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July 11, 2018

Mr. Patrick Wruck
Commission Secretary and Manager
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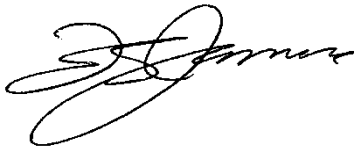
Dear Mr. Wruck:

**RE: British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
F2005/F2006 Revenue Requirements Application
Commission Decision: October 29, 2004; Directive 69 (page 201)
(AMENDED pursuant to 2006 Integrate Electricity Plan and
2006 Long-Term Acquisition Plan
Commission Decision: May 11, 2006; Directive 16 (pages 145 to 146)
2008 Long-Term Acquisition Plan
Commission Decision: July 27, 2009; Directive 36 (page 184))
Fiscal 2017 – Fiscal 2019 Revenue Requirements Application
Commission Decision: March 1, 2018; Directive 23 (page 84)
F2018 Demand-Side Management Activities Annual Report**

BC Hydro writes to provide its Report on Demand-Side Management Activities for the 12 months ending March 31, 2018.

For further information, please contact Geoff Higgins at 604-623-4121 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,



Fred James
Chief Regulatory Officer

st/ma

Enclosure (1)



Report on Demand-Side Management Activities for Fiscal 2018

July 11, 2018

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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 2018 fiscal year, which is the twelve months ending March 31, 2018. This annual report is filed in compliance with the following Commission Directives:

- Directive 69 from the Commission Decision on BC Hydro’s Fiscal 2005 – Fiscal 2006 Revenue Requirements Application (**F05-F06 RRA**);
- Directive 16 from the Commission Decision on BC Hydro’s 2006 Integrated Electricity Plan and Long Term Acquisition Plan (**2006 IEP/LTAP**);
- Directives 36 and 38 from the Commission decision on BC Hydro’s 2008 LTAP; and
- Directive 23 from the Commission decision on BC Hydro’s Fiscal 2017 – Fiscal 2019 Revenue Requirements Application (**F17-F19 RRA**).

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

- Executive Summaries of milestone evaluation reports and full final evaluation reports for each program;
- 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

1 ▶ variances of fiscal year budgeted and actual deferred capital expenditures and
2 explanation of variances.”

3 Directive 16 of the 2006 IEP/LTAP Decision directed BC Hydro “to continue to file
4 reports on DSM performance as described in Directive 69 of the F05/F06 RRA Decision
5 included in Order No. G-96-04 and to file its Semi Annual Demand-Side Management
6 Reports in the same format as the June 2005 Report with the following enhancements:

7 Provide annual and cumulative totals since program inception;

8 (i) Express these values on a per unit basis; and

9 (ii) Provide the benefit to cost ratios for the three DSM tests.”

10 Directive 36 of the 2006 IEP/LTAP Decision directed BC Hydro to switch from
11 semi-annual to annual DSM performance reports. Directive 38 from the same Decision
12 directed BC Hydro to include in these reports:

13 “metrics for each initiative, achievements in relation to milestones, and
14 description of past or planned mitigation measures where warranted.

15 These mitigation measures should include shifting program resources and
16 alternative supply options for each program. Ongoing DSM performance
17 reporting should demonstrate how BC Hydro is continuously pursuing
18 DSM and that specific programs are cost-effective.”

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

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

24 This annual report addresses the balance of Directives 69 and 16, as well as
25 Directives 36 and 38 of the 2006 IEP/LTAP Decision and Directive 23 of the
26 F17-F19 RRA Decision.

2 Expenditures and Electricity Savings for Fiscal 2018

1 BC Hydro's DSM expenditures¹ in fiscal 2018 totalled \$82.3 million while net
2 incremental DSM electricity savings totalled 543 GWh/year. Expenditures were
3 \$37 million or 31 per cent below the Fiscal 2018 DSM Plan presented in BC Hydro's
4 F17-F19 RRA. Overall, net incremental electricity savings as shown in [Table 1](#) were
5 61 GWh/year or 13 per cent above the DSM Plan.
6

7 [Table 1](#) presents planned and actual DSM expenditures and net incremental electricity
8 in fiscal 2018.

