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August 30, 2013

Ms. Erica Hamilton  
Commission Secretary  
British Columbia Utilities Commission  
Sixth Floor – 900 Howe Street  
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:


**RE: British Columbia Utilities Commission (BCUC)  
British Columbia Hydro and Power Authority (BC Hydro)  
F2005/F2006 Revenue Requirements Application  
BCUC Decision: October 29, 2004; Directive 69 (page 201)  
(AMENDED pursuant to 2006 Integrate Electricity Plan and  
2006 Long-Term Acquisition Plan  
BCUC Decision: May 11, 2006; Directive 16 (page 145-146))**

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BC Hydro writes to the BCUC to provide its Report on Demand-Side Management Activities for the 12 months ending March 31, 2013.

For further information, please contact Geoff Higgins at 604-623-4121 or by email at [bchydroregulatorygroup@bchydro.com](mailto:bchydroregulatorygroup@bchydro.com).

Yours sincerely,



(for) Janet Fraser  
Chief Regulatory Officer

sh/rh

Enclosure



**Report on Demand-Side  
Management Activities for  
Fiscal 2013**

**August 30, 2013**

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## 1 Introduction

This BC Hydro annual report to the British Columbia Utilities Commission (**BCUC**) on Demand Side Management (**DSM**) activities responds to Directive 69 from the BCUC decision on BC Hydro's F2005/F2006 Revenue Requirements Application (**F05/F06 RRA**), Directive 16 from the BCUC decision on BC Hydro's 2006 Integrated Electricity Plan and Long Term Acquisition Plan (**2006 IEP/LTAP**) and Directives 36 and 38 from the BCUC decision on BC Hydro's 2008 LTAP. The report provides information on DSM expenditures, electricity savings, plan performance and mitigation measures for the 2013 fiscal year (**F2013**), or the twelve months ending March 31, 2013.

Directive 69 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
- 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

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1 Demand Side Management Reports in the same format as the June 2005 Report  
2 with the following enhancements:

3 Provide annual and cumulative totals since program inception;

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

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

6 Directive 36 2006 IEP/LTAP Decision directed BC Hydro to switch from semi-annual  
7 to annual DSM performance reports while Directive 38 of the same Decision directed  
8 BC Hydro to include in these reports “metrics for each initiative, achievements in  
9 relation to milestones, and description of past or planned mitigation measures where  
10 warranted. These mitigation measures should include shifting program resources  
11 and alternative supply options for each program. Ongoing DSM performance  
12 reporting should demonstrate how BC Hydro is continuously pursuing DSM and that  
13 specific programs are cost-effective.”

14 Consistent with past practice, BC Hydro will file its program evaluation reports later  
15 this year. This report addresses the balance of Directives 69 and 16, as well as  
16 Directives 36 and 38.

## 17 **2 Expenditures and Electricity Savings for Fiscal 2013**

18 BC Hydro’s DSM expenditures<sup>1</sup> in F2013 totalled \$150.1 million while incremental  
19 DSM electricity savings totalled 931 GWh/year. This was \$53 million or 26 per cent  
20 below the DSM Plan in BC Hydro’s Amended F2012 to F2014 Revenue  
21 Requirements Application (**Amended F12-F14 RRA**). Incremental electricity savings  
22 were 198 GWh/year or 18 per cent below the Amended F12-F14 RRA. From a  
23 cumulative perspective electricity savings are 20 GWh/year or 5 per cent above the  
24 Amended F12-F14 RRA.

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<sup>1</sup> Comprising all DSM-related deferred operating and specific capital expenditures. DSM operating expenditures are presented in Table 6 of this report.

- 
- 1 [Table 1](#) presents planned and actual DSM expenditures and incremental electricity
  - 2 savings in F2013.

