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The fixed charge in Hydro-Québec Distribution's domestic rates

Expert Testimony of Philip Raphals

for the RNCREQ

R-3677-08

Régie de l'énergie

October 28, 2008

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1 Qualifications

Quel est votre nom, titre et adresse d'affaires ?

Mon nom est Philip Raphals. Je suis directeur général du Centre Hélios, situé au 326 boul. St.-Joseph est, suite 100, Montréal, Québec, H2T 1J2.

Veuillez décrire le Centre Hélios.

Fondé en 1996, le Centre Hélios est un organisme de recherche à but non lucratif, offrant une expertise indépendante dans le secteur de l'énergie. Le Centre Hélios produit et rend disponibles les connaissances requises pour la mise en œuvre de stratégies, politiques, approches réglementaires et choix économiques favorisant le développement durable et équilibré du secteur énergétique. Depuis 2005, il produit également des analyses approfondies à l'égard des changements climatiques.

Veuillez décrire votre expérience professionnelle.

Mon expérience est résumée dans mon Curriculum vitae. Mes activités professionnelles ont touché à un grand nombre de sujets reliés à la planification, la réglementation et la tarification des réseaux électriques. Ces sujets ont inclus, entre autres, la restructuration des marchés énergétiques, les processus de planification, la réglementation du transport d'électricité, l'efficacité énergétique et la sécurité des approvisionnements dans un réseau hydraulique.

Avez-vous déjà été reconnu comme témoin expert par la Régie de l'énergie ?

J'ai témoigné à titre d'expert devant la Régie de l'énergie dans quatorze dossiers depuis 1998.

2 Mandat

Veuillez décrire le mandat que vous a donné le RNCREQ.

Le RNCREQ m'a demandé de :

i) Analyser les coûts d'abonnement applicables aux tarifs domestiques ainsi que les composantes de la redevance;

ii) Analyser les impacts sur différentes catégories de consommateur domestique d'un ajustement de la redevance en fonction de ses coûts;

iii) Proposer des mesures pour atténuer des conséquences néfastes d'un tel ajustement, le cas échéant;

iv) Formuler des recommandations quant à la redevance ainsi que des mesures additionnelles requises, le cas échéant.

Étant donné le temps très limité pour la préparation de ce rapport et pour faciliter la collaboration avec M. Lazar, il a été convenu qu'il serait rédigé en anglais.

3 Account-related costs

3.1 Context

HQD describes its approach to assigning costs to the customer charge as follows:

> Les composantes et le niveau des coûts d'abonnement
>
> La causalité des coûts guide le Distributeur dans son choix des composantes de coûts à être récupérées par la redevance. Certains coûts sont indépendants de la consommation et sont donc associés à la partie fixe du tarif. Les prix de l'énergie, quant à eux, servent à récupérer les coûts reliés directement à la consommation.
>
> Le Distributeur fait également appel au principe d'utilisateur - payeur. Les clients génèrent des coûts avant même d'avoir commencé à consommer et ces coûts devraient être récupérés par la composante fixe des tarifs. S'aventurer dans une voie différente et faire supporter par certains clients les coûts engendrés par
>
> d'autres clients, bien que cette solution puisse reposer sur un principe d'équité sociale, n'est pas une solution gagnante à long terme. La redevance doit donc servir à récupérer les coûts spécifiques engendrés par la clientèle qui ne sont pas fonction de leur propre consommation.

The purpose of this section is to identify those costs which meet these criteria; i.e., those which are generated by customers without regard to the amount of energy they consume.

3.2 HQD's direct evidence and our earlier testimony

The following table demonstrates the breakdown of the costs assigned by HQD to make up the customer charge. It shows the breakdown of the $431.9 million of *services à la clientèle*[1] costs, which account for 33.43¢/day of the customer charge, to which is added $70.8 million for Mesurage, which accounts for 5.48¢/day of the customer charge.

It should be noted that HQD has identified an additional $44.2 million (3.42¢/day) of costs for Branchement, of which only half (1.73¢/day) is included in the customer charge. Finally, HQD has identified $284.8 million (22.04¢/day) of costs that could be attributed to a *Réseau minimum*, none of which it included in the customer charge.[2]

TABLEAU 19
COMPOSITION DÉTAILLÉE DES REVENUS REQUIS

Coûts d'abonnement aux tarifs domestiques (R-3677-2008)	Ensemble des revenus requis			Niveau actuel de la redevance	Scénario alternatif
	(M$)	(¢/jour)	Références	(¢/jour)	(¢/jour)
Services à la clientèle	**431,9**	**33,43**		**33,43**	**19,52**
Relève des compteurs	84,1	6,51	(1)	√	√
Facturation	98,7	7,64	(2)	√	√
Encaissement	8,8	0,68	(3)	√	√
Recouvrement	120,6	9,33	(4)	√	√ *
Subtilisation	5,9	0,46	(5)	√	√ *
Réponses téléphoniques	127,3	9,85	(6)	√	√ *
Plaintes et réclamation	10,3	0,80	(7)	√	√
Relations avec le milieu	4,1	0,32	(8)	√	√
Réseaux autonomes - Autres	4,5	0,35	(9)	√	√
Revenus (frais d'adm. & d'ouv. doss.)	-48,5	-3,75	(10)	√	√
Ventes et commercialisation	16,1	1,24	(11)	√	√
Mesurage	**70,8**	**5,48**	(12)	**5,48**	**5,48**
Réseau (Abonnement)	**329,0**	**25,46**			
Branchement	44,2	3,42	(13)	1,73	
Réseau minimum	284,8	22,04	(14)		
Total	**831,6**	**64,37**		**40,64**	**25,00**

* Montant partiel

[1] To avoid confusion, we will use the original French terms for cost categories.

[2] As we mentioned in our joint testimony in R-3644-07, most utilities do not take « minimum system » costs (the hypothetical cost of a low-capacity distribution system on a per-customer basis) into account in setting their customer charge.

