

GAZIFÈRE INC.

2008 Rate Case
R-3637-2007 Phase II

2008 Demand Side Management (DSM) Plan

Régie de l'énergie
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EXECUTIVE SUMMARY

This document represents the updated Demand-Side Management (DSM) Plan of Gazifère for the period January 1st 2008 to December 31st 2008.

Gazifère plans to achieve net total annual gas savings of 945,658 m³ over this period. Gazifère is asking the Régie de l'énergie to approve a budget of \$697,942 of which \$532,942 is allocated for financial assistance and \$165,000 for support costs.

The main changes compared to the previous plan are as follows:

- the elimination of the rental component of the residential *Energy Star*[™] Furnace program in the new construction sector due to a completed market transformation with a free-ridership rate of 100%;
- the elimination of the infrared thermal imaging programs in the residential and commercial sectors due to lack of participation, and in an effort to focus efforts on programs with a larger scope ;
- the addition of an *Energy Star*[™] Furnace program for low-income customers;
- the addition of a programmable thermostat component for Gazifère customers who already own an *Energy Star*[™] furnace, at the time of a furnace service call or cleaning by a technician;
- the addition of a Drain Water Heat Recovery (DWHR) program and a Tankless Water Heater program for new construction in the residential sector;
- the re-establishment of Gazifère's water heater rental programs due to the delay in the revision of the minimum standards by the Québec government,
- the elimination of the \$50 customer rebate for the initial home energy audit of the *Rénoclimat*[™] Home Energy Audit program (formerly called *Analyses énergétiques*);
- the addition of a \$150 contribution to the Agence de l'efficacité énergétique for the second home energy audit of the *Rénoclimat*[™] Financial Assistance – Renovations program;
- the establishment of a \$700 limit on the financial assistance for the *Rénoclimat* Financial Assistance – Renovations program;
- new parameters for the Programmable Thermostat program for existing rental furnace customers to achieve market transformation for this measure in this market segment; and,
- new parameters for the High Efficiency Boilers program in the commercial and institutional (C&I) sector resulting from the evaluation recently conducted by Gaz Métro.

Tankless Water Heaters

Program Description

The objective of this program is to generate gas savings with the installation of tankless water heaters. This program focuses on new construction.

Highlights

This is a new program. Although very common in Europe, tankless water heaters are relatively new in the North American market. Tankless water heaters do not have stand-by heat losses that conventional water heaters do. In addition, they take-up less space than conventional water heaters.

Base Case

The base case scenario is modeled on Gaz Métro's evaluation results in 2007. Space heating consumption is established at 2,000 m³ and domestic hot water consumption is established at 450 m³.

Energy Savings

Annual gas savings are established at 139 m³ per participant as per Gaz Métro's program evaluation. A free-ridership rate of 2% is applied to the savings.

Participants

Participation forecasting for this program has been established based on consultations with new home builders in the region. Gazifère is forecasting a total of 15 participants for that program in 2008.

Financial Assistance

Gazifère is proposing to offer the same financial assistance as the one offered by Gaz Métro at \$450 per participant.

