



**FORTISBC INC.**

**SEMI-ANNUAL DSM REPORT**

**SIX MONTHS ENDED JUNE 30, 2012**

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## REPORT OBJECTIVE

This report provides highlights of FortisBC Inc.'s (FortisBC or the Company) Demand Side Management (DSM) programs for the six month period ending June 30, 2012. The report provides a summary of program activities and compares actual energy savings and costs to Plan, where applicable. Pursuant to Directive 51 in British Columbia Utilities Commission (BCUC or the Commission) Order G-110-12, the report also provides a summary on the progress of integration and collaboration on DSM programs with other BC public utilities. A statement of financial results including benefit/cost ratio is also provided. Finally, a summary of historical FortisBC DSM costs and energy savings for the past five years is included in Appendix B.

## OVERVIEW OF RESULTS FOR THE SIX MONTHS ENDED JUNE 30, 2012

Energy efficiency savings for the period ended June 30, 2012 were 18.8 GWh, or 118 per cent of YTD Plan of 16.0 GWh. Company costs incurred were \$3,602,000 or 93 per cent of the YTD Plan of \$3,866,000. Adding customer costs to the Company's program costs yields a Total Resource Cost (TRC) of \$6,303,000 with an overall TRC benefit/cost ratio of 1.7. The method used to determine benefits is provided in the Financial Results section.

## OVERVIEW OF PROGRAM ACTIVITIES

There were four themes to PowerSense activities in the first half of 2012: existing program process improvements; new program development; continued partnership and program delivery collaboration with BC utilities and municipal, provincial and federal governmental agencies; and integration planning with FortisBC Energy Utilities' (FEU) Energy Efficiency and Conservation (EEC) department.

In 2011, PowerSense nominally doubled the DSM incentive rate (¢/kWh), introduced a number of new programs and enhanced others. During the program roll-outs, some process efficiencies and program design element enhancements were identified and improvements were made throughout the first half of 2012, including:

- Improved collateral and signage for Retail Appliance, New and Retro-Fit Home, TLC Heat Pump Maintenance, and Retail Lighting programs;
- Reassigned the rebate processing for the Retail Appliance, Electronics and Retail Lighting programs, reducing the time required to deliver rebates to customers; and
- Improved reporting, monitoring and verification processes.

PowerSense introduced several new programs, including the Irrigation Pumping program for agricultural customers. The Reduce Your Use program was introduced to help provide energy assessments for Residential customers with high electricity consumption who are most affected by the higher block 2 energy rate of FortisBC's tiered Residential Conservation Rate.

The on-going collaboration with the British Columbia Ministry of Energy and Mines' LiveSmart BC continued to be successful in the Commercial and Residential sectors. The small business lighting retro-fit program (FortisBC LiveSmart Installation Program or FLIP) garnered more than 4.1 GWh of savings, contributing to the high activity in Commercial sector lighting retrofits. The LiveSmart BC Business Energy Assessment program directed many small businesses to PowerSense's rebate programs and LiveSmart BC will be providing a "top-up" for the PowerSense Fixed Rebate for Business program in the fall.

The LiveSmart for Homes program produced 1.3 GWh of savings through residential retrofits. On January 28, 2012 the federal ecoEnergy Retrofit offer was closed to new participants two

months prior to its posted closure date. This change may have dampened customer demand for energy efficient home retrofits and potentially contributed to lower activity in the Home Improvement and Heat Pump (Air Source) programs in the period from February to June 2012. The province and public utilities are stepping up awareness of their remaining home retrofit incentives.

PowerSense worked closely with a number of municipal governments to encourage energy efficiency. The Rossland Energy Diet and the Nelson Eco-Save program have shown success in encouraging residents and the commercial sector to make Energy Efficiency improvements to their homes and businesses.

### **DSM INTEGRATION AND COLLABORATION AMONG BC UTILITIES**

The ongoing collaboration between PowerSense and BC Hydro continued in the first half of 2012, while the main focus of PowerSense was integration with FEU's EEC team.

Collaboration between FortisBC and BC Hydro is characterized by information sharing and making efforts to provide similar program offerings where possible. Examples of this collaboration included the Energy Saving Kits (ESK) that are offered to Low Income customers throughout BC. PowerSense also synchronizes retailer instant lighting rebates to the same schedule as BC Hydro's spring and fall residential lighting campaigns.

PowerSense and FEU's EEC team are working towards integrating programs in the Shared Service Territory. PowerSense and EEC collaborated with City Green Solutions, to distribute approximately 1,500 "Tap-by-Tap" water-saving kits in the south Okanagan. In the fall, this program will expand to include rental multi-unit residential buildings in Kelowna. PowerSense and EEC also worked with the cities of Kelowna and Penticton to help develop their Greenhouse Gas Emissions Reduction Plans.

