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September 7, 2023

Residential Consumer Intervener Association
c/o Midgard Consulting Inc.
Suite 828 – 1130 W Pender Street
Vancouver, B.C.
V6E 4A4

Attention: Peter Helland, Director

Dear Peter Helland:

Re: FortisBC Energy Inc. (FEI)

**Application for Acceptance of Demand Side Management (DSM) Expenditures
Plan for the Period Covering 2024 to 2027 (Application)**

**Response to the Residential Consumer Intervener Association (RCIA)
Information Request (IR) No. 1**

On July 12, 2023, FEI filed the Application referenced above. In accordance with regulatory timetable established in British Columbia Utilities Commission Order G-178-23A for the review of the Application, FEI respectfully submits the attached response to RCIA IR No. 1.

For convenience and efficiency, if FEI has provided an internet address for referenced reports instead of attaching the 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 Sarah Commander, Regulatory Projects Manager, at (250) 469-6081.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Sarah Walsh

Attachments

cc (email only): Commission Secretary
Registered Parties

FortisBC Energy Inc. (FEI or the Company) 2024-2027 Demand-Side Management (DSM) Expenditures Plan Application (Application)	Submission Date: September 7, 2023
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9 **A. Legal Framework**

10 **1. Reference: Exhibit B-2 Application p.2**

11 **GHG Emissions Cap**

12 On page 2 of the Application, FEI states:

13 The Roadmap introduced the concept of “a GHG emissions cap that will require
 14 gas utilities to undertake activities and invest in technologies to further lower GHG
 15 emissions from the fossil natural gas used to heat homes and buildings and power
 16 some of our industries.”

17 1.1 Please confirm whether the BC Government has finalized the details of the GHG
 18 emissions cap for gas utilities.

19 1.1.1 If confirmed, please provide a link to the finalized regulation or standard.
 20

21 **Response:**

22 Not confirmed. The Province has not yet finalized the details of the GHG emissions cap for gas
 23 utilities.

24
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26
 27 1.2 Please explain to what extent the proposed GHG emissions cap has informed the
 28 2024-27 DSM Expenditure Plan.
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FortisBC Energy Inc. (FEI or the Company) 2024-2027 Demand-Side Management (DSM) Expenditures Plan Application (Application)	Submission Date: September 7, 2023
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1 **Response:**

2 The Province has not yet legislated the proposed GHG emissions cap on natural gas utilities
3 (Greenhouse Gas Reduction Standard or GHGRS) as included in the CleanBC Roadmap. If the
4 proposed GHGRS is ultimately implemented, FEI anticipates that additional energy efficiency
5 investment will be required in British Columbia.

6 FEI has designed the 2024-2027 DSM Plan with a focus on fostering market transformation for
7 advanced energy efficiency adoption to achieve a new phase of gas energy and associated GHG
8 savings and to improve affordability for customers. However, because the GHGRS has not yet
9 been finalized, FEI was not able to rely on that policy to inform the development of the DSM Plan.
10 Nonetheless, the level of investment and types of DSM being incentivized signal that FEI sees its
11 DSM programming as a key component of its GHG reduction strategy which will likely be
12 directionally aligned with the GHG reduction goals contemplated in the proposed GHGRS.

13

1 **2. Reference: Exhibit B-2 Application pp.21,22**

2 **BC Energy Objectives**

3 On page 21 of its Application, FEI states:

4 Pursuant to section 44.2(3) and (4), the BCUC must accept the expenditures
5 schedule if it considers the schedule to be in the public interest, or it may accept a
6 part of the schedule. In considering whether a demand-side measure expenditures
7 schedule put forward by a public utility other than BC Hydro and Power Authority
8 (BC Hydro) is in the public interest, the BCUC must consider the following criteria
9 according to section 44.2(5):

- 10 • the applicable of British Columbia’s energy objectives;

11 On page 21 of its Application, FEI states:

12 BC’s energy objectives are defined and set out in section 2 of the Clean Energy
13 Act (CEA). The applicable energy objectives and how FEI’s proposals support
14 those objectives are set out in Table 5-1 below.

15 The following is an excerpt from Table 5-1:

Table 5-1: BC’s Energy Objectives Met by FEI DSM Activity

Energy Objective	FEI DSM Portfolio
(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;	The DSM Plan programs will result in gas savings and commensurate reductions in greenhouse gas emissions of 201,087 tonnes CO ₂ e, which will contribute to the Province’s efforts to achieve its GHG reduction targets.

16
17 In the 2023 DSM Expenditures Plan proceeding, FEI stated the following in response to
18 RCIA’s IR1 4.1 request to calculate the change in emissions from 2007 levels for gas
19 supplied by FEI in 2020 and to contrast this change with Objective (g)(iii):

20 As FEI is seeking acceptance in this Application of a one-year 2023 DSM
21 expenditure schedule, and DSM is only one of FEI’s initiatives that will contribute
22 to provincial GHG emission reductions, FEI considers that the GHG reductions
23 related to the gas supplied by FEI that are necessary to meet provincial GHG
24 reduction targets for the province are well beyond the scope of this proceeding.

FortisBC Energy Inc. (FEI or the Company) 2024-2027 Demand-Side Management (DSM) Expenditures Plan Application (Application)	Submission Date: September 7, 2023
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1 The BC's Energy Objectives (g) (iii) and (iv) present a 2020 and 2050 target for
2 overall carbon emission reductions for BC as a whole and, as such, are not tied to
3 a set level of required emissions reductions related to the gas supplied by FEI,
4 either through its DSM programs alone or through all of its carbon reduction
5 initiatives. Further, emissions have increased since 2007 as a result of many
6 different carbon emitting activities in BC. To achieve the reduction targets set by
7 the provincial objectives listed above, it will take many different initiatives by many
8 different sectors of BC's economy.

9 2.1 What is the test, either quantitative or qualitative, that the BCUC should use to
10 evaluate whether FEI's 2024-2027 DSM Plan meets, or is consistent with, the BC
11 Energy Objectives (g)(iii) and (iv)?
12

13 **Response:**

14 For clarity, the requirement in the *Utilities Commission Act* is for the BCUC to consider BC's
15 energy objectives. FEI is not aware of any established test for the BCUC's consideration of BC's
16 energy objectives. However, as the 2024-2027 DSM Plan is estimated to reduce 201,087 tonnes
17 of CO₂e/yr, it clearly contributes to British Columbia meeting the GHG reduction targets described
18 in BC's energy objectives (g)(iii) and (iv).
19
20

21
22 2.2 Does FEI consider a DSM plan that has any amount of GHG reductions greater
23 than zero to meet BC Energy Objectives (g)(iii) and (iv)?

24 2.2.1 If not, please provide thresholds of GHG reductions from a DSM plan
25 that, in FEI's view, would meet BC Energy Objectives (g)(iii) and (iv),
26 explain why these are appropriate thresholds, and compare these
27 thresholds to the GHG reductions in the 2024-2027 DSM Plan.
28

29 **Response:**

30 FEI considers that any amount of incremental GHG reductions achieved through its DSM Plan is
31 supportive of BC's energy objectives. Increasing energy efficiency is one of the lowest cost
32 opportunities to avoid and reduce GHG emissions.
33

FortisBC Energy Inc. (FEI or the Company) 2024-2027 Demand-Side Management (DSM) Expenditures Plan Application (Application)	Submission Date: September 7, 2023
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1 **4. Reference: Exhibit B-2 p.31**

2 **Legacy Measures**

3 On page 31 of the Application, FEI states:

4 FEI intends to support two types of legacy expenditures:

5 a) Those for customers with written commitments from FEI made prior to
6 December 31, 2023 for class B demand-side measures.

7 b) Those for customers participating in DSM programs that do not provide
8 written commitments but meet the program terms and conditions and
9 purchase and/or install a class B demand-side measure before December
10 31, 2023.

11 4.1 Please explain how FEI will communicate to customers and contractors that FEI
12 will no longer pay incentives for conventional space and water heating after
13 December 31, 2023, so that customers are not surprised that there are no longer
14 incentives available.

15

16 **Response:**

17 FEI will communicate the program end dates for conventional space and water heating measures
18 to its customers through its planned “We’ve got rebates” advertising campaign. The campaign is
19 scheduled to run between August 28 and October 6, 2023. In addition, messaging of program
20 end dates have already been, or will be, disseminated through FEI’s social media channels, e-
21 newsletters, collateral updates, application software message alerts, blog posts, internet search
22 results and webpage updates, and emails to customers. FEI will also disseminate this information
23 through correspondence with program partners, external stakeholders, industry groups, key
24 customers, and many other groups that will be directly affected by the amended DSM Regulation.

