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British Columbia Utilities Commission
Sixth Floor, 900 Howe Street
Vancouver, BC V6Z 2N3

Attention: Erica M. Hamilton,
Commission Secretary

Dear Sirs/Mesdames:

Re: Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc.
Energy Efficiency and Conservation Programs Application

We enclose the Submissions on behalf of Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc. on the above noted matter. Twenty hard copies of the Submissions will follow by courier.

Yours truly,

FASKEN MARTINEAU DuMOULIN LLP

[Original signed by Matthew Ghikas]

Matthew Ghikas

MTG/fxm
Enc

IN THE MATTER OF
THE UTILITIES COMMISSION ACT, R.S.B.C. 1996, CHAPTER 473

AND

TERASEN GAS INC. AND
TERASEN GAS (VANCOUVER ISLAND) INC.

ENERGY EFFICIENCY AND CONSERVATION PROGRAMS APPLICATION

SUBMISSIONS OF

TERASEN GAS INC. AND
TERASEN GAS (VANCOUVER ISLAND) INC.

NOVEMBER 19, 2008

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NOVEMBER 19, 2008

I. INTRODUCTION AND OVERVIEW

A. Introduction

1. This is an Application by Terasen Gas Inc. and Terasen Gas (Vancouver Island) Inc. ("TGI" and "TGVI", respectively, and collectively the "Terasen Utilities" or the "Companies") pursuant to section 44.2 of the *Utilities Commission Act* (the "Act") for approval of increased expenditures in support of an expanded Energy Efficiency and Conservation ("EEC") strategy, and for approval to capitalize incremental EEC expenditures by charging the expenditures to a regulatory asset deferral account and amortizing the balance over 20 years. The specific relief sought is set out in Sections 2 and 6 of the Application, Exhibit B-1. The Companies respectfully submit that the relief sought in this Application is cost effective, is consistent with government's energy objectives and prior Commission orders relating to the appropriate financial treatment of Demand Side Management ("DSM"),[1] and is in the interest of persons in British Columbia who receive or may receive service from the Companies. The Companies respectfully submit that the relief sought should be granted.

2. During the course of this proceeding, on November 7, 2008, Government passed a regulation relating to the provision of DSM programs by public utilities in British Columbia (the

[1] In particular, Order G-55-05, June 29, 1995, approved the Commission's DSM Accounting Policy

"DSM Regulation").[2] The DSM Regulation prescribes some requirements for a DSM expenditure schedule filed with the Commission, as well as prescribing how the success of DSM programs within such expenditure schedules should be assessed. Although the DSM Regulation does not apply to the Terasen Utilities until June 1, 2009,[3] and hence is not applicable at this time to the measures proposed in this Application, the Companies recognize that the DSM Regulation is an expression of Government policy. These Submissions outline how the proposed EEC portfolio is aligned with the DSM Regulation.

B. Overview

3. Natural gas plays a significant role in meeting the residential and commercial energy demands of British Columbians. The majority of household energy use is consumed for space and water heating, for which natural gas is ideally suited.[4] The Companies have over 900,000 customers, and transport over 200,000 TJ of energy annually to all customers.[5] The amount of energy delivered to customers of the Terasen Utilities is about the same relative to that provided by BC Hydro. Nevertheless, the Companies current approved level of EEC or DSM expenditure has remained essentially static since the late 1990's.[6] The level of the Companies' DSM expenditures is far below the levels of BC Hydro, the other British Columbia utility of comparable size, and utilities elsewhere in North America.[7] A Conservation Potential Review ("CPR") completed in 2006 on behalf of the Companies determined that current funding levels are inadequate for the Companies to respond to new market conditions and identified and assessed a number of opportunities for cost-effective energy DSM. The expanded level of EEC expenditures to a total of $46.944 million for TGI and $9.667 million for TGVI over three years (2008-2010) is supported by the CPR.

4. Despite limited funding to date, the Companies have enjoyed success with existing DSM programs. The EEC expenditures outlined in the Application will build on that success and continue to assist the Companies' customers in managing their energy bills. The

[2] B.C. Reg. 326/2008
[3] DSM Regulation, s.2
[4] Exhibit B-1, pp.18-19
[5] Exhibit B-1, p.21
[6] Exhibit B-1, p.2
[7] Exhibit B-1, p.5

EEC portfolio contemplated by the Companies with this Application performs strongly, having a Total Resource Cost ("TRC") ratio of 3.1 with a net financial benefit of $165.1 million not accounting for free riders, and a TRC of 2.9 with net financial benefit of $139.4 million accounting for free riders.[8] The Terasen Utilities are ideally positioned to communicate with their customers, and intend to continue working collaboratively with other BC utilities, government agencies, and relevant stakeholders, to provide the best energy solutions for customers. The effective implementation of the programs outlined in the Application will also advance government's energy objectives of pursuing cost effective DSM opportunities and reducing Greenhouse Gas ("GHG") emissions. The Companies submit that the portfolio upon which the funding request is based is consistent with the DSM Regulation.

5. The Commission's Accounting Policy for DSM expenditures ("DSM Accounting Policy") stipulates that DSM expenditures be treated as "assets" or capital.[9] Consistent with the DSM Accounting Policy, the Companies have proposed to treat the incremental EEC expenditures above the amounts already approved by the Commission as part of the TGI and TGVI respective Extended Agreements as capital. The Companies have also proposed to charge the incremental EEC expenditures and existing incentive amounts established in the Extended Agreements to a regulatory asset deferral account on a tax-adjusted basis. The Companies have further proposed to amortize the balance in the regulatory asset deferral account over 20 years, with amortization commencing the year following that in which the expenditure is made. The proposed amortization period is justified because it approximates the 22.5 year weighted average measurable life of the contemplated appliance and energy system installations.[10] This is consistent with the approach approved by the Commission for BC Hydro and FortisBC, with the lengthier proposed amortization period attributable to the life of the related equipment installed by a gas utility compared to that installed by electric utilities.[11] Adopting a consistent DSM financial treatment, i.e. capitalizing EEC expenditures, across the major utilities in British Columbia assists those utilities in coordinating DSM programs.

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[8] Exhibit B-6, BCOAPO 1.41.7

[9] Order G-55-05, June 29, 1995

[10] Exhibit B-1, pp.11, 80.

[11] Exhibit B-3, BCUC 1.42.1

6. The Terasen Utilities have proposed a portfolio approach to program assessment. Under this approach, the success of the EEC strategy is evaluated based on the TRC of the portfolio as a whole (i.e. ensure the TRC of the portfolio exceeds 1.0), rather than on the TRC ratio of an individual measures or programs to always exceed 1.0. The Companies believe that the proposed portfolio approach not only allows the Companies to maintain uniformity in services to customers across geographic regions but also encourages market penetration of newer technologies for the long term benefit of customers. The proposed portfolio approach is consistent with the DSM Regulation.

7. The Companies have proposed that the TRC of EEC portfolios be assessed without accounting for free riders, as this approach is most consistent with the Energy Plan's focus on increased DSM opportunities. In the portfolio contemplated in this Application, the TRC sufficiently exceeds a TRC of 1.0 regardless of whether free riders are considered (3.1 not accounting for free riders, with a net financial benefit of $165.1 million, versus 2.9 and a net financial benefit of $139.4 million accounting for free riders)[12], such that the issue is of practical relevance only to future portfolios.

8. The benefit-cost analysis performed to arrive at the TRC of the proposed portfolio does not include any attributed benefits from market transformation, but the Companies have proposed to include such benefits in the future assessment of DSM programs. The Companies proposed attribution methodology accounts for both the level of the Companies' support for market transformation and the level of financial contribution of others. As discussed later, the DSM Regulation expressly permits the Commission to attribute benefits associated with the introduction of a standard.[13]

9. The Companies recognize the need for accountability for the funds approved for EEC programs, and have accordingly proposed reporting mechanisms on EEC programs, which include an annual EEC report to be filed with the Commission and program progress reports at annual EEC workshops with stakeholders. Approved EEC funds that are not spent will not be charged to the regulatory asset deferral account. The funding requested in this Application is

[12] Exhibit B-6, BCOAPO 1.41.7

[13] DSM Regulation, s.4(7)

only for a three year period, and the Companies recognize that in any future application for EEC funding the Commission and stakeholders will have a keen interest in how funding has been managed up to that point.

II. CONSERVATION POTENTIAL REVIEW AND PROPOSED FUNDING LEVEL

10. The Companies are requesting approval for overall expenditures for the EEC Program Period in the amount of approximately $46.9 million for TGI and approximately $9.7 million for TGVI, for a total of approximately $56.6 million. This represents incremental EEC expenditures over three years of $40.696 million for TGI and $7.366 million for TGVI.[14] The Companies submit that this level of spending is reasonable and will result in tangible customer benefits in the form of reduced energy bills. Moreover, the amounts identified in the Application are the Terasen Utilities' contribution to EEC initiatives. In instances where there are electricity savings from certain measures, the Companies anticipate partnering with electrical utilities to deliver joint programs, and potentially to partner with governments and other entities as well.[15]

A. Current DSM Programs

11. The Companies have historically been active, though in a limited way, in DSM programs targeting space and water heating because these end uses comprise a large proportion of residential energy usage.[16] Continuing and expending DSM programs in these particular uses will have the greatest potential for energy saving.

