Réponses de William Harper aux demandes de renseignements de Hydro-Québec – Distribution

Dossier R-3492-2002 – Phase I
5 février 2003

1. Référence: Evidence of William Harper, page 5, paragraphe 5

Préambule:

> *As a result, while cost analysts may strive to identify and isolate plant and expenses incurred exclusively to serve a specific customer class or group of customers, it is unrealistic to assume that large portions of a utility's plant investment and expenses can be directly assigned. In addition, there are practical constraints (e.g. time and budgets) that will limit the extent to which costs can be directly tracked and assigned.*
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> *In evaluating any cost allocation study primary consideration should be given to the need to reflect cost causality to the extent possible. In this regard, while industry standards and precedents have been established which can assist cost analysts in performing cost of service studies, recognition must also be given to the specific utility's circumstances (e.g., its operating characteristics and design). Other considerations include equity, efficiency, stability of results over time, transparency, logical consistency and practical limits of implementation. (notre souligné)*

Question 1.1:

Pouvez-vous élaborer davantage sur la nécessité de refléter dans la mesure du possible la causalité des coûts dans un contexte où une large portion des coûts n'est pas identifiable directement aux catégories de consommateurs ?

Réponse 1.1:

It is standard regulatory practice that one of the primary criteria in setting rates is that they should result in a fair apportionment of costs based on the principle of cost causality. It is for this purpose that cost allocation studies are undertaken and used as guidance in the design of rates. As a result, it is necessary that cost

allocation studies reflect cost causality to the extent possible. The fact that a large portion of a utility's costs is not directly assignable does not mean that one should abandon the principle of cost causality. Rather, it means that the study must identify and develop methods for allocating costs that reflect the nature and underlying drivers of the costs concerned and are based on the best tools and data available.

Question 1.2:

Pouvez-vous également élaborer sur la façon de faire l'arbitrage avec les autres considérations que vous avez mentionnées à savoir l'équité, l'efficience, la stabilité des résultats dans le temps, la transparence, la cohérence, ainsi que les limites pratiques d'implantation ?

Réponse 1.2:

As indicated in the Evidence (page 6), in performing a cost allocation study primary consideration should be given to the need to reflect cost causality to the extent possible. Considerations of the other factors listed are secondary but come into play when a utility is considering alternative methods, particularly methods that a likely to yield similar results over a number of periods. In addition, situations will arise where there may be practical limits due to data availability. See also the Response to Régie Interrogatory 1.1 in exhibit OC-2.

Question 1.3:

D'après vous, quel niveau de détail serait-il nécessaire d'atteindre pour considérer la méthode de répartition de coûts adéquate, c'est-à-dire respectant les considérations soulignées en préambule ?

Réponse 1.3:

See the Response to 1.1.

Question 1.4:

Étant donné qu'une grande portion des coûts n'est pas identifiable directement, considérez-vous que plus les méthodes de répartition de coûts sont détaillées et plus elles sont précises? (Veuillez élaborer votre réponse).

Réponse 1.4:

Not necessarily. More detailed cost allocation methods may not lead to more precise results (i.e., results that better reflect cost causality). More detailed methods where this could occur include:

- Ones where assumptions, that have not or can not be validated, are used in the allocation process, or
- Ones that, while more detailed, are not better at capturing the underlying cost drivers.

Question 1.5:

Les règles utilisées dans une méthode de répartition affectent de façon plus ou moins significative les coûts associés aux différentes catégories de consommateurs. Celles qui sont les plus significatives sont celles qui font normalement l'objet d'analyses plus détaillées. D'après vous, existe-t-il un seuil (en terme de niveau de coûts ou tout autre critère objectif jugé pertinent) à partir duquel une analyse plus détaillée serait justifiée et significative ? Dans l'affirmative, spécifiez le seuil et le critère ou les critères objectifs privilégiés.

