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VIA EMAIL
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October 28, 2010

TERASEN UTILITIES
2010 RESOURCE PLAN **EXHIBIT A-6**

Ms. Diane Roy
Director, Regulatory
Terasen Gas Inc.
16705 Fraser Highway
Surrey, B.C. V4N 0E8

Dear Ms. Roy:

Re: Terasen Gas Inc.
Terasen Gas (Vancouver Island) Inc.
Terasen Gas (Whistler) Inc.
Project No. 3698604/Order G-124-10
Terasen Utilities 2010 Long Term Resource Plan

Please find attached Commission Information Request No. 2.

Pursuant to Commission Order G-146-10, the Terasen Utilities are to file their Responses to BCUC IR No. 2 on or before Monday, November 8, 2010.

Please file your Responses in accordance with the Commission Filing Protocol.

Yours truly,

Erica M. Hamilton

EC/cms
Enclosure
cc: Registered Interveners
(Terasen2010-RPlan-RI)

BRITISH COLUMBIA UTILITIES COMMISSION
Commission Information Request No. 2

Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc.
Terasen Gas (Whistler) Inc. [collectively (Terasen Utilities or the Utilities)]

2010 Long Term Resource Plan (2010 LTRP or Application)

ACCEPTING 2010 LTRP UNDER SECTION 44.1 OF THE UTILITIES COMMISSION ACT

1.0 Reference: Exhibit B-5, BCUC IR 8.1, IR 1.1
Approval Sought in the 2010 LTRP

"The Terasen Utilities 2010 Long-Term Resource Plan (LTRP) provides a snapshot in time of the Terasen Utilities ongoing resource planning process." BCUC IR 1.1

"The only approval that the Terasen Utilities are seeking in the LTRP is that the Commission accepts the LTRP in accordance with Section 44.1 of the Utilities Commission Act. The Commission's acceptance of the LTRP is not a prerequisite for, and would not constitute approval or prejudgment of, the applications that the Terasen Utilities plan to file." BCUC IR 8.1

1.1 Subsection 44.1(2) of the *UCA* prescribes what a long-term resource plan should include. Is it because of the nature of this 2010 LTRP, because it is a "snapshot in time", that the Commission's acceptance is not prerequisite of Terasen Utilities' future plans?

1.2 Terasen Utilities state that they require the freedom to respond to new events and information and therefore may not proceed with the LTRP as filed. Instead of shelving or not carrying out the 2010 LTRP when circumstances change, would it be more apt for the Terasen Utilities to build on the 2010 LTRP as the Utilities' planning tool to develop strategies and create various portfolios such that the Utilities could adjust readily to new events and information? If so, please describe if there are strategies and portfolios in the making and describe their state of development.

1.3 Considering that the Terasen Utilities are at the juncture of moving towards providing alternative energy solutions from a traditional gas distribution utility, would a long-term plan that is supported by portfolios of programs (as opposed to a plan without portfolio) lead a more meaningful regulatory review as to whether to accept or reject the 2010 LTRP?

2.0 Reference: Exhibit B-5, Response to BCUC IR 1.1
Resource Planning Process

"… the Terasen Utilities have already "adopted" the positions recommended in the 2010 LTRP. The Commission's review of the LTRP under section 44.1 of the *Utilities Commission Act* provides the Commission with the opportunity to consider the current state of the Terasen Utilities resource planning and opine on whether carrying out the LTRP is in the public interest."

2.1 Are all of those "positions" recommended in the 2010 LTRP included in the Response to BCUC IR 56.2? If not, please identify what other "positions" have already been "adopted" by Terasen Utilities and include the related estimated spending.

2.2 Please clarify whether Terasen Utilities will be seeking rates recovery for any capital and O&M expenses for activities "adopted" but not as yet approved by the Commission. If "yes", please provide details of them and their associated expenses.

2.3 The Terasen Utilities are of the view that "the *Utilities Commission Act* does not state that the utility is obligated to undertake aspects of the resource plan that are accepted" (Exhibit B-5, pp.1-2), and that the Utilities have the freedom to discontinue or change their resource plan when deemed prudent. Please explain and justify whether the costs invested in stranded assets and abandoned programs should be incurred by ratepayers.

3.0 Reference: Exhibit B-5, BCUC IR 56.1; Exhibit B-4 BCSEA IR 11.1
Planning Horizon

"The Terasen Utilities would understand the Commission's acceptance of the 2010 LTRP to be an acceptance of the Terasen Utilities' plan to pursue ongoing and expanded EEC funding, but would not understand such acceptance to be a prejudgment or endorsement of the particular EEC program that the Terasen Utilities will be proposing in their next revenue requirement applications." BCUC IR 56.1

"The planning horizon for the LTRP is 20 years." BCSEA IR 11.1

3.1 A revenue requirements application normally sets rate for one to three test years. The planning horizon for the LTRP is 20 years and the Action Plan has a four year window.

3.1.1 Will the Terasen Utilities file another EEC Application before 2013 to update the 2008 EEC Application? Please explain why or why not.

3.1.2 Why is a short-term revenue requirements application the appropriate forum to propose and discuss EEC programs that normally involve long term investments, savings persistence and incur long term amortization costs?

3.1.3 In the Utilities' opinion, does the UCA subsection 44.1 (2) (b) and (c) require a EEC Plan developed under certain probable scenarios and supported by cost-effective strategies and portfolios of programs? If so, please indicate where they are in the 2010 LTRP.

4.0 Reference: Exhibit B-5, Response to BCUC IR 8.1, IR 8.2
Low and No Carbon Initiatives

"However, in this Application, the Terasen Utilities are not seeking approvals for any low or no-carbon initiatives, nor are the Terasen Utilities requesting a determination that its plan to bring forward future applications is in the public interest. The only approval that the Terasen Utilities are seeking in the LTRP is that the Commission accepts the LTRP in accordance with Section 44.1 of the Utilities Commission Act."

4.1 Terasen Utilities state that EEC Funding Scenarios A, B, and C are not to be interpreted as plans, but rather as "illustrations" to indicate that increased funding leads to increased energy savings[1]. Detailed program planning was not prepared in creating the three funding scenarios.

[1] For example, please refer to Exhibit B-5, IR Nos. 8.2, 19.1, 33.1, 37.3, 37.4, 37.4.2, 37.4.3, 38.1, 38.2, 39.1, 39.2, 42.1, 43.3, 46.5.2, 61.1, 51.3, and 56.1.

In the absence of a plan, please explain how the Application satisfies Sections 44.1(2)(b), (c), (d) or Sections 44.1(8)(a), (c) and (d) of the *Utilities Commission Act*.