12. TGI and TGVI have enjoyed success within the available DSM budget. Sections 3.2.1 and 3.2.2 of the Application outline the Companies' past initiatives, recent successes, and current budget limitations. In terms of cost-effectiveness, in 2007 the programs for TGI provided a present value of savings over the measure life of 1,203,596 GJ, and the allowed DSM expenditure was $3.1 million, providing a yield of $2.58/GJ. This yield is significantly lower than TGI gas cost rates including midstream cost that averaged $8.33 Cdn/GJ for residential lower mainland customers in 2007.[17] TGVI, due to the relatively young age of the utility, has

[14] Exhibit B-1, p.49
[15] Exhibit B-1, p.49, and Section 6.2.2.
[16] Exhibit B-1, p.18
[17] Exhibit B-1, p.23, 25

not used utility funding for energy efficiency activities designed to reduce load on the system; rather, its approved activities have had the goal of increasing economical load on the TGVI system.[18] TGVI reports changes in gas usage as a result of DSM programs, rather than "savings".[19]

13. The January 2006 Summit Blue report, prepared for CAMPUT, notes on page 1 that "[o]verall spending levels have, in most cases, not been at a level sufficient to realize most of the cost-effective DSM in any jurisdiction."[20] This determination is particularly apt in the case of the Terasen Utilities, where DSM program offerings to date have been constrained by the lack of resources available to expand successful EEC programs and to design and support new programs. Notably, the retrofit portion of the Efficient Boiler Program was terminated in 2007 because the incentives for boiler replacements would have consumed the entire incentive budget available to TGI had the program been continued.[21]

14. Natural gas commodity rates have more than doubled for most TGI and TGVI customers since the DSM expenditure levels were originally established. The proposed EEC programs outlined in this Application if implemented would assist customers in managing the increased energy costs on their energy bills by having greater access to a wider variety of cost-effective programs, by installing more efficient gas equipment, and by choosing the most efficient fuel for a particular end use.[22]

B. EEC Expenditures at Other Utilities

15. The cost effective EEC programs currently available to TGI and TGVI customers are not in line with the programs available to customers of other utilities within the province. The Companies' approved budget for EEC programs, both in absolute dollars and on a per customer basis, is less than the two major electric utilities in British Columbia. For example, BC Hydro invested a total of $52.3 million in Power Smart in 2007, more than 12 times the amount that the Terasen Utilities invested in DSM, even though BC Hydro and the Terasen Utilities

[18] Exhibit B-1, p.26
[19] Exhibit B-1, p.29
[20] BCUC 1.14.1, BCUC 1.85.1
[21] Exhibit B-1, p.25
[22] Exhibit B-1, p.31

transport approximately the same amount of energy annually. BC Hydro has proposed that its Power Smart expenditures increase significantly for F2009 and F2010 to $105 million and $122 million respectively, more than 24 times the amount that the Terasen Utilities invested in EEC activity in 2007 under the Commission-approved DSM budget.[23] The Terasen Utilities spend about $4.69 per customer annually on conservation,[24] while FortisBC spends $16.06 per customer, and BC Hydro spends $30.68 per customer, based on 2007 expenditure levels.[25] As referenced below, the Companies' CPR has identified that a significant opportunity exists to provide TGI and TGVI customers with more cost effective EEC programs and to assist them to arrive at an optimal resource mix that reduces their consumption and energy bills.[26]

16. Compared to other major North American utilities outside of British Columbia, the established EEC expenditure levels for the Terasen Utilities are not providing the Companies' customers with the same opportunities to participate in EEC activities enjoyed by customers of other utilities.[27] The expenditure proposed in this Application for 2008, at approximately $16.8 million for 2008, represents an expenditure of approximately $18 on a per customer basis. This increase is in line with FortisBC's 2007 expenditure per customer ($16) but is still well below BC Hydro's 2007 expenditure per customer ($30.68). The proposed DSM increases sought by those utilities will result in a significantly higher expenditure per customer than is proposed by the Companies in this Application.

17. As discussed later in Section V of these Submissions, the increase in EEC funding sought in this Application will advance Government's Energy Plan Policy Action #3, which is to "encourage utilities to pursue cost-effective DSM opportunities."

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[23] Exhibit B-1, p.37

[24] The 2007 DSM expenditure per customer for TGI was $3.69 per customer for TGI. (Exhibit B-1, pp. 23, 25) The average cost per customer of approved expenditures in 2007, using all TGVI customers as the denominator, was $12.22. (Exhibit B-1, p.29)

[25] Exhibit B-1, p.34

[26] Ibid

[27] A summary table of the EEC programs being offered by other North American utilities is included at page 34 of Exhibit B-1, with the backing detail at Appendix 6.

C. Conservation Potential Review and Expected Customer Benefits

18. The incremental funding request in this Application was developed based on the program areas and specific programs discussed in Sections 6.1 of the Application, which in turn were based on the CPR undertaken by Marbek and the subsequent refinement by Habart and Associates ("Habart"). The Companies submit that the process used to develop the proposed portfolio was thorough and the results comprehensive.

19. The CPR identified numerous initiatives where, with adequate funding, residential and commercial customers could participate in programs designed to lower their energy consumption and therefore lower their energy bills. In particular, it stated that to reach the achievable potential, "[a] significant increase in annual DSM investment and in program and incentive funding by the Companies and their delivery partners would be required; this increase would be in the range of three to five times current levels. This level of investment would be consistent with current investment levels in other Canadian jurisdictions such as Ontario."[28]

20. The Companies retained Habart to screen measures explored in the CPR to determine which measures might be the best candidates for further program development work. For the most promising measures identified by the CPR and Habart, the Companies developed estimates of the incentive dollars needed to elicit participation, program uptake, and non-incentive costs (administration, marketing and promotion, and evaluation).[29] The measures and associated incentive and non-incentive budgets were then screened in accordance with the California Standard Practice Manual tests for cost-effectiveness.[30]

21. The EEC proposals in the Application aim to capture a significant portion of the achievable energy savings identified in the CPR.[31]

III. FUNDING APPROACH AND COMPOSITION OF THE EEC PORTFOLIO

22. The incremental funding request in this Application was developed based on the program areas and specific programs discussed in Section 6.1 of the Application, and referenced

[28] Exhibit B-1, pp.45-46
[29] Exhibit B-1, p.52, Appendix 9; BCUC 1.56.2
[30] Exhibit B-1, p.52, Appendix 12
[31] Exhibit B-7, BCSEA SCBC IR 1.16.1

below. Further information on the programs can be found in the Terasen CPR attached as Appendix 1 to the Application. The Companies seek approval for the overall expenditure level, for TGI and TGVI respectively, for the Funding Period, rather than for funding by individual program areas or individual program initiatives. The benefits of this approach are discussed in this Section.

A. Funding Approach

23. The Companies' evidence is that the proposed approach based on approval of the overall expenditure for the Funding Period will allow them to respond quickly to changes within initiatives and to new opportunities that might arise. For example, if a particular initiative within the EEC program area has a higher than expected number of participants and a strong cost-benefit ratio, the Companies would assess whether it is appropriate to shift funds from another underutilized program area. The Companies will allocate available funds based on TRC results of individual program areas or individual measures, while ensuring that all residential and commercial customers are able to access EEC programs, based on the Companies' own judgment and input from the Stakeholder Group.[32] This approach permits the Companies to maximize EEC benefits within parameters defined by the Commission in the Decision on this Application. It also reduces administrative burden related to EEC activity and decreases the Companies' response time to new information and opportunities.[33]

24. While proposing an approach based on the overall EEC portfolio and expenditure, the Companies developed a budgetary amount for each significant component of the EEC portfolio. In particular, the Companies developed budgets for Energy Efficiency and Fuel Switching programs "from the bottom up" based on estimates of incentive levels, numbers of participants and program costs. The budget amount for Conservation Education and Outreach was developed in consultation with the Companies' advertising agency. The budget amounts for

[32] Exhibit B-2, BCUC IR 1.6.1

[33] Exhibit B-1, p.51

Trade Relations and for Innovative Technologies were developed based on the Companies' best judgement and experience, as was the budget amount for Joint Initiatives.[34]

25. The Companies submit that the process by which the overall EEC portfolio budget was developed is robust and offers an appropriate level of comfort regarding how the funds will be used. The rigour with which the budgeting has been conducted (and will continue to be conducted) will be enhanced by the proposed accountability mechanisms discussed in Section VI of these Submissions.

B. Program Areas Within EEC Portfolio

26. The program areas outlined in the Application, and summarized below, represent a broad EEC portfolio that will be accessible to all residential and commercial customers of TGI and TGVI.[35]

(i) Energy Efficiency Program Area

27. The proposed EEC portfolio includes energy efficiency incentives for the residential sector and commercial sector, and for the new construction and retrofit markets. In this Application, the Companies define retrofits as including equipment replacements due to renovation and scheduled equipment replacements, as well as, to a lesser degree, early retirement of existing inefficient equipment. Historically, the Companies have not offered programs that encourage early retirement of equipment but rather have focussed on "lost opportunities" as defined in the direct testimony of John Plunkett.[36] The Companies intend to continue focussing EEC activity on "lost opportunities".

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[34] Exhibit B-8, CEC IR 1.7.2; Exhibit B-2, BCUC IR 1.32.0, 1.33.0. The budget for Joint Initiatives includes an amount for measures directed at low income households. In light of the DSM Regulation, the Terasen Utilities intend to apply for additional funding for such measures. This is discussed further below.

[35] The rate schedules affected by this Application are TGI Rate Schedules 1-6. 23, 25. The funding is not intended to be used for programs for customers of Rates 7, 22, and 27, nor is it proposed that EEC costs be recovered from customers of Rates 7, 22 and 27. For TGVI, RGS, SCS1, SCS2, LCS1, LCS2, AGS, LCS3, HLF, and ILF. The funding is not intended to be used for programs for BC Hydro for service to Island Cogeneration Plant or for the Vancouver Island Gas Joint Venture, nor is it proposed that EEC costs be recovered from those customers. See Exhibit B-1, pp.20-21

[36] Exhibit C-5, Evidence of BCSEA, p. 17. It appears that in suggesting the proposed portfolio has not adequately addressed "lost opportunities", Mr. Plunkett has misunderstood the terminology being employed by the Companies. The Terasen Utilities fail to see any distinction between what Mr. Plunkett is advocating for "lost opportunities" and what the Companies are proposing.

Residential Sector

28. The Companies have budgeted $9.2 million of the overall portfolio budget to residential efficiency programs. The residential programs fall under two types of offers -- new construction and retrofit.

