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October 13, 2011

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

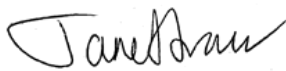
Dear Ms. Gillis:

**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)**

Attached is BC Hydro's annual filing of the Report on Demand-Side Management Activities for the 12 months ending March 31, 2011.

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

Yours sincerely,



Janet Fraser
Chief Regulatory Officer

gh/rh

Enclosure



Report on Demand-Side Management Activities for Fiscal 2011

September 28, 2011

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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 fiscal 2011, or the twelve months ending March 31, 2011.

Directive 69 from the F05/06 RRA 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 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 from the 2006 IEP/LTAP directed BC Hydro "to continue to file reports on DSM performance as described in Directive 69 included in Order No. G-96-04

1 and to file its Semi-Annual Demand Side Management Reports in the same format
2 as the June 2005 Report 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 From the 2008 LTAP, Directive 36 directed BC Hydro to switch from semi-annual to
7 annual DSM performance reports while Directive 38 directed BC Hydro to include in
8 these reports "metrics for each initiative, achievements in relation to milestones, and
9 description of past or planned mitigation measures where warranted. These
10 mitigation measures should include shifting program resources and alternative
11 supply options for each program. Ongoing DSM performance reporting should
12 demonstrate how BC Hydro is continuously pursuing DSM and that specific
13 programs are cost-effective."

14 BC Hydro is filing evaluation reports as a separate package. This report addresses
15 the balance of Directives 69 and 16, as well as Directives 36 and 38.

2 Expenditures and Electricity Savings for Fiscal 2011

BC Hydro's DSM expenditures¹ in fiscal 2011 totalled \$134.4 million while incremental DSM electricity savings totalled 458 GWh/year. This was \$61.2 million or 31 per cent below the DSM Plan in BC Hydro's 2008 LTAP. Electricity savings were 450 GWh/year or 50 per cent below the DSM Plan in the 2008 LTAP and 350 GWh/year or 43 per cent below the DSM Plan in the 2008 LTAP Evidentiary Update (EU).² As indicated in Table 3, cumulative DSM electricity savings at the end of fiscal 2011 were 89 per cent of plan from the 2008 LTAP and 100 per cent of plan from the 2008 LTAP EU.

Table 1 presents planned and actual DSM expenditures and incremental electricity savings in fiscal 2011.

¹ Comprising all DSM-related deferred operating and specific capital expenditures and operating expenditures that are relevant for DSM cost-effectiveness, such as those related to rate structures, which aligns with the types of DSM expenditures included in BC Hydro's DSM plans. Other DSM operating expenditures are presented in Table 6 of this report

² Refer to section 2.4.2 of the EU (Exhibit B-10 filed December 22, 2008) for an explanation of the difference to DSM savings between the 2008 LTAP and the EU.

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Table 1 Expenditures and Incremental Electricity Savings for Fiscal 2011