1  
2

**Table 1 Expenditures and Incremental Electricity Savings for F2013**

	Expenditures <sup>1</sup>				Incremental Electricity Savings			
	Plan <sup>2</sup> \$ 000	Actual \$ 000	Variance \$ 000	%	Plan <sup>2</sup> GWh/yr	Actual <sup>3</sup> GWh/yr	Variance GWh/yr	%
<b>Codes and Standards<sup>4</sup></b>								
Residential	-	-	-	-	159	198	39	25%
Commercial	-	-	-	-	34	52	19	55%
Industrial	-	-	-	-	10	9	(1)	(12%)
<b>Total Codes and Standards</b>	-	-	-	-	203	259	57	28%
<b>Rate Structures</b>								
Residential	2,197	330	(1,867)	(85%)	58	58	0	0%
Commercial & Industrial Distribution	2,201	557	(1,645)	(75%)	393	393	0	0%
Industrial Transmission	349	407	58	17%	(29) <sup>5</sup>	(75)	(46)	158%
<b>Total Rate Structures</b>	4,747	1,294	(3,454)	(73%)	422	377	(45)	(11%)
<b>DSM Programs</b>								
<i>Residential Sector</i>								
Behaviour	5,814	4,419	(1,394)	(24%)	41	7	(34)	(83%)
Lighting	3,722	4,102	379	10%	13	(33)	(47)	(348%)
Refrigerator Buy-back	5,091	3,754	(1,336)	(26%)	18	15	(4)	(20%)
Low Income	6,820	3,040	(3,780)	(55%)	8	(0)	(8)	(105%)
New Home	2,203	2,321	118	5%	4	4	0	5%
Appliances	2,445	2,181	(264)	(11%)	2	2	0	1%
Consumer Electronics	2,860	2,858	(2)	(0%)	4	10	5	127%
Renovation Rebate	3,758	3,636	(121)	(3%)	13	9 <sup>6</sup>	(5)	(34%)
Load Displacement	-	-	-	-	-	-	-	n/a
<u>Sector Enabling Activities</u>	1,821	1,220	(601)	(33%)	n/a	n/a	n/a	n/a
<i>Residential Sector Total</i>	34,534	27,532	(7,001)	(20%)	105	13	(92)	(87%)
<i>Commercial Sector</i>								
Power Smart Partner	30,817	32,204	1,387	5%	79	69	(11)	(13%)
Product Incentive	14,819	7,916	(6,903)	(47%)	53	(1)	(54)	(102%)
New Construction	6,779	8,680	1,901	28%	12	18	6	46%
Load Displacement	-	-	-	-	-	-	-	n/a
<u>Sector Enabling Activities</u>	1,974	1,100	(874)	(44%)	n/a	n/a	n/a	n/a
<i>Commercial Sector Total</i>	54,388	49,900	(4,489)	(8%)	144	85	(59)	(41%)
<i>Industrial Sector</i>								
Power Smart Partner - Transmission	26,481	16,127	(10,354)	(39%)	44	53	9	19%
Power Smart Partner - Distribution	13,630	12,397	(1,232)	(9%)	39	25	(14)	(36%)
New Plant Design	5,079	2,020	(3,059)	(60%)	13	10	(4)	(27%)
Load Displacement	24,928	10,009	(14,919)	(60%)	156	106	(50)	(32%)
<u>Sector Enabling Activities</u>	1,620	1,015	(606)	(37%)	n/a	n/a	n/a	n/a
<i>Industrial Sector Total</i>	71,737	41,567	(30,170)	(42%)	252	193	(59)	(23%)
<i>Cross Sectoral</i>								
<u>Lead by Example</u>	5,834	2,352	(3,481)	(60%)	4	4	1	17%
<i>Cross Sectoral Total</i>	5,834	2,352	(3,481)	(60%)	4	4	1	17%
<b>Total Programs</b>	<b>166,493</b>	<b>121,352</b>	<b>(45,141)</b>	<b>(27%)</b>	<b>505</b>	<b>295</b>	<b>(209)</b>	<b>(41%)</b>
<b>Supporting Initiatives</b>								
Public Awareness and Education	8,018	7,235	(782)	(10%)	-	-	-	-
Community Engagement	8,575	7,232	(1,343)	(16%)	-	-	-	-
Technology Innovation	1,960	1,863	(97)	(5%)	-	-	-	-
Codes and Standards	2,394	1,615	(779)	(33%)	-	-	-	-
Information Technology	750	145	(605)	(81%)	-	-	-	-
<u>Indirect and Portfolio Enabling</u>	9,880	9,386	(495)	(5%)	-	-	-	-
<b>Supporting Initiatives Total</b>	<b>31,577</b>	<b>27,476</b>	<b>(4,101)</b>	<b>(13%)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL DSM</b>	<b>202,817</b>	<b>150,121</b>	<b>(52,696)</b>	<b>(26%)</b>	<b>1,129</b>	<b>931</b>	<b>(198)</b>	<b>(18%)</b>

3 Notes:

 4 <sup>1</sup> Including all DSM-related deferred operating and specific capital expenditures that are relevant for DSM  
5 cost-effectiveness.

