**Section 2: Customer Operation/Operating Costs**

**Q. (Section 2, page 2-13) According to Table 2.2, Newfoundland Power forecasts spending more than $6.4 million in each of 2024 to 2026 on CDM programs.**

**a) Are these CDM expenditures targeted primarily to reduce peak demand?**

**b) If these CDM expenditures were eliminated by the end of 2024, by how much would Newfoundland Power's forecast energy sales for 2025 and 2025 be affected?**

**c) Please provide copies of the 2022 and 2023 *Conservation and Demand Management Reports*.**

A. a) CDM Programs provide a combination of peak demand and energy saving benefits. See response to Request for Information CA-NP-039 for a discussion on the customer benefits associated the Company's CDM programs.

b) The incremental cumulative energy savings from Newfoundland Power's CDM programs for 2025 and 2026 are forecast to be 18.5 GWh and 19.2 GWh, respectively.[1]

If CDM expenditures were eliminated by the end of 2024, these incremental energy savings would be eliminated.[2]

c) Attachment A provides a copy of the 2022 CDM report. The 2023 CDM report will not be available until April 2024.

[1] See the response to Request for Information PUB-NP-091, Table 1. The difference between cumulative savings in 2025 and 2024 is 18.5 GWh and 2026 and 2025 is 19.2 GWh.

[2] These figures do not include the Benchmarking program, which provide embedded annual energy savings of approximately 13 GWh. If CDM programs were eliminated, these annual energy savings would also be lost.

**2022 Conservation, Demand Management and Electrification Report**

April 10, 2023

Board of Commissioners
of Public Utilities
P.O. Box 21040
120 Torbay Road
St. John's, NL A1A 5B2

Attention: G. Cheryl Blundon
Director of Corporate Services
and Board Secretary

Dear Ms. Blundon:

Please find enclosed Newfoundland Power's *2022 Conservation, Demand Management and Electrification Report*, filed in compliance with Order No. P.U. 7 (1996-97).

If you have any questions, please contact the undersigned.

Yours truly,

Lindsay Hollett
Senior Legal Counsel &
Assistant Corporate Secretary

Enclosure

ec. Shirley Walsh
Newfoundland and Labrador Hydro

Dennis Browne, KC
Browne Fitzgerald Morgan & Avis

# 2022 Conservation, Demand Management and Electrification Report

**April 10, 2023**

## Table of Contents

## 1.0 Introduction

In Order No. P.U. 7 (1996-97), the Newfoundland and Labrador Board of Commissioners of Public Utilities (the "Board") ordered, in effect, that Newfoundland Power Inc. ("Newfoundland Power" or the "Company") file annual progress reports on its demand side management activities, including conservation activities.

Since 2009, Newfoundland Power and Newfoundland and Labrador Hydro ("Hydro") (collectively, the "Utilities") have offered conservation and demand management ("CDM") programs on a joint and coordinated basis under the takeCHARGE partnership. Customer CDM programs were implemented by the Utilities throughout 2022 in a manner consistent with past practice and existing Board orders.

Electrification initiatives in 2022 consisted of the installation and operation of ten electric vehicle ("EV") charging stations, approved by the Board in Order No. P.U. 30 (2021), as well as customer education and awareness activities.

While CDM programs and electrification initiatives under the takeCHARGE partnership are available throughout the province, this report focuses on the results and evaluation of Newfoundland Power's CDM programs and electrification initiatives.

## 2.0 CDM Programs

### *2.1 Program Delivery*

Newfoundland Power's CDM programs provide residential and commercial customers with incentives that result in quantifiable energy and demand savings.

In 2022, Newfoundland Power offered six CDM programs for residential customers. These programs target: (i) insulation and air sealing;[1] (ii) high performance thermostats; (iii) heat recovery ventilators ("HRVs"); (iv) various small technologies through the Instant Rebates Program; (v) low-cost behavioural changes through the Benchmarking Program;[2] and (vi) the Energy Savers Kit Program, which provides free energy efficiency kits to income qualified customers. While these programs focus on reducing electrical energy consumption, they also provide reductions in peak demand.

[1] In 2022, the Insulation Program was expanded to include duct insulation and air sealing. Previously, the program provided customers with rebates for attic, basement and crawl space insulation. See Appendix A for details.

[2] Also referred to as the Home Energy Report Program, the Benchmarking Program involves using social norms to encourage friendly competition between customers to reduce electricity consumption.