¹ Comprising all DSM-related deferred operating expenditures. DSM operating expenditures are presented in [Table 7](#) of this report.

1
2

Table 1 Expenditures and Net Incremental Electricity Savings for Fiscal 2018

	Expenditures ¹				Net Incremental Electricity Savings			
	Plan ² \$ 000	Actual \$ 000	Variance \$ 000	%	Plan ² GWh/yr	Actual ³ GWh/yr	Variance GWh/yr	%
Codes and Standards								
Residential	-	-	-	-	175	254	79	45%
Commercial	-	-	-	-	75	89	14	18%
Industrial	-	-	-	-	7	9	2	30%
Total Codes and Standards	4,833	4,797	(37)	(1%)	257	352	95	37%
Rate Structures								
Residential Inclining Block Rate	300	271	(29)	(10%)	12	16	4	32%
General Service Rate	-	-	-	-	-	-	-	-
<u>Transmission Service Rate</u>	<u>720</u>	<u>283</u>	<u>(437)</u>	<u>(61%)</u>	<u>14</u>	<u>4</u>	<u>(10)</u>	<u>(69%)</u>
Total Rate Structures	1,020	553	(467)	(46%)	26	20	(6)	(22%)
DSM Programs								
<u>Residential Sector</u>								
Behaviour	3,180	1,839	(1,341)	(42%)	14	17	3	18%
Refrigerator Buy-back	-	(0)	(0)	-	-	-	-	-
Low Income	2,607	3,542	935	36%	2	6	3	133%
New Home	-	1	1	-	-	-	-	-
Retail	2,331	2,926	595	26%	4	11	6	151%
Home Energy Retrofit Offer	2,807	2,891	84	3%	5	5	0	6%
<u>Sector Enabling Activities</u>	<u>851</u>	<u>612</u>	<u>(238)</u>	<u>(28%)</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
<i>Residential Sector Total</i>	<i>11,775</i>	<i>11,810</i>	<i>35</i>	<i>0%</i>	<i>26</i>	<i>38</i>	<i>13</i>	<i>49%</i>
<u>Commercial Sector</u>								
Leaders in Energy Management - Commercial	20,350	15,221	(5,128)	(25%)	36	33	(3)	(7%)
New Construction	8,507	8,901	394	5%	15	18	3	20%
<u>Sector Enabling Activities</u>	<u>1,020</u>	<u>591</u>	<u>(429)</u>	<u>(42%)</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
<i>Commercial Sector Total</i>	<i>29,877</i>	<i>24,714</i>	<i>(5,163)</i>	<i>(17%)</i>	<i>51</i>	<i>51</i>	<i>0</i>	<i>1%</i>
<u>Industrial Sector</u>								
Leaders in Energy Management - Transmission	18,206	14,050	(4,156)	(23%)	50	56	7	14%
Thermo-Mechanical Pulp	14,700	(1,900)	(16,600)	(113%)	50	-	(50)	(100%)
Leaders in Energy Management - Distribution	9,821	7,756	(2,065)	(21%)	23	24	2	8%
Load Displacement	-	-	-	-	-	-	-	-
<u>Sector Enabling Activities</u>	<u>816</u>	<u>582</u>	<u>(234)</u>	<u>(29%)</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
<i>Industrial Sector Total</i>	<i>43,543</i>	<i>20,488</i>	<i>(23,055)</i>	<i>(53%)</i>	<i>122</i>	<i>81</i>	<i>(41)</i>	<i>(34%)</i>
Total Programs	85,195	57,012	(28,183)	(33%)	199	171	(28)	(14%)
Supporting Initiatives								
Public Awareness	6,936	6,999	63	1%	-	-	-	-
<u>Indirect and Portfolio Enabling</u>	<u>7,284</u>	<u>6,075</u>	<u>(1,210)</u>	<u>(17%)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Supporting Initiatives Total	14,220	13,074	(1,147)	(8%)	-	-	-	-
ENERGY EFFICIENCY PORTFOLIO TOTAL	105,269	75,436	(29,833)	(28%)	-	-	-	-
Capacity Focused DSM	14,236	6,868	(7,368)	(52%)	-	-	-	-
PORTFOLIO TOTAL, EE & CF DSM	119,505	82,304	(37,201)	(31%)	483	543	61	13%