- 1     <sup>2</sup> Plan figures are from BC Hydro's Amended F12- F14 RRA.
- 2     <sup>3</sup> Reported savings from codes and standards and residential and commercial & industrial distribution rate
- 3     structures are based on planned estimates.
- 4     <sup>4</sup> Expenditures for Codes and Standards Support are reported under Supporting Initiatives.
- 5     <sup>5</sup> Plan savings are negative because they are a net number. The new savings in the year are more than offset
- 6     by savings deductions due to historical projects reaching the end of their measure life.
- 7     <sup>6</sup> Reported savings for the Reno Rebate program are based on a conservative estimate. See variance
- 8     description for further details.

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

<b>Codes and Standards</b>	
Residential	Reported codes and standards electricity savings were above plan due to an update of the codes and standards forecast to reflect current market conditions on regulated products.
Commercial	
Industrial	
<b>Rate Structures</b>	
Residential	Expenditures were below plan due to the residential rate design project moving to a later start date. Electricity savings were on plan.
Commercial & Industrial Distribution	Expenditures were below plan due to lower implementation and customer support costs and the introduction of new rate structures for Large General Service ( <b>LGS</b> ) and Medium General Service ( <b>MGS</b> ) has gone smoother than expected. Electricity savings were on plan.
Industrial Transmission	Expenditures were above plan due to additional customer consultation on the tariff amendments. Energy savings were below plan due to a customer who reduced self-generation as a result of equipment failure.
<b>DSM Programs</b>	
<b>Residential Sector</b>	
Behaviour	Expenditures and electricity savings were below plan due to delays in an Information Technology ( <b>IT</b> ) project that was required for the launch of the In-Home Feedback tool.
Lighting	Expenditures were above plan due to higher than forecast program participation. Gross electricity savings for the current fiscal year were slightly above plan but net savings ended up below plan due to a reclassification of historical savings from programs to codes and standards as a result of lighting legislation taking affect that was not accounted for in the plan.
Refrigerator Buy-Back	Expenditures and electricity savings were below plan due to lower than anticipated program participation.
Low Income	Expenditures and electricity savings were below plan due to lower than anticipated participation. Despite BC Hydro and partner efforts, energy savings kit enrolment is declining and the program continues to have difficulty enrolling customers for the more advanced offers. Energy savings was also below plan due to the reclassification of historical savings from programs to codes and standards as a result of lighting legislation taking affect that was not accounted for in the plan.



New Home	Expenditures and electricity savings were approximately on plan.
Appliances	Expenditures were below plan due to partner cost sharing and efficiencies gained through promoting online applications. Electricity savings were approximately on plan.
Consumer Electronics	Expenditures were approximately on plan. Electricity savings were above plan due to an increase in set-top box savings as a result of BC Hydro's partnership with Telus.
Renovation Rebate	Expenditures were approximately on plan. Electricity savings were below plan due to delays in partner reporting. Conservative participation estimates were made based on the best available data at the time. Since then adjusted partner reporting estimates that actual savings are more in line with plan.
Load Displacement	No expenditures or electricity savings were planned.
Sector Enabling Activities	Expenditures were below plan due to lower than expected costs related to the Home Energy Loan pilot program.
<b>Commercial Sector</b>	
Power Smart Partner	Expenditures were above plan due to higher than planned participation in response to a more streamlined program process making it easier for customers and trade allies to participate. Gross electricity savings for the current fiscal year were above plan but net savings ended up below plan due to historical savings having a shorter persistence than planned as a result of a change in persistence methodology.
Product Incentive	Expenditures and electricity savings were below plan due to an over performance in fiscal 2012 that triggered adjustments to the offer in fiscal 2013. Electricity savings were also below plan due to historical savings having a shorter persistence than planned as a result of a change in persistence methodology.
New Construction	Expenditures and electricity savings were above plan due to a selection of projects completing sooner than planned.
Load Displacement	No expenditures or electricity savings were planned.
Sector Enabling Activities	Expenditures were below plan due to the cancellation or delay of selected enabling activities.
<b>Industrial Sector</b>	
Power Smart Partner – Transmission	Expenditures were below plan due to incented projects being delayed until fiscal 2014. Electricity savings were above plan due to a large unanticipated increase in a self-funded project identified through the Industrial programs.
Power Smart Partner – Distribution	Expenditures were below plan due to less than anticipated customer-funded projects in the wood sector. Electricity savings were also below plan due to less customer self-funded projects than planned and historical savings having a shorter persistence than planned as a result of a change in persistence methodology.
New Plant Design	Expenditures were below plan due to lower than planned incentive costs for participating projects. Electricity savings and expenditures were below plan due to one project that is shifted to fiscal 2014.

