Diane Roy
Vice President, Regulatory Affairs

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

Electric Regulatory Affairs Correspondence
Email: electricity.regulatory.affairs@fortisbc.com

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

October 3, 2022

Commercial Energy Consumers Association of British Columbia
c/o Owen Bird Law Corporation
P.O. Box 49130
Three Bentall Centre
2900 – 595 Burrard Street
Vancouver, BC
V7X 1J5

Attention: Mr. Christopher P. Weafer

Dear Mr. Weafer:

Re: FortisBC Energy Inc. (FEI)

Project No. 1599352

Application for Acceptance of Demand-Side Management (DSM) Expenditures for 2023 (Application)

Response to the Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1

On July 5, 2022, FEI filed the Application referenced above. In accordance with the regulatory timetable established in British Columbia Utilities Commission Order G-219-22 for the review of the Application, FEI respectfully submits the attached response to CEC IR No. 1.

For convenience and efficiency, FEI has occasionally provided an internet address for referenced reports instead of attaching lengthy documents to its IR responses. FEI intends for the referenced documents to form part of its IR responses and the evidentiary record in this proceeding.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

1. Reference: Exhibit B-1, Page 1 (6 pdf)

> The 2023 DSM Plan is a continuation of many of the cost-effective programs previously accepted in FEI's 2019-2022 DSM Plan[1], with some additions and modifications including activities that support the transition to advanced DSM programming such as deep retrofits, gas heat pumps and dual fuel hybrid heating systems. FEI is filing a one-year plan because new policy direction included in the late-2021 CleanBC Roadmap to 2030 (Roadmap) is anticipated to result in changes to the Demand-Side Measures (DSM) Regulation before 2024 that are likely to have implications for FEI's DSM portfolio. Further background on FEI's rationale for a one-year plan is included in section 3.1.

1.1 Please provide the % of the expenditures and the % of the savings for the 2023 DSM Plan which are tied to previously-approved programs and confirm that all of these remain cost-effective.

Response:

100 percent of the expenditures and 100 percent of the savings in the 2023 DSM Plan are tied to previously-approved programs. All programs remain cost-effective per the DSM Regulation.

1.2 Please identify what FEI is anticipating about the CleanBC Roadmap DSM regulations to the best of FEI's knowledge, fully understanding at this point there will be considerable uncertainty with respect to what may actually evolve in regulation.

Response:

FEI is unable to discuss potential amendments to the DSM Regulation. However, consistent with the CleanBC Roadmap, FEI expects the DSM Regulation to continue to advance DSM programming, including through the advent of advanced DSM measures such as gas heat pumps, hybrid heating systems and deep energy retrofits.

2. Reference: Exhibit B-1, Page 1 (6 pdf)

Table 1-1: 2023 DSM Plan Expenditures and Savings

DSM Plan	Expenditures ($000s)	Energy Savings (GJ)
2023	141,077	1,601,386
2022	106,293	1,150,189

Accepted expenditures pursuant to Order G-138-18, Order G-135-21 and Order G-301-21

2.1 The expenditures show a 32% increase from 2022 to 2023 and the energy savings show a 39% increase from 2022 to 2023, which would confirm that FEI is anticipating an increase in cost-effectiveness for the whole portfolio. Please confirm or otherwise explain the CEC's interpretation.

Response:

While FEI confirms that the expenditures show a 32 percent increase and the energy savings show a 39 percent increase from 2022 to 2023, the portfolio level blended TRC is 1.6 in 2022 and 1.4 in 2023, and therefore cost-effectiveness has not increased as the question assumes.

The slightly lower blended TRC in 2023 of 1.4 is primarily due to a higher ratio of program spending that historically has not provided energy savings (i.e., CEO, Enabling Activities, Innovative Technologies) to other program area spending in 2023 relative to 2022.

2.2 The energy savings in the 2023 portfolio show a 10.8 GJ/$ expenditure, which is a 5.4% increase in portfolio cost-effectiveness versus the 9.8 GJ/$ expenditure for 2022. Please provide the cost-effectiveness for the new programs added in 2023 versus those that are a continuation from 2022, in terms of the GJ/$ expenditure.

Response:

FEI is not able to reconcile the expenditure and cost-effectiveness values cited in the question. FEI's calculation of the expenditures for both 2023 and 2022 is 0.011 GJ/$, when rounded to the nearest third decimal place, as opposed to 10.8GJ/$ and 9.8 GJ/$ respectively. FEI also notes that all programs in the 2023 DSM Plan are continuations from the 2022 DSM Plan. The cost-effectiveness of each program, in terms of GJ/$ expenditure is shown in the table below.

Please note that savings are expressed in incremental annual GJ in the year 2023, consistent with Table 1-1 of the Application (referenced in the preamble).

Program	Incremental Annual Gas Savings Net (GJ)	Total Expenditures ($)	GJ/$
Res - Home Renovation	210,293	$30,313,939	0.007
Res - New Home	40,025	$12,834,688	0.003
Commercial Prescriptive	275,637	$9,755,981	0.028
Commercial Performance Retrofit	210,543	$9,342,433	0.023
Commercial Performance New Construction	35,809	$4,621,498	0.008
Commercial RAP	41,828	$2,099,911	0.020
Industrial Performance	135,800	$3,680,150	0.037
Industrial Prescriptive	351,823	$2,102,288	0.167
Industrial SEM	140,800	$865,988	0.163
Low Income Self Install	27,120	$609,950	0.044
Low Income Direct Install	15,620	$7,410,375	0.002
Low Income Prescriptive	33,778	$4,275,855	0.008
Low Income Performance	890	$334,400	0.003

3. Reference: Exhibit B-1, Page 3 (8 pdf)

In addition, FEI is seeking approval of:

- proposed changes to its existing funding transfer rules as set out in Section 7.1.1;
- a new variance allowance rule on total portfolio expenditures, as set out in Section 7.1.2;
- forecast rate base additions accounting treatment as set out in Section 7.2; and
- a rate base deferral account to capture the regulatory costs associated with the review of this Application, as set out in Section 7.3.

