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August 5, 2016

Ms. Laurel Ross
Acting Commission Secretary
British Columbia Utilities Commission
Sixth Floor – 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Ms. Ross:

**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))
F2016 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, 2016.

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

Yours sincerely,



Tom Loski
Chief Regulatory Officer

st/ma

Enclosure (1)



Report on Demand-Side Management Activities for Fiscal 2016

July 25, 2016

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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 2016 fiscal year (**F2016**), which is the twelve months ending March 31, 2016. This annual report is filed in compliance with the following Commission Directives:

- Directive 69 from the Commission Decision on BC Hydro's F2005/F2006 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**) and
- Directives 36 and 38 from the Commission decision on BC Hydro's 2008 LTAP.

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
 - ▶ 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-96-04 and to file its Semi Annual Demand-Side Management Reports in the same format as the June 2005 Report with the following enhancements:

Provide annual and cumulative totals since program inception;

- (i) Express these values on a per unit basis; and
- (ii) Provide the benefit to cost ratios for the three DSM tests.”

Directive 36 of the 2006 IEP/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.”

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 and 38 of the 2006 IEP/LTAP Decision.

2 Expenditures and Electricity Savings for F2016

BC Hydro’s DSM expenditures¹ in F2016 totalled \$145.2 million while incremental DSM electricity savings totalled 872 GWh/year. This was \$5 million or 4 per cent below the F2016 DSM Plan presented in BC Hydro’s Fiscal 2015 to Fiscal 2016 Revenue Requirements Rate Application (**F15-F16 RRA**) after the addition of DSM-related expenditures for the Thermo-Mechanical Pulp program, cost recovery of which is

¹ Comprising all DSM-related deferred operating and specific capital expenditures. DSM operating expenditures are presented in [Table 6](#) of this report.

prescribed by the Direction to the British Columbia Utilities Commission Respecting the Authority's TMP Program (B.C. Reg. 139/2015). Overall, net incremental electricity savings as shown in [Table 1](#) were 122 GWh/year or 12 per cent below the DSM Plan. The primary cause of these electricity savings variances is less than planned electricity savings from rate structures. Net incremental electricity savings from DSM Programs were 18 GWh/year or 6 per cent above the DSM Plan.

[Table 1](#) presents planned and actual DSM expenditures and incremental electricity savings in F2016.