4.2 The Utilities have stated that "The Commission's acceptance of the LTRP is not a prerequisite for, and would not constitute approval or prejudgment of, the applications that the Terasen Utilities plan to file." Please explain how the Commission's acceptance or rejection of the 20 year plan would affect the Utilities operational and planning practices over the next 24 months.

4.3 Please confirm that the list provided in Response to IR 56.2 summarizes the 2010 LTRP initiatives that Terasen Utilities are requesting acceptance. If not, please provide a tabular summary of those initiatives by time period. Please itemize estimated expenses for each initiative for the period F2012 to F2020.

ALTERNATIVE ENERGY SERVICES AND INTEGRATED ENERGY SERVICES

5.0 Reference: Exhibit B-4, BCSEA IR 2.1, IR 2.2, IR 12.2
Alternative Energy Services

"From 2010 onward, it was agreed and approved as part of the Negotiated Settlement Agreement with respect to the TGI 2010-2011 Revenue Requirement Application that TGI will be developing and delivering alternative energy services. There are no other criteria that distinguish the alternative energy services delivered by Terasen Energy Services from those under development by TGI." BCSEA IR 2.1

"TGI will be providing alternative energy services throughout the service area of the Terasen Utilities ….. It is not our intention to migrate these services out of TGI and into Terasen Energy services." BCSEA IR 2.2

5.1 The RRA in question is an application for rate setting for the two years 2010-2011 and appears to deal only with allocation of costs and deferral account mechanism for AES. Would it be more accurate to describe the approval of the NSA of the RRA proceeding as an approval for the alternative energy services "initiative" as opposed to approving an overarching regulatory framework?

5.2 In Exhibit B-1, Chapter 8, p.186, the Terasen Utilities state their intention to seek approval of an overall business and regulatory model and seek CPCN approval of specific projects (emphasis added). Please confirm that this approval being sought is distinct and separate from requests related to alternative energy services that might be included in the next revenue requirements application.

6.0 Reference: Exhibit B-4, Response to BCSEA IR 1.3, IR 1.4
Terasen Energy Services

"If Terasen Energy Services provides any services that fall under the definition of "public utility", it is subject to regulation by the Commission."

6.1 TES has participated in projects that are regulated by the Commission. If TES is a regulated utility and it offers alternative energy services not distinguishable from those offered by Terasen Utilities, why is TES not included in the Terasen Utilities' LTRP or why has it not separately filed its own LTRP?

6.2 Please confirm whether TES is a regulated or non-regulated business entity. Please also provide a tabular summary of the products and services that TES currently provides to ratepayers and the wider market.

7.0 Reference: Exhibit B-5, BCUC IR 2.2, IR 9.2
Competition in Integrated Energy Services and TES

"The rejection of the LTRP would not prohibit TGI from making a future application to implement alternative energy services." BCUC IR 2.2

"Yes there are competitors to TGI in the area of integrated energy services. However, competition is a Federal mandate under the Constitution of Canada and not, in and of itself, within the jurisdiction of the BCUC." BCUC IR 9.2

7.1 Please confirm that in the Response to BCUC IR 9.2, Terasen Utilities were referring to the federal law *The Competition Act* whose purpose was, among other things, to prevent anti-competitive practices in the marketplace. Does a natural monopoly currently exist for the integrated energy services market and NGV market? Please explain your answer.

7.2 In the Commission Guidelines: Retail Markets Downstream of the Utility Meter (RUMDUM) published in April 1997 (Ref: Exhibit A2-1), The Guidelines quoted staff position paper's conclusion as follows:

> *the Commission's powers include ….. the ability to define the utility's domain, that is to determine which goods and services the utility will provide, …..the Commission has the power to influence the corporate structure under which utility shareholders will participate in the unregulated market*

Do Terasen Utilities agree with the above statements? If no, please explain.

8.0 Reference: Exhibit B-5, Response to BCUC IR 2.1; Exhibit B-3 BCOAPO IR 3.1
Terasen Energy Services ("TES")

"TGI is now pursuing alternative energy services as described in Section 3.1.1 of the LTRP. In the respectful submission of the Terasen Utilities, it is the services being pursued by TGI that are the subject of this proceeding, rather than TES's services." BCUC IR 2.1

"The Terasen Utilities does not envision any issues with respect to cross-subsidization or affiliate relations with respect to TES going forward." BCOAPO IR 3.1

8.1 Please provide the corporate structure of Terasen Gas that includes all regulated and non-regulated business units. Please discuss the extent to which the relationship between regulated and non-regulated business units are stand-alone and arms length entities or in the alternative share resources such as offices, employees, and other assets.

8.1.1 The Response to BCOAPO IR 3.1 states that Terasen Utilities do not envision any issues with respect to cross-subsidization or affiliate relations with TES going forward. Please provide a description of the nature of TES' relationship with Terasen Utilities including a historical perspective of how assets are shared between the corporate entities.

8.2 The Utilities have stated that the "delivery of alternative energy services to customers is a regulated activity under the *Utilities Commission Act"*. Do the Utilities consider that alternative energy services are exclusive to regulated utilities in the Province of British Columbia? If so, please state why.

9.0 Reference: Exhibit B-5, Response to BCUC IR 2.2; Exhibit B-4 BCSEA IR 12.2
Venture into Alternative Energy Services

"While these activities and plans for future applications are relevant background to the resource plan, the Terasen Utilities are not seeking any approvals in the LTRP to proceed with offering alternative energy services. TGI notes that no advance approval is required for TGI to file applications with the Commission to implement alternative energy services as contemplated by the NSA." BCUC IR 2.2

"In TGI's 2010-2011 RRA, TGI outlined its rationale and strategy for offering alternative energy services and proposed a regulatory model for undertaking these services." BCSEA IR 12.2

9.1 The Application states that the Utilities "anticipate that they would proceed with implementing alternative energy services whether or not the Commission accepts the LTRP". Under such a scenario, please discuss if a regulatory review of the organizational structure of various entities of Terasen Gas should take place. Please discuss if a review of the regulated and unregulated nature of the alternative energy services should take place before the next filings of LTRP, EEC Application or CPCN and funding applications related to the EEC.

9.2 Page 4 of the RUMDUM Guidelines (Exhibit A2-1) depicts those areas as part of the question of determining the proper domain of the utility. Please provide a similar figure depicting products and services related to Innovative Technologies, Alternative Energy Services, and Integrated Energy Services according to the Terasen Utilities' current perception.

