

**DOSSIER : R-3549-2004 – PHASE 2**

**RÉPONSES DE BRASCAN ENERGIE MARKETING INC. (BEMI)  
À LA DEMANDE DE RENSEIGNEMENTS NUMÉRO 1  
DU TRANSPORTEUR**

**LE 7 NOVEMBRE 2005**

**DEMANDE DE RENSEIGNEMENT NUMÉRO 1 DU TRANSPORTEUR  
À BRASCAN ÉNERGIE MARKETING INC. (BEMI)  
RELATIVE À LA DEMANDE R-3549-2004 – PHASE 2**

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**1. Référence :** i) Mémoire de Brascan Énergie Marketing Inc. (BEMI), BEMI-1, page 10.

**Préambule :**

i) « *Par conséquent, BEMI soumet respectueusement que l'utilisation du réseau de transport serait mieux optimisée si HQT était tenue de mettre régulièrement à l'encan sa capacité disponible de services de transport de point à point. Nous estimons que la Régie doit considérer sérieusement cette alternative et ordonner à HQT d'analyser comment un encan pourrait être mis en place au Québec, le tout à l'avantage et au profit de tous ses clients incluant ceux de la charge locale.* »

**Demandes :**

**1.1** Dans le contexte où environ 96% des revenus de point à point du Transporteur proviennent d'un seul client, tel qu'indiqué à la pièce HQT-2, Document 2, Tableau 3, veuillez démontrer, chiffres à l'appui, que la proposition que vous formulez d'offrir à l'encan la capacité de transport disponible pour les services de transport de point à point favorisera une plus grande accessibilité au réseau et qu'elle permettra de générer annuellement des revenus des services de point à point au moins équivalents à ceux prévus par le Transporteur dans la présente demande.

**R1.1** In the first part of the evidence provided by our expert, London Economics, we demonstrated the concept of elasticity of demand for transmission services.

Let us first consider two hypothetical transmission tariffs: a tariff of \$1,000 /MW-hour and a tariff of \$0.00 /MW-hour.

- Under the first tariff, because the transmission tariff is very high we would not expect any participant to use the transmission system for point-to-point transactions. HQT's income from point-to-point sales would therefore be zero dollars.
- Under the second tariff, because the price is so low (although not zero due to the additional cost of ancillary services etc), we would expect many people to use the transmission system for point-to-point service. But with a price of zero, the transmission revenue would once again be zero dollars.

Between these two extreme prices there is a price that maximizes HQT's income from point-to-point service. We do not know what this price is because we do not know how each of the twenty-plus traders active in the northeastern US markets would value access to HQT's system. However, because that they presently do not use HQT's system, we very much doubt it is equal to or greater than the arbitrary value of \$8.33 /MW-hour proposed by HQT. The question for HQT is therefore how to determine in a cost-effective way the price that maximises the economic use of HQT's transmission system for point-to-point service.

We turn to the second part of the evidence provided by our experts. In this evidence, London Economics explain how auctions are used in other jurisdictions to determine the price that economically allocates transmission capacity to the benefit of all users, including native load. What we are suggesting to HQT is that an auction for physical transmission capacity would be a better way to find the price that maximises the use of HQT's transmission system for point-to-point service than choosing an arbitrary rate of \$8.33 /MW-hour, with or without a rebate policy.

In conclusion, we are suggesting that an auction process would encourage more traders to use HQT's transmission system, could increase use of HQT's system and reduce HQT's current reliance on a single user to provide 96% of their point-to-point income.

**1.2** Veuillez indiquer le nombre minimal de participants actifs au marché qui est requis pour assurer le fonctionnement optimal du système d'encan proposé.

**R1.2** The underlying inspiration for setting rates for transmission based on auction outcomes is to proxy the influences, discipline, and efficiency effects of a competitive market process. Thus, competition is a crucial element for a successful auction. In that regard, the appropriate consideration is not conditioned on the number of participants but the interaction of those participants – the quality of competition. An announcement of an auction will naturally stimulate interest in possibly acquiring transmission capacity. Moreover, auction rules can be designed to achieve a more competitive environment and information disclosure policies can help motivate more active bidder participation by leveling the playing field between different bidders and resolving uncertainties that some bidders may have about the value of the product.

In some of the auctions we described in our submission to the Régie, there were only a few companies bidding for capacity along a specific point-to-point, but that did not detract from the success of the auction process. As further example, the successful “open season” auction for physical transmission capacity along the proposed new MAPP-Alberta Intertie involved only four companies.<sup>1</sup> According to statistics published by the National Energy Board, there were three entities involved in importing and exporting electricity to and from Québec in 2004, but over 140 entities have authorization by from National Energy Board to export electricity in and out of Québec. We believe an auction process resulting in lower transmission prices will motivate other entities to acquire capacity on HQT's network.