2008 DSIM Plan Base Case

Programs	Total Consumption	Space Heating	Domestic Hot Water	Standard Performance	Higher Performance	Annual Energy Savings	Free Ridership Rate	Incremental Cost	Participant Contribution	Financial Assistance	Life-Cycle
Residential Sector											
Energy Star Furnace (Purchase)	3 886	3 086	800	78	92	679	30	1 000	900	100	20
Energy Star Furnace (Existing Rental)	3 886	3 086	800	78	92	679	0	500	500	0	20
Programmable Thermostat (Rental)	3 886	3 086	800	0	0	195	0	80	0	80	20
Programmable Thermostat (Purchase)	3 886	3 086	800	0	0	195	11	80	40	40	20
Programmable Thermostat (New Construction Rental)	3 050	2 250	800	0	0	195	0	80	40	40	20
Programmable Thermostat (Customer Own)	3 886	3 086	800	0	0	195	11	80	40	40	20
Water Heater (Rental)	3 886	3 086	800	62	65	44	0	93	93	0	8
Low-Flow Showerhead	3 886	3 086	800	0	0	93	10	5	0	5	8
Aerators	3 886	3 086	800	0	0	17	10	3	0	3	8
Pipe Wrap	3 886	3 086	800	0	0	15	0	1	0	1	20
Tank Turn Down	3 886	3 086	800	0	0	90	0	0	0	0	8
Novoclimat	3 050	2 250	800	0	0	675	0	6 235	2 300	3 935	30
Novitherm Heat Reflectors (Single Family)	3 886	3 086	800	0	0	309	0	285	25	260	20
Novitherm Heat Reflectors (Multi Residential)	2 980	2 180	800	0	0	218	0	175	25	150	20
Renoclimat - Home Energy Audit	5 497	4 697	800	0	0	392	2	300	150	150	25
Renoclimat - Financial Assistance - Renovations	5 388	4 588	800	0	0	700	0	2 650	1 800	850	25
Econologis - Visits	2 980	2 180	800	0	0	110	0	302	0	302	5
Econologis - Programmable Thermostats	2 980	2 180	800	0	0	195	0	80	0	80	20
Econologis - Novitherm Heat Reflectors	2 980	2 180	800	0	0	218	0	200	0	200	20
Econologis - Energy Star Furnace	3 886	3 086	800	78	92	679	0	1 000	0	1 000	20
Drain Water Heat Recovery	3 886	3 086	800	0	0	267	1	750	550	200	25
Tankless Water Heaters	2 450	2 000	450	68	78	139	2	974	524	450	15

C&I Sector

Building Optimization Financial Assistance	120 000	100 000	20 000	0	0	10 000	0	10 000	7 500	2 500	20
SME Water Heater (Rental)	6 000	5 000	1 000	62	65	49	0	93	93	0	8
Large Commercial Water Heater (Rental)	120 000	100 000	20 000	62	65	700	0	500	500	0	8
High Efficiency Boilers	96 376	72 574	23 802	80	85	5 174	14	23 222	19 981	3 241	30

Régie de l'énergie

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2008 DSM Plan Projections

Programs	Participants	Annual Savings (m³)	Budget (\$)	Life-Cycle Savings (m³)	Life-Cycle Avoided Costs (\$)
Residential Sector					
Energy Star Furnace (Purchase)	120	57 036	12 000 \$	1 140 720	759 373 \$
Energy Star Furnace (Existing Rental)	25	16 975	- \$	339 500	226 004 \$
Programmable Thermostat (Rental)	1 500	292 500	120 000 \$	5 850 000	3 894 321 \$
Programmable Thermostat (Purchase)	120	20 826	4 800 \$	416 520	277 276 \$
Programmable Thermostat (New Construction Rental)	600	117 000	24 000 \$	2 340 000	1 557 728 \$
Programmable Thermostat (Customer Own)	25	4 339	1 000 \$	86 775	57 766 \$
Water Heater (Rental)	1 900	83 600	- \$	668 800	445 217 \$
Kit - Low-Flow Showerhead	120	10 044	600 \$	80 352	53 490 \$
Kit - Faucet aerators	120	1 836	300 \$	14 688	9 778 \$
Kit - Pipe Wrap	120	1 800	120 \$	36 000	23 965 \$
Tank Turn Down	680	61 200	- \$	489 600	325 925 \$
Novoclimat	60	40 500	236 100 \$	1 215 000	808 821 \$
Novitherm Heat Reflectors (Single Family)	20	6 180	5 200 \$	123 600	82 280 \$
Novitherm Heat Reflectors (Multi Residential)	20	4 360	3 000 \$	87 200	58 049 \$
Renoclimat - Home Energy Audit	75	28 812	11 250 \$	720 300	479 501 \$
Renoclimat - Financial Assistance - Renovations	22	15 400	18 700 \$	385 000	256 293 \$
Econologis - Visits	45	4 950	13 590 \$	24 750	16 476 \$
Econologis - Programmable Thermostats	33	6 435	2 640 \$	128 700	85 675 \$
Econologis - Novitherm Heat Reflectors	0	0	- \$	0	- \$
Econologis - Energy Star Furnace	2	1 358	2 000 \$	27 160	18 080 \$
Drain Water Heat Recovery	10	2 643	2 000 \$	66 083	43 991 \$
Tankless Water Heaters	15	2 043	6 750 \$	30 650	20 403 \$
Sub-Total Residential	5 632	779 837	464 050 \$	14 271 397	9 500 410 \$
C&I Sector					
Building Optimization Financial Assistance	12	120 000	30 000 \$	2 400 000	1 400 218 \$
SME Water Heater (Rental)	10	490	- \$	3 920	2 287 \$
Large Commercial Water Heater (Rental)	30	21 000	- \$	168 000	98 015 \$
High Efficiency Boilers	12	53 396	38 892 \$	1 601 870	934 570 \$
Sub-Total C&I	64	194 886	68 892 \$	4 173 790	2 435 089 \$
Total Programs	5 696	974 723	532 942 \$	18 445 187	11 935 500 \$
Support Costs (Management, Communications and Evaluation)					
			165 000 \$		
Grand Total	5 696	974 723	697 942 \$	18 445 187	11 935 500 \$

