

Establishment of a Mécanisme de
Réglementation Incitative (MRI)
for
Hydro-Québec Transénergie
Phase III

Hearings before the Régie de l'énergie

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HQT-14, Document 6

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Productivity “X” Factor- Judgment Approach

- PBR applied to transmission is less common.
- Regulatory agency “judgment” is a primary consideration in establishing the X-factor, which may be informed by productivity studies and/or benchmarking studies, by recent X-factors derived in other jurisdictions, or by company-specific evidence.
- To the extent that productivity or benchmarking studies are considered, it is imperative to recognize their many controversies.
- **The X factor should be reasonable, fair, and provide appropriate incentives for HQT to operate efficiently while maintaining a reliable system.**

Overview of Concentric's Approach & Recommendation

X Factor determined using the judgment approach, informed by the Company's implicit historical X Factor and recent studies of industry productivity.

1. HQT Experience (Kahn Method)

Past record of productivity, as measured by the cost categories covered by the formula adopted by the Régie in its Phase I Decision for HQT.

2. Industry Experience (Transmission Productivity Studies)

Identified international programs where transmission productivity had been assessed, and/or rates for transmission companies were established according to formulaic or performance-based rate mechanisms.

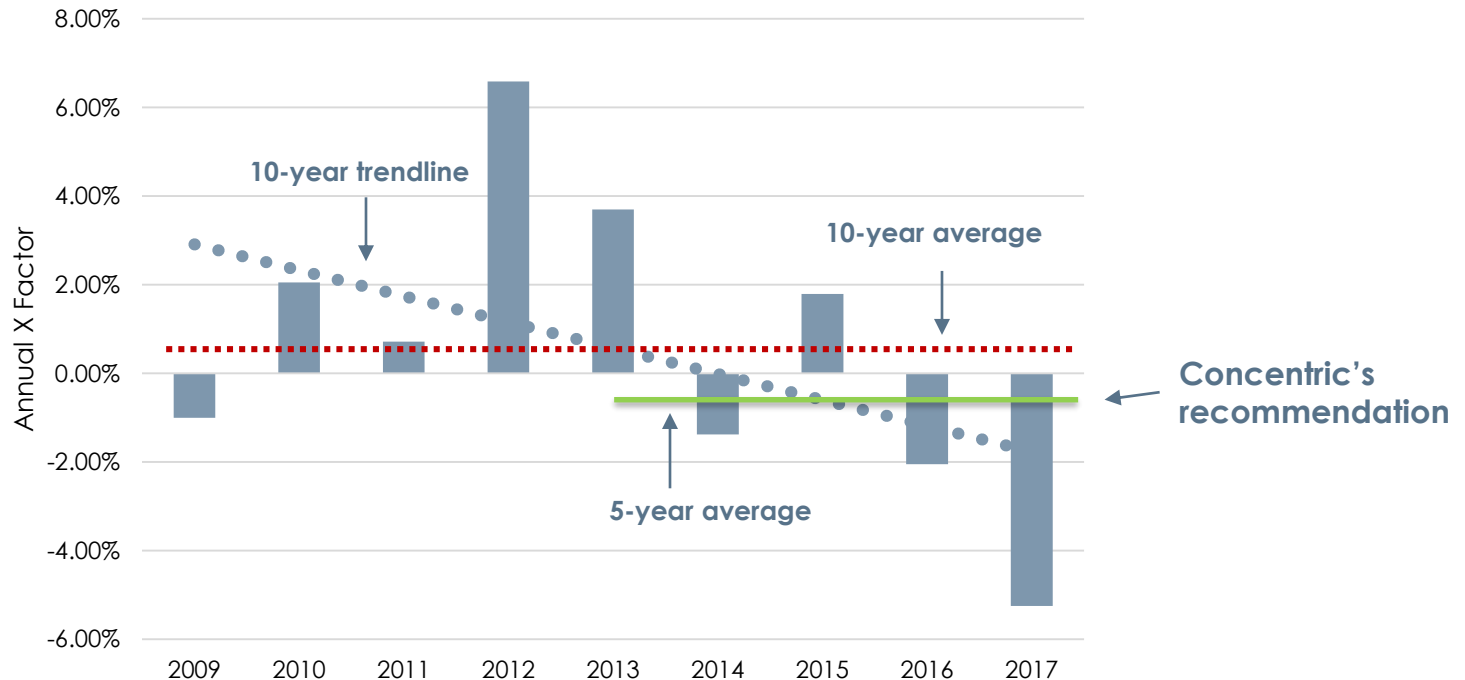
Stretch Factor calibrated with X based on precedents in other jurisdictions, HQT-specific efficiency track record, and consideration of HQT's first generation MRI.

