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MEMBRE DU BARREAU DU QUÉBEC

Montréal, le 16 novembre 2021

M^e Véronique Dubois, Secrétaire de la Régie
Régie de l'énergie
800 Place Victoria, Bureau 255
Montréal (Qué.) H4Z 1A2

Re: Dossier RDÉ R-4167-2021 - Cause tarifaire 2022 d'Hydro-Québec TransÉnergie (HQT), Phase 1.

Demande de renseignements no. 1 à *Pacific Economic Group - PEG* (témoin-expert de l'*Association québécoise des consommateurs industriels d'électricité* et du *Conseil de l'industrie forestière du Québec - AQCIE-CIFQ*) par le *Regroupement pour la transition, l'innovation et l'efficacité énergétiques (RTIEÉ)*.

Chère Consœur,

Il nous fait plaisir de déposer ci-après la Demande de renseignements no. 1 à *Pacific Economic Group - PEG* (témoin-expert de l'*Association québécoise des consommateurs industriels d'électricité* et du *Conseil de l'industrie forestière du Québec - AQCIE-CIFQ*) par le *Regroupement pour la transition, l'innovation et l'efficacité énergétiques (RTIEÉ)*.

Espérant le tout à votre entière satisfaction, nous vous prions, Chère Consœur, de recevoir l'expression de notre plus haute considération.



Dominique Neuman, LL.B.

Procureur du *Regroupement pour la transition, l'innovation et l'efficacité énergétiques (RTIEÉ)*, un Regroupement comprenant les organismes suivants : l'*Association québécoise de lutte contre la pollution atmosphérique (AQLPA)*, *Stratégies Énergétiques (S.É.)*, le *Groupe d'Initiatives et de Recherches Appliquées au Milieu (GIRAM)* et *Énergie solaire Québec (ÉSQ)*.

c.c. La demanderesse et les intervenants, par le *Système de dépôt électronique* de la Régie (SDÉ).

p.j.

RÉGIE DE L'ÉNERGIE
DOSSIER R-4167-2021, PHASE 1

DEMANDE DE RENSEIGNEMENTS NO.1
À PACIFIC ECONOMIC GROUP - PEG (TÉMOIN-EXPERT DE L'ASSOCIATION
QUÉBÉCOISE DES CONSOMMATEURS INDUSTRIELS D'ÉLECTRICITÉ ET DU CONSEIL
DE L'INDUSTRIE FORESTIÈRE DU QUÉBEC - AQCIE-CIFQ)

PAR

LE REGROUPEMENT POUR
LA TRANSITION, L'INNOVATION ET L'EFFICACITÉ ÉNERGÉTIQUES (RTIEÉ)

Regroupement comprenant les organismes suivants :
l'Association québécoise de lutte contre la pollution atmosphérique (AQLPA),
Stratégies Énergétiques (S.É.),
le Groupe d'Initiatives et de Recherches Appliquées au Milieu (GIRAM) et
Énergie solaire Québec (ÉSQ)

DEMANDE DE RENSEIGNEMENT RTIEÉ-1-1

Référence(s) :

- i) **AQCIE-CIFQ**, Dossier R-4167-2021, [Pièce C-AQCIE-CIFQ-0009](#) , PEG, *Transmission Productivity and Benchmarking Study*, and attachments.

Demand(s) :

- 1.1.1 Please provide a more comprehensive description of what each of the attachments (including those that are confidential) comprise.
- 1.1.2 Why is C-AQCIE-CIFQ-0024 (PEG-2, document 3), Tx Line Miles confidential ?

