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July 14, 2023

Patrick Wruck
Commission Secretary and Manager
Regulatory Services
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Patrick Wruck:

**RE: British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
Fiscal 2005 – Fiscal 2006 Revenue Requirements Application BCUC
Decision G-96-04 dated October 29, 2004: Directive 69 (AMENDED pursuant
to 2006 Integrate Electricity Plan and 2006 Long-Term Acquisition Plan
BCUC Decision G-29-07 dated May 11, 2007: Directive 16) 2008 Long-Term
Acquisition Plan BCUC Decision G-91-09 dated July 27, 2009: Directives 36,
38 and 42 Fiscal 2017 – Fiscal 2019 Revenue Requirements Application
BCUC Decision G-47-18 dated March 1, 2018: Directive 23 Fiscal 2020 –
Fiscal 2021 Revenue Requirements Application BCUC Decision G-246-20
dated October 2, 2020: Directives 47, 49, 50 and 51**

BC Hydro writes to provide its Report on Demand Side Management Activities for the 12 months ending March 31, 2023.

For further information, please contact Frankie Vaide at
bchydroregulatorygroup@bchydro.com.

Yours sincerely,



Chris Sandve
Chief Regulatory Officer

sg/ma/om

Enclosure



Report on Demand-Side Management Activities for Fiscal 2023

June 26, 2023

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1 Introduction

This BC Hydro annual report to the British Columbia Utilities Commission (**BCUC** or **Commission**) on Demand-Side Management (**DSM**) activities provides information on DSM expenditures, electricity savings, plan performance and mitigation measures for the 2023 fiscal year, which is the 12 months ending March 31, 2023. This report also provides information on Low Carbon Electrification expenditures within the DSM Regulatory Account.

This annual report is filed in compliance with, or to reflect, the following BCUC Directives:

- Directive 69 from the BCUC Decision G-96-04 on BC Hydro's Fiscal 2005 to Fiscal 2006 Revenue Requirements Application (**F05-F06 RRA**);
- Directive 16 from the BCUC Decision G-29-07 on BC Hydro's 2006 Integrated Electricity Plan and Long-Term Acquisition Plan (**2006 IEP/LTAP**);
- Directives 36, 38, and 42 from the BCUC Decision G-91-09 on BC Hydro's 2008 Long-Term Acquisition Plan (**2008 LTAP**);
- Directive 23 from the BCUC Decision G-47-18 on BC Hydro's Fiscal 2017 to Fiscal 2019 Revenue Requirements Application (**F17-F19 RRA**); and
- Directives 47, 49, 50 and 51 from the BCUC Decision G-246-20 on BC Hydro's Fiscal 2020 to Fiscal 2021 Revenue Requirements Application (**F20-F21 RRA**).

Directive 69 of the F05-F06 RRA Decision directed BC Hydro "to provide information to the BCUC for on-going review of Power Smart performance through:

- Executive Summaries of milestone evaluation reports and full final evaluation reports for each program; and
- Semi-annual reports on DSM activities which, amongst others, will include:

-
- ▶ Detailed breakdown of OMA expenses related to support activities carried out within the Power Smart group and in other departments that support the Power Smart organization;
 - ▶ Detailed description of the functions of portfolio level costs and how these costs are allocated to programs;
 - ▶ Summaries of the overall performance of Power Smart with reference to program objectives; and
 - ▶ Variances of fiscal year budgeted and actual deferred capital expenditures and explanation of variances.”

Directive 16 of the 2006 IEP/LTAP Decision directed BC Hydro “to continue to file reports on DSM performance as described in Directive 69 of the F05/F06 RRA Decision included in Order No. G-9604 and to file its Semi Annual Demand-Side Management Reports in the same format as the June 2005 Report with the following enhancements:

- (i) Provide annual and cumulative totals since program inception;
- (ii) Express these values on a per unit basis; and
- (iii) Provide the benefit to cost ratios for the three DSM tests.”

Directive 36 of the 2008 LTAP Decision directed BC Hydro to switch from semi-annual to annual DSM performance reports. Directive 38 from the same Decision directed BC Hydro to include in these reports:

“...metrics for each initiative, achievements in relation to milestones, and description of past or planned mitigation measures where warranted. These mitigation measures should include shifting program resources and alternative supply options for each program. Ongoing DSM performance reporting should demonstrate how BC Hydro is continuously pursuing DSM and that specific programs are cost-effective.”

Directive 42 of the 2008 LTAP Decision directed BC Hydro to continue to report Ratepayer Impact Measure (**RIM**) test values.

Directive 23 of the F17-F19 RRA Decision directs BC Hydro to “include a line item in BC Hydro’s Annual Report on DSM Activities to reflect the Non-Integrated Area (**NIA**) activities that are tracked separately.”

Directive 47 of the F20-F21 RRA Decision directed BC Hydro, among other things, to report on the progress of the NIA program in future annual DSM reports, and in the fiscal 2023 Revenue Requirements Application, “including an assessment of whether that program has been effective in reducing barriers for Non-Integrated Area customers in accessing DSM offerings and thereby meeting the objective of Directive 23 from the 2017 to 2019 Revenue Requirements Application.”

Directive 49 of the F20-F21 RRA Decision directed BC Hydro “to report on the Low Carbon Electrification expenditures within the DSM Regulatory Account annually in its annual DSM report to the BCUC, clearly allocated to the applicable classes defined in section 4(3) (a), (b), (c) or (d) of the GRR, including a consolidated table with a break down between the Initial LCE and BC Hydro LCE projects and programs.”

Directive 50 of the F20-F21 RRA Decision rescinded Directive 61 from Order No. G-96-04 on BC Hydro’s F05-F06 RRA.