	Expenditures ¹				Incremental Electricity Savings			
	Plan ² \$ 000	Actual \$ 000	Variance \$ 000	%	Plan ² GWh/yr	Actual ³ GWh/yr	Variance GWh/yr	%
Codes and Standards⁴								
Residential	-	-	-	-	141	56	(85)	(60%)
Commercial	-	-	-	-	16	27	11	71%
Industrial	-	-	-	-	0	0	-	n/a
Total Codes and Standards	-	-	-	-	157	83	(74)	(47%)
Rate Structures								
Residential	1,840	1,545	(295)	(16%)	145	29	(116)	-80%
Commercial	1,520	4,591	3,071	202%	56	103	47	84%
Industrial	120	1,020	900	750%	39 ⁵	41 ⁵	2	6%
Total Rate Structures	3,480	7,156	3,676	106%	240	173	(67)	(28%)
Programs								
Residential Sector								
Behaviour	32,390	3,048	(29,342)	(91%)	63	3	(60)	(96%)
Voltage Optimization	4,860	1,328	(3,532)	(73%)	17	5	(11)	(69%)
Lighting	2,790	2,645	(145)	(5%)	2	16	14	724%
Sustainable Community	1,130	1,560	430	38%	3	0	(3)	(100%)
Refrigerator Buy-Back	3,320	4,445	1,125	34%	14	23	9	68%
Low Income	8,600	4,610	(3,990)	(46%)	9	6	(2)	(28%)
New Home	2,240	1,353	(887)	(40%)	4	3	(1)	(27%)
Appliances and Electronics	8,010	6,044	(1,966)	(25%)	27	8	(20)	(72%)
Renovation Rebate	2,210	1,111	(1,099)	(50%)	7	8	0	5%
Load Displacement	190	-	(190)	(100%)	0	0	-	-
<u>Sector Enabling Activities</u>	1,340	1,562	222	17%	n/a	n/a	n/a	n/a
Sector Total	67,080	27,706	(39,374)	(59%)	145	72	(74)	(51%)
Commercial Sector								
Power Smart Partners	19,910	27,603	7,693	39%	48	69	21	43%
Product Incentive	18,010	13,338	(4,672)	(26%)	72	73	1	1%
High Performance Buildings	6,290	4,288	(2,002)	(32%)	13	10	(4)	(27%)
Voltage Optimization	1,620	443	(1,177)	(73%)	5	2	(4)	(67%)
Sustainable Community	280	536	256	91%	1	0	(1)	(100%)
Load Displacement	520	-	(520)	(100%)	1	0	(1)	(100%)
<u>Sector Enabling Activities</u>	1,670	1,534	(136)	(8%)	n/a	n/a	n/a	n/a
Sector Total	48,300	47,741	(559)	(1%)	140	153	13	9%
Industrial Sector								
Mechanical Pulping ⁶	-	-	-	-	-	-	-	n/a
Power Smart Partner - Transmission	22,890	7,712	(15,178)	(66%)	176 ⁷	-173 ⁷	(348)	(198%)
Power Smart Partner - Distribution	18,140	11,023	(7,117)	(39%)	47	45	(1)	(3%)
New Plant Design	2,930	3,610	680	23%	3	105	102	3,154%
Load Displacement	430	-	(430)	(100%)	0	0	-	-
<u>Sector Enabling Activities</u>	1,150	960	(190)	(17%)	n/a	n/a	n/a	n/a
Sector Total	45,540	23,305	(22,235)	(49%)	226	-22	(248)	(110%)
Total Programs	160,920	98,752	(62,168)	(39%)	511	203	(309)	(60%)
Supporting Initiatives								
Public Awareness & Education	8,650	9,190	540	6%	-	-	-	-
Community Engagement	7,300	7,081	(219)	(3%)	-	-	-	-
Technology Innovation	1,250	1,583	333	27%	-	-	-	-
Codes & Standards Support	2,310	1,547	(763)	(33%)	-	-	-	-
Information Technology	2,250	346	(1,904)	(85%)	-	-	-	-
<u>Indirect & Portfolio Enabling</u>	9,490	8,782	(708)	(7%)	-	-	-	-
Total Supporting Initiatives	31,250	28,529	(2,721)	(9%)	-	-	-	-
Total DSM	195,650	134,437	(61,213)	(31%)	908	458	(450)	(50%)

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Table 1 Notes:

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

- 1 2. Plan figures are from BC Hydro's 2008 LTAP rather than the EU of the 2008 LTAP because the Update did
- 2 not include updated figures at the initiative level.
- 3 3. Reported savings from codes and standards and rate structures are based on planned estimates as well as
- 4 evaluated results.
- 5 4. Expenditures for Codes and Standards Support are reported under Supporting Initiatives.
- 6 5. Savings shown are those planned to come from the Industrial sector from the LGS rate. A combined estimate
- 7 of savings from both the Transmission Service Rate and Power Smart Partner - Transmission program is
- 8 presented below in the Power Smart Partner-Transmission program line.
- 9 6. Mechanical Pulping expenditures and savings are included in Power Smart Partner - Transmission.
- 10 7. Includes electricity savings resulting from the Transmission Service Rate.
- 11 8. Numbers are rounded.