The Company continued to offer the Business Efficiency Program for commercial customers in 2022. The Business Efficiency Program has three components: (i) prescriptive rebates; (ii) custom energy rebates; and (iii) custom demand rebates. Prescriptive rebates provide money back when customers purchase and install eligible products. For custom energy rebates, a takeCHARGE employee consults with the customer to develop an energy saving project that is customized to their individual circumstances.[3] Custom demand rebates are available to commercial customers who implement individualized demand reduction measures that are economically viable and provide measurable demand reduction during peak times.[4]

In 2022, the Company introduced a pilot program targeting small business customers. The Small Business Direct Install Pilot Program provides qualified small business customers with a free energy assessment and select free energy efficiency upgrades. Feedback received from organizations, such as the Canadian Federation for Independent Business and St. John's Board of Trade, has indicated that awareness, time, effort and costs are all barriers expressed by small businesses when it comes to making an investment in energy efficiency. The direct install component of the program addresses these cost and effort barriers. Participants are also informed of opportunities to receive incentives through the Business Efficiency Program for larger energy efficiency upgrades. This program will run as a pilot for two years, at which time it will be evaluated to see if the program should be offered to a wider customer base.[5]

[3] Incentives are provided on an individualized basis for projects that are cost-effective from the customer and utility perspectives. Rebates are paid on the energy savings the customer achieves in the first year of the project.

[4] Under the Business Efficiency Program, customers can receive incentives for demand reduction based on the amount of demand they are able to reduce during peak times. This one-time incentive is based on project demand savings at $100 per kW per month over the December to March period. Demand savings projects require a minimum savings of 50 kW and must be sustainable over five years.

[5] The takeCHARGE Small Business Direct Install Pilot Program is currently offered to customers in the St. John's Metropolitan and Corner Brook areas as a means of exploring the viability of this program while also controlling costs.

### *2.2 Program Results*

Table 1 provides customer participation in Newfoundland Power's CDM programs for 2022, as well as the estimated energy and peak demand savings achieved by new participants.[6]

**Table 1:**
**Newfoundland Power**
**CDM Program Participation and Savings**
**(2022)**

| | Customer Participation | Annual Energy Savings (MWh) | Peak Demand Savings (kW) |
|---|---|---|---|
| **Residential Programs** | | | |
| Insulation and Air Sealing Program | 1,010 | 3,153 | 2,234 |
| Thermostat Program | 887[7] | 335 | 131 |
| HRV Program | 653 | 358 | 111 |
| Benchmarking Program | 69,825 | 17,276 | 8,120 |
| Instant Rebates Program | N/A[8] | 6,850 | 1,202 |
| Energy Savers Kit Program | 2,262 | 1,650 | 447 |
| **Commercial Programs** | | | |
| Business Efficiency Program | 204 | 3,759 | 565 |
| **Total All Programs** | **74,841** | **33,381** | **12,810** |

In 2022, the Company's CDM programs achieved energy savings of 33.4 GWh and peak demand savings of 12.8 MW. The Benchmarking Program resulted in the highest contribution to energy and peak demand savings in 2022, making up approximately 52% of total energy savings and 63% of total peak demand savings.

In addition to CDM programs, the Company continued to offer the Curtailable Service Option to Rate 2.3 and 2.4 customers in 2022. Twenty-four General Service customers participated in the Curtailable Service Option during the 2021-2022 winter season, providing an average aggregate load reduction of approximately 12.2 MW.[9]

Appendix A of this report provides the detailed results for each CDM program for 2022 and over the life of the programs.

[6] Unless otherwise noted, estimated savings indicated in this report are provided on an annualized basis. Actual savings during the year of participation will be less, since savings depend on the actual timing of installation. Due to the nature of customer behavioural changes, Benchmarking Program savings are assumed for one year only.

[7] Thermostat Program participation results were impacted by Costco Wholesale discontinuing its sale of the five-pack of Honeywell programmable thermostats. From 2017-2021, Costco sales of these thermostats made up 66% of the 50,906 programmable thermostats rebated through the program.

[8] The Instant Rebates Program resulted in 206,461 units purchased in 2022; however, the number of participants is not available as customer information is not captured at the point of purchase.

[9] This load reduction is exercised to reduce demand on the electrical system when generation reserves fall below normal operating levels.

### *2.3 Program Evaluation*

The cost-effectiveness of CDM programs is evaluated using the Total Resource Cost ("TRC") test and Program Administrator Cost ("PAC") test, as approved by the Board in Order No. P.U. 18 (2016). These tests are applied annually to assess the cost-effectiveness of CDM programs. Both tests provide a benefit-to-cost ratio whereby a result of 1.0 or greater indicates that a program is cost-effective.

Table 2 provides the TRC and PAC test results for Newfoundland Power's CDM programs in 2022.[10]

**Table 2:**
**Newfoundland Power**
**CDM Program Cost-Effectiveness Results**
**(2022)**

| Program | TRC Test | PAC Test |
|---|---|---|
| Insulation and Air Sealing Program | 4.2 | 5.4 |
| Thermostat Program | 1.4 | 2.2 |
| HRV Program | 1.4 | 1.5 |
| Benchmarking Program | 3.6 | 3.6 |
| Instant Rebates Program | 1.7 | 3.2 |
| Energy Savers Kit Program | 2.9 | 2.9 |
| Business Efficiency Program | 1.8 | 2.8 |
| **Total Portfolio** | **2.6** | **3.6** |

The TRC and PAC test results indicate that the benefits of Newfoundland Power's CDM programs were at least 2.6 times the cost of implementing those programs in 2022.