3.1 Please identify whether or not the proposed approvals sought, in addition to the acceptance of the DSM plan for 2023, contribute to the overall increase in cost-effectiveness, or explain what benefits they achieve in the potential improvement of the FEI DSM planning.

Response:

FEI is not seeking approval of the additional proposals cited in the preamble in order to increase the cost-effectiveness of FEI's 2023 DSM Plan. Rather, the specific reasons for each of the additional approvals sought have been set out in detail in Section 7 of the Application.

4. Reference: Exhibit B-1, Page 5 (10 pdf)

> (GHGRS). The GHGRS is described in the Roadmap as a 6 megatonne cap on GHG emissions in BC's buildings and industrial sectors. Collectively, the GHGRS represents a 47 percent reduction in emissions compared to 2007 levels. The Province envisions natural gas utilities, including FEI, as holding the obligation to meet this cap. The GHGRS is an overarching policy that encompasses other related, enabling policies including the DSM Regulation.

4.1 Please provide the date by which the 6 megatonne cap on GHG emissions and the 47% reduction must be achieved.

<u>Response:</u>

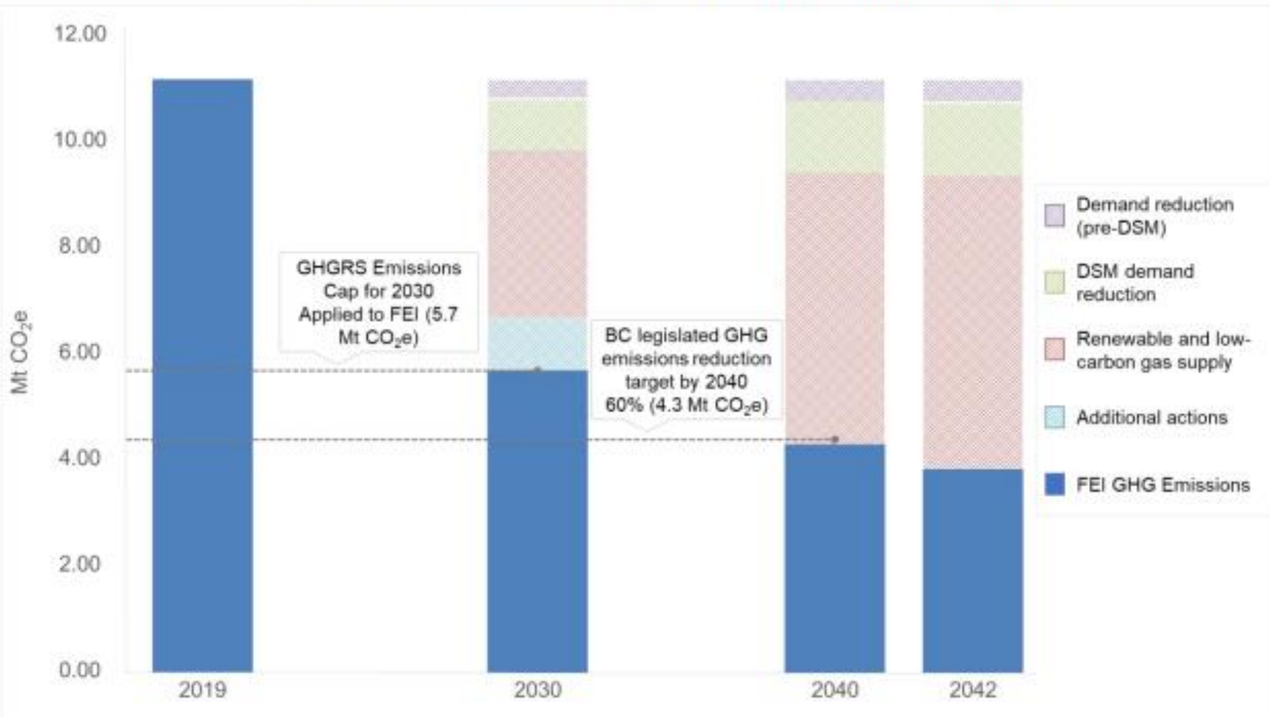
As discussed in the CleanBC Roadmap, the provincial government has targeted 2030 to achieve the goals of the Greenhouse Gas Reduction Standard (GHGRS). However, specific direction on the timing and stringency of the policy has not yet been provided to natural gas utilities, including FEI.

4.2 Please provide FEI's current best estimate of the potential contribution of each of the 4 pillar strategies might contribute to achieving the 47% reduction versus the 2007 GHG emissions, and please quantify these in tonnes of emission reduction and provide the total 2007 GHG emissions upon which the target is based.

<u>Response:</u>

Section 9.2 of FEI's 2022 Long Term Gas Resource Plan (LTGRP) provides a detailed discussion on the potential compliance pathways enabling it to meet the emissions reductions that would be required under the proposed Greenhouse Gas Reduction Standard (GHGRS). Figure 9-1 from the 2022 LTGRP, reproduced below, shows the potential contribution of each of the "4 pillar strategies" referenced in the question.