DEMANDE DE RENSEIGNEMENT RTIEÉ-1-2

Référence(s) :

- i) **AQCIE-CIFQ**, Dossier R-4167-2021, [Pièce C-AQCIE-CIFQ-0009](#) , PEG, *Transmission Productivity and Benchmarking Study*, page 68, Table 2:

Table 2 Utilities Sampled in PEG's Studies

Alabama Power	<i>Kansas Gas and Electric</i>
ALLETE (Minnesota Power)	Louisville Gas and Electric
Arizona Public Service	Kentucky Utilities
Atlantic City Electric	Mississippi Power
Avista	Monongahela Power
Baltimore Gas and Electric	New York State Electric & Gas
Central Hudson Gas & Electric	Niagara Mohawk Power
Cleco Power	Northern States Power – MN
<i>Commonwealth Edison</i>	Oklahoma Gas and Electric
Connecticut Light and Power	Orange and Rockland Utilities
Consolidated Edison of New York	PacifiCorp
Delmarva Power & Light	<i>PECO Energy</i>
Duke Energy Carolinas	Potomac Electric Power
Duke Energy Florida	Public Service Company of Colorado
Duke Energy Indiana	Public Service Electric and Gas
Duke Energy Ohio	Rochester Gas and Electric
Duke Energy Progress	<i>San Diego Gas & Electric</i>
Duquesne Light	South Carolina Electric & Gas
El Paso Electric	<i>Southern California Edison</i>
Empire District Electric	Southern Indiana Gas and Electric
Florida Power & Light	Southwestern Public Service
Gulf Power	Tampa Electric
Idaho Power	Tucson Electric Power
Indianapolis Power & Light	Union Electric
Jersey Central Power & Light	West Penn Power
Kansas City Power & Light	

Notes: Italicized companies are only included in the productivity research.

- 1.2.3 Were there specific utilities that you chose to exclude from that list? In such case, please enumerate them and indicate why they were excluded.
- 1.2.4 On pages 11, 63 and 85, you specifically refer to Texas or to the Electric Reliability Council of Texas (ERCOT). However, Texas utilities seem absent from your list of sampled utilities. Why? Were Texas utilities present in previous versions of your list of sampled utilities and, if so, why and when were they removed from that list.

DEMANDE DE RENSEIGNEMENT RTIÉE-1-3

Référence(s) :

- i) **AQCIE-CIFQ**, Dossier R-4167-2021, [Pièce C-AQCIE-CIFQ-0009](#) , PEG, *Transmission Productivity and Benchmarking Study*.
- ii) **HYDRO-QUÉBEC TRANSÉNERGIE (HQT)**, Dossier R-4167-2021, [Pièce B-0012, HQT-5 Document 2](#), Brattle Report :

*Page Adobe 31, note 47 : « it seems that a **key assumption** of the cost benchmarking and comparison approach is the belief that the statistical model predicts the production possibility frontier, so that a top performer is on the frontier and thus it could make no further improvements. The production possibility frontier refers to all the combinations of output that a firm can produce if it uses all its resources and inputs efficiently. ». Page Adobe 32, note 49 : « **There are many intangible factors** that can explain why one firm performs differently from another, such as the quality of workers and management, the quality and strength of the procurement process—i.e., negotiation and bargaining with suppliers—and the amount of X-inefficiency in the company. **To the extent that data limitations preclude such relevant factors from being included in an econometric cost model, departures from “average” efficiency may well represent the effect of these other factors, rather than failure to minimize cost.** ».*

- iii) **HYDRO-QUÉBEC TRANSÉNERGIE (HQT)**, Dossier R-4167-2021, [Pièce B-0061, HQT-10 Document 6.1](#), Brattle's answers to RTIÉE :

BRATTLE'S ANSWER 1.1.5 TO RTIÉE:

We believe it is a strong assumption in that it is unlikely that a statistical model will be able to capture and control for all observable and unobservable factors and predict accurately the production possibility frontier of each firm's position within the frontier.

BRATTLE'S ANSWER 1.1.6 TO RTIÉE :

For purposes of our analysis, intangible factors are those factors that likely have an impact on a transmission company's costs but that are unobservable.

There are two possibilities for why they are unobservable. The first is that they are inherently unobservable—i.e., the X-inefficiencies that are discussed in the economics literature and that we cite in note 48. The second is that, even though the factors in theory may be measurable, resource constraints—e.g., time, data, costs—make them unobservable to the researcher.

While there is judgement involved, some on the list in the question seem to fall into the first category while others fall into the second category. For example, “scope of the obligation to serve”, “accommodations and adaptations to concerns of social acceptability”, “accommodations and adaptations to local purchasing concerns,” seem to be very difficult to measure in an objective and robust manner, even if resources were not constrained. The others seem to fall more into the second category.