Table 1 Expenditures and Incremental Electricity Savings for F2016

	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	2,970	2,370	(600)	(20%)	422	420	(2)	(0%)
Commercial	1,108	667	(441)	(40%)	137	118	(18)	(13%)
Industrial	143	103	(40)	(28%)	21	18	(3)	(14%)
Total Codes and Standards	4,221	3,140	(1,081)	(26%)	580	557	(23)	(4%)
Rate Structures								
Residential	517	506	(11)	(2%)	108	29	(79)	(73%)
Commercial & Industrial Distribution	421	487	65	16%	(14) ⁴	-	14	(100%)
Industrial Transmission	740	309	(431)	(58%)	7	(44)	(51)	(712%)
Total Rate Structures	1,678	1,302	(376)	(22%)	102	(15)	(117)	(115%)
DSM Programs								
<u>Residential Sector</u>								
Behaviour	4,616	3,236	(1,380)	(30%)	26	13	(13)	(50%)
Refrigerator Buy-back	1,308	1,188	(120)	(9%)	9	3	(6)	(68%)
Low Income	2,517	2,425	(92)	(4%)	2	3	1	68%
New Home	2,114	1,255	(859)	(41%)	-	1	1	-
Retail Rebate	3,867	4,712	845	22%	7	18	11	156%
Renovation Rebate	3,214	2,241	(973)	(30%)	6	6	(1)	(8%)
<u>Sector Enabling Activities</u>	<u>1,241</u>	<u>973</u>	<u>(268)</u>	<u>(22%)</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Residential Sector Total	18,876	16,030	(2,847)	(15%)	50	43	(7)	(13%)
<u>Commercial Sector</u>								
Power Smart Partner	31,400	25,159	(6,240)	(20%)	63	57	(7)	(11%)
New Construction	7,416	7,360	(56)	(1%)	13	17	4	33%
<u>Sector Enabling Activities</u>	<u>1,174</u>	<u>1,089</u>	<u>(84)</u>	<u>(7%)</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Commercial Sector Total	39,990	33,609	(6,381)	(16%)	76	73	(3)	(3%)
<u>Industrial Sector</u>								
Power Smart Partner - Transmission	23,462	18,771	(4,691)	(20%)	92	72	(20)	(21%)
Thermo-Mechanical Pulp	19,566	19,657	90	0%	66	66	0	0%
Power Smart Partner - Distribution	11,850	10,897	(953)	(8%)	28	26	(2)	(7%)
Load Displacement	6,344	14,481	8,136	128%	-	49	49	-
<u>Sector Enabling Activities</u>	<u>1,236</u>	<u>988</u>	<u>(267)</u>	<u>(22%)</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Industrial Sector Total	62,459	64,774	2,315	4%	186	214	28	15%
Capacity Focused DSM	3,102	8,644	5,542	179%	-	-	-	-
Total Programs	124,427	123,057	(1,370)	(1%)	312	330	18	6%
Supporting Initiatives								
Public Awareness and Education	6,044	6,227	183	3%	-	-	-	-
Community Engagement	3,942	2,611	(1,331)	(34%)	-	-	-	-
Advanced DSM Strategies	1,874	1,547	(326)	(17%)	-	-	-	-
<u>Indirect and Portfolio Enabling</u>	<u>8,443</u>	<u>7,278</u>	<u>(1,166)</u>	<u>(14%)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Supporting Initiatives Total	20,303	17,663	(2,640)	(13%)	-	-	-	-
TOTAL DSM	150,629	145,162	(5,467)	(4%)	993	872	(122)	(12%)

Notes:

- ¹ Including all DSM-related deferred operating and specific capital expenditures that are relevant for DSM cost-effectiveness.
- ² Plan figures are from BC Hydro's F15-F16 RRRRA, Appendix G. The Plan also includes DSM-related expenditures of \$19.6 million and electricity savings of 66.3 GWh/year for the Thermo-Mechanical Pulp program, covered by the Direction to the British Columbia Utilities Commission Respecting the Authority's TMP Program (B.C. Reg. 139/2015).
- ³ Reported savings from codes and standards and residential, commercial & industrial distribution rate structures are based on planned estimates as well as evaluated results.
- ⁴ The approach to applying rate increases for F2016 onto the two-part rate structure of the MGS and LGS rates results in a shift of savings from DSM to the rate level savings claimed in the Load Forecast. As a result, the incremental plans savings are negative.

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

Codes and Standards	
Residential	Expenditures were below plan primarily due to BC Hydro's ability to reduce expenditures by leveraging local governments to explore additional opportunities for increased compliance and more savings from codes and standards. Energy savings were below plan due to the delay in adoption of Amendment 13 to the Federal Energy Efficiency Regulation.
Commercial	
Industrial	
Rate Structures	
Residential	Expenditures were approximately on plan. Electricity savings were below plan due to an adjustment in the savings calculation due to the incorporation of lower savings from the 2013 RIB Evaluation outcomes into the forecast model.
Commercial & Industrial Distribution	Expenditures were above plan due to stakeholder engagement on possible rate structure changes, in advance of the Rate Design Application. No further conservation is forecast from the commercial and industrial distribution conservation rates as BC Hydro has revised its conservation forecast to zero due to the outcomes of the F2014 LGS/MGS Evaluation report.
Industrial Transmission	Expenditures were below plan due to the timing of the Transmission Service Rate evaluation and the ability to move forward with a lower cost solution for a data centralization project. Energy savings were below plan due to a reduction in incremental customer self-generation.
DSM Programs	
Residential Sector	
Behaviour	Expenditures and electricity savings were below plan due to a change in campaign strategy to field one promotional campaign instead of the two that were originally planned. Electricity savings were also below plan due to the transition to a more conservative definition for engaged users of the Energy Visualization Portlet.
Refrigerator Buy-Back	The program had a change in strategy to shift from a year-round program offer to a seasonal program offer with reduced budgets and energy targets. The seasonal program offer was reflected in the planned expenditures while the initial year-round program offer was still reflected in the planned electricity savings. As a result, expenditures were approximately on the revised plan and energy savings below the initial plan.
Low Income	Expenditures were approximately on plan. Electricity savings were above plan due to higher than planned participation in the Energy Saving Kit portion of the program offer, resulting largely from leads generated through the BC Hydro call centre.
New Home	The program had a change in strategy that extended the program end date from F2015 to F2016. A F2016 end date is reflected in the planned expenditures while a F2015 end date is reflected in the planned electricity savings. As a result, no electricity savings appear in the plan. Expenditures were below plan due to lower participation following the decision to remove the incentive offer from the market in mid F2016.
Retail Rebate	Expenditures and electricity savings were above plan due to higher than planned participation in the lighting portion of the program, with strong sales of LED lighting, particularly multi-packs which provided more savings than planned.
Renovation Rebate	Expenditures and electricity savings were below plan due to the mix of project measures installed by customers varying from the planned measure mix.
Sector Enabling Activities	Expenditures were below plan due to a change in timing related to work to develop a residential contractor network.