Figure 9-1: GHG Emission Reductions for Residential, Commercial and Industrial Customers Meets the GHGRS for the Diversified Energy (Planning) Scenario



5. Reference: Exhibit B-1, Page 5 (10 pdf)

> The Roadmap's stated direction for enhancing energy efficiency programs is to include more support for building-envelope improvements and high efficiency heat pumps, including gas heat pumps and hybrid dual fuel heating systems. The Roadmap also stated that after 2030, all new space and water heating equipment sold and installed in B.C. will be at least 100 percent efficient.

5.1 Please indicate whether or not the efficiency is likely to be calculated on the overall objective in terms of GHG reduction efficiency or likely at an appliance level.

Response:

The provincial government has only recently initiated consultations on the proposed 100 percent efficiency standard in the CleanBC Roadmap. At this point, FEI is unable to speculate on the approach the provincial government will ultimately adopt.

5.2 Please indicate whether or not the 100% efficient threshold is applicable at the appliance level or at the combined appliance level, particularly because heat pumping may be most cost-effective for a base loading and the gas system may be more appropriate for peaking requirements, thus average efficiency in combination would make more sense, because natural gas furnaces or boilers will not reach 100%.

Response:

Please refer to the response to CEC IR1 5.1.

5.3 Please indicate whether or not in determining a furnace or boiler efficiency it may be possible to incorporate into the efficiency determination the % of H2, or RNG or synthetic natural gas (SNG) in the gas stream such that the combustion efficiency would take into account the key objective of GHG reduction and not just the equipment on its own.

Response:

Yes, minimum efficiency performance standards could be amended to a GHG performance-based standard which would account for the efficiency of energy conversion and the carbon intensity of the fuels consumed.

5.4 Please give FEI's perspective on whether or not there is room for discussion with government legislation and regulation development to influence an optimal set of requirements, rules and guidance.

Response:

To date, FEI has engaged in discussions with the provincial government to inform its approach to guide optimal energy efficiency programming. Engagement opportunities with the provincial government regarding proposed policies are intended to provide stakeholders, such as FEI, with an opportunity to inform potential requirements, rules and associated guidance.

6. Reference: Exhibit B-1, Page 6 (11 pdf)

Table 3-2: 2023 DSM Plan Energy Savings & GHG Emission Reductions

Indicator	Year	Total Natural Gas Savings	GHG Emission Reductions
Net Incremental Annual Gas Savings (GJ/yr) and GHG Reductions (t CO2e/yr)[1]	2023	1,601,386	82,632
NPV of Net Gas Savings (GJ/yr) and GHG Reductions (t CO2e)[2]		14,433,377	744,762

Notes to Table:

[1] Net incremental gas savings are after consideration of free ridership and spill over. GHG reductions are based on long run combustion emission factor of 0.0516 t CO2e/GJ for natural gas from Ministry of Environment & Climate Change Strategy.

[2] NPV in this context refers to including the entire stream of savings into the future (by measure life) and annualizing that to present time to show the total value of the stream of savings.

6.1 Please provide the % of GHG reduction savings from the 2023 program as it relates to the overall GHG reduction requirements for the BC Government by its 2030 target for buildings and provide the calculations.

Response:

The CleanBC Roadmap describes a GHG Reduction Standard (GHGRS) for buildings and industry that is anticipated to establish an approximate target of 5.5 Mt of GHG reductions by 2030 as part of the GHG emissions cap for natural gas utilities. When taking into account only those measures that will be in place in 2030, the total net annual GHG reductions from the one year 2023 DSM Plan equates to 65,634 incremental tonnes. This would be 1.2 percent of the total reduction required to achieve the emissions cap.

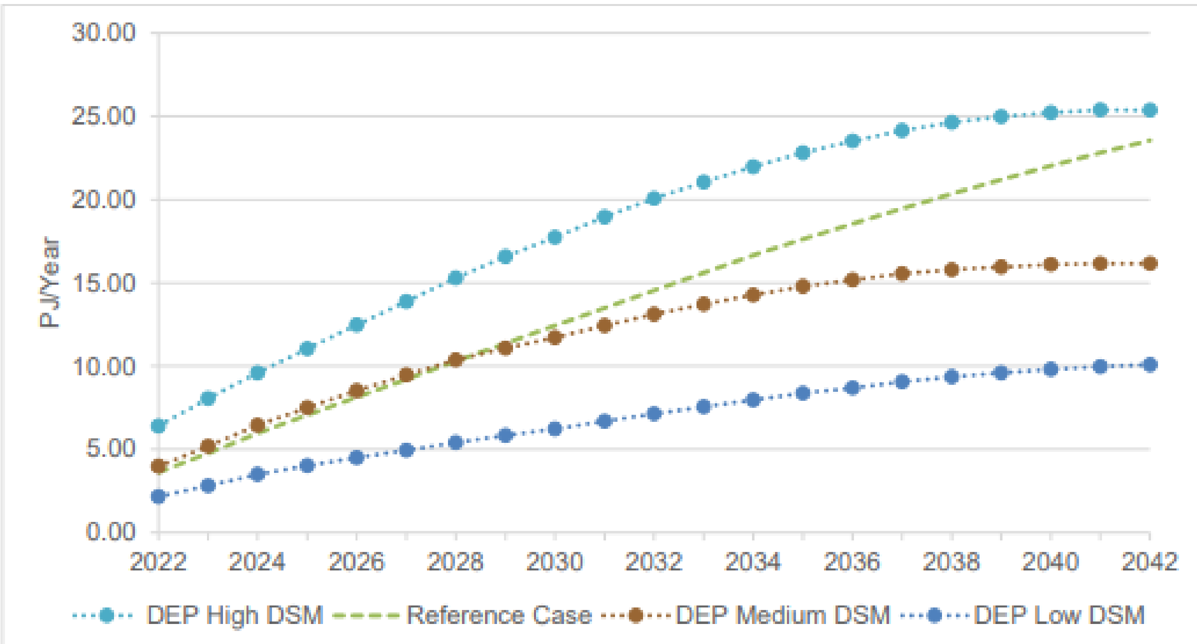
6.2 Please provide the % GHG reductions that would be needed for each of the 2024, 2025, 2026, 2027, 2028, 2029 and 2030 DSM plan years to meet the GHG emissions reduction targets for conservation and efficiency.

