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March 31, 2025

British Columbia Utilities Commission Suite 410, 900 Howe Street Vancouver, BC V6Z 2N3

Attention: Patrick Wruck, Commission Secretary

Dear Patrick Wruck:

Re: FortisBC Energy Inc. (FEI) Natural Gas Demand-Side Management (DSM) – 2024 Annual Report

Attached please find the Natural Gas DSM Program 2024 Annual Report for FEI.

If further information is required, please contact Sarah Commander, Manager, Regulatory Affairs at (250) 469-6081.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Sarah Walsh

Attachment



FortisBC Energy Inc.

Natural Gas Demand-Side Management Programs 2024 Annual Report

March 31, 2025



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Appendix A-1 Inventory of DSM Program Evaluation and Research Activities



1 1. REPORT OVERVIEW

The Demand-Side Management (DSM) Annual Report (Report) provides highlights of FortisBC Energy Inc.'s (FEI or the Company) DSM programs for the year ended December 31, 2024 and provides a summary of results achieved in 2024. The Report reviews the progress of FEI's DSM programs in meeting the accepted 2024-2027 DSM Plan¹ (Plan) by educating and incenting FEI's customers to conserve energy and improve the energy efficiency of their homes, buildings, and businesses.

8 Section 1.1 contains a statement of financial results (Table 1-1), including the Utility Cost Test 9 (UCT) results by Program Area for 2024. Sections 1.1 and 1.2 set out how FEI's DSM programs 10 met the requirements of the British Columbia Demand-Side Measures Regulation (DSM Regulation).² Section 1.3 provides an overview of funding transfers within programs and identifies 11 12 program carryover amounts. Section 1.4 provides insight into external collaboration with government and utilities and Section 1.5 addresses the directives from British Columbia Utilities 13 14 Commission (BCUC) Decision and Order G-31-24 (Decision) on FEI's 2024 DSM Expenditure 15 Plan Application. Sections 2 through 11 of the Report provide an overview of DSM program 16 activities in 2024 by Program Area, including program-level comparisons of actual energy savings 17 and costs to Plan.

Throughout the Report, any difference in the totals between the DSM Portfolio Overview and
Program Area tables are due to rounding. Where "zero" values occur, they may reflect rounding
to the nearest \$000s expenditure level when expenditures were under \$500.

21 **1.1 PORTFOLIO RESULTS**

In this section, FEI provides its DSM energy savings, expenditures and cost-effectiveness test results at an overall Portfolio and Program Area level for 2024. A summary of the overall Portfolio results is provided in Table 1-1, demonstrating that FEI achieved a combined Portfolio UCT of 2.4. FEI achieved DSM expenditures of \$158.922 million and recorded annual natural gas savings of 1.605 million GJ in 2024. These energy savings resulted in carbon emission reductions of 109,123 tonnes of CO2e in 2024 and total reductions of 962,818³ tonnes of CO2e over the life of all measures installed or undertaken in 2024.

¹ The FEI 2024-2027 DSM Plan expenditures were accepted by the BCUC pursuant to Decision and Order G-31- 24.

² Demand-Side Measures Regulation (BC Reg. 326/2008) Section 5(2)(b), amended June 30, 2023.

³ Emission reduction value is determined by a combination of the life cycle (well to burner tip) emission factor and AR5 Global Warming Potential (GWP) factor. The emission factor is 0.068 tonnes CO2e/GJ sourced from the Government of Canada (<u>Clean Fuel Regulations</u>). Annual emission reductions are those attributed to the first year following measure implementation. Lifetime reductions are the total reductions that occur over the life of all measures implemented (based on NPV of gas savings).



| Indicator - 2024 Results | | Total |
|--|-----|------------|
| Utility Expenditures, Incentives (\$000s) | | 128,248 |
| Utility Expenditures, Non-Incentives (\$000s) | | 30,674 |
| Utility Expenditures, Total (\$000s) | | 158,922 |
| Net Incremental Annual Gas Savings (GJ/yr.) | | 1,604,752 |
| Annual GHG Emission Reductions (tonnes CO2e/yr) | | 109,123 |
| NPV of Annual Gas Savings (GJ/yr.) | | 14,159,082 |
| Measure Lifetime GHG Emission Reductions (tonnes CO2e) | | 962,818 |
| | UCT | 2.4 |

Table 1-1: Overall DSM Portfolio Results for 2024

2

1

3 Tables 1-2 and 1-3 below provide the expenditures and cost-effectiveness test results by Program

4 Area for the overall DSM Portfolio.

5 Table 1-2: Overall DSM Portfolio Level Results by Program Area 2024 – Expenditures

| | Utility Expenditures (\$000s) | | | | | | |
|-------------------------------------|-------------------------------|---------|----------------|--------|--------------------|---------|--|
| - Brogram Area | Incentives | | Non-Incentives | | Total Expenditures | | |
| | 2024 | 2024 | 2024 | 2024 | 2024 | 2024 | |
| | Plan | Actual | Plan | Actual | Plan | Actual | |
| Residential | 30,397 | 35,422 | 2,800 | 2,257 | 33,197 | 37,679 | |
| Commercial | 5,481 | 7,987 | 3,246 | 2,471 | 8,726 | 10,458 | |
| Industrial | 6,515 | 10,485 | 1,070 | 411 | 7,585 | 10,897 | |
| Low Income | 6,324 | 10,218 | 2,042 | 2,028 | 8,366 | 12,247 | |
| Indigenous | 2,225 | 1,495 | 480 | 738 | 2,705 | 2,232 | |
| Conservation Education and Outreach | - | - | 14,652 | 9,732 | 14,652 | 9,732 | |
| Innovative Technologies | 31,270 | 27,961 | 3,847 | 2,597 | 35,117 | 30,558 | |
| Enabling Activities | 8,561 | 5,522 | 6,481 | 4,339 | 15,042 | 9,861 | |
| Portfolio Level Activities | - | - | 5,281 | 5,510 | 5,281 | 5,510 | |
| Legacy Expenditures | 34,693 | 29,157 | 1,507 | 590 | 36,200 | 29,748 | |
| ALL PROGRAMS | 125,465 | 128,248 | 41,405 | 30,674 | 166,870 | 158,922 | |

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| Program Area | (GJ) | | Benefit/Cost Ratios | |
|-------------------------------------|--------------|----------------|---------------------|----------|
| | 2024 Plan | 2024 Actual | UCT | TRC |
| Residential | 166,655 | 141,067 | 1.5 | - |
| Commercial | 93,986 | 185,118 | 4.7 | - |
| Industrial | 365,533 | 886,594 | 16.4 | - |
| Low Income | 50,684 | 56,065 | 1.7 | - |
| Indigenous | 16,075 | 1,344 | 0.4 | - |
| Conservation Education and Outreach | 20,000 | 100,358 | Savings Not Es | stimated |
| Innovative Technologies | Savings N | ot Estimated | Savings Not Es | stimated |
| Enabling Activities | | 17,160 | Savings Not Es | stimated |
| Portfolio Level Activities | Savings N | ot Estimated | Savings Not Es | stimated |
| Legacy Expenditures | 147,185 | 217,046 | - | 2.4 |
| ALL PROGRAMS | 860,117 | 1,604,752 | 2.4 | - |

Table 1-3: Overall DSM Portfolio Level Results by Program Area 2024 – Savings . .

. . .

3 The majority of the Plan is subject to the UCT to determine cost effectiveness, however, Legacy

4 Expenditures are subject to the Total Resource Cost Test (TRC) as outlined in Section 5 of the

5 DSM Regulation. Both the UCT and TRC results are above 1, indicating a cost-effective portfolio.

6 FEI's actual 2024 DSM expenditures were 95 percent of Plan and energy savings were 187 7 percent of Plan. Actual savings exceeded Plan in all Program Areas except for the Residential 8 and Indigenous Program Areas.

- 9 Throughout the Report, the following general notes apply to all Program Areas:
- 10 A "Non-Program Specific Expenses" line item has been included for each Program Area • in Sections 3 through 9. These expenditures support multiple programs within that 11 Program Area and therefore, are not specific to only one program. Generally, these 12 13 expenditures represent items such as training, travel, marketing collateral, and consulting 14 services that support the overall Program Area.
- 15 The expenditures, energy savings and cost-effectiveness results presented in the Report • 16 are exclusive of third-party funding such as CleanBC funding from the British Columbia 17 Ministry of Energy and Climate Solutions (MECS). For measures that also receive third party incentive funding, attribution of energy savings among the parties has been 18 19 accounted for in both the FEI claimed savings and cost test results.

1.2 MEETING ADEQUACY REQUIREMENTS OF THE DSM REGULATION 20

21 Table 1-4 below shows how the FEI Annual Report meets the adequacy requirements of Section 22 3 of the DSM Regulation.

1



| DSM Regulation | Compliance Summary |
|--|--|
| (1) A public utility's plan portfolio is adequate for the plan portfolio includes all the following: | purposes of Section 44.1 (8) c of the Act only if the |
| a) a demand-side measure intended specifically (i) to assist residents of low-income households to reduce their energy consumption, or (ii) to reduce energy consumption in housing owned or operated by (A) a housing provider that is a local government, a society as defined in section 1 of the Societies Act, other than a member funded society as defined in section 190 of that Act, or an association as defined in section 1(1) of the Cooperative Association Act, (B) Repealed (C) the low-income households occupying the housing, (D) a housing provider referred to in clause (A), (E) Repealed | In Section 3, FEI continues to deliver the Rental Apartment Efficiency Program (RAP) through its Commercial program. The Low Income Program Area, as described in Section 5, outlines FEI's plans to continue to offer programs that help low-income households and housing providers save energy. |
| b) if the plan portfolio is submitted on or after June 1, 2009, a demand-side measure intended specifically to improve the energy efficiency of rental accommodations; | FEI will be continuing with the Rental Apartment Efficiency Program (RAP). As referenced in the Section 3, the RAP targets improving the energy efficiency only of rental apartment buildings. |
| c) an education program for students enrolled in schools in the public utility's service area; d) if the plan portfolio is submitted on or after June 1, 2009, an education program for students enrolled in post secondary institutions in the public utility's service area; | Conservation Education and Outreach, as described in Section 7, includes the continuation of the School Education Program which includes programming for grade schools and post- secondary institutions in FEI's service area. |
| e) one or more demand-side measures to provide resources as set out in paragraph (g) of the definition of "class A demand-side measure", representing no less than (i) an average of 1% of the public utility's plan portfolio's expenditures per year over the portfolio's period of expenditures, or (ii) an average of \$2 million per year over the portfolio's period of expenditures; | FEI's DSM activities related to the codes and standards specified demand-side measure are considered enabling activities by FEI and are discussed in Section 9. |
| f) one or more demand-side measures intended to result in the adoption by local governments and first nations of a step. | Measures to support the BC Energy Step Code are included within the following programs as discussed in Sections 2, 3 and 9: Residential New Home Program; Commercial Performance Program – New Buildings; |

Table 1-4: Meeting Adequacy Requirements with DSM Regulation

FORTISBC ENERGY INC.

NATURAL GAS DEMAND-SIDE MANAGEMENT PROGRAMS 2024 ANNUAL REPORT



| | DSM Regulation | Compliance Summary |
|----|---|--|
| | | Enabling Activities – Codes & Standards; and Enabling Activities – Community Energy Specialist Program |
| g) | a demand-side measure intended specifically to reduce energy consumption in any of the following: (i) housing owner or operated by an Indigenous governing body or located on reserve land; (ii) a public building owned or operated by an Indigenous governing body. | Section 6 describes the Indigenous Program Area, a new program area that incorporates programming supporting Indigenous customers, including buildings owned by Indigenous governing bodies. In the 2024 this programming was included in the Residential, Commercial, and Low Income Program Areas. |

1 **1.3 FUNDING TRANSFERS AND CARRYOVER**

- 2 The Decision accepted the amended funding transfer and variance rules where:
- FEI does not require approval to transfer funds into an approved program area;
- FEI requires approval to transfer funds greater than 25 percent out of a program area;
- There are no limits on how much one program area can gain;
- FEI is required to report on any transfers into and out of program areas in its DSM annual
 report to the BCUC; and
- The Innovative Technologies program area is included in the funding transfer rules for
 FEI.
- 10 Table 1-5 below shows the 2024 DSM Plan Expenditures and 2024 transfers between Program
- 11 Areas. Table 1-6 outlines the 2025 budget including carry over.
- 12

Table 1-5: Funding Transfers for 2024

| Program Area | 2024 Plan Expenditures (\$000) | 2024 Actual Expenditures (\$000) | 2024 Actual less Plan Expenditures (\$000) | 2024 Funding Transfer Amount Out (In) (\$000) | Final Carryover | Transfer as a percent of Approved (%) |
|-------------------------------------|--------------------------------------|--|--|--|--------------------|---|
| Residential | 33,197 | 37,679 | 4,482 | 5,398 | 916 | 16% |
| Commercial | 8,726 | 10,458 | 1,732 | 2,552 | 820 | 29% |
| Industrial | 7,585 | 10,897 | 3,312 | 3,293 | (19) | 43% |
| Low Income | 8,366 | 12,247 | 3,881 | 3,717 | (164) | 44% |
| Indigenous | 2,705 | 2,232 | (471) | 0 | 471 | 0% |
| Conservation Education and Outreach | 14,652 | 9,732 | (4,920) | (3,600) | 1,320 | -25% |
| Innovative Technologies | 35,117 | 30,558 | (4,559) | (4,243) | 316 | -12% |
| Enabling Activities | 15,042 | 9,861 | (5,181) | (3,760) | 1,421 | -25% |
| Portfolio Level Activities | 5,281 | 5,510 | 229 | (727) | (956) | -14% |
| Legacy Expenditures | 36,200 | 29,748 | (6,452) | (2,630) | 3,822 | -7% |
| ALL PROGRAMS | 166.870 | 158.922 | (7.947) | 0 | 7.947 | |

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| - I |

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Table 1-6: 2025 DSM Budget Including Carryover Amounts (\$000s)

| Program Area | 2025 Plan (includes inflation) | 2024 Carryover | 2025 Budget including Carryover |
|-------------------------------------|-----------------------------------|-------------------|------------------------------------|
| Residential | 40,830 | 916 | 41,746 |
| Commercial | 12,958 | 820 | 13,778 |
| Industrial | 8,071 | (19) | 8,052 |
| Low Income | 9,753 | (164) | 9,589 |
| Indigenous | 4,247 | 471 | 4,718 |
| Conservation Education and Outreach | 14,794 | 1,320 | 16,114 |
| Innovative Technologies | 20,807 | 316 | 21,123 |
| Enabling Activities | 12,451 | 1,421 | 13,872 |
| Portfolio Level Activities | 5,687 | (956) | 4,731 |
| Legacy Expenditures | 16,995 | 3,822 | 20,817 |
| ALL PROGRAMS | 146,593 | 7,947 | 154,540 |

3 1.4 COLLABORATION & INTEGRATION

FEI continues to work alongside BC's major energy utilities and other entities, including
governments and industry associations, to integrate and improve DSM programming. The
Company understands that such collaboration maximizes program efficiency and effectiveness.