3 Notes:

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

 5 ² Plan figures are from BC Hydro's F17-F19 RRA, Appendix W with Thermo-Mechanical Pulp Plan adjustments
6 from BCUC IR 2.314.3 and subsequent Compliance filing from April 27, 2018.

 7 ³ Reported savings from codes and standards and residential inclining block and general service rate structures are
8 based on planned estimates as well as evaluated results.

- 1 The following corresponds to the information provided in [Table 1](#) and are explanations
- 2 for the above variances:

Codes and Standards	
Residential	Expenditures were approximately on plan. Electricity savings were above plan due to an adjustment of the assumed replacement rate for incandescent lamps under the General Service Lighting (GSL) regulation.
Commercial	
Industrial	
Rate Structures	
Residential Inclining Block Rate	Expenditures were approximately on plan. Electricity savings were above plan due to adjustments made to the conservation forecast to reflect an update to the inflation rate and relative residential sales between Tier 1 and Tier 2.
General Service Rate	No further conservation is forecast from the general service rate as BC Hydro has revised its conservation forecast to zero due to the outcomes of the fiscal 2014 LGS/MGS evaluation report.
Transmission Service Rate	Expenditures were below plan due to deferral of the planned Transmission Service Rate evaluation, deferral of planned consultation activities for phase two of the Rate Design Application and lower than expected utilization of engineering resources for energy Customer Base Line (CBL) adjustment and determination reviews. Net incremental electricity savings were below plan in fiscal 2018 because fiscal 2017 electricity savings were higher than planned.
DSM Programs	
Residential Sector	
Behaviour	Expenditures were below plan due primarily to delays in a planned IT enhancement project. Electricity savings were above plan due to higher than forecast participation in select portions of the program, resulting largely from a strong fourth quarter (Q4) promotional campaign.
Low Income	Expenditures and electricity savings were above plan due to higher than planned participation. This was largely due to a strong response to BC Hydro bill inserts as well as leads generated through the BC Hydro call centre that led to a significant increase in the number of Energy Saving Kits being sent to customers than planned.
Retail	Expenditures and electricity savings were above plan due to the success of the lighting campaigns with strong sales of LED lighting particularly multi-packs which provided more savings than planned.
Home Energy Retrofit Offer	Expenditures and electricity savings were approximately on plan.
Sector Enabling Activities	Expenditures were below plan due to planned activities being deferred or cancelled.
Commercial Sector	
Leaders in Energy Management - Commercial	Expenditures and electricity savings were below plan due to customer decisions to delay or cancel projects. Expenditures were also below plan due to projects requiring lower incentive levels than planned.
New Construction	Expenditures were approximately on plan and electricity savings were above plan due to fiscal 2017 delayed projects completing in fiscal 2018.
Sector Enabling Activities	Expenditures were below plan due to planned activities being deferred or cancelled.