Load Displacement	Expenditures and electricity savings were below plan due to a delay in the completion of two projects.
Sector Enabling Activities	Expenditures were below plan due to the cancellation or delay of selected enabling activities.
<b>Cross Sectoral</b>	
Lead By Example	Expenditures were below plan due to staffing reductions and focus on more cost-effective projects. Electricity savings were above plan due to the early completion of a large project.
Total Programs	Expenditures were below plan largely because of lower than planned costs in the Industrial Power Smart Partner – Transmission and Load Displacement programs due to project delays and reduced incentive levels in the Product Incentive program. Electricity savings were below plan largely because of project delays in Industrial Load Displacement, historical savings having a shorter persistence than planned that had a significant impact on the Commercial Product Incentive program as well as a reclassification of historical savings from Residential Lighting and Low Income programs to codes and standards.
<b>Supporting Initiatives</b>	
Public Awareness & Education	Expenditures were below plan due to a reduction in traditional paid media advertising.
Community Engagement	Expenditures were below plan due to a reduction in the number of employees working on community engagement activities.
Technology Innovation	Expenditures were below plan due to receipt of contributions from funding partners on a large multi-year project that offset project costs.
Codes and Standards Support	Expenditures were below plan due to lower co-funding requirements for energy efficiency standard development work at the Canadian Standards Association and higher than planned leveraging of co-funding with other organizations on regulatory impact/market studies.
Information Technology	Expenditures were below plan primarily due to the cancellation of a supporting IT project.
Indirect and Portfolio Enabling Activities	Expenditures were below plan due to ongoing cost control, primarily through reduced use of outside contractors.
Total DSM	Expenditures were 26 per cent below plan primarily because of lower than planned costs for programs, in particular the Industrial Power Smart Partner – Transmission and Load Displacement programs due to project delays. Electricity savings were 18 per cent below plan due to the variance factors previously described under Programs and Rate Structures.

### 3 Expenditures to Date

BC Hydro's DSM expenditures from F2008 through F2013 totalled \$753.3 million.

[Table 2](#) presents DSM expenditures from April 1, 2007 to March 31, 2013.<sup>2</sup>