Commercial Sector	
Power Smart Partner	Expenditures and electricity savings were below plan due to customer projects not completing as planned and being deferred to the next fiscal. Expenditures were also below plan due to a higher mix of lower cost projects completing than planned.
New Construction	Expenditures were approximately on plan. Energy savings were above plan due to higher participation of lower cost projects.
Sector Enabling Activities	Expenditures were approximately on plan.
Industrial Sector	
Power Smart Partner – Transmission	Expenditures and electricity savings were below plan due to a number of projects being deferred by customers to F2017.
Thermo-Mechanical Pulping	Expenditures and electricity savings were approximately on plan.
Power Smart Partner – Distribution	Expenditures and electricity savings were below plan due to a number of projects being cancelled or deferred by customers.
Load Displacement	Expenditures and electricity savings were above plan due to the delay of a large project from F2015 to F2016. This was partially offset by the dissolution of a project completed in F2014.
Sector Enabling Activities	Expenditures are below plan due to planned studies being cancelled or deferred.
Capacity Focused DSM	Expenditures are above plan due to the implementation of a load curtailment pilot program in F2016. This pilot was advanced in order to test the viability of using industrial customers to deliver capacity savings.
Total Programs	Expenditures were approximately on plan. Electricity savings were above plan primarily due to the delay of an Industrial Load Displacement project from F2015 to F2016.
Supporting Initiatives	
Public Awareness & Education	Expenditures were approximately on plan.
Community Engagement	Expenditures were below plan due to the development of a new operating model and a condensed in-market season.
Advanced DSM Strategies	Expenditures were below plan due to BC Hydro leveraging local government and community energy manager work plans to support BC Hydro's codes and standards goals and activities, particularly with respect to building code compliance.
Indirect and Portfolio Enabling Activities	Expenditures were below plan due to lower than expected costs and timing for the Conservation Potential Review and IT projects.
Total DSM	Expenditures were approximately on plan. Electricity savings were 12 per cent below plan due primarily to the incorporation of evaluation results for Residential Rate Structures and a reduction in incremental customer self-generation.

3 Expenditures to Date

BC Hydro's DSM expenditures from F2013 through F2016 totalled \$540.3 million.