Directive 51 of the F20-F21 RRA Decision determined that BC Hydro may make inter-year and inter-program area transfers, as follows:

- BC Hydro may transfer unspent accepted DSM expenditures in a program area to the same program area in the following year of the Test Period, on the condition that BC Hydro provides information regarding unspent amounts as part of its annual DSM reports so that all amounts transferred within a program area are transparently accounted for from one test year to the next; and

-
- The Panel accepted the DSM expenditure schedule including transfers of up to 25% of DSM expenditures from any one existing program area to any other existing program area.

BC Hydro files its evaluation reports pursuant to Directive 69 of the F05-F06 RRA Decision separately.

This annual report addresses the balance of Directives 69 and 16, as well as Directives 36, 38, and 42 of the 2008 LTAP Decision, Directive 23 of the F17-F19 RRA Decision and Directives 47, 49, 50 and 51 of the F20-F21 RRA Decision.

BC Hydro acknowledges the recommendation made in BCUC Decision G-91-23 on BC Hydro's Fiscal 2023 to Fiscal 2025 Revenue Requirements Application, which recommended that BC Hydro report on key accomplishments at the measure level within its annual DSM reporting. As this recommendation came after the end of fiscal 2023, we have not considered this recommendation for this annual report. However, we plan to begin reporting on some measure level activities in next year's report when the required new reporting processes are set up.

2 Expenditures and Electricity Savings for Fiscal 2023 as a Result of DSM Activities

BC Hydro's DSM expenditures¹ in fiscal 2023 totalled \$76.5 million, while new incremental DSM electricity savings totalled 639 GWh/year. Expenditures were \$13 million or 14% below the Fiscal 2023 DSM Plan presented in BC Hydro's F23-F25 RRA. Overall, new incremental electricity savings as shown in [Table 1](#) exceeded the DSM Plan presented in BC Hydro's F23-F25 RRA by 41 GWh/year or 7%.

¹ Comprising all DSM-related deferred operating expenditures. DSM operating expenditures are presented in [Table 10](#) of this report.

[Table 1](#) presents planned and actual DSM expenditures and new incremental energy savings in fiscal 2023.

Table 1 Expenditures and New Incremental Energy Savings for Fiscal 2023*

	Expenditures ¹				New Incremental Energy Savings			
	Plan ² \$ 000	Actual \$ 000	Variance \$ 000	%	Plan ² GWh/yr	Actual ³ GWh/yr	Variance GWh/yr	%
Energy Efficiency DSM								
Energy Efficiency Rate Structures								
Transmission Service – Stepped Rate	458	420	(38)	(8%)	119	119	0	0%
Total Energy Efficiency Rate Structures	458	420	(38)	(8%)	119	119	0	0%
Energy Efficiency DSM Programs								
<i>Residential Sector</i>								
Low-Income	8,841	7,628	(1,213)	(14%)	9	8	(1)	(7%)
Non-Integrated Areas	2,909	1,581	(1,327)	(46%)	1	0	(1)	(93%)
Retail	2,300	2,226	(75)	(3%)	6	7	1	20%
Home Renovation Rebate	6,934	7,293	359	5%	9	20	11	128%
<u>Residential Energy Management Activities</u>	5,017	3,715	(1,302)	(26%)	19	26	7	37%
<i>Energy Efficiency Residential Sector Total</i>	26,001	22,444	(3,557)	(14%)	43	61	18	42%
<i>Commercial Sector</i>								
LEM-C	8,512	8,948	436	5%	38	49	11	29%
New Construction	905	442	(463)	(51%)	2	1	(1)	(43%)
<u>Commercial Energy Management Activities</u>	6,014	5,113	(900)	(15%)	n/a	n/a	n/a	n/a
<i>Energy Efficiency Commercial Sector Total</i>	15,431	14,503	(927)	(6%)	40	50	10	25%
<i>Industrial Sector</i>								
LEM-I	15,384	14,976	(408)	(3%)	141	137	(5)	(3%)
Thermo-Mechanical Pulp	-	(5,134)	(5,134)	-	-	-	-	-
<u>Industrial Energy Management Activities</u>	7,073	6,121	(952)	(13%)	n/a	n/a	n/a	n/a
<i>Energy Efficiency Industrial Sector Total</i>	22,457	15,963	(6,494)	(29%)	141	137	(5)	(3%)
Total Energy Efficiency Programs	63,889	52,910	(10,979)	(17%)	224	248	24	10%
Total Energy Efficiency Programs & Rates	64,347	53,330	(11,017)	(17%)	344	367	24	7%

	Expenditures ¹				New Incremental Energy Savings			
	Plan ² \$ 000	Actual \$ 000	Variance \$ 000	%	Plan ² GWh/yr	Actual ³ GWh/yr	Variance GWh/yr	%
Capacity Focused DSM								
Capacity Rate Structures								
Residential CPP & TOU	403	96	(307)	(76%)	-	-	-	-
Residential EV TOU	-	-	-	-	-	-	-	-
General Service CPP & TOU	-	-	-	-	-	-	-	-
Transmission TOU	-	-	-	-	-	-	-	-
Total Capacity Rate Structures	403	96	(307)	(76%)	-	-	-	-
Capacity Programs								
<i>Demand Response - Residential</i>	701	909	209	30%	-	-	-	-
<i>Demand Response - Commercial</i>	-	-	-	-	-	-	-	-
<i>Demand Response - Industrial</i>	-	-	-	-	-	-	-	-
Non-Wires Alternative Program - Cross Sector	310	173	(137)	(44%)	0	-	(0)	(100%)
Total Capacity Programs	1,011	1,083	72	7%	0	-	(0)	(100%)
Capacity Focused: Program Enabling Total	2,127	1,829	(298)	(14%)	-	-	-	-
Total Capacity Programs, Rate Structures & Program Enabling	3,541	3,008	(533)	(15%)	0	-	(0)	(100%)
Portfolio (EE & CF) Supporting Initiatives								
Public Awareness	7,730	7,699	(31)	(0%)	-	-	-	-
Indirect and Portfolio Enabling	8,347	7,504	(842)	(10%)	-	-	-	-
Supporting Initiatives Total	16,076	15,203	(873)	(5%)	-	-	-	-
Codes and Standards	5,536	4,982	(554)	(10%)	254	272	18	7%
TOTAL DSM PORTFOLIO	89,501	76,524	(12,977)	(14%)	598	639	41	7%