X Factor = -0.6%

Stretch Factor = 0.0%

Net X = -0.6%

HQT Experience: Kahn Method



- Annual X Factor = Inflation – (% change in covered costs - growth).
- The trendline for HQT’s envelope of covered costs is clearly negative.
- 2012 is a clear demarcation year for the shift in this trend, and consistent with the Régie’s adoption of 2012 as a base year for measuring HQT’s efficiency gains (D-2014-035).
- Concentric’s recommended X of -0.6% is greater than the X based on the 10-year trendline.

Industry Experience: International Benchmarks

Australia

- Detailed productivity studies for Australia's seven Transmission Network Service Providers.

Ontario – Hydro One TFP Study

- First North American PBR plan and TFP study presented for an electric transmission company; proceeding is ongoing.

E3Grid Benchmarking

- Study of 21 transmission system operators in continental Europe and the U.K.
- Serves as a basis for establishing baselines for efficient operations.
- It is left to regulators in each country to determine how, or if, the study is applied to rates.
 - The Norwegian regulator is the one example we find where these results over a five-year period are used to establish performance targets for Statnett, Norway's primary transmission operator, with an incentive-based revenue cap model.

Ofgem RIIO

- Business plan approach places significant emphasis on outputs, or performance targets that are linked to revenue.
- Ofgem, like Australia, relies on an industry productivity study to determine the reasonableness of company forecasts.

New Zealand

- Transpower is subject to a building-block framework with various input methodologies under which it forecasts its operating and capital expenditures.

Australia

- **Australia** – one of few examples where TFP and PFP productivity has been studied for electric transmission companies, with significant stakeholder input and is updated annually.
- Opex productivity, defined most closely to HQT’s MRI program, averages -0.39% to -1.25% for these seven transmission networks depending on the time period.

Table 5: Average Annual Transmission Industry TFP and Opex PFP Change Including and Excluding Redundancy Payments: 2006–2016, 2006–2012 and 2012–2016³¹

<i>Year</i>	<i>2006 to 2016</i>	<i>2006 to 2012</i>	<i>2012 to 2016</i>
TFP change including redundancy payments	-2.07%	-2.19%	-1.90%
TFP change excluding redundancy payments	-2.00%	-2.17%	-1.75%
Opex PFP change including redundancy payments	-0.64%	0.13%	-1.80%
Opex PFP change excluding redundancy payments	-0.39%	0.18%	-1.25%

HQT 04, Document 2.1, p. 16.

Ontario

- Transmission productivity study submitted by expert for Hydro One Transmission to establish the company's first-generation PBR plan.
- TFP study covers 48 U.S. transmission companies and a Hydro One-only study .
- The separation of operating cost productivity from total cost productivity, and the use of a North American peer group make this study particularly useful.

U.S. Sample	TFP	PFP
2004-2016	-1.71%	-0.84%
2010-2016	-2.40%	0.00%

Response to PEG

PEG recommends an X factor of 0.2% plus a 0.2% stretch factor for X factor of 0.4% PEG's recommendation is not supported by the evidence or it's arguments

PEG Argument	Response
X factor in HQT's current parametric formula is 2.0%	2.0% has <u>not</u> covered HQT's O&M expenses over the past 5 years
Concentric's Kahn analysis of HQT is 0.57% for the full 10-year period; not clear the 5-year trend will continue	HQT's ability to realize Opex efficiency gains has diminished since the structural actions taken in 2012 and 2013, and the asset management plan <u>requires</u> a continuation of recent expense levels to optimize performance
Hydro One's Opex productivity has averaged 1.07%	<u>Industry studies and prior HQT experience are relevant</u> ; prior experience for another individual company is not relevant, and would be a poor substitute for an industry study
Ofgem and the AER have assumed Opex efficiencies of 1.0% and 0.0%, respectively	PEG acknowledges "No study of power transmission productivity was relied upon to support Ofgem's productivity targets". In Australia, the case cited by PEG involves the smallest and least representative transmission company, and the consultant notes does not reflect the industry.
Challenges the methodologies used in the AER and Hydro One studies, or validity of the peer groups	AER's work has significant stakeholder input and years of development; the Hydro One study utilizes a U.S. transmission sample recommended by PEG in Phase I. These are <u>credible studies</u> by experienced experts and are useful in informing the Régie's judgment for HQT.

Can X be Negative?

- Although the Régie determined a positive X Factor in HQD's Phase III decision, the X Factor for HQT should be set according to the best available evidence for transmission companies and the specific costs covered under HQT's MRI program, including HQT's long-term optimization strategy.
- A negative X Factor is indicated by both the Kahn method for HQT and industry research.
- A negative X Factor does not weaken incentives or reflect inefficient operations.
- This negative X Factor appropriately indicates that some costs for transmission companies, including HQT, exceed inflation.
- The Régie's 2-factor inflation index for HQT has averaged less than 2% for the previous 10 years, and has been lower-still for the previous 5 years. HQT's cost pressures are documented and will continue.