The following tables summarize the PowerSense program offerings and indicate program status and progress of integration with FEU's EEC programs.

RESIDENTIAL PROGRAMS		
Program and Measures	Status	Integrated with FortisBC Energy Utilities for combined offer
Energy Star Appliances	Ongoing	Yes <sup>1</sup> (clothes washers)
Energy Star Electronics	Ongoing	No (electricity only)
Energy Star Retail Lighting Rebate	Ongoing	No (electricity only)
Heat Pump (Air Source and Geo-Exchange)	Ongoing	No (electricity only)
TLC Heat Pump Maintenance	Enhanced	No (electricity only)
New Home <ul style="list-style-type: none"> <li>■ Performance                             <ul style="list-style-type: none"> <li>• EnerGuide Ratings 80/85</li> </ul> </li> <li>■ Prescriptive                             <ul style="list-style-type: none"> <li>• Lighting</li> <li>• Appliances</li> <li>• Insulation</li> <li>• Heat pumps</li> <li>• NEW: Fireplaces (gas)</li> <li>• NEW: Hot water (gas)</li> </ul> </li> </ul>	Ongoing	In progress
Home Improvement (Retro-fit) <ul style="list-style-type: none"> <li>• Windows and doors</li> <li>• Lighting</li> <li>• Appliances</li> <li>• Insulation</li> <li>• Heat pumps</li> <li>• Heat pump loan option</li> <li>• NEW: Fireplaces (gas)</li> <li>• NEW: Hot water (gas)</li> </ul>	Ongoing	In progress
LiveSmart BC <ul style="list-style-type: none"> <li>• Windows and doors</li> <li>• Insulation</li> <li>• Heat pumps</li> <li>• Hot water</li> </ul>	Ongoing	Yes
Reduce Your Use (energy assessments)	New	No (electricity only)
On-Bill Financing	In Design	Yes
Low Income – Direct Installation Lighting	Ongoing	No (electricity only)
Low Income – Energy Savings Kits	Ongoing	In progress

<sup>1</sup> Based on fuel source of hot water tank

<b>RESIDENTIAL PROGRAMS (cont'd)</b>		
<b>Program and Measures</b>	<b>Status</b>	<b>Integrated with FortisBC Energy Utilities for combined offer</b>
Rental Housing	New	Yes
Supporting Initiatives	Ongoing	Yes (where appropriate)
Trade Ally	New	Yes (where appropriate)
WaterSavers	Enhanced	Yes

<b>COMMERCIAL AND INDUSTRIAL PROGRAMS</b>		
<b>Program and Measures</b>	<b>Status</b>	<b>Integrated with FortisBC Energy Utilities for combined offer</b>
Fixed Rebate <ul style="list-style-type: none"> <li>• Lighting</li> <li>• Pumps and fans</li> <li>• Motors</li> <li>• Compressors</li> <li>• Refrigeration</li> <li>• HVAC</li> <li>• Boilers (gas)</li> <li>• Water Heaters (gas)</li> </ul>	In Design	Yes
Building Improvement – New	Ongoing	No
Building Improvement – Retro-fit	Ongoing	No
Building Optimization	Ongoing	Yes
Partners in Energy	Ongoing	No
Energy Efficiency Studies	Ongoing	In progress
Industrial Efficiency	Ongoing	No
Green Motors (motor rewinds)	Ongoing	No (electricity only)

### ENERGY SAVINGS BY SECTOR

The energy savings for the six months ended June 30, 2012, are shown in the table below.

Sector	YTD Plan	Actual	% of Plan
	GWh		Achieved
Residential	8.1	7.0	87%
Commercial	6.7	11.4	171%
Industrial	1.2	0.3	28%
<b>Total Savings (GWh)</b>	<b>16.0</b>	<b>18.8</b>	<b>118%</b>

Note: Minor differences due to rounding

Commercial energy savings were well above Plan at 171 per cent. Residential and Industrial energy savings were under Plan at 87 per cent and 28 per cent respectively. These results are discussed in more detail in the following sections.

#### DETAIL OF ENERGY SAVINGS

The following tables provide details on the DSM energy savings in each sector, including Wholesale DSM activities in the service territories of the Municipal Wholesale customers.