12 The following are explanations for the above variances:

Codes and Standards	
Residential	Electricity savings were below plan primarily because of a delay and reduced scope in the federal government's introduction of new product regulations under the federal <i>Energy Efficiency Act</i> . These regulations were expected to take effect in 2010 when the 2008 DSM Plan was developed but some of these regulations are now expected to take effect in 2012 or later.
Commercial	Energy savings were above plan because of the enactment of a B.C. regulation on fluorescent ballasts taking effect January 2009. This regulation was not planned by the provincial government in 2007 when the 2008 DSM Plan was developed.
Industrial	No new industrial codes and standards savings were planned because no energy efficiency regulations were anticipated to take effect between fiscal 2008 and fiscal 2011.
Rate Structures	
Residential	Residential expenditures were below plan due to postponement of bill presentment enhancements. Electricity savings were below plan because of differences between the assumed RIB rate structure underlying the planned savings in the 2008 DSM Plan and the final RIB rate structure approved by the BCUC in August 2008.
Commercial	Commercial expenditures were above plan due to implementation of the Large General Service (LGS) conservation rate occurring later than planned. Electricity savings were above plan because of differences between the assumed LGS rate structure underlying the planned savings in the 2008 DSM Plan and the final LGS and MGS rate structures approved by the BCUC in June 2010.
Industrial	Industrial expenditures and electricity savings were above plan for the same reasons noted above in Commercial, as the LGS rate includes industrial sector customers as well.

Programs	
Residential Sector	
Behaviour	Expenditures and electricity savings were below plan due to activities enabled by the SMI program occurring later than expected in the 2008 DSM Plan. ³
Voltage Optimization	Expenditures were below plan due to a re-assessment of substation capital investments that resulted in a lower level of costs being attributed to voltage optimization for the purpose of delivering DSM energy savings. Electricity savings were below plan due to a correction in reporting methodology and voltage optimization being temporarily disabled at one substation.
Lighting	Expenditures were approximately on plan. Electricity savings were above plan due to an expansion of the lighting savings opportunities since the 2008 DSM Plan was developed. The increase in electricity savings is the result of the general service lighting regulation having a narrower scope than expected at that time, and changes to the Lighting program successfully capitalizing on opportunities not captured by the lighting regulation.
Sustainable Community	Expenditures were above plan because of changes to the program design after more detailed program development, including incentive levels for energy saving measures and more activity in community energy planning to capitalize on local governments' response to the <i>Local Government (Green Communities) Statutes Amendment Act, 2008</i> . Electricity savings were below plan due to district energy projects proceeding more slowly than planned.
Refrigerator Buy-Back	Expenditures and electricity savings were above plan because of higher than forecast program participation and customer acceptance in response to a strong, targeted advertising campaign and cross-promotions with other Power Smart programs.
Low Income	Expenditures and electricity savings were below plan because of delays in launching the audit and retrofit component of the program as a result of privacy issues in fiscal 2010. While these issues have now been resolved and this component is now operational, participation in this component has been below plan due to challenges in accessing eligible customers. Program marketing and outreach has been adjusted to increase participation in this component.
New Home	Expenditures and electricity savings were below plan because planned detached housing starts in fiscal 2011 were lower than estimated in the 2008 DSM Plan, thereby resulting in lower than planned participation of detached homes.
Appliances and Electronics	Expenditures and electricity savings were below plan due to the set-top box portion of the program not launching as a result of a lack of vendor support and insufficient specifications for efficient set-top boxes.

³ The SMI Program is being implemented on the timeline prescribed by the Clean Energy Act and Smart Meters and Smart Grid Regulation.

Renovation Rebate	Expenditures were below plan largely due to a deferral of advertising and marketing activities as partner funding for the LiveSmart program was temporarily halted in fiscal 2011 leading to uncertainty about the program's future. Electricity savings were above plan as participation surged near the end of fiscal 2011 to meet deadlines for partner incentives.
Load Displacement	No expenditures were incurred because BC Hydro delayed program development in order to ensure alignment with BC Hydro's supply side offers for distributed generation. No savings were planned or achieved.
Sector Enabling Activities	Expenditures were above plan due to above plan participation in the home audit and retail partnership components.
Commercial Sector	
Power Smart Partner	Expenditures and electricity savings were above plan because of the launch of new program components and a marketing and communication effort, both of which resulted in higher than planned participation when compared with the 2008 DSM Plan.
Product Incentive	Expenditures were below plan due to the mix of technologies selected by program participants resulting in lower incentive costs than planned. Electricity savings were on plan because of higher than planned participation in response to program changes, new program components, marketing and communication strategy as well as increased trade ally support.
High Performance Buildings	Expenditures and electricity savings were below plan due to projects taking longer to complete than planned.
Voltage Optimization	See Residential Sector.
Sustainable Community	See Residential Sector.
Load Displacement	See Residential Sector.
Sector Enabling Activities	Expenditures were approximately on plan.
Industrial Sector	
Mechanical Pulping	The program is currently embedded within the Power Smart Partner – Transmission program.