**1.3** Dans le cas où la formule que vous proposez ne permettait pas d'atteindre l'objectif de générer des revenus des services de transport de point à point au moins équivalents à ceux générés actuellement, soit en raison de l'absence d'un nombre suffisant de clients participant à un tel encan, ou soit en raison de l'absence de congestion significative sur les interconnexions avec les réseaux voisins, ou pour toute autre raison, comment la clientèle des services de transport de point à point pourrait-elle être assurée qu'elle assume sa part équitable des coûts du réseau et que la formule proposée ne favorise pas le transfert d'un fardeau additionnel à la charge locale ?

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<sup>1</sup> There are 21 entities registered as open season participants in the Montana Alberta Tie Ltd. (MATL) open season auction, but only four entities submitted bids.

**R1.3** We refer first to HQT-4 Document 1, p. 11:

« Cependant, en commercialisant des capacités de transport auprès de la clientèle des services de transport de point à point à long terme et à court terme, le Transporteur peut optimiser l'utilisation de son réseau et partant, obtenir des revenus additionnels qui permettent de réduire la part des revenus requis assumée par la charge locale. D'ailleurs, en l'absence de clients des services de transport de point à point, la totalité du coût du service de transport devrait être assumée par la charge locale, tel que le souligne la *Federal Energy Regulatory Commission* (FERC). »

Under the charging methodology used by HQT, native load are responsible for all the costs of the transmission costs. Any point-to-point revenue helps lower the costs paid by native load. We cannot determine at this point in time what would be the potential point-to-point revenue, we would therefore expect HQT to be exploring all possible options, including a transmission capacity auction, that could increase point-to-point revenues to the benefit of native load. We believe that the cost of running an auction is small compared to the potential benefits. We would note that HQT could design the auction process in consultation with stakeholders, for example including a minimum floor price, to prevent certain undesirable outcomes.

**2. Référence :** i) Mémoire de Brascan Énergie Marketing Inc. (BEMI), BEMI-1, page 12.

**Préambule :**

i) « *Qu'il soit localisé au Québec ou à l'extérieur de la province, le producteur qui demande du transport de point à point afin soit de passer à travers le réseau ou soit de sortir du réseau de TransÉnergie, fournit déjà lui-même, à ses frais, son contrôle de tension et de fréquence.* »

**Demande :**

**2.1** À partir d'un cas simple, par exemple celui d'un client qui effectue une réservation de service de transport de point à point sur le réseau du Transporteur prévoyant la réception d'électricité produite sur le réseau du Nouveau-Brunswick (point de réception NB) et la livraison vers le réseau de New York (point de livraison MASS), veuillez expliquer de quelle façon le client effectue à ses frais le contrôle de tension et le contrôle de fréquence sur le réseau du Transporteur, comme il est indiqué en préambule.

**R2.1** Le client du service de transport contrôle la tension et la fréquence de son réseau et fournit (ou reçoit) l'électricité en conformité avec les règles établies en vertu de leur convention d'interconnexion entre les deux réseaux. L'électricité est donc fournie à la tension et à la fréquence requises par HQT dans la région. Dans le cas de l'exemple proposée par HQT, l'électricité en provenance du Nouveau-Brunswick diminue, à notre connaissance, les besoins pour HQT de fournir le contrôle de tension dans la péninsule gaspésienne puisqu'elle reçoit de l'électricité d'une source beaucoup plus rapprochée des moyens de production d'HQP. Par ailleurs, il est possible que le besoin de contrôle de tension et de fréquence soit quelque peu accru sur le chemin MASS, contrebalançant la diminution sur le chemin NBP.

**3. Référence :** i) Mémoire de Brascan Énergie Marketing Inc. (BEMI), BEMI-1, page 12.

**Préambule :**

i) « *Quant aux besoins de réserve, de l'avis même de TransÉnergie, cette catégorie de clients (transport de point à point) n'ajoute en rien aux besoins de réserve tournante et arrêtée.* »

**3.1** Veuillez expliquer pourquoi l'utilisation de services complémentaires répondant à la fois aux besoins de la charge locale et à ceux des clients des services de point à point devrait être offerte gratuitement à ces derniers, alors que la charge locale doit de son côté fournir l'ensemble des services complémentaires requis pour ses propres besoins et qu'elle doit en assumer les coûts.

**R3.1** Dans le cas particulier du Québec, le choix qui a été fait par le gouvernement du Québec en vue de déréglementer la production d'électricité a été de créer le concept de l'énergie patrimoniale. Les services complémentaires sont déjà inclus à l'énergie patrimoniale par décret gouvernemental. Or, le service de réserve demeure le même quelque soit le niveau de charge du réseau d'Hydro-Québec, soit 1500 MW. Dans le cas d'une transaction de passage, le client du service de transport fournit une quantité d'énergie à un point du réseau d'HQT pour le reprendre à un autre point (moins les pertes, même si dans les faits et dans la majorité des cas aucune perte réelle n'est encourue) et n'a donc aucunement modifié les besoins de réserve.