[Table 2](#) presents DSM expenditures from April 1, 2013 to March 31, 2016.²

Table 2 Expenditures since F2013

	F2013 (\$ 000)	F2014 (\$ 000)	F2015 (\$ 000)	F2016 (\$ 000)	Total (\$ 000)
Codes and Standards					
Residential	1,323	1,257	2,296	2,370	7,247
Commercial	245	307	660	667	1,878
<u>Industrial</u>	47	64	115	103	329
Total Codes and Standards	1,615	1,628	3,071	3,140	9,453
Rate Structures					
Residential	330	302	314	506	1,453
Commercial & Industrial Distribution	557	409	521	487	1,974
<u>Industrial Transmission</u>	407	300	400	309	1,416
Total Rate Structures	1,294	1,011	1,236	1,302	4,842
DSM Programs					
<u>Residential Sector</u>					
Behaviour	4,419	4,112	2,770	3,236	14,538
Refrigerator Buy-back	3,754	2,239	934	1,188	8,116
Low Income	3,040	2,185	1,925	2,425	9,575
New Home	2,321	2,706	2,716	1,255	8,998
Retail Rebate	9,141	4,063	4,011	4,712	21,926
Renovation Rebate	3,636	1,264	972	2,241	8,113
<u>Sector Enabling Activities</u>	1,220	1,013	874	973	4,081
<i>Residential Sector Total</i>	27,532	17,582	14,202	16,030	75,347
<u>Commercial Sector</u>					
Power Smart Partner	42,472	33,784	26,394	25,159	127,809
New Construction	8,680	7,672	9,011	7,360	32,723
<u>Sector Enabling Activities</u>	1,100	1,176	1,245	1,089	4,610
<i>Commercial Sector Total</i>	52,252	42,631	36,650	33,609	165,142
<u>Industrial Sector</u>					
Power Smart Partner - Transmission	18,146	20,437	28,296	18,771	85,650
Thermo-Mechanical Pulp	-	-	134	19,657	19,791
Power Smart Partner - Distribution	12,397	10,126	13,505	10,897	46,925
Load Displacement	10,009	4,537	2,919	14,481	31,946
<u>Sector Enabling Activities</u>	1,015	1,003	853	968	3,839
<i>Industrial Sector Total</i>	41,567	36,103	45,708	64,774	188,152
Capacity Focused DSM	-	28	4,742	8,644	13,414
Total Programs	121,352	96,345	101,302	123,057	442,055
Supporting Initiatives					
Public Awareness and Education	7,235	7,018	5,974	6,227	26,454
Community Engagement	7,232	4,137	3,715	2,611	17,695
Advanced DSM Strategies	1,863	1,940	984	1,547	6,335
Information Technology	145	-	-	-	145
<u>Indirect and Portfolio Enabling</u>	9,386	8,200	8,470	7,278	33,333
Supporting Initiatives Total	25,861	21,296	19,142	17,663	83,962
Total DSM	150,121	120,279	124,750	145,162	540,312

² Comprising all DSM deferred operating and specific capital expenditures that are relevant for DSM cost-effectiveness.

BC Hydro’s DSM electricity savings since F2013 totalled 2,710 GWh/year at March 31, 2016, which equates to 75 per cent of the planned savings of 3,537 GWh/year in the F15-F16 RRRRA and electricity savings of 66 GWh/year for the Thermo-Mechanical Pulp program, cost recovery of which is prescribed by the Direction to the British Columbia Utilities Commission Respecting the Authority’s TMP Program (B.C. Reg. 139/2015). DSM programs delivered 92 per cent of planned savings. [Table 3](#) presents actual cumulative savings as a percentage of plan in F2013 to F2016.

Table 3 Cumulative Electricity Savings since April 1, 2012

Actual as a Percentage of Plan ¹	
	F2016
Codes and Standards	
Residential	95%
Commercial	85%
<u>Industrial</u>	<u>87%</u>
Total Codes and Standards	93%
Rate Structures	
Residential	54%
Commercial & Industrial Distribution	0%
<u>Industrial Transmission</u>	<u>95%</u>
Total Rate Structures	31%
DSM Programs	
<i><u>Residential Sector</u></i>	
Behaviour	55%
Refrigerator Buy-back	69%
Low Income	119%
New Home	138%
Retail Rebate	133%
<u>Renovation Rebate</u>	<u>73%</u>
<i>Residential Sector Total</i>	<i>82%</i>
<i><u>Commercial Sector</u></i>	
Power Smart Partner	94%
<u>New Construction</u>	<u>110%</u>
<i>Commercial Sector Total</i>	<i>96%</i>
<i><u>Industrial Sector</u></i>	
Power Smart Partner - Transmission	101%
Thermo-Mechanical Pulp	100%
Power Smart Partner - Distribution	101%
<u>Load Displacement</u>	<u>65%</u>
<i>Industrial Sector Total</i>	<i>92%</i>
Capacity Focused DSM	n/a
Total Programs	92%
Total DSM	75%