Power Smart Partner – Transmission	Expenditures were below plan due to economic conditions that delayed customer commitment and project completion generally taking longer to complete than planned, leading to an under-spend of incentives. Electricity savings were below plan due to new savings in fiscal 2011 being more than offset by several deductions, including those for two plant shutdowns, customer self-generation either converting from rate-driven DSM to contracted supply or reducing operation due to economic conditions, a change in the assumed persistence of savings from the Transmission Service Rate (TSR) and historical savings having a shorter persistence than planned. The deductions for plant shutdowns, customer self-generation and the TSR are one-time events that BC Hydro does not expect to repeat in the future. As such, BC Hydro considers fiscal 2011 to be an anomaly when a number of factors combined to produce negative incremental savings from the combination of the TSR and the Power Smart Partner – Transmission program. The two initiatives remain cost-effective despite this result in fiscal 2011.
Power Smart Partner – Distribution	Expenditures were below plan due to selected projects requiring lower incentives than planned. Electricity savings were approximately on plan.
New Plant Design	Expenditures and electricity savings were above plan due to above plan participation by new natural gas customers in northern B.C. Electricity savings were also above plan due to a reduction in the lag time between project identification and completion.
Load Displacement	See Residential Sector.
Sector Enabling Activities	Expenditures were below plan due to lower than planned work as a result of an internal team transition.
Total Programs	Expenditures were below plan largely because of lower than planned costs in the Residential Behaviour and Industrial Power Smart Partner – Transmission programs. Electricity savings were below plan because of lower than planned savings in the Power Smart Partner Transmission program.
Supporting Initiatives	
Public Awareness & Education	Expenditures were approximately on plan.
Community Engagement	Expenditures were approximately on plan.
Technology Innovation	Expenditures were above plan due to the nature of opportunities required to support the advancement of a full funnel of technology opportunities across all customer sectors.
Codes and Standards Support	Expenditures were below plan mainly due to less need for BC Hydro funding for energy efficiency standards development work by the Canadian Standards Association as a result of better leverage of co-funding from other organizations.
Information Technology	Overall expenditures were 15 per cent below plan due to the delay of one IT project. The remaining variance is a result of program-related IT costs being captured under specific DSM programs rather than this supporting initiative.

Indirect and Portfolio Enabling Activities	Expenditures were approximately on plan.
Total DSM	Expenditures were 31 per cent below plan because of lower than planned costs for programs in particular the Residential Behaviour program and the Industrial Power Smart Partner – Transmission program. Electricity savings were 50 per cent below plan because of lower than expected savings from Programs, Rate Structures and Codes and Standards in particular the Industrial Power Smart Partner – Transmission program, Residential Rate Structures and Residential Codes and Standards.

- 1 **3 Expenditures to Date**
- 2 BC Hydro's DSM expenditures from fiscal 2008 through fiscal 2011 totalled
- 3 \$441.6 million. Table 2 presents DSM expenditures from April 1, 2007 to
- 4 March 31, 2011.⁴

⁴ 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 fiscal 2008 forward, these figures do not include \$15.2 million in incentive refunds received since fiscal 2009 related to DSM program activity before fiscal 2008.

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Table 2 Expenditures since Fiscal 2008¹