Réponse 1.5:

See the Response to 1.1. In performing a cost allocation study, all of the elements of the revenue requirement and rate base should be allocated to customer classes based on either direct assignment or allocation methods that have a basis in cost causality. If the data are readily available to undertake more detailed allocation that will improve the "cost tracking" capability of the overall study, then the question of "thresholds" for determining whether the more detailed analysis is warranted would seem moot.

What is relevant to consider is the question of when more detailed data should be developed, than what is currently available, in order to improve the cost tracking capabilities of the cost allocation methodology. In such situations while the materiality of the costs being allocated is important, establishing the need for such analyses simply on the basis of a cost threshold would be inappropriate and the cumulative impact could be material. Other criteria to be considered would include:

- The cost tracking capability (i.e., reasonableness) of the "simpler" alternative,
- The effort involved in developing and maintaining the currency of the more detailed data requirements, and

- The anticipated improvements in overall cost tracking capability.

Question 1.6:

D'après vous, quelles sont les principales caractéristiques spécifiques du réseau d'Hydro-Québec Distribution qui ont un impact significatif sur les coûts de service répartis aux catégories de consommateurs et considérez-vous que ces caractéristiques ont été prises en compte dans la méthode de répartition des coûts du Distributeur notamment au niveau de la fourniture, du transport, de la distribution et des services à la clientèle ?

Réponse 1.6:

See the Response to 1.5. The January 8, 2003 Evidence outlines the major elements of HQD's cost allocation methodology and identifies those areas where improvements should be implemented (see pages 42-50).

2. Référence: Evidence of William Harper, page 20, paragraphe 2

Préambule:

> *The minimum system analysis calculates customer-related costs for poles lines and transformers associated with the Medium Voltage, Low Voltage and Customer Connection sub-functions. These results are then used to estimate the total costs associated with the three functions. In doing so, it is assumed that :*
>
> - *Connections sub-function costs are all customer-related[55], and*
> - *The facilities in both the Medium an Low Voltage sub-functions have the same percentage split between customer-related and demand-related costs[56].*

Question 2.1:

D'après-vous, est-ce que l'ensemble des entreprises d'électricités canadiennes et américaines maintiennent une comptabilité séparée des coûts de distribution en moyenne et en basse tension ?

Réponse 2.1:

Some utilities do have separate accounting records for low and medium tension distribution costs. However, as it is not a requirement of the FERC Uniform System of Accounts, many utilities do not. In contrast, the FERC Uniform System of Accounts does contain a separate reporting category for Services (i.e., connections).

Question 2.2:

Sinon, y aurait-il une méthode de répartition reconnue ou généralement utilisée pour faire la distinction entre les réseaux en moyenne et en basse tension ?

Réponse 2.2:

There is no generally accepted allocation method to separate out Medium Voltage versus Low Voltage distribution costs. In fact, some of the Canadian utilities that do not maintain separate records do not make any separation of Medium Voltage and Low Voltage costs for purposes of their cost allocation studies (e.g., Manitoba Hydro).

Question 2.3:

Êtes-vous d'accord pour dire que l'étude du réseau de taille minimale utilise des partages au niveau des éléments du réseau (câbles, transformateurs et poteaux) qui sont tout aussi appropriés pour le réseau actuel du Distributeur que pour le réseau de taille minimale ?

Réponse 2.3:

The question is understood to be seeking comment on the appropriateness of the minimum system definition used by HQD and applied to its existing distribution system for purposes of determining customer-related costs. As indicated in the Evidence (page 29), there is no standard definition in terms of the equipment that should be used in the minimum system calculation – primarily because electric distribution systems differ widely in terms of operating voltages and equipment used. In addition, there are a number of ways (as discussed in the NARUC Electric Utility Cost Allocation Manual – page 95) to determine the minimum size for each piece of equipment. HQD has indicated (HQD-9, document 1, page 48, lines 2-4 and 7-9) that its determination of the minimum system equipment requirements, as detailed in HQD-10, document 1, Question 78 (page 142), is based on the minimum sized equipment currently installed to serve customers on its system. This is one of the commonly used approaches and an acceptable way of applying the minimum system theory provided:

- There is a proper matching between the equipment included in the minimum system costs and the equipment included in the accounting costs used to determine demand-related costs in Annexe 1, Tables 2 and 3, and

- The effects of inflation have been properly accounted for.