29. Residential new construction programs are targeted at all potential residential new construction. The key decision makers in this market for the programs are builders and developers who build single family homes and row-houses. In addition, a number of single family homes are project managed by the owners themselves who make planning and purchasing decisions and could be considered in an outreach campaign. The new construction portfolio includes incentives to encourage customers, whether they are individuals or builders/developers, to install energy efficient appliances.[37]

30. The proposed retrofit programs consist of a combination of advertising, promotion and incentives for customers who install Energy Star and/or EnerChoice rated products. The CPR identified the number of residential units that would be good candidates to upgrade existing furnaces to high-efficiency models. The incentive participation level contemplated in the Application represents funding for incentives for furnace upgrades in 5.3% of pre-1976 single family dwellings and duplexes with gas in the Companies' service territory. This is based upon current program participation rates.[38]

Commercial Sector

31. The Companies have budgeted $21.7 million of the overall portfolio budget to commercial efficiency programs.[39] The commercial programs also fall under two types of offers, new construction and retrofit. Programming is intended to offer qualified commercial customers with a menu of programs from which to choose. Due to the potential complexity of programs for the commercial sector, the Companies contemplate doing further work in conjunction with industry groups before programs are rolled-out.[40]

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[37] Exhibit B-1, pp.58-59

[38] Exhibit B-1, p.60

[39] Exhibit B-2, BCUC IR 1.25.1, 1.56.2

[40] Exhibit B-1, p.62

32. The new construction program is targeted at all commercial new construction which might use natural gas space and water heating. The immediate opportunities are likely to be Multi-Family Dwellings, commercial office space, municipalities, universities, schools and hospitals. The key decision makers in this market are owners including governments, builders and developers, architects, engineers, interior designers, mechanical consultants, and contractors.[41]

33. The retrofit market is directed at all commercial and industrial buildings with existing natural gas fired space and water heating equipment. The key decision makers are building managers and owners. The two drivers for replacing or upgrading existing equipment in retrofit markets are end of life and potential energy savings.

(ii) Residential Fuel Switching

34. The Companies have budgeted $3.7 million, or 6.6%, of the overall portfolio budget to fuel switching programs. The Commission's DSM Accounting Policy specifically recognizes "Load Building by Fuel Substitution" as a DSM strategy that should be treated in the same manner as other DSM strategies.[42]

35. Fuel substitution initiatives benefit all customers by ensuring that the Terasen Utilities' distribution infrastructure is used to its maximum efficiency. This is especially true within TGVI's service territory, where there are many homes in close proximity to mains that have not made the step to connect. Existing customers have already invested in putting those gas mains in the ground; therefore, connecting as many customers as possible to the natural gas distribution system will keep overall system costs down.[43]

36. The Companies have included a budget for residential retrofits, and will focus their residential retrofit activity on Vancouver Island.[44] TGVI has been running residential fuel switching programs on Vancouver Island and the Sunshine Coast for a number of years. These programs have primarily encouraged owners of existing homes to convert from higher emission

[41] Exhibit B-1, p.61
[42] Exhibit B-3, BCUC IR 2.40.2
[43] Exhibit B-1, p.63
[44] Exhibit B-1, pp.63, 64.

propane and fuel oil to natural gas.[45] The fuel switching program for the retrofit market would continue to be based on encouraging residents in the TGVI service area to get off alternatives such oil, propane and wood and get onto natural gas.[46] The GHG benefits associated with conversion from wood, propane or fuel oil to natural gas for space heating and fireplaces are obvious.

37. Whereas TGVI's existing infrastructure becomes more efficient with the addition of customers converting from these other fuel sources, the addition of that load as electric space and water heating load will increase pressure on BC Hydro's already stretched infrastructure.[47] Residential space heating load is the predominant driver of BC Hydro's winter system peak.[48] As such, fuel switching offers promote the most optimal balance in energy share between electricity and natural gas, preserving BC Hydro's generation and transmission systems for its highest value – in running lights, computers and other technology.[49] The Application identified the present value of the expected electricity savings from fuel switching as being 550 GWh over the life of the proposed measures for the implementation over the 2008-2010 timeline. BC Hydro's 2008 LTAP identified a projected energy shortfall of 14,000 GWh in F2020.[50] Such fuel switching can be readily accommodated by the Companies' existing infrastructure.[51]

38. The fuel switching programs outlined in this Application have the potential to benefit BC Hydro ratepayers in the long-term by reducing the longer term cost of BC Hydro's electricity supply. The CPR recently conducted by BC Hydro found that there exists significant **economic potential** for fuel switching away from electricity, meaning that it is cheaper for BC Hydro to invest in measures designed to avoid this load (i.e. fuel switch) than it is to acquire the incremental electricity necessary to supply the load in the future. The conclusion in the CPR that, notwithstanding the existence of economic potential, there was no **achievable potential** for BC Hydro PowerSmart to engage fuel switching programs that encourage switching away from

[45] Exhibit B-1, p.64.

[46] Exhibit B-1 p.63. Exhibit B-13, BCOAPO IR 2.58.1 indicates that 77% of retrofit fuel switching activity by volume in TGVI service area would be directed at conversions from propane, oil, wood, and electricity.

[47] Exhibit B-3, BCUC IR 2.15.1; 2.15.2

[48] Exhibit B-5, BCH IR 1.6.0

[49] Exhibit B-1, p.64; Exhibit B-7, BCSEA SCBC IR 1.18.4

[50] Exhibit B-3, BCUC IR 2.15.1, 2.15.2

[51] Exhibit B-3, BCUC IR 2.15.2, BCUC IR 2.32.2; Exhibit 7, BCSEA SCBC IR 1.17.3

electricity to natural gas was based on the fact that BC Hydro's Power Smart program guidelines focus on the rate that is paid by the customer installing the natural gas appliances, rather than the marginal cost to BC Hydro to acquire new resources.[52]

39. The economic potential of fuel switching in the BC Hydro CPR was found to be 24.02 PJ equivalent (6,674 GWh/year) by 2026 in the current gas supply cost scenario, and 11.85 PJ equivalent (3,293 GWh/year) by 2026 in the high gas supply cost scenario. The energy efficiency and fuel switching activities covering the time period 2008 to 2010 for which funding is being requested in this Application are anticipated to result in 1,174 GWh of reduced electrical load.[53]

40. Fuel switching opportunities identified in BC Hydro's CPR as having an **economic potential** that do not get pursued (by means of BC Hydro PowerSmart programs or fuel switching programs proposed by the Terasen Utilities, or both), represent a lost opportunity to manage costs to all BC Hydro customers beyond the measurable life of the natural gas appliance that did not get installed. Thus, BC Hydro rates for all customers will increase at a greater rate than if these fuel switching opportunities had been pursued. Further, BC Hydro's CPR conclusion that there is no achievable fuel switching potential was arrived at while the flat rate structure for residential rates was still in effect. The recent approval of the Residential Inclining Block rate structure for BC Hydro changes the framework underpinning that conclusion and may call into question its continued validity.

41. Fuel switching incentives have not to date been implemented by TGI, as until recently, TGI has not had data such as that available from the CPR upon which to base such programs.[54] Incentive funding for fuel substitution retrofits is not sought for TGI at this time.

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[52] Exhibit B-1, p.108. This interpretation of Achievable Potential is also reflected in the materials filed by BC Hydro in response to BCUC-BC Hydro IR 1.1.4, which state in part: "Hence, there was no Achievable Potential as define in the study for fuel switching under either of the supply cost forecasts. This conclusion was based on the observation that all of the potential fuel switching measures had a payback that was negative because the natural gas options cost the customer more to operate than the electricity baseline technology. The reports concluded that "in practical terms, this means that the customers would never recover their capital investment in the fuel switching measure, even if a purchase incentive was provided." Fuel switching by BC Hydro is discussed further in BCUC 1.17.1.

[53] Exhibit B-1, p.108

[54] Exhibit B-1, p.23

42. The Companies propose to offer fuel-substitution programs directed at residential new construction, which would include qualified TGI applicants. The Companies' proposed programs for residential new construction address the concern that the relative higher cost of the Energy Star rated natural gas furnaces, which have been mandated by provincial regulation effective January 1, 2008, may persuade some builders to adopt electric space heat. The programs also take into consideration of the concern that since Energy Star furnaces cannot share a vent with natural gas hot water tanks, builders may be motivated to install electric hot water heaters to avoid the cost of venting the already more expensive natural gas hot water tank.[55] Once electric baseboard heating has been installed in a residence, there is little opportunity to replace that heating with new technology over time, and there is no duct work or hydronic piping in the residence to permit heat from a gas furnace to be circulated throughout the house.

(iii) Conservation Education and Outreach

43. The Companies have budgeted $13.8 million of the overall portfolio budget to conservation education and outreach, which amount was developed in consultation with the Companies' advertising agency.[56] This program area represents non-program-specific education and outreach to educate customers, equipment installers, and the public at large about the importance and benefits of managing energy consumption.[57]

44. The Companies believe that supporting the creation of a conservation culture in British Columbia is crucial to the success of the EEC portfolio and to achieving the larger energy conservation and GHG emission goals of the government of British Columbia. A customer that has been "pre-conditioned" with general mass media messaging about the impacts of natural gas consumption is far more likely to respond to communications regarding a specific program and therefore is more likely to participate in that program. Further, the Companies' view is that the expenditures proposed for Conservation Education and Outreach for natural gas will have the effect of creating spill over in conservation outcomes in other areas, such as water and

[55] Exhibit B-1, p.64

[56] Exhibit B-1, Appendix 8

[57] Exhibit B-1, p.66

electricity.[58] This approach is similar to that employed by BC Hydro in its general PowerSmart advertising campaigns that promote energy saving in a general context.