10.0 Reference: Exhibit B-5, Response to BCUC IR 9.2
Competition

"Yes there are competitors to TGI in the area of integrated energy services. However, competition is a Federal mandate under the Constitution of Canada and not, in and of itself, within the jurisdiction of the BCUC. Neither is the Commission's jurisdiction defined by reference to whether a service is subject to competition."

10.1 Would the pursuit of AES and NGV markets by the Utilities prevent or hinder the development of competitive markets in those sectors of the British Columbian economy? Please discuss how such pursuits might be beneficial or harmful to ratepayers.

CURRENT AND EXPECTED REGULATIONS, UNCERTAINTIES AND RISKS

11.0 Reference: Exhibit B-5, BCUC IR 3.1, IR 3.2, IR 7.1, IR 11.3, IR 12.2
Uncertainties and Risks

11.1 In the Response to BCUC IR 3.1, the Terasen Utilities state that they are unable to speculate on potential impacts on EEC programs due to lack of details of the regulations of the Greenhouse Gas Reduction (Cap and Trade) Act. Have the Terasen Utilities developed scenarios for its EEC program implementation to plan for different possible outcomes related to capped emissions regulations?

11.2 In the Response to BCUC IR 3.2, the Terasen Utilities state they are still resolving how offsets could be apportioned if they were part of a compliance portfolio. Have the Terasen Utilities developed different portfolios of programs to adjust to the possible outcomes regarding whether EEC initiatives qualify as offsets?

11.3 In the Responses to BCUC IR 7.1 and 7.4, the Terasen Utilities have applied a carbon tax amount of $30/tonne to the cost of gas beyond 2012 in the absence of information on carbon tax beyond 2012. Given that the Application quoted some reports that indicate carbon taxes may need to go up to $300 per tonne in order to have a meaningful impact on consumer behavior and therefore reduce GHG emissions, would developing various carbon tax scenarios as inputs be useful in providing better insights on EEC cost-benefit analysis and load forecasts?

11.4 The Terasen Utilities' intention is to move forward with the NGV programs as they have long-term benefits. Ownership of potential carbon offsets has not been considered. Would the impact on the cost-benefit analysis be significant under 'with' and 'without' carbon offsets ownership scenarios?

11.4.1 On page 116 of the 2009 EEC Annual Report, Terasen Utilities suggested that the Companies may seek the Commission's approval allowing a weighted average TRC of less than 1.0 in future filings for Innovative Technologies. Is this because the Terasen Utilities are not sure about the attributes that they could count as benefits?

11.4.2 In the Response to IR 11.1, Terasen Utilities state that the NGV programs for municipal fleets will be subject to the same threshold as other DSM programs of having to pass the TRC test, which means that overall benefits from the NGV programs will exceed the costs. Does this assertion contradict the suggestion on page 116 of the 2009 EEC Annual Report?

11.5 In the Response to BCUC IR 12.2, Terasen Utilities concluded that the Whistler fuel cell bus purchase was part of an effort to showcase fuel cell technology under development in B.C. In the LTRP, have the Terasen Utilities considered scenarios to accommodate changes in provincial government policy such as the promotion of fuel cell bus or electric bus over NGV bus?

11.6 In Response to BCUC IR 1.1, the Terasen Utilities state that they have already "adopted" the positions recommended in the 2010 LTRP. Please comment on the risks inherent in these adopted positions given the uncertainties described in the IRs above.

12.0 Reference: Exhibit B-5, Response to BCUC IR 10.1
NGV Refueling Market

"TGI acknowledges that there is capital risk associated with our plans to enter the NGV refueling market; however, we believe the data shows that the expected benefits to all customers significantly outweigh those risks. TGI does not expect that this prudent investment will negatively impact our risk profile."

12.1 What are the data referred to by TGI in the above quote? To the extent possible, please file a copy of the data as an exhibit to the Application.

13.0 Reference: Exhibit B-5, Response to BCUC IR 11.2, pp. 23-25
NGV Cost Effectiveness

13.1 How many NGV (LNG and CNG) would be required to be introduced annually in British Columbia in order to replace the existing vehicles in Terasen Utilities'' target market for fuel switching (e.g., buses, long haul trucks, vocational trucks, taxis, etc.) which are currently in operation. Please assume a 20 year period.

13.2 Automobile and truck manufactures are continually improving the fuel efficiency and emission standards for the vehicles that they manufacture to meet increasingly stringent environmental standards and regulations. Please provide a comparison of tailpipe emissions per kilometer for the "best" diesel, gasoline, and NGV vehicles available to the Canadian market at present.

13.2.1 If all of the fleet vehicles which are currently operating in British Columbia were replaced by the most fuel efficient diesel and gasoline vehicles which are currently available in the market, what annual impact would that have on the reduction fuel consumption and GHGs? If this were considered the base-case for NGVs, what incremental savings in GHGs would be achieved through the introduction of NGV. Please provide a comparison with the savings used in the 2010 LTRP with the above calculation.

14.0 Reference: Exhibit B-5, Response to BCUC IR 38.1
Government Objectives CEA s. 2(h)

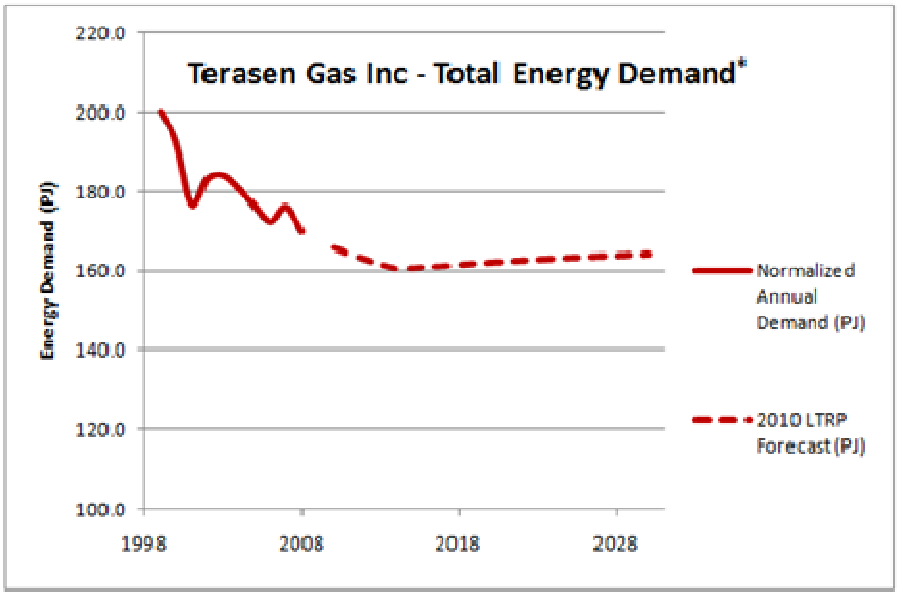
"The Terasen Utilities believe that of the three scenarios, Scenario C is the most consistent with the objectives of the *CEA* and *UCA* since it presents the implementation of an increase in cost effective DSM programs." BCUC IR 38.1

14.1 Please discuss the risks to Terasen Utilities NGV initiatives if: (a) the gap between CNG/LNG engines and diesel and gasoline engines continued to narrow in future in terms of tailpipe emissions and the hydrocarbons of NGV continues to worsen compared to diesel engines; and (b) the provincial and federal policies continue to favour fuel cell and electric vehicles (ref: BCUC IR 12.2).

