBC claims ownership of environmental attributes arising from program awards, with the exception of Public Sector Organizations ("PSOs"), who are mandated by law to report and reduce GHG emissions. During negotiations of contribution agreements, an exception was made for one LNG award recipient in the first round who claimed they were entitled to ownership of 25% of the environmental attributes, as this was the proportion of the cost differential that would be paid by the recipient. Going forward, FortisBC intends to enforce a policy for 100% ownership of

environmental attributes. The FA was consulted to determine if there was a fairness issue with how FortisBC's policy for ownership of environmental attributes has and was to be enforced. The Regulation does not specify how environmental attributes resulting from the NGT program are to be treated. Therefore, the FA advised FortisBC that it can develop and apply program policy as it requires, provided that the policy is clearly communicated to all applicants and applied consistently within each round of funding.

Release of Applicant Information Prior to Award of Contribution Agreement

- FortisBC received a request from an independent fuelling station provider to release contact information of the successful applicants from Round 1 of the NGT program. FortisBC responded that they could not release information about program recipients until all contribution agreements had been signed. These agreements authorize FortisBC to release such information publically. FortisBC informed the interested party of the measures it had made to ensure that all applicants were aware of other third party fuelling station providers. The FA reviewed the information request and FortisBC's response and determined that there was no fairness issue with the course of action taken by FortisBC.

Monitoring of the Information Session for Interested Parties

- The FA attended an online web seminar for parties interested in applying to Round 2 of the CNG program on April 15, 2013. The FA was introduced to attendees and the role of the FA was explained. The FA monitored the presentation as well as question and answers. No fairness related issues were identified during the web seminar presentation and in answers to questions that were provided.

Grace Period for Round 1 Purchase Deadline

- FortisBC provided a one month grace period allowing recipients who requested extra time until the end of June 2013 to secure purchase orders for Round 1 vehicles awards. Subsequently, FortisBC received a request from one recipient to extend the deadline to later in the year as they were not in a position to initiate a purchase. The FA was informed of the request and advised FortisBC that allowing the recipient to extend the purchase timeline beyond the established grace period would be considered a fairness issue as other recipients had been held to these timelines and FortisBC had disallowed these requests. The recipient subsequently requested that their Round 1 award be shifted into Round 2 and that they automatically be granted the same award in Round 2. FortisBC accepted the recipient's application in Round 2, but evaluated it along with the other Round 2 applications. The FA concluded that there were no fairness issues with the resulting course of action.
- Another Round 1 recipient, having missed the deadline to produce a purchase order, was allowed to include the Round 1 vehicles they were awarded in their Round 2 application. As there was no limit on the number of vehicles that can be awarded grants in Round 2, FortisBC applied the terms and conditions for Round 2 to the additional "Round 1" vehicles from this recipient, while applying the lower price differential that was stipulated for Round 2. The FA reviewed this decision and concluded there was no fairness issue.

Changes to the Award Scope

- FortisBC reviewed purchase orders from two Round 1 recipients, where freight costs were greater than the cost quotes provided during the due diligence review. FortisBC approved the revised purchase prices as the difference was within 10% of the original quote and it was known that there was uncertainty in freight costs. The FA considered FortisBC's decision to approve the revised purchase prices and determined there was no fairness issue as the overall amounts awarded to the two recipients did not changed significantly and both recipients were given the same treatment.

Activities and Observations Related to the Round 2 Call for Applications

Monitoring of the NGT Strategic Fit Committee meeting.

- A meeting was held on June 20, 2013 with the Strategic Fit Committee to discuss feasibility and strategic fit of NGT applications received. The FA attended the meeting to monitor communications and provide feedback on any fairness related issues. The objective of this meeting was to discuss current program status

(2012 program uptake) and program funding forecasts. The Committee reviewed the application scores and rankings for the 2013 CNG applications received and considered different incentive award scenarios. The committee considered potential attrition rates and discussed potential award options to achieve program objectives, including: awarding new applicants with a higher percentage than applicants who had applied in previous rounds; awarding sectors that had not yet adopted NGV with a higher percentage to encourage new industries; awarding applicants based on their location to encourage early adopters in areas with no CNG infrastructure. The comments and concerns discussed during this meeting were summarized and the committee's advice was provided to the Executive Steering Committee to assist in their decision. No fairness related issues were identified during the meeting or review comments provided to the Executive Steering Committee from the Strategic Fit Committee.