45. The new DSM Regulation will require future DSM expenditure schedules/portfolio's filed with the Commission after June 1, 2009 to include education and outreach programs.[59]

(iv) Joint Initiatives

46. The Companies have budgeted $3.0 million of the overall portfolio budget to Joint Initiatives. The amount for Joint Initiatives was developed based on the Companies' best estimates of potential expenditure levels for the program area.[60] The Companies outlined four joint initiatives that will be pursued if the Application is approved: DSM for affordable housing, support for audits for a provincial home retrofit program, building labelling, and a contribution to the pool of funds for which municipalities can apply. The Companies could fund further initiatives either through a reallocation of funding from another program, or by making separate application for approval of additional expenditures.[61]

47. The Companies anticipate partnering with BC Hydro, FortisBC and potentially government, to promote demand side measures. The expenditure request does not include an anticipated contribution for incentives from BC Hydro, FortisBC, or from other partners for electrical savings.[62]

(v) DSM for Affordable Housing

48. Included in the $3.0 million proposed funding for the Joint Initiatives program area is the Companies' DSM for affordable housing initiative.[63] The Companies believe that a DSM program for low income customers is a necessary component for meeting its program principle of offering "universal" access to EEC programs. Consistent with the Companies'

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[58] Exhibit B-7, BCSEA SCBC IR 1.9.1

[59] DSM Regulation, s.3(c) and (d)

[60] Exhibit B-1, p.53

[61] Exhibit B-1, p.67; Exhibit B-7, BCSEA SCBC IR 1.19.3

[62] Exhibit B-1, pp.53-56

[63] Exhibit B-1, pp.66-67, Exhibit B-2, BCUC IR 58.1; Exhibit B-9, MEMPR IR 1.2.1; Exhibit B-6, BCOAPO IR 1.28.1

belief, the new DSM Regulation will require the Companies to include within future DSM expenditure schedules filed after June 1, 2009 a demand side measure "specifically to assist residents of low-income households to reduce their energy consumption."[64]

49. At the request of MEMPR, the Companies are leading the Affordable Housing Working Group to explore ways and means to deliver EEC programs to low income customers.[65] The exact allocation of funding is yet to be determined because the nature of any program offered by the Companies to low income customers would be based upon input from, and the Companies' participation in, the working group and upon the programs to be developed as has been done for the Energy Efficiency, Fuel Switching program areas.[66]

50. The Companies' proposal in this Application for funding measures directed at low income households would meet the requirements of the DSM Regulation were they applicable today. However, the Companies recognize that it may be possible to develop effective programs that require greater funding than has been attributed to low income measures within the proposed Joint Initiatives funding. It is not the intent of the Companies to have the funding request in this Application impose artificial limits on the work being undertaken by the Companies in conjunction with the Affordable Housing Working Group. The Terasen Utilities submit that the preferred solution, should the programs developed in conjunction with the Working Group require more funding than is budgeted in this Application, is for the Companies to seek specific additional funding for measures directed at low income households, rather than reallocate funding approved as part of this Application. Allocating a greater proportion of funding sought in this Application to measures directed at low income customers, without increasing the total EEC funding granted to the Companies, would require the Companies to abandon or postpone other worthwhile measures.

(vi) Trade Relations

51. The Companies have budgeted $1.5 million of the overall portfolio budget to Trade Relations. The amounts for Trade Relations were developed based on the Companies' best

[64] Exhibit B-1, p.47; Regulation of The Minister of Energy, Mines and Petroleum Resources, Ministerial Order No. M 271, signed November 6, 2008, effective June 1, 2009.

[65] Exhibit B-1, p.67

[66] Exhibit B-2, BCUC IR 1.58.1; Exhibit B-6, BCOAPO IR 1.28.2

estimates of potential expenditure levels for the program areas.[67] The support and education of skilled trades, equipment manufacturers, distributors, suppliers and retailers, as well as appliance and equipment salespeople and realtors, is crucial to the success of an EEC program.

(vii) Conservation Potential Review

52. The estimate for the 2009 CPR is based on the cost to perform the previous CPR, and an allowance for the kind of work done by Habart to refine the CPR results into a DSM program.[68] The updated CPR would be received in 2010 and would then form the basis of an application to the Commission for the next tranche of EEC funding for the period 2011 to 2014.[69]

(viii) Innovative Technologies, NGV and Measurement Program Area

53. The Companies have budgeted $3 million for innovative technologies, NGV and measurement programs. Investment will depend on an effective program being developed over the funding timeframe.[70] The Companies have identified a number of potential initiatives that promote the efficient use of natural gas through sustainable design, are not currently mainstream technology, and offer the potential for at least a 10% GHG credit.[71]

54. The DSM Regulation, once it is in effect for the Terasen Utilities, will require the Commission to assess the costs and benefits of innovative technologies on a portfolio basis.[72] This implicitly recognizes the long-term benefits associated with such measures.

55. The Companies are in a unique position to foster and further the deployment of forward-looking low carbon technologies, including measurement technologies. Program activity would not be considered viable if the technology is prohibitively costly, or cannot be

[67] Exhibit B-1, p.53; Exhibit B-2, BCUC IR 1.32.1, 1.32.2, 1.32.3
[68] Exhibit B-1, p.53; Exhibit B-2, BCUC IR 1.21.1; 21.2
[69] Exhibit B-1, p.69
[70] Exhibit B-1, p.69; Exhibit B-2, BCUC IR 1.33.1, 1.33.2, 1.33.4
[71] Exhibit B-1, p.70
[72] DSM Regulation, s.4(4)

readily installed or serviced using local tradespeople, or does not provide adequate long term potential for widespread implementation.[73]

56. The initiatives being proposed for the Innovative Technologies, NGV and Measurement program area could be pilot programs, with a limited duration, which typically require fairly quick turnaround times. These would be developed in conjunction with various market actors, including suppliers, installers, and builders and developers.

57. The Companies submit that it is appropriate to have funding approved before approaching stakeholders about developing potential initiatives in this program area. Stakeholders are busy with their core businesses; it would be challenging to get their attention to assist with developing a program that may or may not come to fruition dependent on whether funding was approved or not. The Companies have appropriate accountability mechanisms.[74]

(ix) The Industrial Sector

58. The Companies do not currently engage in industrial EEC activities, and have not included within this Application EEC initiatives for industrial customers (namely, those in TGI Rate Classes 22, 27, and 7 or the three TGVI transportation customers). However, the Companies recognize the importance of energy conservation in the industrial sector. The Terasen Utilities are involved in the Ministry of Energy, Mines and Petroleum Resources (MEMPR) led industrial efficiency working group. Information gained and shared through this group could form the basis for industrial efficiency programs.[75]

59. The CPR assessed efficiency and conservation opportunities in the manufacturing sector, and identified four Primary Action Profiles as key opportunities. The Companies deferred consideration of industrial EEC initiatives primarily because industrial customers tend to have diverse needs that may not be met by a generic EEC program. As the Companies indicated in the Application, if the Application is approved, they intend to establish an industrial customer EEC working group to determine the need for industrial EEC programs, the type of programs that would be beneficial to the industrial customer base, and the funding required in support of

[73] Exhibit B-1, p.69; Exhibit B-2, BCUC IR 1.33.6
[74] Exhibit B-2, BCUC IR 1.33.5
[75] Exhibit B-2, BCUC IR 1.38.3

such programs. Depending on the outcome of the Application, the Companies proposed to bring forward a proposal for funding in late 2009 if the expenditures were warranted.[76]

IV. CUSTOMER BENEFITS AND ADVANCEMENT OF GOVERNMENT'S ENERGY OBJECTIVES

60. The Companies submit that the programs contemplated in the EEC Application and summarized above will provide the following benefits:

- Provide customers access to a wider variety of energy efficiency and conservation incentive programs, assisting them to reduce energy consumption, thereby lowering customer energy bills and reducing the individual and societal impacts associated with energy use.
- Expand the range of customers for whom energy efficiency and conservation programs are available. For example, the programs targeted at commercial operations are a significant expansion over the Companies' current efforts, and in the residential sector, funding is contemplated specifically for DSM for Affordable Housing, as outlined in the Section 6.6.1 of the Application.
- Provide education for customers and the public at large about energy and conservation issues, leading to customers making more informed choices about energy equipment and actions, as outlined in the proposal received from Wasserman and Partners, attached as Appendix 8 of the Application.
- Recognize the need to maintain a competitive cost for using natural gas an energy source, thus maintaining the energy balance in the province and ensuring that customers have a wide variety of cost-competitive energy sources to choose from.
- Support BC Hydro and FortisBC in achieving their conservation goals, through both incidental electrical savings from such items as efficient motors in efficient natural gas appliances, and through the residential fuel switching measures proposed herein, thus helping to minimize the need for the customers of the electric utilities to invest in additional generation and transmission infrastructure.

[76] Exhibit B-7, BCSEA SCBC IR 1.7.2. MEMPR has filed a letter of comment (Exhibit C1-4) seeking an order that the Companies refine the CPR for the manufacturing sector, at the earliest opportunity, to include Terasen's largest manufacturing accounts and identify and develop specific DSM measures for the manufacturing sector. This is consistent with the Companies' original intent to pursue industrial initiatives as a second phase.

- Recognize the continued value in adding efficient cost-effective customers to the Terasen Utilities distribution system, keeping the use of natural gas and other energy forms competitive for all customers.
- Recognize that individual metering technologies can help to inform customers as to their individual consumption, which is shown to lead to reduced overall consumption of up to 30%, as noted in Section 7.3 of the Application.
- Encourage the utilization of new and alternative technologies that have not to date enjoyed strong market penetration in British Columbia.
- Support the development and training of skilled trades people that are fluent in the merits of conservation and efficient technology.

A. Customer Savings

61. The Companies submit that, by targeting the program areas identified in Table 1.4.1a of the Application, the energy savings from the proposed increase in expenditure and activity are likely to be significant. The estimated present value of the savings from energy efficiency is almost 10 million GJs over the lives of the various measures proposed, while the fuel switching activity being proposed is estimated to result in additional load of approximately 2.3 million GJs (present value). The anticipated net present value of the energy savings from the energy efficiency and fuel-switching activity being proposed in this Application is approximately 7.7 million GJs. This does not include potential savings arising from Conservation Education and Outreach, Joint Initiatives, or Innovative Technologies, NGV and Measurement program areas.[77]

62. The customers will also enjoy a benefit associated with reduced Carbon Tax costs.[78] Customers that install an efficient appliance or design a more efficient building as a result of the Companies' EEC initiatives will use less gas, and will therefore pay less Carbon Tax. Therefore, the avoided Carbon Tax was included in the participant benefits, as noted in Appendices 11A and 11B of the Application.[79]

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[77] Exhibit B-1, p.10

[78] Exhibit B-1, Table 7.2a;

[79] BCOAPO 1.27.1. Government's subsequent revision to the amount of the Carbon Tax has minimal impacts on the analysis performed by the Companies. See BCUC 2.3.1

63. The rate impacts resulting from the proposed EEC expenditures are discussed on pages 92 to 98 of the Application. The impact on rates is smoothed by amortizing the EEC expenditures over 20 years.

64. In sum, the Companies submit that this level of expenditure is prudent, fair and in the public interest in light of the anticipated customer benefits.

B. Advancement of Government's Energy Objectives

65. Section 44.2 of the Act, pursuant to which the Companies bring this Application, requires the Commission to consider "government's energy objectives." Those objectives include "encourag[ing] public utilities to take demand side measures," and "encourag[ing] public utilities to reduce greenhouse gas emissions." The background for these objectives is found in the 2007 Energy Plan. The Terasen Utilities submit that the EEC strategy contemplated in this Application is absolutely consistent with "government's energy objectives" and the requirements imposed on public utilities under the amendments to the Act.