* Numbers may not add due to rounding.

Notes:

¹ Including all DSM-related deferred operating expenditures that are relevant for DSM cost-effectiveness.

² Plan figures are from BC Hydro's F23-F25 RRA, DSM Expenditure Schedules, Attachment 1.

³ Reported savings from codes and standards and Transmission Service rate structures are based on planned estimates as well as evaluated results.

[Table 2](#) presents planned and actual new incremental capacity savings in fiscal 2023, including both capacity focused DSM and the associated capacity from energy efficiency activities. As planned, capacity focused DSM activities in fiscal 2023 focused on laying the groundwork for programs and initiatives with savings expected to be realized in fiscal 2024 onwards.

Table 2 New Incremental Capacity Savings for Fiscal 2023

	New Incremental Capacity Savings			
	Plan MW	Actual MW	Variance MW	%
Total Energy Efficiency Programs, Codes and Standards & Rates	92	98	6	6
Total Capacity Programs, Rate Structures & Program Enabling	0	0	0	(100)
Total DSM Portfolio	93	98	6	6

[Table 3](#) provides explanations of the variances between planned and actual expenditures and savings shown in the tables above.

Table 3 Variance Explanations between Planned and Actual Expenditures and Savings for Fiscal 2023

Energy Efficiency Rate Structures	
Transmission Service Rate	Expenditures and electricity savings were approximately on plan.
Energy Efficiency DSM Programs	
Residential Sector	
Low Income	Expenditures and electricity savings were below plan due to lower than planned participation in Indigenous Communities, Energy Saving Kits and weatherization offers.
Non -Integrated Areas	Expenditures and electricity savings were below plan. See Section 3 for explanation and discussion on Non-Integrated Area DSM activities in fiscal 2023.
Retail	Expenditures were on plan. Electricity savings were above plan due to the extension of thermostat campaign and updated assumptions from the recent impact evaluation.
Home Renovation Rebate	Expenditures and electricity savings were above plan due to higher than planned heat pump participation as well as updated net to gross ratios from recent evaluation surveys.
Residential Energy Management Activities	Expenditures were below plan primarily due to reduced advertising activities and an IT project that was planned to complete in fiscal 2023 being delayed to fiscal 2024. Electricity savings were above plan as both Team Power Smart challenge and Energy Visualization Portlet participants were higher than forecast.

Commercial Sector	
Leaders in Energy Management – Commercial (LEM-C)	Expenditures and electricity savings were above plan due to higher volume of project completions than planned.
New Construction	Expenditures and electricity savings were below plan due to a project withdrawal. The program is now closed and no longer available.
Commercial Energy Management Activities	Expenditures were below plan due to energy manager vacancies.
Industrial Sector	
Leaders in Energy Management – Industrial (LEM-I)	Expenditures and electricity savings were approximately on plan.
Thermo-Mechanical Pulp	No expenditures or electricity savings were planned. However, the electricity savings associated with a project implemented previously were reduced based on actual performance of that project. The total incentive paid by BC Hydro to the customer was reduced and recovered to reflect the adjusted electricity savings. This resulted in negative expenditures in fiscal 2023.
Industrial Energy Management Activities	Expenditures were below plan due to energy manager vacancies.
Total Energy Efficiency Programs	Expenditures were below plan primarily due to a recovery of past incentives from a customer in the Thermo-Mechanical Pulping program and lower-than-expected participation in the Residential Low Income and NIA programs. Electricity savings were above plan primarily due to higher-than-expected volume of project completions, as well as higher than planned heat pump participation in the Home Renovation Rebate program.
Capacity Focused DSM	
Capacity Rate Structures	Expenditures were below plan due to the Residential Time of Use Rate application being filed later than expected. Expenditures planned for fiscal 2023 to prepare for the roll-out of new rates will now be incurred in fiscal 2024 and beyond.
Capacity Programs	Expenditures were above plan due to increased activity in the Peak Saver program. Electricity savings are expected to be realized in fiscal 2024 onwards as we approach the first full winter peak season since the implementation of the program.
Capacity Focused: Program Enabling	Expenditures were below plan due to delays in planned trials and pilots.

Portfolio Supporting Initiatives (EE & CF)	
Public Awareness	Expenditures were approximately on plan.
Indirect and Portfolio Enabling	Expenditures were below plan due to an IT project that was delayed.
Codes and Standards	Expenditures were below plan due to vacancies and some project activities delayed to fiscal 2024. Electricity savings were above plan primarily due to the adoption of new energy efficiency regulations, including BC Energy Step Code, by some local municipalities.
Portfolio Total	Expenditures were below plan primarily due to a recovery of past incentives from a customer in the Thermo-Mechanical Pulping program, and lower-than-expected participation in the Residential Low Income and NIA programs. Electricity savings were above plan primarily due to higher-than-expected volume of project completions in the Commercial LEM-C program, higher than planned savings in the Home Renovation Rebate program, as well as new estimated energy savings from adoption of new energy codes.