[10] The TRC and PAC tests were conducted using updated marginal cost information provided by Hydro in the first quarter of 2023.

In addition to cost-effectiveness testing, Newfoundland Power also evaluates changes in market factors that may impact its program delivery. This may include third-party reviews of certain programs to evaluate changes in technologies, industry standards or customer behaviour. Third-party evaluations were conducted of the following programs and initiatives in 2022:

*(i) Instant Rebates Program*

The Instant Rebates Program promotes a variety of smaller energy-efficient products, including LED bulbs. A third-party evaluation of socket saturation levels of LED bulbs in the residential sector was completed in 2022. The Socket Saturation Survey indicated that there are still at least two million sockets left to be converted to LED bulbs in the province.[11] The Instant Rebates Program continues to provide cost effective energy savings for customers and will be continued again in 2023 as opportunity in the market remains.[12] Changes in ENERGY STAR® standards for lighting are expected at the end of 2023. These changes will be monitored for impacts to program delivery.

*(ii) Insulation Program*

A third-party evaluation of the Insulation Program was performed by Guidehouse in 2022. The evaluation focused on the energy and demand savings impacts of the program, as well as customer and trade ally satisfaction. The evaluation found that energy and peak demand savings for the Insulation Program were higher than previously estimated.[13]

A survey of participants found high levels of satisfaction with the Insulation Program. Overall, 91% of participating customers surveyed were either "satisfied" or "very satisfied" with the program.

*(iii) Benchmarking Program*

The Benchmarking Program promotes behavioural changes to improve customers' energy efficiency. Benchmarking uses social norms to stimulate friendly competition among customers as a way to encourage reduction of electricity consumption. The 2022 evaluation showed high levels of participant engagement with the program. Approximately 93% of users reported that they read their Home Energy Reports and found the most value in the comparison of their own energy use to previous months and years. The evaluation also confirmed energy and peak demand savings associated with the program.

[11] The 2022 Socket Saturation Survey was conducted by MQO Research.

[12] In 2020, over 2.5 million products were rebated through the Instant Rebate Campaign followed by 2.1 million in both 2021 and 2022.

[13] For example, in the two years evaluated, Newfoundland Power estimated 7.9 GWh in energy savings for the Insulation Program. The third-party evaluation estimated the energy savings to be 9.4 GWh. Similarly, for peak demand, Newfoundland Power estimated savings of 3,204 kW while the evaluation estimated savings of 6,532 kW. The 2022 reported energy and peak demand savings were estimated using a methodology consistent with Guidehouse's approach.

*(iv) Business Efficiency Program*

A third-party evaluation of the Business Efficiency Program was performed by Guidehouse in 2022. The evaluation focused on energy and demand savings impacts and satisfaction of customers and trade allies. The evaluation found that achieved energy savings for this program were higher than previously estimated.[14]

A survey of participants in the Business Efficiency Program indicated that most customers were "very satisfied" with the recommendations made through takeCHARGE energy assessments and that 90% of respondents are likely to recommend the program to others in the future.

Interviews with trade allies indicated that the takeCHARGE Business Efficiency Program was referred to as one of the "smoothest" programs in terms of its process and requirements and that program oversight was referred to as "just right and effective". Trade allies also indicated they market the program to potential customers and help identify opportunities for upgrades at customer facilities.

*(v) Heat Pump Load Study*

The 2021-2022 winter did not provide conditions conducive to a typical utility peak day. As a result, no additional analysis was completed after the winter season related to the Heat Pump Load Study. Data collection however has continued through the 2022-2023 winter season, which has had several peak days. An analysis of customer heat pump data will be completed after this winter season to assess the impacts of heat pumps on the electricity system during peak.

## 3.0 Education and Awareness

### *3.1 Media and Advertising*

Throughout 2022, broadcast, print, online and social media advertising created awareness for residential and commercial CDM programs as well as for education and awareness activities associated with electrification technologies.

The 2022 takeCHARGE marketing survey conducted by MQO Research continued to show high levels of takeCHARGE program awareness among customers. In 2022, 89% of households surveyed had heard of the takeCHARGE program, most often associating it with rebates (41%). Forty-nine percent of customers recalled takeCHARGE from television, with 22% recalling online advertising and 18% radio. These mediums continue to be effective channels to promote takeCHARGE.