La prémisse voulant que le Distributeur ait à payer les services complémentaires nous apparaît fausse puisque ceux-ci sont inclus à la fourniture de l'énergie patrimoniale. Lorsque le Distributeur achète de l'électricité d'un fournisseur localisé ou non au Québec, rien n'indique que les besoins de contrôle de tension et de fréquence sont accrus pour autant de la part du Producteur. Le Distributeur, tout comme les réseaux interconnectés, doivent s'assurer que les raccordements sont conformes aux normes de TransÉnergie.

La Régie, à notre humble avis, doit tenir compte des coûts encourus pour servir un client et ne pas lui imposer des frais qui ne sont pas liés au service fourni.

**4. Référence :** i) Mémoire de Brascan Énergie Marketing Inc. (BEMI) BEMI-1, page 13.

**Préambule :**

i) « *En réponse à la question 4.2 de la Régie, le Transporteur présente un tableau en page 7 de la pièce HQT-6, Document 1 par lequel il démontre les écarts importants entre la situation actuelle et celle proposée. Le coût des services complémentaires pour le service de point à point passe de 455 900 \$ à 3 556 000 \$ pour le Producteur (qui ainsi se paie à lui-même) et de 18 300 \$ à 11 184 700 \$ pour les clients tiers.*»

**4.1** Veuillez confirmer ou infirmer que les montants indiqués en préambule représentent les totaux correspondant à chacune des colonnes de la pièce HQT-6, Document 1, page 7, Tableau R4.2. Sinon, veuillez indiquer le détail des calculs effectués afin d'arriver à ces montants pour chaque clientèle (Hydro-Québec Production ou clients tiers).

**R4.1** Les données utilisées proviennent entièrement des données fournies par HQT en réponse à la question de la Régie. Il s'agit effectivement des totaux correspondant à chacune des colonnes de la pièce HQT-6, Document 1. Toutefois, nous notons

qu'une erreur s'est glissée dans notre mémoire à la page 13. Le texte aurait dû se lire de la façon suivante : « Le coût des services complémentaires pour le service de point à point passe de 455 900 \$ à 11 184 700 \$ pour le Producteur (qui ainsi se paie à lui-même) et de 18 300 \$ à 356 000 \$ pour les clients tiers. Ceci représente une augmentation cumulative de 1 845 %. ».

**5. Référence :** i) Mémoire de Brascan Énergie Marketing Inc. (BEMI), BEMI-1, page 19

**Préambule :**

i) « *La compensation du producteur devrait donc inclure la base de coût d'opportunité au moment de la demande, les caractéristiques du marché québécois et la réalité commerciale ne se prêtant pas à un traitement similaire à celui des marchés voisins.* »

[...]

« *BEMI s'oppose à ce que le paiement par HQT au producteur s'effectue seulement lors de la « réception du paiement de la zone de réglage réceptrice* »

**Demande :**

**5.1** Advenant le cas où un fournisseur soit appelé par le Transporteur pour répondre à une demande de livraison d'énergie d'urgence de la part d'un réseau voisin et advenant le cas où, par la suite, le prix ou la formule de prix proposée par le fournisseur pour cette livraison d'énergie d'urgence soit différente de celles généralement convenues entre réseaux voisins et jugé inacceptable par le réseau voisin ayant reçu l'énergie d'urgence, quels seraient les motifs justifiant que le Transporteur assume le risque de mauvaise créance au nom du fournisseur d'énergie d'urgence ayant proposé un tel prix ou formule de prix jugé inacceptable par le réseau voisin ?

**R5.1** Tout d'abord, tel que mentionné dans notre mémoire, le Transporteur doit assumer pleinement son statut d'administrateur de réseau et toutes les obligations qui en découlent incluant celle de percevoir les sommes relatives aux services d'énergie d'urgence. Il est indéniable que les ententes d'échanges d'énergie d'urgence sont signées entre opérateurs de réseaux voisins et que les producteurs du Québec n'en sont aucunement partis.

Dans l'éventualité précisée par HQT, notre position est claire. Cette dernière devrait tenir indemne le ou les producteurs ayant portés assistance dans de telles circonstances. Advenant qu'un réseau voisin refuse d'indemniser HQT, celle-ci devrait donc payer directement le producteur et prendre action auprès du réseau voisin. Il s'agit d'une transaction entre réseaux voisins et l'énergie fournie par le producteur désigné à la demande expresse d'HQT. Le producteur ayant donc un engagement contractuel avec HQT, le risque de paiement des tierces parties est un risque d'affaires devant être assumé par cette dernière.