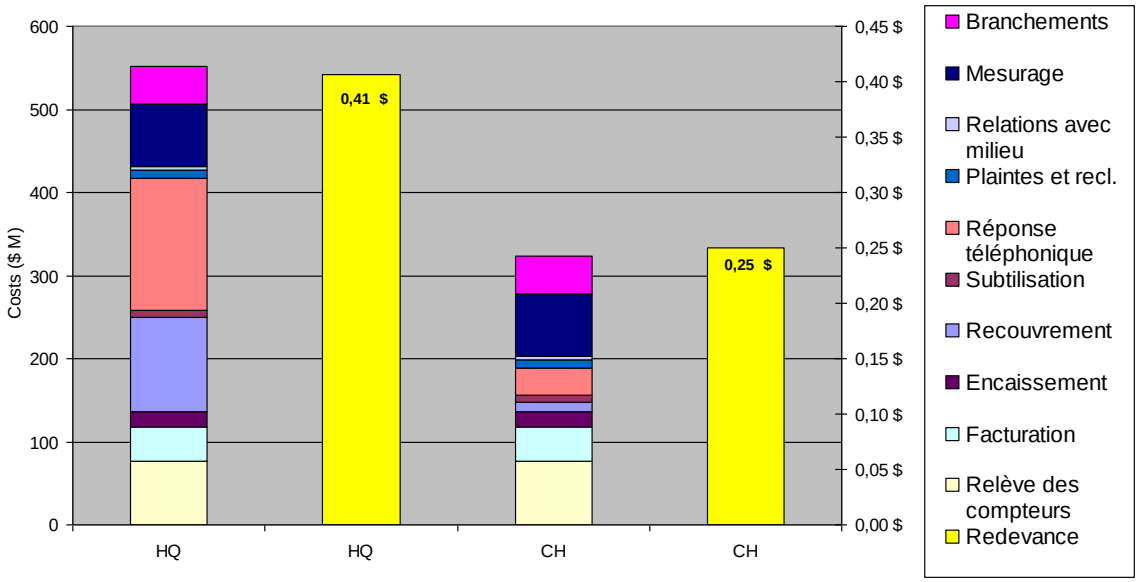
The last column in this table ("Scénario alternatif") reflects our proposal from the last rate case (R-3644-07) that the customer charge be reduced to 25¢/day, due to the exclusion of some of the costs for *recouvrement*, *subtilisation* and *réponses téléphoniques*. It should be noted that HQD has to date provided no justification for the inclusion of 100% of these costs in the customer charge.

In our testimony in R-3644-07, we wrote:

> Most electric utilities subject to regulatory commission oversight impose customer charges which reflect the costs of metering, meter reading, and billing. This is the so-called "basic customer" method of cost assignment. In Washington State, for example, which has firmly adopted the basic customer method, electric customer charges range from $5.00 per month for Pacific Power to $7.50 per month for Puget Sound Energy.
>
> Some utilities, primarily self-regulated utilities, impose much higher customer charges, which include not only metering and billing, but also customer assistance expenses, customer service expenses, uncollectible accounts, line transformer investment, and even a portion of the basic distribution infrastructure – poles, conduits, and conductors. The highest levels are justified using a method called the "minimum system" method, which assigns the hypothetical cost of a low-capacity distribution system on a per-customer basis.
>
> HQ's current rate design falls between the second and third group. It appears that the current charge of approximately $12/month includes not only metering, meter reading, and billing costs, but also uncollectible expenses, customer assistance, and customer service. Including uncollectible expense in the customer charge is clearly inappropriate – while some customers *do* fail to pay their bills, the principal driver of their inability to pay is the size of the usage charge, not the size of the cost for metering, meter reading, and billing. These expenses should be reflected in the usage charges, just as a supermarket includes the "cost" of bananas that spoil before they can be sold in the price of bananas, not in an admission charge to enter the store.
>
> … Including uncollectible accounts in the customer charge is clearly incorrect. When customers are unable to pay their bills, or skip town and don't pay their bills, it is due to the *magnitude* of the bills. It is the consumption that creates the majority of the bill amount, and consumption that therefore causes the uncollectible amounts. This category of costs represents a fairly large component of the $0.42/day calculated by HQ.[3]

In our presentation, we included the following chart, which represents a first approximation of the effects of partially excluding these costs from the customer charge. In the absence of detailed information, we included 10% of the *recouvrement* costs and 20% of the costs of *réponses téléphoniques*. No reduction was made in costs for *subtilisation* or any other cost categories.

[3] Lazar and Raphals, *Reforming the rate structure to better reflect marginal costs: Comments on HQD's 2008 Rate Proposal,* R-3644-07 (for the RNCREQ), Oct. 30, 2007, p. 7.



In the following section, we will look more closely at the structure of these costs.

3.3 The breakdown of HQD's customer service costs

The following table summarizes the costs associated with customer service in HQD's 2008 and 2009 rate applications.

	2008				2009				change-ment
	Base de tarif. Tab. 13B	Coût du capital	Coût de prestation Tab. 14B	Coût de service	Base de tarif. Tab. 13B	Coût du capital	Coût de prestation Tab. 14B	Coût de service	
Relève des compteurs	48,9	3,8	73,2	77,0	84	6,4	77,7	84,1	9%
Facturation	15,5	1,2	39,7	40,9	125,7	9,6	89	98,6	141%
Encaissement	28,1	2,2	16,4	18,6	11,8	0,9	7,8	8,7	-53%
Recouvrement	-1,5	-0,1	112,8	112,7	-22,5	-1,7	122,3	120,6	7%
Subtilisation	4,7	0,4	8,5	8,9	-0,4	0,0	5,9	5,9	-34%
Réponse téléphonique	159,4	12,5	146,1	158,6	128,6	9,8	117,5	127,3	-20%
Plaintes et recl.	6,5	0,5	9,4	9,9	4	0,3	10	10,3	4%
Relations avec milieu	0,7	0,1	4,2	4,3	2,3	0,2	3,9	4,1	-4%
Réseaux autonomes - Autres	1,9	0,1	3,6	3,7	1,5	0,1	4,4	4,5	20%
Revenus (frais d'adm. & ouv. dossier)			-42,4	-42,4		0,0	-48,4	-48,4	14%
Ventes et commercialisation	17,8	1,4	12,6	14,0	14,8	1,1	14,9	16,0	15%
Mesurage	188,5	14,8	60,4	75,2	190,6	14,6	56,2	70,8	-6%
Branchement	259,1	20,3	25,9	46,2	230,7	17,6	26,6	44,2	-4%
TOTAL	729,6	57,1	470,4	527,5	771,1	59,0	487,8	546,8	4%

It is interesting to note that, while the total cost only increased by 4% from 2008 to 2009, there were very substantial changes in several categories of expense. Thus, the cost attributed to *facturation* more than doubled (an increase of 141%), while those of *encaissement, subtilisation* and *réponse téléphonique* fell by 53%, 34% and 20%, respectively. To the best of our knowledge, no explanations for these changes have been provided to date.