66. First, the Application is intended to pursue cost effective DSM opportunities. Cost-effective demand-side investments are defined in Policy Action #3 of the Energy Plan as "those that are equal to or lower in cost than supply side resources."[80] Certainly both the energy efficiency and fuel switching measures delineated in the Habart report meet that definition.[81] Indeed, this Application reflects a request for funding for costs for all the cost-effective measures identified in the Habart report.

67. MEMPR filed a letter of comment with the Commission,[82] indicating that "the Ministry has an interest in seeing [the Companies] expand their demand-side management activities."

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[80] The BC Energy Plan: A Vision for Clean Energy Leadership: "Energy Conversation and Efficiency Policies," p. 2.

[81] Exhibit B-1, p.103

[82] Exhibit C1-4. Natural Resources Canada similarly filed a letter of comment (Exhibit E-12) stating in part: "Natural Resources Canada supports Terasen Gas in their Energy Efficiency and Conservation application to the British Columbia Utilities Commission. Natural Resources Canada and Terasen Gas have a long successful history of partnering to offer British Columbians the opportunity to install efficient natural gas appliances through such initiatives as the Efficient Boiler program, the Think Grand program and the Energy Star Healing Upgrade program. Natural Resources Canada has contributed not only to program incentives for Terasen Gas programs, but also to program development and program promotion costs. Terasen Gas' track record of delivering reductions in energy consumption with relatively few resources is commendable and deserves to be built upon and encouraged."

68. Second, the Companies' energy efficiency activities are expected to result in reduced consumption of natural gas, and hence will result in lower GHG emissions. Table 7.2 from the Application, included for reference below, details the overall natural gas, electricity and GHG savings resulting from the proposed increase in EEC expenditure.

Energy Savings by Activity by Sector by Utility

	Consumption Impact			
Sector and Activity	**Natural Gas (GJ)**	**GHG Impact (tonnes C02e)**	**Electricity (MWh)**	**GHG Impact (tonnes CO2e)**
TGI Residential Energy Efficiency	(2,087,000)	(105,790)	(41,000)	(22,550)
TGI Residential Fuel Switching	831,000	42,123	(174,000)	(95,700)
TGI Commercial Energy Efficiency	(6,858,000)	(347,632)	(511,000)	(281,050)
TGVI Residential Energy Efficiency	(181,000)	(9,175)	(4,000)	(2,200)
TGVI Residential Fuel Switching	1,446,000	73,298	(376,000)	(206,800)
TGVI Commercial Energy Efficiency	(833,000)	(42,225)	(69,000)	(37,950)
Subtotal - Energy Efficiency	**(9,959,000)**	**(504,822)**	**(625,000)**	**(343,750)**
Subtotal - Fuel Switching	**2,277,000**	**115,421**	**(550,000)**	**(302,500)**
Totals	**(7,682,000)**	**(389,401)**	**(1,175,000)**	**(646,250)**

69. These results shown above reflect the present value of energy consumption impacts over the life of the measures proposed for implementation over the 2008 – 2010 timeframe. The CO2e factors that used were 0.05069 tonnes/GJ for natural gas and 550 tonnes/GWh for electricity.[83] The results do not include energy savings projections for the proposed Joint Initiatives, for the Conservation Education and Outreach funding, for the Trade Relations activity, or for savings arising from funding for Innovative Technologies, NGV and Measurement. It is clear from this table that customers would save a significant amount resulting from energy savings and avoided carbon tax impacts.

70. The fuel switching activities, although only a relatively small portion of the total proposed portfolio, have attracted attention of Interveners, particularly BC Hydro. A breakdown of fuel switching activities proposed can be found in Table 6.4 on page 63 of the Application. Because the majority of fuel switching activity will focus on TGVI service area, fuel switching expenditures for TGVI are proposed to be a total of $2.367 million, as compared to $1.329 million for TGI. The Companies submit that, on the evidence before the Commission, fuel switching activities not only result in reduced GHG emissions but also promote the most optimal balance in energy share between electricity and natural gas.

[83] BC Hydro, 2007 Conservation Potential Review, Summary Report, Date Nov 20, 2007, page 12

71. An evident example of the benefit of the fuel switching activity on lowering GHG emission is the heating retrofit programs directed at households that currently use oil or propane as a heating energy source in the TGVI service territory.[84] Since natural gas has lower associated GHG and air contaminant emissions than those other energy sources, substituting or switching to natural gas furthers British Columbia's environmental aspirations to reduce GHG emission by 2020.

72. On a larger scale, the province's GHG reduction goals are best achieved by optimally utilizing other environmentally responsible alternative energy resources, including natural gas, for heating, cooking and other activities, to avoid or defer electrical load, which, in turn, causes lower regional GHG impact.[85] BC Hydro has filed evidence disputing the potential for GHG reduction the Companies have identified resulting from the use of natural gas for space and water heating instead of electricity;[86] however, the Companies submit that the logic of the Terasen Utilities' position is compelling. British Columbia's electric system is interconnected with Alberta and most of western United States.[87] Electricity generated throughout the Western Interconnection moves freely across borders, as do GHG emissions. British Columbia must consider how energy is used across the Western Interconnection to find an optional solution for British Columbians in terms of GHG emissions.

73. A significant portion of both current and new electrical generation in western North America is from the inefficient combustion of coal or natural gas.[88] According to BC Hydro's 2005 Resource Options Report the Greenhouse Gas Emission Factor (Tonnes CO2 equivalent/GWh) for a 560 MW Super Pulverized Coal Combustion Plant and 250 MW Combined Cycle Gas Turbine Plant are 855 and 350 tonnes per GWh respectively. In BC Hydro's 2007 Conservation Potential Review Summary Report, a GHG factor of 550 tonnes per GWh was assigned for BC Hydro's electricity imports in F2006.[89] A modern combined cycle

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[84] Exhibit B-2, BCUC IR 1.2.4

[85] As indicated above the energy efficiency and fuel switching activities covering the time period 2008 to 2010 for which funding is being requested in this Application are anticipated to result in 1,174 GWh of reduced electrical load.

[86] Exhibit C2-6.

[87] Exhibit C2-7, Terasen-BCH 1.2.2

[88] Exhibit B-1, p. 110

[89] BC Hydro, 2007 Conservation Potential Review, Summary Report, dated Nov. 20 2007. p. 12.

gas fired generator operates at 50 to 55% efficiency; whereas modern direct gas fired appliances operate at much higher efficiencies. For example, new high efficiency natural gas fired furnaces operate at 95% efficiency or higher. The Greenhouse Gas Emission Factor for a high efficiency furnace is 180 tonnes CO2 equivalent/GWh[90]. Therefore, there is a clear GHG reduction advantage to using natural gas in direct use applications to reduce the quantity of electricity produced by gas or coal fired generation and thereby reducing GHG emissions in the region.[91]

74. For so long as coal or gas fired electrical generation continues to be the marginal source of electrical generation in western North America, the use of natural gas for specific end uses such as space and water heating will make additional energy available to displace coal or gas fired generation at the margin. Since B.C.'s electrical grid is integrated with the larger grid in Western North America, the efficient direct end use of natural gas and other energy sources in BC will make BC power from "clean" sources such as hydroelectric facilities available to the remainder of Western North America. To displace high emission coal and gas fired generation presents one of the best solutions to reduce GHG emissions.[92]

75. BC Hydro admitted the following in responses to information requests, which helps illustrate Terasen Utilities' position:

(a) Electricity generated in BC that is surplus to domestic load requirements in BC in any one time period will be traded and exported into the western interconnection;[93]

(b) 28% of electricity production in the western interconnection is produced by natural gas fired generation, and 30% is produced by coal fired generation;[94]

(c) A typical efficiency for a new combined cycle gas turbine is about 50% and the typical new coal fired generation facility has an efficiency of about 40%.[95]

(d) Adding any resource into the western interconnection, be it renewable or non-renewable, will displace the marginal unit if the resource that is being added has a

[90] 3600 (GJ per GWh) x 48.5 (kg CO2e per GJ) / 97% (assumed furnace efficiency)

[91] Exhibit B-7, BCSEA SCBC IR 1.17.1

[92] Exhibit B-1, p.99.

[93] Exhibit C2-7, Terasen-BCH 1.2.2

[94] Ibid

[95] Ibid

lower variable operating cost that then marginal unit.[96]

(e) As non-renewable electricity generation resources typically have higher variable costs than renewable resources, renewable resources will typically run first and displace non-renewable resources at the margin.[97]

(f) The Province is currently fuel neutral,[98] meaning that it is not opposed to the direct use of natural gas for space and water heating.

(g) Minister Neufeld stated in an October 21, 2008 radio interview, among other things, that "[w]e have huge opportunities in this province to build generation for export, also, between jurisdictions south of us, that generate with coal."[99]

(h) Pacific Gas & Electric has prepared and filed a report with the California Public Utilities Commission regarding the potential for imports of BC renewable electricity.[100]

(i) There is a proposed Canada to Northern California transmission line in the initial Western Electricity Coordinating Council path rating process.[101]

76. Appendix H of BC Hydro's 2008 LTAP provides additional evidence of the marginal source of electricity generation in the region being thermal-based and its implications for GHG reductions as follows:

> "…the WCI is reviewing studies done by the California Energy Commission (CEC) that show amounts of GHG reductions in each Western state under different penetrations of energy efficiency and renewables. The CEC studies discussed in the above paragraph were performed by running hourly simulations of the WECC power grid with hourly loads across WECC being served by economic dispatch of generation available in the region. …the CEC studies demonstrate the reality that much load in WECC is served by natural gas fired generation. As the CEC increased penetration of renewables in the future in its alternative views of the future, the renewables will run to meet the load, thereby displacing natural gas fired generation that would otherwise be needed to meet loads. The CEC ran a few sensitivities with high GHG taxes in place. In the cases with high penetrations of renewables, economic dispatch would sometimes displace coal fired generation… …because coal generation emits about twice the amount of GHG/kWh

[96] Exhibit C2-7, Terasen-BCH 1.2.2

[97] Ibid

[98] Exhibit C2-7, Terasen-BCH 1.1.1, Evidence of Bob Elton, BC Hydro 2009 Revenue Requirements Application, Tr. p.588 ll.12-15

[99] Exhibit C2-7, Terasen-BCH 1.3.0

[100] Exhibit C2-7, Terasen-BCH 1.2.2

[101] Exhibit C2-7, Terasen-BCH 1.4.0

> than does natural gas fired generation. The CEC concludes that a good way to reduce GHG is to reduce thermal generation levels by causing higher penetration of energy efficiency and renewable power supplies."[102]

77. While the primary GHG benefits are obtained from the export of clean BC electricity either by BC Hydro or by other IPPs directly, and will extend beyond 2016, it is also the case that until self-sufficiency is achieved fuel switching reduces the need for BC Hydro to import electricity from jurisdictions where the marginal source of generation is coal or gas fired.[103]

78. The Terasen Utilities' submission that using natural gas in specific end use leads to lower GHG emission has been accepted by the Commission. In the 2007 BC Hydro Rate Design proceeding, Terasen Gas provided a detailed analysis on the issue of the efficient use of gas for space and water heating.[104] In the Commission's October 26, 2007 Decisions on BC Hydro's 2007 Rate Design – Phase 1, the Commission agreed with Terasen's position that the direct use of natural gas for space and water heating in BC will make additional energy available to displace coal or gas-fired generation at the margin in the Pacific Northwest.