Industrial Sector	
Leaders in Energy Management – Transmission	Expenditures were below plan due to a customer cancelling a large incentive project and self-funding the project instead while maintaining planned electricity savings . Electricity savings were above plan due to energy manager’s identifying and implementing more energy savings opportunities attributable to strategic energy management practices.
Thermo-Mechanical Pulpung	Expenditures and energy savings are below plan due to one project being delayed. Two projects are expected to complete in fiscal 2019 and two more in fiscal 2021.
Leaders in Energy Management – Distribution	Expenditures are below plan due to projects being cancelled or deferred by customers. Electricity savings were approximately on plan due to one large project exceeding its target.
Sector Enabling Activities	Expenditures were below plan due to planned activities being deferred or cancelled.
Total Programs	Expenditures were below plan primarily due to projects not completing as planned in the Thermo-Mechanical Pulpung and Commercial Leaders in Energy Management programs. Electricity savings were below plan due to project delays in the Thermo-Mechanical Pulpung program.
Supporting Initiatives	
Public Awareness	Expenditures were approximately on plan.
Indirect and Portfolio Enabling	Expenditures were below plan primarily due to lower volume of IT support and enhancements.
Capacity Focused DSM	Expenditures were below plan. Projects related to distributed energy resource management systems and localized capacity were rescheduled to later time periods than previously planned to reflect a slower ramp up.
Portfolio Total	Expenditures were below plan primarily due to projects not completing as planned in the Thermo-Mechanical Pulpung program and Capacity Focused DSM. Electricity savings were above plan due to an adjustment of the assumed replacement rate for incandescent lamps under the GSL regulation.

1 **3 Non-Integrated Area Activity**

2 Non-Integrated Area (NIA) activity in fiscal 2018 includes pilot project initiatives and
 3 DSM program activity. Pilot initiative objectives and activities undertaken to support NIA
 4 customers in fiscal 2018 include the following:

- 5 • Support education and skills training to build energy literacy in the community
- 6 • Facilitate access to opportunity assessments and energy efficient upgrades for
 7 homes
- 8 • Support the development and implementation of energy efficient housing policy
- 9 • Support the development of community energy plans
- 10 • Pilot a targeted Low Income Offer for First Nations communities

1 In addition to the pilot project initiatives, BC Hydro's NIA program activities include the
 2 Behaviour, Low Income, Home Energy Retrofit Offer, Leaders in Energy Management
 3 Commercial and Leaders in Energy Management Distribution programs. NIA customer
 4 participation in general offers such as the Retail program is not tracked separately, and
 5 hence is not included here per Directive 23. [Table 2](#) presents expenditures, new
 6 incremental electricity savings for BC Hydro's NIA that were tracked separately as well
 7 as benefit cost ratios and net levelized cost for fiscal 2018. NIA expenditures and
 8 electricity savings included in [Table 2](#) are also included in [Table 1](#) within the applicable
 9 initiatives.

10 **Table 2 NIA Activity for Fiscal 2018**

	Expenditures ¹	New Incremental Electricity Savings ²	Benefit Cost Ratios ³				Net Levelized
	Actual \$	Actual kWh/yr	Utility Test	Total Resource Cost Test	Total Resource Cost Test as modified by DSM Regulation ⁴	Ratepayer Impact Measure Test	Utility Cost (\$/MWh)
DSM Program Activity	\$46,918	169,081	6.6	5.0	5.8	1.9	45
Pilot Project Initiatives	\$522,554	n/a	n/a	n/a	n/a	n/a	n/a

11 Notes:

- 12 ¹ Including all DSM program incentives and pilot project expenditures tracked separately as well as an allocation of
 13 Low Income Program incentives.
- 14 ² Including all new incremental electricity savings for DSM programs tracked separately.
- 15 ³ Long Run Marginal Cost (**LRMC**) is based on NIA generation costs. Also, all components required to calculate
 16 cost effectiveness are not tracked separately therefore assumptions were developed for additional utility costs and
 17 customer cost in order to calculate cost effectiveness.
- 18 ⁴ For the low income components included within DSM NIA Program Activity, the Total Resource Cost Test benefit
 19 cost ratio includes a 40 per cent adder to program benefits, rather than a 15 per cent value for non-energy
 20 benefits, in accordance with the DSM Regulation.