3 Non-Integrated Area Activity

BC Hydro's fiscal 2023 DSM expenditures, electricity savings and cost effectiveness results for the Non-Integrated Area (NIA) program are shown as a line item within [Table 1](#) and [Table 4](#) through [Table 7](#), along with all other programs.

3.1 NIA Program Description

The main components of the NIA program include:

- Indigenous Communities Conservation Program (**ICCP**), which contains two offers:
 - ▶ Home Energy Check-up: provides free energy saving products, salary support and installation training for Indigenous communities to hire local installers to conduct home energy upgrades such as energy efficient lighting, high performance faucets and showerheads, and basic draft proofing, and to assess homes for additional energy savings opportunities; and
 - ▶ Home Energy Upgrade Rebates: offers training to Indigenous communities and their contractors to complete advanced home energy upgrades and

provides high-value rebates to support the cost of those upgrades (e.g., insulation, windows, doors, ventilation, heat pumps, etc.).

- In addition, the NIA program provides support to Indigenous communities through the Indigenous Climate Action Network (**I-CAN**), a program administered by the Coastal First Nations Great Bear Initiative in partnership with the Province of BC and BC Hydro. I-CAN offers funding to hire a full-time staff position (**Climate Action Coordinator**), as well as individual and peer networking support, including training and mentorship. Climate Action Coordinator (**CAC**) work includes planning and implementing energy efficiency, renewable energy generation, and climate change adaptation projects for their community.

For Indigenous communities that choose not to participate in the Indigenous Communities Conservation Program and for all other customers within the NIA, the following offers are available:

- Energy Savings Kits: free energy saving products are offered to NIA residential customers that they can install in their homes;
- Home Renovation Rebates: NIA residential customers are offered higher rebates on eligible home energy upgrades;
- Business Energy Savings Incentives: NIA commercial customers, including Indigenous Nations, are eligible for higher incentives through this program; and
- Commercial Building Energy Efficiency Program: BC Hydro contractors provide free installations of energy efficient products and equipment in commercial buildings. This new offer was launched on Haida Gwaii in fiscal 2023.

3.2 Fiscal 2023 NIA Program Performance

Capacity Building Activities

In fiscal 2023, BC Hydro doubled its investment in the I-CAN to support its expansion to serve additional Indigenous communities in the NIA. Through the I-CAN partnership, BC Hydro leverages funding from provincial and federal governments to scale up support for Indigenous-led approaches to diesel reduction in the NIA, including implementation of DSM projects.

As a result of this investment, five Climate Action Coordinators continued their work in Coastal First Nations communities, including Old Massett, Skidegate, Heiltsuk, Nuxalk and Gitga'at, and two additional NIA Indigenous communities hired Climate Action Coordinators as part of the I-CAN expansion, including Dease River First Nation and Uchucklesaht Tribe. In fiscal 2023, activities within the I-CAN resulted in the following skills and jobs in clean energy for participating communities:

- 44 people receiving training;
- 10 jobs created for women;
- 14 jobs created for youth, including a Nuxalk Nation youth being hired and trained as a licensed Energy Advisor; and
- 36 jobs created for Indigenous peoples, including 4 members of the Haida Nation hired and trained to service and maintain heat pumps.

Energy Savings Projects/Activities

Electricity savings in the NIA program were 0.05 GWh in fiscal 2023. These savings were realized through BC Hydro's new Commercial Building Energy Efficiency Program offer and our Energy Savings Kit offer. We launched the new commercial offer in Q3, and by the end of fiscal year had already completed opportunity assessments in over 30 Indigenous Nation-owned buildings and implemented

energy savings projects in 11 of those buildings. There are now a number of commercial projects in the program funnel to assist in achieving savings in fiscal 2024.

While no NIA Indigenous communities completed projects through BC Hydro's ICCP offers in fiscal 2023, BC Hydro has signed agreements in place with two NIA Indigenous communities planning for home energy upgrades in approximately 470 homes. The lack of completed projects may have been due, at least in part, to the launch of the Community Energy Diesel Reduction (**CEDR**) program, which is administered by the New Relationship Trust² and funded by the Government of B.C. We believe that the introduction of another program into the market may have caused some uncertainty as to how various programs work together and that Indigenous communities in the NIA may have held off on bringing projects through our Indigenous Communities Conservation Program (**ICCP**) as a result.

3.3 Planned Actions and Mitigation Measures

A key component to enable implementation of DSM projects, and Indigenous communities' participation in the clean energy transition more broadly, is capacity development in Indigenous communities. While the number of projects that has come through ICCP to date has been lower than planned, the increase in I-CAN investment that we implemented in fiscal 2023 is intended to help with this going forward. With additional Climate Action Coordinator positions in place across the NIA and more training and peer learning opportunities available, we anticipate that Indigenous communities will have greater capacity to implement energy efficiency projects and that our programs will see increased participation.

² The NRT was established in 2006 through the enactment of the New Relationship Trust Act, Bill 11 – 2006 and was capitalized with an investment of \$100 million from the Province of BC as an outcome of a Transformative Change Accord Agreement (the Accord). The Parties to the Accord recognized that new resources would be required, and that transformative change would require indigenous-led funding approaches.