Can X be Negative?

- A recent Massachusetts decision explains it well:

...[t]he [AG] notes that no other jurisdiction in North America has approved a negative X Factor to date... **This fact does not, however, preclude the possibility of an X factor that is negative.** In fact, other jurisdictions have acknowledged that an X factor may be positive or negative. Whether an X factor is positive or negative is determined solely by the relationship between outputs and inputs in a given industry...

For these reasons, the Department cannot find that the proposed X factor is unreasonable merely because it is negative or lower than any productivity offset approved to date. Massachusetts DPU-17-05.

- We are likely to see other decisions that adopt negative X-factors:

	Expert Recommendation	Commission Decision
MA Eversource	-2.64%	-1.56% (adjusted for Grid Mod)
MA National Grid	-1.72%	pending
Ontario Hydro One	0.0% (industry results of -1.71% to -2.40%)	pending

Stretch Factor

- Recommendation includes an implicit stretch factor in comparison to HQT's 10 year trendline and Australia's 5 year PFP trend.
- Consistent with the Régie's finding in HQD's Phase III decision.
- The evidence here similarly indicates a track record of efficiency and incentives established under the prior parametric formula that do not require a stretch factor for HQT's MRI.

PEG Stretch Factor Argument	Response
<ul style="list-style-type: none">• 0.2% based on belief that HQT is an “average cost performer” and on a “survey” of electric and gas distribution company stretch factors.	<ul style="list-style-type: none">• Stretch factor should represent the efficiency of the target company relative to the industry, as recognized by the Régie in D-2018-067 [para 174].• The evidence shows HQT is a far better than average cost performer versus its industry peers.• PEG's “survey” contains a mixture of electric and gas distribution company rate programs dating back to 1994, and none for transmission companies. It is <u>not</u> relevant for HQT.

X Factor Conclusions

Concentric's recommended X factor is appropriate for HQT's first generation MRI:

- Aggressive efficiency target with consideration of implicit and explicit stretch components;
- There will be ample opportunity to study productivity in greater depth in the latter half of the MRI term.

The recommended X factor, combined with the other plan parameters, provide a balanced set of incentives:

- Incentives for HQT to manage costs under a formula;
- Benefits for customers with a revenue cap on CNE expenses and overall earnings sharing;
- Ongoing monitoring of capital expenditures through a review of major and minor projects.

Purpose of the Off-Ramp (Exit Clause)

As stated by the Régie in Phase 1 (D-2018-001) :

[121] The Régie agrees with the participants and, for the same reasons as those expressed in decision D-2017-043, approves the inclusion of an exit clause allowing the revision or interruption of the Transmission Provider's MRI. The terms of this exit clause will be specified during phase 3 of the proceeding.

Specification of the Exit Clause:

- ROE Threshold (upside and downside)
- Performance Period (i.e., one or two years)
- Consequence of Triggering the Exit Clause (return to cost of service or an interim assessment of the MRI mechanism)

ROE Threshold Levels

3 Key Questions:

1) Should the Exit Clause be based on pre- or post-MTÉR earnings?

Concentric: post-MTÉR earnings. The Exit Clause, by definition, addresses the end-result for both customers and the shareholder.