4 Expenditures to Date

BC Hydro's DSM expenditures from fiscal 2016 through fiscal 2018 totalled \$324.9 million. [Table 3](#) presents DSM expenditures from April 1, 2015 to March 31, 2018.

Table 3 Expenditures since Fiscal 2016

	F2016 (\$ 000)	F2017 (\$ 000)	F2018 (\$ 000)	Total (\$ 000)
Codes and Standards				
Residential	-	-	-	-
Commercial	-	-	-	-
<u>Industrial</u>	-	-	-	-
Total Codes and Standards	4,688	5,057	4,797	14,542
Rate Structures				
Residential Inclining Block Rate	506	527	271	1,304
General Service Rate	487	-	-	487
<u>Transmission Service Rate</u>	<u>309</u>	<u>265</u>	<u>283</u>	<u>857</u>
Total Rate Structures	1,302	792	553	2,647
DSM Programs				
<i>Residential Sector</i>				
Behaviour	3,236	2,176	1,839	7,251
Refrigerator Buy-back	1,188	0	(0)	1,188
Low Income	2,425	2,890	3,542	8,856
New Home	1,255	(128)	1	1,128
Retail	4,712	4,658	2,926	12,295
Home Energy Retrofit Offer	2,241	2,246	2,891	7,378
<u>Sector Enabling Activities</u>	<u>973</u>	<u>677</u>	<u>612</u>	<u>2,262</u>
<i>Residential Sector Total</i>	<i>16,030</i>	<i>12,519</i>	<i>11,810</i>	<i>40,359</i>
<i>Commercial Sector</i>				
Leaders in Energy Management - Commercial	25,159	25,050	15,221	65,430
New Construction	7,360	8,781	8,901	25,042
<u>Sector Enabling Activities</u>	<u>1,089</u>	<u>682</u>	<u>591</u>	<u>2,363</u>
<i>Commercial Sector Total</i>	<i>33,609</i>	<i>34,513</i>	<i>24,714</i>	<i>92,835</i>
<i>Industrial Sector</i>				
Leaders in Energy Management - Transmission	18,771	14,365	14,050	47,186
Thermo-Mechanical Pulp	19,657	133	(1,900)	17,889
Leaders in Energy Management - Distribution	10,897	8,152	7,756	26,805
Load Displacement	14,481	-	-	14,481
<u>Sector Enabling Activities</u>	<u>968</u>	<u>523</u>	<u>582</u>	<u>2,073</u>
<i>Industrial Sector Total</i>	<i>64,774</i>	<i>23,173</i>	<i>20,488</i>	<i>108,435</i>
Total Programs	114,412	70,204	57,012	241,629
Supporting Initiatives				
Public Awareness	8,838	6,799	6,999	22,636
<u>Indirect and Portfolio Enabling</u>	<u>7,278</u>	<u>6,178</u>	<u>6,075</u>	<u>19,530</u>
Supporting Initiatives Total	16,116	12,977	13,074	42,166
ENERGY EFFICIENCY PORTFOLIO TOTAL	136,517	89,031	75,436	300,984
Capacity Focused DSM	8,644	8,377	6,868	23,890
PORTFOLIO TOTAL, EE & CF DSM	145,162	97,408	82,304	324,874

1 BC Hydro's DSM electricity savings since fiscal 2016 totalled 2,033 GWh/year at
 2 March 31, 2018, which equates to 95 per cent of the planned savings of
 3 2,151 GWh/year in the F17-F19 RRA. [Table 4](#) presents actual cumulative savings as a
 4 percentage of plan in fiscal 2016 to fiscal 2018.