EEC FUNDING SCENARIOS

15.0 Reference: Exhibit B-5, Response to BCUC IR 15.1, p. 35 and Response to BCUC IR 26.1.1, p. 58
Demand Forecast Tables

15.1 Appendix B-2, Exhibit B-5 of the Utilities 2010 LTRPI contains a forecast of energy demand for the period 2010 to 2030. In order to include a historical perspective, the following graph was prepared. Please confirm whether the graph is accurate. If not, please provide an updated version.



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Normalized Annual Demand (PJ)	200.1	192.5	176.8	183.2	184.1	180.8	176.4	172.4	176.2	170.0

* Prepared by Commission Staff. Normalized Annual Demand data from TGI 2010-2011 Revenue Requirement Application, Exhibit B-4, Response to IR 4.3, p. 9 2010 LTRP Forecast data is the aggregated TGI Coastal and TGI Interior forecasts from 2010 LTRP, Exhibit B-5, Appendix B-2

15.1.1 There seems to be a leveling out of energy demand starting sometime around 2016. Please explain the critical factors and assumptions used in modeling this forecast.

15.2 Historical data provided in response to BCUC IR 26.1.1 do not agree with historical data provided by Terasen Gas Inc. in response to IR 4.3., Exhibit B-4 of the 2010-2011 Revenue Requirement Application previously filed with Commission. The following table summarizes variances. Please reconcile the differences.

Historical Actual Energy (PJ)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Ref.
2010-2011 Revenue Requirement	198.9	196.7	178.5	186.5	176.6	171.6	175.7	170.1	182.6	183.4	1
2010 Long Term Resource Plan	210.1	208.5	190.0	198.2	188.5	183.2	188.0	182.6	195.7	196.8	2
Variance	11.2	11.8	11.5	11.7	11.9	11.6	12.3	12.5	13.1	13.4	Line 2-1

1 Data source: TGI 2010-2011 Revenue Requirement Application, Exhibit B-4, p.9

2 Data source: 2010 LTRP, Exhibit B-5, Response to IR 26.1.1, p. 58

16.0 Reference: Exhibit B-5, BCUC IR 19.1, IR 8.2
Three EEC Funding Scenarios

The three funding scenarios are intended to be high level and for illustrative purposes. The level of detailed program planning such as that which was completed for the TGI/TGVI 2008 EEC application was not undertaken in creating the three scenarios. The savings presented in the three EEC Scenarios were derived from variations in the assumptions of EEC funding.

16.1 Please confirm that when creating the three scenarios, assumptions to correspond each scenario to uncertainties in the planning environment (e.g., change to government policy or cost to supply of natural gas) were not explicitly or implicitly made.

16.2 Since the three funding scenarios were created without reference to composition of strategies and/or program, would it be difficult to assess if the program costs and associated savings are realistic?

17.0 Reference: Exhibit B-4, BCUC IR 51.5 Attachment; Exhibit B-3, BCOAPO IR 1.4
EEC Expenditure Analysis

Under Option B, the mid-year deferral accounts for TGI and TGVI for the year 2013 will reach $79,132,000 ($65.118 m + $14.014 m). Under Option C, the midyear deferral accounts for TGI and TGVI for the year 2013 will reach $137,471,000 ($104.268 + $33.203).

17.1 Please explain how such deferral accounts will be financed.

17.2 Please confirm if such large increase in deferral accounts over a long-term period would increase the operational risk for the Terasen Utilities.

17.3 Please comment how these large balances affect Terasen Utilities' credit rating.

17.4 In the Response to BCOAPO IR 1.4, Terasen Utilities state that TGI has not yet established the final methodology or time period for recovery of the deferral account balance. When will it take place?

17.4.1 The Response to BCOAPO IR 1.4 refers to a future Commission review on the New Energy Solutions Deferral Account balance. Is this part of the four-year Action Plan of the 2010 LTRP?

18.0 Reference: Exhibit B-2, Response to BC Hydro IR 2.1; Exhibit B-4, Response to BCSEA 16.3
Market Share for NGV in B.C.

In describing the three potential scenarios for adoption of NGV's in the LTRP, the Terasen Utilities will monitor the actual rates of adoption and may need to adjust forecast of adoption rates (either up or down) in subsequent Resource Plans.

18.1 Please comment if adjustment of adoption rates should also be reflected in future EEC Annual Reports.

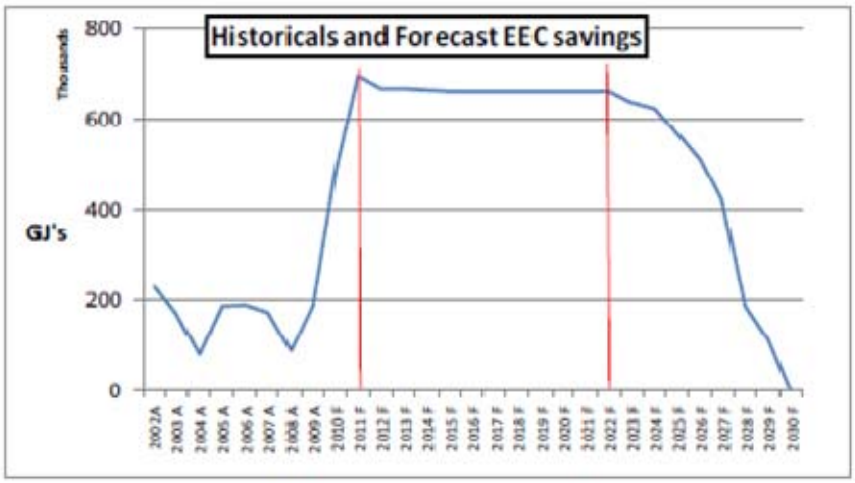
18.2 In the Response to BCSEA IR 16.3, Terasen Utilities indicate that no specific collaboration with BC Hydro has taken place to date on low emission vehicle programs. Could a lack of coordination result in the risk of both sides making more optimistic projections, electric vehicles for BC Hydro and NGV for Terasen Utilities?