Response:

DSM programming beyond 2023 is not addressed in the 2023 DSM Plan. Estimates for DSM incentive expenditures and corresponding savings potential over the next 20 years is discussed in the 2022 Long Term Gas Resource Plan (LTGRP). In particular, please refer to Figure 5-3 of the 2022 LTGRP, reproduced below, which provides the estimated energy savings over time for three DSM expenditure settings under FEI's Diversified Energy (Planning) scenario which is based on FEI's Clean Growth Pathway to reach the provincial government's 2030 and 2050 carbon emission reduction targets. This figure should be read together with Section 5 of the 2022

LTGRP. Please also refer to the response to BCOAPO IR1 4.1 which explains the differences in the DSM energy savings analysis and results contained in the 2023 DSM Plan versus the 2022 LTGRP.

Figure 5-2: Diversified Energy (Planning) or DEP Scenario DSM Savings Potential – 3 DSM Settings



Please note that, until further detail is provided on the GHG emissions cap for natural gas utilities or other provincial GHG policies, there is no specific target energy savings and associated GHG reductions requirement for DSM (on its own) contained in current provincial government energy or emissions policy or regulation. FEI is pursuing a number of carbon reduction initiatives, including DSM, that will work together over the 2022 LTGRP planning horizon (20 years) through FEI's Clean Growth Pathway to meet provincial carbon emission reduction targets and standards as presented in the 2022 LTGRP. While FEI's 2022 LTGRP is planning for an increase in DSM activity and related energy savings / carbon reductions as part of its Clean Growth Pathway, it is important to note that these are estimates of DSM potential to be pursued and are not on their own regulated carbon reduction requirements for FEI's DSM activities.

6.3 Please provide the % GHG reductions which would be required for each of the same years above that would be expected to come from reductions of GHG from combustion of the gas stream supplied.

Response:

Please refer to the response to CEC IR1 6.2.

7. Reference: Exhibit B-1, Page 8 (13 pdf)

(g) to reduce BC greenhouse gas emissions (i) by 2012 and for each subsequent calendar year to at least 6% less than the level of those emissions in 2007, (ii) by 2016 and for each subsequent calendar year to at least 18% less than the level of those emissions in 2007, (iii) by 2020 and for each subsequent calendar year to at least 33% less than the level of those emissions in 2007, (iv) by 2050 and for each subsequent calendar year to at least 80% less than the level of those emissions in 2007, and (v) by such other amounts as determined under the Greenhouse Gas Reduction Targets Act;	FEI's DSM programs will result in substantial natural gas savings and commensurate reductions in greenhouse gas emissions of 82,632 annual tonnes CO2e.

7.1 Please indicate for FEI's DSM programs what percentage of the 2007 GHG emission for the building sector and the industrial sector FEI has achieved for each of the targets 2012, 2016, and 2020.

Response:

The referenced GHG reduction targets in BC Energy Objective (g) do not include sectoral targets for industry and buildings. The BC Energy Objective (g) presents GHG reduction targets for overall carbon emission reductions for BC as a whole and, as such, are not tied to a set level of required emissions reductions for any particular sector or from FEI's DSM programs. FEI is therefore unable to provide the information requested.

FEI also notes that it is seeking acceptance in this Application of a one-year 2023 DSM expenditure schedule and, as such, the contributions of FEI's past DSM programming to meeting provincial GHG targets for past years have marginal, if any, relevance to this proceeding.

7.2 Please indicate what annual levels of GHG reductions FEI would need to achieve by 2050 in order to meet the 80% reduction target and compare those levels to the 82,632 annual tonnes of CO2e GHG reductions FEI is currently claiming.

Response:

Please refer to FEI's response to RCIA IR1 4.1.

8. Reference: Exhibit B-1, Page 10 (15 pdf)

- The 2023 DSM Plan total expenditure is less than the LTGRP DSM high setting in 2023 for the following reasons:
  - The LTGRP analysis is a long-term outlook on DSM potential, using 2019 as a base year for its analysis. It does not consider program design that incorporates ramp up requirements for new measures and programs or potential ramp down of old measures.
  - The high DSM setting in the LTGRP assumed incentives covering up to 100 percent of incremental costs, or maximum market potential, in order to speed market transition and accelerate retrofits for energy and emission reductions, whereas for this transitional one-year 2023 period the DSM Plan focused more on optimizing the costs of energy savings and maintains an average incentive level which is closer to the historical benchmark of 50 percent of incremental cost for high efficiency equipment; and

8.1 Please discuss whether or not participants in the 2023 DSM Plan with 50% coverage of incremental cost would mean that these FEI customers would potentially lose out on 100% coverage of incremental cost versus waiting for another year before participating in certain specific FEI programs.

Response:

FEI notes that the 50 percent of incremental cost for high efficiency equipment cited in the preamble is representative at a portfolio level; however, individual incentives may be higher or lower. Further, incremental cost may change over time with evaluation of programs and market conditions. FEI does not anticipate doubling incentive amounts in the near future and, therefore, does not believe that 2023 participants will “lose out” on significantly larger incentives for the same measures in the near future.