25 Contractors (Trade Ally Network members and non-members) have been informed about the
26 program end dates via email and/or printed newsletter. FEI will also be hosting three in-person
27 Trade Ally Network events in the fall of 2023, including a session on the rebate program changes,
28 key dates and deadlines, as well as a Q&A session to answer questions from contractors. Finally,
29 FEI plans to send additional reminders to contractors before the end of the year to ensure they
30 are informed about program end dates before they end.

31

FortisBC Energy Inc. (FEI or the Company) 2024-2027 Demand-Side Management (DSM) Expenditures Plan Application (Application)	Submission Date: September 7, 2023
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1 **B. Cost-Effectiveness**

2 **5. Reference: Exhibit B-2 Application p.33, Appendix B p.1**

3 **Cost-Effectiveness Tests**

4 On page 33 of the Application, FEI states:

5 The amended DSM Regulation replaces the TRC test with the UCT for the
 6 purposes of determining whether a utility's DSM activities are cost- effective.

7 ...

8 The UCT is calculated as follows:

$$UCT = \frac{\sum_{2024}^{2027} [NPV \text{ of NG Savings Using Avoided Cost of RNG Energy \& Distribution} (\$)]}{\sum_{2024}^{2027} [Incentives + Non Incentive Costs (\$)]}$$

9

10 The first UCT formula uses the “NPV of natural gas savings using the avoided cost
 11 of RNG Energy & Distribution (\$)”, which is calculated for each year from 2024-
 12 2027 as follows:

$$NPV \text{ of NG Savings Using Avoided Cost of RNG Energy \& Distribution} (\$)$$

$$= NG \text{ Savings (GJ)} \times \text{Cumulative Cost of RNG at the Measure Lifetime} (\$)$$

13

14 5.1 Please explain what is meant by “first UCT formula”, and whether there are other
 15 UCT formulas proposed to be used by FEI.

16

17 **Response:**

18 FEI confirms there are no other UCT formulas being proposed and that the formula referenced in
 19 the preamble is the only formula being used to determine the UCT. To clarify, FEI's reference to
 20 the “first UCT formula” refers to the equation where the UCT equals the sum of avoided costs
 21 over the sum of incentives and non-incentives, instead of the equation that calculated the NPV of
 22 savings.

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1 On page 1 of Appendix B to the Application, Posterity Group provides Exhibits 1 and 2:

Exhibit 1 – Additional DSM Portfolio Cost Effectiveness

	Total
TRC	1.4
PCT	0.9
RIM	0.7

Exhibit 2 – Portfolio Cost Effectiveness by Program Area

Program Area	TRC	MTRC	PCT	RIM
Residential	1.0	-	0.8	0.7
Commercial	3.6	-	1.6	0.8
Industrial	5.7	-	1.4	0.9
Legacy Expenditures	0.5	1.5	1.1	0.1

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5.2 Please explain what avoided cost the Posterity Group uses in each of the cost-effectiveness tests shown in Exhibits 1 and 2. If different than the avoided cost prescribed by the DSM Regulation for the Utility Cost Test (the cost of RNG), please explain why a different avoided cost is used.

Response:

10 The following avoided costs are used in each of the cost-effectiveness tests in the 2023 DSM
11 Plan and 2024-2027 DSM Plan.

12 **Table 1: Cost-effectiveness Tests and Avoided Costs of Gas Used**

Cost Test	2023 DSM Plan – Avoided Cost of Gas Used	2024-2027 DSM Plan – Avoided Cost of Gas Used
Utility Cost Test (UCT)	Natural Gas	Renewable and low-carbon gas
Total Resource Cost (TRC)	Natural Gas	Renewable and low-carbon gas
Modified Total Resource Cost (mTRC)	ZEEA (\$106/MWh)	ZEEA (\$106/MWh) – for Legacy Expenditures only
Participant Cost Test (PCT)	Not applicable – PCT evaluates benefits from the perspective of the customer.	Not applicable – PCT evaluates benefits from the perspective of the customer.
Rate Impact Measure (RIM)	Natural gas	Natural gas

13 The major differences between the 2023 and 2024-2027 DSM Plans are as follows:

- 14 • The primary cost-effectiveness test changed from TRC/mTRC to UCT;
- 15 • The mTRC was eliminated as the cost-effectiveness test, except for Legacy Expenditures;

- 1 • The avoided cost of gas changed from natural gas to renewable and low-carbon gas in
 2 UCT and TRC calculation; and
- 3 • The PCT and RIM test remain unchanged.

4 Please note that the RIM scores use the avoided cost of natural gas to calculate the utility benefits
 5 of energy savings. RIM scores using the avoided cost of natural gas can be considered an
 6 evaluation of how the rates are impacted in the short-term, while RIM using the avoided cost of
 7 renewable and low-carbon gas would be considered an evaluation of how the rates may be
 8 impacted in the long-term as FEI transitions its energy supply to be predominantly renewable and
 9 low-carbon gases.

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13 5.3 Please explain whether valid comparisons can be made between the TRC, UCT,
 14 PCT, and RIM of the 2023 DSM Plan and the 2024-27 DSM Plan, on account of
 15 potentially different avoided costs.

16 5.3.1 If so, please provide a table showing the TRC, UCT, PCT, RIM, and cost
 17 of conserved energy by program area (where applicable) and for the
 18 overall portfolio for the 2021-2022 DSM Plan, the 2023 DSM Plan, and
 19 the 2024-2027 DSM Plan.

20

21 **Response:**

22 Valid comparisons can be made for the PCT and RIM between the 2023 DSM Plan and the 2024-
 23 2027 DSM Plan, as the method and avoided costs used in these cost effectiveness tests remain
 24 unchanged.

25 Valid comparisons cannot be made for the UCT and TRC between the 2024-2027 DSM Plan and
 26 previous DSM plans. The UCT and TRC in the 2024-2027 DSM Plan use the avoided cost of
 27 renewable gas to calculate benefits, whereas previous DSM plans use the avoided cost of
 28 conventional natural gas.

29 PCT, RIM, and Cost of Conserved Energy (CCE, in \$/GJ) are presented for 2021, 2022, 2023,
 30 and the proposed 2024-2027 DSM Plan in the following tables.

31

Table 1: PCT by Program Area (2021-2027)

PCT	2021	2022	2023	2024 - 2027
Residential	1.6	1.9	1.2	0.8
Commercial	2.8	3.0	2.1	1.6
Industrial	4.9	3.9	3.5	1.4
Legacy Expenditures	-	-	-	1.1
Portfolio	2.3	2.4	2.0	1.2*

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Table 2: RIM by Program Area (2021-2027)

RIM	2021	2022	2023	2024 - 2027
Residential	0.4	0.4	0.3	0.2*
Commercial	0.5	0.2	0.7	0.5*
Industrial	0.8	0.8	1.0	0.8*
Legacy Expenditures	-	-	-	0.3*
Portfolio	0.4	0.5	0.4	0.3*

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Table 3: Cost of Conserved Energy by Program Area (2021-2027)

Cost of Conserved Energy (\$/GJ)	2021	2022	2023	2024 - 2027
Residential	13.7	12.3	14.21	15.95
Commercial	4.6	6.3	4.52	7.33
Industrial	1.9	2.0	1.47	3.07
Legacy Expenditures	-	-	-	13.78
Portfolio	8.68	10.00	9.77	15.28

4 Notes to tables:

5 * *Portfolio PCT, Portfolio RIM, and Program Area RIM scores for 2024-2027 in the tables above use the*
6 *values as corrected in the Errata filed concurrently with these responses.*

7 • *Cost of Conserved Energy (CCE) is calculated by dividing the total expenditures by the lifetime gas*
8 *savings (i.e., NPV Gas Savings).*

9 • *2021 and 2022 cost effectiveness and CCE results are based on actual expenditures from the 2021*
10 *and 2022 FEI DSM Annual Reports, respectively.*

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14 5.3.1.1. Please identify the avoided cost used in each of the cost-
15 effectiveness tests.

16

17 **Response:**

18 Please refer to the response to RCIA IR1 5.2.

19

20

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22 5.3.1.2. Please explain the reasons for any significant changes in the
23 cost-effectiveness metrics between the 2023 and 2024-2027
24 DSM Plans.

25

26 **Response:**

27 Please refer to the response to RCIA IR1 5.2.

1 **6. Reference: Exhibit B-2 Application Appendix A pp.13,16, Appendix B pp.3-5**
 2 **Program Cost Effectiveness**

3 Prior to the June 2023 amendments of the DSM Regulation, the TRC and MTRC were the
 4 prescribed cost-effectiveness tests.