**Table 2 Expenditures since F2008**

	F2008 <sup>1</sup> (\$ 000)	F2009 <sup>1</sup> (\$ 000)	F2010 <sup>1</sup> (\$ 000)	F2011 <sup>1</sup> (\$ 000)	F2012 <sup>2</sup> (\$ 000)	F2013 (\$ 000)	Total (\$ 000)
<b>Rate Structures</b>							
Residential	-	2,763	996	997	810	330	5,895
Commercial & Industrial Distribution	-	2,237	2,842	4,663	2,188	557	12,488
<u>Industrial Transmission</u>	-	-	84	213	221	407	925
<b>Total Rate Structures</b>	-	<b>5,000</b>	<b>3,923</b>	<b>5,872</b>	<b>3,219</b>	<b>1,294</b>	<b>19,308</b>
<b>DSM Programs</b>							
<i>Residential Sector</i>							
Behaviour	-	1,351	2,157	3,048	4,429	4,419	15,404
Lighting	3,007	2,525	2,627	2,645	4,544	4,102	19,449
Refrigerator Buy-back	4,014	4,950	4,737	4,445	4,027	3,754	25,927
Low Income	113	1,339	2,597	4,610	4,465	3,040	16,164
New Home	1,431	1,519	1,436	1,353	2,025	2,321	10,085
Appliances	1,035	5,362	4,834	3,426	2,167	2,181	19,006
Consumer Electronics	-	98	3,628	2,618	3,592	2,858	12,794
Renovation Rebate	549	1,193	2,040	1,111	3,321	3,636	11,851
Load Displacement	-	-	-	-	-	-	-
<u>Sector Enabling Activities</u>	<u>2,229</u>	<u>1,897</u>	<u>2,058</u>	<u>1,562</u>	<u>1,269</u>	<u>1,220</u>	<u>10,234</u>
<i>Residential Sector Total</i>	12,377	20,235	26,113	24,817	29,839	27,532	140,915
<i>Commercial Sector</i>							
Power Smart Partner	10,723	17,726	22,737	26,406	35,485	32,204	145,282
Product Incentive	2,842	7,920	14,536	13,338	22,019	7,916	68,571
New Construction	2,163	3,721	5,265	4,288	4,901	8,680	29,018
Load Displacement	-	-	-	-	-	-	-
<u>Sector Enabling Activities</u>	<u>1,374</u>	<u>2,100</u>	<u>1,280</u>	<u>1,534</u>	<u>1,286</u>	<u>1,100</u>	<u>8,675</u>
<i>Commercial Sector Total</i>	17,102	31,468	43,819	45,566	63,692	49,900	251,546
<i>Industrial Sector</i>							
Power Smart Partner - Transmission	8,223	6,443	8,529	7,014	20,591	16,127	66,928
Power Smart Partner - Distribution	1,351	5,963	10,068	9,843	13,321	12,397	52,943
New Plant Design	310	729	4,336	3,610	4,785	2,020	15,789
Load Displacement	-	-	-	-	8,100	10,009	18,109
<u>Sector Enabling Activities</u>	<u>1,219</u>	<u>1,283</u>	<u>1,235</u>	<u>960</u>	<u>1,010</u>	<u>1,015</u>	<u>6,723</u>
<i>Industrial Sector Total</i>	11,103	14,418	24,168	21,427	47,807	41,567	160,491
<i>Cross Sectoral</i>							
Sustainable Communities	-	-	1,762	2,096	2,692	n/a	6,550
<u>Lead by Example</u>	-	-	<u>957</u>	<u>2,377</u>	<u>3,010</u>	<u>2,352</u>	<u>8,696</u>
<i>Cross Sectoral Total</i>	-	-	2,719	4,473	5,702	2,352	15,246
<b>Total Programs</b>	<b>40,582</b>	<b>66,121</b>	<b>96,820</b>	<b>96,283</b>	<b>147,039</b>	<b>121,352</b>	<b>568,198</b>
<b>Supporting Initiatives</b>							
Public Awareness and Education	11,295	8,469	8,367	9,190	7,105	7,235	51,661
Community Engagement	-	7,749	7,079	7,081	6,097	7,232	35,236
Technology Innovation	-	1,418	1,120	1,583	1,496	1,863	7,481
Codes and Standards	377	1,295	1,642	1,547	1,447	1,615	7,923
Information Technology	1,520	1,875	1,901	346	1,099	145	6,885
<u>Indirect and Portfolio Enabling</u>	<u>11,231</u>	<u>9,290</u>	<u>8,724</u>	<u>8,782</u>	<u>9,219</u>	<u>9,386</u>	<u>56,632</u>
<b>Supporting Initiatives Total</b>	<b>24,422</b>	<b>30,095</b>	<b>28,832</b>	<b>28,529</b>	<b>26,463</b>	<b>27,476</b>	<b>165,818</b>
<b>Total DSM</b>	<b>65,005</b>	<b>101,217</b>	<b>129,575</b>	<b>130,685</b>	<b>176,721</b>	<b>150,121</b>	<b>753,324</b>

Notes:

<sup>1</sup> These expenditures differ slightly from the actual expenditures presented in BC Hydro's Report on DSM Activities for F2011 because of the exclusion of Voltage Optimization expenditures and Rate Structure

<sup>2</sup> Comprising all DSM deferred operating and specific capital expenditures that are relevant for DSM cost-effectiveness. To present information in a format consistent with the DSM expenditures presented in BC Hydro's 2008 LTAP, which cover the years F2008 forward, these figures do not include \$15.2 million in incentive refunds received since F2009 related to DSM program activity before F2008.

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1 operating expenditures in order to align with DSM expenditures presented in BC Hydro's  
2 Amended F12-F14 RRA.  
3 <sup>2</sup> These expenditures differ slightly from the actual expenditures presented in BC Hydro's Report on DSM  
4 Activities for F2012 because of the inclusion of In-Home Feedback specific capital expenditures to be  
5 consistent with the Amended F12-F14 RRA DSM Plan and adjustments largely due to external cost  
6 recoveries for Demand Side Management projects.