Please refer to the responses to BCOAPO IR1 4.1 and 4.2 for additional details.

9. Reference: Exhibit B-1, Page 11 (16 pdf)

> A public utility's plan portfolio is adequate for the purposes of Section 44.1 (8) (c) of the UCA regarding long-term resource plans, only if the plan portfolio includes the items listed in Table 3-4, as set out in section 3 of the DSM Regulation.
>
> While the DSM Regulation adequacy requirements are applicable to long-term resource plans, since they are related to the demand-side measures, FEI addresses how the 2023 DSM Plan is compliant with each of these considerations in Table 3-4 below:

9.1 Please confirm that the DSM regulations FEI has identified and the level of FEI compliance with those regulations as identified in Table 3-4 represent a complete cost-effective compliance and would lead to meeting the BC government's overall GHG reduction targets for the areas of the BC economy FEI services.

Response:

The elements required to meet the adequacy requirements of the DSM Regulation do not show how either FEI or BC will meet the proposed overall GHG reduction targets for the areas of the BC economy FEI services. However, Section 3.1 of the Application provides a description of how the 2023 DSM Plan and FEI Clean Growth Pathways are consistent with provincial GHG reduction policies.

10. Reference: Exhibit B-1, Page 13 (18 pdf)

> FEI submits that the proposed DSM expenditures are in the interests of customers and potential customers as they encourage energy efficiency and conservation, reduce GHG emissions, are beneficial to the economy and are cost-effective. Individual customers that avail themselves of DSM measures will reduce their natural gas consumption and, all else equal, their natural gas bills.

10.1 Please provide the overall average natural gas bill reduction percentage for the participating FEI customers, which FEI would anticipate arising from the 2023 DSM plan.

Response:

FEI offers a wide variety of energy efficiency programs covering all customer sectors that may result in a wide range of natural gas savings outcomes. This range includes relatively small savings (e.g., the installation of a single faucet aerator) to relatively large savings (e.g., the overhaul of a mechanical system in a large commercial building).

Several measures in the Residential Program Area are forecast to have higher participation and represent a large percentage of program area participants, but have comparatively lower savings (e.g., appliance maintenance, windows, doors, and draft proofing under the Home Renovation Program). Other measures in the Residential Program Area have very substantial bill savings, but are forecast to have fewer participants (e.g., the New Home Program and condensing gas appliances under the Home Renovation Program). The net impact from the higher volume, lower savings measures is that the average per participant savings across the residential program area is comparatively lower, though spread over more customers.

In comparison, the Commercial Program Area is generally characterized by having fewer participants with larger savings. In particular, participants in the Performance Program – Existing Buildings and Performance Program – New Buildings may experience bill savings exceeding 30 percent, while participants in the Prescriptive Program tend to experience relatively lower bill savings. The net impact to the program area is a relatively high percentage of bill reduction experienced by fewer participants, when compared to the Residential Program Area.

In the table below FEI provides the average bill savings for residential and commercial customers participating in FEI DSM programs.

Customer Segment	Average Non-Participant Bill	Average Participant Bill	Percentage of Natural Gas Bill Reduction for Participants
Residential (including Low Income)	$1,312	$1,263	4%
Commercial (including Low Income)	$25,000	$20,404	18%

Please note that FEI has not included the Industrial Program Area in the analysis, as the sector experiences a wide range of magnitudes for energy savings and resulting natural gas bill reductions. In particular, the average natural gas usage reduction varies significantly year-to-year based on the specific projects supported and the size of their participants.

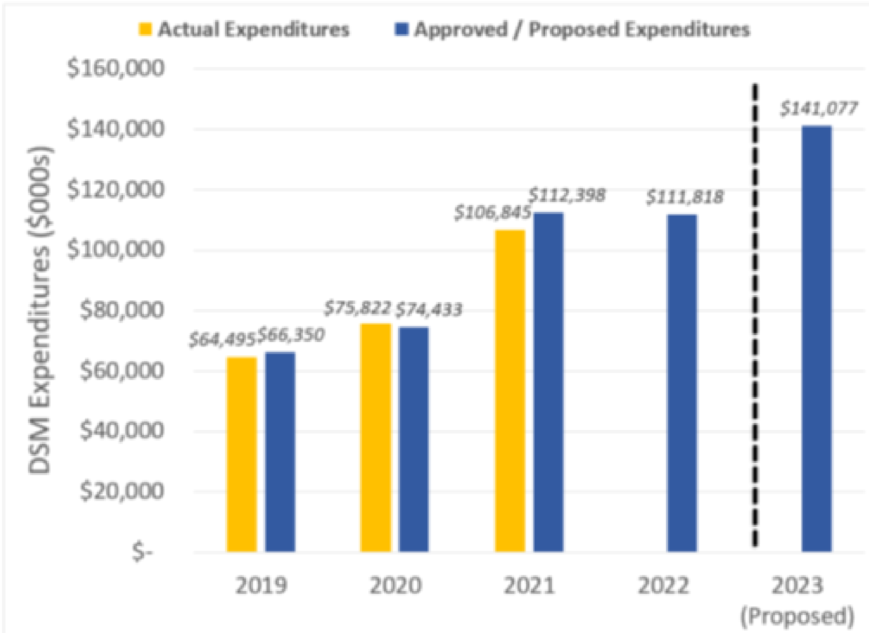
10.2 Please confirm that this level of natural gas affordability for FEI participating customers is an important factor in FEI's build up of its commitments to meeting GHG reduction targets.