5 On page 13 of the 2024-2027 DSM Plan (Appendix A to the Application), Posterity Group
 6 states:

7 Compared with the previous DSM Plan, the 2024-2027 DSM Plan has the following
 8 key updates in the Residential Program Area:

- 9 • Removal of conventional high-efficiency gas equipment incentives.
- 10 • Greater focus on building envelope and whole home performance-based
 11 rebates to drive the market towards deeper energy retrofits.
- 12 • Addition of the following new measures: hybrid dual-fuel systems, high-
 13 efficiency Heat Recovery Ventilators (HRV), whole home performance, space,
 14 and water heating controls, and contractor incentives for HVAC optimization
 15 including quality installation and commissioning.

16 On page 16 of the 2024-2027 DSM Plan (Appendix A to the Application), Posterity Group
 17 states:

18 Compared to the previous DSM Plan, the 2024-2027 DSM Plan has the following
 19 key updates in the Commercial Program Area:

- 20 • New incentives and additional support for advanced DSM measures such as
 21 hybrid dual-fuel systems and gas heat pumps, as well as a performance
 22 pathway to enable building envelope and whole building performance- based
 23 programming to drive the market towards deeper energy retrofits.

24 Posterity Group’s Additional Cost Effectiveness Results, Measure Details and Sources
 25 report (Appendix B to the Application) shows the individual Residential measures in Exhibit
 26 4, an excerpt of which is provided below:

Measure	Incremental Cost (\$)	Incentive (\$)	Contractor Incentive (\$)	Annual Gas Savings (GJ)	Annual Elec. Savings (kWh)	Measure Lifetime (Years)	Free Rider Rate (%)	Spillover Rate (%)
High Efficiency Heat Recovery Ventilator	\$1,600	\$1,600	\$50	10.3	-	14	-	-
Whole Home Performance	\$17,728	\$15,552	-	32.8	-	30	-	-
HVAC Optimization – Contractor Rebate	\$859	\$130	-	1.0	-	18	-	-
Whole Home Performance Support	-	\$7,000	-	-	-	-	-	-
Space and Water Heating Controls	\$248	\$123	-	2.6	186	13	23%	-
Weighted Average Per Participant	\$602	\$296	\$7	1.6	41	8	12%	-

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6.3 Please identify which measure or measures will help drive the market towards “deeper energy retrofits”.

Response:

The pathway to deeper retrofits may require different approaches for each customer and home. FEI considers that the proposed suite of measures targeting whole home improvements including insulation, windows and doors, air sealing, high-efficiency mechanical systems, and whole home performance offered under the Home Renovation Rebate Program will help drive the market towards deeper retrofits.

FEI provides an overview of the proposed new measures in the Residential Program Area intended to enable deeper retrofits in Table 1 below.

Table 1: Proposed Residential Measures to Drive Market Transformation

Measure	Details
Whole Home Performance	Encourages customers to work with an Energy Advisor and take a house-as-a-system approach to retrofits by offering incentives based on the overall improvement in home performance resulting from upgrades to existing residential homes, such as improvements to the building envelope. This may include a combination of upgrades such as insulation, windows, and doors as well as air sealing.
Whole Home Performance Support	This measure is a top-up to the Whole Home Performance measure and will provide incentives for customers to work with building envelope and mechanical design specialists to achieve greater improvements in home performance and ensure that deeper energy retrofits are implemented with good building science and house-as-a-system principals in mind.
High-efficiency Heat Recovery Ventilators (HRV)	HRV’s enable customers to undertake deeper building envelope upgrades and increase overall air tightness beyond what is possible without mechanical ventilation.
Dual-fuel hybrid heating	Dual-fuel hybrid heating systems achieve greater efficiencies and GHG reduction than conventional equipment.

1 **Response:**

2 Under the amended DSM Regulation, the Low Income and Indigenous Program Areas must be
 3 evaluated at the portfolio level as part of Class A DSM, formerly referred to as Specified DSM.
 4 Individual programs and measures under these areas do not need to be cost effective. The
 5 requested cost effectiveness test results are provided in Table 1 below.

6 **Table 1: Cost Effectiveness Test Results for Low Income and Indigenous Measures**

Program Area	Measure	UCT	TRC ²	PCT	RIM
Low Income	Energy Savings Kit (ESK)	11.5	11.5	3.9	0.7
Low Income	Re-engagement Kit	0.4	0.4	1.1	0.1
Low Income	Energy Conservation Assistance Program (ECAP)	1.5	1.5	1.4	0.2
Low Income	Residential - Communicating Thermostat	3.2	2.8	1.7	0.2
Low Income	Residential - Condensing Tankless Water Heater	2.3	2.1	1.4	0.3
Low Income	Residential - Condensing Storage Tank Water Heater	1.4	2.3	2.2	0.2
Low Income	Residential - Bonus Offers	0.0	0.0	N/A	0.0
Low Income	Residential - Attic Insulation	6.1	5.5	2.3	0.5
Low Income	Residential - Wall Insulation	8.9	6.6	2.4	0.6
Low Income	Residential - Ventilation	0.0	0.0	N/A	0.0
Low Income	Residential - Crawlspace and Basement Insulation	2.3	5.1	3.8	0.3
Low Income	Residential - Other Insulation	4.6	4.7	2.2	0.4
Low Income	Residential - Appliance Maintenance	0.0	0.0	N/A	0.0
Low Income	Commercial - Non-profit bundled measures	2.2	1.2	0.8	0.3
Low Income	Commercial - Gas Heat Pump	2.7	2.5	1.3	0.3
Low Income	Residential - High Performance Windows and Doors	0.5	0.3	0.6	0.0
Low Income	Residential - HVAC Optimization [Contractor Rebate]	2.2	0.6	0.3	0.1
Low Income	Residential - Hybrid (Dual-Fuel) Systems	0.9	1.4	1.8	0.1
Low Income	Commercial - Condensing Boiler Heating Plant Optimization	8.3	13.0	3.9	0.7
Low Income	Commercial - Domestic Water Heater System Optimization	2.1	16.2	11.2	0.3
Low Income	Commercial - Hybrid Systems	3.4	3.4	1.7	0.4
Low Income	Commercial - Connected Thermostats	4.9	5.6	3.4	0.3
Low Income	Residential Energy Efficiency Works (REnEW)	0.0	0.0	N/A	0.0
Low Income	New Construction Project Support	0.0	0.0	N/A	0.0
Indigenous	Energy Conservation Assistance Program (ECAP) - NEW	1.3	1.3	1.3	0.2
Indigenous	Residential - Communicating Thermostat	4.4	3.6	1.7	0.4
Indigenous	Residential - Condensing Tankless Water Heater	2.4	2.2	1.4	0.3
Indigenous	Residential - Two Upgrade Bonus	0.0	0.0	N/A	0.0

² TRC cost effectiveness calculation, in line with the TRC of other programs, program areas, and portfolio, uses the avoided cost of RNG to calculate savings benefits. It does not include any low income adders or factors previously included in the modified TRC (mTRC).

Program Area	Measure	UCT	TRC ²	PCT	RIM
Indigenous	Residential - Attic Insulation	4.3	5.8	2.8	0.4
Indigenous	Residential - Wall Insulation	9.1	6.8	2.4	0.6
Indigenous	Residential - Ventilation (including HRV)	0.0	0.0	N/A	0.0
Indigenous	Residential - Crawlspace and Basement Insulation	2.4	5.5	3.8	0.3
Indigenous	Residential - Other Insulation	3.9	5.0	2.5	0.4
Indigenous	Residential - Appliance Maintenance	0.0	0.0	N/A	0.0
Indigenous	Commercial - Gas Heat Pump	7.9	2.9	0.9	0.7
Indigenous	Energy Evaluations	0.0	0.0	1.0	0.0
Indigenous	Health & Safety	0.0	0.0	N/A	0.0
Indigenous	Residential - High Performance Windows and Doors	0.8	0.4	0.5	0.1
Indigenous	Residential - Quality Installation [Contractor Rebate]	1.3	17.7	N/A	0.2
Indigenous	Deep Retrofit Lite / Whole Home Performance (20-40% reduction)	3.2	2.2	1.2	0.4
Indigenous	Residential - Hybrid (Dual-Fuel) Systems	0.8	1.0	1.5	0.1
Indigenous	Commercial - Condensing Boiler Heating Plant Optimization	41.5	28.9	3.0	0.9
Indigenous	Commercial - Domestic Water Heater System Optimization	37.0	28.1	3.6	0.9
Indigenous	Commercial - Hybrid Systems	30.5	9.5	1.0	0.8
Indigenous	Commercial - Connected Thermostats	20.9	25.4	3.4	0.6
Indigenous	Bundled residential new home measures	0.0	0.0	N/A	0.0
Indigenous	Commercial - Non-profit New Construction Bonus (Part 3/9)	0.0	0.0	N/A	0.0
Indigenous	Residential - Non-profit New Construction Bonus (Part 9)	0.0	0.0	N/A	0.0
Indigenous	Commercial SEM	9.3	10.7	3.5	0.5
Indigenous	Step 4 detached home - hybrid	2.0	0.7	0.8	0.2
Indigenous	Step 4 row home - hybrid	1.5	0.6	0.9	0.2
Indigenous	Step 5 detached home - hybrid	1.6	0.5	0.6	0.2
Indigenous	Step 5 row home - hybrid	1.2	0.5	0.7	0.2

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Avoided costs used in each test:

- **UCT:** renewable gas;
- **TRC:** renewable gas;
- **PCT:** Not applicable – PCT uses customer retail costs and incentives to calculate benefits; and
- **RIM:** conventional gas.