	F2008 ² (\$ 000)	F2009 (\$ 000)	F2010 (\$ 000)	F2011 (\$ 000)	Total (\$ 000)
Rate Structures					
Residential	1,164	3,688	1,329	1,545	7,727
Commercial	44	2,593	3,543	4,591	10,771
<u>Industrial</u>	- ³	339 ³	538 ³	1,020	1,896
Total Rate Structures	1,208	6,620	5,410	7,156	20,394
Programs					
Residential Sector					
Behaviour	-	1,351	2,157	3,048	6,556
Voltage Optimization	805 ⁴	1,274 ⁴	2,356	1,328	5,763
Lighting	3,007	2,525	2,627	2,645	10,803
Sustainable Community	-	-	1,410	1,560	2,970
Refrigerator Buy-Back	4,014	4,950	4,737	4,445	18,146
Low Income	113	1,339	2,597	4,610	8,659
New Home	1,431	1,519	1,436	1,353	5,739
Appliances and Electronics	1,035	5,460	8,463	6,044	21,002
Renovation Rebate	549	1,193	2,040	1,111	4,893
Load Displacement	-	-	-	-	-
<u>Sector Enabling Activities</u>	<u>2,229</u>	<u>1,897</u>	<u>2,058</u>	<u>1,562</u>	<u>7,746</u>
Sector Total	13,182	21,510	29,878	27,706	92,276
Commercial Sector					
Power Smart Partners	10,723	17,726	22,737	27,603	78,790
Product Incentive	2,842	7,920	14,536	13,338	38,636
High Performance Buildings	2,163	3,721	5,265	4,288	15,437
Voltage Optimization	268 ⁴	425 ⁴	785	443	1,921
Sustainable Community	-	-	352	536	888
Load Displacement	-	-	-	-	-
<u>Sector Enabling Activities</u>	<u>1,374</u>	<u>2,100</u>	<u>1,280</u>	<u>1,534</u>	<u>6,289</u>
Sector Total	17,370	31,892	44,957	47,741	141,960
Industrial Sector					
Mechanical Pulping	-	-	-	-	-
Power Smart Partner - Transmission	8,492 ³	6,715 ³	9,118 ³	7,712	32,036
Power Smart Partner - Distribution	1,351	5,963	11,025	11,023	29,361
New Plant Design	310	729	4,336	3,610	8,985
Load Displacement	-	-	-	-	-
<u>Sector Enabling Activities</u>	<u>1,219</u>	<u>1,283</u>	<u>1,235</u>	<u>960</u>	<u>4,698</u>
Sector Total	11,371	14,690	25,714	23,305	75,079
Total Programs	41,924	68,092	100,549	98,752	309,316
Supporting Initiatives					
Public Awareness & Education	11,295	8,469	8,367	9,190	37,320
Community Engagement	-	7,749	7,079	7,081	21,908
Technology Innovation	-	1,418	1,120	1,583	4,121
Codes & Standards Support	377	1,295	1,642	1,547	4,862
Information Technology	1,520	1,875	1,901	346	5,641
<u>Indirect & Portfolio Enabling</u>	<u>11,231</u>	<u>9,290</u>	<u>8,724</u>	<u>8,782</u>	<u>38,027</u>
Total	24,422	30,095	28,832	28,529	111,879
Total DSM	67,554	104,807	134,792	134,437	441,589

2 Table 2 Notes:

3 1. Numbers are rounded.

- 1 2. These expenditures differ slightly from the fiscal 2008 actual expenditures presented in BC Hydro's Report on
2 DSM Activities for fiscal 2008 because of the inclusion of expenditures for Rate Structures and Voltage
3 Optimization in order to align with DSM expenditures presented in BC Hydro's 2008 LTAP.
- 4 3. These expenditures differ from those presented in BC Hydro's reports on DSM activities for fiscal 2008,
5 fiscal 2009 and fiscal 2010 because TSR expenditures were transferred from Rate Structures to the Power
6 Smart Partner - Transmission program.
- 7 4. These expenditures differ from those presented in BC Hydro's reports on DSM activities for fiscal 2008 and
8 fiscal 2009 because they have been adjusted to better reflect Voltage Optimization costs that contribute to
9 energy savings.

1 **4 Plan Performance**

2 BC Hydro's DSM electricity savings since fiscal 2008 totalled 2,338 GWh/year⁵ at
3 March 31, 2011, which equates to 89 per cent of the planned savings of
4 2,639 GWh/year in BC Hydro's DSM Plan from the 2008 LTAP or 100 per cent of the
5 planned savings of 2,349 GWh/year in the 2008 LTAP EU. Table 3 presents actual
6 cumulative savings as a percentage of plan in fiscal 2008 to fiscal 2011.

⁵ Subsequent to the release of the BC Hydro 2011 Annual Report a reduction of 10 GWh/year was made to the fiscal 2011 cumulative energy savings of 2,348 GWh.

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Table 3 Cumulative Electricity Savings since April 1, 2007

