



**FORTIS BC**  
**SEMI-ANNUAL DSM REPORT**  
**YEAR ENDED DECEMBER 31, 2003**

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**Report Objective:**

This report provides highlights of energy management programs for the year ending December 31, 2003. The presentation format compares actual energy savings and costs to plan, provides a statement of financial results and details the earned DSM incentive.

**Overview of Results for the Year Ended December 31, 2003:**

Energy efficiency savings for the year ended December 31, 2003 amounted to 18.5 GW.h, 119% percent of the plan of 15.6 GW.h. Costs to December 31, 2003 were \$1,705,716 or 93% of the plan of \$1,843,373. The Total Resource Benefit/Cost ratio for the year ending December 31, 2003 was 1.6.

**Energy Savings per Sector:**

	<b>YTD Plan GW.h</b>	<b>Actual</b>	<b>% of Plan Achieved</b>
Residential	5.7	6.4	112%
General Service	8.2	10.1	123%
Industrial	1.7	2.0	118%
<b>Total savings (GW.h)</b>	<b>15.6</b>	<b>18.5</b>	<b>119%</b>

All sectors, Residential, General Service and Industrial exceeded their GW.h savings target for the year

**Detail of Energy Savings:**

<b>Residential Programs:</b>	<b>YTD Plan GW.h</b>	<b>Actual</b>	<b>% of Plan Achieved</b>
HIP/Watersavers	0.2	0.1	50%
New Home Program	0.3	0.8	267%
Heat Pumps (Air & Ground Source)	2.5	4.3	172%
Residential Lighting	2.7	1.2	44%
	<b>5.7</b>	<b>6.4</b>	<b>112%</b>

Both the New Home and Heat Pumps programs exceeded plan expectations. There were 421 participants in the Air Source Heat Pump program compared to 300 in 2002. Two of these participants were multi-unit construction projects totalling 187 units, 0.4 GW.h of energy savings. The Fall Compact Fluorescent promotion extends to March 2004 and we expect continued participation in this offer. Participation in the Home Improvement program was below plan in the Okanagan region.

<b>General Service Programs:</b>			
	<b>YTD Plan</b>	<b>Actual</b>	<b>% of Plan</b>
Lighting	2.0	4.2	210%
Building and Process Improvement	<u>6.2</u>	<u>5.9</u>	95%
	<b><u>8.2</u></b>	<b><u>10.1</u></b>	<b><u>123%</u></b>

The General Service sector recorded savings of 10.1 GW.h, 123% of plan to December 31, 2003. In the lighting program, there were two special initiatives that contributed to its success. The first was the municipal LED Holiday Light initiative saving 0.9 GW.h and the second was a LED traffic light change out in the Kelowna and Nelson areas that saved 0.7 GW.h..

Installation of new aerator pipes and the introduction of a lower horsepower pump at the Penticton sewage treatment plant accounted for savings of 1.4 GW.h of the Building and Process Improvement program.

<b>Industrial Programs:</b>			
	<b>YTD Plan</b>	<b>Actual</b>	<b>% of Plan</b>
	<b>GW.h</b>		<b>Achieved</b>
Pumps and Fans	0.5	0.7	140%
Compressed Air	0.2	0.2	100%
Industrial Efficiencies	<u>1.0</u>	<u>1.1</u>	<u>110%</u>
	<b><u>1.7</u></b>	<b><u>2.0</u></b>	<b><u>118%</u></b>

Weyerhaeuser completed 2 projects that saved 0.7 GW.h . Variable frequency drives and recycling instead of chipping planer mill cut ends were key elements of the savings.

### **Program Costs:**

#### **Summary of Costs by Sector**

	<b>YTD Plan</b>	<b>Actual</b>	<b>% of Plan</b>
<b>Sector:</b>	<b>\$'000</b>		
Residential	717	567	79%
General service	659	736	112%
Industrial	174	108	62%
Planning & Evaluation	291	294	101%
	<b>1,841</b>	<b>1,705</b>	<b>93%</b>

Costs were held to \$1,705,716, 93% of plan, while still achieving savings in excess of plan.

**Costs per Sector:**

<b>Residential</b>	<b>YTD Plan</b>	<b>Actual</b>	<b>% of Plan</b>
	<b>\$'000</b>		
H.I.P./Watersavers	41	24	59%
New Home Program	90	135	150%
Heat Pumps (Air & Ground )	277	313	113%
Residential Lighting	309	95	31%
	<b>717</b>	<b>567</b>	<b>79%</b>

The costs of Residential programs amounted to \$567,000, 79% of plan. The residential lighting costs are less than anticipated due to a later than planned start date to the campaign. The New Home Program was changed to increase rebates for window and lighting measures and this resulted in higher than planned customer participation.