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 since F2013 have been achieved at an average net levelized utility cost of -\$1 per MWh. [Table 4](#) presents the net levelized utility cost of actual DSM electricity savings achieved from April 1, 2012 through March 31, 2016. Net levelized utility cost 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 4 Utility Cost of Electricity Savings: F2013 to F2016

	Net Levelized Utility Cost (\$/MWh) ¹
Codes and Standards	
Residential	-25
Commercial	-11
<u>Industrial</u>	<u>-9</u>
Total Codes and Standards	-21
Rate Structures	
Residential	-13
Commercial & Industrial Distribution	4
<u>Industrial Transmission</u>	<u>-4</u>
Total Rate Structures	-11
Programs	
<u>Residential Sector</u>	
Behaviour	18
Refrigerator Buy-back	37
Low Income	63
New Home	35
Retail Rebate	9
Renovation Rebate	9
<u>Sector Enabling Activities</u>	<u>n/a</u>
<i>Residential Sector Total</i>	21
<u>Commercial Sector</u>	
Power Smart Partner	36
New Construction	37
<u>Sector Enabling Activities</u>	<u>n/a</u>
<i>Commercial Sector Total</i>	37
<u>Industrial Sector</u>	
Power Smart Partner - Transmission	19
Thermo-Mechanical Pulp	19
Power Smart Partner - Distribution	31
Load Displacement	22
<u>Sector Enabling Activities</u>	<u>n/a</u>
<i>Industrial Sector Total</i>	22
Capacity Focused DSM	n/a
Total Programs	27
Total DSM	-1

[Table 5](#) presents Total Resource Cost Test benefit cost-ratios of actual DSM electricity savings achieved from April 1, 2012 through March 31, 2016. [Table 5](#) shows the Total Resource Cost Test benefit-cost ratios for the Total Resource Cost test and the Total Resource Cost test as modified by the Demand-Side Measures Regulation.

Table 5 Benefit Cost Ratios of Electricity Savings: F2013 to F2016

	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	229.5	7.4	8.6	1.3
Commercial	202.5	6.5	7.6	1.3
<u>Industrial</u>	<u>174.9</u>	<u>35.7</u>	<u>41.0</u>	<u>2.0</u>
Total Codes and Standards	222.3	7.4	8.6	1.4
Rate Structures				
Residential	21.3	21.3	24.5	1.0
Commercial & Industrial Distribution	9.4	9.4	10.7	0.9
<u>Industrial Transmission</u>	<u>45.1</u>	<u>3.4</u>	<u>3.9</u>	<u>1.1</u>
Total Rate Structures	21.9	10.9	12.5	1.0
Programs				
<i>Residential Sector</i>				
Behaviour	3.3	3.6	4.2	0.9
Refrigerator Buy-back	2.3	3.4	3.1	0.7
Low Income ³	1.4	1.9	1.8	0.7
New Home	2.1	1.4	1.4	0.9
Retail Rebate	3.6	5.5	5.9	1.0
Renovation Rebate	3.5	1.4	1.5	0.9
<u>Sector Enabling Activities</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
<i>Residential Sector Total</i>	2.9	2.6	2.8	0.9
<i>Commercial Sector</i>				
Power Smart Partner	2.4	1.8	2.2	0.8
New Construction	2.3	1.7	2.8	0.8
<u>Sector Enabling Activities</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
<i>Commercial Sector Total</i>	2.3	1.8	2.3	0.8
<i>Industrial Sector</i>				
Power Smart Partner - Transmission	3.8	2.2	2.6	1.0
Thermo-Mechanical Pulp	3.6	3.1	3.6	1.3
Power Smart Partner - Distribution	2.6	2.2	2.5	0.9
Load Displacement	3.4	1.5	1.7	1.2
<u>Sector Enabling Activities</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
<i>Industrial Sector Total</i>	3.4	2.0	2.4	1.0
Capacity Focused DSM	n/a	n/a	n/a	n/a
Total Programs	2.9	2.0	2.4	0.9
Total DSM	7.2	3.7	4.4	1.1