In addition, to ensure that BC Hydro can continue to support reductions in diesel-generated electricity through DSM projects in the NIA, we have entered into a partnership with the Province of BC and the New Relationship Trust to join the CEDR program in fiscal 2024. BC Hydro sees this partnership as a demonstration of our commitment to advancing reconciliation with Indigenous peoples and our alignment with the Province to enable implementation of DSM projects as part of our broader NIA strategy. This partnership increases support for Indigenous communities in the NIA by both providing higher incentives for energy efficient upgrades and increasing the total funding available, which increases the number of projects that can be supported. Enabling energy efficiency projects led by Indigenous communities provides them with greater control over their energy demand, and can contribute towards other socio-economic benefits such as reduced energy costs, improved health outcomes, and skills development and job opportunities in the green building industry. In addition, the partnership supports BC Hydro in responding to several of the recommendations made in the ICCP process evaluation that was completed in fiscal 2023.

The ICCP process evaluation looked at how BC Hydro's current ICCP offers have addressed, amongst other evaluation objectives, barriers to energy efficiency and made recommendations which we are considering and addressing. The table below provides a subset of the process evaluation's recommendations, for which BC Hydro's ability to respond to these recommendations is reinforced and/or strengthened through our CEDR program partnership.

Recommendation	Alignment with CEDR program
Take an equity perspective in program design to illuminate the barriers stemming from systemic biases faced by Indigenous communities.	Working with an Indigenous organization and Indigenous staff helps to ensure that Indigenous perspectives are included in program design. CEDR program partners are developing processes to solicit input from Indigenous communities that will inform a deeper understanding of the systemic barriers they face.

Recommendation	Alignment with CEDR program
Implement a stage at the beginning of program participation for “relationship-oriented project planning support”.	The CEDR program includes support for community energy planning as well as a “turn-key” delivery option where participating communities have access to program consultants that support DSM project planning and implementation. This builds on and expands the relationship-oriented approach that BC Hydro has taken through our ICCP offers and will continue to support in partnership with CEDR program partners.
Harmonize the ICCP with energy programs and initiatives offered by other organizations designed specifically for Indigenous communities to make it easier for Indigenous communities to navigate and to facilitate the achievement of Indigenous goals for clean energy and energy sovereignty.	Combining our DSM incentives with the CEDR program responds to this recommendation. The CEDR program brings together funding from the Province of BC and BC Hydro to provide communities with support for diesel reduction initiatives, including community energy planning, DSM and renewable energy generation projects.
Review the incentive approach for ICCP Home Energy Upgrade Rebates to better address the financial barriers for communities.	Through the CEDR program, NIA Indigenous communities can access higher value DSM incentives through a delivery model that provides a portion of the project costs upfront to support project mobilization costs and help address financial barriers to project implementation.
Provide more support to Indigenous communities to help them identify and hire qualified contractors for retrofit work.	Through the CEDR program, NIA Indigenous communities can choose a “turn-key” delivery option that provides access to program-qualified contractors to support DSM project planning and implementation.

BC Hydro believes that our new and expanded partnerships with Indigenous organizations and government funders will reduce barriers for NIA Indigenous communities to advance energy efficiency by providing increased funding and pathways for capacity building and project support.

3.4 On-going Program Performance Monitoring

Also in fiscal 2023 and in response to BCUC Directive 47 of the F20-F21 RRA Decision, BC Hydro continued development of a performance measurement framework for the NIA program. The ICCP process evaluation was used as a way to collect input from Indigenous communities on the outcomes they are seeking from DSM projects and barriers they face in advancing these projects. This input is being reflected in the draft performance measurement framework, which maps key performance indicators to program outputs (activity or process-based metrics) and to

short-, medium- and long-term program outcomes. Key performance indicators that measure program outputs and short-term program outcomes lend themselves to annual reporting. Whereas key performance indicators that evaluate performance against medium and long-term outcomes are generally not measured annually and would be reported less frequently.

BC Hydro plans to complete our reporting plan for the performance measurement framework in fiscal 2024, and is putting systems in place to enable us to report on the applicable key performance indicators in the fiscal 2024 DSM Annual Report.

This timeline is purposeful as it affords us the opportunity to:

- Where possible, address recommendations from the ICCP process evaluation through our collaborative program design efforts on the CEDR program;
- Seek and incorporate additional Indigenous perspectives through our program partnerships with the Coastal First Nations Great Bear Initiative and the New Relationship Trust; and
- Consider how BC Hydro's NIA Strategy might inform our DSM performance measures and reporting plans.

4 Expenditures to Date

BC Hydro's DSM expenditures for fiscal 2023 totalled \$76.5 million. [Table 4](#) presents DSM expenditures by program from April 1, 2022 to March 31, 2023.

Table 4 Expenditures for Fiscal 2023*

Energy Efficiency DSM	F2023 (\$000)
Energy Efficiency Rate Structures	
<u>Transmission Service – Stepped Rate</u>	<u>420</u>
Total Energy Efficiency Rate Structures	420
Energy Efficiency DSM Programs	
<i><u>Residential Sector</u></i>	
Low-Income	7,628
Non-Integrated Areas	1,581
Retail	2,226
Home Renovation Rebate	7,293
<u>Residential Energy Management Activities</u>	<u>3,715</u>
<i><u>Energy Efficiency Residential Sector Total</u></i>	<i><u>22,444</u></i>
<i><u>Commercial Sector</u></i>	
LEM-C	8,948
New Construction	442
<u>Commercial Energy Management Activities</u>	<u>5,113</u>
<i><u>Energy Efficiency Commercial Sector Total</u></i>	<i><u>14,503</u></i>
<i><u>Industrial Sector</u></i>	
LEM-I	14,976
Thermo-Mechanical Pulp	(5,134)
<u>Industrial Energy Management Activities</u>	<u>6,121</u>
<i><u>Energy Efficiency Industrial Sector Total</u></i>	<i><u>15,963</u></i>
Total Energy Efficiency Programs	52,910
Total Energy Efficiency Programs & Rates	53,330