Par ailleurs, la situation proposée par HQT ne devrait pas trouver application dans la mesure où une entente intervient d'avance avec le fournisseur quant à la formule de prix applicable reflétant les conditions de marché en vigueur au moment où la demande est faite. Ce type de formule de prix est connu et appliqué dans l'industrie. En effet, dans les marchés contrôlés par les ISOs, une ressource appelée à contribuer de l'énergie pour des raisons de fiabilité sera compensée sur une base de « Reliability Must Run » ou de « Constraint on ».

- 6. Référence :** i) Introduction to market-based mechanisms for optimizing usage of transmission network assets: transmission capacity auctions, London Economics International LLC, BEMI-3, page 5

**Préambule:**

i) « Auctions of financial transmission rights involve the sale of a financial instrument that is derived from the underlying physical capacity. The underlying purpose of a physical rights auction and financial rights auction is alike and typically the auction process, itself, would be similarly driven by supply-demand fundamentals. There is, however, one key difference between an FTR and a physical transmission right. The buyer of the FTR at the auction pays for the right to receive (or pay) congestion rents<sup>5</sup> associated with the specified transmission path, rather than to use the physical capacity.

*5 Congestion rents arise when transmission line constraints prevent cheap power from one region (market) from flowing to a higher priced region (market). The need to dispatch more expensive generation in the region cut off from further imports means that prices in that region rise; those who control the available export capacity on the line are then able to garner additional revenues from the resulting higher prices in the zone to which they are exporting. These additional revenues are typically referred to as "congestion rents." »*

**Demandes:**

**6.1** Tel qu'indiqué en préambule, les droits financiers offerts par encan dans les réseaux voisins du Transporteur sont différents du droit physique d'utilisation du réseau de transport. Ce dernier est quant à lui octroyé au participant au marché lorsque sa soumission (« bid ») pour l'achat ou la vente d'électricité est acceptée par l'ISO exploitant le marché. Advenant le cas où le Transporteur voulait tenir un encan pour vendre le droit physique de transport sur son réseau et que la capacité disponible sur une interconnexion soit limitée, qu'advierait-il dans le cas où le gagnant de l'encan pour une capacité donnée sur le réseau du Transporteur était différent du gagnant pour la capacité identique octroyée par l'ISO du réseau voisin ?

**R6.1** Though physical and financial transmission rights are different, the underlying value and benefits that they confer on their holder can be characterized as similar – physical transmission rights insure that the holder's transaction along the acquired path will not be "rejected" because of congestion while financial transmission rights hedge against this same potential congestion through financial terms. Although it is true that some of the surrounding markets (Ontario, New York, and New England) have financial transmission rights auctions, this should not detract from the success of an auction of physical transmission capacity on HQT's system. An auction of available point-to-point capacity on HQT's system would give the holder the right to use the capacity and schedule power along that point-to-point, for example up to the point of interconnection between Québec and New England. At the juncture, the entity must also schedule its transaction with ISO New England, as it has always been required to do.

It is also important to note that in most markets, financial transmission rights are not granted with associated energy sales, but rather acquired by those entities that want to hedge their transactions against congestion costs. In some markets, in fact, there may not be enough financial transmission rights to hedge all energy transactions; however, market participants are still active in pursuing energy transactions and are willing to take some of the congestion risk. To the extent that financial and physical transmission rights are also traded in the secondary

(bilateral) market, we would expect re-allocation of the rights acquired in the auction consistent with principles of allocative efficiency.

**6.2** Dans les circonstances soulevées à la question 6.1, les clients des services de transport de point à point sur le réseau du Transporteur seraient-ils motivés à soumettre des offres équitables au Transporteur en fonction de la valeur réelle du service offert sur le réseau de ce dernier ou préféreraient-ils soumettre au Transporteur des offres à prix minimal, puisque seul le soumissionnaire retenu dans le marché du réseau voisin pourra transiter sur le réseau du Transporteur ?

**R6.2** The value of a transmission right is based on one's expectations about the costs of congestion along the point-to-point path. This expectation is developed by looking directly at the expected economics surrounding the injection and withdrawal points of the defined path, but is also contingent on understanding how adjacent transmission paths and other elements of the transmission system impact congestion. It is possible that the value of two paths is greater than the sum of individual values from those two paths. In economics, these paths would be characterized as complimentary products. Indeed, the goal of combinatorial auctions, which have been used extensively with financial transmission rights and many other products and services, is to auction a set of products and provide a venue for bidders to bid on one or more products. To the extent that a bidder does not win all the paths he bid on, there are typically future opportunities for further trade (i.e., through secondary (bilateral) markets).