3.3.1 Costs associated with *recouvrement*

The cost attributed to *recouvrement*, which did not vary greatly from 2008 to 2009, represents approximately 26% of total customer service costs. 87.5% of these costs ($120.6 million) are attributed to residential clients, based on their share of the value of the inventory of unpaid and potentially unrecoverable accounts.[4] No information is available concerning the average unpaid amount per account.[5]

HQD considers 100% of these costs to be account-related and therefore to be recovered via the customer charge. As we noted in R-3644-07, this is inappropriate, in that the reason people do not or cannot pay their bills is related primarily to the *magnitude* of the bill. Customers with very low consumption are unlikely to find themselves in *recouvrement,* and if they do, the amount of the account *en souffrance* will likely be small. In the absence of evidence to the contrary, it must be assumed that the vast majority of amounts owing are energy-related, rather than account-related.

However, one can argue that, even if energy costs were very low, it would nonetheless be necessary to maintain a *recouvrement* service, and that its overhead costs are indeed account-related. Alternatively, one could consider argue that, as the customer charge represents 11.7% of the average bill, this same percentage of total amounts in recovery can be attributed to the customer charge. However, as large users are more likely to find themselves in *recouvrement*, this estimate is necessary conservative.

In the absence of any breakdown of these costs, we recommend attributing 10% of the *recouvrement* costs to the customer charge.

3.3.2 Costs associated with *plaintes et réclamations*

The costs associated with *plaintes et réclamations* are relatively small, accounting for just 4% of total customer service costs in 2009. For the same reasons as those described above for *recouvrement,* it is reasonable to assume, in the absence of evidence to the contrary, that the vast majority of complaints are energy-related. Clients with very low bills are unlikely to initiate complaint procedures.

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[4] HQD-11, doc. 3, p. 30, Tableau 18.

[5] HQD-16, doc. 10, p. 21, R21.

We therefore consider it reasonable to allocate only 50% of the costs associated with *plaintes et réclamations* to the customer charge.

3.3.3 Costs associated with *subtilisation*

The costs associated with *subtilisation* are relatively small, accounting for just 1.3% of total customer service costs in 2009. (In 2008, the figure was 2.1%.) Nevertheless, it is clear that the vast majority of these costs are energy-related rather than account-related. If a client steals energy, it is almost certainly in order to avoid paying for that energy. The only exception would be a non-client that steals small amounts of energy in order to avoid having an account at all, i.e., in order to avoid the customer charge. While such cases might exist, there is no reason to believe they exist in significant numbers. Furthermore, this hypothetical thief would not, in fact, impose on the utility the account-related costs (meter reading, billing, etc.) that the customer charge is meant to recover.

I therefore find it reasonable to exclude all *subtilisation* costs from the customer charge.

3.3.4 The costs associated with *Réponse téléphonique*

Like *Recouvrement*, the dollar amounts associated with *Réponse téléphonique* represent a significant portion of the total customer service costs, and therefore of the customer charge. These amounts are shown in the following table:

Réponse téléphonique	**2008**	**2009**
Cost of service	158,6	127,3
% of total Customer Service costs	37%	23%

The call centre costs are allocated to domestic and business clients based on their relative work loads (number of calls multiplied by response time); they are then allocated to each rate class based on the number of accounts.

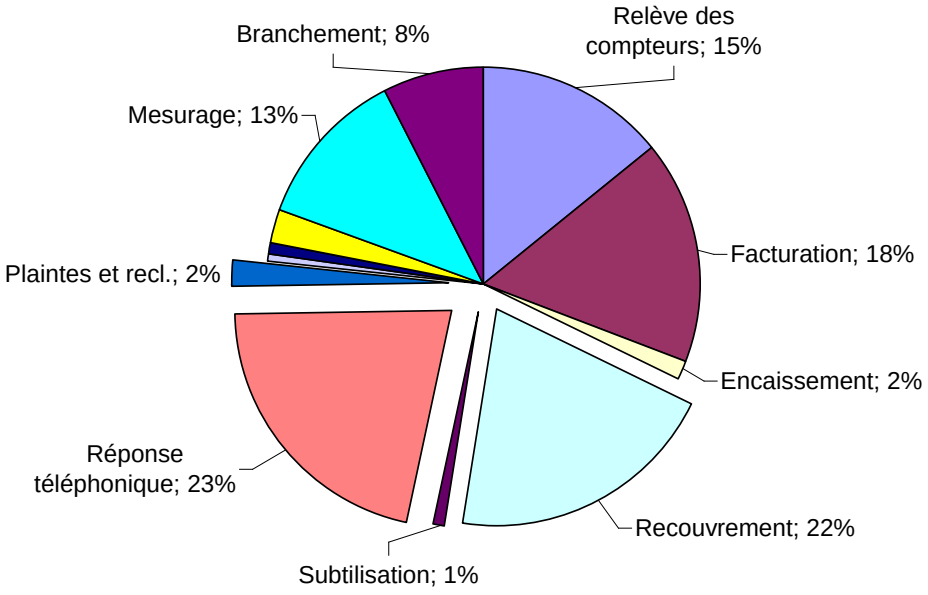
No breakdown has been provided as to the types of calls handled.[6] In the absence of additional information in this regard, we will tentatively assign 50% of call centre costs to customer account.

[6] The information provided concernign the 1-800-ÉNERGIE line is of little interest, as this line apparently accounts for only a small percentage of calls.

3.4 Implications for the customer charge

The relative importance of the various categories of customer service costs can be seen in the following chart. These figures are identical to those in HQD's Table 19, excluding the costs for "Réseau minimum."

