

**PROPOSAL FOR ELECTRICITY RATES
AND THEIR APPLICATION**

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1. CONTEXT OF THE APPLICATION

Hydro-Quebec Distribution's (hereafter the Distributor) rates are described in the document *Distributor's Rates and Conditions of Application Effective April 1, 2006*, as approved by the Régie de l'énergie (hereafter, the Régie) in decision D-2006-46¹, hereafter "Rates and Conditions". That decision followed up on decision D-2006-34.²

The current application concerns rates for the year 2007-2008 as well as the resulting modifications to the Distribution Tariff.

1.1 Energy Strategy

In this application the Distributor integrates certain elements of the government's energy strategy, published in May 2006, which directly affect rates.³

1.1.1 *Dynamic Ratemaking*

The Government wants Hydro-Quebec to progressively implement rates according to the season and the hour of use in Quebec. The Government asked Hydro-Quebec to present an application to that effect to the Régie de l'énergie in 2007. The result of these proposals shall not be to raise customers' overall bills.

In response to this request, in 2007 the Distributor will present analyses that will allow the Régie to render a decision on rates that will vary according to the season and hour of use.

¹ Decision pertaining to the approval of the Distributor's rate grid applicable as of April 1, 2006.

² Application to set electricity rates for the year 2006-2007.

³ Government of Quebec, *Energy to Build the Quebec of Tomorrow-Quebec's Energy Strategy 2006-2015*, page 57 (French only) <http://www.mrmfp.gouv.qc.ca/publications/energie/strategie/strategie-energetique-2006-2015.pdf>

1.1.2 *Structure of Rate D*

The Government asked Hydro-Quebec to submit a new rate structure to the Régie de l'énergie, including a greater price variance than the present one between both blocs, possibly simultaneously increasing the current level of 30 kWh/day, or by eventually instating a third bloc; this is to be done without modifying the Crown corporation's overall revenue. Such a modification to the rate structure would then have the effect of reducing small consumers' electricity bills and of increasing the bills of large consumers who have not modified their consumption habits.

In response to this request, and in compliance with decision D-2006-34, the Distributor begins by explaining, in section 3.1.2, its preferences regarding the price variance between both blocs of energy for Rate D and the role of the demand charge as a third energy bloc. Finally, in section 3.1.3.1, a specific analysis in which blocs vary by season is presented.

1.1.3 *Impact of Rate Increases on Low-Income Customers*

The Government expects the Régie de l'énergie to order energy distributors to conduct studies on the impact of rate adjustments on low-income households.

In response to this request, in section 4.3.1.4 the Distributor presents a study on the impact of the rate increase on low-income customers.

1.2 Reform of Rate Structures

In decision D-2006-34, the Régie also ascribes to the Distributor's principle to the effect that the structure of electricity rates should reflect the cost of service. However, and in a context in which the marginal cost of supply is equivalent to three times the average cost, in its decision D-2006-34 the Régie reiterates the importance of setting rates that send a price signal to customers and reflect that

reality.⁴ It considers these modifications as an important issue from social, economic, and environmental perspectives. Ratemaking remains the most efficient vehicle to encourage optimal behaviour on the part of energy users.

The Régie considers it appropriate to revise rate structures so that they are more representative of the new long-term reality of marginal costs with which the Distributor is faced. The Régie ordered the Distributor to immediately begin reflecting on the process that will lead to the reform of rate structures. The Régie considers that this process will be spread out over several years. This document constitutes the first progress report for this process.

Moreover, in its last energy strategy, the Government expressed its concerns regarding the signal of marginal costs, particularly concerning the rates for the residential sector.

“The Government wants Hydro-Quebec to propose to the Régie de l’énergie ways to increase the progressiveness of electricity rates in the residential sector so that the last kilowatt-hours consumed are billed at a price which is closer to the real costs of the last supply, which is not currently the case.” (Translator’s version)

1.3 Cross-Subsidization

In June 2000, so as to preserve the advantage conferred to residential customers, the legislator modified the Act respecting the Régie de l’énergie⁵ (hereafter the Law) by adding Article 51.2, in which the 4th paragraph states the following:

“The Régie cannot modify the rates for one category of consumers so as to attenuate cross-subsidization between the rates applicable to different consumer classes”.

⁴ D-2006-34, page 70.

⁵ R.S.Q., c.R-6.01.

In decision D-2003-93, the Régie de l'énergie indicated that cross-subsidization is a concept for which the reality changes constantly, in accordance with the evolution of volumes consumed and the costs associated with each customer class. Consequently, it considered it important to create a benchmark to follow the evolution of the level of cross-subsidization over time and it set 2002 as the reference year.⁶

However, the Régie considers that it cannot incite a thorough reflection on the reform of rate structures that better reflect marginal costs without examining the relationship with the 4th paragraph of Article 52.1 of the Act. In this rate application, the Régie wishes to hear different intervenors' opinions on the alternative avenues that, namely, would permit the reflection of the costs of new supply in the rates of each customer category, and on the interpretations to be given to the provisions of the Act related to cross-subsidization in this new context.

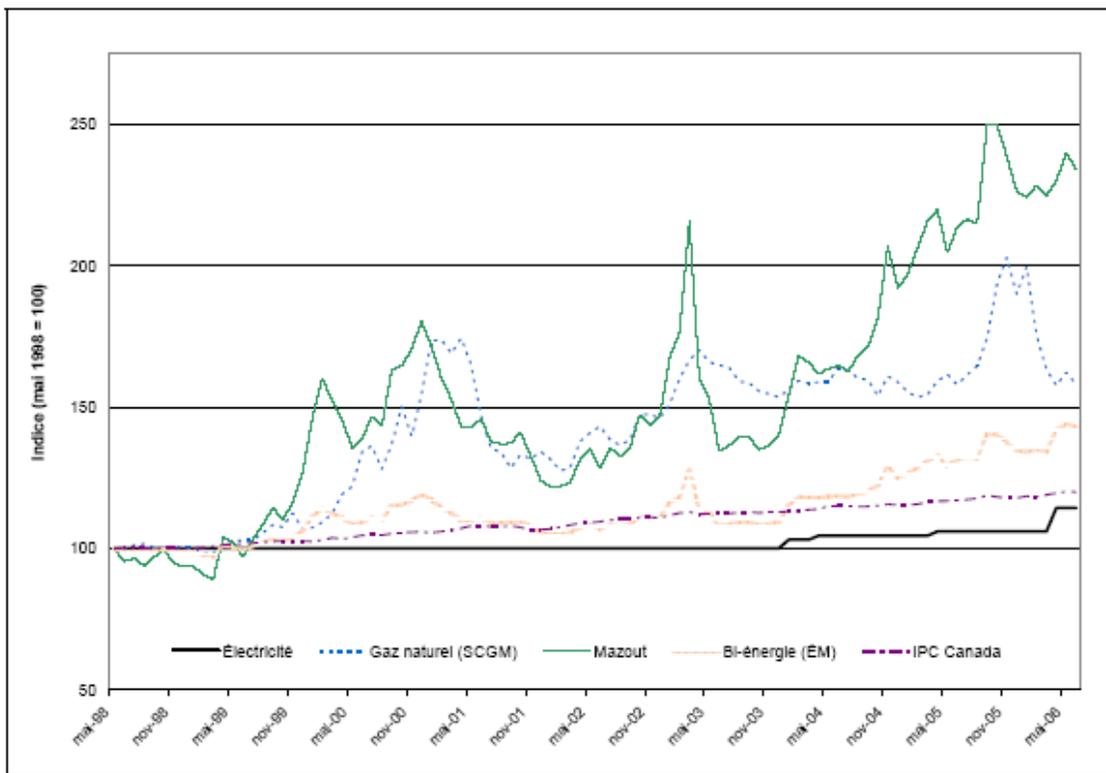
The Distributor submits its proposal in section 2.1 on reflecting new supply costs in rates as its reflections concerning cross-subsidization in this new context.

⁶ Decision D-2003-93, page 185.

1.4 Evolution of Electricity Rates, of Inflation and of Fuel Prices

Following a rate freeze that exceeded five years, the Régie authorized the Distributor to increase its rates in 2004. Since the consumption price index progressed 19.6% between 1998 and 2006, and the Distributor's rates increased by only 11.3% over the same period, Quebecers pay, in constant dollars, less for their electricity today than they did eight years ago.

Figure 1
GROWTH OF ENERGY COSTS FOR SPACE HEATING
AVERAGE SINGLE-FAMILY DWELLING LOCATED IN MONTREAL
MAY 1998 TO JUNE 2006



Moreover, as shown in Figure 1, the Distributor's customers have benefited from a stability of electricity prices over a period during which the prices of fuel oil and natural gas were subject to a significant increase and a great deal of volatility. For example, between May 1, 1998 and April 1, 2006 the energy bill for an average home heated with fuel oil increased by 130%, while the energy bill for a home heated with natural gas increased by 58%.

2. RATE STRATEGY

2.1 Rate Principles

The Distributor can recover the revenues authorized by the Régie via infinite rate structures going from a uniform rate for all customers (authorized revenues/sales in kWh) to a multitude of particular rates including each fixed and variable component. The choices for the number of rates, the type of structure and the level for each component should be made in accordance with the principles set forth hereafter.

2.1.1 *Leaving Cross-Subsidization Unchanged*

Since the adoption by the Régie of a method to calculate the cross-subsidization index, keeping the historic level of cross-subsidization that consumers in the domestic and farm category benefit from has not been problematic since, as the Régie mentions in its decision D-2006-34:

- The costs related to serving customer categories have progressed moderately and uniformly;
- The characteristics of customer classes did not change substantially;
- The rate increases that were requested and granted were applied uniformly to different customer categories.