<b>General Service</b>	<b>YTD Plan</b>	<b>Actual</b>	<b>% of Plan</b>
	<b>\$'000</b>		
Lighting	199	251	126%
Building and Process Improvement	460	485	105%
	<b>659</b>	<b>736</b>	<b>112%</b>

Costs to December 31, 2003 for General Service amounted to \$736,000 or 112% of plan. A single rebate for a large wastewater infrastructure project within the Building and Process Improvement program amounted to \$68,000. The LED traffic light conversions in the Kootenay and the Okanagan, and the Christmas light demonstration project for municipalities resulted in higher than planned expenditures in this sector.

Expenses during the year amounted to \$108,000 or 62% of plan. Cost savings compared to plan occurred in both incentives (\$42 k) and contract labour (\$28 k). Because a number of measures for process change and control equipment in compressed air, pumps and fans, had less than 2-

<b>Industrial</b>	<b>YTD Plan</b>	<b>Actual</b>	<b>% of Plan</b>
	<b>\$'000</b>		
Pumps and Fans	64	28	44%
Compressed Air	22	12	55%
New Process Design	21	24	114%
Industrial Efficiencies	67	44	66%
	<b>174</b>	<b>108</b>	<b>62%</b>

year paybacks, rebates were not paid and we were under budget.

**Financial Results:**

**FINANCIAL RESULTS for the Year ended December 31, 2003**

Financial Results by Program (\$'000)

Program	Program Benefits	Program Costs	Planning & Evaluation Costs	Customer Costs	Total Costs	Benefit Cost Ratio
<b>Residential</b>						
H.I.P./Watersavers	54	24	2	41	67	0.8
New Home program	307	135	12	63	210	1.5
Heat Pumps	1,235	313	68	532	913	1.4
Residential Lighting	213	95	18	12	125	1.7
<b>Residential Total</b>	<b>1,809</b>	<b>567</b>	<b>101</b>	<b>648</b>	<b>1,316</b>	<b>1.4</b>
<b>General Service</b>						
Lighting	1,243	251	67	227	545	2.3
Building and Process Improvement	1,838	485	94	713	1,292	1.4
<b>General Service Total</b>	<b>3,081</b>	<b>736</b>	<b>161</b>	<b>940</b>	<b>1,837</b>	<b>1.7</b>
<b>Industrial</b>						
Pumps and Fans	174	28	11	48	87	2.0
Compressed Air	42	12	4	20	36	1.2
Industrial Efficiencies	316	68	18	54	140	2.3
<b>Industrial Total</b>	<b>532</b>	<b>108</b>	<b>32</b>	<b>122</b>	<b>262</b>	<b>2.0</b>
<b>Total</b>	<b>5,422</b>	<b>1,411</b>	<b>294</b>	<b>1,710</b>	<b>3,415</b>	<b>1.6</b>

An overall Benefit/Cost ratio of 1.6 has been achieved to December 31, 2003, identical to that of 2002.

Residential Results

In general, the residential sector had good results with an overall benefit/cost ratio of 1.4. To improve volumes and results in the Home Improvements program, arrangements have been made to integrate audit activities and incentives with the federal government's recently announced home retrofit program.

The New Home program was changed during the year to target developers and address first cost issues by providing full incremental cost support for window upgrades. Developers have been responsive to this change and results have exceeded plan.

Strong HVAC contractor support and increased customer awareness of the heat pump technology and its advantages have resulted in higher customer participation volumes.

The CFL component of the residential lighting program has performed well due to increased availability and lower retail prices \$7--\$15 range.

General Service and Industrial Results

The general and industrial financial results have benefit/cost ratios of 1.7 and 2.0 respectively. Savings potential are identified through key customer contacts, trade ally relationships with architectural and engineering firms.

The continued attention to the Energy Management Committee (EMC) process has resulted in a more structured and formal approach in identifying, implementing and monitoring energy efficiency measures. While EMC's have been established with a number of larger customers,

## Demand Side Management Appendix B

our goal is to set up this process for each of our top 70 customers. This process involves at least one annual meeting with the customer to review the capital plan and identify the projects with which we can improve energy efficiency.

### **Incentive Mechanism:**

The incentive mechanism provides for incentives based on Net Benefits being achieved beyond 100% of plan. The maximum benefit available is allowable on 150% of plan benefits. The Residential incentive ranges from 3% to 6%, starting at the achievement of 101% of plan Net benefits. The General Service range is from 2% to 4% and Industrial 1% to 3%, also both starting from achievement of 101% of plan Net benefits.

A penalty is possible if less than 90% of Net Benefits is achieved in each sector. There is a maximum penalty set at 50% of plan Net Benefits.