Breakdown of customer service costs



The total cost of service for all of these categories is $546.8 million, equivalent to a customer charge of 42.3¢/day.

While the removal of *subtilisation* and *plaintes et réclamations* from the customer charge has little impact, *recouvrement* and *réponse téléphonique* account for a significant portion of these costs. Reducing the percentage of *recouvrement* costs in the customer charge to 10% in itself results in reducing the customer charge by 20%, to 33.9¢/day.

Allocating 50% of the call centre costs to energy reduces the customer charge by 12%.

Combining the above-mentioned steps has the effect of reducing the customer charge by 34%, to 28.1¢/day.

Unless additional information is provided to justify the allocation of more than 50% of the call centre costs based on the number of subscribers rather than on energy consumed, we consider approximately 28¢/day to be the appropriate cost-based customer charge rate. This rate is based purely on cost causality and on the user-pay principle, before taking into account any other policy considerations.

4 Bill impacts of reducing the customer charge

In its direct evidence, HQD provided data resulting from a number of simulations inspired by our testimony last year, including two scenarios based on reducing the customer charge to 25¢/day. The following discussion is based on these results. More specifically, we refer to HQD's second sub-scenario ("Baisse de la redevance et hausse équivalente de la 2e tranche"), as described in Tableau 23, where the price of the first block remains unchanged at 5.40¢/kWh and the price of the second block is increased to 8.01¢/kWh (from 7.33¢/kWh currently). We will refer to this as the "Alternate Rate Design," or ARD. According to HQD, the ARD would result in the same revenue generation as the existing tariff (without taking into account any changes in usage that might result from the ARD itself). Under the ARD, the price ratio of the two blocks is 1.48, as compared to 1.36 with the current rates.[7]

HQD points out that the ARD would result in bill reductions of 5% to 8% for apartment dwellers and for those whose consumption is limited to the first block; it would also produce bill increases of 3% for average houses and 5% to 9% for the largest consumers.[8]

In HQD's view, this scenario is undesirable for the following reasons:

1. It results in bill reductions for certain consumers who have made no effort to reduce their consumption. This reduction could be seen as a lowering of the price signal;

2. It is not justified, since the current strategy to increase the price of the second block twice as fast as the price of the first block, combined with the freeze on the customer charge, is already contributing to increase the progressivity of the tariff and hence the price signal, which is approaching the long-term marginal cost;

[7] HQD-12, doc. 1, p. 42.

[8] Ibid.

3. It would provide an undue benefit to those who do not consume electricity regularly throughout the year, especially the 200,000 chalet owners and those who spend winter outside Quebec, as their fixed customer service and metering costs would be borne by other clients;

4. It would also provide an undue benefit to those who do not heat with electricity, and to condominium owners who rarely use the second block.

We will address these objections in the sections that follow.

4.1 Bill reductions

HQD expresses concern that the bill reductions for certain customers are undeserved, in that they do not result from any effort to reduce consumption, and that they are counterproductive, in that they could be construed as a reduction in the price signal and this lead to an increase in consumption. HQD also argues that, for those who do not consume electricity regularly throughout the year, these reductions are undue and will result in their costs being borne by other customers. We will examine each of these arguments in detail.

4.1.1 "Undue and undeserved"

The notion of cost causality and the user-pay principle are deeply ingrained in the ratemaking methodology applied by the Régie, and indeed are implicit in the requirement that rates must be "just and reasonable". We fully support HQD's position in this regard, quoted in section 3.1 above. The customer charge should reflect costs that flow from the existence of a customer's account, regardless of the amount of energy he consumes.

We are thus fully in agreement that metering and fixed customer service costs should be reflected in the customer charge, precisely to ensure that these costs are paid even by customers who purchase little or no electricity. By the same token, however, if energy-related costs were to be included in the customer charge, the cross-subsidization would go in the other direction: customers who consume very little energy would be forced to bear costs caused by those who consume more.

Based on our analysis of the costs currently included in the customer charge, set out in section 3, above, we can only conclude that HQD's current rates indeed include such cross-subsidization. By requiring low-energy customers (whether chalet owners, snowbirds, or owners of unoccupied premises) to pay a customer charge that includes 100% of the costs associated with *recouvrement,*

subtilisation, plaintes et réclamations and *réponse téléphonique*, they are in fact being forced to bear costs that they do not cause. To quote HQD again :

> S'aventurer dans une voie différente [que le principe d'utilisateur-payeur] et faire supporter par certains clients les coûts engendrés par d'autres clients, bien que cette solution puisse reposer sur un principe d'équité sociale, n'est pas une solution gagnante à long terme.

In other words, insofar as our analysis of these cost categories is correct, **the current rates are not just and reasonable, insofar as low-consumption clients are concerned,** regardless of the reason for their low consumption. The question is thus not whether or not the reduction is deserved, but whether the current rates are fair.

While this discussion is limited to the costs of the customer charge components, it is also important to note that serving each of the client groups mentioned also imposes significantly lower supply costs than the average customer, due to their zero-usage during system peak. A similar argument can be made for those who heat with other fuels — although, unlike the chalet owners and snowbirds, they do consume electricity during the system peak. They nevertheless contribute less to peak costs than do those who heat with electricity.

4.1.2 "Counterproductive"

Even if it is determined that the current rates are unfairly burdensome for low-consumption clients, the question remains as to the effects of the proposed change in rate structure on their consumption.

HQD has expressed the concern that the reduction in the customer charge will be interpreted as a rate decrease, which will incent increased consumption. In our view, this is not a significant risk, for the following reasons.

First, it is important to recognize that the maximum bill decrease possible under this proposal is $4.50 per month. This decrease would be experienced by the 18.3% of HQD's clientèle which never exceed the first block. The highest-level consumption which would receive the full $4.50 bill reduction is a customer who uses 900 kWh a month, for a bill under current rates of $60.60 (a reduction of 7.4%).

The problem, in our view, is one of communication. It is essential to make clear to those customers whose bills go down that, at the same time, their marginal rate is going up. Thus, any increased consumption beyond the first block will now cost over 8¢ — almost 50% more than the first block. In order for them to retain the benefit of the reduction in the customer charge, it is essential that they avoid increasing consumption accordingly. In our view, HQD is fully capable of getting this

message across, through a combination of bill inserts — including perhaps a bill insert specially targeted and low-consumption customers — and advertising, before and after the roll-out of the new rates.