Of course, the costs of serving different customer categories will not necessarily continue to evolve uniformly. In the current context of significant growth of marginal supply costs, differences in consumption characteristics between categories could accentuate the cost variances that are attributed to them.

The Régie notes that it may, in the medium term, be lead to pursue contradictory objectives: correct rate structures so as to set rates that give the right price signal; allocate costs in compliance with legal requirements (Article 52.2); set the level of rates by taking into account all costs (Articles 52.2, 49 (6) and 52.1);

and, finally, attempting to leave the historic level of cross-subsidization between consumer categories unchanged.

The Régie wishes, among other things, to hear intervenors, including the Distributor, on the interpretation to be given to provisions of the Act concerning cross-subsidization in this new context.

Since Phase 1 of R-3592-2002, the Distributor had presented its proposal regarding the evolution of the cross subsidization index in the following way⁷:

“The concept of cross-subsidization is called upon every time the Régie examines an application for the modification of rates. Cross-subsidization should not be evaluated and set definitively at a specific moment. This practice would in fact be inconsistent with the intrinsic variability of several factors that impact upon the evaluation of cross-subsidization, whether it be, for example, the evolution of sales, the cost allocation method, commercial programs or achieving a reasonable return. A definite freeze of cross-subsidization would not only result in constant volatility of rates and significant rate chocks, it would also render several powers of the Régie inoperable, namely those pertaining to the cost allocation method, to commercial programs to the authorized rate of return or to the setting of rates. The Distributor is of the opinion that the measure for cross-subsidization must remain adaptable and must therefore be evaluated in each rate application, as was the case before the powers of setting rates were transferred to the Régie. In each rate application, the Régie will therefore be able to verify the level of cross-subsidization and to evaluate the Distributor’s evidence whose application does not seek to attenuate this cross-subsidization.” (Translator’s version)

More succinctly, the Distributor’s proposal seeks first to maintain the position acquired by the domestic customers: as for additional costs incurred to serve customers, the Distributor considers that respecting Article 52.1 must not prevent the causality of costs. To do so, in a rate increase, one must recover from each customer class the increase in costs attributed to each. By doing so, cross-

⁷ See R-3492-2002 Phase 1, HQD-3, Document 4.

subsidization is maintained with respect to projected and required revenues of previous years while cost causality is respected for costs marginal to the same revenue requirements. This infers rate increases that are differentiated by customer category as well as a cross-subsidization index that varies from year to year. The cross-subsidization index of one year will be the result and not the aimed objective.

The Distributor's proposal is different in that sense from what is done in New Brunswick, where the Government established, in its 2001 energy policy, that the cross-subsidization index for each rate class should be between 95% and 105%. Therefore, last June, the New Brunswick Board of Commissioners of Public Utilities set adjustments differentiated by rate which allow for indexes that come within those limits. Table 1 presents the indexes before and after adjustment by rate class taken from that decision. For example, a residential increase of 13.05% sets the index between 0.844 and 0.953, whereas with a 15.36% increase the industrial cross-subsidization index increases between 0.826 and 0.953.⁸

⁸ New Brunswick Board of Commissioners of Public Utilities, *Decision in the matter of an Application by the New Brunswick Power Distribution & Customer Service Corporation (DISCO) for changes to its Charges, Rates and Tolls*, 19 June 2006. However, the Government subsequently limited the average rate increase to 6.9% rather than the 9.64% set by the New Brunswick Board of Commissioners of Public Utilities. See Table 45.

Table 1

**Extract of the Decision of June 2006 of the New Brunswick Board of
Commissioners of Public Utilities**

Class	Revenue at Existing Rates	Revenue Requirement at 1.1 x Interest Coverage & 1:1 Revenue/Cost Ratio	Revenue/Cost Ratio Existing	Revenue Approved by Board	Revenue/Cost Ratio at Approved Rates	Change Necessary
Residential	455.8	540.7	0.844	515.3	0.953	13.05
General Service I	103.9	88.4	1.176	102.0	1.154	(1.83)
General Service II	111.5	101.7	1.096	117.5	1.155	5.38
Small Industrial	42.3	43.9	0.967	43.8	0.998	3.55
Large Industrial	262.3	317.5	0.826	302.6	0.953	15.36
Water Heaters	15.0	10.4	1.437	12.5	1.202	(16.66)
Street Lights/Unmetered	19.9	11.9	1.674	17.9	1.504	(10.05)
Wholesale	87.8	89.7	0.978	92.8	1.035	5.69
TOTAL	1,098.5	1,204.4	0.912	1,204.4	1.0	9.64

The Distributor presents, in section 4.2, an evaluation of cross-subsidization for the year 2007 in light of its proposal.

2.1.2 Giving the Right Price Signal: Marginal Costs

To ensure an optimal use of resources, economic theory suggests that the price of a good be set according to the marginal cost; that is, the cost associated with the production of an additional unit of that good.⁹

Rates at the level of marginal costs cannot however be used in the Distributor's context where the latter are significantly higher than the average costs determined by the revenue requirement. In fact, rates at the marginal cost level would generate far more revenue than that which is recognized by the Régie. Several methods exist to rectify this situation.

" One adjustment method, widely supported, is the inverse elasticity rule; departure from marginal cost pricing should be inversely proportional to the elasticity of demand. Those customers with elastic demands, would be charged marginal cost-based rates; those customers with inelastic demands, would be charged rates below marginal costs. In this way, prices below marginal costs "would distort consumption decision as little as possible." Another method is to lower or eliminate the customer charge. A third method is to adopt and inverted (sic.)rate structure, in which the tailblock rate reflects marginal costs and "the initial block or blocks are set at a low enough level to meet the revenue requirement"¹⁰

In the absence of marginal cost rates it is therefore possible to induce the right economic and energy choices by reflecting, in the rate structure and on the more elastic components, the signal given by marginal costs. It is not a question of using marginal costs to set the level of rates but rather to use marginal costs and their intrinsic structure – that is, the cost of energy and power- as indicators for changes to be made over the long-term.

⁹ In general, in the electricity industry, long-term marginal costs are used for the conception of basic rates while short-term marginal costs are more widely used to design rate options related to short-term demand management.

¹⁰ Phillips, Charles F., *The regulation of public utilities – Theory and practice*, Public Utilities Reports, 1988.

Since the 2006-2007 rate application, the Distributor adopted a clearly marginalist approach with regard to rate structures for all rates; this approach translated mainly into an increase twice as large for the second bloc of energy for Rate D and by a more significant increase in the energy than in the power component of general rates. According to the Régie, these modifications gradually and prudently set in motion the reform of rate structures leading to a better price signal. It encouraged the Distributor to continue along the same path in subsequent rate applications.

Moreover, in its energy strategy the Government expressly asked the Distributor to improve the marginal cost signal for its residential rate structure. The Government wants the Distributor to propose to the Régie de l'énergie ways to increase the progressive path of electricity rates in the residential sector so that the last kilowatt-hours used are billed at a price which comes closer to the actual cost of the last supply than is currently the case.

The rate structures proposed in section 3, as well as their projection over a three-year period, gradually improve the marginal cost signal for all rates. To this end, the Distributor uses the marginal costs presented in HQD-15, Document 1.

2.1.3 Competitive Advantage and Substitution

The issue of electricity for space heating has frequently been raised, both within the procedure for the 2005-2006 rate application as well as in current media coverage. The main argument is that with a bad price signal, customers opt for electricity for space heating. In a context of high fuel prices, as is presently the case, customers could even be tempted to substitute their heating load from fuel towards electricity. Since, marginally, electricity is sold below the cost of marginal supply, a loss that is assumed by all customers ensues.

In its energy strategy the Government stated its concern for this situation. By asking the Distributor to revise its rate structures, it is indicating that a more progressive electricity rate structure will give Quebec consumers a better price signal when they chose the energy source that they will use for heating. This new

rate structure will be an incentive to “use the right energy in the right place”. One must in fact question if it is still relevant to systematically heat with electricity.

The framework for analysis of rates, particularly that of general rates, specifically raises the issue of shifting heating loads from fuel toward electricity.

2.1.4 Rate Simplicity, Equity, Continuity and Stability

The principle of simplicity must generally guide the rate design. Simplicity means, on the one hand, avoiding the proliferation of rate classes or customized rates for all customers and, on the other hand, the development of rates that are easy to understand and to apply. It is also for reasons of simplicity that the Distributor does not charge for the power component to domestic and rate G customers with a power demand of 50 kW or less.

Rate simplicity must be achieved by respecting the principle of rate equity; between rate classes as well as between customers within the same rate class. In fact, although customers within a rate class have similarities in their consumption profiles, in their position on the distribution system as well as in the type of services used, they nonetheless realize a great deal of diversity of costs. Since all customers within a rate class are billed according to the same rate, some of them will pay more than the costs they generate while others will pay less. Equity within a rate class is ensured when the variance between the costs and revenues that are generated is reasonable for the sub-group of customers that make up the rate class.

Taking into account this cross-subsidization, the modification of a structure, albeit achieved with constant revenue, will theoretically imply that some customers' bills will increase while for others they will decrease. In concrete terms, since adjustments to the structure are carried out within the framework of applications for rate increases, the “increase” associated with the modification to the rate structure would then be added to the regular rate increase and some customers could be subject to increases that are superior to the average increase.

For its part, continuity between rates makes it possible to ensure that equity between rate classes is achieved. By respecting this principle, rate structures encourage customers to naturally choose the rate that corresponds to their level of consumption and to the time of use of their maximum power demand.

Finally, the defined structures should ensure the stability of rates. Adjustments to rate structures should be carried out progressively and, in some cases such as managing peak energy demand, it is preferable to rely on rate options rather than modifying basic rates so as to respect consumers' right of choice and taking into account consumers' ability to modify their load profiles.