RESIDENTIAL	YTD Plan	Actual	% of Plan
	GWh		Achieved
Home Improvement Program	4.2	2.9	70%
Low Income	0.9	0.7	75%
Residential Lighting	1.3	2.0	158%
Heat Pumps	1.7	0.9	55%
New Home Program	0.05	0.5	1173%
<b>Total Savings (GWh)</b>	<b>8.1</b>	<b>7.0</b>	<b>87%</b>

In the six months ended June 30, 2012, the energy saving results from Residential programs were 87 per cent of Plan. The New Home and Residential Lighting programs exceeded Plan. The Heat Pump, Home Improvement and Low Income programs fell short of forecast. Customer participation in the New Home program continues to exceed expectations; to date there are 245 projects recorded since the beginning of 2012, an increase from the 82 projects recorded in the first half of 2011. The point-of-purchase incentive campaign in March and April was quite successful and contributed to the increased results in Residential Lighting.



The LiveSmart BC collaboration resulted in 1.3 GWh of retrofit energy savings, which are recorded in the Heat Pump and Home Improvement (HIP) programs. The savings results for these programs do not include all the projects in the first half of 2012. The Ministry of Energy and Mines continues to process rebates for the first half of 2012 and will provide the remaining information in the third quarter of 2012.

In the first half of 2012, the Low Income program distributed approximately 250 Energy Saving Kits (ESKs) and concluded the direct install lighting program in the Okanagan. The savings results for Low Income should be more robust in the fall as ESK distribution generally increases as low income customers prepare their homes for the heating season. In the second half of the year, the direct install lighting program will begin in the Kootenay region.

COMMERCIAL	YTD Plan	Actual	% of Plan
	GWh		Achieved
Lighting	3.7	10.3	280%
Building and Process Improvement	1.7	1.1	63%
Water Handling and Infrastructure	1.3	0.02	1%
<b>Total Savings (GWh)</b>	<b>6.7</b>	<b>11.4</b>	<b>171%</b>

The Commercial sector recorded savings of 11.4 GWh, or 171 per cent of the YTD Plan. The majority of these savings are realized through the Commercial lighting programs, which include both “at the counter” product rebates and custom lighting retrofits, such as those installed at an Okanagan post-secondary education institute producing 0.2 GWh savings. Another large component of the Commercial lighting programs is the FLIP direct installation program, a collaborative effort with the LiveSmartBC Business program. FLIP continued to be very popular in the first half of 2012 and has contributed 4.1 GWh of savings.

Examples of Building and Process Improvement (BIP) projects include heating and cooling system upgrades at a shopping centre (0.2 GWh savings) and a regional hospital (0.1 GWh savings).

Water Handling and Infrastructure, which includes the Irrigation program, has very few savings, partly because of low project count. In the first half of 2012 a small water handling infrastructure project with the Christina Lake Waterworks District contributed 0.02 GWh of savings. The

second half of a large water infrastructure project with an Okanagan municipality will be concluded in the second half of 2012. The Irrigation program was launched in June and will not realize savings until a later date.

<b>INDUSTRIAL</b>	<b>YTD Plan</b>	<b>Actual</b>	<b>% of Plan</b>
	<b>GWh</b>		<b>Achieved</b>
Industrial Efficiency	1.1	0.3	30%
Integrated EMIS	0.1	0.0	0%
<b>Total Savings (GWh)</b>	<b>1.2</b>	<b>0.3</b>	<b>28%</b>

The Industrial Programs achieved savings of 0.3 GWh or 28 per cent of the YTD Plan of 1.2 GWh. An example of an Industrial Efficiency project is the installation of variable speed drives on process equipment at a Kootenay lumber mill resulting in 0.3 GWh of energy savings.

The table below disaggregates the Wholesale DSM results, which are included in the sector tables above.

<b>WHOLESALE ACTIVITY</b>	<b>GWh</b>	<b>MW</b>	<b>% of GWh*</b>
Grand Forks	0.0	0.0	0%
Summerland	0.4	0.1	12%
Nelson	0.4	0.1	10%
Penticton	0.8	0.1	21%
Kelowna	2.1	0.4	57%
<b>Total Savings (Wholesale)</b>	<b>3.6</b>	<b>0.7</b>	<b>100%</b>

\*Of savings attributable to the Wholesale class

Note: Minor differences due to rounding

The total Wholesale energy savings, which were acquired within the service areas of the five municipal electric utilities served by FortisBC, were 3.6 GWh and 0.7 MW to June 30, 2012. The largest DSM savings results occurred within Kelowna and Penticton municipal utility service areas (those with the largest number of customers).

**PROGRAM COSTS**

The table below presents the actual costs incurred in the first six months of 2012 compared to YTD Plan.