1 6.6 Please provide the UCT, TRC, MTRC, PCT, and RIM for each of the Residential,
2 Commercial, Low Income, and Indigenous Legacy Expenditures measures, and
3 specify the avoided cost used in each test.
4
5

6 **Response:**

7 The requested cost effectiveness scores are provided in Table 1 below.

8 **Table 1: Cost-effectiveness Test Results for Legacy Expenditures**

Program	Measures	UCT	TRC	MTRC	PCT	RIM
Legacy - Residential	Furnace (Home Reno)	3.6	0.3	1.1	0.8	0.4
Legacy - Residential	Boiler (Home Reno)	2.9	0.2	0.7	0.5	0.3
Legacy - Residential	EnerChoice fireplace (Home Reno)	6.3	2.9	11.9	8.7	0.4
Legacy - Residential	Condensing storage tank water heater (Home Reno)	3.3	0.3	1.4	1.1	0.3
Legacy - Residential	Condensing tankless water heater (Home Reno)	5.5	0.3	1.2	0.8	0.4
Legacy - Residential	Combination system (Home Reno)	2.2	0.1	0.6	0.7	0.2
Legacy - Residential	STEP 2 (Single Family Dwelling) (New Home)	1.4	0.3	1.0	1.6	0.2
Legacy - Residential	STEP 2 (Townhome/Rowhome) (New Home)	2.2	0.2	0.8	1.0	0.2
Legacy - Residential	STEP 3 (Single Family Dwelling) (New Home)	2.2	0.3	1.1	1.3	0.3
Legacy - Residential	STEP 3 (Townhome/Rowhome) (New Home)	2.6	0.2	0.9	1.0	0.3
Legacy - Residential	STEP 4 (Single Family Dwelling) (New Home)	2.8	0.3	1.1	1.1	0.3
Legacy - Residential	STEP 4 (Townhome/Rowhome) (New Home)	2.2	0.3	1.0	1.2	0.3
Legacy - Residential	STEP 5 (Single Family Dwelling) (New Home)	3.4	0.3	1.2	1.1	0.4
Legacy - Residential	STEP 5 (Townhome/Rowhome) (New Home)	2.6	0.3	1.2	1.3	0.3
Legacy - Residential	Condensing Storage Tank Water Heater (New Home)	3.4	0.4	1.6	1.2	0.3
Legacy - Residential	Condensing Tankless Water heater (New Home)	5.7	0.5	2.2	1.5	0.4
Legacy - Residential	EnerChoice Fireplace (New Home)	3.0	2.0	8.1	7.9	0.3
Legacy - Residential	Combination Systems (New Home)	2.0	0.1	0.5	0.6	0.2
Legacy - Commercial	Condensing Volume boiler (Commercial Prescriptive)	21.3	0.7	2.8	1.0	0.6
Legacy - Commercial	Condensing tankless water heater (Commercial Prescriptive)	40.9	1.5	5.9	2.6	0.4
Legacy - Commercial	Furnace replacement (Std & Mid) (Commercial Prescriptive)	4.9	0.4	1.7	0.9	0.1
Legacy - Commercial	Condensing Unit Heaters (Commercial Prescriptive)	67.4	8.1	32.9	8.6	0.7
Legacy - Commercial	Condensing make up air unit (Commercial Prescriptive)	22.7	3.3	11.6	3.7	0.6
Legacy - Commercial	Studies - Retrofit (Commercial Retrofit)	N/A	N/A	0.0	0.8	N/A
Legacy - Commercial	Capital Upgrades - Retrofit (Commercial Retrofit)	3.7	0.6	2.1	1.3	0.4
Legacy - Commercial	Step Code - Whole Building (Commercial NC)	1.4	0.7	1.2	0.8	0.2

Program	Measures	UCT	TRC	MTRC	PCT	RIM
Legacy - Commercial	Non Step Code - Whole Building (Commercial NC)	1.4	0.7	1.2	0.8	0.2
Legacy - Low Income	LI - Residential - Furnace (LI Prescriptive)	1.0	0.2	0.9	1.6	0.1
Legacy - Low Income	LI - Residential - Boiler (LI Prescriptive)	1.6	0.2	0.7	0.9	0.2
Legacy - Low Income	LI - Commercial – Condensing Volume Boiler (LI Prescriptive)	13.6	2.2	8.5	3.2	0.8
Legacy - Low Income	LI - Commercial – Condensing Tankless Water Heater (LI Prescriptive)	5.9	1.4	5.7	2.8	0.6
Legacy - Low Income	LI - Commercial - Furnace (LI Prescriptive)	1.6	0.3	1.4	1.6	0.2
Legacy - Low Income	LI - Energy Conservation Assistance Program (ECAP) (LI Direct Install)	0.3	0.0	0.2	1.0	0.0
Legacy - Low Income	LI - Commercial - Non-profit bundled measures (LI Prescriptive)	12.1	0.9	3.4	1.3	0.8
Legacy - Indigenous	LI - Furnace (Indigenous Prescriptive)	0.8	0.2	0.9	1.9	0.1
Legacy - Indigenous	LI - Boiler (Indigenous Prescriptive)	1.6	0.2	0.7	0.8	0.2
Legacy - Indigenous	LI - Commercial - Non-profit bundled measures (Indigenous Prescriptive)	2.3	0.2	0.8	0.7	0.3
Legacy - Indigenous	LI - Commercial – Condensing Tankless Water Heater (Indigenous Prescriptive)	5.9	1.4	5.7	2.8	0.5
Legacy - Indigenous	LI - EnerChoice Fireplace (Indigenous Prescriptive)	12.1	4.8	19.5	7.0	0.4
Legacy - Indigenous	LI - STEP 2 (Single Family Dwelling) (Indigenous Performance)	1.7	0.4	1.6	2.0	0.2
Legacy - Indigenous	LI - STEP 2 (Townhome/Rowhome) (Indigenous Performance)	1.9	0.2	0.9	1.1	0.2
Legacy - Indigenous	LI - STEP 3 (Single Family Dwelling) (Indigenous Performance)	2.0	0.3	1.3	1.4	0.2
Legacy - Indigenous	LI - STEP 3 (Townhome/Rowhome) (Indigenous Performance)	3.3	0.4	1.5	1.1	0.3
Legacy - Indigenous	LI - STEP 4 (Single Family Dwelling) (Indigenous Performance)	1.7	0.2	0.9	1.1	0.2
Legacy - Indigenous	LI - STEP 4 (Townhome/Rowhome) (Indigenous Performance)	4.3	0.7	2.7	1.8	0.3

1
2 AVOIDED COSTS USED IN EACH TEST:

- 3 • **UCT:** renewable gas;
4 • **TRC:** conventional gas;
5 • **MTRC:** ZEEA (\$106/MWh);
6 • **PCT:** Not applicable – PCT uses customer retail costs and incentives to calculate benefits;
7 and
8 • **RIM:** conventional gas.

9

1 **7. Reference: Exhibit B-2 Application p.33; FEI 2023 DSM Expenditures Plan**
 2 **Exhibit B-1 p.25**

3 **Changes in Portfolio Cost Effectiveness from 2023**

4 On page 25 of Exhibit B-1 of the 2023 DSM Expenditures Plan proceeding, FEI provided
 5 Table 5-1:

Table 5-1: 2023 DSM Plan Portfolio Level Cost Effectiveness Results – All Tests

	TRC	Portfolio	UCT	PCT	RIM
Total Portfolio	0.7	1.4	0.7	2.0	0.4

Note to Table: The cost effectiveness test result called 'Portfolio' in this Table reflects the use of the modified total resource cost test (MTRC) for up to 40 percent of the portfolio per the DSM regulation as explained in Section 7.1.3 below.