2.2 Variances Between Revenue Requirements and Projected

Revenues for 2007

Taking into account the current rates and the 2007 revenue requirement, the Distributor's projected shortfall would be \$256 million for 2007.

2.3 Proposed Rate Increase

The Distributor asks the Régie to approve an overall rate increase of 2.8% starting April 1, 2007, in accordance with the prices proposed in HQD-12, Document 4 of this application. This increase will allow for \$177 million in additional revenue between April 1, 2007 and December 31, 2007 as well as a regulatory provision of \$79 million (see HQD-1, Document 1).

Figure 2

Evolution of Electricity Rates and of the Consumer Price Index

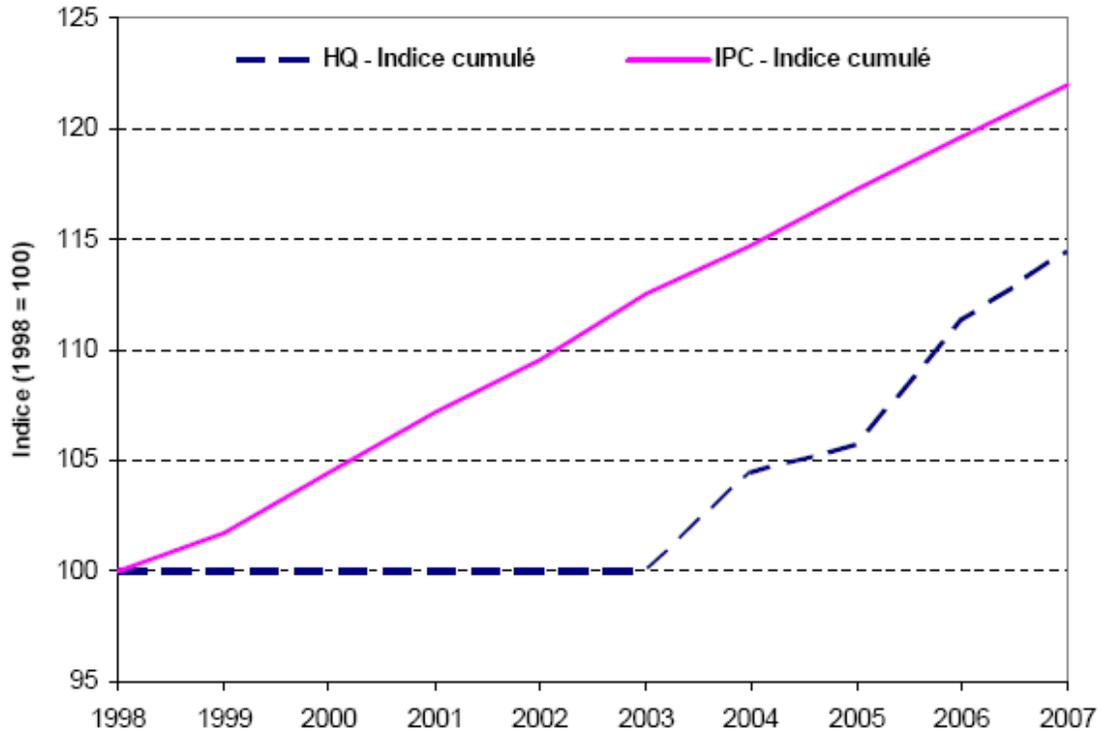


Figure 2 shows the evolution, between 1998-2007, of the Consumer Price Index and the Distributor's rates including the proposed increase. The projected inflation rate for 2007 is 2%.¹¹

3. PROPOSED RATE STRUCTURES

3.1 Domestic Rates

3.1.1 Rates and of Customer Description

3.1.1.1 Rates D and DM

Rates D and DM are rates that apply to contracts for which the use of electricity is domestic, that is, exclusively for living purposes, including the exceptions

¹¹ May 2006 forecasts. Reference : Hydro-Québec. Direction Marchés financiers - Trésorerie de la Société.

described in the Rates and Conditions. Electricity delivered to farms for the purposes of growing crop and animal farming is also subject to Rate D.

Rate D applies to dwellings for which electricity is metered separately. Therefore, for dwellings with multiple housing units, Rate D is only applied when the consumption for each housing unit is metered separately.

The structure of Rate D, described in Table 2, consists of a fixed charge (40.64¢/day) and two increasing prices for the energy used. A lower price for the first 30 kWh per day (5.22¢/kWh), and the consumption exceeding that amount is billed at a higher price (6.83¢/kWh). During the winter period, when the maximum power demand exceeds 50 kW, the excess is billed at the monthly price of 4.71\$/kW.

Table 2**Rate D on April 1, 2006**

Fixed charge	40.64¢/day
The first 30 kWh/day	5.22¢/kWh
Remaining consumption	6.83¢/kWh
Winter demand charge (exceeding 50 kW)	\$4.71/kW

Rate DM is a rate that is similar to Rate D but adapted to bulk metering (see Table 3). It applies to a contract covering electricity delivered to an apartment building or community residence with dwellings for which bulk metering was selected.

The singularity of Rate DM resides in the multiplier applied to the number of dwellings, in the calculation of the fixed charge, and in the level of the first bloc.

The multiplier corresponds to:

- For an apartment building and community residence with dwellings: to the number of dwellings;

- For a community residence with both dwellings and rooms: to the number of dwellings for the community residence plus;
 - 1 for the first 9 rooms, plus;
 - 1 for each additional room.

The prices for the 1st and 2nd blocs are 5.22¢/kWh and 6.83¢/kWh respectively. During the winter period, when the maximum power demand exceeds 50 kW, the excess is billed at the monthly price of 1.17\$/kW.

Table 3

Rate DM on April 1, 2006

Fixed charge	40.64¢/day X multiplier
The first 30 kWh/day X multiplier	5.22¢/kWh
Remaining consumption	6.83¢/kWh
Winter demand charge (exceeding 50 kW)	\$1.17/kW

As shown in Table 4, a total of 2 677 571 Rate D and Rate DM contracts were included in the analysis covering the period between May 1, 2005 and April 30, 2006. The consumption and revenues associated with these contracts amount to 47.5 TWh and \$3.3 billion based on the rates in effect April 1, 2006. Among all contracts, only 5 495 were billed for the winter demand charge.

Two thirds of residential customers had an all electric heating (AEH) system, the other third used a different heating system (non-AEH),¹² such as natural gas, fuel oil, wood or mixed. Over 43 400 contracts were attributed to farms whose activities of animal raising and growing crops made them admissible to Rate D.

¹² Residential customers at the dual-energy rate DT are discussed in the following section.

Table 4

Description of Domestic Customers for Rates D and DM

(2005-2006)

	Contracts	Annual Consumption (GWh)	Total Revenues M\$
Residential customers			
All electric heating (AEH)	1 810 915	35 666	2 433
Without billed power	1 807 225	34 074	2 322
With billed power	3 690	1 592	111
Other types of heating	823 241	10 183	721
Without billed power	822 495	9 808	695
With billed power	746	375	26
<i>Total residential customers</i>	2 634 156	45 849	3 154
Farms			
Without billed power	42 356	1 396	96
With billed power	1 059	262	18
Total for farms	43 415	1 658	114
All domestic customers			
Without billed power	2 672 076	45 278	3 112
With billed power	5 495	2 229	156
<i>Total domestic customers</i>	2 677 571	47 507	3 268

Table 5 shows the revenues generated by component, derived from the reference data of Rate D and DM.

Table 5

Rates D and DM: Revenues by Rate Component 2005-2006

Rate Components	Rates in effect April 1, 2006	
	Price	\$M
Fixed charge (¢/day)	40.64	421
Energy		
1 st bloc (¢/kWh)	5.22	1 300
2 nd bloc (¢/kWh)	6.83	1 543
Demand charge		
D (\$/kW)	4.71	2
DM (\$/kW)	1.17	1
Total		3 268

Table 6 shows the monthly bills of Rate D customers for the period between May 1, 2005 and April 30, 2006. Over that period, the average annual consumption for Rate D was 17 075 kWh and the average monthly bill was \$98. For a consumption of 26 500 kWh per year, the average single-family dwelling with an electric heating system had a monthly bill of \$148.

Table 6

Average Monthly Bills for Rate D Customers

	Average Annual Consumption ¹ (¢/kWh)	Average Annual Bill (\$)
All Rate D customers	17 075	98
All electric heating	19 050	108
Not heated with electricity	12 820	75
Average single-family dwelling Heated with electricity (158 m ²)	26 500	148

Note 1: Rounded consumption data

3.1.1.2 Rate DT

Rate DT is an optional domestic rate that applies to all customers whose contract is eligible for Rate D or Rate DM who uses, mainly for domestic purposes, a dual energy system.

In addition to the fixed charge of 40.64¢/day, Rate DT is made up of two prices for energy that vary according to exterior temperature: 3.96¢/kWh when the exterior temperature is below -12°C or -15°C (see Table 7 for the price structure and Table 8 for the areas where the transfer temperature is -15°C). During the winter period, when the maximum power demand exceeds 50 kW, the excess is billed at the monthly price of \$1.17/kW when there is bulk metering and \$4.71/kW in all other cases.

Table 7
Rate DT on April 1, 2006

Fixed charge	40.64¢/day
Price for off-peak energy	3.96¢/kWh
Price for peak energy	17.27¢/kWh
Winter demand charge (exceeding 50 kW)	
With bulk metering	\$1.17/kW
All other cases	\$4.71/kW

The off-peak price is adjusted to ensure HQD's competitive advantage compared to fuel oil. Currently, it may be in the customers' interest to use electricity during off-peak periods as long as the price of fuel oil is superior to 32¢/litre.¹³

¹³ The average price of fuel oil was 71¢/litre during the 2005-2006 heating season (Source : Régie de l'énergie).