2008 DSM Plan Water and CO² Savings

Programs	Annual Water Savings (litres)	Annual CO ² Savings (tons)	Life-Cycle Water Savings (litres)	Life-Cycle CO ² Savings (tons)
Residential Sector				
Energy Star Furnace (Purchase)	0	107	0	2 145
Energy Star Furnace (Existing Rental)	0	32	0	638
Programmable Thermostat (Rental)	0	550	0	10 998
Programmable Thermostat (Purchase)	0	39	0	783
Programmable Thermostat (New Construction Rental)	0	220	0	4 399
Programmable Thermostat (Customer Own)	0	8	0	163
Water Heater (Rental)	0	157	0	1 257
Kit - Low-Flow Showerhead	4 536 000	19	36 288 000	151
Kit - Faucet aerators	432 000	3	3 456 000	28
Kit - Pipe Wrap	0	3	0	68
Tank Turn Down	0	115	0	920
Novoclimat	0	76	0	2 284
Novitherm Heat Reflectors (Single Family)	0	12	0	232
Novitherm Heat Reflectors (Multi Residential)	0	8	0	164
Renoclimat - Home Energy Audit	0	54	0	1 354
Renoclimat - Financial Assistance - Renovations	0	29	0	724
Econologis - Visits	0	9	0	47
Econologis - Programmable Thermostats	0	12	0	242
Econologis - Novitherm Heat Reflectors	0	0	0	0
Econologis - Energy Star Furnace	0	3	0	51
Drain Water Heat Recovery	0	5	0	124
Tankless Water Heaters	0	4	0	58
Sub-Total Residential	4 968 000	1 466	39 744 000	26 830
C&I Sector				
Building Optimization Financial Assistance	0	226	0	4 512
SME Water Heater (Rental)	0	1	0	7
Large Commercial Water Heater (Rental)	0	39	0	316
High Efficiency Boilers	0	100	0	3 012
Sub-Total C&I	0	366	0	7 847
Total Programs	4 968 000	1 832	39 744 000	34 677