However, should the Régie conclude that the risk of incenting increased consumption among this group exceeds the benefits of a price signal that more closely approximates marginal cost, an alternate solution would indeed be to distribute the increase between the two blocks, as indicated in HQD's evidence (Table 23, second row). While this solution is, in our view, less advantageous that the one proposed, it remains far superior to maintaining the customer charge at its current level.

4.2 Bill increases

While HQD's evidence focusses primarily on the bill reductions described above, it also expresses concerns about the rate increases that would result from this approach. Table 24 indicates that these increases range from 0.8% for a small house, to 3.8% for a large house, and 6.5% for a "maison imposante". Furthermore, "grands clients" would see rate increases of 8.5%.

Under the Alternate Rate Design, bill increases of 4% or more occur when average daily consumption exceeds 90 kWh. On an annual basis, this group includes just 6.9% of all customers; increases of more than 6% would affect just 1% of customers[9]. More than half of all customers will see their average annual bills increase or decrease by less than 4%.[10]

As for the "grands clients", it is useful to distinguish among the different groups of clients. Of the 2029 residential clients that exceed 100 kW, three-quarters (1501) are served under rate DM (multiple dwellings with individual metering). As the size of the first block under rate DM is proportional to the number of dwellings, the actual rate impact under rate DM would resemble that experienced by individual residential customers.[11]

In apartment buildings or community residences with individual metering, each residence is billed at rate D. The electricity used for common areas and collective services is also billed at rate D;

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[9] HQD-16, doc. 10, p. 4, Tableau R-4-A.

[10] Ibid.

[11] Hydro-Québec, 2008 Distribution Tariff, s. 2.17. In rooming houses and community residences, the multiplier consists of the number of rooms or dwellings minus nine (9).

however, if it is not used exclusively for habitation purposes, the other uses cannot account for more than 10 kW .[12]

It appears from the above that few if any of the > 100 kW residential clients mentioned in Tableau R-18 (HQD-16, doc. 10) would be exposed to the 8.5% bill increase identified in Tableau 24 (HQD-12, doc. 1).

Another area of concern is the agricultural sector. As HQD explained in its responses to the RNCREQ, farm activities (animal husbandry and cultivation) have been served under the domestic rate as the result of a negotiated settlement with the Union des producteurs agricoles that was approved by the Quebec government in 1996.[13] Other commercial and industrial activities are served under the general tariffs.

Should the Régie determine that the proposed modification is unduly prejudicial to the 216 farms served under rates D and DM (with total annual electricity bills of $7.7 million), it is recommended that it create a special agricultural sub-tariff, preferably by maintaining the proposed rates for the two blocks but by increasing the size of the first block.

The final area of concern with respect to bill increases is in relation to low-income families. Tableau R-4-D (HQD-16, doc. 10) indicates that, for families with annual incomes in the two lowest deciles (under $23,000), the average rate impact would be a rate decrease of 3.75% to 5%, and in the third and fourth lowest deciles ($23,000 to $37,000), it would be a rate decrease of just under 2%. At the same time, the available dispersion data indicate that 5% of the first two deciles would see bill increases of just over 2%, and that 5% of the third and fourth deciles would see bill increases of 3.5% or more.

To put these figures in perspective, a bill increase of 2% is associated with usage of 2,000 kWh per month (monthly bill of $141), and a bill increase of 3.5% is associated with usage of about 2,500 kWh per month (monthly bill of $178). As most users will see bill reductions in summer months, in order for a client to experience a rate increase of 3.5% on an annual basis, his winter usage would have to be significantly greater.

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[12] Ibid., s. 2.7 and 2.12.

[13] HQD-16, doc. 10, p. 18, R18.2.

A number of energy efficiency programs are available to such households. Targeted information concerning energy efficiency programs such as *ÉconoLogis* should of course accompany the roll-out of the new rate design. Additional measures are discussed in section 4, below.

4.3 "Accentuation of price signal is unnecessary"

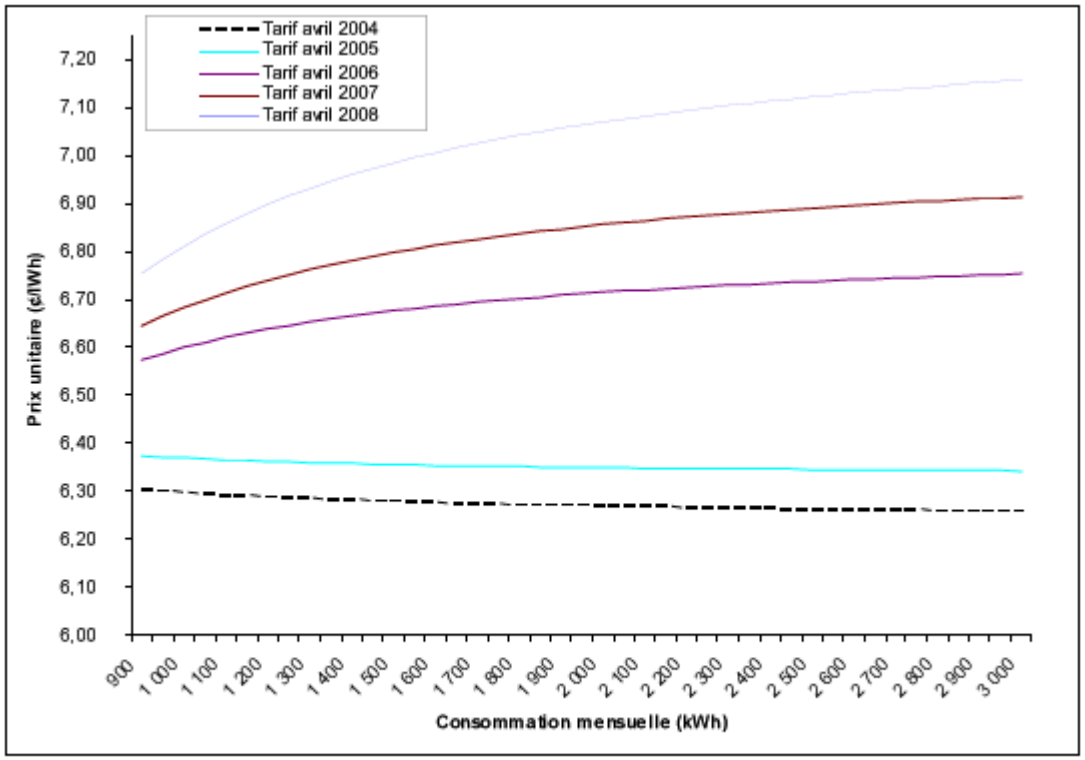
In addition to the arguments described above, HQD also maintains that the accentuation of the price signal resulting from this approach is unnecessary, as the current rate strategy is already contributing to improve the rate's progressivity and thus the price signal:[14]