> "Commission Panel commends Terasen for its initiative in leading evidence both concerning the use of electricity for space and water heating in BC Hydro's service area, and concerning the potential growth in demand for electric space and water heat that BC Hydro is forecasting. The implications of the growth in demand were among the reasons that led the Commission Panel to encourage and guide BC Hydro to implement an inclining block residential rate, so that customers receive the correct pricing signal in this regard. **The Commission Panel agrees with Terasen that the use of natural gas (as opposed to electricity) for space and water heating in B.C. will make additional energy available to displace coal or gas-fired generation at the margin in the Pacific Northwest.**[105]" (emphasis added).

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[102] Exhibit C2-7, Exhibit B-7, BCSEA SCBC IR 1.17.1. Global Energy, 2008. Renewable Energy Credit – Market Analysis of Potential Renewable Energy Sale in WECC. Prepared for BC Hydro and Appearing as Appendix H to BC Hydro's 2008 LTAP. P 10-11 of 47.

[103] Exhibit B-3 BCSEA-SCBC IR 1.17.1

[104] Exhibit B-7, BCSEA SCBC 1.17.1, Attachment 17.1. A discussion of the regional GHG impact analysis can be found in Section 5.1, pages 5 to 7 of the Attachment.

[105] BCUC Decision in the Matter of British Columbia Hydro and Power Authority 2007 Rate Design Application – Phase 1, October 26, 2007, p. 191.

79. The Commission repeated in December 2007 that it "continues to agree with Terasen that the use of natural gas (as opposed to electricity) for space and water heating in BC will make additional energy available to displace coal."[106]

80. The position advanced by the Terasen Utilities in support of fuel switching programs that the direct use of natural gas lowers total energy consumption and carbon emissions is also supported by a recent study from American Gas Foundation, *Direct Use of Natural Gas: Implications for Power Generation, Energy Efficiency and Carbon Emissions*.[107] The study found that:

- The direct natural gas in residential and commercial applications can increase the productivity of available energy supplies, reduce the cost of energy and reduce CO2 emissions.
- In all direct use scenarios considered by the study CO2 emissions are reduced.
- The direct use of natural gas would result in significant avoidance of electricity generation capacity.[108]

81. Since environmental issues have local, provincial and global implications, the Companies support an end-to-end analytic approach and conclude that using natural gas in specific end uses has a lower overall regional GHG impact than using other energies including electricity for those same end uses. Looking at BC in isolation does not provide an adequate view of the impacts from various activities including fuel switching, and could in fact produce unintended consequences such as mass electrification if British Columbians take the view that all of the electricity consumed in the Province has no GHG consequences.[109]

82. The Companies submit that information concerning energy use in the province, as well as general conservation messaging to support the creation of a "culture of conservation" in the province would likely be part of the information provided not only to program participants, but also as part of the larger Conservation Education and Outreach initiative, outlined in Section 6.5 of the Application, and in the proposal for Conservation Education and Outreach from Wasserman and Partners, attached as Appendix 8.[110]

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[106] BCUC Decision in the Matter of Terasen Gas (Vancouver Island) Inc. and Terasen Gas Inc., System Extension And Customer Connection Policies Review, December 6, 2007, p. 50.

[107] American Gas Foundation, "Direct Use of Natural Gas: Implications for Power Generation, Energy Efficiency and Carbon Emissions, April 2008.

[108] Exhibit B-7, BCSEA SCBC IR 1.17.1

[109] Exhibit B-2, BCUC IR 1. 62.1

[110] Exhibit B-1, p.110

V. FINANCIAL TREATMENT

83. For TGI, DSM program costs are currently recorded as O&M, and incentives and rebates are charged to a regulatory asset deferral account and amortized over three years. For TGVI, program costs are recorded as O&M and incentives and rebates are charged to a regulatory asset deferral account and amortized over one year. The Terasen Utilities propose that the incremental EEC expenditures above amounts already approved as part of TG PBR Extended Settlement and TGVI RR Extended Settlement be treated as capital. The Terasen Utilities further propose that the incremental EEC expenditures and existing incentive amounts in TG PBR Extended Settlement and TGVI RR Extended Settlement be charged to a regulatory asset deferral account on a tax-adjusted basis, the balance of which is amortized over 20 years, with amortization commencing the year following the year in which the expenditure is made.[111] For the reasons outlined below, the Companies submit that the proposed financial treatment is consistent with the Commission's DSM Accounting Policy, the *Utilities Commission Act* and the Energy Plan, as well as being beneficial to customers.

A. Capitalization

84. The financial treatment sought by the Companies in this Application is expressly contemplated in the Commission's DSM Accounting Policy, and is consistent with the financial treatment that has been approved by the Commission for use by other BC utilities (in particular FortisBC and BC Hydro).[112] Expensing EEC expenditures would represent a departure from the Commission's approved Accounting Policy and a different treatment of the Terasen Utilities from other British Columbia utilities.[113] The DSM Accounting Policy states, in part:

> *2. Deferred Costs Included in Rate Base and Earning a Return*
>
> *Costs incurred at different stages of program commercialization reflect varying degrees of uncertainty as to beneficial outcomes and shall be deferred according to the following criteria:*
>
> *(a) A significant or material, non-recurring cost shall be deferred and amortized using a rapid writeoff for the purpose of smoothing the impact on rates.*

[111] Exhibit B-1, p.81; Exhibit B-2, BCUC IR 1.10.2; Exhibit B-6, BCOAPO IR 1.1.1

[112] Exhibit B-1, p.81; Exhibit B-2, BCUC IR 1.42.1, 1.43.2.4.2, 1.41.3; Order G-55-95, June 29, 1995

[113] Exhibit B-2, BCUC IR 1.43.2.4.2

> *(b) Direct program costs, indirect administration costs and allocated overhead, shall be deferred according to the intent of section 3450 - Research and Development, of the Canadian Institute of Chartered Accountants, Accounting Recommendations Handbook.*[114] *Generally speaking, those criteria treat research costs as expenses and treat as assets, those development costs that have a high probability of achieving net financial benefits.*
>
> *3. Load Building by Fuel Substitution*
>
> *Utilities engaged in strategic load building by fuel substitution may account for this in the same manner as other DSM strategies subject to Commission directions specific to that utility. Changes to this accounting policy may need to be made following a multi-utility review of the economic evaluation of fuel substitution. [Emphasis added.]*

85. Further, the requirement in the DSM Accounting Policy to capitalize DSM expenditures is consistent with Section 60(1)(b) of the Act, which requires the Commission to have due regard when setting rates that the utility is provided a fair and reasonable return on any expenditure made by it to reduce energy demand. This approach puts DSM expenditures on equal footing with capital expenditures for utility infrastructure construction and expansion.

86. Apart from being consistent with the Commission's DSM Accounting Policy, the Terasen Utilities have cited several additional reasons justifying capitalization of costs associated with EEC activity.[115]

87. From the perspective of ratepayers, capitalizing EEC expenditures helps to reduce rate impact by smoothing the increased expenditure over a period of time matching the benefits achieved from the expenditure. Expensing the EEC expenditures may cause more rate volatility since the level of EEC expenditures may vary from year to year and cause upward pressure on rates in some years and downward pressure on rates in other years.[116] Natural gas customers are already exposed to rate volatility in the commodity portion, which normally represents about

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[114] Section 3450 Research and Development of the CICA Handbook, which is referred to in the DSM Accounting Policy, is being replaced with Section 3064 Goodwill and Intangible Assets, effective January 1, 2009. Section 3064 as it relates to Research and Development expenditures is substantially the same as previous section 3450, and includes the same approach to research (expense) and development (deferral) expenditures. Please refer to the responses to BCUC IRs 1.44.0 to 1.44.2 for further discussion of accounting guidance on EEC expenditures.

[115] Exhibit B-2, BCUC IR 1.10.2

[116] Exhibit B-3, BCUC IR 2.27.1

two-thirds of their bill.[117] Rate volatility may have unintended impacts on conservation and customer behaviour by exacerbating temporary responses to rate changes without lasting conservation. Rate stability will permit customers to make more considered and lasting investments in conservation measures.[118]

88. As indicated in the response to BCUC IR 43.1.1 and 42.3.4.5, when the time value of money is considered customers may be better off when the utility recovers the costs, including the utility's carrying cost, over an extended period of time rather than having to recover the cost in the year of expenditure. The present value of the revenue requirements from the rate base approach is lower for customers assuming customers have a time value of money preference based on a higher discount rate than the utility's after-tax cost of capital. The Companies submit that this is a reasonable assumption to make based on numerous studies that suggest the implicit discount rates employed by energy consumers in assessing energy efficiency investments are generally in excess of 20%.[119] This is discussed further below in the context of the proposed amortization period.

89. From an equity perspective, capitalization permits utilities to match the cost recovery period to the period over which benefits accrue to ratepayers. The benefits of the EEC programs contemplated in this Application are expected to persist on average for 22.5 years. If expensed, current customers will be paying the full cost of the EEC expenditures and future customers will receive the benefits of the DSM programs without having to bear the costs.[120]

90. Capitalization is also consistent with the Energy Conservation and Efficiency Policies from "The BC Energy Plan: A Vision for Clean Energy Leadership". In particular, Policy Action #3 ("Encourage utilities to pursue cost effective and competitive demand side management opportunities") states that "the Ministry will assess whether additional measures are needed to ensure appropriate incentives are in place to encourage investor owned utilities to

[117] Exhibit B-2, BCUC IR 1.41.10. In this response, the Companies explained that the volatility would not affect customers enrolled with a marketer in a fixed rate plan.