## 7 **4 Plan Performance**

8 BC Hydro's DSM electricity savings since F2008 totalled 4,459 GWh/year at  
9 March 31, 2013, which equates to 100 per cent of the planned savings of  
10 4,439 GWh/yr in the Amended F12-F14 RRA. [Table 3](#) presents actual cumulative  
11 savings as a percentage of plan in F2008 to F2013.

1  
2

**Table 3 Cumulative Electricity Savings since April 1, 2007**

Actual as a Percentage of Plan <sup>1</sup>	
	F2013
<b>Codes and Standards</b>	
Residential	108%
Commercial	112%
Industrial	<u>96%</u>
<b>Total Codes and Standards</b>	<b>108%</b>
<b>Rate Structures</b>	
Residential	100%
Commercial & Industrial Distribution	100%
Industrial Transmission	<u>99%</u>
<b>Total Rate Structures</b>	<b>100%</b>
<b>DSM Programs</b>	
<i>Residential Sector</i>	
Behaviour	47%
Lighting	84%
Refrigerator Buy-back	98%
Low Income	66%
New Home	96%
Appliances	91%
Consumer Electronics	165%
Renovation Rebate	85%
Load Displacement	<u>n/a</u>
<i>Residential Sector Total</i>	87%
<i>Commercial Sector</i>	
Power Smart Partner	110%
Product Incentive	85%
New Construction	102%
Load Displacement	<u>n/a</u>
<i>Commercial Sector Total</i>	98%
<i>Industrial Sector</i>	
Power Smart Partner - Transmission	125%
Power Smart Partner - Distribution	89%
New Plant Design	123%
Load Displacement	<u>82%</u>
<i>Industrial Sector Total</i>	105%
<i>Cross Sectoral</i>	
Lead by Example	<u>125%</u>
<i>Cross Sectoral Total</i>	125%
<b>Total Programs</b>	<b>98%</b>
<b>Total DSM</b>	<b>100%</b>

3 Notes:

 4 <sup>1</sup> Reported savings for codes and standards and rates structures are based on planned estimates as well as  
 5 evaluated results.

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1 The DSM electricity savings presented in [Table 3](#) have been achieved at an average  
2 net levelized utility cost of \$1 per MWh. [Table 4](#) presents the net levelized utility cost  
3 of actual DSM electricity savings achieved from April 1, 2007 through  
4 March 31, 2013. See footnote 1 to [Table 4](#) for a definition of “net levelized utility  
5 cost”.

1

**Table 4 Utility Cost of Electricity Savings: F2008 to F2013**

	Net Levelized Utility Cost (\$/MWh) <sup>1</sup>
<b>Codes and Standards</b>	
Residential	-16
Commercial	-10
<u>Industrial</u>	<u>-9</u>
<b>Total Codes and Standards</b>	<b>-14</b>
<b>Rate Structures</b>	
Residential	-11
Commercial & Industrial Distribution	-5
<u>Industrial Transmission</u>	<u>-7</u>
<b>Total Rate Structures</b>	<b>-8</b>
<b>Programs</b>	
<u>Residential Sector</u>	
Behaviour	24
Lighting	-11
Refrigerator Buy-back	25
Low Income	90
New Home	5
Appliances	87
Consumer Electronics	50
Renovation Rebate	1
Load Displacement	n/a
<u>Sector Enabling Activities</u>	<u>n/a</u>
<i>Residential Sector Total</i>	14
<u>Commercial Sector</u>	
Power Smart Partner	37
Product Incentive	17
New Construction	27
Load Displacement	n/a
<u>Sector Enabling Activities</u>	<u>n/a</u>
<i>Commercial Sector Total</i>	29
<u>Industrial Sector</u>	
Power Smart Partner - Transmission	12
Power Smart Partner - Distribution	33
New Plant Design	2
Load Displacement	3
<u>Sector Enabling Activities</u>	<u>n/a</u>
<i>Industrial Sector Total</i>	10
<u>Cross Sectoral</u>	
<u>Lead by Example</u>	<u>126</u>
<i>Cross Sectoral Total</i>	<b>126</b>
<b>Total Programs</b>	<b>18</b>
<b>Rate Structures and Programs</b>	<b>5</b>
<b>Total DSM</b>	<b>1</b>

2 Notes:

3 <sup>1</sup> Net levelized utility cost is calculated by subtracting capacity benefits from gross utility costs and then dividing  
 4 the resulting net utility costs by electricity savings. A negative net levelized utility cost means that the  
 5 subtracted capacity benefits exceed gross utility costs.