In 2024, FEI, FortisBC Inc. (FBC), and British Columbia Hydro and Power Authority (BC Hydro) (collectively, the BC Utilities) continued to collaborate on various programs and projects to enhance utility integration, supporting government legislation, policies, and directives. This collaboration resulted in cost efficiencies, including streamlined application processes for customers, extended program reach, and consistent, unified messaging aimed at improving energy literacy.

Additionally, FEI worked with MECS on CleanBC initiatives, which included administering incentives and facilitating applications for CleanBC rebates through FEI's processes, ensuring a seamless customer experience, and collaborated to support quality assurance and industry capacity training for the Home Performance Stakeholder Council (HPSC). While details of collaborative activities are included in the Program Area sections, the tables throughout the Report reflect expenditure and savings information for FEI's expenditure portfolio only.

19 **1.5 ADDRESSING BCUC DIRECTIVES FROM ORDER G-31-24**

In its Decision and Order G-31-24 on the 2024-2027 DSM Plan, the Panel directed FEI to include
 specific information in FEI's DSM annual reports regarding the Innovative Technology Program
 Area. FEI provides the directives below, and where the information can be found within the Report.

23



| Directive | Compliance |
|---|--|
| The Panel directs FEI to include in the Annual DSM Report the expenditures associated with each pilot and deep retrofit project listed within the Innovation Technologies program area. | Refer to Tables 8-3 and 8-4 in Section 8 of the Report. |
| For new measures that FEI transitions from the Innovative Technologies program area into main programs, the new measures' forecast of cost-effectiveness, energy savings, GHG emission reduction and participation. | Refer to Section 8.5 and Table 8-5 in Section 8.5 of the Report. |
| For actual and forecast results on expenditures, energy savings, GHG emissions, participation and cost-effectiveness, a breakdown of results for those measures transitioned from the Innovative Technologies program into main program areas. | Refer to Section 8.5 and Table 8-5 in Section 8.5 of the Report. |

Table 1-7: Order G-31-24 Directives

2 1.6 PORTFOLIO SUMMARY

1

3 FEI's DSM Portfolio met the goal of cost effectiveness with a Portfolio UCT value of 2.4 in 2024. 4 FEI believes that the energy savings reflected in the Portfolio and the resulting UCT are conservative, thus likely understated. In addition to the direct energy benefits accounted for in the 5 6 UCT, benefits from additional activities, such as Conservation Education and Outreach (CEO) 7 and Enabling Activities, play an important role in supporting the development and delivery of programs, while helping facilitate market transformation in British Columbia. FEI continues to 8 9 develop and maintain strong, collaborative relationships with other BC utilities, government 10 partners, and key market stakeholders to provide its portfolio of DSM programs.



1 2. RESIDENTIAL PROGRAM AREA

2 **2.1 OVERVIEW**

- 3 The Residential Program Area consists of two programs:
- 4 Home Renovation Program; and
 - New Home Program.

6 Tables 2-1 and 2-2 summarize the planned and actual expenditures and savings for the7 Residential Program Area.

8

5

Table 2-1: Residential Program Area Results Summary – Expenditures

| | Utility Expenditures (\$000s) | | | | | |
|-------------------------------|-------------------------------|----------------|----------------|----------------|--------------------|----------------|
| Program | Incentives | | Non-Incentives | | Total Expenditures | |
| | 2024 Plan | 2024 Actual | 2024 Plan | 2024 Actual | 2024 Plan | 2024 Actual |
| Home Renovation Program | 27,494 | 35,064 | 683 | 429 | 28,177 | 35,493 |
| New Home Program | 2,902 | 359 | 655 | 371 | 3,557 | 730 |
| Labour | - | - | 1,412 | 1,454 | 1,412 | 1,454 |
| Non-Program Specific Expenses | - | - | 50 | 2 | 50 | 2 |
| ALL PROGRAMS | 30,397 | 35,422 | 2,800 | 2,257 | 33,197 | 37,679 |

10

9

Table 2-2: Residential Program Area Results Summary – Savings

| Program | Incremental Annua (G | Benefit/Cost Ratios | |
|-------------------------------|-------------------------|---------------------|-----------------------|
| | 2024 Plan | 2024 Actual | UCT |
| Home Renovation Program | 157,048 | 139,852 | 1.6 |
| New Home Program | 9,607 | 1,215 | 1.1 |
| Labour | Savings not estimated | | Savings not estimated |
| Non-Program Specific Expenses | Savings not estimated | | Savings not estimated |
| ALL PROGRAMS | 166,655 | 141,067 | 1.5 |

11

12 2.2 Home Renovation Rebate Program

The Home Renovation Program (HRR) encourages customers to take a whole home approach to their energy efficiency upgrades by consolidating space heating, water heating, and building envelope measures into one overarching program. This program is a collaboration between the BC Utilities.

Retail offers directed towards the home renovation segment are included in this program. FEI
 collaborates with FBC, BC Hydro, retailers, and distributors to offer point-of-sale incentives on



- several low-cost and easy to install measures such as draft proofing, water savers and connected
 thermostats.
- 3 The following are key updates for the program in 2024:
- Program achieved 126 percent of Plan expenditures and 89 percent of Plan energy savings. Participation was driven by point-of-sale retail incentives such as draft proofing and water savers, appliance maintenance, windows and dual fuel hybrid systems.
- Dual fuel systems were introduced as a new measure under HRR in 2024 and drove HRR
 incentive investment achieving 146 percent of planned participation. This was likely driven
 by contractor engagement and strong incentives.
- 10

11 2.3 New Home Program

The New Home Program aligns with and provides incentives for the tiers of the BC Energy Step Code for Part 9 Buildings, as per the DSM Regulation Section 3.⁴ FEI provides incentives for builders who adopt and comply with the Energy Step Code in municipalities across BC. FEI, in partnership with FBC, supports local governments in their adoption of the Step Code as part of an ongoing initiative for market transformation to high performance homes.

- 17 The following are key updates for the program in 2024:
- New Home Program achieved 21 percent of Plan expenditures and 13 percent of Plan energy savings.
- In 2024, the New Home Program was redesigned and relaunched in collaboration with
 FBC to align with changes to the BC Building Code and DSM Regulation. The revised FEI
 program offers incentives for achieving Step 4 and Step 5 of the BC Energy Step Code
 and requires dual fuel hybrid space heating systems.
- Due to the lengthy upfront planning required in the construction process for new homes,
 participation and incentives for residential new construction were primarily committed
 incentives from prior years. These participants and incentives are captured in Section 11
 Legacy Expenditures.
- FEI continues to collaborate with FBC, BC Hydro, MECS, Industry Associations and BC
 Housing to provide education to builders and energy advisors in support of high performance homes in BC. These funds are discussed further in Section 9.2 and shown
 in Table 9-1 in the Enabling Activities budget.

⁴ Includes expenditures as per *BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008)* Section 3(1)(f), amended June 30, 2023.



1 **2.4** SUMMARY

- 2 Overall, the Residential Program Area achieved 85 percent of Plan energy savings and 114
- 3 percent of Plan expenditures for a total investment of \$37.7 million. 94 percent of total
- 4 expenditures was incentive spending. The difference between achieved and planned savings can
- 5 be attributed to the higher proportion of dual fuel hybrid systems in the HRR program, and lower
- 6 participation in the relaunched New Home Program. Overall, the participation in residential
- 7 programs resulted in over 141 thousand GJ/year of natural gas savings.



I

1 3. COMMERCIAL PROGRAM AREA

2 **3.1 OVERVIEW**

- 3 The Commercial Program Area consists of four programs:
- Prescriptive Program;
- 5 Performance Program Existing Buildings;
- 6 Performance Program New Buildings; and
- 7 Rental Apartment Efficiency Program.

8 Tables 3-1 and 3-2 summarize the planned and actual expenditures and savings for the

9 Commercial Program Area.

Table 3-1: 2024 Commercial Program Area Results Summary – Expenditures

| _ | Utility Expenditures (\$000s) | | | | | |
|-------------------------------------|-------------------------------|----------------|----------------|----------------|--------------------|----------------|
| Brogram | Incentives | | Non-Incentives | | Total Expenditures | |
| | 2024 Plan | 2024 Actual | 2024 Plan | 2024 Actual | 2024 Plan | 2024 Actual |
| Prescriptive Program | 1,987 | 1,859 | 500 | 455 | 2,487 | 2,315 |
| Performance - Existing Buildings | 3,125 | 5,505 | 100 | 60 | 3,225 | 5,566 |
| Performance - New Buildings | - | - | 150 | 141 | 150 | 141 |
| Rental Apartment Efficiency Program | 369 | 622 | 400 | 50 | 769 | 672 |
| Labour | - | - | 1,346 | 1,758 | 1,346 | 1,758 |
| Non-Program Specific Expenses | - | - | 750 | 7 | 750 | 7 |
| ALL PROGRAMS | 5,481 | 7,987 | 3,246 | 2,471 | 8,726 | 10,458 |

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Table 3-2: 2024 Commercial Program Area Results Summary – Savings

| Program | Incremental Annua (C | Benefit/Cost Ratios | |
|-------------------------------------|-------------------------|---------------------|-----------------------|
| | 2024 Plan | 2024 Actual | UCT |
| Prescriptive Program | 49,563 | 49,563 28,072 | |
| Performance - Existing Buildings | 30,016 | 126,145 | 5.2 |
| Performance - New Buildings | Savings no | ot estimated | Savings not estimated |
| Rental Apartment Efficiency Program | 14,407 | 30,901 | 9.6 |
| Labour | Savings not estimated | | Savings not estimated |
| Non-Program Specific Expenses | Savings not estimated | | Savings not estimated |
| ALL PROGRAMS | 93,986 | 185,118 | 4.7 |

13



1 **3.2 PRESCRIPTIVE PROGRAM**

The Prescriptive Program offers rebates for the purchase and installation of specific qualifying measures. All such rebates conform to a simple archetype: market participants are informed of the fixed rebate amounts, qualifying measures are installed at a customer's location, and the rebates are provided to reduce the capital cost of the higher efficiency measures. Some rebates may be delivered directly to the end user, whereas others may see the rebate provided through a point of sale partner, such as a product supplier.

8 The following are key updates for the program in 2024:

- 9 The Prescriptive Program achieved 93 percent of planned expenditures and 57 percent of planned savings.
- Expenditures were driven by the dual fuel rooftop unit (RTU) offer. This was likely driven
 by contractor engagement and strong incentives.
- Savings were below Plan due to food service measures being lower than expected and experiencing a decline in participation in 2024.

15 **3.3 PERFORMANCE PROGRAM – EXISTING BUILDINGS**

16 The Performance Program – Existing Buildings provides incentives to encourage commercial customers to identify, assess, and implement building energy-efficiency projects for existing 17 18 buildings. The commercial retrofit offer in the Performance Program provides incentives for 19 customers to engage a qualified energy consultant to study potential building-scale natural gas 20 energy efficiency opportunities. Incentives are also available to encourage the implementation of 21 cost-effective measures. The Continuous Optimization and Strategic Energy Management (SEM) 22 offers within this program are administered jointly with FBC and BC Hydro to provide a one stop 23 program for customers to evaluate no cost, low cost, and recommissioning opportunities. FEI staff 24 also provide technical and engineering support, customer outreach and engagement for the 25 Performance Program – Existing Buildings. Under the program, smaller commercial customers 26 are also provided with energy assessments and customers with a portfolio of buildings can take 27 advantage of portfolio-wide energy studies.

- 28 The following are key updates for the program in 2024:
- Program expenditures achieved 173 percent of plan and savings achieved 420 percent of plan.
- Participation, savings, and incentives were significantly above plan because of increased interest in advanced DSM projects, which were enabled by the UCT becoming the key cost effectiveness test under the latest version of the DSM Regulation. High consultant engagement and increased outreach to large customers in recent years also contributed to strong performance in 2024.



 The Commercial Energy Assessment and Continuous Optimization offers also saw significant increases in participation and savings due to increased interest in building optimization, offer updates and advanced DSM opportunities.

4 **3.4 PERFORMANCE PROGRAM – NEW BUILDINGS**

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5 The Performance Program - New Buildings encourages the design of high-performance 6 commercial buildings. Capital incentives are available for customers that design new buildings 7 that exceed BC Building Code. This program includes support for large commercial new 8 construction, which is centred on encouraging the integration of the BC Energy Step Code 9 objectives into the design of high-performance commercial buildings, while allowing for a more 10 prescriptive pathway as well.

- 11 The following are key updates for the program in 2024:
- Due to the significant upfront planning required in the construction process of new, high performance commercial buildings, participation and incentives for new construction were
 committed incentives from prior years. These participants and incentives are captured in
 Section 13, Legacy Expenditures.
- Planning for the updated Performance Program New Buildings program began in 2024
 in response to changes in the DSM Regulation.

18 **3.5 RENTAL APARTMENT EFFICIENCY PROGRAM (RAP)**

19 The Rental Apartment Efficiency Program (RAP), in collaboration with FBC, provides energy 20 assessments and the direct installation of in-suite measures, such as low-flow showerheads, and 21 faucet aerators in hotels, motels and rental suites in multi-unit residential buildings (MURBs).

- 22 The following are key updates for the program in 2024:
- The Rental Apartment Efficiency Program expenditures achieved 87 percent of plan, and
 savings achieved 214 percent of plan.
- Higher than planned incentive costs and savings were the result of significant participation
 in Energy Assessments and direct installs as building owners look for energy saving
 opportunities to support tenants and plan for larger retrofits.
- Lower than planned non incentive costs were the result of lower than expected costs to manage and operate the program.



1 **3.6 SUMMARY**

- 2 Overall, the Commercial Program Area achieved 120 percent of total planned expenditures for a
- 3 total expenditure of \$10.458 million and realized 197 percent of planned savings. 76 percent of
- 4 the total expenditures was incentive spending. The difference between achieved and planned
- 5 savings can be attributed to increased participation in the Performance Program Existing
- 6 Buildings and the dual fuel RTU offer. Overall, the participation in commercial programs resulted
- 7 in over 185 thousand GJ/year of natural gas savings.