It is also important to remember that the financial transmission rights in adjacent markets do not preclude scheduling of energy transactions, but merely provide a financial settlement which hedges the congestion component of energy transactions. Thus, as discussed in our answer to Question 6.1, an entity may decide to take on the congestion risk for part of the contract path for which it had not acquired capacity rights in the auction; or, alternatively, it may seek to negotiate financial transmission rights for the next leg of the contract path in the secondary (bilateral) market. An entity that has delivered energy up to the point of interconnection can also sell the energy at that node.

### **Demandes de renseignements du Dr. Ren Orans**

**7. Référence :** i) Conceptualizing the impact of demand elasticity of transmission services on the potential revenues to Hydro-Québec TransÉnergie, BEMI-2, page 1.

#### **Préambule:**

i) « *According to the principles of the Law of Demand, this price sensitivity translates into a very elastic demand for such short-term point-to-point transmission services.* »

#### **Demande:**

**7.1** Have you estimated the transmission demand curve specific to HQT's short-term point-to-point service that shows the quantities demanded at different transmission rate levels?

**R7.1** At this time, we have not conducted a comprehensive elasticity of demand study for short-term point-to-point transmission services on HQT's system. Nevertheless, we

believe that it is vital for HQT to conduct such a study and urge the Régie to direct HQT in this regard.

- 8. Référence :** i) Conceptualizing the impact of demand elasticity of transmission services on the potential revenues to Hydro-Québec TransÉnergie, BEMI-2, page 8.

**Demandes:**

- 8.1** Please confirm that the price shown on the vertical axis of Figure 10 is the price of power delivered at the Québec border.
- R8.1** The price in Figure 10 of our report represents hourly Locational Marginal Prices (LMPs) in the Day-Ahead market for energy, as reported by ISO New England (ISO-NE). More specifically, we have used the LMPs for the Phase II External Node, which is one of ISO-NE's interconnection points with the Québec system.
- 8.2** Please confirm that the price shown on the vertical axis of Figure 10 only includes the transmission costs imposed by ISO-NE, not HQT.
- R8.2** The LMP used in Figure 10 consists of three elements: the underlying energy costs, transmission congestion on ISO-NE's system, and marginal losses on ISO-NE's system.<sup>2</sup>
- 8.3** Does this figure show the change in the usage of HQT's short-term point-to-point service due to a change in HQT's transmission rate?
- R8.3** Figure 10 graphs the hourly flows of energy metered by ISO-NE on the Phase II External Node (i.e., flows between Québec and New England markets) against the Day-Ahead LMP at that External Node. Though the LMP is based on ISO-NE's determination, it is a good proxy for the opportunity costs of energy from the perspective of the Québec market, inclusive of any variable transmission charges, such as short-term, non-firm point-to-point charges.
- 8.4** Please provide the estimate of the slope coefficient of the red downward sloping trend line in Figure 10 and statistical significance of the estimate.
- R8.4** Each dot in Figure 10 represents a quantity of energy (and respective volume of transmission services) at a given price (LMP). For illustrative purposes, we included a linear trend line based on a multi-year sample of data (March 2003 through August 2005). This trend line documents how point-to-point flows along the Phase II intertie between Québec and New England changed on average as a function of price over the last several years. The downward slope of the trend line is reflected in the sign of the coefficient. The negative coefficient signifies that the volume of flows declines as prices increase.

The trend line can be mathematically formulated as a simple regression:

$$\text{Volume of flows metered on Phase II External Node} = a + b \cdot \text{LMP at Phase II External Node}$$

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<sup>2</sup> Market participants transacting in New England may also be required to pay the Pool Transmission Facilities charge (PTF) and other administrative charges.

Where a = intercept and b = coefficient on the explanatory variable (LMP), i.e., the slope of the trend line

The coefficient of the slope is -0.014. It is statistically significant at a 95% confidence level with a t-statistic of -66.43. We present the regression results in the table below:

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	49.628	0.137	363.154	0.000
LMP	-0.014	0.000	-66.434	0.000

*N (number of data observations) = 21960*

**9. Référence :** i) Conceptualizing the impact of demand elasticity of transmission services on the potential revenues to Hydro-Québec TransÉnergie, BEMI-2, page 9

**Demandes:**

**9.1** Please confirm that the linear demand curve with a price elasticity of -2 is an assumption made by London Economics International LLC, and not based on actual data specific to HQT.

**R9.1** The linear demand curve with a price elasticity of -2.0 is an assumption made by London Economics purely for illustrative purposes.

**9.2** Suppose HQT has found that lowering its short-term rate by 25% did not increase short-term transmission usage. Would such a finding support a price elasticity estimate of -2?