Monitoring of the NGT Executive Steering Committee meeting.

- A meeting was held on July 11, 2013 with the Executive Steering Committee meeting to present and discuss the applicant rankings, input from the Strategic Fit Committee and recommendations for awards. The FA attended the meeting to monitor communications and provide feedback on any fairness related issues. The meeting and review discussion was conducted in a fair and objective manner and no fairness related issues were identified during the meeting discussions or in the subsequent decisions.

Review of Changes to the Contribution Agreement

- FortisBC modified the standard contribution agreement to include an additional clause for Public Sector Organizations ("PSOs") which limits the total third party funding received by PSOs for NGV purchases to 100% of the total cost of the vehicle. The FA advised that all things being equal, PSOs should receive award amounts that are equivalent to other program recipients. The FA reviewed the change and potential implications to PSO applicants and determined that there was no fairness issue, as the contribution agreement provided at the time of application was considered draft and FortisBC had discretion to modify the contribution agreements to suite the circumstances of each recipient.
- FortisBC modified the contribution agreement for one recipient to address concerns about how a breach of agreement is dealt with. The FA reviewed the change and determined there was no fairness issue as the award was made following the established process and FortisBC has discretion to establish a contribution agreement with their award recipients that mitigates their business risk.

Activities and Observations Related to the Round 2 Due-diligence Review

Opening a Limited call for 15l LNG vehicles

- In August 2013, a LNG engine manufacturer announced they were planning to discontinue manufacturing their 15 litre LNG engine as of September 30, 2013. This engine size is most appropriate for BC's highways as it has sufficient horsepower for climbing mountain passes. Several trucking companies indicated that they would like to arrange to purchase the 15 litre LNG vehicles before the September 30 cutoff date. In response, FortisBC initiated a second round of funding for LNG vehicles ahead of the anticipated approval of Rate Schedule 16 and opened the second round of LNG funding to all applicants. The FA reviewed this decision and the subsequent course of action and determined that there was no fairness issue.
- The Round 2 LNG program for 15 litre vehicles was scheduled to close for applications on September 10, 2013. Some vehicles dealers indicated to their customers that they would need to submit purchase orders for the discontinued 15 litre engines prior to September 6 to allow sufficient time for purchase and delivery of the vehicles. Some applicants requested that FortisBC make an early decision on awards for those applicants that had already submitted an application. The FA considered the request and advised FortisBC that to be considered a fair and competitive process FortisBC must adhere to the established program timelines for the second LNG round and should not make awards prior to the close of the Call for Applications.

Timeline Flexibility for Round 2 Due Diligence Process

- FortisBC allowed some recipients flexibility in the established timelines to provide necessary information to support the due diligence process around executing the contribution agreement. FortisBC made it clear to

recipients that there were two hard deadlines: the application deadline (May 31, 2013), and the deadline to provide Purchase Orders for vehicles (March 31, 2014). The FA reviewed this course of action and determined there was no fairness issue provided all applicants were afforded the same flexibility if required.

Marine Vessel Program award process.

- FortisBC proposed an award process for the Marine Vessel Program designed to incentivise companies to secure ship building contracts in a timely manner. FortisBC planned to issue an award letter to the successful Marine Vessel Program applicants specifying a variable award amount with a performance bonus that would be granted if the recipient secured a ship building contract by a specified date. The amount of the performance bonus also depended on the performance of other Marine Vessel Program recipients, whereby if a recipient fails to meet the deadline, the performance bonus would be reallocated to those recipients that were successful at meeting the deadline. The FA reviewed the approach and determined there was no fairness issue, provided all Marine Vessel Program applicants were in agreement with the procurement timeline.

Changes to program application process for 2014 Call

- FortisBC made a decision to alter the program application process and timelines for the 2014 Program. Under the revised Program process, Calls for Applications will be issued quarterly. Applications are received and evaluated, and awards then would be issued prior to the end of the same quarter. Successful applicants are then required to enter a contribution agreement by the end of the subsequent quarter. A purchase order must then be secured by the end of the following quarter (approximately six months following the award date). If an applicant fails to meet the timeline the recipient will lose their funding commitment, but will be automatically entered into the next round of applications and re-evaluated against the terms of that round. The resulting award amount would be subject to available funding in that round of funding. The FA reviewed the revised program application process and determined there was no fairness issue.