19.0 Reference: Exhibit B-2, Response to BCUC IR 8.2
New EEC Funding Scenarios and Programs

"*The level of detailed program planning such as that which was completed for the TGI/TGVI 2008 EEC Application was not undertaken in creating the three scenarios.*"

19.1 What is the relationship between the EEC Annual Report and the EEC portion of the LTRP? For example, do the analyses and study results on current EEC activities and commitment to undertake activities in the Annual Report get fed into the long-term plan?

20.0 Reference: Exhibit B-5, Response to BCUC IR 43.1 p. 112-113
Impact on Energy Savings Funding Scenario A

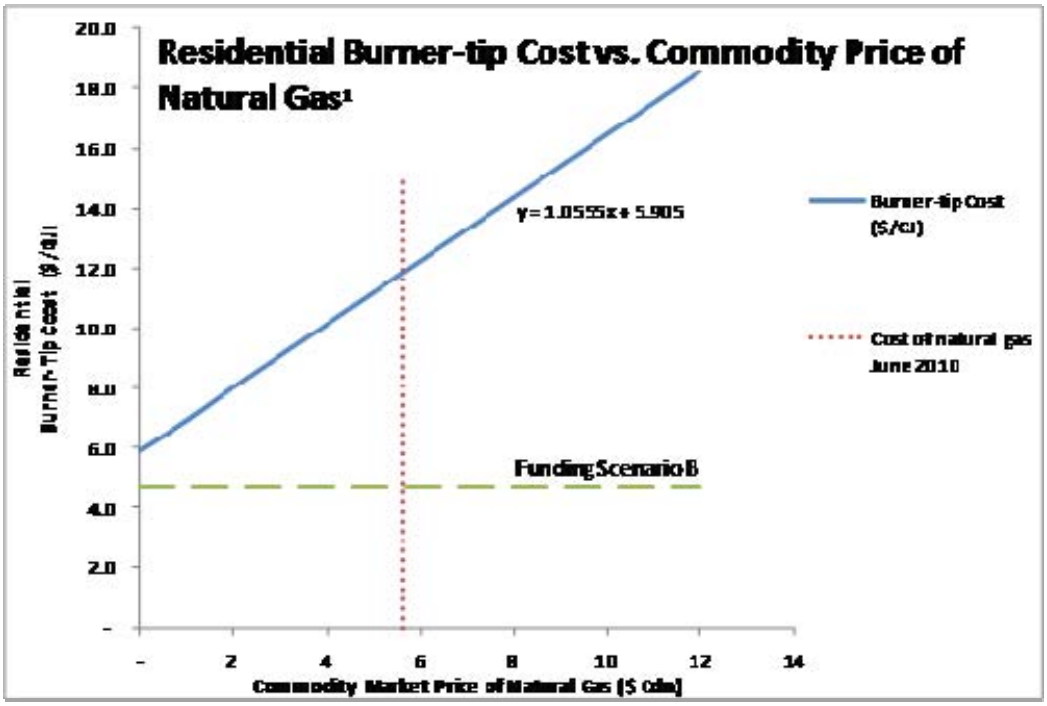


20.1 The above graph was supplied by the Utilities in response to IR 43.1. For illustrative purposes, Commission staff have highlighted the 10-year period 2011F to 2022F by superimposing demarcations for those years. Despite EEC funding ceasing at the end of 2011, the graph seems to suggest that EEC savings will not be materially impacted for a subsequent 10 year period. Please confirm whether this is correct. If "yes", please explain the underlying assumptions which support this level of EEC program persistence.

20.1.1 Based on the data summarized in the above graph, please calculate the cumulative energy savings from 2009 to 2030. Please reconcile this amount with the energy savings for Funding Scenario A as illustrated in Figure 5.1, Exhibit B-1, p. 122.

21.0 Reference: Exhibit B-5, Response to BCUC IR 41.1.3 p. 111
Impact of Commodity Prices on EEC Funding Scenarios

21.1 Based on the rate structure of residential customers (June 2010), a summary of the relationship between the market price of natural gas and end user cost is summarized the table and graph below. Please confirm whether the data are correct. If not, please provide an updated version.



June 2010 Residential Rate Structure		Cost of Natural Gas ($/GJ)				
		-	1.00	4.00	8.00	12.00
Basic Charge ($)	11.84	0.00	0.00	0.00	0.00	0.00
Delivery Charge ($/GJ)	3.145	3.15	3.15	3.15	3.15	3.15
Midstream Charge ($/GJ)	1.725	1.73	1.73	1.73	1.73	1.73
Carbon Tax ($/GJ)	0.7449	0.74	0.74	0.74	0.74	0.74
Clean Energy Levy (%)	0.4	0.02	0.03	0.04	0.05	0.07
GST (%)	5	0.28	0.33	0.48	0.68	0.88
Burner-tip Cost[2] ($/GJ)		5.92	6.97	10.13	14.35	18.57

1 Prepared by Commission Staff

2 Excluding basic monthly charge of $11.84

21.1.1 The above data seem to suggest that even if the commodity price ($/GJ) of natural gas fell to zero, it would remain economically beneficial for residential customers to support Terasen Utilities implementation of EEC Funding Scenario B. Stated slightly differently, there seems to be no commodity price of natural gas at which Terasen Utilities EEC Funding Scenario B is not financially economic. Please confirm whether this approximation is correct. If not, please provide an updated analysis and explanation.

21.1.2 Please confirm at what commodity price ($/GJ) Funding Scenario C is no longer economic.

COST-EFFECTIVENESS OF EEC PROGRAMS

22.0 Reference: Exhibit B-5, Response to BCUC IR 33.1, pp. 72-73
Annual Demand Forecast

"In general, the more funds there are for EEC programs and activities the greater the energy savings."

22.1 Funding Scenarios A, B, and C each have significantly different costs and forecasted EEC impacts. It is generally observed in all production systems that there is a point beyond which the addition of more resources results in progressively decreasing marginal benefits. If the law of diminishing returns does not apply to the EEC in the 2010 LTRP, please explain why and provide supporting evidence.

22.1.1 Please provide an analysis and supporting calculations of the marginal benefit associated with incremental spending for each of the proposed Funding Scenarios A, B, and C. Please clearly identify the assumptions implicit in the calculations.