**SUMMARY OF COSTS BY SECTOR**

Sector/Component	YTD Plan	Actual	% of Plan
	(\$000s)		Achieved
Residential	1,859	1,334	72%
Commercial	1,100	1,406	128%
Industrial	175	77	44%
Supporting Initiatives	363	416	115%
Monitoring & Evaluation	152	130	86%
Planning & Admin	218	238	109%
<b>Total</b>	<b>3,866</b>	<b>3,602</b>	<b>93%</b>

Note: Minor differences due to rounding

Costs amounted to \$3,602,000 or 93 per cent of the Plan to June 30, 2012. A breakdown of utility program costs per sector follows. Appendix A contains an additional breakdown of total program costs, including the customer portion of project costs.

**COSTS PER SECTOR**

RESIDENTIAL	YTD Plan	Actual	% of Plan
	(\$000s)		Achieved
Home Improvement Program	983	483	49%
Low Income	339	167	49%
Residential Lighting	164	234	143%
Heat Pumps	352	312	89%
New Home Program	22	139	648%
<b>Total</b>	<b>1,859</b>	<b>1,334</b>	<b>72%</b>

Note: Minor differences due to rounding

The utility cost of Residential programs was \$1,334,000 or 72 per cent of Plan for the first half of 2012. This report does not include costs for the FortisBC contribution to LiveSmart BC rebates from May and June, as the Ministry of Energy and Mines is in the process of distributing rebates

for this time period. The New Home program continues to be very successful and while the costs are over budget, it is commensurate with savings.

<b>COMMERCIAL</b>	<b>YTD Plan</b>	<b>Actual</b>	<b>% of Plan</b>
	<b>(\$000s)</b>		<b>Achieved</b>
Lighting	579	1,083	187%
Building and Process Improvement	330	265	80%
Water Handling and Infrastructure	192	59	31%
<b>Total</b>	<b>1,100</b>	<b>1,406</b>	<b>128%</b>

Note: Minor differences due to rounding

Commercial sector costs to June 30, 2012 amounted to \$1,406,000 or 128 per cent of Plan. The largest cost component of Commercial programs was the Lighting program, which includes incentives paid through the LiveSmart BC FLIP collaboration. Incentives paid to Commercial Lighting program participants in the first half of 2012 amounted to \$918,000 compared to \$397,000 Plan, a variance of \$521,000. The costs for Water Handling and Infrastructure are proportionally higher than the savings for this program, partially because it incorporates the Irrigation program. PowerSense launched the Irrigation program in June and has incurred the start-up costs, although program savings will not be realized until a later date.

<b>INDUSTRIAL</b>	<b>YTD Plan</b>	<b>Actual</b>	<b>% of Plan</b>
	<b>(\$000s)</b>		<b>Achieved</b>
Industrial Efficiency	162	70	43%
Integrated EMIS	14	7	51%
<b>Total</b>	<b>175</b>	<b>76</b>	<b>44%</b>

Note: Minor differences due to rounding

Industrial sector costs incurred by the Company were \$76,000 for the period, or 44 per cent of Plan. The Industrial sector is characterized by large projects that generally occur less frequently than in other sectors. Energy Management Information System (EMIS) software is a long-term program with up-front costs and savings that will be realized later in the process. The Company has committed to co-funding the EMIS software at an Okanagan lumber mill.

**PORTFOLIO COSTS**

Portfolio level costs, that are not specifically associated with individual programs, include Supporting Initiatives and Planning and Evaluation. These costs are summarized in the table below.

Components	YTD Plan	Actual	% of Plan
	(\$000s)		Achieved
Supporting Initiatives*	363	416	115%
Monitoring & Evaluation	152	130	86%
Planning & Admin	218	238	109%
<b>Total</b>	<b>733</b>	<b>785</b>	<b>107%</b>

\*Including Conservation Culture

The Supporting Initiative costs for the first half of 2012 were \$416,000 or 115 per cent of the \$363,000 Plan. The Conservation Culture costs included in Supporting Initiatives were \$167,000. Supporting Initiatives and Conservation Culture spending continues to drive community outreach and direct customer communication, which is a strong component of PowerSense programming. The three community ambassadors attended more than 80 community events and distributed clotheslines at 45 locations. Whenever possible, outreach and community event sponsorship was done in collaboration with EEC. The Earth Hour and Caught Hanging Out (clotheslines) promotions were expanded for 2012, and were once again well received. As part of Earth Hour customers across the FortisBC service area sent in approximately 6,000 pledges, each committing to turn their lights off for one hour. This was more than triple the number of participants from 2011. The Caught Hanging Out campaign won the Natural Resources Canada ENERGY STAR Utility of the Year (Regional) award.

The Planning and Evaluation budget is separated into two main components: Monitoring and Evaluation (M&E), and Planning and Administration. M&E was under budget with costs of \$130,000, or 86 per cent of Plan. However, the costs associated with large evaluation studies will be incurred in the second half of the year. The Planning & Administration expenditure was \$238,000, or 109% of Plan.