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1 4. INDUSTRIAL PROGRAM AREA

2 **4.1 OVERVIEW**

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- 3 The Industrial Program Area consists of two programs:
- 4 Prescriptive Program; and
- 5 Performance Program.

Tables 4-1 and 4-2 summarize the planned and actual expenditures and savings for the Industrial
Program Area.

8 Table 4-1: 2024 Industrial Energy Efficiency Program Area Results Summary – Expenditures

| | Utility Expenditures (\$000s) | | | | | |
|-------------------------------|-------------------------------|----------------|----------------|----------------|--------------------|----------------|
| Program | Incentives | | Non-Incentives | | Total Expenditures | |
| | 2024 Plan | 2024 Actual | 2024 Plan | 2024 Actual | 2024 Plan | 2024 Actual |
| Prescriptive Program | 1,188 | 4,303 | 320 | - | 1,508 | 4,303 |
| Performance Program | 5,328 | 6,182 | 80 | 8 | 5,408 | 6,190 |
| Labour | - | - | 470 | 402 | 470 | 402 |
| Non-Program Specific Expenses | - | - | 200 | 1 | 200 | 1 |
| ALL PROGRAMS | 6,515 | 10,485 | 1,070 | 411 | 7,585 | 10,897 |

10 Table 4-2: 2024 Industrial Energy Efficiency Program Area Results Summary – Savings

| Program | Incremental Annua (G | Benefit/Cost Ratios | |
|-------------------------------|-------------------------|---------------------|-----------------------|
| | 2024 Plan | 2024 Actual | UCT |
| Prescriptive Program | 75,973 | 226,389 | 23.2 |
| Performance Program | 289,560 | 660,205 | 12.8 |
| Labour | Savings not estimated | | Savings not estimated |
| Non-Program Specific Expenses | Savings not estimated | | Savings not estimated |
| ALL PROGRAMS | 365,533 | 886,594 | 16.4 |

12 4.2 PRESCRIPTIVE PROGRAM

13 The Prescriptive Program includes fixed incentives for the purchase and installation of specific 14 qualifying industrial measures where the savings are well understood and their installation is not 15 typically part of a larger, more complex upgrade. Examples of such measures include air curtains, 16 steam traps, and pipe insulation. Program delivery is adapted to the specific nature of both the 17 measures and the target markets. For example, some rebates may be delivered directly to the end user, whereas others may see the rebate provided to the end user through midstream market 18 19 actors, such as a product supplier. Communication materials and channels are adapted to suit 20 the different target markets.



- 1 The following are key updates for the program in 2024:
 - Program achieved 285 percent of plan expenditures and 298 percent of planned savings.
- Savings and incentives were driven by thermal curtain adoption in greenhouse operations.
 This is likely due to an increase to the incentive in late 2023 to boost participation.
- Adoption of infrared heaters exceeded expectations. This is believed to be due to the point
 of sale rebate delivery, which simplified the application process for industrial customers.

7 4.3 PERFORMANCE PROGRAM

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8 The Performance Program provides incentives to encourage customers to identify, assess and 9 implement measures that use energy for process-related activities. The program provides 10 customers with a one-stop program in the FBC/FEI shared service territory and FEI only service 11 areas to evaluate and implement industrial energy efficiency projects. FEI staff and external 12 consultants provide customer outreach and engagement for the Performance Program. It offers 13 funding for plant-wide audits, feasibility studies, implementation, and Strategic Energy 14 Management (SEM) incentives.

- 15 The following are key updates for the program in 2024:
- The Performance Program achieved 114 percent of plan expenditures, and 228 percent
 of planned savings.
- The SEM program experienced a notable rise in participation. The active involvement of
 SEM consultants facilitated the completion of several significant projects at participating
 sites, resulting in combined energy savings that surpassed the 2024 plan.
- In 2024, SEM milestone incentives were eliminated, but customer energy-saving
 incentives were increased to maintain participant engagement and focus on completing
 energy efficiency projects at participating sites.
- The Performance Retrofit program also experienced a rise in participation. Several significant projects completed in 2024, which resulted in expenditures and savings exceeding plan.

27 **4.4 SUMMARY**

Overall, the Industrial Program Area achieved 144 percent of planned expenditures for total expenditures of \$10.897 million and achieved 243 percent of planned savings. 96 percent of the total expenditures was incentive spending. Better than planned savings and expenditures can be attributed to strong performance in the SEM program and high participation in Prescriptive and Performance programs. The participation in industrial programs resulted in over 886 thousand GJ/year of natural gas savings.



1 5. LOW INCOME PROGRAM AREA

2 **5.1 OVERVIEW**

3 This program area focuses on creating energy savings opportunities for low income customers 4 both through programs that low income customers can apply to and through programs that serve 5 charities, non-profit housing providers and co-ops, which in turn benefit FEI's low income 6 customers. The program area is subject to cost effectiveness requirements in Section 4 of the DSM Regulation as a class A measure.⁵ Furthermore, one of FEI's guiding principles of 7 8 conservation and energy management is that "programs will have a goal of being universal, 9 offering access to energy efficiency and conservation for all residential, commercial, and industrial 10 customers, including low income customers."⁶ FEI maintains its commitment to this principle by offering both no-cost and rebate programs to low income customers, along with offers that assist 11 12 charities and non-profit housing providers pursuing energy efficiency and conservation.

13 The Low Income Program Area consists of four programs:

• Self Install Program;

- Direct Install Program;
- Prescriptive Program; and
- Support Program.

18 Tables 5-1 and 5-2 summarize the planned and actual expenditures and savings for the Low

- 19 Income Program Area.
- 20

Table 5-1: 2024 Low Income Program Area Results Summary – Expenditures

| | Utility Expenditures (\$000s) | | | | | | |
|-------------------------------|-------------------------------|--------|---------|----------------|-------|------------|--|
| Program | Incentives | | Non-Inc | Non-Incentives | | penditures | |
| | 2024 | 2024 | 2024 | 2024 | 2024 | 2024 | |
| | Plan | Actual | Plan | Actual | Plan | Actual | |
| Self Install Program | 518 | 352 | 135 | 142 | 653 | 494 | |
| Direct Install Program | 4,200 | 3,519 | 800 | 654 | 5,000 | 4,173 | |
| Prescriptive Program | 1,606 | 6,347 | 117 | 2 | 1,723 | 6,349 | |
| Support Program | - | - | 165 | 276 | 165 | 276 | |
| Labour | - | - | 775 | 908 | 775 | 908 | |
| Non-Program Specific Expenses | - | - | 50 | 46 | 50 | 46 | |
| ALL PROGRAMS | 6.324 | 10.218 | 2.042 | 2.028 | 8.366 | 12.247 | |

²¹

²²

⁵ As per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 4(4), amended June 30, 2023.

⁶ FEI 2024-2027 DSM Expenditures Application, page 19, July 12, 2023.



Table 5-2: 2024 Low Income Program Area Results Summary – Savings

| Program | Incremental Annual Gas Savings, Net (GJ) | | | |
|-------------------------------|---|--------|--|--|
| | 2024 | 2024 | | |
| | Plan | Actual | | |
| Self Install Program | 27,120 | 24,788 | | |
| Direct Install Program | 14,735 | 18,026 | | |
| Prescriptive Program | 8,829 | 13,251 | | |
| Support Program | Savings not est | imated | | |
| Labour | Savings not estimated | | | |
| Non-Program Specific Expenses | Savings not estimated | | | |
| ALL PROGRAMS | 50,684 56,06 | | | |

2

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3 5.2 SELF INSTALL PROGRAM

4 The Self Install Program provides participants with an Energy Savings Kit (ESK) that includes 5 energy saving measures along with an installation instruction booklet and directions to access 6 online "how to" videos. All measures are easy to install and participants install themselves. The 7 Self Install Program is a partnership program with FBC and BC Hydro.

- 8 The following are key updates for the program in 2024:
- The program met 76 percent of plan expenditures and 91 percent of GJ savings. This was achieved despite a shortened program marketing campaign in the FEI/BC Hydro joint service area and the postal strike.
- The joint FEI/BC Hydro marketing campaign took place in August and September. This campaign was a significant driver of program participation, despite ending earlier than expected due to the provincial election interregnum. The joint FEI/FBC marketing campaign launched in November and was less effective given the overlapped timing with the postal strike.

17 5.3 DIRECT INSTALL PROGRAM

The Direct Install Program provides an in-home visit from a program contractor to assess a participant's home's energy efficiency, install basic measures (e.g., low flow showerheads, faucet aerators, etc.) and provide customized energy efficiency coaching. Additionally, some participants qualify to receive more robust measures such as draft-proofing, ventilation, and insulation. Partners in the Direct Install Program include FBC and BC Hydro.

23 The following are key updates for the program in 2024:



- The program achieved 84 percent of planned expenditures and 122 percent of planned energy savings.
- In 2024, the Program achieved the highest participation to date with over 5,700 participants, primarily driven by housing provider projects. The program expanded fridge replacement criteria which attracted more housing providers to the program and once they were in the program, additional measures that achieve gas energy efficiency were also installed.
- Energy savings exceeded targets due to high participation and the ongoing trend of
 installing comprehensive measures like insulation in the program.

10 **5.4 Prescriptive Program**

11 The Prescriptive Program provides rebates, implementation support, funding for energy studies,

12 and training for non-profit housing providers. Prescriptive rebates are available for residential and

13 commercial measures such as thermostats, insulation, ventilation, gas absorption heat pumps,

- 14 dual fuel hybrid systems, and water heaters.
- 15 The following are key updates for the program in 2024:
- The Prescriptive Program achieved 369 percent of planned expenditures, and 150 percent
 of planned savings.
- Participation and incentives were driven by dual fuel hybrid systems. Demand was greater
 than what was anticipated and was likely driven by contractor engagement and strong
 incentives.

21 **5.5 SUPPORT PROGRAM**

The Support Program provides funding for training and educational opportunities to enhance energy efficiency retrofit skills for people who experience barriers to employment.

- 24 The following are key updates for the program in 2024:
- One element of the Support Program is Residential Energy Efficiency Works which is an energy retrofit training offer for people facing barriers to employment and was deployed in partnership with the Canadian Mental Health Association and the Foundry in 2024.
 Participants contributed to making a community counselling office, managed by Reach Out Counselling, more comfortable and energy efficient by replacing three windows and two doors, as well as installing other energy efficient measures.
- Expenditures were higher than Plan due to necessary upgrades to the Support Program.
 FEI engaged engineering consulting firm RDH Building Science (RDH) to review core participant modules focused on building science and the house-as-a-system approach.



RDH conducted an in-depth review of these modules, updated the content to reflect
 current best practices, and developed new engagement materials and exercises to ensure
 participants retained the information provided.

4 **5.6 SUMMARY**

- 5 Overall, the Low Income Program Area achieved 146 percent of total planned expenditures for a
- 6 total expenditure of \$12.247 million. Greater than expected demand for dual fuel hybrid systems
- 7 was the main driver. High participation in Low Income programs resulted in achieving 111 percent
- 8 of planned energy savings for a total of over 56 thousand GJ/year of natural gas savings.



1 6. INDIGENOUS PROGRAM AREA

2 **6.1 OVERVIEW**

Collaborating with Indigenous communities, FEI supports improvements for existing buildings and new construction. Program design and eligible measures are based upon non-Indigenous retrofit and new construction program eligibility criteria with enhanced rebates and modified application processes and marketing approaches. FEI also supports community outreach and education, and capacity building and training for energy efficiency construction and building maintenance within communities.

9 The Indigenous Program Area is also subject to cost effectiveness requirements in Section 4 of 10 the DSM Regulation as a class A measure.⁷

This is the first year that FEI is reporting Indigenous energy efficiency programs as a separate Program Area. In previous years, the Company included Indigenous energy efficiency participation and expenditures in other areas such as Residential, Low Income, Community Energy Specialists and Conservation Education and Outreach programs. The Indigenous Program Area consists of five programs:

- Direct Install Program;
- Prescriptive Program;
- Performance Program;
- 19 Conservation Education and Outreach Program; and
- Community Energy Specialist.

Tables 6-1 and 6-2 summarize the planned and actual expenditures and savings for the Indigenous Program Area.

23

Table 6-1: 2024 Indigenous Program Area Results Summary – Expenditures

| | Utility Expenditures (\$000s) | | | | | | |
|-------------------------------------|-------------------------------|----------------|----------------|----------------|--------------------|----------------|--|
| Program | Incentives | | Non-Incentives | | Total Expenditures | | |
| | 2024 Plan | 2024 Actual | 2024 Plan | 2024 Actual | 2024 Plan | 2024 Actual | |
| Direct Install | 72 | 26 | 5 | - | 77 | 26 | |
| Prescriptive | 1,092 | 772 | 50 | 18 | 1,142 | 789 | |
| Performance | 581 | 120 | 50 | 4 | 631 | 123 | |
| Conservation Education and Outreach | - | - | 20 | 337 | 20 | 337 | |
| Community Energy Specialist | 480 | 577 | 10 | - | 490 | 577 | |
| Labour | - | - | 335 | 354 | 335 | 354 | |
| Non-Program Specific Expenditures | - | - | 10 | 25 | 10 | 25 | |
| ALL PROGRAMS | 2,225 | 1,495 | 480 | 738 | 2,704 | 2,232 | |

²⁴

⁷ As per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 4(4), as amended June 30, 2023.



Table 6-2: 2024 Indigenous Program Area Results Summary – Savings

| Program | Incremental Annual Gas Savings, Ne (GJ) | | | |
|-------------------------------------|--|-------------|--|--|
| | 2024 | 2024 | | |
| | Plan | Actual | | |
| Direct Install | 202 | 116 | | |
| Prescriptive | 5,545 | 904 | | |
| Performance | 10,328 | 324 | | |
| Conservation Education and Outreach | Savings no | t estimated | | |
| Community Energy Specialist | Savings no | t estimated | | |
| Labour | Savings not estimated | | | |
| Non-Program Specific Expenditures | Savings not estimated | | | |
| ALL PROGRAMS | 16,075 1,344 | | | |

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3 6.2 DIRECT INSTALL PROGRAM

4 The Indigenous Direct Install Program is modelled after the Low Income Direct Install Program 5 with application process modifications. It is delivered in partnership with BC Hydro.

6 The following are key updates for 2024:

The program achieved 96 percent of planned participation. Many Indigenous communities
 have participated in the program in the past so there is limited new market potential.