> Le Distributeur considère qu'une baisse de la redevance afin d'accélérer le processus d'amélioration du signal de prix déjà entamé n'est pas justifiée puisque la stratégie actuelle d'augmenter deux fois plus le prix de la 2e tranche que celui de la 1re combinée au gel de la redevance contribue déjà à améliorer la progressivité du tarif[17] et, par le fait même, le signal de prix. Le prix de la 2e tranche est passé de 5,97 ¢/kWh à la fin du gel tarifaire en 2003 à 7,33 ¢/kWh au 1er avril 2008 et se rapproche des coûts marginaux de long terme. Le Distributeur propose de maintenir la stratégie actuelle plutôt que de modifier la structure trop rapidement en diminuant le prix de la redevance pour accentuer le signal de prix. Cette approche permet d'atteindre le signal des coûts marginaux tout en minimisant les impacts sur la clientèle.

[17] Le graphique présenté à l'annexe B démontre que la stratégie du Distributeur relative au tarif D appliquée depuis 2005 a permis de le rendre progressif à partir d'avril 2006.

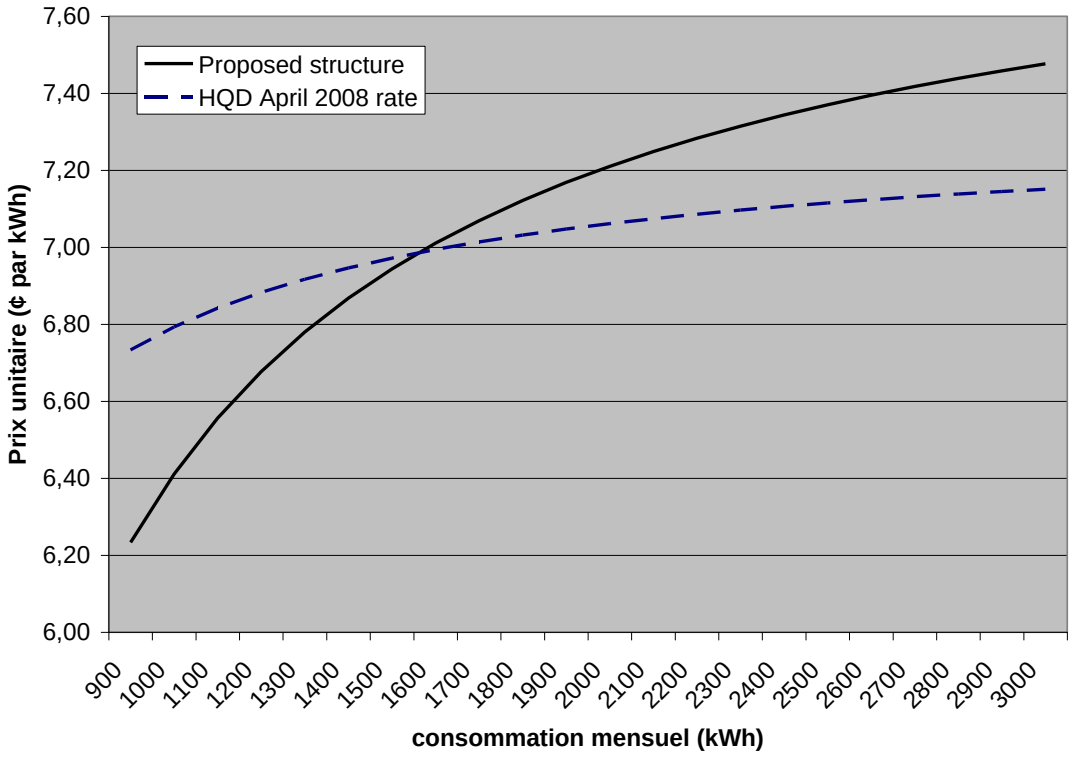
The graphic provided in Appendix B to illustrate this evolution is reproduced below.

[14] HQD-12, doc. 1, p. 43.



The graphic demonstrates that the rate structures in effect since 2006 do indeed provide a certain degree of progressivity. For the 2008 rates, the average per-kWh rate at a consumption level of 3000 kWh/month is 6.2% greater than at 900 kWh/month.

However, under the Alternate Rate Design, the average per-kWh rate at a consumption level of 3000 kWh/month is **20%** greater than at 900 kWh/month. The greatly enhanced progressivity of this rate, as compared to HQD's 2008 rates, is shown in the following chart.



There is thus no question that our rate proposal provides a substantially better price signal and significatively greater progressivity than HQD's current rates. The question, then, is: are these improvements are actually needed, or is the current approach is good enough?