6
 7 On page 33 of the Application, FEI states:

8 FEI's proposed DSM portfolio for 2024-2027 is cost effective, with a portfolio UCT
 9 cost-effectiveness result of 2.1 based on the methodology set out in section 4 of
 10 the DSM Regulation.

11 7.1 Explain the factors that result in the 2023 DSM Plan UCT increasing from 0.7 to
 12 the 2024-2027 DSM Plan Utility Cost Test of 2.1.

13
 14 **Response:**

15 The primary factor influencing the UCT increase from 0.7 to 2.1 is the avoided costs used to
 16 calculate the energy savings benefits in the UCT cost effectiveness test.

17 The 2023 DSM Plan used the avoided cost of conventional gas. As per the amended DSM
 18 Regulation, the 2024-2027 DSM Plan uses the avoided cost of renewable and low carbon gas
 19 (which is higher than that of the avoided cost of conventional gas).

20
 21
 22
 23 7.1.1 Please break down the factors showing each factor's contribution to the
 24 improved UCT.

25
 26 **Response:**

27 The UCT is a benefits / cost cost-effectiveness test that, for the DSM Plan and per the amended
 28 DSM Regulation, is calculated using the following formula:

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$$UCT = \frac{\sum_{2024}^{2027} [NPV \text{ of NG Savings Using Avoided Cost of RNG Energy \& Distribution} (\$)]}{\sum_{2024}^{2027} [Incentives + Non Incentive Costs (\$)]}$$

1
2 In the 2023 and earlier DSM plans, UCT was calculated using the same formula – except the
3 avoided cost of conventional gas was used instead of the avoided cost of renewable and low-
4 carbon gases.

5 In the 2024-2027 DSM Plan, for the same amount of gas savings, the benefits calculated using
6 the avoided cost of renewable energy are approximately 3-5 times higher than benefits using
7 avoided cost of conventional gas, depending on the life of the measure. Thus, using the avoided
8 cost of renewable and low-carbon gases in lieu of the avoided cost of conventional gas improves
9 the UCT by a similar factor.

10

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1 the overall bill impacts resulting from the DSM Plan activities. While there is no threshold that FEI
2 sets, the impact of the DSM Plan on rates is considered and provided for review by the BCUC as
3 part of the proposed DSM Plan. Please refer to the response to BCOAPO IR1 13.2 for the
4 incremental rate impact due to the proposed 2024-2027 DSM Plan.

5
6

7

8 8.2 Please explain what avoided cost is used in the RIM calculation.

9

10 **Response:**

11 The RIM test uses the avoided cost of conventional gas. Please also refer to the response to
12 BCUC IR1 14.3 for additional details on the RIM calculation.

13

14

15

16 8.3 Please confirm whether FEI could have constructed a DSM portfolio that meets
17 the requirements of the DSM Regulation, but with a higher RIM.

18 8.3.1 If confirmed, please explain why FEI ultimately selected the portfolio
19 proposed in this proceeding.

20

21 **Response:**

22 Confirmed. The amended DSM Regulation does not stipulate how much FEI should spend on
23 DSM, but rather, establishes minimum requirements for programming and how to evaluate cost-
24 effectiveness. A DSM plan with a higher (though still likely less than 1.0) RIM could potentially be
25 in alignment with the amended DSM Regulation, by including fewer measures and lesser
26 incentives, but would result in less market transformation. Such a DSM plan, while technically
27 meeting the requirements of the amended DSM Regulation, would require the BCUC to ignore
28 stakeholder feedback, alignment with BC climate policies, and alignment with the LTGRP.

29 FEI developed the 2024-2027 DSM Plan portfolio using a bottom-up approach reflecting program
30 design, stakeholder feedback, alignment with the LTGRP, and FEI's DSM Guiding Principles in
31 Section 4.4 of the Application, discussed further in the response to BCOAPO IR1 2.5. FEI selected
32 the DSM Plan portfolio because it believes it better meets market transformation objectives than
33 a plan that may ignore these elements. Assessment at the portfolio level allows for a more
34 equitable balance of expenditures and savings across sectors and enabling activities. The
35 continued use of the portfolio approach will provide flexibility for FEI to implement programs that
36 meet customer needs.

37

38

1
2 On page 21 of the Application, FEI states:

3 In considering whether a demand-side measure expenditure schedule put forward
4 by a public utility other than BC Hydro and Power Authority (BC Hydro) is in the
5 public interest, the BCUC must consider the following criteria according to section
6 44.2(5):

7 ...

- 8 • the interests of persons in British Columbia who receive or may receive service
9 from the public utility.”

10 8.4 Please identify the items considered by FEI when it considers the interests of non-
11 participant customers, and explain how FEI addresses their interests.

12
13 **Response:**

14 Please refer to the response to BCUC IR1 7.2 for details on how non-participating ratepayers
15 receive value for funding the cost of DSM programs. Please also refer to the response to RCIA
16 IR1 8.1 for additional context regarding the consideration of non-participants with respect to RIM.

17
18

19
20 8.5 Please explain the steps FEI takes to ensure or encourage low income customers
21 become participants in the DSM programs.

22
23 **Response:**

24 FEI focuses on both program design and promotion to encourage Low Income customers to
25 participate in DSM programs. The list below provides additional details about both components.

26 **Table 1: Elements of Program Design and Promotion**

Program Design Elements	Program Promotion Elements
<ul style="list-style-type: none"> • Partnering with BC Hydro and FBC, where applicable, to extend program reach throughout the province and provide customers with fuel agnostic programming. • Offering diverse programs with varying levels of incentives, including programs that are completely free. • Removing barriers to participation, such as allowing income self-declaration and providing a direct install option for customers who do 	<ul style="list-style-type: none"> • Deploying diverse marketing initiatives, such as digital advertising, direct mail campaigns, and bill inserts. This includes supporting in-language messaging. • Participating in community events and having a presence in places such as food banks and community centers. • Working with trusted allies such as community social service organizations and housing providers.

Program Design Elements	Program Promotion Elements
<p>not have the expertise and/or physical capability to install measures themselves.</p> <ul style="list-style-type: none"> Leveraging customer satisfaction surveys to continually make program enhancements based on customer feedback. 	<ul style="list-style-type: none"> Collaborating with FEI funded Commercial Energy Specialists and Climate Action Partners to promote programs through various channels. This includes working closely with individuals at BC Non-profit Housing Association, BC Housing, and the Aboriginal Housing Management Association.

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8.6 Please confirm whether FEI has demographic data indicating the number of low income customers and the proportion that have participated in DSM programs.

8.6.1 If confirmed, please provide a summary of the data, indicating the proportions of low income customers that participate in the various DSM programs or measures.

8.6.1.1. If not confirmed, please explain the steps FEI is taking to obtain these data.

Response:

FEI does not know the exact number of residential customers who qualify as “low income” based on the definition provided in the amended DSM Regulation. FEI does not request or collect income-related information from customers for the purposes of establishing or maintaining an account.

However, in order to be responsive, FEI serves approximately 976 thousand residential customers.³ According to Statistics Canada, the prevalence of low income individuals in all age groups in British Columbia is approximately 14 percent, which equates to approximately 137 thousand customers, based on low-income cut-offs (LICO), before tax.⁴ According to the amended DSM Regulation, low income customers are based on LICO, before tax, multiplied by a factor of 1.6. FEI does not have data on how many customers would be included within the LICO multiplied by a factor of 1.6 group, but assumes it to be higher than 137 thousand customers.

Over the last number of years, FEI has taken steps to gain insights about customers who participate in Low Income programs. This includes a segmentation study completed in 2018 and conducting ongoing customer satisfaction surveys for the Direct Install Program. Through this work, FEI has learned geographic, demographic, psychographic, and behavioral insights to aid program design and promotion.

³ Total residential customers as of the end of 2022.

⁴ Statistics Canada. [Table 98-10-0102-01 Low-income status by age, gender and year: Canada, provinces and territories, census metropolitan areas and census agglomerations with parts.](#)

1 In the table below, FEI provides an overview of residential low income participants in the Low
 2 Income Program Area as a percentage of FEI’s residential customer base. FEI notes the following
 3 considerations:

- 4 • Some programs report participation at the measure level while others, such as the Direct
 5 Install Program, report participation at the individual level which may include multiple
 6 measures;
- 7 • Some individuals participate in multiple programs and as such may be double counted;
- 8 • Some programs benefit residential low income individuals indirectly and are not counted
 9 in the below, such as offers for charities and housing providers; and
- 10 • An individual’s income may not be static, as such they may be considered low income one
 11 year but not the next.