5 **Table 4 Cumulative Electricity Savings:**
 6 **Fiscal 2016 to Fiscal 2018**

Actual as a Percentage of Plan ¹	
Codes and Standards	
Residential	85%
Commercial	87%
<u>Industrial</u>	<u>79%</u>
Total Codes and Standards	85%
Rate Structures	
Residential Inclining Block Rate	108%
General Service Rate	n/a
<u>Transmission Service Rate</u>	<u>112%</u>
Total Rate Structures	111%
DSM Programs	
<u>Residential Sector</u>	
Behaviour	106%
Refrigerator Buy-back	100%
Low Income	182%
New Home	101%
Retail	151%
<u>Home Energy Retrofit Offer</u>	<u>101%</u>
<i>Residential Sector Total</i>	126%
<u>Commercial Sector</u>	
Leaders in Energy Management - Commercial	90%
<u>New Construction</u>	<u>96%</u>
<i>Commercial Sector Total</i>	91%
<u>Industrial Sector</u>	
Leaders in Energy Management - Transmission	124%
Thermo-Mechanical Pulp	66%
Leaders in Energy Management - Distribution	101%
<u>Load Displacement</u>	<u>85%</u>
<i>Industrial Sector Total</i>	103%
Total Programs	102%
PORTFOLIO TOTAL	95%

7 Notes:

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

1 The cumulative portfolio DSM electricity savings from April 1, 2015 through
 2 March 31, 2018 have been achieved at an average net levelized utility cost of
 3 \$5 per MWh. [Table 5](#) presents net levelized utility cost that is calculated by subtracting
 4 capacity benefits from gross utility costs and then dividing the resulting net utility costs
 5 by electricity savings. A negative net levelized utility cost means that the subtracted
 6 capacity benefits exceed gross utility costs.

7 **Table 5 Utility Cost of Electricity Savings:**
 8 **Fiscal 2016 to Fiscal 2018**

	Net Levelized Utility Cost (\$/MWh)
Codes and Standards	
Residential	n/a
Commercial	n/a
<u>Industrial</u>	<u>n/a</u>
Total Codes and Standards	n/a
Rate Structures	
Residential Inclining Block Rate	-25
General Service Rate	n/a
<u>Transmission Service Rate</u>	<u>-15</u>
Total Rate Structures	-21
DSM Programs	
<u>Residential Sector</u>	
Behaviour	-5
Refrigerator Buy-back	47
Low Income	28
New Home	75
Retail	-23
Home Energy Retrofit Offer	-19
<u>Sector Enabling Activities</u>	<u>n/a</u>
<i>Residential Sector Total</i>	-10
<u>Commercial Sector</u>	
Leaders in Energy Management - Commercial	17
New Construction	23
<u>Sector Enabling Activities</u>	<u>n/a</u>
<i>Commercial Sector Total</i>	19
<u>Industrial Sector</u>	
Leaders in Energy Management - Transmission	12
Thermo-Mechanical Pulp	5
Leaders in Energy Management - Distribution	18
Load Displacement	13
<u>Sector Enabling Activities</u>	<u>n/a</u>
<i>Industrial Sector Total</i>	12
Total Programs	10
Rate Structures and Programs	5

9 [Table 6](#) presents Total Resource Cost Test benefit cost-ratios of actual DSM electricity
 10 savings achieved from April 1, 2015 through March 31, 2018. [Table 6](#) shows the Total

1 Resource Cost Test benefit-cost ratios for the Total Resource Cost test and the Total
 2 Resource Cost test as modified by the Demand-Side Measures Regulation.

3 **Table 6 Benefit Cost Ratios of Electricity Savings:**
 4 **Fiscal 2016 to Fiscal 2018**