[14] For example, in the two years evaluated, Newfoundland Power estimated 8.7 GWh in energy savings for the Business Efficiency Program. The third-party evaluation estimated the energy savings to be 11.3 GWh. For peak demand, Newfoundland Power estimated savings of 1,470 kW while the evaluation estimated savings of 1,320 kW. The 2022 reported energy and peak demand savings were estimated using a methodology consistent with Guidehouse's approach.

takeCHARGE launched an EV educational advertising campaign in June 2022. The six-week campaign, "Go Everywhere in an EV", aimed to increase education and awareness around EVs. The campaign included television, website and social media advertisements. Across platforms, the campaign generated 87,000 clicks to the takeCHARGE website and generated 1.7 million video views. This campaign was co-funded by Natural Resources Canada.[15]

Twelve takeCHARGE newsletters were included with electricity bills throughout the year. These newsletters included energy-saving tips for homeowners and promoted participation in the rebate programs.

During its 14th annual *Energy Efficiency Week*, takeCHARGE provided customers with the opportunity to virtually connect with energy experts during a free webinar and at an island-wide retailer event held at Kent locations.[16] Newfoundland Power employees were also featured on the NTV News during this week to discuss opportunities for customers to save energy and participate in takeCHARGE rebate programs.

Customers continued to visit takechargenl.ca for a range of energy solutions. The website received over 661,000 visits in 2022. The Insulation and Thermostat Program pages were visited most frequently, followed by the Business Efficiency Program page and the EV page.

### *3.2 Community Outreach*

The takeCHARGE team raises awareness of CDM programs as well as provides education and awareness associated with electrification technologies through a variety of community and outreach activities.

Access to LED bulbs for lower-income households was targeted through the *Make the Switch* initiative. Research shows that customers with lower incomes are less likely to have LED bulbs in their homes.[17] The *Make the Switch* initiative distributed over 19,000 LED bulbs through community groups and organizations, including through partnerships with Stella's Circle, the Community Center Alliance in St. John's, the Association for New Canadians and a number of municipalities throughout the province.

The 2022 *takeCHARGE of Your Town Challenge* received 62 proposals from municipalities for energy-efficiency upgrades within their communities, representing the largest annual volume of applications received to date. The Town of Irishtown-Summerside was awarded $10,000 to upgrade the lighting at their community facilities. The project is a part of the Town's strategy it has been implementing since 2019 as it works to become a "greener" town.

[15] takeCHARGE was awarded $200,000 in funding from Natural Resources Canada for EV demonstration and awareness projects to be completed between December 2021 and March 2023. takeCHARGE utilized this funding to complete EV related events such as ride and drives, a marketing campaign and an online fleet toolkit to educate customers on EVs.

[16] Energy Efficiency Week ran from October 1 to October 7, 2022.

[17] Results from the 2022 Socket Saturation Survey completed by MQO Research provided that among households with annual incomes of less than $40,000, 60% of sockets have a LED bulb. This compares to over 70% of sockets having a LED bulb in households with annual incomes of over $80,000.

Newfoundland Power educated students on energy conservation through the *takeCHARGE Kids in Charge (K-I-C) Start* school program. The program offers presentations for Kindergarten to Grade 6 students and contests that promote energy-efficient behaviours for primary, elementary and high school students. In 2022, over 550 students in 13 schools received presentations on energy efficiency either in person or virtually. takeCHARGE also received 28 entries for its annual school contest for Kindergarten to Grade 12 students.[18]

In 2022, takeCHARGE initiated a series of public EV events across the province. In June, takeCHARGE brought EV owners and dealers together at the St. John's Farmers' Market for the first ever takeCHARGE EVerything EVs Roadshow. The event aimed to provide customers with information to consider if an EV is right for them. Attendees could view a variety of EVs and ask questions of those most familiar with the vehicles, including takeCHARGE employees as well as EV owners and retailers. The EVerything EVs Roadshow made additional stops in Corner Brook, Gander and Rocky Harbour. In total, takeCHARGE hosted 520 members of the public across four events, during which 80 people participated in almost 45 test drives. The EVerything EVs Roadshow was co-funded by Natural Resources Canada.

### *3.3 Trade Allies and Partners*

In 2022, takeCHARGE was recognized for playing a key role in advancing energy efficiency and demonstrating the value of investing in smart energy choices when it received its fifth ENERGY STAR Canada Award. The award recognized the takeCHARGE Instant Rebates Program as "Utility Program of the Year" for the third year in a row.

takeCHARGE continued to support trade allies and partners throughout 2022 through virtual communication, providing supporting materials and webinars. takeCHARGE employees returned to more in-person events in the second half of 2022, attending events such as such as the Municipalities Newfoundland and Labrador Conference, the Hospitality Newfoundland and Labrador Conference, the 50+ Federation Annual Conference, the St. John's Board of Trade Business Awards, the EcoNext Conference, and Memorial University of Newfoundland and Labrador's Botanical Gardens Merry and Bright Festival.

takeCHARGE uses an installer newsletter to stay engaged with its trade allies. The newsletters are used to communicate updates on takeCHARGE initiatives and provide information on what is happening in the energy efficiency sector. In addition to circulating two installer newsletters, takeCHARGE reached out directly to its network of HRV, insulation and heat pump installers to provide information on topics such as the new duct insulation and air sealing programs, and virtual training opportunities. takeCHARGE also leverages these relationships to learn about customer and trade ally satisfaction with programs and gain insight into new programs or technologies that are becoming available to customers.