9 The Indigenous Direct Install Program achieved 34 percent of planned expenditures and • 57 percent of planned energy savings. While participation was strong, the average 10 11 investment per participant was less than anticipated. This reflects fewer comprehensive 12 measure installations in homes and Indigenous participants' reluctance or distrust to allow 13 unknown contractors to enter their homes. Additionally, many Indigenous communities are 14 now investing in home improvements and are incorporating energy efficiency 15 improvements into those renovations, which is resulting in fewer opportunities for 16 comprehensive measures to be provided via the Direct Install Program.

17 6.3 PRESCRIPTIVE PROGRAM

18 The Prescriptive Program has enhanced value rebates to support building envelope and space 19 and water heating improvements. This includes ventilation and health and safety rebates to 20 encourage a house-as-a-system approach and to facilitate energy efficiency upgrades. The 21 program supports community housing departments in residential and commercial applications.



- 1 The following are key updates for 2024:
- The program achieved 69 percent of planned expenditures and 16 percent of planned energy savings. The lower than planned savings is the result of providing higher rebate values to a sub-group of Indigenous communities with low-income households to better understand community needs and challenges related to heating equipment retrofits. This increased costs per unit, while not commensurately increasing total savings.
- Participation and incentive expenditures were driven by the appliance maintenance, dual-fuel heating system and condensing gas water heater measures. Comprehensive measures such as insulation and other building envelope measures had less than planned participation.
- A key focus in 2024 was investing time and resources into working collaboratively with MECS and BC Hydro to consolidate the Indigenous residential prescriptive offers from all three parties into one collaborative program offer. The collaboration, due to launch its first phase in 2025, is expected to reduce market complexity, better meet customers' needs, streamline the application process and encourage increased participation in Indigenous energy efficiency programs in the future.

17 **6.4 PERFORMANCE PROGRAM**

The Performance Program includes both new and existing buildings in residential and commercial sectors. For existing buildings, FEI provides support to identify, assess, and implement building energy efficiency projects. The new building offer is designed to encourage integration of the BC Energy Step Code objectives and includes the Integrated Design Process, enhanced rebates, and energy evaluator support.

- 23 The following are key updates for 2024:
- Program updates were launched mid-way through the year. These include support for new home construction at BC Energy Step Code Steps 3, 4 and 5. Participation in 2024 was driven by Step 3 homes and reflects the importance of allowing Step 3 to be offered to Indigenous communities to become familiar with the BC Energy Step Code and encourage higher efficiency building practices than are required by the Federal Building Code, which is the construction baseline for on-reserve homes.
- The program achieved 20 percent of planned expenditures. The lower than planned expenditures reflect the abbreviated time that the program was in market. Additionally, several communities completed the construction of Step Code 3 and 4 homes but were unable to complete the applications within 2024 timelines.
- Outreach to Indigenous communities indicates strong interest in participating in this program and some communities are planning for new residential construction in 2025 and



1 2 2026. If these projects proceed as planned, higher participation and expenditures are anticipated in those years.

3 6.5 CONSERVATION EDUCATION AND OUTREACH PROGRAM

4 The Conservation Education and Outreach Program provides funding support for community 5 energy planning, community engagement and outreach, and educational support for energy 6 efficiency construction training.

- 7 The following are key updates for 2024:
- The program provides important peripheral support to Indigenous community and education programs that help reduce or remove barriers faced by Indigenous communities when trying to participate in energy efficiency programs. Previously, FEI reported support for Indigenous training, education and community programs under the portfolio Conservation Education and Outreach Initiatives Area.
- The expenditure in 2024 was higher than expected as some activities which were initially planned under the portfolio Conservation Education and Outreach Initiatives Program
 Area were reported here to better reflect the community served by the activities. These expenditures are being recorded in the Indigenous Program Area for better alignment and reporting clarity.

18 6.6 COMMUNITY ENERGY SPECIALIST PROGRAM

19 The Community Energy Specialist Program provides funding support for a dedicated employee 20 and/or other resources and capacity support to help communities facilitate efficiency 21 improvements in buildings, policy development and ultimately, improve energy efficiency and 22 reduce emissions.

- 23 The following are key updates for 2024:
- In previous years, FEI reported Indigenous Community Energy Specialist support as part
 of the non-Indigenous Community Energy Specialist Program. It is now reported under the
 Indigenous Program Area.
- The Indigenous Community Energy Specialist Program exceeded plan expenditures by
 18 percent. This investment supported seven Indigenous Governing Bodies and
 supporting organizations in improving or implementing energy efficiency, emissions
 reductions and policy development within Indigenous communities. Across those
 organizations, this program funded a total of eight positions.



1 **6.7** SUMMARY

2 The Indigenous Program Area achieved 83 percent of total planned expenditures. The Indigenous Program Area is a complex area to administer and requires extensive focus on building trusting 3 4 relationships in communities and longer-term capacity building. While participation in some 5 program areas was lower than planned in 2024, a great deal of effort was put into supporting enabling activities through the Community Energy Specialist Program and the Conservation 6 7 Education & Outreach Program. These areas help to enable future work within Indigenous 8 communities by reducing barriers to participation (e.g., increasing energy efficiency knowledge, 9 supporting roles within communities to focus on energy efficiency, etc.). This investment alongside the collaborative program development efforts between FEI, BC Hydro and MECS are 10 11 anticipated to encourage participation by making it easier to navigate funding opportunities and 12 eliminate past barriers such as program confusion and misalignment.



1 7. CONSERVATION EDUCATION AND OUTREACH

2 **7.1 OVERVIEW**

3 The Conservation Education and Outreach (CEO) Program Area provides education about 4 energy conservation and efficiency, as well as non-program specific outreach communications 5 and engagement. This Program Area fosters a culture of conservation within the province by providing education to a broad range of customers and stakeholders, including hard-to-reach 6 7 residential and commercial customers, and students. The goal of these programs is to inform 8 customers on how to conserve energy (behaviour change) and to educate about energy 9 conservation, efficiency and incentive programs. The costs of CEO activities are included on the 10 portfolio level and have an impact on the overall portfolio cost-effectiveness. Conservation Education and Outreach includes the following programs: 11

- Customer Engagement Tool;
- Residential Education Program;
- Commercial Education Program; and
- School Education Program.

Tables 7-1 and 7-2 summarize the planned and actual expenditures and savings for the CEOinitiatives.

18

Table 7-1: 2024 CEO Program Area Results Summary – Expenditures

| | Utility Expenditures (\$000s) | | | | |
|-------------------------------|-------------------------------|-----------|-----------|--------------------|--|
| Program | Non-Inc | centives | Total Exp | Total Expenditures | |
| | 2024 | 2024 2024 | | 2024 | |
| | Plan | Actual | Plan | Actual | |
| Residential Education Program | 3,660 | 4,397 | 3,660 | 4,397 | |
| Customer Engagement Tool | 5,510 | 1,211 | 5,510 | 1,211 | |
| Commercial Education Program | 1,600 | 1,005 | 1,600 | 1,005 | |
| School Education Program | 1,086 | 1,280 | 1,086 | 1,280 | |
| Labour | 2,746 | 1,795 | 2,746 | 1,795 | |
| Non-Program Specific Expenses | 50 | 44 | 50 | 44 | |
| ALL PROGRAMS | 14,652 | 9,732 | 14,652 | 9,732 | |



1

Table 7-2: 2024 CEO Program Area Results Summary- Savings

| Program | incremental Annual Gas Savings, Net (GJ) | | | |
|-------------------------------|---|-----------|--|--|
| C C | 2024 | 2024 | | |
| | Plan | Actual | | |
| Residential Education Program | Savings not | estimated | | |
| Customer Engagement Tool | 20,000 | 100,358 | | |
| Commercial Education Program | Savings not | estimated | | |
| School Education Program | Savings not | estimated | | |
| Labour | Savings not | estimated | | |
| Non-Program Specific Expenses | Savings not | estimated | | |
| ALL PROGRAMS | 20,000 | 100,358 | | |

2

3 7.2 CUSTOMER ENGAGEMENT TOOL PROGRAM

The Customer Engagement Tool home energy reports help customers understand their energy use in comparison to energy used by similar homes and encourages customers to reduce their energy through actionable advice. The online portal "My Energy Use" offers a home assessment survey that helps customers understand their energy consumption better. By completing the home assessment survey, users receive a customized action plan tailored to their specific needs, which can guide them in reducing their energy use more effectively.

- 10 The following are key updates for 2024:
- Lower than planned expenditures are due to further development of the tool not proceeding because of an unexpected program overlap with an energy rating tool being developed externally for BC residential homeowners, and FEI not pursuing a proposed Virtual Energy Audit program, after further customer research.
- Similar to 2023, FEI sent six home energy reports to approximately 85 thousand customers throughout the year.

17 7.3 RESIDENTIAL EDUCATION PROGRAM

18 The Residential Education Program provides information to residential customers and the public 19 on gas conservation and energy literacy through direct engagement, online tools, and general 20 public marketing/advertising campaigns. Promotional efforts include a multimedia rebate 21 awareness and education campaign, engagement activities, educational seminars, and 22 participation in home shows and community events. This outreach extends to low income and 23 multilingual customers. Ongoing partnerships with regional districts, municipalities, social service 24 organizations, and local sports organizations expand outreach opportunities. The program covers 25 the cost of developing and producing educational and marketing materials for events, as well as



- prizes for audience engagement, such as draft proofing kits, used at events that reach residential
 customers.
- 3 The following are key updates for 2024:
- Higher than anticipated expenditures are attributed to an increase in communications
 resources and paid media for Q1 2024 to ensure a sustained presence in market.
- FEI continued to partner with Empower Me, focusing on income-qualified non-English speaking customers, driving participation in the utility's income qualified programs.
 Participants also learned about their utility bills, safety, and behaviour change initiatives to help them save energy and money.
- FEI continued with the "We've got Rebates" general awareness campaign driving participation in its rebate programs.
- FEI and FBC maintained its commitment to direct customer engagement by participating
 in over 200 events across the province. During these events, more than 25 thousand
 meaningful conversations were conducted, focusing on energy literacy, conservation,
 efficiency, and rebate programs.

16 7.4 COMMERCIAL EDUCATION PROGRAM

17 The Commercial Education Program provides ongoing communication and education about 18 energy efficiency and conservation measures, as well as behavioural change educational 19 programming, to help commercial customers reduce their organization's energy consumption. 20 Commercial Education includes small to large businesses in a variety of sub sectors such as 21 retail, offices, multi-family residences, schools, hospitals, hospitality services and municipal 22 institutions. Promotional activities include face-to-face engagement, print and online marketing, 23 and participation in industry association meetings and tradeshows. FEI and FBC also hosts the 24 Efficiency in Action Awards, which recognizes commercial customers and community 25 organizations for their innovation and leadership in energy efficiency and the gas savings 26 achieved. Additionally, FEI provides support for behavioral and technical education campaigns 27 delivered by energy specialists in their respective organization such as the Energy Wise Network 28 which is offered in partnership with BC Hydro. These initiatives also guide and support energy 29 specialists, thermal energy managers or energy/facilities managers in their respective 30 organizations or communities.

- 31 The following are key updates for 2024:
- FEI continued with the "We've got Rebates" general awareness campaign driving
 participation in its rebate programs.
- FEI's partnership with BC Hydro continued into 2024. This collaboration included the
 Energy Wise Network Program for commercial customers, which resulted in 19 behavior
 change projects being submitted in 2024 (with a completion date of March 31, 2025).



1 2 • Lower than planned expenditures were due to the program area requiring less communication support than anticipated.

3 7.5 SCHOOL EDUCATION PROGRAM

4 The School Education Program includes the Live It Earth series, a kindergarten to grade 8 5 curriculum connected resource, and the assembly style presentation, Energy Champions, which 6 is currently delivered in collaboration with the BC Lions. A program for grades 9-12, introduced in 7 partnership with Live It Earth, offered students practical experience in storytelling through film and 8 opportunities to engage with professionals from the energy efficiency sector. FEI enjoys ongoing 9 partnerships with post-secondary institutions and is supporting additional energy efficiency 10 training for academic and trades training initiatives. This includes in-class programs, on-campus education campaigns, instructional tool development, and education campaigns delivered by 11 12 energy specialists, thermal energy managers or energy/facilities managers.

- 13 The following are key updates for 2024:
- FEI and FBC sponsored curriculum-connected programs for grades K-9 that focus on energy literacy, conservation, and efficiency. The Live It Earth series delivered energy efficiency and conservation education to students in grades K-7 through an interactive online learning platform. Additionally, FEI partnered with Relay Education to provide interactive energy conservation-focused workshops for students in grades 6-7.
- FEI and FBC supported the Climate Action Ripple Effect (CARE) initiative in Vernon.
 CARE engages teachers, students, and community climate experts in creating student
 projects that align with UN Sustainable Development Goals, including energy efficiency
 and conservation. In 2024, the initiative involved over 700 students, 15 teachers, 60
 community members and mentors, resulting in 18 projects focused on energy efficiency.
- For students enrolled in post-secondary academic institutions, FEI, in collaboration with FBC, delivered virtual presentations on demand-side management policies and programs in British Columbia, as well as employment opportunities within the energy management sector. Additionally, FEI and FBC provided funding support to the British Columbia Institute of Technology (BCIT), Okanagan College, and Selkirk College for hands-on training on high-performance buildings using a science based, envelope-first approach.

30 **7.6 SUMMARY**

The CEO Program Area continues to support the DSM Portfolio goals of energy conservation in various ways. Several initiatives and campaigns were undertaken in 2024, positively influencing customer attitudes about efficiency. Educating all types of customers and students remains a strong priority. FEI is committed to ensuring that the information provided is relevant and timely.



- 1 FEI continued its collaboration with FBC in 2024 to maximize efficiencies across both utilities.
- 2 Costs continue to be shared on school, residential, and commercial outreach as applicable. FEI
- 3 remains focused on behavioral change opportunities and partnering with post-secondary
- 4 institutions to foster a culture of conservation in British Columbia while driving program awareness
- 5 and participation.



1 8. INNOVATIVE TECHNOLOGIES PROGRAM AREA

2 **8.1 OVERVIEW**

The Innovative Technologies Program Area evaluates both pre-commercial and commercially available technologies and conducts pilot studies to validate manufacturers' claims related to equipment and system performance. The program area also assesses actual savings and customer acceptance of these newer technologies or systems of technologies. Technologies that successfully emerge from the Innovative Technologies Program Area are considered for inclusion within the applicable sector programs within the larger C&EM portfolio. The Innovative Technologies Program is broken out into three core activities including:

- Technology Screening;
- Pilot Projects; and

24

• Deep Energy Retrofits (Deep Retrofits).