Actual as a Percentage of Plan¹				
	F2008	F2009	F2010	F2011
Codes and Standards				
Residential	0%	26%	11%	25%
Commercial	0%	0%	2173%	329%
<u>Industrial</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Total Codes and Standards	0%	25%	29%	41%
Rate Structures				
Residential	n/a	131%	105%	78%
Commercial	n/a	n/a	0%	59%
Industrial ²	<u>n/a</u>	<u>n/a</u>	<u>0%</u>	<u>34%</u>
Total Rate Structures	n/a	131%	64%	66%
Programs				
Residential Sector				
Behaviour	127%	75%	42%	15%
Voltage Optimization	0%	18%	18%	22%
Lighting	199%	789%	762%	766%
Sustainable Community	n/a	n/a	n/a	0%
Refrigerator Buy-Back	155%	159%	147%	152%
Low Income	n/a	54%	50%	60%
New Home	48%	147%	112%	104%
Appliances and Electronics	29%	137%	73%	49%
Renovation Rebate	51%	138%	170%	142%
<u>Load Displacement</u>	<u>n/a</u>	<u>n/a</u>	<u>0%</u>	<u>0%</u>
Sector Total	128%	224%	165%	115%
Commercial Sector				
Power Smart Partners	111%	112%	127%	132%
Product Incentive	101%	121%	140%	126%
High Performance Buildings	30%	91%	169%	134%
Voltage Optimization	0%	18%	17%	22%
Sustainable Community	n/a	n/a	n/a	0%
<u>Load Displacement</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>0%</u>
Sector Total	97%	111%	132%	125%
Industrial Sector				
Mechanical Pulping ³	n/a	n/a	n/a	n/a
Power Smart Partner - Transmission ⁴	316%	157%	141%	82%
Power Smart Partner - Distribution	191%	114%	69%	80%
New Plant Design	n/a	159%	1856%	2736%
<u>Load Displacement</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Sector Total	294%	153%	138%	98%
Total Programs	217%	153%	141%	109%
Total DSM	211%	148%	109%	89%

3 Table 3 Notes:

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

- 1 2. A combined estimate of savings from both the TSR and Power Smart Partner - Transmission program is
- 2 presented below in the Power Smart Partner-Transmission program line.
- 3 3. Mechanical Pulping expenditures and savings are included in Power Smart Partner - Transmission.
- 4 4. Includes evaluated electricity savings resulting from the TSR.

5 The DSM electricity savings presented in Table 3 have been achieved at an average
6 utility cost of 2 cents/kWh. Table 4 presents the levelized utility cost of actual DSM
7 electricity savings achieved from April 1, 2007 through March 31, 2011.

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**Table 4 Utility Cost of Electricity Savings:
Fiscal 2008 to Fiscal 2011**

	Levelized Utility Cost (cents/kWh)
Rate Structures	
Residential	0.7
Commercial	1.3
<u>Industrial¹</u>	<u>0.9</u>
Total Rate Structures	0.8
Programs	
Residential Sector	
Behaviour	3.5
Voltage Optimization	3.8
Lighting	1.5
Sustainable Community	n/a
Refrigerator Buy-Back	2.8
Low Income	9.8
New Home	2.6
Appliances and Electronics	9.0
Renovation Rebate	2.2
Load Displacement	n/a
<u>Sector Enabling Activities</u>	<u>n/a</u>
Sector Total	3.1
Commercial Sector	
Power Smart Partners	5.8
Product Incentive	2.6
High Performance Buildings	3.2
Voltage Optimization	3.7
Sustainable Community	n/a
Load Displacement	n/a
<u>Sector Enabling Activities</u>	<u>n/a</u>
Sector Total	4.1
Industrial Sector	
Mechanical Pulping	n/a
Power Smart Partner - Transmission ²	1.0
Power Smart Partner - Distribution	4.0
New Plant Design	1.0
Load Displacement	n/a
<u>Sector Enabling Activities</u>	<u>n/a</u>
Sector Total	1.5
Total Programs	2.6
Total DSM	2.0

3 Table 4 Notes:

4 1. A combined estimate of the levelized utility cost for both the TSR and Power Smart Partner - Transmission
5 program is presented below in the Power Smart Partner-Transmission program line.

1 2. The levelized utility cost of the Power Smart Partner - Transmission program includes electricity savings and
2 costs from the TSR.

3 The DSM electricity savings presented in Table 3 have been achieved at a
4 substantially lower cost than new electricity supply, with an All Ratepayers Test
5 benefit cost ratio of 3.3. Table 5 presents benefit cost ratios of actual DSM electricity
6 savings achieved from April 1, 2007 through March 31, 2011.