Capacity Focused DSM	F2023 (\$000)
Capacity Rate Structures	
Residential CPP & TOU	96
Residential EV TOU	-
General Service CPP & TOU	-
<u>Transmission TOU</u>	<u>-</u>
Total Capacity Rate Structures	96
Capacity Programs	
<i>Demand Response - Residential</i>	909
<i>Demand Response - Commercial</i>	-
<i>Demand Response - Industrial</i>	-
Non-Wires Alternative Program - Cross Sector	173
Total Capacity Programs	1,083
Capacity Focused: Program Enabling Total	1,829
Total Capacity Programs, Rate Structures & Program Enabling	3,008
Portfolio (EE & CF) Supporting Initiatives	
Public Awareness	7,699
<u>Indirect and Portfolio Enabling</u>	<u>7,504</u>
Supporting Initiatives Total	15,203
Codes and Standards	4,982
Total DSM Portfolio	76,524

* Numbers may not add due to rounding.

BC Hydro's DSM electricity savings since the beginning of fiscal 2023 totalled 639 GWh/year at March 31, 2023, which equates to 107% of the planned savings of 598 GWh/year in the F23-F25 RRA. [Table 5](#) presents actual cumulative savings as a percentage of the plan in the F23-F25 RRA as of the end of fiscal 2023.

**Table 5 Cumulative Electricity Savings:
Fiscal 2023**

Energy Efficiency DSM	Actual as a Percentage of Plan¹
Energy Efficiency Rate Structures <u>Transmission Service – Stepped Rate</u>	100%
Total Energy Efficiency Rate Structures	100%
Energy Efficiency DSM Programs <u>Residential Sector</u>	
Low-Income	92%
Non-Integrated Areas	7%
Retail	120%
Home Renovation Rebate	228%
<u>Residential Energy Management Activities</u>	136%
<i>Energy Efficiency Residential Sector Total</i>	141%
<u>Commercial Sector</u>	
LEM-C	129%
New Construction	57%
<u>Commercial Energy Management Activities</u>	n/a
<i>Energy Efficiency Commercial Sector Total</i>	125%
<u>Industrial Sector</u>	
LEM-I	97%
Thermo-Mechanical Pulp	n/a
<u>Industrial Energy Management Activities</u>	n/a
<i>Energy Efficiency Industrial Sector Total</i>	97%
Total Energy Efficiency Programs	110%
Total Energy Efficiency Programs & Rates	107%
Total Capacity Programs, Rate Structures & Program Enabling	0%
Codes and Standards	107%
Total DSM Portfolio	107%

Notes:

¹ Reported savings for codes and standards and rates structures are based on planned estimates as well as evaluated results.

The cumulative portfolio DSM electricity savings from April 1, 2022 through March 31, 2023 have been achieved at an average net levelized utility cost of \$17 per MWh. [Table 6](#) presents the net levelized utility cost that is calculated by subtracting capacity benefits from gross utility costs and then dividing the resulting net utility costs by electricity savings. A negative net levelized utility cost means that the subtracted capacity benefits exceed gross utility costs.

**Table 6 Utility Cost of Electricity Savings:
Fiscal 2023**

	Net Levelized Utility Cost (\$/MWh)
Energy Efficiency Rate Structures	
Residential Inclining Block Rate	n/a
General Service Rate	n/a
Transmission Service Rate	-\$4
Total Rate Structures	-\$4
Energy Efficiency DSM Programs	
<i>Residential Sector</i>	
Low Income	\$36
Non Integrated Areas	\$2,735
Retail	-\$11
Home Renovation Rebate	-\$30
<i>Energy Efficiency Residential Sector Total</i>	<i>-\$10</i>
<i>Commercial Sector</i>	
LEM-C	\$6
New Construction	\$9
<i>Energy Efficiency Commercial Sector Total</i>	<i>\$7</i>
<i>Industrial Sector</i>	
LEM-I	\$14
Thermo-Mechanical Pulp	n/a
<i>Energy Efficiency Industrial Sector Total</i>	<i>\$5</i>
Total Energy Efficiency Programs	\$0
Total Energy Efficiency Programs & Rates	\$0
Total Capacity Programs, Rate Structures & Program Enabling	n/a
Portfolio (EE & CF) Supporting Initiatives	n/a
Portfolio (EE & CF) Energy Management Activities	n/a
Codes and Standards	n/a
Total DSM Portfolio¹	\$17

Notes:

¹ Energy management activities, supporting initiatives costs and codes and standards costs are included at the portfolio level.

[Table 7](#) presents benefit cost-ratios of actual DSM electricity savings achieved from April 1, 2022 through March 31, 2023.