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1 [Table 5](#) presents Total Resource Cost Test benefit cost-ratios of actual DSM  
2 electricity savings achieved from April 1, 2007 through March 31, 2013. [Table 5](#)  
3 shows the Total Resource Cost Test benefit-cost ratios for the Total Resource Cost  
4 test and the Total Resource Cost test as modified by the Demand Side Management  
5 Regulation, B.C. Reg. 326/2008 as amended by B.C Reg. 228/2011.



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**Table 5 Benefit Cost Ratios of Electricity Savings: F2008 to F2013**

	Benefit Cost Ratios			
	Utility Test	Total Resource Cost Test	Total Resource Cost Test as modified by DSM Regulation <sup>1</sup>	Ratepayer Impact Measure Test <sup>2</sup>
<b>Codes and Standards</b>				
Residential	n/a	15.4	18.3	1.6
Commercial	n/a	7.8	10.4	1.8
<u>Industrial</u>	<u>n/a</u>	<u>47.0</u>	<u>54.0</u>	<u>2.5</u>
<b>Total Codes and Standards</b>	<b>n/a</b>	<b>12.5</b>	<b>15.4</b>	<b>1.7</b>
<b>Rate Structures</b>				
Residential	35.6	35.7	41.1	1.3
Commercial & Industrial Distribution	29.0	29.1	33.5	1.3
<u>Industrial Transmission</u>	<u>249.7</u>	<u>4.3</u>	<u>5.0</u>	<u>1.8</u>
<b>Total Rate Structures</b>	<b>33.7</b>	<b>22.1</b>	<b>25.4</b>	<b>1.3</b>
<b>Programs</b>				
<u>Residential Sector</u>				
Behaviour	3.8	4.2	4.8	1.1
Lighting	11.6	3.7	3.5	1.6
Refrigerator Buy-back	4.0	4.7	4.7	1.1
Low Income <sup>3</sup>	1.4	1.7	1.6	0.8
New Home	5.2	2.3	3.5	1.4
Appliances	1.4	1.0	1.1	0.7
Consumer Electronics	2.2	1.9	1.8	1.0
Renovation Rebate	5.9	2.0	2.2	1.2
Load Displacement	n/a	n/a	n/a	n/a
<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>	4.4	2.6	2.9	1.2
<u>Commercial Sector</u>				
Power Smart Partner	3.0	2.4	2.8	1.1
Product Incentive	5.1	2.9	3.4	1.3
New Construction	3.8	2.7	4.2	1.2
Load Displacement	n/a	n/a	n/a	n/a
<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>	3.6	2.6	3.2	1.2
<u>Industrial Sector</u>				
Power Smart Partner - Transmission	6.6	1.9	2.2	1.3
Power Smart Partner - Distribution	3.3	2.0	2.3	1.1
New Plant Design	13.5	4.7	5.4	2.2
Load Displacement	11.5	8.1	9.3	2.1
<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>	7.1	2.8	3.2	1.6
<u>Cross Sectoral</u>				
Lead by Example	1.0	1.0	1.2	1.0
<i>Cross Sectoral Total</i>	1.0	1.0	1.2	1.0
<b>Total Programs</b>	<b>4.8</b>	<b>2.7</b>	<b>3.1</b>	<b>1.4</b>
<b>Rate Structures and Programs</b>	<b>8.3</b>	<b>4.7</b>	<b>5.4</b>	<b>1.3</b>
<b>Total DSM</b>	<b>10.5</b>	<b>5.4</b>	<b>6.4</b>	<b>1.4</b>

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**Notes:**

<sup>1</sup> In keeping with the DSM Regulation (Ministerial Order M 271), the avoided cost of natural gas is valued at 50 per cent of BC Hydro's long run marginal cost of acquiring electricity generated from clean or renewable resources in B.C. and non-energy benefits are valued at 15 per cent of electricity and natural gas benefits.

- 1 <sup>2</sup> While subsection 4(6) of the DSM regulation precludes the use of the Ratepayer Impact Measure Test in  
 2 determining cost-effectiveness of a demand-side measure, this benefit cost ratio is included in the table  
 3 consistent with Directive 42 from the BCUC decision on BC Hydro's 2008 LTAP.  
 4 <sup>3</sup> The Total Resource Cost Test benefit-cost ratio for the Low Income program includes a 30 per cent adder to  
 5 program benefits, rather than a 15 per cent value for non-energy benefits, in keeping with the DSM  
 6 regulation.