22.1.2 If a marginal analysis has not yet been performed, do the Utilities intend to perform such an analysis in conjunction with future Commission filings?

23.0 Reference: Attachment: News Release and Media Reports
District Energy Systems in Kelowna, Conversion to CNV Vehicles by Waste Management Inc, and Geoexchange System in Okanagan School District

Attached are three articles from News Releases and Press Report relating to (1) Agreement to develop two renewable energy systems in Kelowna using Terasen-owned and operated district energy systems; (2) Terasen funding Waste Management Inc. to offset the incremental cost of the CNG trucks; and (3) a deal to retrofit and operate a geoexchange system in Central Okanagan School District.

23.1 For each of the three activities, please describe the following:

(a) what is the relevance, if any, of these activities to the 2010 LTRP? Since Terasen Utilities will not be asking for approval in this LTRP to proceed with these projects, please describe if these initiatives offer any insight to the Commission with regards to accepting the 2010 LTRP.

(b) Whether there were competing candidates for the funding and the criteria used in the selection of these recipients.

(c) How will these initiatives be tracked, measured, verified and reported? Will the TRC be used to assess the program and will the UC and RIM tests be carried out and reported? What will be the tests, in particular, the measurement for GHG emissions reductions?

(d) For the funding of the CNG trucks, will do the data for the calculations of GHG emissions reductions come from? Are the new CHC emissions compared to the old vehicle's emissions being replaced or to the current diesel or gasoline engine's GHG emissions?

(e) How will the results of these EEC initiatives inform demand forecasting for conventional natural gas usage and renewable energy usage?

Terasen Gas

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News Release

FOR IMMEDIATE RELEASE

September 30, 2010

Terasen Gas to develop renewable energy projects in Kelowna worth $38-million

City expected to save energy costs and produce fewer greenhouse gases

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SURREY, B.C. – Terasen Gas and the City of Kelowna have entered into an agreement in principle to develop two unique renewable energy systems in Kelowna valued at $22-million and $16-million respectively. Using Terasen-owned and operated district energy systems, the Kelowna City Centre Energy System and Kelowna South Pandosy Energy System will help the City reduce its energy use and lower greenhouse gas emissions.

"This is an important, innovative collaboration that will help to reduce our carbon footprint," said City of Kelowna Mayor Sharon Shepherd. "District energy can significantly reduce greenhouse gas emissions while ensuring businesses and residences have a secure source of energy. This is one more step towards our goal to build a safe, vibrant and sustainable city."

"An integrated energy solution, such as a district energy system, allows us to incorporate alternative energy sources, in this case waste heat and water, to help ensure British Columbia meets its energy and environmental goals," said Doug Stout, Vice President, Energy Solutions and External Relations, Terasen Gas and FortisBC. "The systems will provide many benefits, including energy savings, affordable cost for customers, and proven reliability."

The two district energy systems will use waste heat and water from the City's wastewater treatment plant and from Sun-Rype Products Ltd., with other project collaborators providing energy to heat or cool a number of buildings in Kelowna. The new infrastructure will be put in place over the next decade. According to the City of Kelowna's January 2010 pre-feasibility study, both projects combined could also have the potential to save 16,300 tonnes of CO_2 per year – equivalent to removing approximately over 3,500 cars from the road annually.

"Sun-Rype is very pleased to collaborate in this important environmental initiative in Kelowna, and we look forward to working with Terasen and the City of Kelowna to make this project a success," said Dave McAnerney, CEO, Sun-Rype Products Ltd.

Before building the two district energy systems, Terasen Gas and the City of Kelowna will work to negotiate and conclude definitive agreements. With the successful conclusion of these agreements and the engineering work, approval from the British Columbia Utilities Commission will be required to proceed with the projects.

In October 2009, the City of Kelowna began exploring the possibility of district energy systems with local businesses. The pre-feasibility study identified a potential for district energy systems in four key areas of Kelowna: City Centre, South Pandosy, Orchard Park / Highway Centre and Rutland Centre.

Terasen Gas builds, owns and operates district energy systems for large-scale developments and existing communities. Buildings connected to district energy systems have lower capital costs for their

energy equipment as they can eliminate conventional boilers, chillers or air conditioners, saving valuable upfront dollars that can be invested elsewhere.

For more information on Terasen Gas' integrated energy solutions, please visit terasengas.com.

For more information on the district energy pre-feasibility study, see the energy management section at kelowna.ca/environment.

Terasen Gas is mainly composed of the operations of Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc., both indirect wholly owned subsidiaries of Fortis Inc. Fortis Inc., the largest investor-owned distribution utility in Canada, serves approximately 2,100,000 gas and electric customers and has total assets exceeding $12 billion. Its regulated holdings include Terasen Gas and electric utilities in five Canadian provinces and three Caribbean countries. Fortis Inc. owns non-regulated hydroelectric generation assets across Canada and in Belize and upper New York State. It also owns hotels and commercial real estate in Canada. Fortis Inc. shares are listed on the Toronto Stock Exchange and trade under the symbol FTS. Additional information can be accessed at www.fortisinc.com or www.sedar.com

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NOTE TO NEWS EDITORS: Mayor Sharon Shepherd is in attendance at the Union of British Columbia Municipalities (UBCM) convention in Whistler. Those wishing phone interviews, please contact Tom Wilson at 250-469-8663 to make arrangements.

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Waste Management converting garbage trucks from diesel to natural gas

BY JEFF LEE, VANCOUVER SUN SEPTEMBER 28, 2010

Waste Management of Canada is converting its diesel garbage trucks to compressed natural gas.
Photograph by: Debra Brash, Postmedia News Files

WHISTLER - Waste Management Inc. will begin conversion of its diesel trash-hauling fleet in Vancouver later this year to compressed natural gas.

On Monday North America's largest commercial waste company announced a deal with Terasen Gas to supply fuel for 20 new CNG trucks the company will put in operation by the end of 2010.

The companies made the deal public at the Union of B.C. Municipalities, where Terasen is attempting to broaden its utility business with municipal governments. Rob Sherman, Waste Management's B.C. director of operations, said the company has 100 trucks in Metro Vancouver working on commercial contracts with apartment buildings and businesses.

He said the company will eventually convert all of its fleet to CNG as the trucks are replaced. Switching to natural gas will save the company 35-45 per cent in fuel costs, but Sherman said it's also good for business.

"We're all about clean air. This is a huge investment for us because we have clients that want us to

associate with us if we undertake these kinds of green initiatives. It's a competitive differentiator for us."