All 2024 activities undertaken in this Program Area meet the definition of technology innovation programs as set out in the DSM Regulation. It should be noted that Innovative Technologies are considered a "specified demand-side measure", meaning that the Program Area or the measures therein are not subject individually to a cost-effectiveness test. Instead, the costeffectiveness of these expenditures is evaluated as part of the DSM Portfolio as a whole.

- In 2024, expenditures of Innovative Technologies were 87 percent of Plan. The expenditure
 variances for the program area are due to construction contingency reserves and some project
 timelines expending into 2025.
- Table 8-1 summarizes the planned and actual expenditures for the Innovative TechnologiesProgram Area.

23 Table 8-1: 2024 Innovative Technologies Program Area Results Summary – Expenditures

| | Utility Expenditures (\$000s) | | | | | | |
|-------------------------------|-------------------------------|--------|----------------|--------|--------------------|--------|--|
| Program | Incentives | | Non-Incentives | | Total Expenditures | | |
| | 2024 | 2024 | 2024 | 2024 | 2024 | 2024 | |
| | Plan | Actual | Plan | Actual | Plan | Actual | |
| Deep Energy Retrofits | 25,620 | 23,411 | 813 | 347 | 26,433 | 23,757 | |
| Pilots | 5,350 | 4,551 | 250 | 301 | 5,600 | 4,852 | |
| Technology Screening Studies | 300 | - | 500 | 165 | 800 | 165 | |
| Labour | - | - | 1,709 | 1,208 | 1,709 | 1,208 | |
| Non-Program Specific Expenses | - | - | 575 | 576 | 575 | 576 | |
| ALL PROGRAMS | 31,270 | 27,961 | 3,847 | 2,597 | 35,117 | 30,558 | |

25 Overall, the Innovative Technologies Program Area achieved 87 percent of planned

26 expenditures. The expenditure variances for the program area are due to construction

27 contingency reserves and some project timelines extending into 2025.



1 8.2 TECHNOLOGY SCREENING STUDIES

2 Technology Screening assesses new energy efficient technologies. Activities include 3 conducting prefeasibility studies, small demonstrations, or lab tests to understand the 4 availability of the technology, applicable codes, and testing standards, estimate the current 5 adoption rate, evaluate any technical barriers, gather measure assumption data, determine the 6 target customers, and assess the market opportunity. The data is used to determine whether 7 the technology meets the requirements of a technology innovation program as defined in 8 Section 1 of the DSM Regulation.⁸ Candidate technologies that do not pass the DSM screen 9 are rejected; those that do pass are considered further through the development of a pilot 10 project if information gaps exist and can be incorporated into a sector program if the information 11 gaps are filled. The Technology Screening activity also incorporates the administration of the 12 Gas Technology Demonstration Program. This program is offered to those participating in FEI's 13 Commercial and Community Energy Specialist Programs to conduct technology studies, 14 demonstrations, and evaluation activities with funding support. Results of these activities are 15 used to inform future DSM programs. Lastly, Technology Screening explores external research 16 activities in collaboration with industry to support market transformation of energy efficient 17 technologies across North America.

18 Table 8-2 outlines the specific Technology Screening activities undertaken in 2024. Expenditure

19 variances are attributable to cost efficiencies of existing studies and were reallocated to support

20 increasing expenditures for pilot projects.

| 2 | 1 |
|---|---|
| | |

| TechnologyScreening Activity | Activity Description |
|--|---|
| Heat Pipe Ventilation Heat Recovery Study | The objective of this prefeasibility study was to identify the energy savings and non-energy benefits of ventilation heat recovery by heat pipe for commercial and industrial settings. This study focuses on factors such as installation costs, operational efficiencies, maintenance requirements, and the overall return on investment. By assessing these aspects, the study provided a comprehensive overview of the potential benefits and challenges associated with heat pipe heat recovery systems, facilitating informed decision-making for future energy- saving initiatives. Study results were provided to the program areas in late 2024. |
| Gas Heat Pump Lab Testing: Residential Gas Absorption Heat Pump | FEI provided funding for a residential gas heat pump manufacturer in partnership with the Gas Technology Institute to conduct efficiency and performance lab testing for a residential gas heat pump to support evaluation of the manufacturer's new production model. Results were provided to the program areas in later 2024. |

Table 8-2: 2024 Technology Screen Activities

⁸ As per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 1 "technology innovation program", as amended June 30, 2023.

FORTISBC ENERGY INC. NATURAL GAS DEMAND-SIDE MANAGEMENT PROGRAMS 2024 ANNUAL REPORT



| TechnologyScreening Activity | Activity Description |
|---|--|
| North American Gas Heat Pump Collaborative | FEI is a founding member of the North American Gas Heat Pump Collaborative. In 2024, FEI provided funding to support manufacturer engagement opportunities to advance gas heat pumps in the residential sector. Funding activities span across 2024 and are used to inform strategic communication and education strategies for contractors and customers to support the adoption of gas heat pump technologies. |
| Restaurant Domestic Hot Water Heat Recovery | In 2024, FEI provided funding to support the demonstration of a system that recovers heat from commercial kitchen appliances and uses the recovered energy to heat water. Funding spans 2024-2025 and the objective of the project to fully demonstrate the savings and safe operation of a heat reclaimer adaptation for gas-fired fryers. |
| Hybrid Heating System Controller | In 2024, FEI provided funding to support development of a smart thermostat which adds a layer of controls to an existing thermostat by seamlessly switching between the furnace and heat pump in homes with dual fuel hybrid heating to reduce carbon emissions and utility bills, without compromising comfort and convenience. Homeowners and small businesses with dual fuel hybrid heating systems can use this technology to optimize heating equipment operation to reduce utility costs and lower carbon emissions. Funding activities span across 2024-2025. |
| Gas Technology Demonstration Pilot ("GTD") | The Gas Technology Demonstration (GTD) pilot provides funding to those participating in FEI's Commercial and Community Energy Specialist Programs to explore innovative technologies through three main offerings: Technology Feasibility Study, Technology Demonstration, and Technology Measurement and Verification. In 2024, GTD provided an incentive for a Fault Detection and Diagnostics application for measurement and verification activities. GTD also approved funding for 6 new applications in 2024 which are expected to be completed in 2025. |
| | 2024 Participants Total: 1 |

1 8.3 PILOT PROJECT EXPENDITURES

2 Pilot Projects gather actual field performance data of a technology in a customer's home or 3 business to verify customer acceptance, installation challenges, costs, and energy savings. This 4 activity is supported by third-party measurement and verification following International 5 Performance Measurement and Verification Protocols. The development and implementation 6 of a typical pilot project for technologies that pass Technology Screening generally takes one 7 to three years, depending on the complexities of the pilot design, program controls and 8 participation requirements. Results from pilot projects help support developing future DSM 9 programs.

- 10 In 2024, FEI experienced strong participation in both the dual fuel and gas heat pump pilot
- 11 programs. Results from these pilots supported the development of related Home Renovation
- 12 and Commercial Prescriptive rebate offerings. Table 8-3 summarizes 2024 Pilot activities.



1

| Table 8-3: | 2024 | Pilot | Activities ⁹ |
|------------|------|-------|-------------------------|
|------------|------|-------|-------------------------|

| Pilot Activity | Pilot Description |
|--|--|
| Carbon Capture Pilot | FEI partnered with CleanO2 to test and demonstrate energy efficiency and GHG reduction for carbon capture and conversion technology installations in the Lower Mainland and Vancouver Island. The pilot is testing if the CleanO2 Carbon Capture Technology can meet the energy conservation and greenhouse gas (GHG) reduction objectives of commercial and small business clients. In 2024, FEI supported installation of one unit. To date, FEI has installed 8 units under this pilot and has been collecting performance data. Manufacturer supply challenges have caused some delays in achieving the target of installing ten units under this pilot. Pilot results are expected in 2025. |
| | 2024 Participants: 1 Expenditures: \$0 |
| Gas Demand Response Pilot | FEI developed and launched the Peak Plan Pilot Program, a residential natural gas demand response pilot. In 2024, the pilot recruited 138 customers who have connected 159 thermostats controlling natural gas furnaces. The pilot aims to investigate whether gas demand response can reduce system capacity restraints, as well as reduce energy consumption and related GHG emissions during peak times. Results are expected in 2025. |
| | 2024 Participants: 138 Expenditures: \$136,777 |
| Commercial Gas Absorption Heat Pump Pilot | FEI installed a model of gas absorption heat pump at a healthcare facility in the Lower Mainland in 2023 which can provide heating and supplemental cooling. The objective is to identify system performance enhancements for both space heating and supplemental cooling. M&V completed during the year and the final report was provided in late 2024. The evaluation showed an average of 1.2 to 1.3 coefficient of performance (COP) during the heating season. The site saw a decrease in annual energy |
| | consumption by about 20% and GHG emissions reduced by 66.5 t-CO ₂ e. |
| | 2024 Participants: 1 Expenditures: \$0 |
| Commercial Gas Engine-driven Heat Pump Pilot | FEI is evaluating the energy savings, installation, and customer acceptance of a gas engine-driven heat pump for commercial customers which provides high- efficient space heating, cooling, ventilation, and domestic hot water. In 2023, FEI provided incentives to install these gas engine-driven heat pumps at four different sites within Lower Mainland and Vancouver Island. Two additional sites in 2024 increased the total to six. M&V on all sites is planned to complete this year along with a final report. |
| | 2024 Participants: 2 Expenditures: \$1,456,509 |
| Residential Gas Absorption Heat Pump Pilot | FEI is evaluating the energy savings, installation, and customer acceptance of a pre-production residential gas absorption heat pump unit for residential space and water heating applications. In 2024, FEI provided incentives to replace the pre-production gas heat pumps with production model for 3 participants. Installations of additional production models are ongoing and will continue through the 2024-2025 heating season. Pilot results are expected in 2025. |

⁹ Participant count values are populated based on the actual incentives released for the 2024 calendar year. The expenditures listed in each pilot do not include evaluation expenditures. The cost for evaluation in each pilot can be found in Appendix A-1.

FORTISBC ENERGY INC.





| Pilot Activity | Pilot Description |
|--|---|
| | 2024 Participants: 3 |
| | Expenditures: \$42,359 |
| Residential Dual Fuel Hybrid Heating Pilot Phase 1 | FEI evaluated energy savings, installation, and customer acceptance of dual fuel hybrid heating systems for residential customers which is a combination of an air source heat pump with a natural gas furnace with integrated controls. In this pilot, FEI installed sub-metered equipment at residential customer premises to evaluate the performance and understand how systems are controlled to establish a baseline of older systems within the market to compare to the performance of newer high-performance models. |
| | 2024 Participants: 22 Expenditures: \$12,428 |
| Residential Dual Fuel Hybrid Heating Early Adopter Offer | FEI is evaluating the energy savings, installation, and customer acceptance of dual fuel hybrid heating systems for residential customers which is a combination of an air source heat pump with a natural gas furnace with integrated controls. In this pilot, FEI provided incentives to participants throughout the province to install new dual fuel hybrid heating systems in their homes. The objective of the pilot is to evaluate the seasonal system coefficient of performance (SCOP), energy consumption, GHG emissions reduction and customer acceptance of this technology. Data collection is ongoing for the existing 40 M&V participants and will continue over the 2024-2025 heating season. No new participants were added in 2024. |
| | 2024 Participants: 0 Expenditures: \$29,087 |
| Gas Engine Heat Pump with Variable Refrigerant Flow | FEI is evaluating the energy savings, installation, and customer acceptance of a Gas Engine Heat Pump with variable refrigerant flow. This unit can provide simultaneous space heating and cooling. The objective of this pilot is to evaluate the system performance, energy consumption, GHG emissions reduction and customer acceptance of this technology. M&V will be ongoing until 2026. An interim report is planned in 2025 with the final report in 2026. |
| | 2024 Participants: 4 |
| Dual Fuel Combination System | Expenditures: \$1,158,050 FEI is evaluating the energy savings, installation, and customer acceptance of a dual fuel combi system. This unit can provide space heating, cooling and domestic hot water services to residential customers and can use both electricity and gas simultaneously. The objective of this pilot is to evaluate the system performance, energy consumption, GHG emissions reduction and customer acceptance of this technology. M&V will be ongoing through the 2025-2026 heating season. 2024 Participants: 20 Expenditures: \$1,110,410 |
| Gas Engine Heat Pump with Variable Refrigerant Flow | FEI installed a Gas Engine Heat Pump with variable refrigerant flow at a new construction office building which can provide simultaneous heating and supplemental cooling. The objective is to identify system performance enhancements for both space heating and supplemental cooling. The M&V data collection is ongoing throughout 2024-25 heating season and a report will be provided in 2025. 2024 Participants: 1 Expenditures: \$833 |



| Pilot Activity | Pilot Description |
|--|--|
| Gas Absorption Heat Pump for Large Homes | FEI is evaluating the energy savings, installation, and customer acceptance of a gas absorption heat pump technology for single-family homes that have a floor plan of more than 3,500 square feet. These units can provide space heating to residential customers and can maintain a system efficiency of greater than 100%. The objective of this pilot is to evaluate the system performance, energy consumption, GHG emissions reduction and customer acceptance of this technology. |
| | 2024 Participants: 13 |
| | Expenditures: \$856,809 |

1 **8.4 DEEP ENERGY RETROFITS**

2 Deep Retrofit activities aim to both assess and evaluate energy efficiency technologies, a 3 system of technologies, and or building designs that can reduce natural gas use and resulting 4 GHG emissions by 50 percent or greater in both residential and commercial buildings. Activities 5 include conducting house-as-a-system technology research to focus on understanding barriers 6 and identifying innovative solutions to support industry and market transformation, executing 7 small and large demonstrations, and partnering with industry stakeholders to educate the 8 market. Results of these activities will be used to inform energy savings and costing numbers, 9 identify customer adoption barriers, and establish recommendations to support future DSM 10 program offerings.

In 2024, Deep Retrofit activities achieved 90 percent of Plan. Three out of four Part 3 commercial buildings completed construction activities and all twenty Part 9 residential homes completed construction and are now underway with evaluation. Expenditure variances were due to contingency reserves for construction and rebate processing timing. Table 8-4 summarizes the Deep Retrofit pilot activities.