[18] This province-wide school contest invites students in Kindergarten to Grade 12 to submit projects that showcase energy conservation in creative and effective ways for a chance to win up to $2,500 worth of technology and other supplies for their class or school.

In 2022, takeCHARGE recognized its partners at the fourth annual Luminary Awards. The event used a hybrid format with most participants attending in person at the Emera Innovation Centre in St. John's, while others joined virtually. The Luminary Awards recognize companies, organizations, communities, and individuals across Newfoundland and Labrador who are taking steps to use energy wisely, and inspiring others to do the same.[19]

Partnerships allowed takeCHARGE to grow its efforts around the education and awareness of EVs in 2022. Through partnerships with Natural Resources Canada, Drive Electric NL, the Automobile Dealers Association of Newfoundland and Labrador, local car dealerships, and the New Brunswick Lung Association, takeCHARGE was able to host several events to provide EV education and awareness across the island. Partnerships with local businesses were critical to the successful installation of ten EV charging sites in 2022.

The Government of Canada's *Low Carbon Economy Leadership Fund* aims to reduce greenhouse gas emissions. Through this initiative and provincial funding, takeCHARGE offered its Insulation Program and Thermostat Program to customers with oil heating. It is anticipated that these programs will continue to be available to customers with oil heating until March 2024.

## 4.0 Electric Vehicle Charging Network

In Order No. P.U. 30 (2021), Newfoundland Power's proposed supplemental 2021 capital expenditure for the deployment of ten EV charging stations was approved. Each of these stations contains a 62.5 kW direct current fast charger ("DCFC") and a 7.2 kW Level 2 charger. Installation of all EV charging sites was completed by August 2022. Since that time, Newfoundland Power has seen usage at all customer sites.

[19] Awards were provided in the categories of "Community Impact Award", "Leadership Award – Individual", "Leadership Award – Organization", "Innovation Award", "Partnership Award", "Retail Partnership Award", "EV Awareness Award" and the "BIG Award".

Table 3 shows the number of sessions, the energy usage and revenue from each Newfoundland Power owned public EV charging station for 2022.

**Table 3:**
**Electric Vehicle Charging Stations Statistics**
**2022**

| Charger Locations | Number of Sessions | Energy Usage (kWh) | Revenue ($) |
|---|---|---|---|
| Paradise | 712 | 13,910 | $4,564 |
| Carbonear | 158 | 2,734 | 966 |
| Lewisporte | 144 | 2,319 | 714 |
| Robinsons | 125 | 2,171 | 673 |
| Port Rexton | 106 | 2,172 | 688 |
| Marystown | 104 | 2,167 | 743 |
| Bonavista | 91 | 1,771 | 563 |
| Trepassey | 43 | 321 | 98 |
| Fermeuese | 39 | 446 | 192 |
| St. Mary's | 19 | 98 | 52 |
| **Total** | **1,541** | **28,109** | **$9,253** |

## 5.0 CDM and Electrification Costs

Table 4 summarizes the Company's CDM and electrification related costs from 2018 to 2022.

**Table 4:**
**Newfoundland Power**
**CDM and Electrification Costs**
**($000s)**

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **General Costs** | | | | | |
| Customer Education and Support[20] | 488 | 421 | 429 | 489 | 527 |
| Planning[21] | 282 | 1,082 | 429 | 262 | 331 |
| ***Total General Costs*** | ***770*** | ***1,503*** | ***858*** | ***751*** | ***858*** |
| **Program Costs** | | | | | |
| Insulation and Air Sealing Program | 1,152 | 1,379 | 1,393 | 1,176 | 1,350 |
| Thermostat Program | 412 | 421 | 324 | 294 | 146 |
| HRV Program | 209 | 145 | 157 | 205 | 229 |
| Benchmarking Program | 813 | 793 | 770 | 974 | 986 |
| Instant Rebates Program | 1,742 | 1,448 | 973 | 1,020 | 959 |
| Energy Savers Kit Program[22] | - | - | - | 103 | 288 |
| Business Efficiency Program[23] | 1,716 | 1,687 | 1,344 | 1,035 | 938 |
| ***Total Program Costs*** | ***6,044*** | ***5,873*** | ***4,961*** | ***4,807*** | ***4,896*** |
| **Capital Costs** | | | | | |
| CDM Capital Expenditures[24] | 50 | 21 | 57 | 41 | 72 |
| EV Charging Network[25] | - | - | - | - | 1,481 |
| ***Total Capital Costs*** | ***50*** | ***21*** | ***57*** | ***41*** | ***1,553*** |
| **Other Costs** | | | | | |
| EV Charging Network[26] | - | - | - | - | 28 |
| Curtailable Service Option | 388 | 375 | 398 | 403 | 408 |
| ***Total Other Costs*** | ***388*** | ***375*** | ***398*** | ***403*** | ***436*** |
| **Total Costs** | **7,252** | **7,772** | **6,274** | **6,002** | **7,743** |

[20] 2022 costs are shown net of approximately $48,000 in funding received from Natural Resources Canada in 2022 associated with EV education and awareness activities.