**R9.2** In our paper, we included a hypothetical example which described the mechanics of elasticity by demonstrating how a rate decrease from current published rates (hourly non-firm of \$8.33/MWh) could raise HQT's revenues from point-to-point services. In this example, we have applied an assumed elasticity of -2.0 (as noted in answer to Question 9.1) and a linear demand curve for all short-term point-to-point transmission services on HQT's system. We utilized HQT's annual revenue requirement and projected share of point-to-point services ("North American wholesale transactions") to prepare a hypothetical example. We further assumed a 15% rate decrease would apply across the board for all available point-to-point paths and across all time periods and further assumed that the elasticity was identical across all paths and time periods and that demand for services was linear. On the basis of such assumptions, we estimated that revenues earned from such point-to-point services would rise by over 2% or approximately \$2.3 million over the baseline allocated revenue requirement for "North America wholesale transactions."

In reality, it is likely that elasticity of demand may change depending on time period and specific location of the path and class of service (firm, non-firm, etc.). If one were to measure elasticity through 'natural experiments,' it is important to distinguish the market dimensions that underlie the 'natural experiment.' For example, HQT's previous rebate program was applied only in certain hours and only for a certain class of services. Thus, any observations regarding demand response to that rebate would hold only for the segment of the market analyzed.

- 10. Référence:** i) Introduction to market-based mechanisms for optimizing usage of transmission network assets: transmission capacity auctions, London Economics International LLC, BEMI-3, page 1.

**Préambule:**

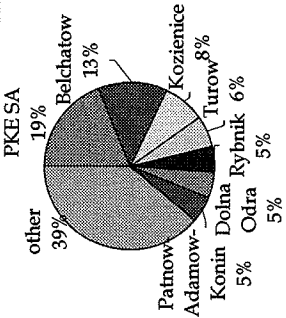
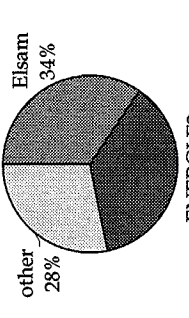
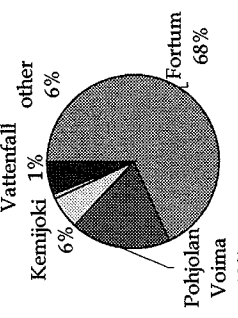
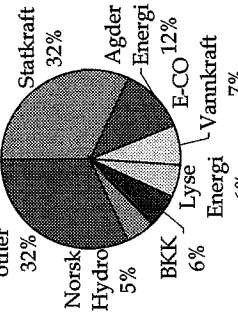
i) « *This brief paper provides an overview of auction mechanisms and describes the experiences of a sample of jurisdictions with transmission auction processes, as described in the table below.* »

**Demandes:**

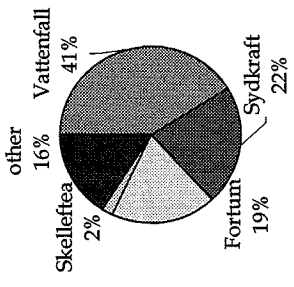
**10.1** Have all these jurisdictions undergone electricity market reform that deregulated the generation market inside each jurisdiction?

**R10.1** The jurisdictions we highlight on page 1 of our report on transmission auctions have undergone different reforms of their electricity market. Many of these jurisdictions still have state-owned companies involved in the transmission, distribution, or generation of electricity, especially in the case of the European nations. Furthermore, many of these jurisdictions do not have a centralized power pool or full retail competition. The table below highlights some of the key characteristics of the electricity sector in each of the European jurisdictions we mentioned on page 1 of our report.