12 **Table 1: Residential Low Income Participants in Low Income Program Area**

	2023 Forecast	2024 Plan	2025 Plan	2026 Plan	2027 Plan	2024-27 Plan
Low Income Program Area Participants	17,770 ¹	19,960	20,585	21,445	22,515	84,505
FEI Residential Customers ²	976,170					
Participants as a percent of FEI Residential Customers	2%	2%	2%	2%	2%	9%
Estimated FEI Residential Low Income Customers ³	136,664					
Participants as a percent of Estimated FEI Residential Low Income Customers	13%	15%	15%	16%	16%	62%

13 Notes to Table:

14 ¹ Reporting for 2023 follows the approved FEI 2023 DSM Expenditures Plan and includes Low Income
 15 and Indigenous programming.

16 ² Total residential customers as of the end of 2022.

17 ³ Assuming 14 percent of FEI’s residential customer base is considered low income.
 18

1 **9. Reference: Exhibit B-2 Application p.33**
 2 **Impacts of DSM on Rates**

3 On page 33 of the Application, FEI states:

4 FEI's proposed DSM portfolio for 2024-2027 is cost effective, with a portfolio UCT
 5 cost-effectiveness result of 2.1 based on the methodology set out in section 4 of
 6 the DSM Regulation.

7 9.1 Please provide the proposed delivery rate impacts to residential customers for
 8 each year resulting from approval and implementation of the 2024-27 DSM Plan.
 9

10 **Response:**

11 Please refer to the response to BCOAPO IR1 13.3.
 12
 13

14
 15 9.2 Please provide the expected total annual bill savings that residential customers will
 16 realize if they implement the measures in the 2024-27 DSM Plan as forecasted.
 17 Provide on both an incremental and a cumulative basis each year.
 18

19 **Response:**

20 Please refer to the tables below for the expected total residential gas bill savings and expected
 21 total utility bill savings (including impacts to electricity consumption) on both an incremental and
 22 cumulative basis.

23 Please note that FEI estimates annual bill savings using current utility and carbon tax rates. In
 24 addition, total bill savings will be impacted by rate changes and updates to assumed energy
 25 savings determined through program evaluation throughout the Plan period.

26 **Table 1: Total Gas Bill Savings for the DSM Plan**

Savings	Total Gas Bill Savings (\$000s) ¹			
	2024	2025	2026	2027
Incremental	\$2,504	\$2,862	\$3,308	\$3,742
Cumulative	\$2,504	\$5,367	\$8,674	\$12,416

27

28 **Table 2: Total Utility Bill Savings for the DSM Plan**

Savings	Total Utility Bill Savings (\$000s) ^{1,2,3,4}			
	2024	2025	2026	2027
Incremental	\$2,442	\$2,687	\$2,971	\$3,225
Cumulative	\$2,442	\$5,130	\$8,101	\$11,326

1 Notes to Tables:

2 ¹ Gas bill savings assumes \$10.23 per GJ based on current FEI rates, and the current Carbon Tax rate
 3 schedule up to April 1st 2026 that is available online at [https://www2.gov.bc.ca/gov/content/taxes/sales-](https://www2.gov.bc.ca/gov/content/taxes/sales-taxes/motor-fuel-carbon-tax/publications/carbon-tax-rates-by-fuel-type)
 4 [taxes/motor-fuel-carbon-tax/publications/carbon-tax-rates-by-fuel-type](https://www2.gov.bc.ca/gov/content/taxes/sales-taxes/motor-fuel-carbon-tax/publications/carbon-tax-rates-by-fuel-type).

5 ² Estimates the impact on gas and electric bills.

6 ³ Assumes an electricity billing rate of \$0.14 per kWh, based on BC Hydro’s current Tier 2 electricity rate.

7 ⁴ FEI does not assume and allocate electricity savings associated with building envelope measures at this
 8 time. Inclusion of these savings would likely further increase total utility bill savings.

9

10

11

12 9.3 Please provide the incremental revenue requirement that will be allocated to
 13 residential customers each year, as well as the cumulative increase in revenue
 14 requirement, assuming the 2024-27 DSM Plan is implemented as forecasted.

15

16 **Response:**

17 Please refer to the response to BCOAPO IR1 13.3.

18

19

20

21 9.4 For each year of the Plan period, please provide the average annual per- customer
 22 bill savings for residential participants according to the participation forecasts in
 23 the 2024-27 DSM Plan

24

25 **Response:**

26 Please refer to the table below for the expected average annual bill savings per customer. The
 27 relatively low average bill savings reflect the high number of participants for low-cost, lower
 28 savings measures such as appliance maintenance, showerheads, and aerators as compared to
 29 lower number of participants for higher-cost, high savings measures such as dual fuel hybrids
 30 and whole home performance measures.

31 **Table 1: Average Annual Bill Savings per Customer**

Average Annual Billing Savings Per Customer ^{1,2,3}				
Year	2024	2025	2026	2027
Average gas bill savings per customer	\$27.5	\$30.1	\$33.4	\$36.1
Average utility ⁴ bill savings per customer	\$26.8	\$28.2	\$30.0	\$31.1

32 Notes to Table:

33 ¹ Assumes \$10.23 per GJ based on current FEI rates, and the current Carbon Tax rate schedule up to
 34 April 1st 2026 that is available online at <https://www2.gov.bc.ca/gov/content/taxes/sales-taxes/motor->

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1 [fuel-carbon-tax/publications/carbon-tax-rates-by-fuel-type.](#)

2 ² *Assumes a rate of \$0.14 per kWh, based on BC Hydro's current Tier 2 electricity rate.*

3 ³ *Accounts for approximately 20% of customers implementing multiple measures.*

4 ⁴ *Estimates the impact on gas and electric bills.*

5

6

7

8 9.5 For each year of the Plan period, please provide the per-customer additional
9 annual bill impact for non-participants (i.e. those residential customers that do not
10 participate in any DSM program in 2024 to 2027).

11

12 **Response:**

13 Please refer to the response to BCOAPO IR1 13.3.

14

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1 **C. Additional Approvals**

2 **10. Reference: Exhibit B-2 Application p.39**

3 **Funding Carryover and Funding Transfers**

4 On page 39 of its Application, FEI states:

5 FEI is requesting to continue the funding carryover rules that were previously
6 approved as part of its 2019-2022 DSM Expenditure Plan for its 2024-2027 DSM
7 Plan, with one proposed change. FEI is requesting to be permitted to carryover
8 overspent (or negative amounts) into the following year. For clarity, FEI would be
9 permitted to carryover unspent and overspent expenditures in a program area to
10 the same program area in the following year. In effect, FEI is requesting that the
11 BCUC accept the total expenditures per program area over the time period of the
12 expenditures schedule.

13 On page 39 of its Application, FEI states:

14 As part of the DSM Plan, FEI is proposing to continue the funding transfer rules,
15 as approved by the BCUC in its Decision and Order G-45-23. These rules will
16 continue to provide FEI with flexibility to manage its DSM portfolio more effectively.
17 In summary, FEI is requesting that the following funding transfer rules be in place
18 for its 2024-27 DSM Plan:

19 In cases where a proposed transfer out of an approved program area is
20 greater than twenty five percent of that program area's accepted expenditures
21 for the year in question, BCUC approval is required.

22 10.1 Please explain whether there are any restrictions on FEI carrying over unspent or
23 overspent funds from one year to the next within a DSM Expenditure Plan period.
24 Are these funds required to remain in the same program or program area?
25

26 **Response:**

27 There are no restrictions on the amount of unspent or overspent funds FEI can carry over from
28 one year to the next; however, consistent with the funding carryover rules, those funds must be
29 carried over to the same program area in the next year. For reference, the requested carryover
30 rule, as set out in the Application (page 40), is as follows (emphasis added):

31 *FEI is permitted to carryover unspent and overspent expenditures in a Program*
32 *Area to the same Program Area in the following year.*

33
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35

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1 10.2 Please explain whether FEI can carry over unspent or overspent funds to the next
2 year, and then if these funds remain unspent or overspent in that year, transfer
3 these funds (or the overspend) to another program or program area.
4

5 **Response:**

6 It is possible that unspent funds in one year that are carried over to the following year could be
7 transferred to other program areas if they cannot be used in the original program area. However,
8 FEI would not transfer a carried over “overspend” to another program area. If funds are required
9 in the program area that had its budget reduced due to a carried over overspend from the previous
10 year, FEI would transfer funds from another program area if funds were available. If funds from
11 other program areas were not available, FEI would continue to carry over the overspend to the
12 following year.