Table 8

Areas where the DT Rate Transfer Temperature is -15°C

Noroît (Rouyn-Noranda, Val-d'Or, LG-2/Nemiscau) North of the de Lanaudière Region High-Laurentians Haute-Mauricie From St-Féréol-des-Neiges to the Saguenay River Saguenay Côte-Nord Îles-de-la-Madeleine Lower St-Laurent and Gaspésie ¹
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Note 1) Except municipalities bordering (direct access) the River or the Baie des Chaleurs, between St-Fabien and Cascapédia river.

The peak price also applies to all consumption. This price is set so as to achieve neutrality between Rate DT and Rate D based on the consumption of an average single-family dwelling during a year in which the exterior temperature is normal, when the customer uses only electricity to meet heating requirements. It is sufficiently dissuasive to encourage the customer to use an alternative energy source for heating and to shift certain basic loads. In order for the customer to consider it beneficial to use on-peak electricity, the price of fuel oil would have to exceed \$1.40/litre. For a year with normal exterior temperature, Rate DT can result in savings to the customer ranging between 5% and 15% compared to Rate D, depending on the level of their consumption management efforts.

Rate DT includes approximately 119 000 contracts of which 103 288 were selected for the period between May 1, 2005 and April 30, 2006. These contracts generated sales of 2.4 TWh and revenues of \$118 million all the while eliminating 780 MW on the system's peak.

3.1.2 Framework for Analysis and Proposed Structure for the Short and Medium Terms

In its decision D-2006-34, the Régie expressed its satisfaction regarding the Distributor's response to the requirements set out in decision D-2005-34. There,

it ordered the Distributor to present an update of the balance between the rate structures and costs all the while specifying which components of the rates should be affected in future rate increases.

For the year 2006-2007, the Régie therefore accepted to:

- Freeze the fixed charge;
- Keep the threshold of the 1st bloc at 30 kWh/day;
- Increase the price of the 2nd bloc two times more than the price of the 1st bloc;
- Continue with the adjustments to the demand charge that began in 2005-2006 and increasing it by 75¢/kW for individually metered rates and by 18 ¢/kW for bulk metered rates.

According to the Régie, these modifications allowed for a gradual and prudent reform of rate structures leading to a better price signal. It encouraged the Distributor to continue along that path in subsequent rate applications.

Moreover, in its energy strategy, the Government asked Hydro-Quebec to submit a new rate structure to the Régie de l'énergie, including a more significant price variance between both blocs of Rate D than is currently the case, possibly by increasing the current bloc or 30 kWh per day, or by instating a third bloc, and this, without modifying the Distributor's overall revenue.¹⁴

3.1.2.1 Fixed Charge

The fixed charge, expressed in ¢/day, is the fixed component of domestic rates (D, DM, DT and DH). The following Table presents the revenue requirement associated with customer service and metering for 2007. It amounts to 37.08¢/day. At its current level of 40.64¢/day, the fixed charge is slightly higher

¹⁴ Government of Quebec, *Energy to Build the Quebec of Tomorrow-Quebec's Energy Strategy 2006-2015*, page 57 (French only) <http://www.mrmfp.gouv.qc.ca/publications/energie/strategie/strategie-energetique-2006-2015.pdf>

than costs for 2007. However, if we add service loop charges to this, the total cost amounts to 41.42¢/contract/day.

Table 9
Revenue Requirement for Customer Service and Metering

Revenue Requirement	(\$M)	(¢/contract/day)
Customer Service	383.7	30.60
Metering	81.2	6.48
<i>Total</i>	465.0	37.08
Service loop	54.5	4.34
<i>Total including service loop</i>	519.4	41.42

In decision D-2006-34, the Régie opted to freeze the basic charge for domestic rates since this component is not an elastic part of the rate structure and customer service costs, which are its basis, are historically very stable and remain at a similar level for 2006. During the 3rd technical meeting for the 2005-2006 rate application, at the request of intervenors, the Distributor analyzed the possibility of reducing this fixed charge and of recovering the revenue requirement on the 2nd energy bloc. A priori, a decrease of the fixed charge goes against cost causality. In fact, this reduction would unduly favour some customers, for instance, owners of Chalets or customers who spend the winter abroad, whose contracts generate fixed customer service, metering and service loop costs and which would ultimately be assumed by the other customers. However, the Distributor's analysis revealed that a significant reduction of the fixed charge –such as a 25% decrease- was required to have a significant impact on the price of the 2nd bloc. On the other hand, a decrease in the price of the fixed charge, combined with an increase in the 2nd bloc of energy, led to a great dispersion of rate impacts among customers.

The Distributor proposes to the Régie renew this freeze for the 2007-2008 rate year. This proposal not only reflects the costs of service, in the context of price signals, it also reflects the fact that the fixed charge is not an elastic part of the rate structure.

3.1.2.2 Threshold of the 1st Bloc

Conceptually, the 1st bloc covers basic uses (lighting, appliances, water-heater), while the 2nd bloc covers other uses, including heating. The threshold of 30 kWh per day properly reflects this distinction. In fact, the consumption data from the sample of customers metered by the Distributor establishes basic uses at 28 kWh per day.¹⁵

3.1.2.3 Variance Between Energy Blocs

The variance between the two energy blocs has been a long-time objective to be based on the average-cost variance between basic uses and other uses.¹⁶ In the evidence for the 2005-2006 rate application,¹⁷ it was shown on this basis that the price variance between the first and the 2nd bloc for Rates D and DM could be between a minimum of 34% and a maximum of 50%. However, in a context in which the rate structure must be much more reflective of marginal costs, this variance is no longer an objective in itself but a consequence of the reflection of marginal costs.

Following an increase differentiated by component on April 1, 2006, the prices of both energy blocs are currently 5.22¢/kWh for the first 30 kWh per day and of 6.83¢/kWh for the other kWh, for a 31% variance; prior to the differentiated increase, this variance was 26%. In fact, in order to better reflect marginal costs, the Régie accepted the Distributor's proposal to increase the second bloc twice as much as the first. As mentioned in section 2.1.2, a price that is determined by the long-term marginal cost ensures an optimal use of resources. The customer can then act according to the price signal on the more elastic part of the consumption.

The price of the 2nd energy bloc of domestic rates is the most important lever the Distributor has to favour efficient behaviour from his domestic customers since it

¹⁵ See section 3.1.3.1 for more information on the subject.

¹⁶ Or revenue requirement.

¹⁷ R-3541-2004, HQD-1, Document 2 pages 14 to 17.

is more difficult to reduce the consumption for basic uses (consumption of the 1st bloc). Conversely, the 2nd energy bloc is a more elastic component of the structure of Rate D since there are more possibilities for the customer to reduce his consumption beyond basic uses. The more the price of the 2nd bloc increases, the more likely the customer will reduce his consumption. The Distributor does not assume that the customer explicitly knows the structure of Rate D. However, the amount of a customer's electricity bill is dependant upon this structure. When, as a result of a rate increase, the customer notices an increase in his electricity bill, he will generally seek to consider actions that will reduce his consumption.¹⁸ As mentioned earlier, when it is a question of price signals and of energy choices, the price of the 1st bloc has less of an impact on consumption than the price of the 2nd bloc. Since, with constant revenues, the price of the 1st bloc and the price of the 2nd are interdependent and determined simultaneously, the ratemaking exercise thereby consists of determining the right price for each bloc, a price which will favour good energy choices all the while taking into account other rate principles.

Table 10 shows the marginal costs associated with Rate D. To favour energy efficiency and align the structure of the domestic rate over the long-term, the price of the 2nd bloc could reflect the marginal cost of supply (supply and transmission) for heating. This cost is estimated at 9.57¢/kWh¹⁹ (constant annuity over 10 years). By 2016, the marginal cost for heating goes to 10.56 ¢/kWh. These costs are much higher than the current price of the 2nd bloc of energy.

¹⁸ For example, choosing more efficient equipment when an equipment is replaced, the replacement of windows,...

¹⁹ See HQD-15, Document 1

Table 10
Avoided Costs by Use for Rate D Customers

(In ¢ / kWh)											
	Constant Annuity ¹ (10 years) 10	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Domestic - Rate D											
Water heating	10,48	9,68	9,87	10,07	10,27	10,47	10,68	10,89	11,11	11,33	11,55
Supply and transmission	9,58	8,84	9,02	9,20	9,38	9,57	9,75	9,95	10,15	10,35	10,55
Transmission-Native Load	0,67	0,61	0,63	0,64	0,65	0,66	0,68	0,69	0,71	0,72	0,73
Distribution	0,24	0,22	0,23	0,23	0,24	0,24	0,24	0,25	0,25	0,26	0,26
Space heating	11,45	10,56	10,77	10,99	11,21	11,44	11,67	11,90	12,14	12,38	12,63
Supply and transmission	9,57	8,83	9,01	9,19	9,37	9,56	9,75	9,95	10,15	10,35	10,56
Transmission – Native Load	1,38	1,27	1,30	1,33	1,35	1,38	1,41	1,43	1,46	1,49	1,52
Distribution	0,50	0,46	0,47	0,48	0,49	0,50	0,51	0,52	0,53	0,54	0,55
All uses	10,86	10,02	10,22	10,42	10,63	10,85	11,06	11,28	11,51	11,74	11,97
Supply and Transmission	9,55	8,81	8,99	9,16	9,35	9,53	9,72	9,92	10,12	10,32	10,53
Transmission- Native Load	0,96	0,89	0,91	0,93	0,94	0,96	0,98	1,00	1,02	1,04	1,06
Distribution	0,35	0,32	0,33	0,33	0,34	0,35	0,35	0,36	0,37	0,38	0,38

¹ The nominal discount rate used is 6,41%

Moreover, so as to favour the optimal use of resources, the price can be evaluated as a function of the price of an alternative product. For example, the cost in kWh-equivalent for natural gas heating, for the energy bill alone, has been 8.90 ¢/kWh during the winter 2005-2006.²⁰ By adding the additional acquisition and maintenance costs of natural gas systems compared with electric baseboards, the price per kWh-equivalent is of 12.64¢/kWh. This price is therefore a part of the upper benchmarks to set the price for the 2nd bloc of energy. In fact, by coming closer to this value, the Distributor limits the substitution of fuels toward electricity, a substitution that could not take place without having an impact on supply costs for all customers.