Appendix C
INCENTIVE PROCESS AND EVALUATION

VEHICLE INCENTIVE PROCESS AND EVALUATION CRITERIA

In any given year applicants wishing to apply for incentive funding are required to submit an application form to FEI before the application deadline date. The application requires information about the applicant such as the location, total fleet size, number of vehicles, the models that will be converted, mileage, the price differential between CNG or LNG and the equivalent diesel application, supporting documentation from dealers and natural gas fuelling and implementation plans.

After the application deadline for each incentive call process, all funding requests are evaluated using a pre-established assessment model that has been approved by the fairness advisor. The use of this model ensures that evaluations are carried out consistently and fairly among all applicants. 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. The three main categories are

- Mandatory Requirements
- Performance metrics of the amount of diesel litre displaced per dollar incentive
- Overall fit with the program objectives

These are discussed in more detail below.

1.1 *MANDATORY REQUIREMENTS*

All applicants must satisfy the minimum requirements in this first category in order to continue on in the evaluation process. Companies that fail the safety standard assessment, or that have a poor financial rating, will be disqualified from the selection process.

The specific details on the minimum threshold for the financial assessment are based on Equifax scores that are openly published on the website and in the instructions to applicants while submitting the application form. The safety standards are based on the applicant's scores as measured by the Ministry of Transportation's National Safety Code Carrier Profile (CP), or an equivalent measure.

1.2 *AMOUNT OF DIESEL LITERS DISPLACED PER DOLLAR INCENTIVE*

Each applicant is assessed based on the amount of diesel litres displaced per dollar of incentive funding issued. A measure called the Diesel Litre Equivalent per Dollar Incentive (DLE/$) is calculated for each company based on the information submitted on the application form.

Once the DLE/$ has been calculated, the companies are ranked accordingly and then assigned a score relative to all other companies. Generally speaking the higher the DLE displaced for every incentive dollar, the higher the level of benefit for British Columbians.

This is a key performance metric and as such receives a higher weighting relative to other criteria to meet the GGRR objectives.

1.3 *OVERALL FIT WITH PROGRAM OBJECTIVES*

The final category of the evaluation criteria considers the extent to which each applicant furthers the objectives of the GGRR. This category considers factors such as whether funded projects would increase geographical diversification of projects throughout BC, as well as the ability to expand corridor development. Construction of fuelling stations along BC's strategic transportation corridors plays a vital role in expanding the use of natural gas vehicles.

Once the applicant is evaluated and approved through the internal process as described above, an award letter is issued notifying the applicant about the award details and the next steps.

The next steps are described below.

- **Signing of the Contribution Agreement.**

A standard form of FEI's vehicle contribution agreement is available on FEI's website with all the applicable terms and conditions. Among other requirements in the agreement, applicants are required to commit to a minimum annual quantity per vehicle, or alternatively, agree to pay back a portion of the contribution amount to FEI if the actual amount consumed is less than the agreed upon amount. This is to ensure that applicants take ownership of their commitments and also to protect the interests of all ratepayers that are currently funding the incentives through rates.

- **Producing the Purchase Order by the Deadline Date**

As agreed in the contribution agreement, applicants are required to submit a purchase order(PO) by the deadline date to be eligible for incentives.

- **Payments of Incentives**

The first 25% of the agreed upon incentive funding is issued when the PO is submitted and the remaining 75% is issued when the vehicle is put in operation. Appropriate documentation is produced confirming that the vehicle has been registered in the applicant's name with the Insurance Corporation of British Columbia.

- **Ongoing Monitoring and Evaluation**

Once the vehicles hit the road, the program manager responsible for managing the NGT program ensures that the vehicles are consuming the minimum amounts stated in the contract,

and also that the applicants are obliging to the terms and conditions as agreed to in the contribution agreement.

1.4 *PROCESS CHANGES IN 2014*

In 2014 FEI changed the incentive process to start accepting applications every quarter in order to allow applicants to apply for incentives based on their individual timelines and procurement plans. By doing this, applicants are required to submit a purchase order within two quarters from the quarterly application deadline. These changes were made to help ensure a higher participation rate from applicants.

This also allows FEI to manage commitments and not tie up incentive funding on applicants who may not move forward with their vehicle purchases. Essentially, the funding is directed to applicants with firm commitment plans to purchase vehicles.

Appendix D

GGRR INCENTIVE AND FUELING STATION DETAILS

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

FILED CONFIDENTIALLY

Attachment 28.1

REFER TO LIVE SPREADSHEET MODEL

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(accessible by opening the Attachments Tab in Adobe)