Table 7 Benefit Cost Ratios of Electricity Savings: Fiscal 2023

	Benefit Cost Ratios ¹			
	LRMC			Reference Price
	Modified Total Resource Cost Test ²	Total Resource Cost Test excluding Non-Energy Benefits	Ratepayer Impact Measure Test ³	Utility Cost Test
Energy Efficiency Rate Structures				
Transmission Service Rate	<u>2.1</u>	<u>2.1</u>	<u>0.7</u>	<u>42.4</u>
Total Rate Structures	2.1	2.1	0.7	42.4
Energy Efficiency DSM Programs				
<i>Residential Sector</i>				
Low Income ⁴	3.0	3.1	0.7	1.2
Non Integrated Areas ^{4, 5 & 9}	0.1	0.1	0.1	0.1
Retail	2.8	2.8	1.0	3.2
Home Renovation Rebate	<u>1.3</u>	<u>0.8</u> ⁸	<u>0.9</u>	<u>4.7</u>
<i>Energy Efficiency Residential Sector Total</i>	1.5	1.1	0.9	2.7
<i>Commercial Sector</i>				
LEM-C ⁴	2.9	1.9	0.9	2.8
New Construction	<u>1.3</u>	<u>1.0</u>	<u>0.9</u>	<u>2.5</u>
<i>Energy Efficiency Commercial Sector Total</i>	2.7	1.9	0.9	2.8
<i>Industrial Sector</i>				
LEM-I	4.5	3.1	0.8	2.3
Thermo-Mechanical Pulp	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
<i>Energy Efficiency Industrial Sector Total</i>	4.5	3.1	0.9	3.5
Total Energy Efficiency Programs	2.2	1.6	0.9	2.9
Total Energy Efficiency Programs & Rates	2.2	1.6	0.8	3.4
Total Capacity Programs, Rate Structures & Program Enabling⁷	n/a	n/a	n/a	n/a
Portfolio (EE & CF) Supporting Initiatives	n/a	n/a	n/a	n/a
Portfolio (EE & CF) Energy Management Activities	n/a	n/a	n/a	n/a
Codes and Standards	n/a	n/a	n/a	n/a
Total DSM Portfolio⁶	1.7	1.3	0.7	1.8

Notes:

- ¹ To align with BC Hydro's F23-F25 RRA, this report uses a long-run marginal cost (LRMC) of \$65 per MWh based on the values presented in Appendix L of the 2021 Integrated Resource Plan Application.
- ² In accordance with the DSM Regulation, the avoided cost of natural gas is valued at BC Hydro's LRMC of acquiring electricity generated from clean or renewable resources in B.C. converted to \$/gigajoule (GJ) in all time periods. Non-energy benefits in the DSM Regulation are valued at 15% of the energy and capacity benefits of electricity and natural gas, or as quantified by the Utility.

- ³ While subsection 4(6) of the DSM Regulation precludes the use of the Ratepayer Impact Measure Test in determining cost-effectiveness of a demand-side measure, this benefit-cost ratio is included in the table to comply with Directive 42 from the BCUC decision on BC Hydro's 2008 LTAP.
- ⁴ The Total Resource Cost Test benefit-cost ratios for the Low Income, Non-Integrated Areas and Social Housing Retrofit component of the LEM-C Program include a 40% adder to program benefits, in accordance with the DSM Regulation.
- ⁵ Avoided costs in all cost tests are based on NIA generation costs of \$300 per MWh (F2021\$).
- ⁶ Energy management activities, supporting initiatives costs and codes and standards costs are included at the portfolio level.
- ⁷ As planned, CF-DSM activities in F23 focused on laying the groundwork for programs and initiatives with savings expected to be realized in F24 onwards.
- ⁸ The Home Renovation Rebate program consists of a bundle of building envelope offers, which passes the Total Resource Cost Test excluding Non-Energy Benefits (**NEBs**) in fiscal 2023, and a bundle of HVAC/Water Heating offers that fails the TRC excluding NEBs in fiscal 2023. The expenditures associated with the HVAC/Water Heating offers were \$6.35 million in fiscal 2023, which represent 8.3% of portfolio expenditures, which is below the modified TRC cap in the DSM Regulation.
- ⁹ As described in section 3, few savings were realized through the NIA program in fiscal 2023, in light of the launch of the Province's CEDR program targeting the same communities. As a result the NIA program's benefit cost ratios fall below 1.0 in fiscal 2023. We anticipate cost effectiveness to improve in future years as a result of the actions we plan to take as described in section 3.

Based on the experience gathered over the past few years through initiative tracking, [Table 8](#) sets out the mitigation measures that have been undertaken or are planned for to address areas where cumulative energy savings are below the plan in the F23-F25 RRA.

Table 8 Mitigating Measures to Address Cumulative Energy Savings Below Plan

Energy Efficiency Rate Structures	
Industrial Transmission	Cumulative electricity savings in fiscal 2023 were on plan.
Energy Efficiency DSM Programs	
Residential Sector	
Low Income	Cumulative electricity savings in fiscal 2023 were below plan due to lower than forecast participation. Promotional strategies will continue to be reviewed to improve participation and work is underway to better utilize call centre agents to refer customers to the program.
Non-Integrated Areas	Cumulative electricity savings in fiscal 2023 were below plan largely due to a new government program targeting diesel reduction. BC Hydro is working to integrate our offer with the government offer and expect to launch early in fiscal 2024.

Retail	Cumulative electricity savings in fiscal 2023 were above plan.
Home Renovation Rebate	Cumulative electricity savings in fiscal 2023 were above plan.
Residential Energy Management Activities	Cumulative electricity savings in fiscal 2023 were above plan.
Commercial Sector	
LEM-C	Cumulative electricity savings in fiscal 2023 were above plan.
New Construction	Cumulative electricity savings in fiscal 2023 were below plan due to a project withdrawal. The program is now closed and no longer available.
Industrial Sector	
LEM-I	Cumulative electricity savings in fiscal 2023 were approximately on plan.

5 Transfer of DSM Expenditures

Directive 51 of the F20-F21 RRA Decision determined that BC Hydro may make inter-year and inter-program area transfers, as follows:

- BC Hydro may transfer unspent accepted DSM expenditures in a program area to the same program area in the following year of the Test Period, on the condition that BC Hydro provides information regarding unspent amounts as part of its annual DSM reports so that all amounts transferred within a program area are transparently accounted for from one test year to the next; and
- The Panel accepted the DSM expenditure schedule including transfers of up to 25% of DSM expenditures from any one existing program area to any other existing program area.