13
14

15

16 10.3 With respect to FEI’s proposed modification to the carryover rule, please explain
17 whether FEI is instead able to address overspending in a program by transferring
18 funds from another program that has not been fully spent.

19

20 **Response:**

21 FEI will only transfer funds out of a program area if those funds are not needed in that program
22 area due to lower than forecast activity and those funds could be appropriately used in another
23 program area in that year. If a program area has lower expenditures than forecast due to timing,
24 FEI would choose to carry those funds over into the next year to be used in the same program
25 area.

26
27

28

29 10.4 Please explain whether there are any restrictions on FEI precluding transferring
30 funds from one program or program area within the same plan year, other than the
31 quoted rule which precludes FEI from transferring more than 25% of the funds out
32 of a program area.

33

34 **Response:**

35 There are no other restrictions beyond the 25 percent cap to transfer funds from one program or
36 program area within the same plan year. Please also refer to the response to RCIA IR1 10.3.

37
38

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1
2 In the 2023 DSM Expenditures Plan proceeding, FEI responded to a RCIA IR1 9.1 with
3 respect to how DSM costs are allocated to each customer class:

4 Each year, as part of FEI's Annual Review for Delivery Rates application, FEI
5 includes the forecast annual cost of its DSM program as part of the utility's overall
6 revenue requirement. As such, the cost of the DSM program forms part of the
7 overall rate change that is applied to all FEI's non-bypass customers.

8 10.5 Please explain how FEI ensures that transferred funds (either overspent or
9 underspent), if they are transferred to a different program area, are allocated to the
10 proper customer class, particularly if the transfer occurs after the delivery rates are
11 approved.

12
13 **Response:**

14 As described in the preamble, when setting rates through its Annual Review, FEI includes the
15 forecast annual cost of its DSM program as part of the utility's overall revenue requirement. As
16 such, the cost of the DSM program forms part of the overall rate change that is applied to all FEI
17 non-bypass customers and, as such, the forecast of DSM expenditures for any particular program
18 is not recovered from any particular customer group. For example, DSM expenditures forecast
19 for residential customers are not recovered from only residential customers.

20 The allocation of DSM expenditures is reviewed as part of FEI's Cost of Service Allocation (COSA)
21 study and Rate Design proceedings. The allocation of the DSM expenditures within the current
22 COSA is based on historical actual DSM spending in each customer class. As such, the actual
23 spending of DSM expenditures in each customer class, including the transferred funds to the
24 proper customer classes, would be factored into allocation.

25

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1 **D. Appendix A – 2024-2027 DSM Plan**

2 **11. Reference: Exhibit B-2 Application Appendix A p.3**

3 **Measures Included in the DSM Plan**

4 On page 3 of the 2024-2027 DSM Plan, Posterity Group states:

5 Many of the programs in this DSM Plan are part of FEI's existing DSM portfolio
6 previously accepted in the FEI 2023 DSM Expenditures Plan Application and prior
7 applications to the BCUC. The activities and measures within some of the
8 programs have been updated, and several new initiatives have been added within
9 the previously approved program areas. The updates reflect FEI's response to
10 amendments made within the B.C. Demand-Side Measures (DSM) Regulation,
11 ongoing changing market conditions, and integrating operational lessons learned
12 from current implementation activities.

13 11.1 Provide a list of measures that FEI and Posterity Group contemplated or analyzed
14 for inclusion in the 2024-27 DSM Plan but were ultimately excluded and briefly
15 explain why each measure was rejected.

16 **Response:**

17 Please refer to the response to BCOAPO IR1 6.2.

18
19

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1 **12. Reference: Exhibit B-2 Application Appendix A pp.13,42 Fireplaces**

2 On page 13 of Appendix A, Posterity Group states:

3 Compared with the previous DSM Plan, the 2024-2027 DSM Plan has the following
4 key updates in the Residential Program Area:

- 5 • Removal of conventional high-efficiency gas equipment incentives.

6 On page 42 of Appendix A, Posterity Group states:

7 The legacy incentives from the Residential program area include conventional
8 furnaces, boilers, EnerChoice fireplaces, condensing tankless and storage tank
9 water heaters, combination systems and step code measures from the Home
10 Renovation and New Home programs.

11 12.1 Please confirm whether residential customers are permitted under BC provincial
12 or municipal laws to continue installing gas fireplaces, either as part of retrofits or
13 in new homes.

14
15 **Response:**

16 FEI is not aware of any provincial and municipal laws that prevent residential customers from
17 installing gas fireplaces as a part of retrofits and in new homes.

18
19

20
21 12.2 Please confirm whether, with the exception of the Legacy Expenditures, there are
22 no incentives provided under the 2024-2027 DSM Plan for customers to choose
23 an EnerChoice fireplace over a non- EnerChoice fireplace.

24
25 **Response:**

26 FEI confirms that, with the exception of the Legacy Expenditures, there are no incentives provided
27 under the 2024-2027 DSM Plan for customers to choose an EnerChoice fireplace over a non-
28 EnerChoice fireplace.

29

1 Incentive levels are set to optimize participation at a cost-effective level. Program supports and
 2 incentives were developed in consultation with stakeholders and additional expenditures may
 3 result in diminishing returns with respect to program participation, savings and incentive
 4 expenditures.

5
6

7

8 13.1.1 Please explain the impacts to the 2024-2027 DSM Plan in terms of overall
 9 Plan savings and costs if FEI made these changes.

10

11 **Response:**

12 As explained in the response to RCIA IR1 13.1, the Residential Program Area can achieve a PCT
 13 of 1.0 if incentives for most residential measures were increased by approximately 50 percent.

14 In the requested scenario, FEI has not made any changes to the measure assumptions; therefore,
 15 the savings would remain the same. The 2024-2027 total DSM expenditures would increase by
 16 \$73.3 million, or 11.7 percent, from \$626.7 million to \$700 million. The portfolio UCT would
 17 decrease from 2.1 to 1.9. The UCT of the Residential Program Area would decrease from 2.0 to
 18 1.4.

19 FEI provides other cost effectiveness results on a portfolio and program area level (i.e., updated
 20 Exhibit 1 and Exhibit 2) in the tables below.

21 **Table 1: Portfolio Cost-effectiveness Test Results Under Requested Scenario**

Cost Effectiveness Test	Total
TRC	1.4
PCT	1.0
RIM	0.3

22 **Table 2: Program Area Cost-effectiveness Test Results Under Requested Scenario**

Program Area	TRC	MTRC	PCT	RIM
Residential	1.0		1.0	0.2 ⁵
Commercial	3.6		1.6	0.5
Industrial	5.7		1.4	0.8
Legacy Expenditures	0.5	1.5	1.1	0.3

23

24

25

⁵ This is the corrected, post-errata RIM value.

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1 13.2 Recognizing there are likely a variety of ways to do so, please describe the
2 changes that FEI would need to make to the 2024-2027 Plan to increase the
3 portfolio RIM by 0.1 to 0.8.

4 13.2.1 Please explain the impacts to the 2024-2027 DSM Plan in terms of overall
5 Plan savings, program area savings, and costs if FEI made these
6 changes.

7
8 **Response:**

9 Please refer to the response to BCUC IR1 14.1 with respect to the Errata correcting the RIM
10 calculations and values. The corrected portfolio RIM value is 0.3 (using the avoided cost of
11 conventional gas).

12 RIM is calculated using the following equation:

13
$$RIM = \frac{NPV \text{ of Gas Savings Using Avoided Cost of Natural Gas } (\$)}{Total \text{ Expenditures } (\$) + NPV \text{ of Customer Gas Savings } (\$, \text{ Gross, Discounted})}$$

14 Lowering the total expenditures is a key component that can improve the portfolio RIM by 0.1,
15 from 0.3 to 0.4.

16 While there are other factors that are included within RIM values (e.g., customer retail rates,
17 discount rates, etc.), these inputs are either fixed or do not have a material impact on portfolio
18 RIM values.

19 The portfolio RIM can be increased by 0.1 from 0.3 to roughly 0.4 by reducing the expenditures
20 by approximately 50 percent. To do so, assuming the level of savings would remain the same as
21 the current 2024-2027 DSM Plan, the 2024-2027 total expenditures would need to decrease by
22 approximately \$176 million, from \$627 million to \$451 million. FEI assumes that the reduction of
23 expenditures comes entirely from incentives, and that non-incentives remain unchanged. FEI is
24 unable to forecast how changing the incentive would impact savings without additional program
25 design and stakeholder engagement, but it would likely result in a significant reduction.

26 As a result of the change, the portfolio UCT would increase from 2.1 to 2.9. FEI provides other
27 cost effectiveness results on a portfolio and program area level (i.e., updated Exhibit 1 and Exhibit
28 2) in the tables below.