This discussion is not occurring in a policy vacuum. On the contrary, the Government of Quebec has expressed itself quite explicitly on this question, in its 2006 energy strategy, *Energy at the Service of Quebec: A Sustainable Development Perspective*:

> Le gouvernement demande donc à Hydro-Québec d'apporter deux séries de modifications à la structure des tarifs, tout en faisant en sorte que ces modifications n'entraînent pas d'augmentation des revenus d'Hydro-Québec et de la facture énergétique des consommateurs dans leur ensemble.
>
> • Le gouvernement souhaite qu'Hydro-Québec propose à la Régie de l'énergie des façons d'accroître la progressivité de la tarification de l'électricité dans le secteur résidentiel, afin de faire en sorte que les derniers kilowattheures consommés soient facturés à un prix plus proche du coût réel des derniers approvisionnements que cela n'est le cas actuellement.
>
> …

> Le gouvernement demande à Hydro-Québec de soumettre à la Régie de l'énergie une nouvelle structure tarifaire, comportant un écart de prix plus important qu'à l'heure actuelle entre les deux paliers, possiblement en augmentant simultanément le seuil actuel de 30 kW par jour, ou instaurant éventuellement un troisième palier, et cela, sans modifier le revenu global de la société d'État. Dans la nouvelle structure tarifaire, le prix correspondant au premier palier serait donc diminué. Une telle modification de la structure tarifaire aurait ainsi pour effet de diminuer la facture d'électricité des petits consommateurs et d'accroître celle des grands consommateurs qui n'auraient pas modifié leurs habitudes de consommation.
>
> Des mesures seront conçues afin d'éviter que la modification de la structure tarifaire affecte certains grands consommateurs à faibles revenus. Ces mesures seront définies en fonction du scénario tarifaire retenu par la Régie de l'énergie. » (nos soulignements)

This can be summarized as follows:

1. The price of the last block should be closer to marginal cost.

2. The price of the first block should be decreased, and the difference between the first and second blocks should be greater.

3. Electricity bills should be lowered for those who consume less, and increased for those who consume more.

4. Additional measures should be designed to protect low-income households with high electric consumption.

In our view, the Alternate Rate Design represents a substantial improvement over the *status quo* with respect to each of these four objectives.

1. **The price of the last block should be closer to marginal cost.** HQD's long-term marginal cost has increased by 11% since the 2007 rate case, and is now 10.5¢/kWh (in 2007 dollars). The second block in the current rate is just 70% of marginal cost, compared to 76% in the alternate proposal.

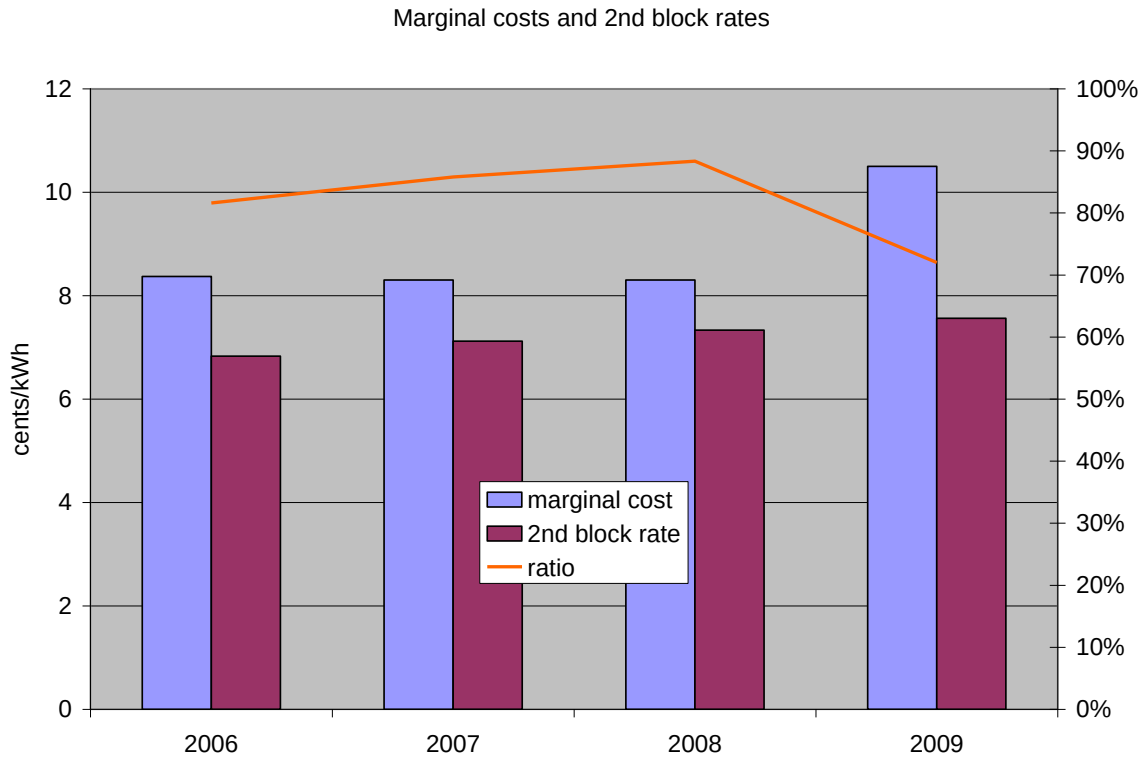
2. **The price of the first block should be decreased, and the difference between the first and second blocks should be greater.** Last year, we proposed lower the price of the first block to 5¢/kWh, but this proposal was rejected by the Régie. The ratio between the blocks is 1.48 under the alternate proposal, up from 1.35 under the current rate Design.

3. **Electricity bills should be lowered for those who consume less, and increased for those who consume more.** It is ironic that the bill effects of the alternate proposal to which HQD

objects, as described in sections 4.1and 4.2, above, are precisely those sought by the government energy strategy.

4. **Additional measures should be designed to protect low-income households with high electric consumption.** Such measures are discussed in the following section.

The rate structure in effect when this policy was issued included a first block at 5.22¢/kWh and the second block at 6.83¢/kWh, corresponding to the middle line of the Appendix B graphic reproduced above. While the second block rate is indeed increasing under Hydro-Québec's strategy, it is not increasing as fast as marginal costs are. Second block rates as a percentage of marginal costs are in fact decreasing, as shown in the following graph.



Thus, the need for the reform described in the Quebec Energy Strategy is in fact increasing.