In addition to these, in note 49 we included: “quality and strength of the procurement process—i.e., negotiation and bargaining with suppliers.”

- iv) **HYDRO-QUÉBEC TRANSÉNERGIE (HQT)**, Dossier R-4167-2021, [Pièce B-0061, HQT-10 Document 6.1](#), Brattle's answers to RTIÉE :

BRATTLE'S ANSWER 1.1.8 TO RTIÉE (EXCERPT) :

Firms that compete in a market are different in many ways—reflecting differences in both tangible and intangible factors. Firms may have different wage contracts, procurement practices, cost of capital, strategic initiatives, managerial quality and brand value. These differences determine a company's overall strength and weakness in competing—with all firms being good at some things and not as good at others. There is no requirement, however, that firms be identical in every way for competitive markets to function

- v) **REGROUPEMENT POUR LA TRANSITION, L'INNOVATION ET L'EFFICACITÉ ÉNERGÉTIQUES (RTIÉE)**, Dossier R-4167-2021, Pièce [C-RTIÉE-0016](#), RTIÉE-1, Doc. 3 :

Dimitrios GIANNAKIS, Tooraj JAMASB, Michael POLLITT, *Benchmarking and incentive regulation of quality of service : An application to the UK electricity distribution networks*, In: (2005) vol 33 no. 17 *Energy Policy*, pp. 2256-2271, <https://nyuscholars.nyu.edu/en/publications/benchmarking-and-incentive-regulation-of-quality-of-service-an-ap>:

*p. 33: We also found that **some firms that performed well in the cost-only models did not score high in our quality-only model and the***

correlation coefficients between the cost-only and quality-only scores were somewhat low. This indicates a possible trade-off or differing competencies between costs and quality of service. These findings show that, at least conceptually, it is plausible and desirable to integrate quality of service and capital expenditure in benchmarking and incentive regulation of electricity networks.

p. 33: Regulatory benchmarking schemes involving capital expenditures and quality of service still need to address concerns about long-term impacts of leaving investments and quality to benchmarking models instead of approval of investment plans and standards of performance for quality.

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- vi) REGROUPEMENT POUR LA TRANSITION, L'INNOVATION ET L'EFFICACITÉ ÉNERGÉTIQUES (RTIÉE), Dossier R-4167-2021, Pièce [C-RTIÉE-0015](#), RTIÉE-1, Doc. 2 :

Paul L. JOSKOW, MIT, *Incentive Regulation in Theory and Practice: Electricity Distribution and Transmission Networks*, Harvard, January 21, 2006, https://hepg.hks.harvard.edu/files/hepg/files/joskow_incentive_2006.pdf

p.51 : Incentive regulation in practice is considerably more complicated than incentive regulation in theory.

p. 51: Incentive regulation has been promoted as a straightforward and superior alternative to traditional cost of service or rate of return regulation. In practice, incentive regulation is more a complement to than a substitute for traditional approaches to regulating legal monopolies.

pp. 51-52: Performance benchmarks must be defined and the power of the relevant incentive mechanisms determined. The information burden to implement incentive regulation mechanisms well is similar to that for traditional cost of service regulation.

p. 52: There is a lot of loose and misleading talk about the application of price caps in practice. From a theoretical perspective the infatuation with price caps as incentive devices is surprising since price caps are almost never the optimal solution to the tradeoff between efficiency and rent extraction when the regulator must respect the regulated firm's budget-balance constraint (Schmalensee 1989) and raise service quality issues. However, price caps in practice are not like "forever" price caps in theory.