Finally, in its energy strategy, the Government explicitly asked the Distributor to submit a rate proposal which included a more significant price variance between the two blocs than the current one.

²⁰ If we consider a 70% efficiency factor for natural gas heating systems. See 5.1.1.

Taking into account the Government's request, the cost variance that exists between basic uses and other uses, the prices of fuels, but especially the signal stemming from marginal costs, for 2007 the Distributor proposes to increase the price of the 2nd bloc twice as much as the price of the first in order to improve the price signal all the while limiting the rate impact on customers. If the increase had been lesser, it could have been completely absorbed by the 2nd bloc. The Distributor's proposal has the advantage of improving the price signal given by the 1st bloc in light of the increase in supply costs that affect all customers.

Theoretically and as an example, if the price of the 2nd bloc of energy was set at the marginal cost of heating for 2007, it would be 8.83¢/kWh. In keeping with the assumption that the increase for the 2nd bloc, to reach 8.83¢/kWh, is twice that of the increase for the 1st bloc, the price of the 1st bloc would then be 5.98¢/kWh, and the variance between both blocs would then be 48%.

3.1.2.4 Demand Charge

The demand charge for Rate D only applies to customers whose power demand is superior to 50 kW during winter, i.e. between December 1 and March 31. It is associated with an electrical entrance that is superior to 200 amps and an annual consumption of 130 000 kWh.²¹ Billing for power during winter reflects the fact that the Distributor's system is conceived to respond to the winter peak. This encourages customers to manage their power demand during peak periods.

For domestic customers whose power demand does not exceed 50 kW in winter, billing for power is a complex concept that is difficult to manage; nonetheless, the signal of the 2nd bloc of energy will lead them to make the right energy choices in regards to uses beyond basic uses.

For large domestic customers whose power demand does exceed 50 kW in winter, the demand charge plays a role that is similar to a 3rd bloc of energy consumption. In other words, it allows for the application of a higher price for

²¹ Taking into account a 30% use factor.

consumption that is marginal to the 2nd bloc. In doing so, for these customers, there is a clear link between their energy choices –between the management of their power demand in winter- and their bills, while a 3rd bloc of energy could not be associated to any consumption in particular.

During the 3rd technical meeting for the 2005-2006 rate application, at the request of intervenors the Distributor analysed the possibility of adding a 3rd bloc of energy to the structure of Rate D. The analysis revealed that adding a 3rd bloc would only dilute the price signal; for several years it had implied a small increase of the price for the 1st bloc and a freeze of the price for the 2nd bloc.

For domestic rates, the Distributor proposes to pursue the adjustments that began in 2005-2006 by increasing the demand charge by 0.75\$/kW for individually metered contracts and by 0.18\$/kW for bulk metered contracts.

3.1.2.5 Evolution of the Structure to 2010

The structure proposed for Rate D, applicable April 1, 2007 and including an overall increase of 2.8%, is shown in the following Table. Assuming a freeze of the fixed charge and respecting the orientations described in section 3.1.2.3, the price of the 2nd bloc increases by 4.2%, which is twice as much as the 1st bloc.

Table 11
Rate Increase and Selected Scenario – Rate D

Fixed charge	40.64¢/day
The first 30 kWh/day	5.32¢/kWh
Remaining consumption	7.12¢/kWh
Winter demand charge (exceeding 50 kW)	\$5.46/kW

Over 3 years, the Distributor expects to pursue the same orientations as those evoked in the current application: freeze of the fixed charge; increase of the 2nd bloc that is double that of the price for the 1st; adjustment of the winter demand charge.

In light of this, Table 12 shows the medium term evolution of the structure for Rate D which assumes an increase of 2.8% in 2007, followed by annual increases of 2.0% for 2008, 2009 and 2010.

Table 12
Evolution of the Rate Structure for Rate D to 2010

Rates D and DM	Rate Structure					
	Fixed charge (¢/day)	1 st bloc ¢/kWh	2 nd bloc ¢/kWh	Ratio 2 nd /1 st	D Demand Charge \$/kW	DM Demand Charge \$/kW
Current- April 1 2006	40.64	5.22	6.83	1.31	4.71	1.17
Proposed Rates- April 1 2007	40.64 0.0%	5.32 1.9%	7.12 4.2%	1.34	5.46 15.9%	1.35 15.4%
April 1 2008	40.64 0.0%	5.40 1.5%	7.33 2.9%	1.36	6.21 13.7%	1.53 13.3%
April 1 2009	40.64 0.0%	5.48 1.5%	7.54 2.9%	1.38	6.96 12.1%	1.71 11.8%
April 1 2010	40.64 0.0%	5.55 1.3%	7.76 2.9%	1.40	7.71 10.8%	1.89 10.5%

In the above example, the price of the 2nd bloc of energy reaches 7.76¢/kWh in 2010 compared with 7.12¢/kWh in 2007, which follows the progression of marginal heating costs which go from 8.83¢/kWh to 9.37¢/kWh over the same period (see Table 10).

As for the power charge for the winter kW which exceed 50 kW and in accordance with the adjustments made in 2005, annual increases gradually seek to bring the demand charge to a level that reflects the variance between the price of the 2nd bloc and the price signal for the heating load. As shown in Table 12, the power charge is set to 7.71\$/kW in 2010, which is equivalent to an increase of 0.76¢/kWh for a customer whose demand exceeds 50 kW in winter.²² For that same year, the price of the 2nd bloc will be 7.76¢/kWh. For customers who pay for power, the price of the kWh marginal to the 2nd bloc is therefore 8.52¢/kWh²³ while the avoided cost for space heating is estimated to be 11.21¢/kWh in 2010 (see Table 10). Although there is still a variance of 2.69¢/kWh for 2010, the proposed adjustments go in the direction of the right price signal.

²² Based on a 47% use factor applicable to consumption beyond 50 kW.

²³ That is, 7.76¢/kWh + 0.76¢/kWh

In order to have a clearer idea of the impacts of the evolution of domestic rates, a simulation of some typical cases was carried out. As shown in the following Table, despite the heterogeneity among cases, the impacts remain acceptable considering the average increase.

Table 13
Impact of the Evolution of the Rate Structure for Rate D to 2010

	Average D Customer 17 075kWh	Apartment 11 590kWh	Small Home -Heated with Electricity- 20 494 kWh	Average Home 26 484 kWh	Large Home 32 054 kWh	Customer 1 st Bloc 10 950 kWh	Apartment Building 124 160 kWh	Large Customer 100 kW 411 700 kWh
Current- April 1 2006	\$1164	\$789	\$1379	\$1 782	\$ 2 161	\$720	\$8 342	\$29 041
Proposed Rates- April 1 2007	\$33 2.8%	\$16 2.0%	\$39 2.9%	\$56 3.1%	\$72 3.3%	\$11 1.5%	\$239 2.9%	\$1 324 4.6%
April 1 2008	\$25 2.0%	\$12 1.5%	\$29 2.1%	\$41 2.3%	\$53 2.4%	\$9 1.2%	\$178 2.1%	\$1 002 3.3%
April 1 2009	\$25 2.0%	\$12 1.5%	\$29 2.0%	\$41 2.2%	\$53 2.3%	\$9 1.2%	\$178 2.0%	\$1 002 3.2%
April 1 2010	24\$ 2.0%	\$11 1.4%	\$29 2.0%	\$42 2.2%	\$54 2.3%	\$8 1.0%	\$177 2.0%	\$1 041 3.2%

3.1.3 Additional Analyses

3.1.3.1 Blocs of Consumption that Vary by Season

In application R-3579-2005, Option Consommateurs (OC) suggested the analysis of seasonal billing, where the number of kWh associated with the 1st energy bloc would be set at 35 kWh/day during the winter period and 25 kWh/day in summer. In decision D-2006-34, the Régie ordered the Distributor to examine the feasibility and impacts of this proposal and to provide its results in future analyses of rate structures. This section responds to this request.

- Analysis of Consumption Data

OC's proposal relies on a certain set of consumption data.²⁴ According to this analysis the basic requirements for non-AEH customers would be much higher in winter (beyond 40 kWh/day) than in summer (between 22 and 25 kWh/day).

²⁴ R-3579-2005, HQD-14, Document 11, pages 104-105.

However, the average daily consumption of non-AEH customers covers more than basic uses. The AEH/non-AEH classification relies on the dominant heating system²⁵ and does account for the use of an auxiliary source. In fact, if a non-AEH customer indeed owns a primary heating system for which the main source of energy is not electricity, that will not prevent the possibility of also using an auxiliary system.

Data from a survey conducted by the Distributor, presented in the Table below, clearly shows that a large proportion of non-AEH customers use an auxiliary heating system.²⁶ Therefore, among 31% of households that use a main heating system that is other than electric, 44% use an auxiliary electric system. Consequently, it is difficult to come to the conclusion of an important seasonal variation of basic uses considering the average daily consumption of non-AEH customers.