	Benefit Cost Ratios			
	Utility Test	Total Resource Cost Test	Total Resource Cost Test as modified by DSM Regulation ¹	Ratepayer Impact Measure Test ²
Codes and Standards				
Residential	n/a	8.3	9.3	1.4
Commercial	n/a	9.2	11.9	1.5
Industrial	n/a	45.7	52.5	1.9
Total Codes and Standards	n/a ³	8.2	9.5	1.4
Rate Structures				
Residential Inclining Block Rate	29.1	29.1	33.5	1.0
General Service Rate	0.0	0.0	0.0	0.0
<u>Transmission Service Rate</u>	73.0	2.8	3.2	1.1
Total Rate Structures	32.8	7.2	8.2	1.1
DSM Programs				
<u>Residential Sector</u>				
Behaviour	5.4	6.0	6.8	1.1
Refrigerator Buy-back	1.8	2.5	2.6	0.7
Low Income ⁴	2.1	3.1	3.1	0.9
New Home	1.3	1.1	1.2	0.7
Retail	7.6	15.4	17.0	1.2
Home Energy Retrofit Offer	4.8	1.9	2.5	1.0
<u>Sector Enabling Activities</u>	n/a	n/a	n/a	n/a
<i>Residential Sector Total</i>	5.0	4.8	5.4	1.1
<u>Commercial Sector</u>				
Leaders in Energy Management - Commercial	3.3	2.6	3.1	1.1
New Construction	2.8	1.7	2.3	1.0
<u>Sector Enabling Activities</u>	n/a	n/a	n/a	n/a
<i>Commercial Sector Total</i>	3.1	2.3	2.7	1.0
<u>Industrial Sector</u>				
Leaders in Energy Management - Transmission	4.0	2.6	3.0	1.0
Thermo-Mechanical Pulp	5.4	4.2	4.8	1.4
Leaders in Energy Management - Distribution	3.2	2.5	2.9	1.0
Load Displacement	4.0	1.0	1.2	1.3
<u>Sector Enabling Activities</u>	n/a	n/a	n/a	n/a
<i>Industrial Sector Total</i>	4.0	2.3	2.6	1.1
Total Programs	3.9	2.6	3.1	1.1
Rate Structures and Programs	4.5	2.9	3.4	1.1
Portfolio Total	n/a	4.9	5.7	1.3

5 Notes:

6 ¹ In accordance with the DSM Regulation, the avoided cost of natural gas is valued at BC Hydro's LRMC of
 7 acquiring electricity generated from clean or renewable resources in B.C converted to \$/gigajoule (GJ) in all time
 8 periods. Non-energy benefits are valued at 15 per cent of the energy and capacity benefits of electricity and
 9 natural gas.

10 ² While subsection 4(6) of the DSM Regulation precludes the use of the Ratepayer Impact Measure Test in
 11 determining cost-effectiveness of a demand-side measure, this benefit-cost ratio is included in the table to comply
 12 with Directive 42 from the Commission decision on BC Hydro's 2008 LTAP.

13 ³ BC Hydro is not solely responsible for codes and standards savings, so this benefit-cost metric is not applicable.

14 ⁴ The Total Resource Cost Test benefit-cost ratio for the Low Income Program includes a 40 per cent adder to
 15 program benefits, rather than a 15 per cent value for non-energy benefits, in accordance with the DSM
 16 Regulation.

5 Mitigation Measures

Based on the experience gathered over the past few years through initiative tracking, the following are mitigation measures that have been undertaken or are planned for the future.