Notes:

- ¹ In accordance with the DSM Regulation (Ministerial Order M233/2014), the avoided cost of natural gas is valued at BC Hydro's long run marginal cost of acquiring electricity generated from clean or renewable resources in B.C converted to \$/GJ in all time periods. Non-energy benefits are valued at 15 per cent of the energy and capacity benefits of electricity and natural gas.
- ² 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 Commission decision on BC Hydro's 2008 LTAP.
- ³ The Total Resource Cost Test benefit-cost ratio for the Low Income program includes a 40 per cent adder to program benefits, rather than a 15 per cent value for non-energy benefits, in accordance with the DSM Regulation.

4 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 F2016 were below plan. BC Hydro will manage risk by tracking Codes & Standards progress against a number of milestones or indicators to anticipate savings shortfalls or identify trends that may trigger the need for adjustments to the DSM Plan as well as continuing to work closely with both the federal and provincial governments to anticipate and adjust code and regulation approval timelines as appropriate.
Commercial	
Industrial	
Rate Structures	
Residential	Cumulative electricity savings in F2016 were below plan. Adjustments have been made to the conservation forecasts to reflect the outcomes from their respective evaluation reports.
Commercial & Industrial Distribution	
Industrial Transmission	Cumulative electricity savings were approximately on plan in F2016.
DSM Programs	
Residential Sector	
Behaviour	Cumulative electricity savings in F2016 were below plan. New cumulative electricity savings targets were set based on past performance and are reflected in the new DSM Plan in the F2017-F2019 RRA. The program is expected to reach F2017 targets.
Refrigerator Buy-Back	Cumulative electricity savings in F2016 were below plan. The program has ended per the new DSM Plan in the F2017-F2019 RRA.
Low Income	Cumulative electricity savings in F2016 were above plan.
New Home	Cumulative electricity savings in F2016 were above plan. The program has ended per the new DSM Plan in the F2017-F2019 RRA.
Retail Rebate	Cumulative electricity savings in F2016 were above plan.
Renovation Rebate	Cumulative electricity savings in F2016 were below plan. New cumulative electricity savings targets were set based on past performance and are reflected in the new DSM Plan in the F2017-F2019 RRA. The program is expected to reach F2017 targets.
Commercial Sector	
Power Smart Partner	Cumulative electricity savings in F2016 were below plan. New cumulative electricity savings targets were set based on past performance and are reflected in the new DSM Plan in the F2017-F2019 RRA. The program is expected to reach F2017 targets.
New Construction	Cumulative electricity savings in F2016 were above plan.
Industrial Sector	
Power Smart Partner – Transmission	Cumulative electricity savings in F2016 were above plan.
Thermo-Mechanical Pulping	Cumulative electricity savings in F2016 were on plan.
Power Smart Partner – Distribution	Cumulative electricity savings in F2016 were above plan.
Load Displacement	Cumulative electricity savings in F2016 were below plan. The program has ended per the new DSM Plan in the F2017-F2019 RRA.
Capacity Focused DSM	No capacity savings were planned in F2016 as these are pilot initiatives.

5 Operating Expenditures for F2016

BC Hydro's DSM operating expenditures in F2016 totalled \$569,517.³ [Table 6](#) presents DSM operating expenditures in F2016.

Table 6 Operating Expenditures for F2016

	(\$000)
Labour	433
Consultants/Contractors/Temp Labour	29
Other	107
Total	570

6 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. F2025 has been used as the year for energy savings allocation. As an example, rate structures and programs are forecast to save roughly 2,107 GWh/year in F2025, so a program that is forecast to save 21 GWh/year in F2025 represents 1 per cent of the total. In turn, 1 per cent of supporting initiative costs would be allocated to that program in each year when calculating the program's levelized cost or benefit cost ratio.

³ DSM operating expenditures are not included in earlier tables.