Table 14
Energy Systems of Households

Type of heating system	% of customers	% of customers with auxiliary electric system
AEH	67%	16%
Non-AEH	31%	44%

The Distributor considers that the consumption data for the customer sample measured by the Distributor allows for the annual profile for basic uses to be more clearly defined.

According to this data, the annual basic uses are set at 28 kWh per day, which confirms that the current threshold of 28 kWh/day remains adequate. However, the monthly allocation of basic requirements shows a slight seasonal variation (see Table 15). The average basic requirements are 30 kWh/day between November and April and are 25 kWh/day between May and October.

²⁵ R-3529-2005. Transcriptions December 8, 2005, page 73.

²⁶ Hydro-Quebec Distribution, *Use of Electricity in the Residential Market, 2002*.

Table 15

Monthly Allocation of Basic Requirements

Month	Average kWh per day
January	31
February	30
March	30
April	28
May	27
June	25
July	25
August	25
September	24
October	24
November	27
December	33
Year	28
Summer (May to October)	25
Winter (November to April)	30

In light of this, it would therefore not be justified to increase the threshold of the 1st energy bloc in winter for Rate D, while it may be justified to reduce it in summer.

- Analysis of the Proposal

OC's Evidence refers to the case in Ontario in which the Regulated Price Plan (RPP) includes a seasonal variation of the 1st energy bloc. The Distributor believes it is necessary to properly understand the Ontario case prior to pursuing the analysis of the proposal and the rate strategy adopted by the Distributor.

- Context in Ontario

On November 1, 2005, the Ontario Energy Board (OEB) introduced a structure of supply prices for residential customers for which the threshold of the 1st bloc is higher in winter than in summer, that is, 1 000 kWh per month between November 1 and April 30 and 600 kWh per month between May 1 and October 30 (see Table 16). It is relevant to note that this structure will eventually be eliminated once advanced metering is implemented, and it will be replaced by time-of-use (TOU) pricing.²⁷

Table 16

“Regulated Price Plan” – Residential Customers

Prices April 1, 2006

1 st bloc	Summer- 600 th kWh	5.8¢/kWh
	Winter- 1 000 th kWh	
2 nd bloc	Above that	6.7¢/kWh

The fact that a larger proportion of low-income customers use electricity for heating was considered a factor in setting the threshold for the higher 1st energy bloc during winter.²⁸ Therefore, increasing the threshold of the 1st bloc in Ontario during the winter period mitigates rate impacts on the small proportion of customers that heat with electricity, by allowing for more consumption at a lower energy price.

The introduction of seasonal billing in Ontario is, nonetheless, coherent with efforts to reflect price signals. Since climate variations in Ontario primarily take place in summer, reducing the summer threshold sends a better price signal for uses that exacerbate the system’s peak.

- Two-Tiered Billing in Quebec

²⁷.For additional details refer to the follow-up on advanced metering presented in Exhibit HQD-12, Document 3.

²⁸ OEB, 2006 Regulated Price Plan Electricity Rates FAQ #32

The use of seasonal thresholds that are identical to those applied in Ontario is not adapted to the Quebec context.

What is problematic in that proposal is the increase of the threshold of the 1st energy bloc in winter. In the Quebec context, a higher threshold in winter would dilute the price signal, which would be counter to one of the objectives set by the Régie in decision D-2006-34 and by the Government in its energy strategy. In fact, increasing the 1st bloc in winter to 35 kWh/day (equivalent to about 1000 kWh/month) would lead to billing an additional 5 kWh/day at the price of the 1st bloc (5.22¢/kWh). Yet, this consumption should be billed at the price of the 2nd bloc since it is generally related to heating which contributes to the system's peak and creates an upward pressure on the Distributor's costs of supply.

If we wanted to adapt the Ontarian logic to the Quebec context it would be more justified to reduce the threshold of the 1st bloc in winter so as to accentuate the price signal. Because this measure would have an impact on basic requirements it could also have significant impacts on all customers, especially since 70% of the population heats with electricity.

Based on the monthly allocation of basic requirements, it would also be logical to decrease the threshold of the 1st energy bloc in summer. However, the monthly allocation does not permit a clear delineation of the months during which the threshold should be reduced. In light of the risk of billing basic consumption at the 2nd bloc, the Distributor prefers to maintain the threshold of the 1st bloc at its current level of 30 kWh per day, including in summer.

Consequently, the Distributor believes that pursuing the rate strategy approved by the Régie in its decision D-2006-34 is more effective in responding to the need to improve the price signal received by customers with the aim of encouraging them to adopt energy efficiency measures while protecting their basic uses. The introduction of a seasonal threshold would not have a significant impact and it would delay achieving the objective sought by the Régie.

3.1.3.2 Time-of-Use Pricing

The Distributor currently offers two dynamic rates to its domestic customers: Rate DT, which is described in detail in section 3.1.1.2, and Rate DH.

- Description of Rate DH

Rate DH is an experimental rate. It is an hourly, weekly, seasonal time-of-use-type rate; the price varies according to the time, day, and the season (summer or winter). It applies to all consumption uses.

The Distributor's customers who agreed to participate in this pilot project in the St-Jérôme region had to have contracts subject to Rate D for at least 365 days and the capacity of their electrical entrance had to be equal to or less than 200 amps. In addition, the customer's consumption during the winter period(s) included in the 365-day period preceding the subscription to Rate D had to equal at least 50% of the yearly consumption and be at least 80 kWh per day.

- History of Rate DH

In the early 90s, certain intervenors had expressed the desire for Hydro-Quebec to offer a time-of-use rate to allow customers to reduce their electricity bills when consumption habits were modified at the right time. All the while, this would allow Hydro-Quebec to avoid costs in peak periods.

In response to these demands, in 1993, Hydro-Quebec led a time-of-use pilot project in the St-Jérôme region. On an initial sample of 20 000 customers, 750, or 3.5%, were willing to adhere for one year, which is in the upper limit of results obtained by other companies in North America for similar rates. Among these, 450 were approved.

Rate DH was never open to all customers. There are only 159 subscribers to this day.

- Structure of Rate DH

Rate DH includes a fixed charge of 40.64¢ per day and two prices for energy according to the consumption period : 4.01¢/kWh for energy consumed during off-peak periods and 14.41¢/kWh for energy consumed during peak periods.

Table 17

Rate DH on April 1, 2006

Fixed charge	40.64¢/kWh/day
Price of energy	
Off-peak ²⁹	4.01¢/kWh
Peak ³⁰	14.41¢/kWh

The prices and hour periods covered were designed to be practical for the customer all the while covering most of the network's peak hours. The rate was also calibrated to generate revenues equivalent to rate D, that is to say that an average customer who makes no effort to manage his consumption will have the same bill as with rate D.

- Reduction during Peak Periods

During the first year of application of the pilot project (1993-94), actions taken by the participants represented an average reduction of 0.83kW per customer during peak periods, which translated into an impact on the system of 0.66 kW per customer. Real annual savings on the bill amounted to \$86 per customer over the same period. In 1994-1995, the installation of local electric thermal storage equipment for 38 customers allowed for an additional reduction of 0.73 kW per customer but the effect of taking back the stored energy limited the advantage of the reduction on the network.

²⁹ At all times during the summer period. In the winter period, the off-peak period is the following: Saturday and Sunday; Monday to Friday, between 10:00 p.m. and 6:00 a.m. and between 11:00 a.m. and 3:00 p.m. inclusive; on December 25 and January 1.

³⁰ In the winter period, Monday to Friday between 6:00 a.m. and 11:00 a.m. and between 3:00 p.m. and 10:00 p.m. inclusive.

The structure of Rate DH does not automatically guarantee savings to the participant on his bill and only customers that can modify their consumption habits according to the hourly limits can benefit from such a rate.

- Impacts on the Cost of Supply

The Distributor notes that an hourly-weekly-seasonal-type rate does not allow for a sufficient load reduction during the critical hours on the network. The Distributor's costs are not only determined by the hours of use, but are especially affected by exterior temperature. The system was designed to meet electricity requirements at all times, which reach their peak during cold periods in winter. These periods do not necessarily coincide with the hours defined in the rate.

Rate DH varies according to fixed hours while the Distributor's supply needs can now occur at any time. In the current supply context in which the variance between peak/off-peak costs is minimal, the Distributor cannot offer a significant financial advantage to customers who displace a part of their load from peak periods to off-peak periods.

- Perspective

Rate DH will be included in the analyses that will be carried out by the Distributor in 2007 and which will be presented to the Régie to render a decision on rates that vary according to the hour and season.

4. Impacts of the Rate Increase

4.1 Projected Revenues by Rate class and Component

This rate proposal allows for an overall increase of the Distributor's revenue of \$256 million in 2007 of which \$177 million are from April 1 to December 31, 2007. Table 28 shows the details of the \$177 million by rate class.

Table 28

Revenues Generated By Rate Class in 2007 (\$M)

	Without the increase on April 1, 2007	Including the increase on April 1, 2007	Difference
Domestic	4 050	4 124	74
Small Power	1 275	1 300	25
Medium Power	1 830	1 867	37
Large Power	1 971	2 012	41
<i>Total – Regular Rates</i>	9 126	9 303	177
Special Contracts	820	820	N/A
Consumption management and Back-Up energy Source Rates	2	2	0
<i>Total</i>	9 947	10 124²	177

Notes:

- 1) Results may not correspond due to rounded data
- 2) Excluding the \$79 million regulatory provision coming from the months of January to March 2007.

4.2 Impact on Cross-Subsidization**4.2.1 Calculation of the 2007 Index**

In its decision D-2006-34, the Régie found that the calculation for cross-subsidization must rely on the same data used to set rates. Therefore, it ordered the Distributor to calculate the cross-subsidization indexes based on the revenues generated by the application of rates during the 12-month test-year period, rather than using the revenues generated during the financial year.