[118] Exhibit B-2, BCUC IR 1.41.10

[119] Exhibit B-3, BCUC IR 2.8.1

[120] Exhibit B-2, BCUC IR 1.41.3, 1.41.10

identify and purse cost effective DSM programs."[121] By capitalizing EEC expenditures the Companies are made indifferent between allocating funds to EEC programs that will potentially reduce infrastructure requirements and future investments in infrastructure.

91. The proposed financial treatment segregates the debate over free rider rates from the discussion of the appropriate financial incentive. It is clear from the nature of the information requests, and the Companies' responses, that the issue of free ridership has the potential to be an issue of considerable contention. Free rider rates can take on greater significance as an input to cost-benefit tests, and hence become more contentious, if a utility has in place a DSM financial incentive that is based upon program net savings and TRC, both of which are somewhat affected by assumptions about free riders. In such cases, underestimating free riders will result in a higher net-to-gross ratio, higher program savings, a higher TRC and presumably a higher incentive. This is reflected in the Companies' studies of the other jurisdictions and authorities.[122]

92. Energy Plan Policy Action No. 2 is to "ensure a coordinated approach to conservation." Adopting a consistent DSM financial treatment across the major utilities in British Columbia, i.e. capitalizing EEC expenditures and amortizing the expenditures over the weighted amortization of individual program lives, provides a foundation for encouraging a coordinated approach to DSM programs. All utilities then have similar incentives to proceed with DSM, based on the DSM Accounting Policy.

B. Amortization Period

93. Appendix A to Order No. G-55-95, the DSM Accounting Policy, states on page 2:

> DSM costs that have been deferred shall be subject to the following amortization periods as appropriate:
>
> - Rapid write-off for significant or material non-recurring costs – 2-3 years.
> - Normal write-off for recurring costs that qualify as assets – 3-10 years.
> - A utility may apply for a normal write-off longer than 10 years.

[121] The BC Energy Plan: A Vision for Clean Energy Leadership: "Energy Conversation and Efficiency Policies," p. 2.

[122] Exhibit B-2, BCUC IR 1.3.1; Exhibit B-3, BCUC IR 2.4.1

94. The costs in the program cost category and the incentive cost category of the proposed portfolio are of an ongoing nature and are aimed at producing the sustained efficiency and conservation benefits being sought in the Application. Consequently, the applied-for EEC funding appropriately falls within the normal write-off category.

95. The fact that the DSM Accounting Policy provides for a range of acceptable amortization periods depending on the type of expenditure and an allowance for normal write-offs longer than 10 years implicitly recognizes the need to match the cost recovery period to the period over which benefits accrue to ratepayers. The DSM Accounting Policy, in permitting a utility to apply for a normal write-off longer than 10 years, recognizes the potential for benefits to continue to accrue beyond 10 years.

96. The Commission's selection of 10 years as a typical upper limit for the purposes of normal write-offs is logical in the context of electrical utilities, where the weighted amortization does not materially exceed 10 years. For instance, FortisBC employed the amortization period of 10 years based on the weighted amortization of individual program lives (ranging from 5 to 30 years) with a weighted amortization period of 11 years. The FortisBC Negotiated Settlement Agreement, approved by Commission Order No. G-58-06, notes that BC Hydro "amortizes the Power Smart costs to appropriately match the costs with the energy savings benefits, but in any case not to exceed 10 years", and states that future DSM costs will be amortized in a manner consistent with BC Hydro.[123] BC Hydro amortizes DSM expenditures over a 10 year period.[124] However, a 10 year typical upper limit is not necessarily applicable in the case of a gas utility where the gas equipment installed for DSM purposes has a longer life. The range of measure lives outlined by the Terasen Utilities in this Application range from 10 to 25 years, with a weighted period of 22.5 years.[125] Based on this assessment, the proposed 20-year amortization period is a reasonable representation of the benefit received by customers from the EEC expenditures.[126]

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[123] Exhibit B-2, BCUC 1.42.1

[124] Exhibit B-1, p.80

[125] Exhibit B-1, p.80; Exhibit B-3, BCUC IR 2.22.1. In BCUC IR 1.43.1.3 (Exhibit B-2), the Companies expressed the view that its EEC program expenditures would not change from having long term benefits that extend out numerous years.

[126] Exhibit B-1, p.80; Exhibit B-2, BCUC IR 1.41.3,1.43.2.1; Exhibit B-3, BCUC IR 2.30.1

97. Relative to a shorter amortization period, the proposed 20 year amortization period will smooth the impact to rates from the proposed increase in expenditure.[127] Customer rate impacts are discussed in Section 7.1 of the Application. The proposed approach is "least cost" for ratepayers as represented by the lowest net present value of cost of service.[128] In other words, although customers will nominally pay more money over a longer recovery period, when the time value of money is taken into consideration between a three year period (under the current methodology) and a 20 year period customers are better off with a longer recovery period. The Companies submit that amortizing the EEC expenditures over the longer period of time provides better value to customers.[129]

VI. ASSESSMENT CRITERIA AND ACCOUNTABILITY

98. The Terasen Utilities have proposed assessment criteria for EEC programs. The DSM Regulation that will apply to the Companies' EEC proposals filed after June 1, 2009 includes provisions relating to the assessment of EEC programs. The Companies' assessment proposals in this Application were consistent with the DSM Regulation. The Companies have also proposed reporting mechanisms to ensure accountability. The Terasen Utilities submit that these assessment and accountability proposals are reasonable and should be approved.

A. Portfolio Analysis

99. The Companies propose that all energy efficiency and fuel switching initiatives for both TGI and TGVI be evaluated using the cost-benefit tests outlined in the "California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects".[130] In particular, the energy efficiency and fuel switching programs would be planned and evaluated monthly on the TRC, the Ratepayer Impact Measure (RIM) test, the Utility Cost ("UC") test and the Participant test, but the decision on whether or not a program would proceed or continue would be determined with reference to the TRC test. The Companies propose that the EEC portfolio be evaluated on an overall combined basis, rather than on individual initiatives or

[127] Exhibit B-1, p.80
[128] Exhibit B-6, BCOAPO IR 1.7.1.2
[129] Exhibit B-2, BCUC IR 1.41.1, 1.8.1, 1.8.2, 1.8.3; Exhibit B-6, BCOAPO IR 1.7.1.4
[130] Exhibit B-1, p.82 and Appendix 12

program areas. That is, some individual initiatives can have a TRC test result of less than one, but the overall EEC portfolio would need to have a TRC test result of at least 1.0.[131]

100. The proposed portfolio approach, combined with the use of the TRC ratio in evaluating the portfolio, is consistent with the DSM Regulation that will apply to EEC measures brought forward by the Companies after June 1, 2009. Specifically, the DSM Regulation permits the Commission, in assessing the cost-effectiveness of a demand-side measure, to "compare the costs and benefits of . . . (c) the portfolio as a whole."[132] The Commission must use the portfolio approach in assessing the costs and benefits of "specified demand side measures",[133] which consist of measures directed at low income housing, training, community engagement and technology innovation.[134] The DSM Regulation also specifically requires the Commission to employ the TRC test, in addition to any other test the Commission regards as appropriate, reinforcing the primary importance of the TRC test in program evaluation.[135] The Commission is expressly precluded from finding that a program is not cost effective by relying on the RIM.[136]

101. As described in the Application, the portfolio approach permits the Companies to encourage ever-increasing levels of efficiency in natural gas equipment, including that equipment which is relatively new to the market and as such, has a higher initial cost due to the fact that it has not yet reached economies of scale and may therefore have a TRC lower than 1.0.[137] As indicated above, the DSM Regulation will require such measures to be evaluated on a portfolio, as opposed to individual, basis in the future.[138] Further, usage patterns in some geographic regions may change over the program period, resulting in TRCs of lower than 1.0 for some particular measures in some particular geographic regions. A portfolio approach to cost-benefit analysis would allow the Companies to maintain the principles of uniformity (providing

[131] Exhibit B-1, p.83; Exhibit B-3, BCUC IR 2.39.1

[132] DSM Regulation, s.4(1)

[133] DSM Regulation, s.4(4)

[134] DSM Regulation, s.1

[135] DSM Regulation, s.4(2)

[136] DSM Regulation s.4(6)

[137] As noted in BCUC IR 1.2.3, this approach is reflected in a study done for the Ontario Power Authority in December 2005.

[138] DSM Regulation, s.4(4)

the same programming to customers throughout the Companies' service territories) in instances where there may be regional differences in usage patterns.[139]

102. The Companies' view that the TRC test, combined with a portfolio approach, is the most appropriate test for EEC programs is shared by other jurisdictions. For instance, the DSM Handbook for Ontario Natural Gas Local Distribution Companies, published by the Ontario Energy Board, states:

> "The TRC test is the sole test of cost effectiveness for programs and will be used for screening the portfolio of programs. The utilities will ensure that the total portfolio has a positive net TRC. The utilities may reserve the right to invest in individual technology or program offerings that do not have [a] positive net TRC, if the utility believes there are compelling reasons to do so."[140]

The Ontario Energy Board has acknowledged pilot programs may warrant inclusion in a portfolio despite having a TRC of less than 1.0.[141] The Companies submit that it is in the longer term interest of customers to encourage newer technologies and thus the programs should be included in the approved portfolio.

103. BCSEA SCBC maintains that the TRC should be maximized.[142] The Companies do agree that maximizing net resource benefits as measured by the TRC, within available budgets, is a worthwhile goal for an EEC program portfolio; however, the Companies' submit that there are other principles that must be weighed as well. For example, in Section 5 of the Application, the Companies outlined key principles guiding the selection of EEC programs, the first one being "universality," namely that programs should be available for all residential and commercial customers. As can be seen in Table 6.13 on page 85 of Exhibit B-1, the Commercial Energy Efficiency program area has a higher TRC at 3.7 than the Residential Energy Efficiency program area at a TRC of 2.4. If one were to run an EEC portfolio with the sole goal of maximizing TRC benefits, presumably one would only run Commercial Energy Efficiency programs. This, however, would run counter to the first principle as outlined by the Company.