1

| Pilot Activity | Pilot Description | | |
|--|---|--|--|
| Deep Energy Retrofit Pilot - Part 3 Commercial Buildings | FEI is evaluating the potential energy savings, GHG emission reduction, customer and industry acceptance and implementation challenges of deep energy retrofits for FEI's Commercial natural gas customers. This multi-year, multi-phase pilot focuses on Part 3 Multi Unit Residential Buildings (MURB), with four final participants, located in BC Climate Zones 4, and 5. Three buildings completed the Construction Phase in 2024 and began the Evaluation Phase. The fourth building is expected to completed construction by mid 2025. | | |
| | 2024 Participants: 4 Expenditures: \$22,527,182 | | |
| Deep Energy Retrofit Pilot - Part 9 Residential Buildings | FEI is evaluating the potential energy savings, GHG emission reduction, customer and industry acceptance and implementation challenges of deep energy retrofits for FEI's residential natural gas customers. This multi-year, multi-phase pilot focuses on Part 9 Single Family Dwellings (SFD), with 20 final participants, located in BC Climate Zones 4, 5 and 6. The Construction Phase was completed in mid 2024. The Evaluation Phase is underway and is expected to complete in Q2 2025. | | |
| | 2024 Participants: 20 Expenditures: \$1,061,519 | | |

Table 8-4: 2024 Deep Retrofit Activities¹⁰

2 8.5 TRANSITIONED MEASURES

3 In 2023, a pilot was launched to evaluate the system performance, optimization opportunities 4 and customer acceptance of dual fuel hybrid system technologies to support the transition of a 5 prescriptive rebate offer for the Home Renovation Rebate (HRR) Program and both the Low 6 Income and Indigenous Prescriptive Program. A residential dual fuel hybrid system most 7 commonly consists of a natural gas furnace and electric heat pump heating system that is 8 sequentially operated with an integrated control system to meet heating needs while offering 9 opportunities to reduce GHG emissions and achieving a combined seasonal system coefficient of performance (SCOP) of 1.5 or greater. Although furnaces and heat pumps are well-10 established technologies, there is still low adoption in BC to install and pair these two 11 12 technologies to perform as one efficient heating system.

During 2024, the Innovative Technologies Program Area supported the transition of dual fuel hybrid system technologies into the Residential, Low Income, and Indigenous Program Areas as a measure. Final evaluation results of the pilot are expected in 2025 and will inform any future program adjustments. While FEI typically transitions measures to main program areas after pilots have final evaluation results, this measure was transitioned to those Programs in 2024 because of the faster transition to advanced DSM measures necessitated by updates to the DSM Regulation and supported by the initial pilot findings.

¹⁰ The expenditures listed in each pilot do not include evaluation expenditures. The cost for evaluation in each pilot can be found in Appendix A-1.



1 Table 8-5 displays the residential dual fuel hybrid system measure actual and forecast results.

| | | Cost | | | | | |
|--------------------|---------------|-------------------|--------------------------------|------------------------|--|--|--|
| | Participation | Energy Savings | GHG Emissions Reductions | Effectiveness (UCT) | | | |
| Actual 2024 | 3,270 | 66,626 GJ | 3,349 tCO2e | 1.0 | | | |
| Plan Forecast 2024 | 2,020 | 40,400 GJ | 2,085 tCO2e | 1.0 | | | |
| Plan Forecast 2025 | 2,465 | 58,667 GJ | 2,949 tCO2e | 1.0 | | | |

Table 8-5: Part 9 Retrofit¹¹ Dual Fuel Hybrid Actual Results & Plan Forecast

3 **8.6 SUMMARY**

2

4 The Innovative Technologies Program Area represents a key component of FEI's overall 5 commitment to DSM activities by identifying viable technologies and projects that have the 6 potential to support new program development within the larger DSM portfolio. Overall, the 7 Innovative Technologies Program Area achieved 87 percent of planned expenditures. The 8 difference between achieved and planned expenditures can be attributed to Technology 9 Screening activities and technology installation and/or construction delays for gas heat pumps, 10 dual fuel hybrid systems and Deep Retrofit pilot activities.

11 The pilots launched in 2024 will support the evaluation and transition of commercial gas engine

12 driven heat pumps into the Commercial & Industrial Program area for 2025. They will also

13 assess opportunities to expand offerings for residential dual fuel systems and enhance

14 opportunities to design and scale deep retrofit program incentives.

¹¹ Includes Residential - HRR, Low Income – Prescriptive, and Indigenous – Prescriptive.



1 9. ENABLING ACTIVITIES

2 **9.1 OVERVIEW**

3 Enabling Activities are initiatives that support and supplement FEI's C&EM program 4 development and delivery. These programs, activities and projects provide resources common 5 to the support and delivery of all program area activities. The costs of Enabling Activities are 6 included at the portfolio level and are reflected in the overall portfolio cost-effectiveness.

- 7 Enabling Activities include the following:
- Trade Ally Network;
- 9 Codes and Standards;
- 10 Reporting Tool and Customer Application Portal;
- Conservation Potential Review;
- Customer Research;
- 13 Commercial Energy Specialist Program; and
- Community Energy Specialist Program.

15 Tables 9-1 and 9-2 summarize the planned and actual expenditures and savings for the

16 Enabling Program Area.

17

Table 9-1: 2024 Enabling Program Area Results – Expenditures

| | Utility Expenditures (\$000s) | | | | | |
|--|-------------------------------|--------|----------------|--------|--------------------|--------|
| Program | Incentives | | Non-Incentives | | Total Expenditures | |
| | 2024 | 2024 | 2024 | 2024 | 2024 | 2024 |
| | Plan | Actual | Plan | Actual | Plan | Actual |
| Trade Ally Network | - | - | 1,770 | 1,199 | 1,770 | 1,199 |
| Codes and Standards | 3,361 | 3,001 | 1,138 | 766 | 4,499 | 3,767 |
| Reporting Tool & Customer Application Portal | - | - | 892 | 705 | 892 | 705 |
| Conservation Potential Review | - | - | 100 | 92 | 100 | 92 |
| Customer Research | - | - | 150 | 168 | 150 | 168 |
| Commercial Energy Specialist Program | 2,600 | 2,144 | 250 | 74 | 2,850 | 2,217 |
| Community Energy Specialist Program | 2,600 | 378 | 30 | 26 | 2,630 | 403 |
| Labour | - | - | 2,151 | 1,309 | 2,151 | 1,309 |
| ALL PROGRAMS | 8,561 | 5,522 | 6,481 | 4,339 | 15,042 | 9,861 |
| | | | | | | |



Table 9-2: 2024 Enabling Program Area Results - Savings

| Program | Incremental Annual Gas Savings, Net (GJ) | | | |
|--|---|--------|--|--|
| | 2024 | 2024 | | |
| | Plan | Actual | | |
| Trade Ally Network | Savings not estimated | | | |
| Codes and Standards | Savings not estimated | | | |
| Reporting Tool & Customer Application Portal | Savings not estimated | | | |
| Conservation Potential Review | Savings not estimated | | | |
| Customer Research | Savings not estimated | | | |
| Commercial Energy Specialist Program | 17,160 | | | |
| Community Energy Specialist Program | Savings not estimated | | | |
| ALL PROGRAMS | 0 17,160 | | | |

2

1

3 9.2 TRADE ALLY NETWORK

The Trade Ally Network (TAN) includes expenditures related to FEI's work with industry. FEI 4 5 relies on trade allies, such as contractors, manufacturers, distributors, and Point of Sale 6 Partners, that provide the qualifying products and quality installations of energy efficiency 7 measures. FEI recognizes that other industry representatives, such as Energy Advisors, 8 general contractors and renovators will play a key role in advancing whole home performance 9 retrofits and influencing energy efficient upgrades in residential homes. This program also supports funding energy efficiency training, a specified demand-side measure outlined in 10 Section 1 of the DSM Regulation.¹² 11

12 The following are key updates for 2024:

The TAN Program achieved 68 percent of Plan. Results were lower than Plan due to delays with some training activities and a planned online portal development. Completed initiatives included additional training on new advanced DSM measures for key industry stakeholders. Efforts were also undertaken to assess industry readiness for adopting deep energy retrofits and to help build contractor capacity.

 In 2024, FEI hosted and sponsored several in-person training sessions for trade allies that focused on advanced DSM measures. The sessions were designed to assist TAN contractors, consulting engineers, energy advisors and builders in adopting advanced DSM measures and continuing to assist residential and commercial customers with their energy efficiency goals.

¹² As per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 1 "class A measure" (c), as amended June 30, 2023.



- In addition, the program collaborated with several major trade associations, such as TECA (Thermal Environmental Comfort Association), BCCPA (BC Care Providers Association) and others, to advance energy efficiency messaging among trade allies and key decision-makers, driving market awareness and uptake of advanced DSM measures. Collaborating with organizations like TECA also enhances the quality of HVAC installations by supporting contractor training and best practices.
- In collaboration with program partners, and the Home Performance Stakeholder Council (HPSC) FEI also supported the development of the Home Performance Industry through trades outreach, training, and ongoing development of the Home Performance Contractor Network (HPCN) - a database of retrofit contractors in BC that meet specific trade designation and training qualifications.

12 9.3 CODES AND STANDARDS

13 The Codes and Standards budget finances FEI's support for codes and standards policy 14 development and research, through in-kind and financial co-funding arrangements. In the 15 residential sector, FEI provides support for energy compliance and testing of new homes 16 through the provision of incentives for energy advisor services in support of the BC Energy Step 17 Code. Incentives encourage builders to work with an energy advisor to validate the energy 18 performance of their home through energy modelling, on-site airtightness testing, completion of 19 the Step Code compliance reports and receipt of an EnerGuide label. Additional support is 20 provided to encourage early design activities such as mechanical design, building envelope 21 design and integrated design process. These activities minimize time and risk when building to 22 the upper tiers of the BC Energy Step Code.

The Codes and Standards area "supports the development of or compliance with specified standard or a measure respecting energy conservation or the efficient use of energy", as referred to in the definition of "class A demand-side measures" in Section 1 of the DSM Regulation and supports implementation and adoption of such measures and aims to educate and provide training to the industry.¹³

- 28 The following are key updates for 2024:
- Program achieved 84 percent of plan. The lower than anticipated expenditures were primarily due to the transition in the New Home Program as Step 3 in the BC Energy Step Code became the base building code, administrative delays in completing code-support funding agreements, and less uptake in municipal and health care authority building portfolio master energy plan funding than anticipated.
- Participated in the development of Energy Efficiency and GHG compliance performance
 pathways of the National Building Code of Canada and National Energy Code of Canada

¹³ As per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 1 "class A measure" (g)(i), as amended June 30, 2023.



- for Buildings. This creates a GHG compliance path which includes other energy sources
 with GHG emissions factors of <25 g/kWh (such as qualifying Renewable Natural Gas
 (biomethane), biomass (i.e., wood), renewables (i.e., on-site PV or wind), and
 hydrogen). The expected publication date is the end of 2025 with revisions in 2030. The
 BC building code is expected to harmonize with these national codes within 18 months
 of the federal publication.
- 7 Participated in the development of a new Dual Fuel Utilization Efficiency Rating with the 8 Canadian Standards Association (CSA) for systems that combine residential gas 9 furnaces and electric ASHPs. This is expected to be completed in 2025 and adopted by 10 the Air Conditioning, Heating and Refrigeration Institute (AHRI) 210/240 standard, as an 11 Appendix (L) - Dual Fuel System Seasonal Efficiency Metrics. It would be applicable to 12 new integrated systems and retrofit situations where a heat pump is added to an existing 13 furnace. A Commercial version is also in development for rooftop-based air heating 14 systems (Make-Up Air and Rooftop Units).

15 9.4 REPORTING TOOL & CUSTOMER APPLICATION PORTAL

16 The Reporting Tool & Customer Application Portal includes expenditures related to the 17 Demand-Side Management Tracking System. This system manages DSM rebates from the 18 application stage through to payment, including application review, approval, payment file 19 exports, reporting, and customer communications. Expenditures included licensing and hosting 20 fees, and the labour required to operate and maintain the system and related customer portal.

As of 2024, dependency on third parties was eliminated by handling all integrations internally,
 continuing to reduce costs.

23 9.5 CONSERVATION POTENTIAL REVIEW

The Conservation Potential Review (CPR) is an important tool for use in developing, supporting, and assessing current and future C&EM expenditure applications, as well as for directional input into program development. The purpose of a CPR study is to examine available technologies and determine their conservation potential, which includes the amount of energy savings that can be explored through conservation and energy management programs over the study period. The CPR does this by comparing the economic and market potential of viable measures to a base case scenario.

31 Work on the newest Conservation Potential Review began in 2024 as planned.

32 9.6 CUSTOMER RESEARCH

Customer Research expenditures included ongoing research to track the impact of C&EM
 communications, communications testing, and customer segmentation research.



- 1 The following are key updates for 2024:
- Research activities included conducting the advanced DSM segmentation analysis to
 understand the large-scale home renovation market, developing personas, and
 identifying demographic and psychographic characteristics.
- Activities also involved ongoing monitoring of the impact of general Conservation and
 Energy Management communications, as well as conducting communications and
 customer testing.

8 9.7 COMMERCIAL ENERGY SPECIALIST

9 The Commercial Energy Specialist Program provides funding for Energy Specialist, Energy 10 Analyst and Thermal Energy Manager positions in large commercial organizations. Funding 11 ranges from \$50 thousand up to \$90 thousand per year, per position. A funded position's key 12 priority is to identify and implement opportunities for their organization to participate in FEI's 13 C&EM programs, while also identifying and implementing non-program specific opportunities to 14 use gas more efficiently. This program is funded as an enabling activity but claims gas savings 15 for those projects completed by a funded position that are not claimed by another FEI DSM 16 program. FEI considers this to be an energy management program¹⁴ and subject to Section 4.¹⁵

- 17 The following are key updates for 2024:
- There were 44 contracted positions within the Commercial Energy Specialist Program.
- Expenditures were lower than the 2024 plan. This reduction was driven by the transition of a Commercial Energy Specialist workshop and several sector-specific meetings from exclusively in-person formats to a combination of in-person and virtual formats. Additionally, the recruitment cycle for filling vacant Commercial Energy Specialist positions at participating sites was longer than expected.
- In 2024, the annual funding for Energy Specialist and Thermal Energy Manager
 positions was increased by \$10 thousand and incorporated into contract renewals. This
 adjustment was essential to retain talent and attract higher-skilled applicants for open
 roles.
- This program is funded as an enabling activity but claims natural gas savings for those projects completed by energy specialists, energy analysts and thermal energy managers that are not claimed by another FEI DSM program. Total 2024 verified (non-C&EM program) annual savings were 17,160 GJ.