Net Benefits are defined as benefits assigned to energy and capacity savings based on avoided power purchase costs, less FortisBC program costs and customer-incurred costs pertinent to the energy savings system being installed.

<u>Sector</u>	<b>2003 Net Benefits (\$000)</b>		<b>Percent of Plan C</b>	<b>Eligible Amount D</b>	<b>Incentive Rate E</b>	<b>Incentive (D + E)</b>
	<b>Plan A</b>	<b>Actual B</b>				
Industrial	\$255	\$302	118%	\$302	2%	6
General Service	\$1,323	\$1,405	106%	\$1,405	2%	28
Residential	\$390	\$594	152%	\$585	6%	35
	\$1,968	\$2,301	117%			\$69

*Net benefits is the value of power saved less the utility and customer costs to save that power.*

Actual Net Benefits to December 31, 2003 amounted to \$2,301,000, a \$333,000 favourable variance over the adjusted plan Net Benefits of \$1,968,000. The incentive mechanism provided for a 3% productivity factor to be applied to Plan Gross Benefits and a current year Consumer Price Index escalator (2.12% actual for 2003) to be applied to the Total Resource Cost. These have been incorporated into the Plan Net Benefits above.

An incentive of \$69,000 has been earned during the year.

Demand Side Management Appendix B

Appendix A

**FortisBC**  
**Demand-Side Management Summary Report in BCUC Format**  
**for the Year Ending December 31, 2003**

Sector/Program	Utility Costs			Program Evaluation	Research Adm & OH	Total	Customer Incurred Cost	Total Resource Cost	Benefit/Cost Ratios			
	Direct Incentives	Direct Information	Program Labour						Societal Cost	Total Resource	Rate Impact	Levelised Cost
\$'000												
<b><u>RESIDENTIAL:</u></b>												
Heat Pumps	127.0	92.7	95.3	40.9	27.3	383.1	532.0	915.1	n/a	1.3	0.6	2.4
New Home Program	104.0	17.6	12.4	7.2	4.8	146.1	63.0	209.1	n/a	1.5	0.6	2.4
Residential Lighting	37.0	30.2	27.8	11.0	7.4	113.4	12.0	125.4	n/a	1.7	0.7	2.7
Home Improvements Program	5.0	6.4	12.6	1.4	0.9	26.3	41.0	67.3	n/a	0.8	0.6	4.6
	<u>273.0</u>	<u>146.9</u>	<u>148.1</u>	<u>60.5</u>	<u>40.4</u>	<u>668.9</u>	<u>648.0</u>	<u>1,316.9</u>		<u>1.4</u>	<u>0.6</u>	<u>2.5</u>
<b><u>GENERAL SERVICE</u></b>												
Lighting	154.0	15.2	81.8	39.9	26.6	317.5	227.0	544.6	n/a	2.3	0.6	1.7
Building and Process Improvements	<u>226.0</u>	<u>72.2</u>	<u>186.8</u>	<u>56.5</u>	<u>37.7</u>	<u>579.2</u>	<u>713.0</u>	<u>1,292.2</u>	<u>n/a</u>	<u>1.4</u>	<u>0.5</u>	<u>2.2</u>
	<u>380.0</u>	<u>87.4</u>	<u>268.6</u>	<u>96.5</u>	<u>64.3</u>	<u>896.8</u>	<u>940.0</u>	<u>1,836.8</u>		<u>1.7</u>	<u>0.5</u>	<u>2.0</u>
<b><u>INDUSTRIAL:</u></b>												
Industrial Efficiencies	30.0	9.8	27.2	10.8	7.2	85.0	54.0	139.0	n/a	2.3	0.7	1.2
Pumps & Fans	0.0	1.9	26.1	6.4	4.3	38.7	48.0	86.7	n/a	2.0	0.7	1.3
Compressors	0.0	0.8	11.2	2.2	1.5	15.6	20.0	35.6	n/a	1.2	0.7	3.0
	<u>30.0</u>	<u>12.5</u>	<u>64.5</u>	<u>19.4</u>	<u>12.9</u>	<u>139.3</u>	<u>122.0</u>	<u>261.3</u>		<u>2.0</u>	<u>0.7</u>	<u>1.4</u>
<b><u>TOTAL:</u></b>	<u>683.0</u>	<u>246.8</u>	<u>481.2</u>	<u>176.4</u>	<u>117.6</u>	<u>1,705.0</u>	<u>1,710.0</u>	<u>3,415.0</u>		<u>1.6</u>	<u>0.6</u>	<u>2.1</u>

Levelised Energy Unit Cost - Cents per kWh  
 Levelised Capacity Unit Cost - Dollars per kW

2.1  
 138.6

Energy Savings - kWh  
 Capacity Savings - kW

18,529,518  
 3,005