In that decision the Régie also confirmed that the cross-subsidization index for the year 2002, adjusted to take into account the methodological changes and price/cost/volume effects, should serve as a benchmark to evaluate the evolution of this index over the years.

Table 28

Revenues Generated By Rate Class in 2007 (\$M)

	Adjusted Cross-subsidization Index 2002 (%)	Revenue Requirement 2007 (\$M)	2007 Projected Revenues Before Increase (\$M)	Cross-Subsidization Index Before Increase (%)	Projected Revenues After Increase Jan. 1, 2007 (\$M)	Cross-Subsidization Index Following Increase (%)
Domestic	80.8	5 026	4 050	81.1	4 164	81.1
Small Power	122.5	1 042	1 275	123.1	1 310	123.1
Medium Power	130.3	1 401	1 830	131.4	1 881	131.4
Large Power	117.9	1 715	1 971	115.6	2 026	115.6
<i>Total – Regular Rates</i>	100.0	9 184	9 126	100.0	9 381	100.0
Special Contracts	100.0	820	820	100.0	820	100.0
Consumption management and Back-Up energy Source Rates	100.0	2	2	100.0	2	100.0
BT Rate	100.0	55	N.A.	N.A.	N.A.	N.A.
<i>Total</i>	100.0	10 062	9 947	100.0	10 203	100.0

Notes:

- 1) Results may not correspond due to rounded data

As shown in Table 29, the 2002 reference benchmark adjusted for domestic customers is now 81.0%. For 2007, prior to the uniform increase proposed by the Distributor, this index is 81.1%. As can be expected, following a uniform 2.8% increase applied on January 1, 2007, the index remains stable at 81.1%. This index comes within the margins recognized by the Régie as being acceptable.³¹

³¹ See D-2003-93.

4.2.2 Cost causality: Impact on Cross-Subsidization

As indicated in section 2.1.1, the Distributor shows the impact of its proposal for cross-subsidization from 2006 and 2007 data. The Distributor believes that this proposal allows to maintain the position acquired by domestic customers in terms of cross-subsidization all the while favouring cost causality. Through rate adjustments, the proposal seeks to recover the increase in costs that can be attributed to each of the customer classes. That then translates into rate increases that are differentiated by customer class as well as a cross-subsidization index that varies from year to year.

The following Table shows this exercise for 2007 by assuming the same cost allocation method than that used in Table 29. If the cost causality is respected for the increase in revenue requirement, rate adjustments differentiated by rate should be applied in 2007. This would have an influence on the cross-subsidization indexes following the rate adjustment. Therefore, although the average increase would still be 2.8%, the domestic customer class would be subject to a 4.1% increase and the cross-subsidization index associated with it would increase to 82.1%. For their part, general rates would be subject to lower increases, which would have the effect of reducing their respective cross-subsidization indexes.

The Distributor notes that this exercise is carried out only as an example and its current proposal is to apply a uniform rate adjustment of 2.8%.

Table 30
Cross-Subsidization and Cost Causality:
Example of the Impact of the Distributor's proposal

	Cross-Subsidization		
	Required rate increase for 2007	Prior to increase	After increase
	(%)	(%)	(%)
Domestic	4.1	81.1	82.1
Small Power	2.8	123.1	123.1
Medium Power	1.6	131.4	129.9
Large Power	1.3	115.6	113.9
<i>Total</i>	2.8	100.00	100.0

4.3 Customer Bills

4.3.1 Domestic Rates

4.3.1.1 Distribution of Impacts

Table 31 shows a distribution of the impacts on domestic customers. The impact on almost 68% of customers ranges between 1% and 3%. Moreover, the bill for 36% of customers, represented by small customers, will increase by less than 2%. Annex A shows a more complete distribution of the impacts on domestic customers.

Table 31
Annual Impact of a 2.8 % Rate Increase: Rate D

Variation of the annual bill (%)	Customer allocation (%)
Less than 1 (min:0)	6.7%
From 1 to 2	29.1%
From 2 to 3	38.5%
From 3 to 4	25.5%
From 4 to 5	0.2%
From 5 to 6	0.0%
6 and over (max: 6.4)	0.0%
<i>Total</i>	100.0%

4.3.1.2 Impact on Monthly Bills

The following Table shows the impact of the increase on monthly bills for typical consumption levels. The increase on these bills ranged between 1.4% and 3.5%. Annexe B shows the impact by typical consumption level and by rate component.

Table 32
Monthly Impacts on Typical Consumption Levels – Rate D

Energy kWh	Bill at the current rate \$	Bill at the proposed rate \$	Variance \$	Variance %
625	44.82	45.44	0.82	1.4
750	51.34	52.09	0.75	1.5
1 000	66.00	67.19	1.19	1.8
2 000	134.30	138.39	4.09	3.0
3 000	202.60	209.59	6.99	3.5

4.3.1.3 Impact on the Average Customer

Table 33 shows the impact of the proposed increase on the electricity bills of domestic customers. For the average domestic customer, the monthly electricity bill increases by \$2.74.

Table 33
Effects of the Proposed Increase on the Average Monthly Bill
For Domestic Customers (Rate D)

Average Annual Consumption Based on 2005-2006	Monthly Bill (\$)		Increase (\$)	Increase (%)
	Current rate	Proposed rate incl. 2.8% increase		
Customer average (17 075 kWh)	97.82	100.56	2.74	2.8%
Customer average for customers heating with electricity (19 050 kWh)	108.22	111.34	3.12	2.9%
Customer average for customers not heating with electricity (12 820 kWh)	75.44	77.37	1.93	2.6%
Customer living a single-family dwelling heated with electricity (26 500 kWh)	148.46	153.13	4.67	3.1%

4.3.1.4 Impact on Low-Income Customers

As per the Government's request in its energy strategy, the Distributor shows the impact of the rate increase on low-income customers.³²

The Distributor has little data on the income of its residential customers and the data from surveys that were carried out for other ends is often incomplete and not valid as far as the respondents' income is concerned. It is in fact a delicate question to which respondents are not always inclined to respond.

³² The situation of low-income households is treated in greater detail in HQD-13, Document 1.

Moreover, a household's income is not the only variable that determines whether or not a household is in need.

In order to evaluate the impact of the increase on low-income customers, the Distributor used 2003 data from Statistics Canada pertaining to household expenses.³³ This data provides the annual expense for several goods and services by income category.

The Distributor asked Statistics Canada to carry out a distribution of electricity expense according to the decile of the household's income. Therefore, if all households are classified according to their income, from the lowest to the highest, the first decile includes the 10% of households that have the lowest income, the second decile includes the next 10% and so on. The following Table shows the deciles used in 2003 as well as the average electricity expenses, including taxes, for the households that claimed to have electricity expenses.

**Table 34
Description of the Deciles Used**

	Annual Household Income \$	Average Annual Electricity Expenses
1 st decile	14 400 or less	808
2 nd decile	14 400 -21 550	936
3 rd decile	21 550 -27 780	1 039
4 th decile	27 780 - 35 552	1 102
5 th decile	35 552 - 44 200	1 161
6 th decile	44 200 - 54 100	1 289
7 th decile	54 100 - 64 000	1 386
8 th decile	64 000 - 79 772	1 509
9 th decile	79 772 – 106 000	1 660
10 th decile	106 000 and over	1 929

³³ Aggregated data is also available on the Government of Quebec website http://www.stat.gouv.qc.ca/donstat/societe/famls_mengs_niv_vie/revenus_depense/depense/Ta bleau_13.htm

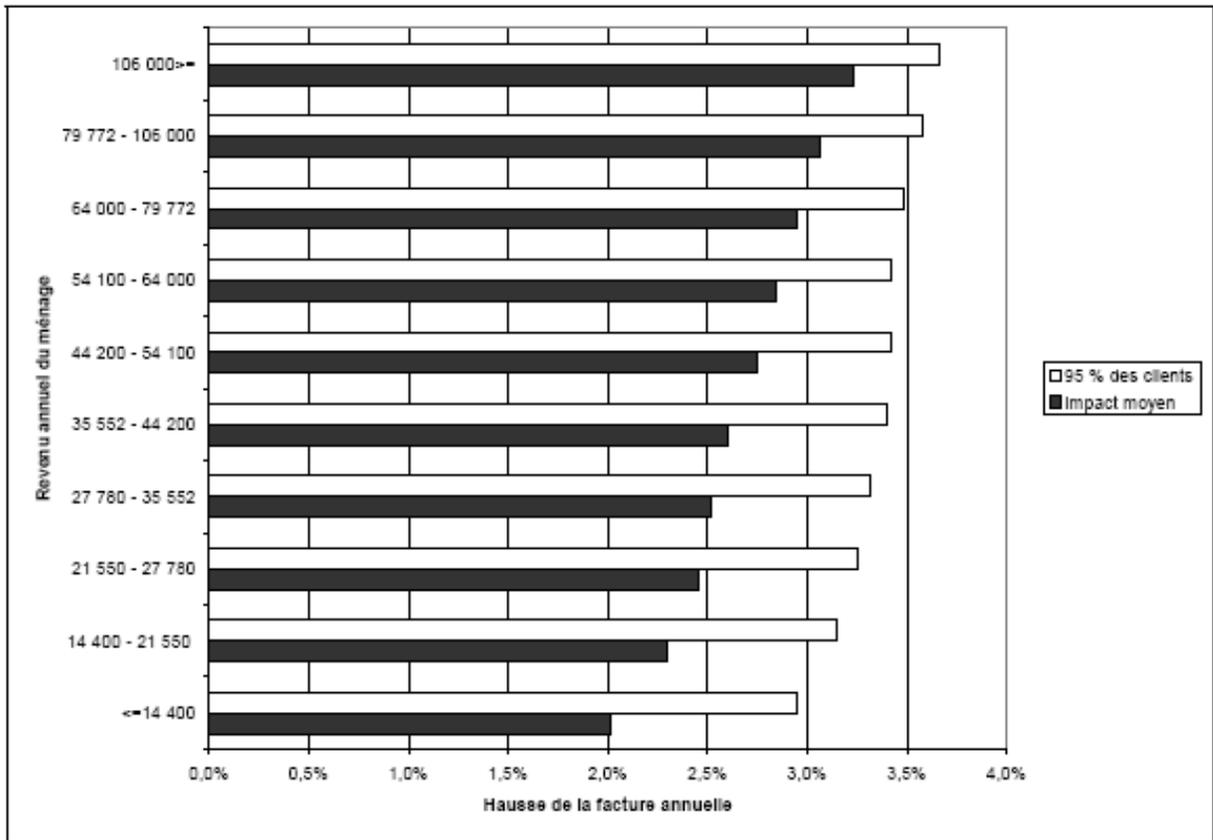
The Distributor also requested an index for the dispersion of electricity expenses for each of the deciles. This allows it to evaluate the maximum impact by bloc of income. This maximum level of expense shows the upper bound that includes 95% of all respondents by decile.