In Appendix A, Program Development costs are further broken out from the Planning and Administration costs.

## FINANCIAL RESULTS

Program benefits are calculated on the present value of avoided power purchase costs. In previous semi-annual reports this was based on the prevailing BC Hydro Rate Schedule 3808 (RS3808) rate over the measure lifespan, plus a deferred construction factor. In this report, the present value of avoided power purchase costs is based on the long-term avoided power purchase cost<sup>2</sup> over the measure lifespan, plus the deferred construction factor. Program costs are a total of Company costs and customer costs. Customer portion of costs are the incremental costs of new construction measures and the energy efficiency portion of full retrofit measure costs.

### Financial Results for Year to Date Ending June 30, 2012 by Program

Program	Program Benefits	Planning & Evaluation					Total Costs	Benefits less Costs	Benefit Cost Ratio
		Program Costs	Program Dev.	Planning & Admin.	Monitoring & Eval.	Customer Costs			
(\$000s)									
<b>Residential</b>									
Home Improvement	2,313	483	10	26	20	427	967	1,346	2.4
Low Income	306	167	2	6	5	49	229	76	1.3
Residential Lighting	779	234	7	18	14	133	406	373	1.9
Heat Pumps	805	312	3	9	6	479	809	(4)	1.0
New Home Program	567	139	2	5	4	246	396	172	1.4
<b>Residential Total</b>	<b>4,770</b>	<b>1,334</b>	<b>25</b>	<b>64</b>	<b>49</b>	<b>1,335</b>	<b>2,807</b>	<b>1,963</b>	<b>1.7</b>
<b>Commercial</b>									
Lighting	4,961	1,083	37	95	72	919	2,204	2,757	2.3
Building and Process Improvement	942	265	4	10	7	441	726	215	1.3
Water Handling Infrastructure	21	59	0	0	0	1	60	(40)	0.3
<b>Commercial Total</b>	<b>5,923</b>	<b>1,406</b>	<b>40</b>	<b>105</b>	<b>79</b>	<b>1,361</b>	<b>2,991</b>	<b>2,933</b>	<b>2.0</b>
<b>Industrial</b>									
Industrial Efficiency	287	70	1	3	2	5	82	205	3.5
Integrated EMIS	-	7	-	-	-	-	7	(7)	-
<b>Industrial Total</b>	<b>287</b>	<b>77</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>89</b>	<b>199</b>	<b>3.2</b>
Supporting Initiatives		416					416		
<b>Total</b>	<b>10,981</b>	<b>3,233</b>	<b>66</b>	<b>172</b>	<b>130</b>	<b>2,701</b>	<b>6,303</b>	<b>4,678</b>	<b>1.7</b>

Note: Minor differences due to rounding

An overall total resource benefit/cost ratio of 1.7 has been achieved thus far in 2012. The benefit/cost ratios for the individual programs are also detailed in the table above. The Residential sector program performance resulted in a benefit/cost ratio of 1.7 for the sector. The Low Income program benefit/cost ratio of 1.3, includes a 30 percent benefits lift as per the DSM Regulation, s4(2)(b).

<sup>2</sup> As per the 2012-2013 Long Term Demand Side Management (DSM) Plan, approved by BCUC Order G-110-12, the long-term avoided power purchase cost of \$84.94/MWh is for firm energy, inclusive of capacity savings.

For the first half of 2012, the Commercial sector achieved a benefit/cost ratio of 2.0. The Industrial sector benefit/cost ratio was more robust at 3.2. While this is higher than the other sectors, this result was expected based on the 2012 Plan.

#### **DSM INCENTIVE**

The DSM incentive was created in conjunction with Performance Based Regulation (PBR) and thus is not applicable under the current Cost of Service regulatory framework.