Country	Deregulation law	Centralized ISO/TSO	Centralized power pool	Ownership of generation capacity & Status of retail market opening												
<b>Germany</b>	The 1998 Energy Law (EnWG) introduced open access and allowed for wholesale and retail competition, but did not require centralized market operations	No single entity; coordination between the four transmission system operators: RWE, E.On, EnBW, and Vattenfall	No centralized power pool; several voluntary energy exchanges started by market participants to supplement bilateral transactions (LPX merged with EEX in 2002)	84% of installed capacity controlled by four companies, hundreds of other companies (mainly municipals) also own generation capacity. In addition, E.On and RWE directly control 60% of the market and have stakes in many municipals												
				<table border="1"> <caption>Ownership of installed capacity in Germany</caption> <tr><th>Company</th><th>Percentage</th></tr> <tr><td>RWE</td><td>33%</td></tr> <tr><td>Vattenfall</td><td>12%</td></tr> <tr><td>EnBW</td><td>14%</td></tr> <tr><td>E.On</td><td>25%</td></tr> <tr><td>other</td><td>16%</td></tr> </table>	Company	Percentage	RWE	33%	Vattenfall	12%	EnBW	14%	E.On	25%	other	16%
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<b>France</b>	The Electricity Act of 2000 transposed the EU Electricity Directive and prepared groundwork for market liberalization (retail market competition only for large users currently); EdF Group continues to be owned by the state, and thus owns majority of generation and RTE, France's TSO	State-owned RTE is the TSO	No centralized power pool; Powernext (a voluntary exchange) has been in operation since November 2001, though majority of market transacts bilaterally	Generation market is dominated by EdF, a state-owned company. High percentage of nuclear plan ownership means that even harder to break into market given EDF price advantage												
				<table border="1"> <caption>Ownership of installed capacity in France</caption> <tr><th>Company</th><th>Percentage</th></tr> <tr><td>EdF</td><td>88%</td></tr> <tr><td>other</td><td>9%</td></tr> <tr><td>CNR</td><td>3%</td></tr> </table>	Company	Percentage	EdF	88%	other	9%	CNR	3%				
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EdF	88%															
other	9%															
CNR	3%															
<b>Czech Republic</b>	The Electricity Act of 2000 laid out the path for power sector liberalization for the Czech Republic in accordance with EU directives; though currently only large customers benefit from competition	State-owned CEPS is the TSO	OTE (state-owned) was established in 2002 to administer a residual spot market and coordinate medium-term and long-term planning studies; however, bilateral contracts dominate the market	CEZ controls over 70% of the country's installed capacity, and is majority owned by the state through the National Property Fund												
				<table border="1"> <caption>Ownership of installed capacity in Czech Republic</caption> <tr><th>Company</th><th>Percentage</th></tr> <tr><td>CEZ</td><td>71%</td></tr> <tr><td>other</td><td>29%</td></tr> </table>	Company	Percentage	CEZ	71%	other	29%						
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Country	Deregulation law	Centralized ISO/TSO	Centralized power pool	Ownership of generation capacity & Status of retail market opening
<b>Poland</b>	The Energy Law went into effect in 1997, however, the amendments of 2002 brought the legislation fully in line with EU accession requirements; currently only about 50% of the retail market open to competition (full retail choice expected in 2006)	No centralized ISO; state-owned PSE is the Single Buyer	Gielda Energii SA was created in 1999 as a voluntary exchange, however, bilateral contracts dominate the market	Mixture of state-owned generators and private companies 
<b>Denmark</b>	The Electricity Supply Bill, along with three other legislative documents adopted in 1999, introduced competition in electricity sector	State-owned Energinet is the TSO (established in January 2005 through a merger between Elkraft, Eltra and Gastra)	Denmark participates in Nord Pool (a voluntary pool/exchange open to Denmark, Finland, Norway, and Sweden)	There are two major generation companies, though each is the dominant player in their respective region 
<b>Finland</b>	The Electricity Market Act of 1995 has amended several times since it came into force. The Act is being redrafted again to ensure EU compliance	Fingrid is the TSO (owned by state and the generators, such as Fortum, Pohjolan Voima)	Finland participates in Nord Pool (a voluntary pool/exchange open to Denmark, Finland, Norway, and Sweden)	There are four main players in Finland's generation market; the largest two companies are privately-owned 
<b>Norway</b>	One of the first countries to introduce competition in the electricity sector with the passage of the Energy Act in 1991	State-owned Statnett is the TSO and owner of approximately 80% of the transmission infrastructure	Norway participates in Nord Pool (a voluntary pool/exchange open to Denmark, Finland, Norway, and Sweden)	State-owned Statkraft is the dominant player but there are over 150 other companies engaged in generation of electricity 

Country	Deregulation law	Centralized ISO/TSO	Centralized power pool	Ownership of generation capacity & Status of retail market opening
Sweden	The new General Electricity Act of 1999 brought the country's electricity legislation in line with that of the EU	State-owned Svenska Kraftnät is the TSO	Sweden participates in Nord Pool (a voluntary pool/exchange open to Denmark, Finland, Norway, and Sweden)	Highly concentrated market with four key generation companies