Under the deal, Terasen gave Waste Management a grant from its Energy Efficiency and Conservation Fund to help with the purchase of the trucks. Neither company would reveal the size of the contribution, but Vito Triggiano, Terasen's manager of natural gas vehicles sales, said it was enough to be an incentive for Waste Management to begin the conversion.

Sherman said Waste Management already has 930 natural gas trucks in its North American fleet of more than 20,000 vehicles, and is aggressively moving to put more in place as conventional diesel trucks are retired.

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News Release

FOR IMMEDIATE RELEASE

October 12, 2010

Central Okanagan School District to save energy and money with new Terasen Gas geoexchange system

SURREY, B.C. –Terasen Gas and School District 23 Central Okanagan, have signed a deal to retrofit and operate a $650,000 geoexchange system, expected to be operational in 2010, at Helen Gorman Elementary School in West Kelowna. The geoexchange system will help the school manage its energy costs and reduce its carbon footprint.

"As one of the first utility companies in Canada to include alternative energy solutions as part of its regulated energy service offerings, our deal with the Central Okanagan School District will help them use energy efficiently and benefit the environment," said Doug Stout, Vice President, Energy Solutions and External Relations at Terasen Gas and FortisBC.

Once the geoexchange system is operational, Terasen Gas estimates that Helen Gorman Elementary School will save approximately 84 tonnes of greenhouse gas emissions (GHG) and 1,400 gigajoules of net energy per year. The geoexchange system will also enable Terasen Gas to determine how geoexchange systems can be used in other school districts to reduce schools' energy usage and GHGs.

"This upgrade and the operational savings it brings will result in more money being directed to the classroom while providing a more comfortable and sustainable learning space," said Ben Stewart, MLA for Westside-Kelowna on behalf of Education Minister Margaret MacDiarmid. "This project between the Province, the Central Okanagan School District and Terasen Gas is a model for the kind of partnership needed to aggressively pursue critical environmental goals."

Terasen Gas directly invested $225,000 into the retrofit and contributed an additional $100,000 through an Energy Efficiency and Conservation incentive to help fund the overall cost of the project, with the school district funding the balance.

"We are excited about this innovative and sustainable energy project and look forward to making significant progress in reducing our carbon footprint," said Hugh Gloster, Central Okanagan School District Superintendant. "With Helen Gorman Elementary School as an example, we hope many other schools will be encouraged to follow our lead to become as energy efficient as possible."

Geoexchange systems are one of Terasen Gas' principal alternative energy solutions that can be implemented in both new construction and retrofits. They transport heat from where it is generated to where it is needed by capturing heat from the earth, water or waste heat sources. Geoexchange systems also provide many benefits for developers, building owners and end-users, ranging from indoor comfort, to protecting the environment, to stable rates which provide financial certainty regarding the price of energy.

For more information on Terasen Gas' integrated energy solutions, please visit terasengas.com.

Terasen Gas is mainly composed of the operations of Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc., both indirect wholly owned subsidiaries of Fortis Inc. Fortis Inc., the largest investor-owned

24.0 Reference: Exhibit B-5, Response to BCUC IR 10.1, p.17
Transportation Fuel Service Offerings - NGV

24.1 Based on Terasen's historical experience with NGV programs (for example with Blacktop Cabs), please discuss the key problems and successes experienced by the Utilities in developing that line of business. If some customers have abandoned NGV programs, please explain why. Is it known whether they were substituted with competitive technology?

24.2 Segmented by year, please provide a list of companies that Terasen has provided NGV programs and services to over the past 10 years. For each company, please provide time series data of the number of vehicles in use and the annual consumption of natural gas. Please also indicate the type and quantity of financial subsidy that has been provided to each company.

24.3 Please provide a historical graph of Rate 6, 6A and 26 for the period 2000 to 2010 in graphical and tabular data in electronic format. Please note any observable trends and discuss the underlying reasons for them.

24.3.1 In the Canadian context, please provide recent examples of other jurisdictions which have made decisions to operate NGV programs in the form of a regulated monopoly.

25.0 Reference: Exhibit B-5, Response to BCUC IR 11.2, p.22
NGV Pilot Program

	Number of Vehicles		Total Incremental Cost	
	2010	2011	2010	2011
Vocational Trucks (@ $41,000 per)	7	22	$ 287,000	$ 902,000
Heavy Duty Trucks (@ $78,000 per)	9	10	$ 702,000	$ 780,000
Total Heavy Duty Trucks:	16	32	$ 989,000	$ 1,682,000

25.1 In addition to the incremental cost related to the purchase of vehicles, please state what incremental costs must be incurred by customers that adopt NGV programs. Please include all capital and O&M costs including fueling stations, additional labor, maintenance, etc.

25.1.1 Based on the Utilities' experience with the NGV pilot program, please update the above table to reflect the full cost incurred by customers to implement a typical NGV program.

25.2 Have Terasen Utilities developed a model to assess the breakeven point of the number of miles per fleet? If "yes", please provide a copy of that assessment. If "no", does Terasen plan to conduct such an assessment?

25.3 The pilot NGV program conducted by Terasen Utilities indicates that from 2010 to 2011 vocational trucks were subsidized in the amount of $1.2 million to achieve 328 tonnes of CO_2 savings. Heavy-duty trucks were subsided in the amount of $1.5 million to achieve 2,268 tonnes of CO_2 savings. From these data, it appears that CO_2 savings associated with heavy-duty trucks have a cost-benefit ratio that is more than 500% more effective than that of vocational trucks. Please confirm whether this interpretation is correct, and if not, please provide a revised interpretation.

	Tonnes of CO_2e	
	2010	2011
Vocational Trucks (@ 40,000 km per year)		
Tonnes of CO_2e from Diesel	401	1,261
Tonnes of CO_2e from CNG	322	1,012
Tonnes of CO_2e reduced	79	249
Heavy Duty Trucks (@ 300,000 km per year)		
Tonnes of CO_2e from Diesel	3,869	4,299
Tonnes of CO_2e from LNG	2,795	3,105
Tonnes of CO_2e reduced	1,074	1,194
Total Tonnes of CO_2e reduced:	1,154	1,443

25.3.1 Please explain the selection criteria Terasen Utilities applied during its pilot program to determine what firms to offer NGV subsidies and the level of subsidies to be provided to each of them.

25.3.2 Terasen Utilities NGV pilot program is based on an up-front subsidy to cover 100% of the incremental cost of purchasing a NGV vehicle. Have the Utilities considered offering NGV subsidies which are not front-end loaded? For example, has a fuel subsidy been considered which rewards customers for substituting higher carbon fuels for natural gas? Please discuss all of the options that have been considered by Utilities.