From this data, it is possible to draw a consumption profile (energy for the 1st and 2nd blocs) on an annual basis, which will be used to establish the impact of the 2,8% increase by decile of income.

The following Table very precisely shows the impact of the 2.8% rate increase by decile of income. The average impact on bills in the first four deciles ranges between 2% and 2.5%. Nevertheless, within each decile we note a variation in the impacts that reflects the variation in expenses. For example, for certain households within the first deciles for which the energy bill is important, the impact can exceed the average increase for all customers.

The Distributor's proposal to increase the 2nd bloc twice as much as the 1st energy bloc means that households that have a significant electricity bill –and therefore consume several kWh in the 2nd bloc- will be subject to an increase that exceeds 2.8%. These are primarily households that have higher incomes. For their part, households that have lower electricity bills – and therefore consume fewer kWh in the 2nd bloc – will be subject to a rate increase that is inferior to 2.8%. It consists mainly of low-income households. On average, the Distributor's proposal therefore attenuates the impact of the rate increase for low income households.

Table 35
Dispersion of Impacts According to the Income Decile



5. Competitive advantage

5.1 In Quebec

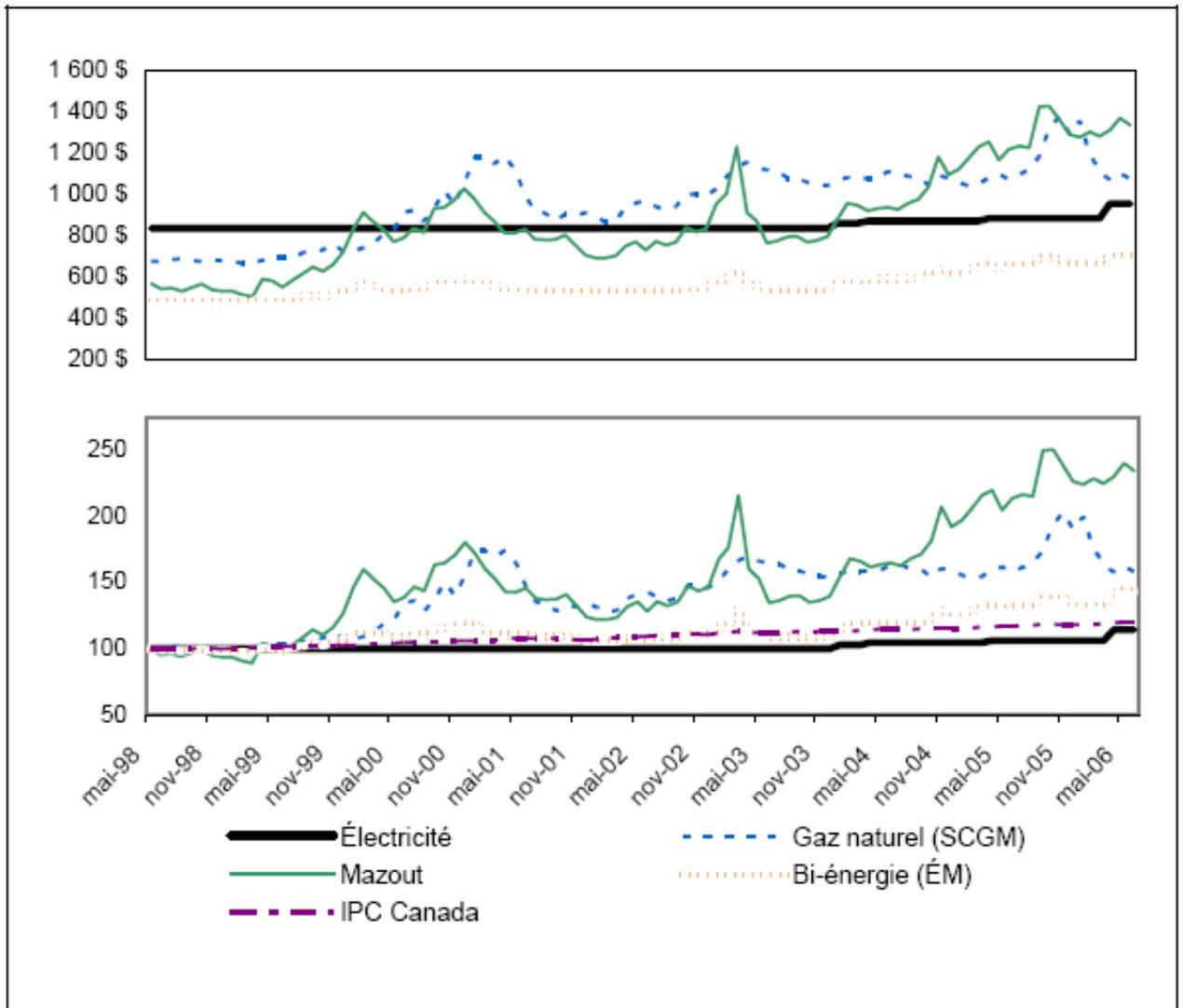
In light of the fact that the Distributor has the monopoly on the retail sale of electricity in Quebec³⁴, competition within the province essentially comes from natural gas and fuel oil, as alternative energy sources that are mainly used for heating.

5.1.1 Residential Sector

The significant growth and fluctuation of fuel prices in recent years, presented in section 1.4 and reiterated in the following Figure, has led to an unstable and unattractive environment for the residential consumer. Since May 1998, the energy bill for space-heating for an average single-family dwelling heated with fuel oil and natural gas increased by 130% and 58% respectively, with peaks reaching 150% for fuel oil in October 2005 and 103% for natural gas in November 2005.

³⁴ With the exception of municipal systems and Coopérative régionale d'électricité de St-Jean- Baptiste de Rouville

Figure 4
Annual Bills for Space Heating
Average Single-Family Dwelling Located in Montreal



Note: 70% efficiency rates for fuel oil and natural gas heating systems, and 75% for dual-energy systems.

The following Table, shows the unitary prices for space heating during the 2005-2006 winter period and the equivalent in ¢/kWh for fuel-fired heating systems with two different levels of efficiency (the average efficiency rate is 70%, and 90% for highly efficient systems).

Table 42
Cost of Energy for Space Heating
Single-Family Dwelling Located in Montreal
Winter 2005-2006

	Électricité		Mazout no. 2 ¹		Gaz naturel ²			Total		
	(¢/kWh)	(¢/litre)	(¢/kWh-e)		Fourniture et compression	Transport et équilibrage	Distribution ³	(¢/m ³)	(¢/kWh-e)	
			@70%	@90%					@70%	@90%
Août 2005	6,33	65,92	8,73	6,79	28,949	7,296	22,400	58,645	7,96	6,19
Septembre 2005	6,33	76,58	10,14	7,88	32,330	7,296	22,400	62,026	8,42	6,55
Octobre 2005	6,33	76,76	10,16	7,90	38,951	7,218	22,703	68,872	9,35	7,27
Novembre 2005	6,33	73,25	9,70	7,54	42,396	7,218	22,703	72,317	9,82	7,63
Décembre 2005	6,33	69,42	9,19	7,15	37,792	7,218	22,703	67,713	9,19	7,15
Janvier 2006	6,33	68,76	9,10	7,08	41,232	7,192	22,703	71,127	9,65	7,51
Février 2006	6,33	70,08	9,28	7,22	32,703	7,192	22,703	62,598	8,50	6,61
Mars 2006	6,33	68,92	9,12	7,10	28,510	6,999	22,703	58,212	7,90	6,15
Avril 2006	6,83	70,58	9,34	7,27	26,499	6,999	22,703	56,201	7,63	5,93
Moyenne pondérée par les degrés-jours de chauffage	6,37	70,48	9,33	7,26	35,684	7,158	22,698	65,540	8,90	6,92

Notes:

- 1) Reference: Régie de l'énergie first publication of the month
- 2) Excluding basic charges and inventory adjustments
- 3) Space heating for an average home (158m²) located in Montreal. The majority of SCGM's residential customers only use gas in the 1st energy bloc of the Distribution rate D1 (which includes 9 digressive blocs).

At 6.33¢/kWh (the price of the 2nd bloc for rate D, in effect on April 1, 2005), residential customers with electric heating had an advantage during the winter of 2005-2006, compared with those who selected fuel oil or natural gas. The additional costs attributed to the purchase and maintenance of a fuel-fired heating system compared with those of an electric baseboard system (approximately 4.45 and 3.74¢/kWh for an average home heated with fuel oil or natural gas respectively) increases electricity's competitive advantage in the residential sector.