[21] Planning costs in 2019 reflect completion of the Dunsky Energy Potential Study, development of the *Electrification, Conservation and Demand Management Plan: 2021-2025* (the "2021 Plan"), and the first year of the Heat Pump Load Study. Costs in 2020 reflect completion of the 2021 Plan. Costs in 2022 reflect implementation of the Small Business Direct Install Pilot Program.

[22] Costs in 2022 reflect the first year the program was fully implemented and offered to customers.

[23] Decreases in program participation since 2020 were driven by COVID-19 impacts on local businesses.

[24] Capital expenditures are associated with improvements to the takeCHARGE website and the Company's tracking systems.

[25] 2022 costs are shown net of $550,000 in funding received from Natural Resources Canada in 2022 associated with the installation of ten EV charging stations.

[26] Costs in this category are related to the maintenance, operation and advertising of the EV Charging Network.

## 6.0 Outlook

CDM programs remain an essential part of managing peak demand while meeting customers' expectations that their utility help them with their energy costs.

In 2023, takeCHARGE will explore the most effective demand management options associated with space heating and EV load through two pilot programs.[27] These pilot programs will be aimed at furthering understanding of the effectiveness of demand response in the province, including the cost to establish programs, the amount of load that could be shifted, customer adoption and acceptance, and the potential for cost-effective programs based on scalability.[28]

These pilot programs are timely, as both Federal and Provincial Governments are currently offering programs to encourage fuel-switching, which increases customers' adoption of electric space heating, and EV rebates to encourage EV adoption. Electric space heating adoption and transportation electrification will increase utility peak load. The pilot programs will inform future load management initiatives to reduce peak load effects associated with space heating and transportation electrification in a cost-effective manner.

takeCHARGE will begin the planning cycle for its next multi-year plan in 2023. This includes the completion of residential and commercial end use surveys which are prerequisites to the next potential study. Potential studies focusing on conservation, demand management and electrification are anticipated to begin in the latter part of 2023.

The future of electricity supply on the Island Interconnected System remains uncertain. Hydro continues to evaluate supply alternatives through its *Resource and Reliability Adequacy Study*, which could change the marginal cost of electricity supply, particularly for capacity. Based on current data, all existing CDM programs are expected to remain cost-effective in 2023.[29] Newfoundland Power will continue to monitor and evalute its programs annually to ensure they remain cost-effective for customers.

Community outreach and customer education will remain a focus for Newfoundland Power in 2023. The Company will continue to educate its customers on matters regarding using energy wisely, including electrification technologies. In 2023, large scale events like the Canadian Home Builders Association Home Show are scheduled to return, which provide an opportunity for large numbers of customers to connect with takeCHARGE.

[27] Newfoundland Power anticipates filing an application with the Board in the second quarter of 2023 for approval of an EV load management pilot program. This pilot program will allow the Utilities to explore the most effective options to shift EV charging to off-peak periods.

[28] The cost-effectiveness of demand response programs will be measured based on the PAC test. The PAC test is more appropriate for use when customers do not have to incur costs to participate. The TRC test is more appropriate when customers will have to incur costs such as purchasing insulation, etc.

[29] 2023 may be the last year for both the Instant Rebate and Thermostat programs. Changes in ENERGY STAR standards for LED lighting expected to take effect in Canada at the end of 2023 may make the Instant Rebate Program no longer viable. Participation in the Thermostat Program has declined year over year. The Utilities will monitor the market and assess the future viability of the programs in 2023.

**Appendix A**
**takeCHARGE Program Descriptions and Results**

## 1.0 Introduction

The following tables provide details of customer participation levels, savings results achieved and the levelized utility cost ("LUC") for each CDM program for 2022 and since program implementation.[30] The TRC and PAC test results for 2022 are based upon forecast marginal costs of energy and capacity.[31]

The estimated annual energy and peak demand savings in each year represent the savings resulting from participants in that year. The estimated life to date energy and peak demand savings reflect the energy savings associated with energy-saving technologies that have been installed by all participants in the program. These savings will continue to occur each year for the life of the installed measures.

## 2.0 Residential Programs

With the exception of the Instant Rebates Program and Benchmarking Program, residential program incentives are processed primarily through customer applications. The programs are promoted in partnership with trade allies in retail, home building and renovation industries.

### *2.1 Insulation and Air Sealing Program*

The objective of the Insulation and Air Sealing Program is to provide incentives to increase the insulation R-value in residential basements, crawl spaces and attics, thereby increasing the efficiency of the home's building envelope. Eligibility for the program is limited to electrically heated homes, determined on the basis of annual energy usage. Home retrofit projects are eligible. Customers can receive an incentive of 75% of basement wall or ceiling insulation material costs up to $1,000, and 50% of attic insulation material costs up to $1,000.