29 Please note that the results below are for a hypothetical exercise and actual results will vary
30 widely depending on how much of the budget decrease comes from incentives versus non-
31 incentive expenditures.

1 **Table 1: Portfolio Cost-effectiveness Test Results Under Requested Scenario**

Portfolio Results		
Cost Effectiveness Test	2024-2027 DSM Plan	
	Post-Errata Corrected Values	IR 13.2.1 Hypothetical Scenario Values
TRC	1.4	1.4
PCT	1.2	0.9
RIM	0.3	0.4

2
3 **Table 2: Program Area Cost-effectiveness Test Results Under Requested Scenario**

Program Area Results								
Program Area	2024-2027 DSM Plan				IR 13.2.1			
	Post-Errata Corrected Values				Hypothetical Scenario Values			
	Program Area				Program Area			
	TRC	MTRC	PCT	RIM	TRC	MTRC	PCT	RIM
Residential	1.0		0.8	0.2	1.0		0.5	0.4
Commercial	3.6		1.6	0.5	3.6		1.2	0.6
Industrial	5.7		1.4	0.8	5.7		1.2	1.0
Legacy Expenditures	0.5	1.5	1.1	0.3	0.5	1.5	0.7	0.4

4
5 Please also note that to get to a portfolio RIM of 0.8, incentives would need to be reduced by 85
6 percent, and all non-incentive costs reduced by 90 percent. The total portfolio expenditure would
7 reduce from \$617 million to \$84 million.

8

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1 **E. Annual DSM Report**

2 **14. Reference: 2023 Demand Side Management Expenditures Plan Exhibit B-1**
3 **Application Appendix B**
4 **FEI 2022 Annual DSM Report**

5 In the 2023 Demand Side Management Expenditures Plan proceeding, FEI provided the
6 2021 Annual DSM Report in Appendix B.

7 14.1 Please explain why FEI did not provide its 2022 Annual DSM Report with its 2024-
8 2027 Demand Side Management Expenditures Plan application.

9

10 **Response:**

11 FEI filed its 2022 Annual DSM Report earlier this year, which was reviewed and acknowledged
12 by the BCUC. Given the relatively short length of time between the filing of the 2022 Annual DSM
13 Report and the filing of the 2024-2027 DSM Plan Application, as well as the amount of change in
14 the 2024-2027 DSM Plan, the 2022 Annual DSM Report was not considered as relevant to the
15 2024-2027 DSM Plan Application.

16

17

18

19 14.2 If available, please provide the 2022 Annual DSM Report.

20

21 **Response:**

22 Please refer to the response to BCOAPO IR1 1.1.

23

1 **F. Consistency with the 2022 LTGRP**

2 **15. Reference: Exhibit B-2 Application pp.23,24**

3 **Alignment with 2022 LTGRP**

4 On page 23 of the Application, FEI states:

5 The 2022 LTGRP was also prepared and filed before the June 2023 amendments
6 to the DSM Regulation. Accordingly, the 2022 LTGRP and CPR scenarios included
7 savings related to conventional gas space and water heating systems that will be
8 phased out beginning in 2024. Similarly, the LTGRP and CPR used a TRC and
9 mTRC economic screen for DSM measures, while the amended DSM Regulation
10 is subject to a UCT using the avoided cost of renewable and low-carbon gas
11 stipulated in the GGRR.

12 On page 24 of the Application, FEI states:

13 While there is generally alignment with the LTGRP on measures not impacted by
14 the changes to the DSM Regulation, the DSM Plan also addresses policy and
15 technology advancements that are changing rapidly and have evolved since the
16 CPR and the 2022 LTGRP analysis were completed. [underlining added]

Table 5-2: Comparison of 2024-2027 DSM Plan and LTGRP Diversified Energy Planning DSM Settings

Forecast Scenario	Incremental Energy Savings (PJ/yr)				Expenditures, Including Inflation (\$Ms)
	Residential ¹	Commercial	Industrial	Total	Total
2024-2027 DSM Plan	1.4	0.8	1.8	3.9	\$626.7
2022 LTGRP Low DSM Setting	0.7	0.9	0.6	2.1	\$57.3
2022 LTGRP Med DSM Setting	2.6	1.0	0.9	4.3	\$365.1
2022 LTGRP High DSM Setting	1.8	2.7	1.3	5.8	\$887.2

¹ Includes savings in the Low Income, Indigenous, Conservation, Education and Outreach Program Areas.

17

18 15.1 Please explain whether it is FEI's view that there is not alignment between the
19 2022 LTGRP and the 2024-2027 DSM Expenditures Plan with respect to the
20 measures affected by the changes to the DSM Regulation.

21

22 **Response:**

23 FEI considers that the 2024-2027 DSM Expenditures Plan and the 2022 LTGRP DSM are not
24 aligned on measures that are impacted by the changes to the DSM Regulation. This is because
25 the 2022 LTGRP DSM analysis included incenting conventional high-efficiency gas space and

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1 water heating DSM measures and slower adoption of advanced DSM measures. The amended
2 DSM Regulation resulted in the DSM Plan removing incentives for most conventional high-
3 efficiency space and water heating measures and accelerated adoption of advanced DSM
4 measures.

5
6

7

8 15.2 Considering the 2024-2027 DSM Expenditures Plan is expected to save 91% of
9 the energy at the 2022 LTGRP Medium setting but with 172% of the expenditures,
10 please provide FEI's view as to whether these plans are aligned.

11 15.2.1 If FEI considers the 2024-2027 DSM Expenditures Plan to be aligned
12 with the 2022 LTGRP, please provide the percentage increase in
13 spending, or the percentage decrease in savings, that would cause FEI
14 to consider these plans to no longer be in alignment.

15

16 **Response:**

17 As discussed in Section 5.3.1 of the Application, FEI considers that the energy savings generally
18 align with the Medium DSM Setting in the 2022 LTGRP, and that the expenditures generally align
19 between the Medium and High DSM Settings. Further, in Section 3.4 of the 2022 LTGRP, FEI
20 stated that it is "piloting next generation equipment, innovative technologies and new approaches
21 to efficiency in the buildings sector such as deep energy retrofits, gas heat pumps, dual-fuel
22 heating systems and buildings controls to leverage new emissions reduction energy
23 technologies." Section 5.3.1 of the Application further describes the alignment between the DSM
24 Plan and the 2022 LTGRP analysis, and the alignment on measures not impacted by the changes
25 to the DSM Regulation.

26 However, as stated in the Application, the DSM Plan no longer aligns with the 2022 LTGRP High
27 DSM Setting given the removal of incentives for most high-efficiency conventional gas space and
28 water heating systems.

29 One objective way to consider alignment between the two filings is to examine the boundaries of
30 expenditures modelled in the 2022 LTGRP and how they compare to the DSM Plan. For alignment
31 on an overall energy savings and expenditures basis, utilizing Table 5-2, the percentage increase
32 in the DSM Plan spending would have to be 42 percent or greater (to exceed the \$887.2 million
33 in the High DSM Setting), or the percentage decrease in energy savings would have to be -46
34 percent or lower (to be less than the 2.1 PJ/year in the Low DSM Setting) to no longer be in
35 alignment with the scenarios in the 2022 LTGRP. However, there are aspects of alignment
36 between the two filings such as, but not limited to, universal access to programs, supporting
37 market transformation, as well as being an important part of FortisBC's Clean Growth Pathway to
38 reduced carbon emissions.

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15.3 Considering the 2024-2027 DSM Expenditures Plan is expected to save 67% of the energy at the 2022 LTGRP High setting but with 71% of the expenditures, please provide FEI’s view as to whether these plans are aligned.

Response:

Please refer to the response to RCIA IR1 15.2.

15.4 Please provide FEI’s views as to whether the BCUC may still accept the 2024-2027 DSM Expenditures Plan if it finds that it is not aligned with the 2022 LTGRP.

Response:

Although the planning environment for DSM has changed since the 2022 LTGRP was submitted, resulting in changes to DSM measures presented in the 2024-2027 DSM Plan versus the 2022 LTGRP, FEI does not view these changes as a substantial misalignment between the two filings for the reasons presented in the preamble. However, the BCUC may still accept its 2024-2027 DSM Plan even if it finds that the Plan is not aligned with its 2022 LTGRP. The UCA states that the BCUC must consider the most recent long-term resource plan filed by the public utility, and not that the expenditure schedule must be in alignment with a public utility’s most recently filed long-term resource plan. FEI has explained the differences between the 2024-2027 DSM Plan and the 2022 LTGRP, and these explanations are reasonable and do not constitute a reason to reject the 2024-2027 DSM Plan.