**APPENDIX A DSM SUMMARY REPORT IN BCUC FORMAT**

FortisBC Demand Side Management Summary Report  
Six Months Ended June 30, 2012

Sector/Program	Utility Program Costs			Planning and Evaluation			Total Utility Costs	Customer Incurred Cost	Total Resource Cost	Program Benefits*	Energy Savings MWh	Benefit/Cost Ratios		Levelised Cost
	Direct Incentives	Direct Information	Program Labour	Program Dev.	Planning & Admin.	Monitoring & Eval.						Total Resource	Total Rate	
	(\$000s)													
<b>Residential</b>														
Home Improvements Program	333	44	106	10	26	20	539	427	967	2,313	2,891	2.4	0.8	3.8
Low Income	128	12	27	2	6	5	180	49	229	306	669	1.3	0.7	8.6
Residential Lighting	162	41	30	7	18	14	273	133	406	779	2,003	1.9	0.8	5.1
Heat Pumps	215	21	76	3	9	6	330	479	809	805	931	1.0	0.7	9.2
New Home Program	89	13	37	2	5	4	150	246	396	567	528	1.4	0.8	6.7
<b>Residential Total</b>	<b>927</b>	<b>131</b>	<b>277</b>	<b>25</b>	<b>64</b>	<b>49</b>	<b>1,472</b>	<b>1,335</b>	<b>2,807</b>	<b>4,770</b>	<b>7,023</b>	<b>1.7</b>	<b>0.8</b>	<b>5.5</b>
<b>Commercial</b>														
Lighting	918	76	89	37	95	72	1,286	919	2,204	4,961	10,348	2.3	0.5	2.8
Building and Process Improvement	133	63	69	4	10	7	286	441	726	942	1,078	1.3	0.7	6.9
Water Handling Infrastructure	16	4	39	0	0	0	59	1	60	21	17	0.3	0.2	36.5
<b>Commercial Total</b>	<b>1,066</b>	<b>143</b>	<b>197</b>	<b>40</b>	<b>105</b>	<b>79</b>	<b>1,630</b>	<b>1,361</b>	<b>2,991</b>	<b>5,923</b>	<b>11,443</b>	<b>2.0</b>	<b>0.6</b>	<b>3.4</b>
<b>Industrial</b>														
Industrial Efficiency	34	4	31	1	3	2	77	5	82	287	344	3.5	1.2	2.4
Integrated EMIS	-	4	3	-	-	-	7	-	7	-	-	0.0	0	-
<b>Industrial Total</b>	<b>34</b>	<b>8</b>	<b>34</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>83</b>	<b>5</b>	<b>89</b>	<b>287</b>	<b>344</b>	<b>3.2</b>	<b>1.2</b>	<b>2.6</b>
Supporting Initiatives	-	220	196	-	-	-	416	-	416			-	-	-
<b>TOTAL</b>	<b>2,027</b>	<b>502</b>	<b>704</b>	<b>66</b>	<b>172</b>	<b>130</b>	<b>3,602</b>	<b>2,701</b>	<b>6,303</b>	<b>10,981</b>	<b>18,810</b>	<b>1.7</b>	<b>0.6</b>	<b>4.4</b>

Note: Minor differences due to rounding

\* Benefits calculated using the long-term avoided power purchase cost of \$84.94/MWh.



**APPENDIX B HISTORICAL SUMMARY OF FORTISBC'S DSM COSTS AND ENERGY SAVINGS**

Historical FortisBC DSM Costs and Energy Savings 2007-2008

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	2007 (Actual)							2008 (Actual)						
	Spend (\$000s)			Energy Savings (MWh)			TRC <sup>3</sup>	Spend (\$000s)			Energy Savings (MWh)			TRC <sup>3</sup>
	Planned	Actual	Variance	Planned	Actual	Variance	(B/C)	Planned	Actual	Variance	Planned	Actual	Variance	(B/C)
1 <b>Residential</b>														
2 Home Improvements	98	78	20	500	500	-	1.5	135	62	73	385	331	(54)	0.8
3 Building Envelope <sup>1</sup>														
4 Heat Pumps	513	651	(138)	6,200	9,600	3,400	1.6	446	682	(236)	4,889	8,444	3,555	1.4
5 Residential Lighting	170	116	54	2,200	2,700	500	5.6	156	151	5	1,796	2,562	766	4.1
6 New Home Program	424	458	(34)	1,700	2,500	800	2.3	286	340	(54)	1,332	1,596	265	2.8
7 Appliances <sup>1</sup>														
8 Electronics <sup>1</sup>														
9 Water Heating <sup>1</sup>														
10 Low Income <sup>1</sup>														
11 Behavioural <sup>1</sup>														
12 <i>Residential Total</i>	<b>1,205</b>	<b>1,303</b>	<b>(98)</b>	<b>10,600</b>	<b>15,300</b>	<b>4,700</b>	<b>1.9</b>	<b>1,023</b>	<b>1,236</b>	<b>(213)</b>	<b>8,401</b>	<b>12,933</b>	<b>4,531</b>	<b>1.7</b>
13 <b>Commercial</b>														
14 Lighting	257	240	17	3,000	5,500	2,500	2.8	257	375	(118)	3,000	5,960	2,960	2.4
15 Building and Process Improvements	469	499	(30)	6,200	4,900	(1,300)	1.5	497	506	(9)	6,103	5,081	(1,022)	1.6
16 Computers														
17 Municipal (Water Handling) <sup>2</sup>														
18 Irrigation <sup>2</sup>														
19 <i>Commercial Total</i>	<b>726</b>	<b>739</b>	<b>(13)</b>	<b>9,200</b>	<b>10,400</b>	<b>1,200</b>	<b>2.0</b>	<b>754</b>	<b>881</b>	<b>(127)</b>	<b>9,103</b>	<b>11,042</b>	<b>1,939</b>	<b>1.9</b>
20 <b>Industrial</b>														
21 Compressed Air	37	30	7	700	400	(300)	1.0	58	22	36	700	210	(490)	1.2
23 EMIS														
22 Industrial Efficiencies	131	153	(22)	1,300	1,800	500	1.6	142	124	18	1,285	3,083	1,798	2.3
24 <i>Industrial Total</i>	<b>168</b>	<b>183</b>	<b>(15)</b>	<b>2,000</b>	<b>2,200</b>	<b>200</b>	<b>1.5</b>	<b>200</b>	<b>147</b>	<b>53</b>	<b>1,985</b>	<b>3,294</b>	<b>1,309</b>	<b>2.3</b>
25 <b>Programs Total</b>	<b>2,099</b>	<b>2,225</b>	<b>(126)</b>	<b>21,800</b>	<b>27,900</b>	<b>6,100</b>	<b>-</b>	<b>1,977</b>	<b>2,264</b>	<b>(287)</b>	<b>19,489</b>	<b>27,268</b>	<b>7,779</b>	<b>-</b>
26 Supporting Initiatives	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27 Planning & Evaluation	375	324	51	-	-	-	-	378	419	(41)	-	-	-	-
28 <b>Total</b>	<b>2,474</b>	<b>2,549</b>	<b>(75)</b>	<b>21,800</b>	<b>27,900</b>	<b>6,100</b>	<b>1.9</b>	<b>2,355</b>	<b>2,683</b>	<b>(328)</b>	<b>19,489</b>	<b>27,268</b>	<b>7,779</b>	<b>1.8</b>