Question 2.4:

Êtes-vous d'accord pour dire que les facteurs de classement en puissance et abonnement appliqués dans la proposition d'Hydro-Québec Distribution au niveau de l'ensemble des réseaux en moyenne tension et en basse tension ne sont pas les mêmes ?

Réponse 2.4:

The overall demand-customer classification factors for the Medium Voltage and Low Voltage functions are different – as noted on page 28 of the Evidence. However, the referenced section of the Evidence was referring to the fact that HQD's minimum system analyses assumes that the demand-customer factors are the same for medium and low tension poles (see HQD-9, Document 1, page 55, Table 2, line 29) and, similarly, assumes that the demand-customer factors are the same for medium and low voltage lines (see HQD-9, Document 1, page 56, Table 3, lines 7 & 23).

Question 2.5:

Si l'étude du réseau de taille minimale ne servait pas de référence pour établir les coûts des fonctions réseaux moyenne tension et réseaux basse tension, il faudrait alors réaliser une étude distincte. Expliquez la nature de cette étude et

les hypothèses sous-jacentes qui seraient différentes de celles utilisées dans le réseau de taille minimale.

Réponse 2.5:

The Evidence contains two recommendations (see page 49) aimed at improving the basis on which the costs for the Medium Voltage and Low Voltage functions (along with the Connections function) are established and classified for cost allocation purposes.

The first recommendation is that "HQD should be encouraged to review its account records and determine whether the cost of medium voltage, low voltage and customer connections can be separately established and tracked". What is being suggested here is that Hydro Quebec Distribution review all of the accounting-related data and analyses (such as depreciation review studies) available to it and determine if any information would provide additional insight into the relative costs of medium versus low voltage systems. This could also entail determining if it was possible to develop accounting cost data for representative portions of both systems as opposed to the system in total. Such data could then be used to benchmark the relative total costs for the two systems and in conjunction with the minimum system's determination of customer costs, be used to derive the demand cost by function.

The second recommendation was that "HQD should also be directed to undertake further analysis to substantiate its assumptions that:

- Customer connections are 100% demand-related *(Note: A correction is required to Evidence on page 49 which should read 100% customer-related)*

- The demand/customer split is the same for Medium and Low Voltage facilities (i.e. poles and lines)."

One way of approaching this analysis would be to compare the cost of the minimum components (as established in Annexe 1) with the replacement costs for the types of equipment most commonly used for the Medium Voltage and Low Voltage systems – as discussed in response to OC Interrogatories #8 and #10 (HQD-10 doc. 8, pages 12-13 and 14-16). Development of such ratios would help HQD confirm whether its current assumptions regarding the demand-customer split are correct and, if not, provide the required information to revise their cost allocation study results.

3. Référence: Evidence of William Harper, page 32, paragraphe 3

Préambule:

> *Finally, there is a load carrying capability associated with the minimum system. HQD has indicated that is in the order of 1-2 kVA (1-2 kWs) per connection. Since the costs associated with this minimum load are allocated to customer classes as customer-related cost it is necessary to adjust the 1 NCP values used to allocate demand related costs in order to avoid double counting. This is generally done by reducing the 1 NCP value for each customer class by the product of the per customer load carrying capability of the minimum system and the number of customers served.*

Question 3.1:

Compte tenu qu'Hydro-Québec dans la réponse 79.2 à la demande de renseignements de la Régie (voir HQD-10, Document 1, p. 144 145) a précisé que le réseau de taille minimale pourrait seulement livrer une puissance bien inférieure à 1 kVA moyen par abonnement, comment justifiez-vous que votre calcul d'ajustement utilise 2 kW par abonnement ?