1
2

Table 5 Benefit Cost Ratios of Electricity Savings: Fiscal 2008 to Fiscal 2011

	Benefit Cost Ratios		
	Utility Test	All Ratepayers Test	Non Participant Test ⁴
Rate Structures			
Residential	21.1	21.1	1.2
Commercial	10.6	10.6	1.0
<u>Industrial¹</u>	<u>15.3</u>	<u>15.3</u>	<u>1.0</u>
Total Rate Structures	17.3	17.3	1.1
Programs			
Residential Sector			
Behaviour	4.0	4.2	1.1
Voltage Optimization	3.7	3.7	1.1
Lighting	9.7	3.7	1.6
Sustainable Community	n/a	n/a	n/a
Refrigerator Buy-Back	4.3	5.1	1.1
Low Income ²	1.5	1.9	0.8
New Home	6.1	2.2	1.4
Appliances and Electronics	1.5	1.4	0.7
Renovation Rebate	7.4	2.3	1.2
Load Displacement	n/a	n/a	n/a
<u>Sector Enabling Activities</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Sector Total	4.6	2.8	1.2
Commercial Sector			
Power Smart Partners	2.2	2.2	0.8
Product Incentive	4.9	3.0	1.1
High Performance Buildings	4.0	2.2	1.2
Voltage Optimization	3.5	3.5	1.1
Sustainable Community	n/a	n/a	n/a
Load Displacement	n/a	n/a	n/a
<u>Sector Enabling Activities</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Sector Total	3.2	2.5	1.0
Industrial Sector			
Mechanical Pulping	n/a	n/a	n/a
Power Smart Partner - Transmission ³	11.6	1.5	1.3
Power Smart Partner - Distribution	3.2	2.2	0.9
New Plant Design	13.1	5.2	2.0
Load Displacement	n/a	n/a	n/a
<u>Sector Enabling Activities</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Sector Total	8.3	2.1	1.4
Total Programs	4.9	2.3	1.2
Total DSM	6.6	3.3	1.2

3 Table 5 Notes:

4 1. A combined view of the benefit cost ratios from both the TSR and Power Smart Partner - Transmission
5 program is presented below in the Power Smart Partner-Transmission program line.

- 1 2. The All Ratepayers Test benefit-cost ratio for the Low Income program includes a 30 per cent adder to
- 2 program benefits, in keeping with the 2008 DSM regulation (Ministerial Order M 271).
- 3 3. The benefit cost ratios of the Power Smart Partner - Transmission program includes electricity savings and
- 4 costs from the TSR.
- 5 4. While the 2008 DSM regulation precludes the use of the Non Participant Test in determining
- 6 cost-effectiveness of a demand-side measure, this benefit cost ratio is included in the table consistent with
- 7 Directive 42 from the BCUC decision on BC Hydro's 2008 LTAP.

1 **5 Mitigation Measures**

2 Table 3 indicates that a number of DSM initiatives are below plan in terms of
 3 cumulative electricity savings in fiscal 2011 while Table 5 indicates that each
 4 initiative has delivered electricity savings at a substantially lower cost than new
 5 electricity supply. Based on the experience gathered over the past few years through
 6 initiative tracking, the following are mitigation measures that have been undertaken
 7 or are planned for the future.

Codes and Standards	
Residential	Cumulative electricity savings in fiscal 2011 were below plan primarily because of a delay in the federal government’s introduction of regulations. BC Hydro continues to work with the federal government to ensure these regulations are implemented as soon as possible.
Commercial	Cumulative electricity savings in fiscal 2011 were above plan.
Industrial	No electricity savings were planned.
Rate Structures	
Residential	Cumulative electricity savings in fiscal 2011 were below plan because of differences between the assumed RIB rate structure underlying the planned savings and the final RIB rate structure approved by the BCUC. No mitigation measures are warranted. BC Hydro has been directed to file a new residential rate application by December 2013.
Commercial	Cumulative electricity savings in fiscal 2011 were below plan due to the LGS conservation rate being implemented later than planned. No mitigation measures are warranted because planned cumulative electricity savings in the 2008 DSM Plan are expected to be achieved and even exceeded over time.
Industrial	Cumulative electricity savings in fiscal 2011 were below plan due to the LGS conservation rate being implemented later than planned. No mitigation measures are warranted because planned cumulative electricity savings in the 2008 DSM Plan are expected to be achieved over time.
Programs	
Residential Sector	
Behaviour	Cumulative electricity savings in fiscal 2011 were below plan due to SMI implementation occurring later than planned. The SMI Program is being implemented on the timeline prescribed by the Clean Energy Act and Smart Meters and Smart Grid Regulation.