¹⁴ As per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 1 "class A measure" (e), as amended June 30, 2023.

¹⁵ As per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 4(4), as amended June 30, 2023.



The energy savings listed only apply to third party verified natural gas projects
 completed by funded positions in 2024 which did not receive incentive funding from
 another C&EM program. These energy savings are only reported and have not been
 included in the calculations for the benefit/cost tests as the required inputs are not
 available.

6 9.8 COMMUNITY ENERGY SPECIALIST PROGRAM

7 The Community Energy Specialist Program provides funding for Senior Energy Specialist positions in municipalities, regional districts and organizations for up to \$100 thousand per year. 8 9 In the FEI service territory, C&EM contributes up to 60 percent of this funding amount, with the 10 remaining portion coming from FEI's External Relations department. Senior Energy Specialists 11 lead policy development and implementation as communities develop or refresh their 12 sustainability and energy plans, including BC Energy Step Code support where applicable and 13 raise awareness of and participate in FEI's C&EM programs. FEI considers this to be an energy management program¹⁶ and subject to Section 4 of the DSM Regulation.¹⁷ 14

- 15 The following are key updates for 2024:
- The Community Energy Specialist Program experienced a slight increase in participation compared to 2023 but was significantly lower than planned as interest from other potential local governments was lower than anticipated. This was primarily due to local government's internal capacity constraints and challenges in finding suitable candidates.
- There were 12 contracted positions within the Community Energy Specialist Program that focused on both FEI and FBC related projects within their organizations.

23 **9.9 SUMMARY**

Overall, the Enabling Program Area achieved 66 percent of total planned expenditures. The difference between achieved and planned expenditures is due to delays with some trade ally training activities and a planned online portal development, lower than expected participation in the Community Energy Specialist Program, as well as higher than expected turnover in the Commercial Energy Specialist Program.

¹⁶ As per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 1 "class A measure" (e), as amended June 30, 2023.

¹⁷ As per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 4 (4), as amended June 30, 2023.



1 10. PORTFOLIO-LEVEL ACTIVITIES

2 **10.1 OVERVIEW**

Portfolio activities are required to properly plan, implement, and evaluate the proposed DSM
programs and support efforts to meet the energy savings targets.

- 5 This area includes:
- Evaluation; and
- 7 Portfolio Level Activities.

8 **Evaluation** studies are conducted to determine if FEI's DSM program objectives are being met 9 and savings are being realized. Evaluation of energy efficiency programs provides internal and

external accountability by reducing uncertainty in the estimates of energy and demand savings.

11 Evaluation activities and studies are done in collaboration with various stakeholders including

12 FBC, government and other utilities.

Portfolio-Level Activities are comprised largely of planning as well as staffing costs and consultant fees for the numerous studies. Portfolio Level Activities are those activities for which the costs cannot be assigned to individual DSM programs. These distinct Portfolio-Level Activities can include expenditure such as DSM support and portfolio level staff labour, some staff training and conferences, facilities and equipment, some industry association memberships, regulatory work and EECAG¹⁸ activities.

19 Expenditures in 2024 for Evaluation and Portfolio-Level Activities were largely as planned. Table20 10-1 includes the planned and actual expenditures.

21

Table 10-1: 2024 Portfolio Activities Results – Expenditures

| | Utility Expenditures (\$000s) | | | | | |
|----------------------------|-------------------------------|----------|-----------|------------|--|--|
| Program | Non-In | centives | Total Exp | oenditures | | |
| | 2024 | 2024 | 2024 | 2024 | | |
| | Plan | Actual | Plan | Actual | | |
| Evaluation | 2,831 | 2,931 | 2,831 | 2,931 | | |
| Portfolio-Level Activities | 2,450 | 2,580 | 2,450 | 2,580 | | |
| ALL PROGRAMS | 5,281 | 5,510 | 5,281 | 5,510 | | |

23 Additional details on Program Evaluation Activities can be found in Appendix A-1.

¹⁸ The Energy Efficiency and Conservation Advisory Group (EECAG) provides insight and feedback on FBC and FEI's portfolio of DSM activities and related issues. In 2024, EECAG sessions were not held.



11. LEGACY EXPENDITURES 1

11.1 OVERVIEW 2

- This section includes legacy expenditures¹⁹ enabled under Section 5 of the DSM Regulation, in 3 4 particular gas space and water heating measures that operate at lower than 100 percent 5 efficiency (i.e. conventional high-efficiency gas equipment).
- 6 Expenditures for conventional high-efficiency gas equipment which were formerly under the 7 respective program areas in the 2023 DSM Plan are included within the Legacy Expenditures 8 section. These incentives are a continuation of committed incentives under the previous DSM 9 Plan period which are expected to be completed or paid within the 2024-2027 DSM Plan period. 10 This Legacy Expenditures section is subject to the prior cost effectiveness guidelines of the 11 DSM Regulation²⁰ which used the blended Total Resource Cost (TRC) test and modified TRC as the primary cost test. Actual expenditures, estimated savings, and results are listed below.
- 12
- 13 The legacy incentives from the Residential Program Area include conventional high efficiency
- 14 furnaces, boilers, EnerChoice fireplaces, condensing tankless and storage tank water heaters,
- 15 combination systems and BC Energy Step Code measures from the Home Renovation and
- 16 New Home programs.
- 17 The legacy incentives from the Commercial Program Area include condensing volume boilers,
- 18 condensing tankless water heaters, furnaces, condensing unit heaters, condensing make up air
- 19 units, capital upgrades, and whole building Step Code and non-Step Code measures from the
- 20 Prescriptive, Performance (Existing Buildings) and Performance (New Construction) programs.
- 21 The legacy incentives from the Low Income Program Area include conventional high efficiency 22 furnaces and boilers, condensing volume boilers, condensing tankless water heaters, and other 23 measures from the Prescriptive Program and the Direct Install Program.
- 24 The legacy incentives from the Indigenous Program Area include conventional high efficiency 25 furnaces, boilers, EnerChoice fireplaces, Step Code measures, condensing storage tank water 26 heaters, condensing tankless water heaters and other measures from the Prescriptive Program. 27 While the Indigenous Program Area is a new distinct area beginning in 2024, these offers were 28 previously offered to Indigenous communities and committed under existing programs. They 29 are separated here for consistency.
- 30 Tables 11-1 and 11-2 summarize the planned and actual expenditures and savings for the 31 Legacy Program Area.

¹⁹ As per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 5, as amended June 30, 2023.

²⁰ This is determined from committed legacy expenditures as per BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 5(2), as amended June 30, 2023, resulting in cost effectiveness as defined under the BC Utilities Commission Act, Demand-Side Measures Regulation (BC Reg. 326/2008) Section 3, as amended March 24, 2017.



1

Table 11-1: Legacy Program Area Results Summary – Expenditures

| Utility Expenditures (\$000s) | | | | | | | |
|---|--|--|--|--|--|--|--|
| Incentives | Non-Incentives Total Expenditures | Total Expenditures | | | | | |
| 2024 2024 | 2024 2024 2024 2024 | | | | | | |
| Plan Actual | Plan Actual Plan Actual | | | | | | |
| 34,693 29,157 | 34,693 29,157 | | | | | | |
| | 1,507 590 1,507 590 | | | | | | |
| 34,693 29,157 | 1,507 590 36,200 29,748 | | | | | | |
| 2024 2024 Plan Actual 34,693 29,157 - - 34,693 29,157 | 2024 2024 <th< td=""><td>2024 ctual 9,157 590 9,748</td></th<> | 2024 ctual 9,157 590 9,748 | | | | | |

3

4

Table 11-2: Legacy Program Area Results Summary – Savings

| Program | Incremental Savings, | Benefit/Cost Ratios | | |
|---------------------|-------------------------|---------------------|-------------|-----------|
| | 2024 Plan | 2024 Actual | TRC | MTRC |
| Legacy expenditures | 147,185 | 217,046 | 2.4 | 6.1 |
| Labour | Savings no | t estimated | Savings not | estimated |
| ALL PROGRAMS | 147,185 | 217,046 | 2.4 | 6.1 |

5 **11.2 SUMMARY**

6 Overall, the Legacy Expenditures Program Area achieved 82 percent of the total planned

expenditure for 2024. The participation in Legacy Expenditures programs resulted in over 217
 thousand GJ/year of natural gas savings.



1 12. CONCLUSION

In 2024, FEI achieved 95 percent of its total approved DSM expenditures and realized 187 percent of annual energy savings for the year, as compared to its 2024-2027 DSM Plan. Annual energy savings were approximately 1.6 million GJ. Incentive expenditures at year-end were more than four times that of non-incentive expenditures, making up 81 percent of the overall portfolio expenditures. The resulting total lifetime energy savings for 2024 DSM activity is estimated at 14.2 million GJ with corresponding lifetime GHG emissions reductions of 962,818 tonnes CO2e. The Report details how FEI cost-effectively delivered these programs in 2024.

In 2025, FEI will continue to offer a robust portfolio of DSM programming accessible to all
 customer groups and locations, meeting the adequacy requirements of the DSM Regulation
 and operating according to the Company's DSM Guiding Principles.

Appendix A-1 FEI INVENTORY OF DSM PROGRAM EVALUATION AND RESEARCH ACTIVITIES



| Evaluation Name | Program Area | Type of Evaluation | Evaluation Partners | Actual Evaluation Expenditure (\$000s) | Evaluation Status |
|---|----------------|-------------------------------|--|---|--|
| HOME RENOVATION PRO | OGRAM | | | | |
| Home Renovation Program Evaluation | Residential | Process & Impact | FortisBC Energy Inc. & FortisBC Inc. | 14 | Evaluation of the program from design to delivery, including assessment of free-ridership, and identifying opportunities and areas for improvement. Completed in 2024. |
| COMMERCIAL NEW CON | ISTRUCTION PRO | OGRAM | | | |
| Third Party Energy Model Reviews | Commercial | Measurement & Verification | None | 351 | Ongoing BC Energy Step Code and Non-BC Energy Step Code energy model validations conducted by a third-party consultant as part of the program administration and evaluation. |
| COMMERCIAL PERFORM | ANCE PROGRA | Μ | | | |
| Third Party Energy Study Reviews | Commercial | Measurement & Verification | None | 204 | Ongoing reviews conducted by third party consultants to verify the reported savings in commercial project energy study reports. Energy study reviews may include engineering calculations for specific energy conservation measures, document reviews, and feasibility study reviews. |
| M&V Project Management and Review | Commercial | Measurement & Verification | None | 132 | Ongoing management and review of commercial and industrial projects post-completion including review and verification of project savings, development of M&V Plans, and completion of a Year 1 and/ or Year 2 M&V Reports. |

Table 1: Inventory of DSM Program Evaluation and Evaluation Research Activities Conducted in 2024¹

¹ Measurement & Verification studies require time to conduct activities which include, but are not limited to, project commissioning, installing and removal of monitoring equipment, data collection, and data analysis and reporting. M&V activities align with the International Performance Measurement and Verification Protocol (IPMVP) Concepts and Options for Determining Energy and Water Savings. Prepared by the Efficiency Valuation Organization: <u>www.evo-world.org.</u> <u>January 2012.</u>



| Evaluation Name | Program Area | Type of Evaluation | Evaluation Partners | Actual Evaluation Expenditure (\$000s) | Evaluation Status |
|--|----------------------------|-------------------------------|--|---|---|
| Custom Efficiency Program (CEP) Evaluation | Commercial & Industrial | Process & Impact | FortisBC Energy Inc. & FortisBC Inc. | 11 | Evaluation of the program from design to delivery, including assessment of free-ridership, understanding participants' motivations for participation, identifying opportunities and areas for improvement, and validation of energy savings. Completed in 2024. |
| Commercial Energy Assessment Program (CEAP) Evaluation | Commercial | Process | FortisBC Energy Inc. & FortisBC Inc. | 4 | Survey conducted with program participants, and key stakeholders to assess the delivery and implementation of the Commercial Energy Assessment Program measures. Completed in 2024. |
| RENTAL APARTMENT EI | FICIENCY PROG | RAM | | | |
| Participant and Building Owner Surveys | Commercial | Process | FortisBC Energy Inc. & FortisBC Inc. | 33 | Annual survey conducted with building owners and tenants to assess customer satisfaction, program awareness, and gather feedback for future program design. |
| INDUSTRIAL PERFORMA | NCE PROGRAM | | | | |
| Third Party Energy Study Reviews | Industrial | Measurement & Verification | None | 79 | Ongoing reviews conducted by third party consultants to review and verify the savings as noted in the project energy study reports. Energy study reviews may include engineering calculations for specific energy conservation measures, plant wide audits, document reviews, and feasibility study reviews. |
| Third Party Measurement & Verification | Industrial | Measurement & Verification | None | 79 | Ongoing management and review of commercial and industrial projects post-completion including review and verification of project savings, development of M&V Plans, and completion of a Year 1 and/ or Year 2 M&V Reports. |



| Evaluation Name | Program Area | Type of Evaluation | Evaluation Partners | Actual Evaluation Expenditure (\$000s) | Evaluation Status |
|---|---------------|-----------------------|---|---|--|
| LOW INCOME PROGRAM | 1S | | | | |
| Direct Install Quality Assurance | Low Income | Evaluation Study | FortisBC Energy Inc., FortisBC Inc. & BC Hydro | 222 | Ongoing quality assurance to ensure direct install measures are installed according to program policies and procedures. |
| Customer Feedback Surveys | Low Income | Process | FortisBC Energy Inc., FortisBC Inc. & BC Hydro | 29 | Surveys with Direct Install Program participants to gather feedback on their customer experience, satisfaction with the program and the program delivery agents. Completed in 2024. |
| Low Income Program Evaluation | Low Income | Process & Impact | FortisBC Energy Inc. & FortisBC Inc. | 35 | Evaluation of the Low Income Program Area through (1) deemed savings review of the Direct Install (ECAP) and Social Housing and Retrofit Support (SHRSP) programs and (2) synthesis of findings from ECAP feedback surveys to identify opportunities and areas for improvement. To be completed in 2025. |
| CONSERVATION EDUCA | TION AND OUTR | EACH | | | |
| Customer Engagement Tool Evaluation - Year 3 | CEO | Process & Impact | FortisBC Energy Inc. & FortisBC Inc. | 8 | Evaluation of the overall program, including a jurisdictional scan to better understand motivations for energy savings, validation of the treatment and control group selection of a new self-compare cohort, and calculation of net savings attributed to the distribution of the Home Energy Reports. Completed in 2024. |
| Customer Engagement Tool Evaluation - Year 4 | CEO | Impact | None | 37 | This is the second phase of the previous year's evaluation and focuses mainly on the program's energy savings impact for natural gas customers in both the normative and self-compare cohorts. This provides a fuller picture of the consumption trends for both cohorts. To be completed in 2025. |