Réponse 3.1:

The load carrying capability of the minimum system should be based on the maximum load that the equipment associated with the minimum system could carry without compromising the integrity of equipment or the overall system, without reference to the capabilities of the existing system. However, the 1 kVA value put forward by HQD was not determined in this manner but rather by adjusting the nominal load carrying capability of the minimum system by the excess capacity currently available in the HQD system overall – under the assumption that the existing excess capacity on the overall system represents the excess needed for reliability and quality of service purposes on the minimum system. As a result, of the two values offered in the HQD response, the 2 kW value appeared to more closely represent what was required for the calculation.

The Evidence's recommendation (page 45) calls for HQD to adjust the demand allocators by the "load carrying capability of the minimum system". It is expected that, as part of its 2004-2005 rate filing, HQD would put forward information to substantiate their proposed value.

Question 3.2:

Même si le réseau de taille minimale pouvait fournir une puissance bien inférieure à 1 kVA, expliquez pourquoi il faudrait considérer un facteur de coïncidence de 100 % et appliquer cette pleine valeur que représente le réseau de taille minimale par abonnement sur la puissance appelée des catégories de consommateurs ?

Réponse 3.2:

The loads associated with the minimum system are generally considered to be those associated with basic needs, such as lighting. As such, there is likely to be little diversity between customers and the use of a 100% coincidence factor is reasonable (see also the Response to Régie #3, in exhibit OC-2).

Question 3.3:

Pouvez-vous citer quelques entreprises canadiennes ou américaines qui ont procédé à l'ajustement des résultats de l'étude du réseau de taille minimale et expliquer l'ajustement ?

Réponse 3.3:

Hydro One Networks is the only utility Mr. Harper is directly aware of as having made this adjustment. However, the need for the adjustment is clearly highlighted in NARUC's Electric Utility Cost Allocation Manual:

> "When using this distribution method (i.e., the minimum system method), the analyst must be aware that the minimum-size distribution equipment has a certain load-carrying capability, which can be viewed as a demand-related cost." (page 95)

In the case of Hydro One Networks, the minimum system calculation was based on the system capable of maintaining a nominal load of about 100 watts per customer. The adjustment to the 12 NCP value calculated for each customer class involved reducing the overall value in each case by the product of 100 watts and the number of customers in the class.

Question 3.4:

Croyez-vous qu'il soit inapproprié d'établir un coût d'abonnement pour le réseau de distribution au-delà des coûts de branchement et de mesurage compte tenu que le concept du réseau de taille minimale est théorique et qu'il est évalué à partir d'hypothèses ?

Réponse 3.4:

It is generally accepted that a portion of distribution plant costs (over and above connection and metering costs) should be considered customer related for cost allocation purposes, if for no other reason than adding additional customers requires more distribution line. While a theoretical concept, the minimum system method represents a reasonable and logical way to estimate customer costs, particularly since there is no way to identify them directly. Admittedly, the

minimum system method is based on assumptions which can vary across utilities – particularly as to the definition of the minimum system equipment. The use of assumptions and variation in equipment is one reason why it is important to adjust the demand allocators for the load carrying capability associated with the minimum system definition used.

It should be noted that the issue of how much of the customer-related costs identified for each customer class should be recovered through monthly customer (or service) charges as opposed to through rates based on usage is a separate issue and one that will be addressed in Phase II of the current proceeding.

Question 3.5:

Dans votre rapport, vous confirmez que la part de la composante abonnement d'environ 38 % (page 29, paragraphe 2, lignes 25 à 28) est comparable aux résultats obtenus dans d'autres études canadiennes. Comment expliquez-vous le fait qu'il y a plusieurs entreprises américaines qui n'appliquent aucune des deux méthodes (réseau de taille minimale et coûts fixes extrapolés) ?

Réponse 3.5:

The paragraph from which the 38% is taken (Evidence, page 29) is discussing the fact that minimum system methodologies vary across jurisdictions and the "other Canadian utilities" referred to are ones that performed minimum system studies.