25.3.3 For the period 2010 to 2011 Terasen Utilities NGV pilot program realized a total of 2,597 tonnes of CO_2 savings (1,154 tonnes in 2010 and 1,443 tonnes in 2011) at an average cost to ratepayers of $1,028 per tonne of CO_2 ($2.67 million ÷ 2,597 tonnes of CO_2). The cost to ratepayers for CO_2 savings provided by Terasen Utilities is approximately 3,400% higher than the Utilities estimated market value of $C0_2$ (based on $30/tonne). From an economic perspective, please discuss whether it is in ratepayers' best interest to pay this premium on CO_2 savings.

25.3.3.1 Aside from the NGV pilot program, have the Utilities considered EEC options which might reduce GNG emissions more economically? If so, please discuss.

26.0 Reference: Exhibit B-5, Response to BCUC IR 12.2, pp. 27-29 and BCUC IR 38.2, pp. 97-98
NGV Target Markets

"Section 2(g) of the *Clean Energy Act* is one of the British Columbia energy objectives that must be considered by the Commission in determining whether to accept a long-term resource plan pursuant to section 44.1 of the *Utilities Commission Act*. It does not impose on the Terasen Utilities an obligation to meet certain GHG emissions reduction targets." (Ref. Exhibit B-5, p. 97)

26.1 Terasen Utilities has stated that it is not obliged to meet GHG reduction targets which have been outlined in Section 2(g) of the *Clean Energy Act*, but that Utilities are nevertheless pursuing EEC programs which contribute to GHG reduction (Ref. Exhibit B-5, p. 97). As it specifically pertains to the Application, please identify GHG targets for the period 2012 to 2016 and from 2017 to 2020, and describe those plans (NGV and others) the Utilities have in place to achieve those targets.

27.0 Reference: Exhibit B-5, Response to BCUC IR 20.1, p. 44
Residential Use Trends and Furnace Efficiency Assumption

27.1 Please provide a copy of the Conditional Demand Analysis and input assumptions used in determining that standard furnaces consume 17 GJ to 20 GJ more energy per year than higher efficiency furnaces.

28.0 Reference: Exhibit B-5, Response to BCUC IR 23.1, p. 54
Commercial Use Rate

Utilities customers are segmented into residential, commercial and industrial categories based on a combination of factors that include customer end-use and annual consumption. Figure 4-1, Exhibit B-1, p. 76 provides a summary of Terasen Utilities customers and annual demand.

28.1 Please verify the time period represented in the data illustrated in Figure 4.1 by stating the start date and end date of the underlying data.

28.2 Some multi-unit residential complexes such as condominiums are not metered separately. Terasen Utilities allocate what is traditionally considered a residential end-use customers to either a commercial or industrial segment based on the aggregated demand recorded on a single meter. Please provide an alternative version of Figure 4.1 based on the allocation of residential customers by end-use irrespective of the volume of natural gas recorded at the meter.

29.0 Reference: Exhibit B-5, Response to BCUC IR 34.1, p. 75; IR 34.3, pp. 77-78
Risk Profile of Innovative Technologies

"The Innovative Technologies funding itself will not have a material impact on the Terasen Utilities risk profile." BCUC IR 34.1, p. 75

"It is to be noted that technologies in the portfolio are subject to change depending on market conditions, introduction of new technologies and obtaining further data." BCUC IR 34.3, p. 77

29.1 Assuming that the Innovative Technologies program applied for and received approval from the Commission, please elaborate on the strategies, beyond offering customers incentives, Terasen Utilities will employ to successfully overcome the barriers and market failures outlined in response to IR 34.3.

30.0 Reference: Exhibit B-5, Response to BCUC IR 34.5, p. 81 and IR 55.1 Attachment
Risk Profile of Innovative Technologies

"At this time, the Terasen Utilities does not have good data on the appropriate level of financial incentives necessary to make Innovative Technologies attractive to customers. There is therefore a need to conduct pilot programs to test the effect that differing levels of incentives have on adoption rates, such as the pilot programs currently underway for solar thermal and NGV."

30.1 The Utilities submitted a forecast of the impact that Funding Scenarios will have on rates and rate base in IR 55.1. Please explain what assumptions were made in these forecasts in the absence of "good data on the appropriate level of financial incentives". To the extent possible, please provide a confidence level for Terasen Utilities 20 year forecast.

31.0 Reference: Exhibit B-5, Response to BCUC IR 36.1 p. 84
Conservation Potential Review (CPR)

"The CPR study itself will not incorporate Commission determinations as it is intended to provide the Terasen Utilities with an "unfettered" view of the amount of cost-effective conservation available in its service territories."

31.1 Please confirm if the Utilities still intend to incorporate the CPR results to update the three funding scenarios.

32.0 Reference: Exhibit B-5, Response to BCUC IR 39.2 p. 105
Rate Affordability and Diminishing Returns

"The Terasen Utilities can report that in 2009, TGI expended $5.743 million on EEC activity, and that calculated NPV energy savings were 1,223,550 GJ, as per the 2009 EEC Annual Report filed to the Commission on March 31, 2010."

32.1 Please restate the above statement by converting NPV energy saving of 1,223,550 GJ into a dollar amount representing the avoided costs. Please state the assumptions used and the resulting cost-benefit ratio.

33.0 Reference: Exhibit B-5, Response to BCUC IR 41.2 p. 108
Acceleration of GHG Reduction

"The Terasen Utilities do not anticipate that there will be free riders for EEC NGV grants for medium and heavy duty return to home fleets for the foreseeable future for the reasons outlined in the response to BCUC IR 1.41.1."

33.1 To better understand the market demand for NGV technology and the underlying business case, please provide examples, if any, of market interventions undertaken by other Canadian jurisdictions to materially change customers' willingness to adopt NGV technology.

34.0 Reference: Exhibit B-5, Response to BCUC IR 46.4 pp. 127-130
EEC Energy Savings Persistence

"The Terasen Utilities do not have data on the persistence of their EEC programs over the past 10 years."

34.1 Are tracking systems now being put in place for all programs? Given the absence of data for those earlier initiatives? Is it correct to assume that currently, persistence for all EEC programs last 10 years, i.e., over the amortized period? If "no", please clarify. Are there EEC programs with persistence savings of less than 10 years? If "yes", please provide details.

34.2 Would the introduction of Innovative Technologies programs which are relatively new to the market provide a compelling rationale for tracking persistence? Please explain.

34.3 In the absence of persistence data, please explain the methodology employed by the Utilities to develop the 20 year forecasts provided in its Application.

End of IR Questions = =