BC Hydro did not transfer any expenditures across program areas in fiscal 2023; however, we will carry over the \$13 million unspent amount in fiscal 2023³ to

³ This includes the industrial sector incentive recovery discussed under Total Energy Efficiency Program on page 8.

fiscal 2024. [Table 9](#) presents the calculation of transfers and carryover for fiscal 2023.

Table 9 Funding Transfers for fiscal 2023 and Calculation of Carryover Expenditures to fiscal 2024 (\$000)

Program Area	F2023 Plan Expenditures (F2023-F2025 RRA)	F2023 Actuals Expenditures	F2023 Actual Expenditures less Plan	F2024 Plan Expenditures (F2023-F2025 RRA)	F2024 Plan Expenditures plus Transfer from F2023
Total Energy Efficiency Rate Structures	458	420	(38)	460	498
Energy Efficiency Residential Sector Total	26,001	22,444	(3,557)	28,953	32,510
Energy Efficiency Commercial Sector Total	15,431	14,503	(927)	15,003	15,930
Energy Efficiency Industrial Sector Total	22,457	15,963	(6,494)	22,685	29,179
Total Capacity Programs, Rate Structures & Program Enabling	3,541	3,008	(533)	7,534	8,067
Supporting Initiatives Total	16,076	15,203	(873)	15,863	16,737
<u>Codes and Standards</u>	<u>5,536</u>	<u>4,982</u>	<u>(554)</u>	<u>5,635</u>	<u>6,189</u>
TOTAL DSM PORTFOLIO	89,501	76,524	(12,977)	96,133	109,110

6 Conservation and Energy Management KBU Operating Expenditures for Fiscal 2023

BC Hydro’s Conservation and Energy Management KBU operating expenditures in fiscal 2023 totalled \$563,492⁴. [Table 10](#) presents Conservation and Energy Management KBU operating expenditures in fiscal 2023.

Table 10 Conservation and Energy Management KBU Operating Expenditures for Fiscal 2023

	(\$000)
Labour	463
Consultants/Contractors/Temp Labour	6
Other	94
Total	563

⁴ DSM operating expenditures are not included in earlier tables.

7 Low Carbon Electrification Expenditures

In accordance with Directive 49 of the F20-F21 RRA Decision, BC Hydro reports on the low carbon electrification (**LCE**) expenditures within the DSM Regulatory Account, “clearly allocated to the applicable classes defined in section 4 (3) (a), (b), (c) or (d) of the GGRR, including a consolidated table with a break down between the Initial LCE and BC Hydro LCE projects and programs.”

BC Hydro’s LCE expenditures within the DSM Regulatory Account for fiscal 2023 totalled \$24.7 million. As further explained below, BC Hydro carried out LCE programs as a “prescribed undertaking” under the Greenhouse Gas Regulation (**Clean Energy**) Regulation (**GGRR**) and incurred expenditures totalling \$0.38 million, with the remaining \$24.4 million for LCE programs as defined under the Direction to the British Columbia Utilities Commission Respecting Load Attraction and Low-Carbon Electrification (**the Electrification Plan Regulation**).

On March 1, 2017, the government issued the Direction to the British Columbia Utilities Commission Respecting Undertaking Costs. Accordingly, the costs we incurred in previous fiscal years for the LCE programs that meet the requirements of a prescribed undertaking under the GGRR were deferred to the DSM Regulatory Account pursuant to the Direction to the British Columbia Utilities Commission Respecting Undertaking Costs. On June 27, 2022, the government issued the Electrification Plan Regulation. All the costs incurred for BC Hydro’s LCE programs/activities continue to go to the DSM Regulatory Account. Almost all of the costs for the LCE activities incurred in fiscal 2023 are for LCE programs as defined under the Electrification Plan Regulation. Only \$0.38 million in fiscal 2023 are costs that go to the DSM Regulatory account for prescribed undertakings as defined under section 4 of the GGRR.

For this report, notwithstanding that BC Hydro has carried out the LCE programs as defined under the Electrification Plan Regulation, BC Hydro presents in [Table 11](#) all fiscal 2023 LCE expenditures as directed in Directive 49 of the F20-F21 RRA

Decision, allocating expenditures as they would have been allocated to the applicable classes defined in section 4(3) (a), (b), (c) or (d) of the GGRR, including a consolidated table with a break down between the initial LCE projects and BC Hydro LCE programs. In future reporting, expenditures for the LCE programs that are carried out as defined under the Electrification Plan Regulation will be reported as required by Directive 6 of Order G-91-23 relating to BC Hydro's F2023-F2025 RRA.

Table 11 Low Carbon Electrification Expenditures for Fiscal 2023*

Initial LCE Projects		
GGRR Regulation Subsection	Projects	F2023 (\$ 000)
4(3)(a)	Project 3	\$952
	Project 4	(\$572)
4(3)(c)	Thompson Rivers University	
	Translink	
Project Total		\$379
BC Hydro LCE Programs		
GGRR Regulation Subsection	Programs	F2023 (\$ 000)
4(3)(a)(b)	BC Hydro LCE Program	\$22,481
4(3)(c)	BC Hydro LCE Program	\$137
4(3)(d)	BC Hydro LCE Program	\$1,748
Program Total		\$24,365
Summary of LCE Projects/Programs		F2023
Initial LCE Projects		\$379
BC Hydro LCE Programs		\$24,365
Total BC Hydro LCE Projects/Programs		\$24,744

* Numbers may not add due to rounding.