<sup>1</sup> These programs were included in Home Improvements program

<sup>2</sup> Water Treatment and Wastewater Handling infrastructure were part of Building and Process Improvement

<sup>3</sup> Benefits calculated using RS3808 applicable at the time

Historical FortisBC DSM Costs and Energy Savings 2009-2010

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	2009 (Actual)							2010 (Actual)						
	Spend (\$000s)			Energy Savings (MWh)			TRC <sup>3</sup>	Spend (\$000s)			Energy Savings (MWh)			TRC <sup>3</sup>
	Planned	Actual	Variance	Planned	Actual	Variance	(B/C)	Planned	Actual	Variance	Planned	Actual	Variance	(B/C)
1 <b>Residential</b>														
2 Home Improvements	273	145	128	1,024	1,032	8	1.4	294	434	(140)	953	4,948	3,995	3.1
3 Building Envelope <sup>1</sup>														
4 Heat Pumps	515	677	(162)	5,642	3,188	(2,454)	0.7	624	749	(125)	6,377	3,239	(3,138)	1.2
5 Residential Lighting	263	306	(44)	2,822	3,349	526	2.8	243	278	(35)	2,383	2,589	206	2.4
6 New Home Program	341	496	(155)	1,216	1,735	518	2.2	254	247	7	1,392	477	(915)	1.1
7 Appliances <sup>1</sup>														
8 Electronics <sup>1</sup>														
9 Water Heating <sup>1</sup>														
10 Low Income <sup>1</sup>								100	131	(31)	1,000	385	615	0.7
11 Behavioural <sup>1</sup>														
12 Residential Total	<b>1,391</b>	<b>1,624</b>	<b>(233)</b>	<b>10,705</b>	<b>9,304</b>	<b>(1,401)</b>	<b>1.3</b>	<b>1,515</b>	<b>1,838</b>	<b>(323)</b>	<b>12,105</b>	<b>11,638</b>	<b>764</b>	<b>1.9</b>
13 <b>Commercial</b>														
14 Lighting	724	422	302	5,505	7,638	2,133	3.0	722	526	196	5,304	7,971	2,667	3.5
15 Building and Process Improvements	563	639	(75)	6,095	8,713	2,618	1.8	658	597	61	6,751	6,685	(67)	1.5
16 Computers														
17 Municipal (Water Handling) <sup>2</sup>														
18 Irrigation <sup>2</sup>														
19 Commercial Total	<b>1,287</b>	<b>1,060</b>	<b>227</b>	<b>11,600</b>	<b>16,351</b>	<b>4,751</b>	<b>2.2</b>	<b>1,380</b>	<b>1,123</b>	<b>257</b>	<b>12,055</b>	<b>14,655</b>	<b>2,600</b>	<b>2.1</b>
20 <b>Industrial</b>														
21 Compressed Air	71	41	30	811	398	(413)	0.9	87	25	62	938	114	(823)	0.7
23 EMIS														
22 Industrial Efficiencies	274	195	79	2,189	2,305	116	1.6	302	216	86	2,412	2,853	441	2.1
24 Industrial Total	<b>345</b>	<b>236</b>	<b>109</b>	<b>3,000</b>	<b>2,703</b>	<b>(297)</b>	<b>1.5</b>	<b>389</b>	<b>241</b>	<b>148</b>	<b>3,350</b>	<b>2,967</b>	<b>(383)</b>	<b>2.0</b>
25 Programs Total	<b>3,023</b>	<b>2,920</b>	<b>103</b>	<b>25,305</b>	<b>28,358</b>	<b>3,053</b>	<b>-</b>	<b>3,284</b>	<b>3,203</b>	<b>81</b>	<b>27,510</b>	<b>29,261</b>	<b>2,981</b>	<b>2.1</b>
26 Supporting Initiatives	141	141	0	-	-	-	-	148	155	(7)	-	-	-	-
27 Planning & Evaluation	503	402	101	-	-	-	-	519	354	165	-	-	-	-
28 Total	<b>3,667</b>	<b>3,464</b>	<b>204</b>	<b>25,305</b>	<b>28,358</b>	<b>3,053</b>	<b>1.7</b>	<b>3,951</b>	<b>3,712</b>	<b>239</b>	<b>27,510</b>	<b>29,261</b>	<b>2,981</b>	<b>2.0</b>