In 2022 the Insulation Program was expanded to include insulation for heating ducts in unconditioned spaces, as well as an air sealing component. Customers applying for duct insulation can receive an incentive of 50% of their material costs up to $500, and air sealing customers can receive an incentive of up to $500 depending on the results of their pre- and post-air sealing assessments.

[30] The LUC represents the economic cost to the utility (per kWh) to save energy considering only utility program costs (i.e. program development, marketing, incentives and administration costs), not customer costs.

[31] The TRC test accounts for customer costs and benefits, whereas the PAC test accounts for costs and benefits incurred by the utility only.

Table A-1 shows the customer participation levels, savings results achieved, and the LUC for the Insulation and Air Sealing Program for 2022 and since implementation.

**Table A-1:**
**Insulation and Air Sealing Program Results**

| | Customer Participation | Energy Savings (MWh) | Peak Demand Savings (kW) | LUC (¢/kWh) |
|---|---|---|---|---|
| **2022** | 1,010 | 3,153 | 2,234 | 4.6 |
| **Life to Date**[32] | 18,120 | 51,608 | 19,663 | 3.0 |

**2022 TRC Result:** 4.2
**2022 PAC Result:** 5.4

### *2.2 Thermostat Program*

The Thermostat Program encourages the installation of programmable and electronic thermostats, which provide customers with better control of the temperature in their home and to save energy. High-performance programmable thermostats allow customers to reduce the temperature during the night or when they are away. Eligibility for the program is limited to electrically heated homes, determined on the basis of annual energy usage. Home retrofit projects and new home developments are eligible. Incentives of $10 per programmable thermostat and $5 per electronic high-performance thermostat are offered.

Table A-2 shows the customer participation levels, savings results achieved, and the LUC for the Thermostat Program for 2022 and since implementation.

**Table A-2:**
**Thermostat Program Results**

| | Customer Participation | Energy Savings (MWh) | Peak Demand Savings (kW) | LUC (¢/kWh) |
|---|---|---|---|---|
| **2022** | 887 | 335 | 131 | 5.8 |
| **Life to Date** | 27,944 | 24,669 | 3,320 | 2.1 |

**2022 TRC Result:** 1.4
**2022 PAC Result:** 2.2

[32] "Life to Date" represents the program results since the launch of the program.

### *2.3 Heat Recovery Ventilator ("HRV") Program*

The HRV Program encourages customers to purchase a high-efficiency HRV to improve the efficiency of their home. Eligible measures in this program include HRV models that have a Sensible Recovery Efficiency of 70% or more. Customers who purchase a high-efficiency HRV can receive a rebate of $175. All customers are eligible for this program regardless of the age of their home or heat source.

Table A-3 shows the customer participation levels, savings results achieved, and the LUC for the HRV Program for 2022 and since implementation.

**Table A-3:**
**HRV Program Results**

| | Customer Participation | Energy Savings (MWh) | Peak Demand Savings (kW) | LUC (¢/kWh) |
|---|---|---|---|---|
| **2022** | 653 | 358 | 111 | 7.3 |
| **Life to Date** | 3,981 | 2,196 | 686 | 7.3 |

**2022 TRC Result:** 1.4
**2022 PAC Result:** 1.5

### *2.4 Benchmarking Program*

The Benchmarking Program encourages customers to adopt energy-efficient behavioural changes. Participants receive home energy reports that provide insight into their electricity use. The reports help customers understand changes in their usage over time, as well as how they compare to similar homes. Reports also include practical tips on how to save energy moving forward. The program includes an online portal component that allows customers to engage even further through weekly challenges and personalized savings plans.

Program participants are randomly selected and broadly reflect the composition of Newfoundland Power's customer base in respect of heating type and geographic distribution. No financial incentive is offered for this program.

Table A-4 shows the customer participation levels, savings results achieved, and the LUC for the Benchmarking Program for 2022 and since implementation.

**Table A-4:**
**Benchmarking Program Results**

| | Customer Participation | Energy Savings (MWh) | Peak Demand Savings (kW) | LUC (¢/kWh) |
|---|---|---|---|---|
| **2022** | 69,825 | 17,276 | 8,120 | 5.7 |
| **Life to Date**[33] | 69,825 | 17,276 | 8,120 | 6.1[34] |

**2022 TRC Result:** 3.6
**2022 PAC Result:** 3.6

### *2.5 Instant Rebates Program*

The Instant Rebates Program promotes a variety of smaller technologies, such as LED bulbs and high-efficiency showerheads, through rebates available at the cash register of participating retailers. All customers are eligible for this program regardless of the age of their home or heat source.

Table A-5 shows the customer participation levels, savings results achieved, and the LUC for the Instant Rebates Program for 2022 and since implementation.