Response:

FEI is strongly committed to maintaining affordability of energy services for its customers now and throughout the energy transition to a low-carbon economy. This is why FEI is pursuing a diversified energy strategy, as described in 2022 Long Term Gas Resource Plan (LTGRP), which is the more cost-effective pathway to achieving the provincial government's GHG reduction targets. Because energy efficiency is often the most cost-effective abatement option to reduce GHG emissions, FEI is continuing to prioritize investments in DSM programming that will help moderate overall bill impacts to its participating customers.

11. Reference: Exhibit B-1, Page 14 (19 pdf)

Figure 4-1: FEI Annual Total DSM Expenditures 2019 to 2022[9]



11.1 Please provide FEI's expected actual expenditures based on its best information for forecasting the end 2022 results for the 2022 DSM plan and its approved level of expenditures.

<u>Response:</u>

Based on actual expenditures to August 31, 2022, FEI is forecasting $106.5 million in DSM expenditures by year-end 2022. This represents 95 percent of the $111.8 million of approved expenditures for 2022, including carryover from 2021.

12. Reference: Exhibit B-1, Page 15 & 16

> FEI also received directional feedback from the consultations. This feedback included the following:
>
> - Continue to support Energy Advisors;
> - More education, training and resources for customers, contractors and consultants;
> - Broaden the collaboration within the value chain;
> - Energy concierge and financing support needed for deep energy retrofits;
> - Support hybrid systems and gas heat pump adoption;
> - Expand eligible measure set; and
> - Expand Indigenous specific support.

12.1 Has FEI received any consultation or feedback on the potential importance of energy supply diversity, such that over dependence on electrification does not lead to increased vulnerability and risk related to electric grid dependent electrification solutions? Please explain.

Response:

Yes, FEI has received feedback on energy supply diversity and resiliency. Though it was not a focus of the consultation conducted regarding FEI's DSM planning, FEI has received such feedback through other stakeholder engagement initiatives. For example, feedback was received through consultation in the Long Term Resource Planning session (February 2022), to which members from both the Energy Efficiency Advisory Group (EECAG) and Resource Planning Advisory Group (RPAG) were invited.

This feedback included commentary on:

- Concerns on the equity and affordability of electrification.
- Long term resiliency in energy systems needs to be adaptable.
- Challenge in financing energy transformation in the province.
- Diversifying the electricity grid through increased use of on-site renewable generation resources.
- Dependency on technological innovation to deliver cost-effective Renewable Gas.
- Resiliency in the natural gas system mitigates risk in the energy system as a whole.
- Risk and variability of energy supply.
- Making use of developed energy systems available to increase resiliency and reduce risk.

- Concern about the Province's energy systems to meet peak demand, particularly on the coldest days and considering extreme weather events.
- Provincial alignment and collaboration are needed across utilities and government.
- Use a grassroots approach for behaviour change, by involving local groups, industry, and public in order to achieve targets and transformation.
- Though studies are province wide there are regional differences. For example, northern communities have unique challenges. Smaller communities might be able to demonstrate viability of diversified pathway.
- Need to do everything, not just focus on one area, need to look at diversification.
- The range of housing and building stock can limit feasible options available to owners and operators, as such, a diversified pathway provides more flexibility and cost-effective alternative low carbon energy solutions. The relationship of owners and operators can also vary. Those that are empowered to make decisions may not be responsible for operating costs, this arrangement is most common in the non-profit sector. Long term implications on costs need to be considered when making up front planning decisions, as energy poverty can be compounded with a solely electrified path. Flexibility is needed, in particular with this segment, dual fuel systems can provide options.

Topics of energy diversity and vulnerability are key aspects of the Clean Growth Pathway. FortisBC outlines a more affordable and resilient alternative to an all-electrification pathway, one which incorporates a diversified future that ensures technology is not locked into one path.

13. Reference: Exhibit B-1, Page 17

Table 4-1: FEI DSM Expenditures - 2023 Forecast, Shown in As Spent Dollars

Program Area	Incentives	Non-Incentives	Total Expenditures
Residential	39,196	4,798	43,994
Commercial	21,442	5,128	26,570
Industrial	5,787	1,061	6,848
Low Income	10,348	2,903	13,251
Conservation Education and Outreach	-	9,713	9,713
Innovative Technologies	18,838	7,122	25,960
Enabling Activities	5,662	6,349	12,010
Portfolio Activities	-	2,730	2,730
Total ($000s)	**$101,273**	**$39,804**	**$141,077**

13.1 Please provide a comparable table to Table 4-1 above for the FEI DSM Expenditures anticipated for FEI DSM 2022.

Response:

The table below shows the incentive, non-incentive, and total FEI DSM expenditures forecast for 2022, as of August 2022.

Program Area	Incentives	Non-Incentives	Total Expenditures
Residential	40,969	2,254	43,223
Commercial	13,284	3,510	16,794
Industrial	7,022	478	7,500
Low Income	8,068	1,968	10,036
Conservation Education and Outreach	0	7,384	7,384
Innovative Technologies	3,297	6,527	9,823
Enabling Activities	5,134	4,716	9,850
Portfolio Activities	0	1,844	1,844
Total($000)	**77,774**	**28,681**	**106,455**

14. Reference: Exhibit B-1, Page 21 (26 pdf)

> FEI's proposed DSM portfolio for 2023 is cost effective, with a Portfolio (TRC/MTRC hybrid) cost effectiveness result of 1.4, based on the methodology set out in section 4 of the DSM Regulation. FEI submits that the current approach to determining the cost-effectiveness of its DSM programs is comprehensive, benefits customers and should be used for 2023. The following sections explain these cost-effectiveness tests and demonstrate that the 2023 DSM Plan meets the requirements of the DSM Regulation.