- 10.2** Does Québec have a market environment like these jurisdictions?
- R10.2** Québec has a market environment that is similar in many respects to some of the European jurisdictions we mentioned in our paper. Please refer to the table on the preceding pages.
- 11. Références:** i) Introduction to market-based mechanisms for optimizing usage of transmission network assets: transmission capacity auctions, London Economics International LLC, BEMI-3, page 4.
- 11.1** Please confirm that the cited statement does not consider the implementation and operation costs of a transmission capacity auction run by an Independent System Operator (ISO).
- R11.1** An Independent System Operator (ISO) is not a prerequisite for implementing a successful auction for physical transmission capacity. HQT, as the Transmission System Operator (TSO), is already well-positioned to be the administrator of the auction.
- 11.2** What are the implementation and operation costs of an ISO in each of the jurisdictions listed in the table in page 1 of BEMI-3?
- R11.2** As we have stated in response to Question 11.1, we do not believe that conducting an auction for transmission services requires the existence of an ISO. Thus, the operating costs of an ISO are irrelevant to the question of transmission capacity auctions.
- 11.3** What are the implementation and operation costs of transmission capacity auctions run by an ISO in each of the jurisdictions listed in the table in page 1 of BEMI-3?
- R11.3** Implementation costs of an auction for physical transmission capacity will vary depending on the auction rules and requirements imposed by the administrator. For example, an internet-based auction may require some initial set-up costs with respect to the interface for accepting and publishing bids and information. However, the necessary skills to implement this web-based infrastructure are probably available internally within HQT or could be contracted out cost-effectively. Furthermore, some auctions of transmission capacity have been conducted using more traditional methods (sealed bids), which require very limited infrastructure. To the extent that HQT can leverage off its existing database of information on available capacity and can quickly prepare necessary background information to bidders on the capacity that it wants to auction, then costs will be further minimized. Similarly, we would expect HQT to leverage off existing transmission contracts in drafting arrangements and documents for such an auction.

In many regards, auctions for transmission capacity are quite similar to other competitive solicitations in the energy sector, such as procurement auctions for energy, capacity, and ancillary services; Request for Offers (RFOs) for various energy services; and “open season” solicitations. From our experience in reviewing and advising clients on these various forms of market processes, we have found that these undertakings are relatively low cost. Based on a survey of energy procurement processes, energy-related auctions can cost a few hundred thousand dollars (taking into account external consultant costs and internal support staff costs

at the regulator and the utilities). Internet-based auctions have been more expensive to administer; for example, the New Jersey BGS auctions have an annual operating cost in the range of US\$1 million.<sup>3</sup> These costs, however, are minimal when compared to the auction revenues (in the case of procurement, costs of energy purchased), which have run from US\$1 billion to over US\$4 billion per annum.

- 12. Références:** i) Introduction to market-based mechanisms for optimizing usage of transmission network assets: transmission capacity auctions, London Economics International LLC, BEMI-3, page 3.

**Préambule:**

i) « Auctions of point-to-point transmission capacity on HQT's network would promote and accommodate efficient allocation of HQT's transmission – i.e., transmission capacity will go to those buyers that value it the most. »

ii) « The main objective of using auctions to allocate physical capacity is to optimize the use of the network and ensure that limited transmission capacity goes to those who value it most. »

**Demande:**

**12.1** Would you agree that the economic theory upon which the first two statements above are based relies on the assumption of perfect competition, i.e., multiple parties bidding on the capacity, none of which is of sufficient size so as to have the ability to influence the outcome of the auction?

**R12.1** Economic theory typically relies on perfect competition. In practice, the success of an auction depends on “workable competition”. “Workable competition” is not solely based on the quantity of bidders but on the quality of competition and a range of other criteria. It is ultimately the role of HQT to promote the auction to potential participants, propose auction formats and implement rules that motivate competition among qualified bidders during the auction process.

- 13. Références:** i) Introduction to market-based mechanisms for optimizing usage of transmission network assets: transmission capacity auctions, London Economics International LLC, BEMI-3, pages 14 to 17.

**Préambule**

i) and ii) Each of the North American case studies presented involves a system with a centralized power pool and financial transmission rights.

**Demande:**

**13.1** Are you aware of systems in North America operating under an OATT, rather than a centralized power pool, that have successfully implemented an auction for point-to-point transmission capacity? If yes, please provide a reference to these jurisdictions.

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<sup>3</sup> The initial BGS auction had additional start-up costs related to software resulting in overall costs of approximately US\$3 million.

**R13.1**

There are many regions of North America that do not have a centralized power pool and thus operate under an OATT. The successful open season of physical transmission capacity along the Alberta-Montana intertie is a constructive example of the implementation of transmission capacity auctions involving systems that are under OATT.

Montana Alberta Tie Ltd. (MATL) is a proposed AC transmission line between Lethbridge, Alberta and Great Falls, Montana. The 190-mile transmission line would connect the Albert Power Pool (operated by the Alberta Electric System Operator (AESO)) with the transmission system of NorthWestern Energy and would have thermal capacity of 300 MW in each direction. Notably, there is no centralized power pool in Montana.

The project developers of MATL held an open season between February 3, 2005 and April 15, 2005. MATL offered all of the available capacity (600 MW) for sale. The auction included specific terms and also floor prices (which denoted the minimum bid that MATL would accept). MATL received 13 bids for transmission rights from four different companies, with a total of 420 MW. All conforming (320 MW) bids were accepted. Two non-conforming bids by one company totaling 100 MW were rejected. MATL is planning to conduct a second open season for the remainder of the capacity.