**Table A-5:**
**Instant Rebates Program Results**

| | Customer Participation[35] | At-the-Cash Rebates | Energy Savings (MWh) | Peak Demand Savings (kW) | LUC (¢/kWh) |
|---|---|---|---|---|---|
| **2022** | 0 | 206,461 | 6,850 | 1,202 | 2.8 |
| **Life to Date** | 7,288 | 3,907,553 | 81,883 | 18,444 | 2.9 |

**2022 TRC Result:** 1.7
**2022 PAC Result:** 3.2

[33] Due to the nature of customer behavioural changes, benchmarking savings are assumed for one year only.
[34] While Benchmarking Program savings are claimed for one year, the LUC for the life of program is derived considering the sum of savings and program costs in all years the program has been offered.
[35] The Instant Rebates Program was previously included as part of a Small Technologies Program, which also included an on-bill rebate component for Appliances and Electronics. The Appliances and Electronics component ended in 2017. The life to date customer participation presented in Table A-5 represents participants in the Appliance and Electronics component prior to its end. Customer participation data is not tracked for the Instant Rebates Program.

### *2.6 Energy Savers Kit Program*

The Energy Savers Kit Program provides free energy efficiency kits to income-qualified customers. Customers are qualified based upon their net income and the number of people living in the household. Qualifying customers receive a kit with specific items depending on their heating source.[36] Customers who install all products in their kit may see energy savings of up to $100.

Table A-6 shows the customer participation levels, savings results achieved, and the LUC for the Energy Savings Kit Program for 2022 and since implementation.[37]

**Table A-6:**
**Energy Savers Kit Program Results**

| | Customer Participation | Energy Savings (MWh) | Peak Demand Savings (kW) | LUC (¢/kWh) |
|---|---|---|---|---|
| **2022** | 2,262 | 1,650 | 447 | 2.2 |
| **Life to Date** | 2,262 | 1,650 | 447 | 2.2 |

**2022 TRC Result:** 2.9
**2022 PAC Result:** 2.9

## 3.0 Commercial takeCHARGE Programs

### *3.1 Business Efficiency Program*

The objective of the Business Efficiency Program is to improve electrical energy efficiency in a variety of commercial facilities and equipment types. Program components include financial incentives based on energy savings, and other financial and educational supports to enable commercial facility owners to identify and implement energy efficiency and demand reduction projects. This program is available for existing commercial facilities that can save energy or reduce demand by installing more efficient equipment and systems. The program includes custom project incentives and rebates for specific measures on a per unit basis.

[36] Customers who do not have electric heat do not receive all of the kit contents such as weatherproofing items that will decrease their space heating costs. All customers receive items such as LED bulbs and showerheads to reduce electricity costs for these end uses.

[37] The Energy Savers Kit Program was launched in January 2022. As such, Life to Date data is the same as 2022 data.

Table A-7 shows the customer participation levels, savings results achieved, and the LUC for the Business Efficiency Program for 2022 and since implementation.

**Table A-7:**
**Business Efficiency Program Results**

| | Customer Participation | Energy Savings (MWh) | Peak Demand Savings (kW) | LUC (¢/kWh) |
|---|---|---|---|---|
| **2022** | 204 | 3,759 | 565 | 3.2 |
| **Life to Date** | 3,198 | 48,279 | 8,782 | 2.9 |

**2022 TRC Result:** 1.8
**2022 PAC Result:** 2.8

## 4.0 Total Results of takeCHARGE Programs

Table A-8 shows the participation levels, savings results achieved, and the LUC for all of the programs for 2022 and since implementation.

**Table A-8:**
**takeCHARGE Programs**
**Total Results**

| | Customer Participation | At-the-Cash Rebates | Energy Savings (MWh) | Peak Demand Savings (kW) | LUC (¢/kWh) | Provincial LUC (¢/kWh)[38] |
|---|---|---|---|---|---|---|
| **2022** | 74,841[39] | 206,461 | 33,381 | 12,810 | 3.8 | 4.0 |
| **Life to Date** | 132,618[40] | 3,907,553 | 227,561 | 59,462 | 3.2 | 3.5 |

[38] "Provincial LUC" represents the combined cost and energy savings of the Utilities' Island Interconnected CDM program offerings.
[39] Figure consists of 74,841 participants in the 2022 Benchmarking Program, and 5,016 participants in on-bill rebate programs.
[40] Prior years' participants in the Benchmarking Program are not included in this number.

Table A-9 shows the TRC and PAC test results for Newfoundland Power's residential and commercial portfolios, along with the provincial portfolio, which includes Hydro's Island Interconnected System costs and energy savings.

**Table A-9:**
**takeCHARGE Programs**
**TRC and PAC Test Results**
**(2022)**

| | TRC Result | PAC Result |
|---|---|---|
| **Residential Portfolio** | 2.8 | 3.8 |
| **Commercial Portfolio** | 1.8 | 2.8 |
| **Provincial Portfolio** | 2.5 | 3.5 |