Voltage Optimization	Cumulative electricity savings in fiscal 2011 were below plan due to voltage optimization projects proceeding slower than planned and unforeseen technical and customer issues requiring the interruption of voltage optimization at selected substations. BC Hydro has adjusted the priority of voltage optimization projects to ensure that they proceed as planned and implemented corrective measures to address technical and customer issues.
Lighting	Cumulative electricity savings in fiscal 2011 were above plan. The program offer and approach has been adjusted in response to changes in the content and timing of the General Service Lighting regulation in order to secure additional lighting energy savings.
Sustainable Community	Cumulative electricity savings in fiscal 2011 were below plan due to district energy projects proceeding more slowly than planned. No mitigation measures are warranted because planned electricity savings are expected to be achieved at a later date.
Refrigerator Buy-Back	Cumulative electricity savings in fiscal 2011 were above plan.
Low Income	Cumulative electricity savings in fiscal 2011 were below plan due to a delay in launching the audit and retrofit component of the program and lower than planned participation in this component. This program component is now operational. The program's marketing approach has changed to increase participation, including an expanded effort in community marketing, enlisting the partnership of non-profit housing providers and aboriginal organizations and expanded program recruitment efforts through the program's dedicated contractors.
New Home	Cumulative electricity savings in fiscal 2011 were above plan.
Appliances and Electronics	Cumulative electricity savings in fiscal 2011 were below plan because of the set-top box portion of the program not launching as a result of a lack of vendor support and insufficient specifications for efficient set-top boxes. Based on this experience, BC Hydro now believes that a government regulation would be a better way to secure potential electricity savings in set-top boxes and is now working with the BC Ministry of Energy and Mines to explore establishing an energy efficiency regulation for set-top boxes. The appliance and TV portions of the program are performing well.
Renovation Rebate	Cumulative electricity savings in fiscal 2011 were above plan.
Load Displacement	No electricity savings were planned.
Commercial Sector	
Power Smart Partner	Cumulative electricity savings in fiscal 2011 were above plan. Electricity savings have increased relative to plan since fiscal 2008 in response to changes to the program offer, program process and marketing and communication strategy.
Product Incentive	Cumulative electricity savings in fiscal 2011 were above plan. Electricity savings have increased relative to plan since fiscal 2008 in response to changes to the program offer, program process and marketing and communication strategy.

High Performance Buildings	Cumulative electricity savings in fiscal 2011 were above plan. Electricity savings have increased relative to plan since fiscal 2008 in response to changes to the program offer, program process and marketing and communication strategy.
Voltage Optimization	See Residential Sector.
Sustainable Community	See Residential Sector.
Load Displacement	See Residential Sector.
Industrial Sector	
Mechanical Pulping	The program is currently embedded within the Power Smart Partner – Transmission program.
Power Smart Partner – Transmission	Cumulative electricity savings in fiscal 2011 were below plan. With the successful conclusion of the Integrated Power Offer negotiations, the expectation is that project activity will increase in fiscal 2012. In addition, BC Hydro has also introduced a more targeted approach to pursuing sector-specific energy efficiency opportunities in order to increase program participation.
Power Smart Partner – Distribution	Cumulative electricity savings in fiscal 2011 were below plan due to a longer than planned lag between completion of energy studies and the ensuing energy savings projects. No mitigation measures are warranted because planned cumulative electricity savings are expected to be achieved once the increased lag time is accounted for.
New Plant Design	Cumulative electricity savings in fiscal 2011 were above plan. The program has been able to exceed planned savings by targeting growth sectors and having greater influence on customer projects by obtaining better market intelligence that enables BC Hydro to get involved in customer projects earlier in their development.
Load Displacement	See Residential Sector.

6 Operating Expenditures for Fiscal 2011

BC Hydro's DSM operating expenditures in fiscal 2011 totalled \$993,365.⁶ Table 6 presents DSM operating expenditures in fiscal 2011.

Table 6 Operating Expenditures for Fiscal 2011

	(\$000)
Labour	779
Materials	18
ABS Services	19
Other Services	173
Facilities and Equipment	4
Total	993

7 Allocation of Supporting Initiative Costs to Programs⁷

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 fiscal 2018. For example, rate structures and programs are forecast to save roughly 6,554 GWh/year in fiscal 2018, so a program that is forecast to save 65 GWh/year in fiscal 2018 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.

⁶ DSM operating expenditures relevant for DSM cost-effectiveness, such as those related to rate structures are reported in Table 1 and not included here.

⁷ A description of the functions of supporting initiatives is available in BC Hydro's 2008 LTAP (Exhibit B-1-1, Appendix K, p. 183 of 213).