5 Measures to mitigate the bill impacts of reducing the customer charge

As noted above, the effects of reducing the customer charge as proposed are:

- Reductions of $4.50 per month for bills with no 2nd-block consumption (up to 30 kWh/day);
- Reductions of up to $4.50 per month for bills with consumption between 30 and 52 kWh/day;
- Increases for bills with consumption higher than 52 kWh/day, as follows:

Daily consumption between:	% bill increase	$ bill increase
52 and 66 kWh	0 to 2%	Up to $2.82
66 and 90 kWh	2% to 4%	$2.82 to $8.01
90 and 142 kWh	4% to 6%	$8.01 to $18.43
142 and 371 kWh	6% to 8%	$18.43 to $65.03
371 or more	8 to 8.9%	More than $65.03

It is important to note that these effects are on a per-bill basis, and many consumers will see increases in their winter bills counterbalanced by decreases in their summer bills. On an annualized basis, HQD has evaluated the frequency of bill increases as follows:

% bill increase	% of clientèle
0 to 2%	15.4%
2% to 4%	15.8%
4% to 6%	5.9%
6% to 8%	0.9%
8 to 8.9%	0.1%

Thus, only 6.9% of the clientèle (those with average consumption of more than 90 kWh/day), will see bill increases of more than 4%, and only 1% will see bill increases of more than 6%.

It is important to emphasize, once again, that, broadly speaking, these are precisely the type of modifications expressly indicated in the Quebec Government's energy strategy.

However, in accordance with this same policy and with good regulatory practice, mitigation is nevertheless required for low-income households that would face significant bill increases under this approach.

The income dispersion data reported by HQD clearly demonstrates that, in general, the bill impact increases with household income.[15] This reflects the fact that average electricity consumption also increases with household income.[16] There are, however, exceptions, as noted in section 4.2, where low-income families have disproportionately high electricity consumption and thus would face substantial bill increases under this approach.

It is reasonable to assume that most if not all of these cases are related to heating expense, due to large and/or poorly insulated residences. In rural areas, these are likely to be large, owner-occupied single family residences; in urban areas, they are more likely to be rental apartments.

In both cases, the *Éconologis* program administered by the Agence d'efficacité énergétique, is an important first step. *Éconologis* provides free home visits, including weatherstripping, installation of electronic thermostats and other energy saving devices, for low-income families (annual income of under $40,000 for a family of four).

It is recommended that all households with winter consumption levels of 90 kWh/day or more receive targeted bill inserts informing them about Éconologis and its eligibility criteria. Furthermore, any household with these usage levels which is in arrears should be automatically referred to an *Éconologis* provider, who should contact the customer directly.

For homeowners, *Rénoclimat* provides subsidized energy evaluations, and some subsidies are available for improvements that reduce energy consumption. Furthermore, HQD is currently developing a *Rénovation énergétique* program for low-income households, for August 2008.[17]

Valuable as these programs are, it is unfortunate that there is still no emergency energy assistance program in place in Quebec for families unable to pay their heating bills. In 2001, I prepared a *rapport de balisage* on low-income utility programs in the U.S., which concluded that the most effective "safety nets" for low-income utility customers were composed of a combination of four elements:

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[15] HQD-16, doc. 10, p. 5, Tableau R-4-D.

[16] HQD-16, doc. 2, p. 56, Tableau R-57A.

[17] HQD-14, doc. 1, p. 27.

- consumer assistance programs, which in some states take the form of a low-income rate class,
- low-income usage reduction programs, similar to Éconologis,
- hardship funds, for families in extreme circumstances, and
- customer assistance and referral services.

For the small percentage of low-income households that would see bill increases under the current proposal, targetted efforts to direct them to Éconologis are probably sufficient to compensate the direct effects of this rate modification. However, a certain subset of these households form part of the *triangle rouge* of low-income households who are already in serious difficulty with respect to their energy bills. Addressing this issue, which goes far beyond scope of this hearing, requires a multi-faceted approach, as outlined in my 2001 report.

6 Summary and recommendations

After reviewing the components of the customer charge, we conclude that, based on cost causality and the user-pay principle, the customer charge should be reduced from its current level of 42.3¢/day to approximately 28¢/day. This calculation is based on a number of assumptions, which may be revised if additional information becomes available.

We recognize that policy considerations may lead a regulator to fix the customer charge at a level higher or lower than that which flows directly from the cost of service. In his testimony in this file, Mr. Jim Lazar has reviewed these considerations, in particular with respect to Ramsay pricing and the inelasticity rule. On this basis, he concludes that, in Hydro-Québec's case, given its low average costs (due primarily to the heritage contract) and its much higher marginal cost, the fixed charge should be set at a relatively low level in order to allow the end-block rate to approximate marginal cost. I support this conclusion which, as noted before, is also consistent with Quebec government policy. For these reasons, it would not be inappropriate to "round down" from a cost-based 28¢/day to the 25¢/day rate used in Hydro-Québec's simulations.

Reducing the customer charge obviously requires a corresponding increase in energy charges if the revenue requirement is to be met. In order to bring the marginal rate as close as possible to the marginal cost, we recommend leaving the 1st block charge unchanged and increasing the 2nd block to the level necessary to meet the revenue requirement.

HQD has evaluated that, following this approach, with a customer charge of 25¢/day, the 2nd block rate would have to increase to 8.01¢/day, and it has carried out a simulation of the bill impacts of such a change (the "Alternate Rate Design"). As it is not possible to reproduce this simulation for a 28¢/day customer charge, we have based our analysis on this Alternate Rate Design.

HQD has raised a number of objections to this rate design, based primarily on the bill reductions for low-usage customers, but also on the bill increases for high-use customers. We have addressed each one of these objections, and found them to be unconvincing, for the following reasons:

- Based on strict cost causality, the current customer charge is excessive and thus unfair to low-usage customers.

- While it is possible that some customers might see a bill reduction as a price signal to consume more, this effect can be countered with a communications program that points out that the marginal cost for most customers is **increased**, especially during winter months.

- Most "large residential clients" are served under the DM rate, and thus would face bill increases no greater than typical residential customers.

- High-usage agricultural would indeed face relatively high bill increases. To counter this unwanted effect, we recommend establishing an agricultural tariff with the same block rates, but with a larger first block. It would be important to obtain input from the agricultural sector before determining the appropriate size of this block.

- While most low-income households will see bill decreases, a small number of them will see bill increases. 5% of households in the first two deciles would still see rate increases over 2%, and 5% of households in the first third and fourth deciles would see rate increases of 3.5% or more. **We recommend that all households with winter consumption levels of 90 kWh/day or more receive targeted bill inserts informing them about Éconologis and its eligibility criteria. Furthermore, any household with these usage levels which is in arrears should be automatically referred to an *Éconologis* provider, who should contact the customer directly.**