14.1 Please advise whether or not the cost-effectiveness determinations include any value for the GHG emissions reductions anticipated as a result of the DSM plans.

<u>Response:</u>

The Total Resource Cost (TRC) test is based on the *California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects* and does not include GHG emission reductions as part of the test calculation. FEI considers GHG emission reductions in the calculation of the Participant Cost Test (PCT) as it pertains to the impact of the carbon tax.

15. Reference: Exhibit B-1, Page 22 (27 pdf)

- The portfolio approach permits FEI to encourage increasing levels of efficiency in natural gas equipment. Equipment that is relatively new to the market may have a higher initial cost due to the fact that it has not yet reached economies of scale. A program based on such equipment is more likely to have low TRC and MTRC results. Although the near-term results of such a program might be unfavourable, the long-term prospects for such equipment to provide benefits to customers could be significant. The Portfolio level cost-effectiveness analysis can absorb some of these types of programs without failing the cost-effectiveness tests.

15.1 Please confirm that as FEI supports new levels of efficiency in natural gas equipment and or new levels of potential GHG reductions in use of natural gas equipment that FEI anticipates that its programs will be leading to a transition for the market in BC such that the changes would become permanent even after the DSM plan anticipated effective life.

Response:

Confirmed. One of the guiding principles of FEI's DSM programs (as set out in Section 4.3 of the Application) is to promote market transformation of natural gas energy efficiency technologies. FEI intends for the energy savings and GHG reductions to persist for at least the assumed life of the proposed measures. The measure lives proposed are typically, although not universally, longer than the period of a given DSM plan.

Please refer to the response to RCIA IR1 2.3 for how FEI considers replacements following the life of measures proposed in the 2023 DSM Plan.

15.2 Please comment on the timing for the market to take on full adoption of the new levels of natural gas equipment efficiency even after the government regulation adoption, assuming it is not instantaneous.

Response:

The timing for the market to take on full adoption of the new levels of natural gas equipment efficiency varies depending on a number of potential factors, including:

- The measure life of any existing measures;
- The capital cost of the new measures;
- The ease of replacing any existing measures;
- Supply chain considerations such as levels of existing stock in the market;

- The perceived energy and non-energy benefits of the new measures and associated confidence in their implementation; and
- The market transformation measures such as acceptance, installer training and quality assurance associated with introducing new equipment and practices to the market.

16. Reference: Exhibit B-1, Page 23 (28 pdf)

Subsections 4(1.1) and (1.5) of the DSM Regulation allow for the use of a MTRC for up to 40 percent of the natural gas DSM portfolio, excluding specified demand-side measures. FEI manages its activities to stay within this MTRC Cap, as shown in Exhibit 4 of the 2023 DSM Plan (Appendix A). The MTRC includes two additional components described below: the use of a zero-emission energy supply alternative (ZEEA) in determining avoided cost of energy for DSM, and the inclusion of non-energy benefits (NEB) to customers and the utility. At the portfolio level, the combination of the MTRC benefits for those programs that require use of the MTRC and the TRC benefits for all other programs are compared to the portfolio costs in what is referred to as the 'Portfolio' test in Table 5-1 below and in Exhibit 3 of Appendix A. A 'Portfolio' test result of one or better means that the Portfolio as a whole passes the required cost effectiveness test under the current and applied for method discussed in Section 7.1.1.

16.1 Please confirm that the MTRC approach with ZEEA & NEB rules is in effect a means of incorporating benefits that are not otherwise incorporated in the traditional TRC test, which is primarily an avoided future costs test, or otherwise explain the rationale for the MTRC.

Response:

Confirmed.

17. Reference: Exhibit B-1, Page 24 (29 pdf)

> While the TRC and mTRC continue to be the governing tests that FEI uses to determine the cost-effectiveness of its DSM Plan on a portfolio basis, the Company has also historically reported and considered a range of other industry standard cost-effectiveness tests, including the Ratepayer Impact Measure (RIM)[17], the Utility Cost Test (UCT)[18] and the Participant Cost Test (PCT)[19] applied at the program, program area, and portfolio levels. These cost-effectiveness tests are from the California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects (California Manual)[20]. **Error! Reference source not found.** shows the standard test results at the portfolio level and demonstrates that the 2023 DSM Plan is cost effective under the standard TRC test and also under the mTRC, UCT and PCT tests. Although the 2023 DSM Plan does not pass the RIM test, the BCUC may not determine that a proposed DSM measure is not cost effective based on the result of the RIM test.[21]

17.1 Please discuss whether or not this regulation against the use of the RIM test is effectively requiring the natural gas ratepayers to take on some of the burden of achieving required levels of GHG reductions.

Response:

FEI is not required to use the RIM test to comply with the cost-effectiveness requirement of the DSM Regulation. A negative portfolio RIM implies that, while some customer bills will decrease, the proposed DSM expenditure will result in an increase in customer rates. One interpretation of a negative RIM result is that all customers are paying into DSM programs, resulting in GHG reductions, where the net result for customers that do not participate in DSM programs is a bill increase, all else equal.

18. Reference: Exhibit B-1, Page 26 (31 pdf)

Appendix E contains FEI's DSM Evaluation Plan covering 2023 for its EM&V activities, including evaluations for process, impact, market analysis and communications, as well as measurement and verification activities for its current and planned DSM programs and pilots. Overall program expenditures reported in Section 5.2 include costs for EM&V activities; however, the EM&V costs are also reported in the Evaluation Plan to provide an easy-to-view summary of the evaluation expenditures together with this one-year Evaluation Plan. The total proposed expenditure for program evaluation and M&V activities to be conducted from 2023 is approximately $2.9 million or 2 percent of FEI's overall planned portfolio expenditures. This proposed budget aligns with FEI's EM&V Framework, historical evaluation expenditures, and industry general practice for budget spending on EM&V activities.