2008 DSM Plan Investments

Programs	Investments	
	Gazifère	Participants
Residential Sector		
Energy Star Furnace (Purchase)	12 000.00 \$	108 000.00 \$
Energy Star Furnace (Existing Rental)	- \$	12 500.00 \$
Programmable Thermostat (Rental)	120 000.00 \$	- \$
Programmable Thermostat (Purchase)	4 800.00 \$	4 800.00 \$
Programmable Thermostat (New Construction Rental)	24 000.00 \$	24 000.00 \$
Programmable Thermostat (Customer Own)	1 000.00 \$	1 000.00 \$
Water Heater (Rental)	- \$	176 700.00 \$
Low-Flow Showerhead	600.00 \$	- \$
Aerators	300.00 \$	- \$
Pipe Wrap	120.00 \$	- \$
Tank Turn Down	- \$	- \$
Novoclimat	236 100.00 \$	138 000.00 \$
Novitherm Heat Reflectors (Single Family)	5 200.00 \$	500.00 \$
Novitherm Heat Reflectors (Multi Residential)	3 000.00 \$	500.00 \$
Renoclimat - Home Energy Audit	11 250.00 \$	11 250.00 \$
Renoclimat - Financial Assistance - Renovations	18 700.00 \$	39 600.00 \$
Econologis - Visits	13 590.00 \$	- \$
Econologis - Programmable Thermostats	2 640.00 \$	- \$
Econologis - Novitherm Heat Reflectors	- \$	- \$
Econologis - Energy Star Furnace	2 000.00 \$	- \$
Drain Water Heat Recovery	2 000.00 \$	5 500.00 \$
Tankless Water Heaters	6 750.00 \$	7 860.00 \$
Sub-total Residential	464 050.00 \$	530 210.00 \$
C&I Sector		
Building Optimization Financial Assistance	30 000.00 \$	90 000.00 \$
SME Water Heater (Rental)	- \$	930.00 \$
Large Commercial Water Heater (Rental)	- \$	15 000.00 \$
Efficient Boilers	38 892.00 \$	239 772.00 \$
Sub-total C&I	68 892.00 \$	345 702.00 \$
TOTAL	532 942.00 \$	875 912.00 \$
	38%	62%
Support Costs	165 000.00 \$	
TOTAL	697 942.00 \$	

2008 Financial Plan Test Results

Programs

Programs	Participant Test	Total Resource Cost Test	Rate Impact Test
Residential Sector			
Energy Star Furnace (Purchase)	20	273,550 \$	418,503 \$-
Energy Star Furnace (Existing Rental)	20	102,223 \$	79,615 \$-
Programmable Thermostat (Rental)	20	1,830,452 \$	1,251,860 \$-
Programmable Thermostat (Purchase)	20	129,860 \$	110,040 \$-
Programmable Thermostat (New Construction Rental)	20	735,119 \$	524,744 \$-
Programmable Thermostat (Customer Own)	20	27,054 \$	22,925 \$-
Water Heater (Rental)	8	147,494 \$	212,808 \$-
Low-Flow Showerhead	8	35,751 \$	29,007 \$-
Aerators	8	6,345 \$	5,112 \$-
Pipe Wrap	20	11,883 \$	8,322 \$-
Tank Turn Down	8	221,493 \$	155,788 \$-
Novoclimat	30	33,609 \$-	8,496 \$
Novitherm Heat Reflectors (Single Family)	20	35,571 \$	23,785 \$-
Novitherm Heat Reflectors (Multi Residential)	20	25,635 \$	17,449 \$-
Renoclimat - Home Energy Audit	25	192,825 \$	143,598 \$-
Renoclimat - Financial Assistance - Renovations	25	60,903 \$	61,732 \$-
Econologis - Visits	5	1,429 \$-	5,036 \$
Econologis - Programmable Thermostats	20	40,270 \$	27,541 \$-
Econologis - Novitherm Heat Reflectors	20	- \$	- \$
Econologis - Energy Star Furnace	20	7,055 \$	4,369 \$-
Drain Water Heat Recovery	25	12,802 \$	12,004 \$-
Tankless Water Heaters	15	2,100 \$-	1,608 \$-
Sub-Total Residential	5,610,614 \$	3,859,146 \$	3,097,278 \$-
C&I Sector			
Building Optimization Financial Assistance	20	592,310 \$	527,746 \$-
SME Water Heater (Rental)	8	738 \$	1,236 \$-
Large Commercial Water Heater (Rental)	8	53,446 \$	52,975 \$-
High Efficiency Boilers	30	124,597 \$	319,350 \$-
Sub-Total C&I	1,095,412 \$	771,091 \$	901,308 \$-
Total	6,706,027 \$	4,630,237 \$	3,998,586 \$-
Support Costs			
		165,000 \$-	
		4,465,237 \$	

Note: avoided cost used is:

Residential : 0.5842\$ (before taxes)

Commercial : 0.5120\$ (before taxes)