## 5 Mitigation Measures

8 [Table 3](#) indicates that more than half of DSM initiatives are on or above plan in terms  
 9 of cumulative electricity savings in F2013 and that BC Hydro is 100 per cent to plan.  
 10 Based on the experience gathered over the past few years through initiative  
 11 tracking, the following are mitigation measures that have been undertaken or are  
 12 planned for the future.

<b>Codes and Standards</b>	
Residential	Cumulative electricity savings in F2013 were above plan.
Commercial	
Industrial	
<b>Rate Structures</b>	
Residential	Cumulative electricity savings in F2013 were on plan.
Commercial & Industrial Distribution	
Industrial Transmission	
<b>DSM Programs</b>	
<b>Residential Sector</b>	
Behaviour	Cumulative electricity savings in F2013 were below plan. The In-Home Feedback component of the program is expected to be fully operational in F2014 with promotional campaigns planned to drive customer awareness and action.
Lighting	Cumulative electricity savings in F2013 were below plan due to a one time impact from lighting legislation. No mitigation measures are warranted.
Refrigerator Buy-Back	Cumulative electricity savings were approximately on plan but program participation is declining. Program forecasts will be adjusted to reflect the decreasing participation and alternate delivery models will be explored to determine if cost savings are possible.
Low Income	Cumulative electricity savings in F2013 were below plan. Program forecasts will be adjusted to reflect the decreasing participation. Qualifying criteria including use of Low Income Cut Off ( <b>LICO</b> ) will be examined.
New Home	Cumulative electricity savings in F2013 were approximately on plan.

Appliances	Cumulative electricity savings in F2013 were below plan. Qualifying criteria will be reviewed and adjusted if required. Increasing baselines continue to challenge program cost effectiveness as energy savings margins narrow. Alternate delivery models will be explored to determine if cost savings are possible.
Consumer Electronics	Cumulative electricity savings in F2013 were above plan.
Renovation Rebate	Cumulative electricity savings in F2013 were below plan. BC Hydro will continue to work with partners to determine the appropriate scope and scale of this multi partner program.
Load Displacement	No electricity savings were planned in F2013.
<b>Commercial Sector</b>	
Power Smart Partner	Cumulative electricity savings in F2013 were above plan. Electricity savings have increased relative to plan since F2008 in response to program improvements and strong trade ally support.
Product Incentive	Cumulative electricity savings in F2013 were below plan. BC Hydro is examining program qualifying criteria required to drive program participation in F2014.
New Construction	Cumulative electricity savings in F2013 were above plan. The program recovered from below plan results in F2012 due to projects completing sooner than planned.
Load Displacement	No electricity savings were planned in F2013.
<b>Industrial Sector</b>	
Power Smart Partner – Transmission	Cumulative electricity savings in F2013 were above plan.
Power Smart Partner – Distribution	Cumulative electricity savings in F2013 were slightly below plan due to continued poor performance in the Wood Products sector. No mitigation measures are warranted as planned cumulative electricity savings are expected to be achieved.
New Plant Design	Cumulative electricity savings in F2013 were above plan.
Load Displacement	Cumulative electricity savings in F2013 were below plan due to the delay of two projects. No mitigation measures are warranted as planned cumulative electricity savings are expected to be achieved. Delays in load displacement projects are possible due to the long lead times for equipment delivery, installation and commissioning.
Cross Sectoral	
Lead by Example	Cumulative electricity savings in F2013 were above plan.

## 6 Operating Expenditures for Fiscal 2013

BC Hydro's DSM operating expenditures in F2013 totalled \$699,022.<sup>3</sup> [Table 6](#) presents DSM operating expenditures in F2013.

**Table 6 Operating Expenditures for Fiscal 2013**

	(\$000)
Labour	440
Materials	10
ABS Services	51
Other Services	190
Facilities and Equipment	8
Total	699

## 7 Allocation of Supporting Initiative Costs to Programs<sup>4</sup>

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

In keeping with Directive 61 from the BCUC 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 in F2018. For example, rate structures and programs are forecast to save roughly 6,554 GWh/year in F2018, so a program that is forecast to save 65 GWh/year in F2018 represents one per cent of the total. In turn, one 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.

<sup>3</sup> DSM operating expenditures are not included in earlier tables.

<sup>4</sup> A description of supporting initiatives is available in the F12-F14 RRA (Appendix II, Attachment 4).