p. 53: **The evaluations of the performance of price cap regulation should therefore be evaluated from the perspective of the effects on performance incentives not on its effects on price structures since these are typically not chosen voluntarily by the regulated firm but are subject to independent regulatory determinations.**

p. 53: **Collection of data on all relevant and significant measures of firm performance and the use of these data for benchmarking purposes and for developing performance targets is an important component of good incentive regulation in practice. Regulators need the authority to require firms to collect performance data, to audit performance data and to analyze these data. Absent these authorities and resources incentive regulation mechanisms will not achieve their promise in practice.**

p. 53: **Quality of service schemes appear to have been bolted on to schemes designed to provide incentives for cost reduction and do not effectively incorporate information on consumer valuations of quality and the costs of varying quality in different dimensions.**

p. 54: **it is better to use an imperfect estimate of the right number than a highly accurate estimate of the wrong number**

p. 55: **Incentive regulation mechanisms often have “deadbands,” caps, and floors that place limits on the performance realizations for which the regulated firm is at risk.**

[Souligné en caractères gras par nous]

- vii) **R. Anthony INMAN**, Page Internet de présentation, <http://www.business.latech.edu/inman/> : Le professeur R. Anthony Inman de la Louisiana Tech University souligne la difficulté mais néanmoins la nécessité, dans les études de productivité, de trouver un moyen de **mesurer non seulement les extrants quantitatifs mais aussi les extrants qualitatifs** :

*The ways in which input and output are measured can provide different productivity measures. Disadvantages of productivity measures have been the distortion of the measure by fixed expenses and also **the inability of productivity measures to consider quality changes** (e.g., output per hour might increase, but it may cause the defect rate to skyrocket). **It is easier to conceive of outputs as tangible units such as number of items produced, but other factors such as quality should be considered.***

- viii) **Anthony INMAN**, *Productivity concepts and measures*, <http://www.referenceforbusiness.com/management/Pr-Sa/Productivity-Concepts-and-Measures.html> ,
Souligné en caractère gras par nous :

Experts have cited a need for a measurement program that gives an equal weight to quality as well as productivity.

- ix) **Erwin DIEWERT**, *Le défi de la mesure de la productivité totale des facteurs*, <http://www.csls.ca/ipm/1/diewert-un-fr.pdf> : Dans le même sens, le Professeur Erwin Diewert du département d'économie de l'Université de la Colombie-Britannique, dans « *Le défi de la mesure de la productivité totale des facteurs* », souligne que « **de nombreux extrants du secteur des services sont difficiles à mesurer conceptuellement** : il suffit de songer à la prolifération des forfaits de services téléphoniques et aux difficultés que pose la mesure de l'assurance, du jeu, des affaires bancaires et des opérations sur options. ». (page 3). Il se demande en outre : « **Comment pouvons-nous mesurer le capital-savoir ?** Compte tenu de la façon dont nous avons défini le savoir (comme ensembles de possibilités de production propres à l'entreprise et qui sont fonction du temps), **il est extrêmement difficile de mesurer le savoir et les variations du savoir (l'innovation)**. » (page 10).

- x) **John O'GRADY (Prism Economics and Analysis), Prof. Brenda MCCABE (Dept. of Civil Engineering, University of Toronto)**, *Productivity in the Construction Industry: Concepts, Trends, and Measurement Issues*, <http://www.ogradey.on.ca/Downloads/Papers/Productivity%20in%20the%20Construction%20Industry.pdf> , page 6. Souligné en caractère gras par nous. Selon cette référence, s'il y a variation des extrants du point de vue qualitatif, John O'Grady (de Prism Economics and Analysis) et le Professeur Brenda McCabe (du Département du génie civil de l'Université de Toronto) recommandent un ajustement qualitatif pour refléter cette variation qualitative :

If the quality of the output changes over time, an allowance must be made for the improvement or reduction in quality.

Demand(s) :

- 1.3.1 Please comment on the matters raised by Brattle in references ii and iii as to the intangible factors that cannot be taken into account by the statistical models.
- 1.3.2 Should your model take into account intangible factors or do you agree with Brattle's statement in reference iv ?
- 1.3.3 Please provide, to your best knowledge, the studies (or any web link to such studies that does not require membership or registration) that take into account or recommend into account intangible factors into such benchmarking models.

- 1.3.4** What is your opinion on Joskow, Giannakis, Inman, Diewert and O'Grady-McCabe's statements in references v, vi, vii, viii, ix and x regarding the taking into account of intangible factors into such benchmarking models?
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