<sup>1</sup> These programs were included in Home Improvements program

<sup>2</sup> Water Treatment and Wastewater Handling infrastructure were part of Building and Process Improvement

<sup>3</sup> Benefits calculated using RS3808 applicable at the time

Historical FortisBC DSM Costs and Energy Savings 2011

		1	2	3	4	5	6	7
		2011 (Actual)						
		Planned	Actual	Variance	Planned	Actual	Variance	TRC <sup>3</sup> (B/C)
1	<b>Residential</b>							
2	Home Improvements	2,145	479	1,666	8,960	3,692	(5,268)	1.6
3	Building Envelope <sup>1</sup>							
4	Heat Pumps	694	532	162	3,397	2,257	(1,140)	1.0
5	Residential Lighting	438	239	199	3,420	3,308	(112)	2.2
6	New Home Program	54	205	(151)	105	689	584	1.0
7	Appliances <sup>1</sup>							
8	Electronics <sup>1</sup>							
9	Water Heating <sup>1</sup>							
10	Low Income	305	245	60	540	1,447	(907)	1.0
11	Behavioural <sup>1</sup>							
12	<b>Residential Total</b>	<b>3,636</b>	<b>1,700</b>	<b>1,936</b>	<b>16,422</b>	<b>11,393</b>	<b>(6,843)</b>	<b>1.3</b>
13	<b>Commercial</b>							
14	Lighting	1,114	1,995	(881)	7,370	20,577	13,207	2.3
15	Building and Process Improvements	572	606	(34)	3,010	1,386	(1,624)	0.7
16	Computers							
17	Municipal (Water Handling)	432	231	201	3,560	2,199	(1,361)	1.6
18	Irrigation <sup>2</sup>							
19	<b>Commercial Total</b>	<b>2,118</b>	<b>2,832</b>	<b>(714)</b>	<b>13,940</b>	<b>24,162</b>	<b>10,222</b>	<b>1.9</b>
20	<b>Industrial</b>							
21	Compressed Air							
23	EMIS	10	9	1	80	-	(80)	-
22	Industrial Efficiencies	603	128	475	9,280	794	(8,486)	2.5
24	<b>Industrial Total</b>	<b>613</b>	<b>137</b>	<b>476</b>	<b>9,360</b>	<b>794</b>	<b>(8,566)</b>	<b>2.4</b>
25	<b>Programs Total</b>	<b>6,367</b>	<b>4,669</b>	<b>1,698</b>	<b>39,722</b>	<b>36,349</b>	<b>(5,187)</b>	<b>1.8</b>
26	Supporting Initiatives	725	658	67	-	-	-	-
27	Planning & Evaluation	750	590	160	-	-	-	-
28	<b>Total</b>	<b>7,842</b>	<b>5,918</b>	<b>1,924</b>	<b>39,722</b>	<b>36,349</b>	<b>(5,187)</b>	<b>1.6</b>

<sup>1</sup> These programs were included in Home Improvements program

<sup>2</sup> Irrigation was included in Municipal (Water Handling)

<sup>3</sup> Benefits calculated using RS3808 applicable at the time