| Evaluation Name | Program Area | Type of Evaluation | Evaluation Partners | Actual Evaluation Expenditure (\$000s) | Evaluation Status |
|---|------------------------|-----------------------|--|---|---|
| COMMERCIAL ENERGY | SPECIALIST PRO | GRAM | | | |
| Energy Audit 2023 | Enabling Activities | Impact | FortisBC Energy Inc. & FortisBC Inc. | 52 | The study is an update to an energy savings audit to verify energy savings from projects completed in 2023. Completed in 2024. |
| Energy Audit 2024 | Enabling Activities | Impact | FortisBC Energy Inc. & FortisBC Inc. | 6 | The study is an update to an energy savings audit to verify energy savings from projects completed in 2024. To be completed in 2025. |
| CUSTOMER RESEARCH | | | | | |
| FortisBC Communication Tracking: Energy Efficiency Conservation | Enabling Activities | Communications | None | 12 | Ongoing tracking of customer engagement and awareness of C&EM activities and provides recommendations for the right media mix. |
| MyVoice Panel Software (Customer Voice Panel) | Enabling Activities | Communications | None | 16 | Market assessment to ensure effectiveness of approach. This includes testing ad concepts, comparing product offerings, testing rebate steps information to ensure clarity, and assessing preferences for various webpage design. Completed in 2024. |
| Commercial End Use Survey | Enabling Activities | Communications | FortisBC Energy Inc. & FortisBC Inc. | 6 | The survey identified energy end-uses in FortisBC's commercial gas and electric customers. The results are intended to support a variety of FortisBC processes and strategic initiatives such as load forecasting, energy conservation program design, long-term resource planning, and conservation potential reviews. Completed in 2024 |
| Customer Satisfaction Index | Enabling Activities | Communications | FortisBC Energy Inc. & FortisBC Inc. | 15 | The study is expected to identify aspects of the customer experience that are driving customer satisfaction with energy efficiency programs and potential actions for FortisBC. To be completed in 2025. |



| Evaluation Name | Program Area | Type of Evaluation | Evaluation Partners | Actual Evaluation Expenditure (\$000s) | Evaluation Status |
|--|----------------------------|-------------------------------|------------------------|---|---|
| TRADE ALLY NETWORK | QUALITY ASSU | RANCE | | | |
| Program Compliance & Quality Assurance Site Visits | Enabling Activities | Evaluation Study | None | 200 | Program compliance and quality assurance site visits are conducted in homes with insulation, draft proofing and space heating measures. Both are ongoing and focus on best practices and program compliance to provide contractor feedback and promote upcoming contractor education and training. |
| INNOVATIVE TECHNOLO | GIES | | | | |
| Gas Absorption Heat Pump for Large Homes | Innovative Technologies | Measurement & Verification | None | 107 | Measurement of energy savings, installation, and customer acceptance of a gas absorption heat pump technology for space heating applications in large residential homes. Pilot is ongoing. |
| Dual Fuel Combination Pilot | Innovative Technologies | Measurement & Verification | None | 202 | Measurement of energy savings, installation, and customer acceptance of a dual fuel combination system for residential space heating, cooling, and domestic hot water applications. Pilot is ongoing. |
| GHP VRF Pilot | Innovative Technologies | Measurement & Verification | None | 112 | Measurement of energy savings, installation, and customer acceptance of a gas engine heat pump with variable refrigerant flow for commercial buildings for space heating and supplemental cooling. Pilot is ongoing. |
| Gas Absorption Heat Pump Pilot | Innovative Technologies | Measurement & Verification | None | 11 | Measurement of energy savings, installation, and customer acceptance of a gas absorption heat pump technology for commercial customers. Final M&V report for two sites. Completed in 2024. |
| Residential Gas Absorption Heat Pump Pilot | Innovative Technologies | Measurement & Verification | None | 26 | Measurement of energy savings, installation, and customer acceptance of a gas absorption heat pump technology for residential space and water heating applications. Pilot is ongoing. |
| Deep Energy Retrofit Pilot | Innovative Technologies | Measurement & Verification | None | 384 | Measurement of energy savings, installation and customer acceptance of building envelope and energy system upgrades for residential and commercial buildings. Pilot is ongoing. |



| Evaluation Name | Program Area | Type of Evaluation | Evaluation Partners | Actual Evaluation Expenditure (\$000s) | Evaluation Status | |
|---------------------------------------|----------------------------|-------------------------------|--|---|---|--|
| Residential Hybrid Heating Program | Innovative Technologies | Measurement & Verification | None | 57 | Measurement of SCOP, understand the switch over temperature set by customers, control system of residential customers who already are users of a hybrid dual fuel heating system. Completed in 2024. | |
| Hybrid Heating Early Adopter | Innovative Technologies | Measurement & Verification | None | 299 | Measurement of SCOP, energy savings, impact of switch over temperature, preferred control system and customer acceptance of dual fuel heating systems in residential settings. Pilot is ongoing. | |
| Dual Fuel RTU Evaluation | Innovative Technologies | Measurement & Verification | None | 24 | Measurement of SCOP, energy savings, impact of switch over temperature, of a dual fuel rooftop unit heating system for commercial customers. The M&V is ongoing. | |
| PORTFOLIO | | | | | | |
| Measure Library Review | Portfolio | Process | FortisBC Energy Inc. & FortisBC Inc. | 62 | Comprehensive review and update of the Measure Library workbook, and integration to DDSM. Completed review and integration in 2024, update to be completed during 2025. | |



Table 2: Summary of Key Findings and Methodology for 2024 Completed DSM Program Evaluation Studies and Pilot Program Reports

| Evaluation Name | Program Area | Type of Evaluation | Methodology | Key Findings |
|--|-----------------|-----------------------|--|--|
| HOME RENOVATION | PROGRAM | | | |
| Home Renovation Program Evaluation | Residential | Process & Impact | The study intended to evaluate program effectiveness through assessing program processes, understanding participants experience, characterizing program participants, estimating gross and net energy savings, and estimating freeridership and spillover. Deemed savings values were subjected to engineering review and compared against a billing analysis of a sample of 70 electric and 70 gas participants of the HRR program to assess the soundness of the deemed savings values and identify potential improvements. The process evaluation included an online survey that received a total of 200 (21%) responses complemented by interviews with program staff and contractors. | Results: The survey showed that majority (93%) of the program participants were "very satisfied" or "satisfied" with the overall program. The rebate had a greater effect on the decision to install higher efficiency furnaces and water heaters. In terms of attitudes towards energy efficiency, more than three fourths of the respondents reported they were somewhat knowledgeable about ways to save energy around their home, and two thirds are "somewhat willing" to pay for energy savings measures. More than half of respondents regard energy efficiency as "high priority". The prevailing attitude seems to be that participants prioritize energy reduction measures when making home improvements so long as the financial burden is not solely on them. For the deemed savings review, realization rate is 100% for most of the measures. Outcome of Key Findings: Results and recommendations were reviewed and taken under consideration for future program design. |
| RENTAL APARTMEN | T EFFICIENCY PR | OGRAM | | |
| Participant and Building Owner Surveys | Commercial | Process | This is an annual feedback survey to gauge participant experience and assess various aspects of the program to inform future program planning. The survey received a total of 26 completed responses out of 55 contacted owners/managers/contacts of rental apartments, accommodations, strata buildings and student residences whose projects had reached or passed the installation phase. This was complemented by a literature review of direct install commercial customer programs in other jurisdictions to identify key features of program effectiveness. | Results: Majority of participants continue to view the program positively. Key drivers for program participation are participants' desire to "reduce owner operating costs" and "save energy". And although not the top priority, "doing the right thing environmentally" remains a key driver. The majority of participants remain pleased with the program on an overall basis, as well as with each of the three components: direct install, energy assessment, and implementation support. Outcome of Key Findings : Continue to conduct tenant and building owner surveys to provide feedback to program design. |



| Evaluation Name | Program Area | Type of Evaluation | Methodology | Key Findings |
|--|----------------|-----------------------|---|---|
| DIRECT INSTALL PR | OGRAM | | | |
| Ongoing Customer Feedback Surveys | Low Income | Process | Two separate surveys were conducted to assess customer satisfaction with the program application process, the measures installed, and the experience with the installation contractors. The paper survey targeted a larger number of participants (Basic ECAP), and the second survey completed by telephone or online was for a subgroup who were eligible for additional draft-proofing, insulation, bathroom fans, programmable thermostats, and/or a natural gas furnace (Advanced ECAP). During 2024, a total of 352 participants completed the Basic ECAP survey and 226 for Advanced ECAP. | Results: The survey showed that Basic ECAP participation has been driven by the need to improve home comfort and the majority of participants are taking additional steps to save energy. The top product installed was the carbon monoxide detector. Satisfaction with product quality, application process, and Energy Coaches remains stable, though overall program satisfaction has slightly decreased (90-93%) compared to the previous year. Advance ECAP survey results also showed participants overall satisfaction remained stable, with more participants indicating higher satisfaction with the total time to complete the installation. Later in the year, programmable thermostat installations declined, and natural gas furnace installations were less common as the program was closing out furnace installations due to the most recent DSM Regulation changes. |
| CONSERVATION EDU | JCATION AND OU | TREACH | | |
| Customer Engagement Tool Evaluation - Year 4 | CEO | Impact | The study focused on estimating the gas energy savings from the program for the period December 2023 to November 2024 based on two customer cohorts: the normative cohort receives Home Energy Reports that compares their consumption against a similar household, and a self- compare cohort receives Home Energy Reports that show their current consumption compared with the previous period. Savings are calculated using the monthly and cumulative savings from the natural gas billing data. | Results : In 2024, the natural gas savings under the normative cohort have remained stable at 1.18 GJ/yr per participant, which represents approximately 1.59% reduction in annual gas consumption exceeding the 1% program target. The self-compare cohort showed a lower calculated natural gas savings at 0.47 GJ/yr per participant, showing a slight increase from the previous year but continues to generate fewer savings compared to the first two years of the normative cohort. Outcome of Key Findings : Results and recommendations were reviewed and taken under consideration for future program design. |



| Evaluation Name | Program Area | Type of Evaluation | Methodology | Key Findings |
|---|----------------------------|-------------------------------|---|---|
| INNOVATIVE TECHNO | DLOGIES | | | |
| Hybrid Heating Early Adopter Interim Report | Innovative Technologies | Measurement & Verification | This study provides performance data on the dual fuel heating system for residential customers. The interim report provided data collected from Jan 1st, 2024, to May 15th, 2024. The M&V study followed IPMVP protocol Option A. | Results: The average SCOP for participants in climate zone 4 was measured as 2.2 with a switchover temperature between 5 and 7 degrees Celsius. The SCOP was primarily driven by the proportion of usage between the systems. The report also noted that the control settings such as the switch-over temperature is a key factor in the system's performance. The M&V will continue over the 2024-25 heating season to measure the SCOP at climate zone 5 & 6, the net energy savings, and emissions reduction. |
| Gas Absorption Heat Pump Phase 6 & 7 Report | Innovative Technologies | Measurement & Verification | The study focused on measuring the energy savings for a gas absorption heat pump (GAHP) installed in conjunction with a domestic hot water (DHW) and space heating boiler, associated emissions reductions and customer acceptance of the technology. Another objective was to identify any issues associated with installation and operation of gas absorption heat pump technology in a multi-unit building. | Results: The major finding from Phase 6 was that the system efficiency improved when the GAHP was used in conjunction with a high efficiency condensing DHW boiler instead of older mid- efficiency DHW boilers. This phase saw an average monthly GJ savings of 31.5. The Phase 7 report showed an average annual energy savings of 1,694 GJ by reducing the runtime of the space heating boilers and using the GAHP units as the primary means of heating. However, it also revealed challenges with maintaining the heating set points of the system during the colder periods of the year, which identified the need for more robust heat loss reduction strategies. |
| Gas Absorption Heat Pump AR Pilot | Innovative Technologies | Measurement & Verification | The study focused on assessing the systems performance, energy efficiency and adherence to the specified operational parameters. The M&V process involved IPMVP option A. | Results: The energy and GHG savings resulted in \$13,833 annual cost savings which is a 4.4 year payback. By replacing the existing boilers with the GAHP the participant was able to reduce their energy consumption by approximately 1,260 GJ annually. The study also showed that the system maintained an average COP of 1.2 to 1.3. |



| Evaluation Name | Program Area | Type of Evaluation | Methodology | Key Findings |
|--|------------------------|-----------------------|--|--|
| CUSTOMER RESEARCH | | | | |
| Commercial End Use Survey | Enabling Activities | Communications | From a random sample of 14,000 FortisBC commercial customers who were invited to participate in the 2024 Commercial End Use Survey (CEUS), a total of 1,616 surveys were completed, of these 523 were joint FBC/FEI customers, and 44 electric-only FBC customers. The survey collected detailed information on building characteristics, fuels, energy end-uses, and operating characteristics. The results will support FortisBC processes and strategic initiatives, including load forecasting, energy conservation program design, long-term resource planning, and conservation potential reviews. | Results: More than half (55%) of FEI commercial customers use natural gas or piped propane for space heating with gas furnaces and gas packaged rooftop units as the main heating methods. About the same proportion of FEI customers use either gas (46%) or electricity (45%) for water heating, and slightly more than a third (35%) of commercial gas customers have upgraded their main water heating system. For electric end uses, hardwired LED fixtures have become the more common indoor lighting compared to linear fluorescents. The majority (69%) of FEI customers use some form of space cooling, with air source heat pump packaged rooftop units and direct expansion rooftop units being the top methods. The survey also noted a growing interest among commercial customers in purchasing or leasing a plug-in electric vehicle. About 6% of customers in the SST indicated they will or probably will install a Level 2 or 3 electric vehicle charging station at their business location in the next five years. |
| MyVoice Panel Software (Customer Voice Panel) | Enabling Activities | Communications | MyVoice is an online customer insights community supported via a cloud-based research platform. The community includes over 4,000 members which FortisBC regularly reaches out to complete short research studies. | Results: Insights were generated from several panel activities to inform future programming and design. Outcome of Key Findings : Results were taken under consideration for future program design. |