Codes and Standards	
Residential	Cumulative electricity savings in fiscal 2018 were below plan. Based on market data, it is expected that as incandescent lamps subject to the General Service Lighting regulation burn out they will continue to be replaced with efficient LED lamps that meet the regulation. Replacement rate assumption has been adjusted in plans moving forward.
Commercial	
Industrial	
Rate Structures	
Residential Inclining Block	Cumulative electricity savings in fiscal 2018 were above plan.
General Service Rate	No further conservation is forecast from the general service rate.
Industrial Transmission	Cumulative electricity savings in fiscal 2018 were above plan.
DSM Programs	
Residential Sector	
Behaviour	Cumulative electricity savings in fiscal 2018 were above plan. In fiscal 2019 the program is conducting a trial to test an application for mobile devices as a means of engaging customers more easily.
Refrigerator Buy-Back	Cumulative electricity savings in fiscal 2018 were on plan. The program has ended per the new DSM Plan in the F17-F19 RRA.
Low Income	Cumulative electricity savings in fiscal 2018 were above plan. In fiscal 2019 the program will focus on coordinating with the newly developed Crisis Fund as a means of reaching customers that have sought bill relief from BC Hydro and helping them to lower their bills in the future.
New Home	Cumulative electricity savings in fiscal 2018 were on plan. The program has ended per the new DSM Plan in the F17-F19 RRA.
Retail	Cumulative electricity savings in fiscal 2018 were above plan. In fiscal 2019 the program will begin offering email money transfers for those customers that do not opt for credit on bill, further reducing costs by eliminating cheques.
Home Energy Retrofit Offer	Cumulative electricity savings in fiscal 2018 were on plan. In fiscal 2018 the program launched an online application form, greatly improving the customer experience and reducing application processing and rebate payment times by more than half.
Commercial Sector	
Leaders in Energy Management - Commercial	Cumulative electricity savings in fiscal 2018 were below plan. The program is making adjustments such as incenting HVAC control measures, launching an offer focused on social housing for multi-unit residential buildings to implement energy conservation measures and having Business Energy Advisors work with small medium businesses in order to help reach fiscal 2019 planned values.
New Construction	Cumulative electricity savings in fiscal 2018 were approximately on plan. No mitigation measures are warranted as planned fiscal 2019 electricity savings are expected to be achieved based on anticipated project completions.

Industrial Sector	
Leaders in Energy Management - Transmission	Cumulative electricity savings in fiscal 2018 were above plan. Continued development in fiscal 2018 of savings directly associated with strategic energy management has resulted in increased savings in this area.
Thermo-Mechanical Pulping	Cumulative electricity savings in fiscal 2018 were below plan. No mitigation measures are warranted as delays in large projects are possible. Two projects are currently being implemented and expected to complete in fiscal 2019. The remaining two projects are still subject to delay but currently planned in fiscal 2021. BC Hydro is in contact with the customer to ensure the best information is available for planning purposes.
Leaders in Energy Management – Distribution	Cumulative electricity savings in fiscal 2018 were on plan. A new strategy that we worked on in fiscal 2018 is the introduction of the cohort energy manager targeting medium-sized firms that completed its first full year with three cohorts in progress. This initiative will begin to deliver electricity savings in fiscal 2019.
Load Displacement	Cumulative electricity savings in fiscal 2018 were below plan. The program has ended per the new DSM Plan in the F17-F19 RRA.
Capacity Focused DSM	No capacity savings were planned in fiscal 2018 as these are pilot initiatives.

6 Operating Expenditures for Fiscal 2018

BC Hydro's DSM operating expenditures in fiscal 2018 totalled \$521,043.² [Table 7](#) presents DSM operating expenditures in fiscal 2018.

Table 7 Operating Expenditures for Fiscal 2018

	(\$000)
Labour	458
Consultants/Contractors/Temp Labour	11
Other	53
Total	521

7 Allocation of Supporting Initiative Costs to Programs

This section describes how supporting initiative costs are allocated to programs for the purpose of cost test calculations.

In accordance with Directive 61 from the Commission decision on the F05-F06 RRA, when calculating levelized costs and benefit cost ratios for this report, supporting initiative costs are allocated to DSM programs and rate structures based on their share of DSM electricity savings. Fiscal 2025 has been used as the year for energy savings allocation. As an example, rate structures and programs are forecast to save roughly 700 GWh/year in fiscal 2025, so a program that is forecast to save 7 GWh/year in

² DSM operating expenditures are not included in earlier tables.

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- 1 fiscal 2025 represents one per cent of the total. In turn, one per cent of supporting
 - 2 initiative costs would be allocated to that program in each year when calculating the
 - 3 program's levelized cost or benefit cost ratio.