18.1 Please confirm or otherwise explain that the $2.9 million evaluation plan expenditure has a benefit of improving the overall performance of the successive DSM plans, such that the 2% has a benefit of cost-effectiveness increases in future programs.

<u>Response:</u>

FEI believes that the $2.9 million evaluation plan expenditure has a benefit of improving the overall performance of existing and proposed Conservation and Energy Management (C&EM) programs during the 2023 DSM Plan period and subsequent DSM plans. While many factors impact how the cost-effectiveness of a program changes over time, maximizing cost-effectiveness, where practicable, is one of the goals for program evaluation feedback.

18.2 Please provide FEI's best estimate of the annual improvement benefits in future DSM plans as a consequence of the $2.9 million evaluation expenditure.

<u>Response:</u>

FEI is unable to quantify the annual improvement benefits resulting from the evaluation expenditure; however, the $2.9 million expenditure (which equals 2 percent of FEI's overall planned portfolio expenditures) will enable FEI to conduct the necessary program evaluations in 2023. As program evaluations and measurement & verification (M&V) projects are conducted, FEI's program managers are provided with regular program feedback. The feedback is used to improve existing programs, support analysis to evaluate potential new programs to meet customer needs and ensure DSM programs are accessible to all customers.

19. Reference: Exhibit B-1, Page 28 (33 pdf)

> It should be noted that as with all plans, the 2023 DSM Plan is subject to change in response to changes in market conditions, customer responses to programs, input from stakeholders including program partners, and changes in government policy. FEI requires the flexibility to be able to adjust to new information, program results and opportunities through the test period without the time required for a full BCUC review.
>
> FEI agrees that the funding transfer rules established for the 2012-2013 test period and retained for the 2014-2018 and 2019-2022 periods provide some flexibility to respond to changes in the execution of its DSM programs. However, FEI is proposing some changes to the rules to overcome some of the challenges of working within the transfer rules. These proposed changes still provide the necessary boundaries to ensure that the DSM portfolio still aligns with the approved portfolio deemed to be in the public interest.

19.1 Please confirm or otherwise explain that the purpose of the FEI flexibility sought is to reduce potentially unnecessary regulatory costs or effectively increase the regulatory efficiency of DSM Plan oversight by the Commission.

<u>Response:</u>

Confirmed. The requested changes to the transfer rules are intended to reduce potentially unnecessary regulatory costs while effectively increasing the regulatory efficiency of BCUC oversight with respect to the 2023 DSM Plan. The proposed changes to the transfer rules will also allow FEI to more effectively and efficiently deliver its DSM programs in the market.

20. Reference: Exhibit B-1, Page 30 (35 pdf)

FEI is seeking approval of an allowed variance above the accepted DSM expenditure amount in the final year of a DSM expenditure schedule without prior approval from the BCUC. In the case of the 2023 DSM Plan, FEI is proposing that actual DSM expenditures may exceed 2023 accepted DSM expenditures by no more than five percent without prior approval from the BCUC. This means that FEI has additional flexibility to overspend 2023 approved expenditures by $7.1 million.

20.1 Please confirm or otherwise explain that this flexibility for expenditures to exceed an approved level is also a flexibility to outperform the potential benefits of the DSM Plan to the benefit of ratepayers, particularly participating ratepayers and to the benefit of the provincial commitments to GHG reductions in support of climate change stabilization benefits for the planet.

Response:

The proposed variance allowance rule is intended to reflect that it can be difficult to precisely meet accepted DSM expenditure amounts. As such, variances, either positive or negative, are a practical reality and the proposed variance allowance rule provides FEI flexibility to manage its DSM portfolio more effectively. Further, FEI's intention is not to outperform its 2023 DSM Plan, but rather, to ensure that FEI can continue to offer its DSM programs at year-end if market demand is somewhat higher than forecast. Nevertheless, an outcome of expenditures in excess of the approved amount can be increased benefits from GHG reductions and increased DSM incentives for FEI's customers.

21. Reference: Exhibit B-1, Page 31 (36 pdf)

> As shown in Figure 4-1, DSM expenditures have exceeded $60 million for the past three years (2019 through 2021), and FEI's expenditures are forecast to exceed $100 million for years 2022 and 2023. FEI expects that at least that level of expenditures to be maintained for the foreseeable future. Aligning the amount forecast in the rate base DSM Deferral account each year more closely with the actual expenditures reduces the financing costs added to the deferral account, and reduces overall costs to customers on the non-rate base portion of the DSM Plan expenditures. As per existing approved practice, FEI will account for the balance of spending, up to the approved FEI funding amount and greater than $60 million, in FEI's non-rate base DSM Deferral account. Consistent with approved practice, the ending balance of the non-rate base DSM Deferral account will be transferred to FEI's rate base DSM Deferral account at the beginning of the following year. FEI's rate base DSM deferral account will continue to be amortized in rates over the approved amortization period of 10 years.

21.1 Please confirm or otherwise explain that the alignment of the DSM Deferral account and the actual expenditures is a matter of fairness of return for FEI and, if not confirmed, please otherwise explain the requirement and the benefit sought.

<u>Response:</u>

Not confirmed. FEI earns a weighted average cost of capital financing return on both the rate base and non-rate base deferral account, so is not impacted by this change. The alignment of the DSM deferral account and the actual expenditures was done with the intention of ensuring fairness for the customer and reducing the overall financing costs borne by customers. Please also refer to the response to BCOAPO IR1 10.6.