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[139] Exhibit B-1, p.84

[140] Exhibit B-3, BCUC IR 2.19.1

[141] Exhibit B-3, BCUC IR 2.28.1

[142] Exhibit C5-5, pp.22-23

104. Similarly, the Companies are proposing to undertake some activities such as the Conservation Education and Outreach campaign that have a cost associated with them, but no quantifiable benefits at this time that would contribute to maximizing TRC. However, the Companies submit that creating a conservation mindset in British Columbia is crucial to the success of individual programs and to supporting the energy conservation and GHG reduction goals established by the Government of British Columbia. Since the Conservation Education and Outreach expenditure could be considered detrimental to TRC as it has costs but no benefits attributed to it, a portfolio that had a sole goal of maximizing TRC would not undertake this very important activity. It should be noted that even with accounting for the costs but not the benefits of Conversation Education and Outreach, the portfolio of EEC activity as proposed has a TRC ratio of significantly greater than 1.0, and thus provides benefits that are greater in value than the costs associated with obtaining those benefits.[143]

105. For a discussion on the Companies' proposed cost-effectiveness approach to the Conservation Education and Outreach expenditure, please refer to Exhibit B-1, the Application, Section 6.13, page 83. The proposed approach is further explored in Exhibit B-2, BCUC IR 1.47.1. The Companies propose to develop the methodology and an understanding of impacts and behaviour changes resulting from the proposed expenditure through the advertising tracking approach outlined in response to BCUC IR 1.47.1, eventually being in a position to attribute energy savings resulting from Conservation Education and Outreach to the expenditure. The portfolio level analysis results include the expenditures for Conservation Education and Outreach program area, but do not include any accounting for energy savings benefits from this program area.[144]

B. Free Riders

106. The Companies have accounted for free riders in developing its Application, which, if anything, results in a conservative assessment of the benefits associated with the individual measures and portfolio.[145] The inclusion or exclusion of free riders from the analysis makes little practical difference in the context of the measures proposed in this Application, as

[143] Exhibit B-7, BCSEA SCBC IR 1.5.2
[144] Exhibit B-7, BCSEA SCBC IR 1.9.1
[145] Exhibit B-3, BCUC IR 2.30.1

the TRC ratios for the portfolio (and most individual measures) exceeds a TRC of 1.0 by a significant margin. This is illustrated in Table 6.13 from the Application, which accounts for free rider effects. The table is included below for ease of reference.

Table 6.13 - Cost-Benefit Results for EEC Portfolio including Free Rider Factor

	RatePayer Impact Measure	Utility	Participant	Total Resource Cost	TRC benefit
Residential Energy Efficiency	0.6	2.6	14.4	2.4	$15,048,000
Residential Fuel Subsitution	1.2	FS	0.9	2.5	$37,723,000
Commercial Energy Efficiency	0.7	3.3	8.1	3.7	$108,512,000
Portfolio Level	0.5	1.4	8.7	2.9	$139,448,000

107. The exclusion of free riders would drive the TRC for the portfolio upwards by only 0.2 to a total of 3.1.[146]

108. The issue of the inclusion or exclusion of free riders is of practical relevance for utilities with mature DSM programs, where the "low hanging fruit" measures with higher TRC ratios have previously been addressed. In such cases, the inclusion of the effects of free riders in the cost-benefit test for EEC programs distorts the value of EEC programs and, to the extent that this distortion results in the exclusion of potentially beneficial programs, is counter to the objectives of the Energy Plan.[147] The Terasen Utilities are not in this position, and there still remains significant "low hanging fruit" to be captured.

C. Attribution

109. Attribution is the inclusion of savings resulting from the projected introduction of regulation resulting from certain EEC programs. The cost-benefit tests that the Terasen Utilities have completed in support of its proposed programs do not include savings related to attribution.[148] This results in a conservative assessment of the benefits associated with the individual measures and portfolio.

[146] Exhibit B-1, Table 6.13a, p.86

[147] Exhibit B-1, p.86

[148] Exhibit B-1, p.87; Exhibit B-2, BCUC IR 1.4.1

110. The Companies propose that once a proposed regulation and implementation date for minimum efficiency standards for an appliance or building or energy system is announced by a regulating body, the Companies be permitted to attribute savings to market transformation programs for that particular appliance, building or energy system in its cost benefit tests at that time. The proposal involves attributing the savings to the program over a five year span,[149] with adjustment for the level of the Companies' support for the market transformation and the level of financial contribution by others.[150]

111. The Companies submit that it is reasonable to include attribution savings in a cost-benefit test, particularly in light of the newly issued DSM Regulation. The Regulation permits the Commission to include in the benefit of measures proposed a proportion of the savings resulting from the increased market share of a regulated item because of the commencement and application of a specified standard with respect to the regulated item.[151]

D. Additional Accountability Mechanisms

112. In this Application, the Companies have recognized the need for accountability for the funds approved for EEC programs. First, any funds not spent will not be charged to the regulatory asset deferral account. Second, the Companies intend to monitor the portfolio TRC on a monthly basis,[152] and have proposed to file an Annual EEC Report with the Commission by the end of the first quarter every year. The Report will detail program activity, expenditures, and cost-benefit results for the previous year, as well as describe program activity and provide forecasts for the upcoming year.[153] Third, in the event that the relief sought is granted, the Companies would form and engage an EEC stakeholder group with membership representing a broad cross section of stakeholders identified in the Application.[154] Fourth, the Companies have indicated their intention to hold annual EEC workshops with stakeholders, at which the Companies would present updates on program progress and obtain stakeholder input on new

[149] Exhibit B-1, p.87; Exhibit B-2, BCUC IR 1.7.2.1; 1.51.1
[150] Exhibit B-2, BCUC 1.7.2.2; 1.51.2; Exhibit B-6, BCOAPO IR 1.41.6
[151] DSM Regulation, section 4(7)
[152] Exhibit B-3, BCUC 2.17.1
[153] Exhibit B-1, p.88
[154] Ibid

programs and refinements to existing programs.[155] Fifth, the Companies are proposing to develop many of the programs for the commercial sector and the DSM for Affordable Housing sector in conjunction with stakeholder advisory groups.[156]

113. The Companies intend to bring forward an Application for EEC funding beyond 2010. In that context, the Companies will wish to demonstrate that the funding being requested in the current Application has been spent productively, so it is in the Companies' best interest to amend or terminate unproductive programs.[157]

VII. COORDINATION

114. The evidence of Mr. Plunkett, filed on behalf of the BCSEA SCBC, expressed a concern that planning and execution of EEC programs in new construction or in retrofits are not coordinated.[158] In fact, there is extensive evidence on the record that the Companies are currently participating in or have contemplated joint initiatives or actions with the government, other utilities, and other stakeholders in an appropriate manner.[159] For instance, although the Companies are of the view that they should not act alone as a social instrument to establish a DSM program for affordable housing, they are leading a working group for DSM for Affordable Housing to find ways and means to delivery EEC programs to this sector.[160] If the Application is approved, the Companies could more fully participate in the province-wide LiveSmartBC program.[161] Section 7.3.2 of the Application further details the Companies' partnership and working with other utilities, the industry associations, non-profit organizations, and different levels of government to achieve a coordinated approach to deliver energy efficiency programs.[162] The Companies anticipate that they would follow the same process that has been followed in the past collaborations where a formal agreement regarding program partnership is developed over the course of informal discussions.

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[155] Exhibit B-1, p.89; Exhibit B-3, BCUC IR 2. 17.1; Exhibit B-6, BCOAPO IR 1.11.1
[156] Exhibit B-6, IR 1.11.2
[157] Exhibit B-3, BCUC 2.17.1; Exhibit B-6, BCOAPO IR 1.6
[158] Exhibit C5-5, pp.20-21
[159] Exhibit B-1, pp. 66-67, 101
[160] Exhibit B-1, p.84; BCUC 29.1.
[161] Exhibit B-1, p.67.
[162] Exhibit B-1, p.101; Exhibit B-2, BCUC IR 1.23.5; 1.30.3.

115. Joint delivery or initiatives have the potential to reduce program implementation costs and deepen per-participant savings, which should be attributed based on proportional contributions by funding and program partners. This was the case with programs co-funded with BC Hydro. This is also a matter under discussion by the British Columbia Partnership for Energy Conservation and Efficiency (BCPECE), which coordinates DSM activity within the Province and includes representation from the Commission, the MEMPR, and utilities. The Terasen Utilities are active members of the steering committee for BCPECE, as well as its Working Groups.[163]

116. The Companies intend to meet with BC Hydro, as well as other utilities and potential partners, to explore potential joint or coordinated programs and to discuss significant research issues such as cross over effect.[164] In fact, crossover effects have been included in the DSM fireplace program.[165]

117. Should the Companies receive funding approval for new construction programs, the Companies would commence discussions with key stakeholder groups such as the Canadian Homebuilders' Association of BC, the Greater Vancouver Homebuilders' Association and the Urban Development Institute as to the best way for their respective members to receive conservation programming.[166] The Companies would also consider consolidating their stakeholder activity with that of other utilities and the Province, in order to avoid potential "stakeholder fatigue".[167]

VIII. CONCLUSION

118. The Terasen Utilities submit that the proposed EEC program will provide greater cost-effective assistance to customers to manage their energy costs, and support the government's energy objectives as defined in the *Utilities Commission Act* and detailed in the Energy Plan. The portfolio upon which this funding request is based is consistent with the DSM Regulation. The Companies will continue to assess over the course of the Program Period whether customers

[163] Exhibit B-2, BCUC IR 19.1
[164] Exhibit B-12, BCUC IR 3.4.1.
[165] Exhibit B-12, BCUC 3.4.1.
[166] Exhibit B-7, BCSEA SCBC 1.3.2
[167] Exhibit B-1, p.89

would benefit from additional EEC spending over and above the funding sought in this Application, and will bring forward any further application as appropriate. This will likely include additional DSM funding for measures directed at low income households.

119. The proposed financial treatment of EEC expenditures is consistent with the Commission's DSM Accounting Policy, and the approved practices at other BC utilities. For the reasons described in this Submission, customers will ultimately be better off with the expenditures capitalized and amortized over 20 years, as compared to the existing financial treatment or a shorter amortization period.

120. The Companies' proposed methodology for assessing the performance of DSM measures is reasonable and should be approved. The Companies have proposed appropriate accountability measures to give the Commission and stakeholders the necessary assurances that the funds will be spent prudently.

All of which is respectfully submitted.

[Original signed by Matthew Ghikas]

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