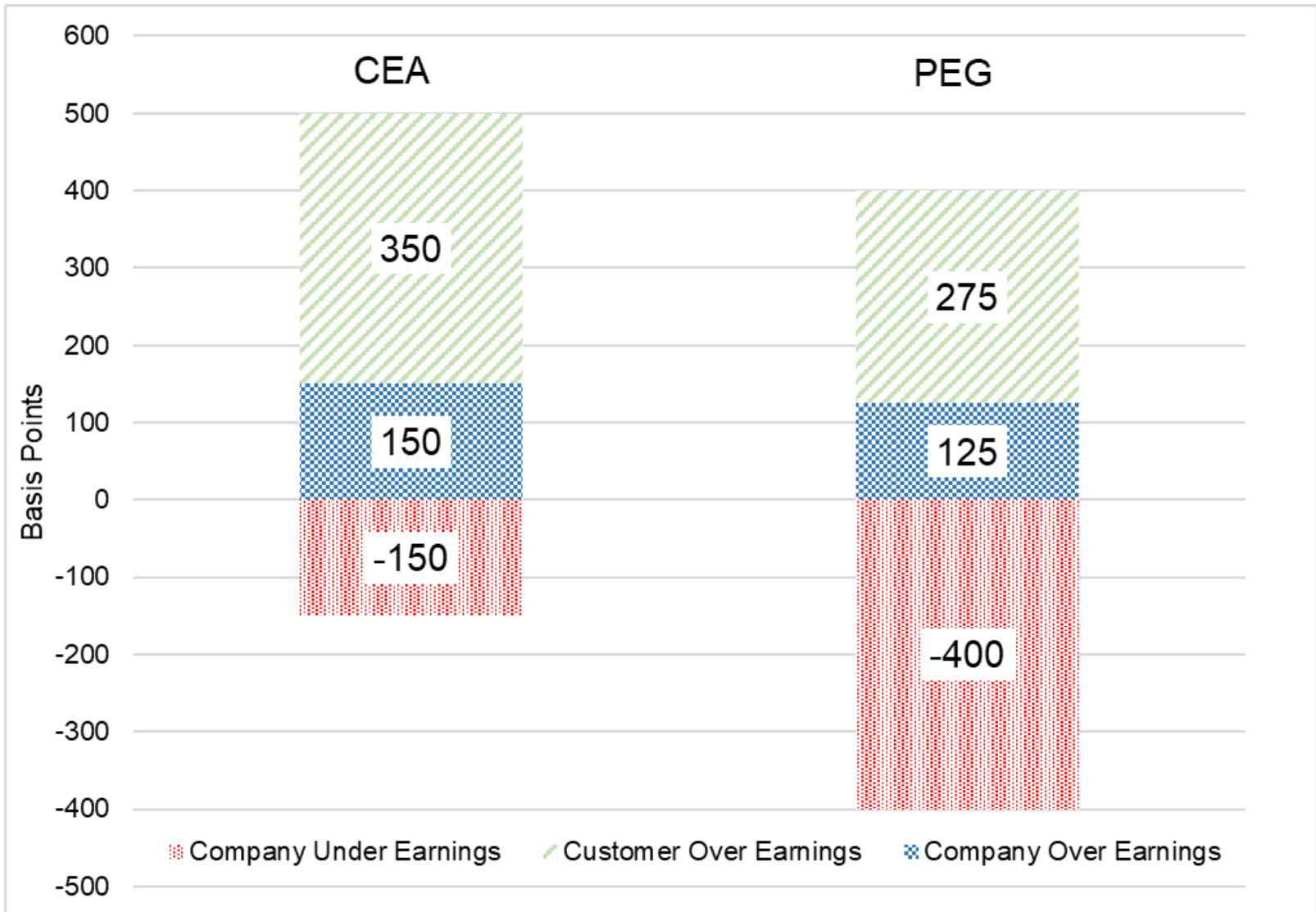
2) Should the Exit Clause be symmetric, i.e., have identical upside and downside ROE thresholds?

Concentric: Yes. This provides the identical protection to both customers and the shareholder and is fair to all parties.

3) What is the appropriate ROE threshold for HQT?

Concentric: 150 Basis Points, post-MTÉR.

Concentric Recommends a Balanced Approach



Performance Period: One or Two Years?

Concentric: One-Year Performance Period

- Appropriate for an initial MRI plan.
- MRI term is only four years, with an initial year based on the forecasted cost of service; a two-year performance period would likely have no practical consequence.
- One year may easily become two years; two years may become three years.
- This recommendation is closely connected to our recommendation on the consequence of triggering the Exit Clause.

Parametric Formula for Capital

Toronto Hydro Building Block Method

- Capital portion of revenue requirement is forecasted on a cost of service basis: building block method.
- Indexation formula adjusts for this capital with a separate percentage adder (+/-).
- Add formula components together (I, X, etc.) → escalation index by which rates grow.

Australia Building Block Method

- Capital portion of revenue requirement is forecasted on a cost of service basis: building block method.
- Overall revenues are smoothed, generating an implicit increase or decrease relative to inflation.

Fortis BC Electric Indexation Method

- Amount of “base capital” to be included in the I-X formula is determined.
- Remaining capital is excluded from the formula and added back later.
- Growth factor for capital is applied.
- Base capital increases by I-X including growth factor.

Parametric Formula for Capital Recommendation: British Columbia – FBC Model

Partial Indexation Approach to Capital:

1. Determine Base Capital
 2. Subtract Capital Tracked Outside Formula
 3. Apply I-X Formula to Base Capital
 4. Add Back Capital Tracked Outside Formula
 5. Determine Allowed Capital Related Revenue Requirement
- Parametric approach is most responsive to the Régie's directive in D-2018-001 but is less likely to be suitable for a transmission company.
 - HQT's scenario analysis applying this approach indicates that year-to-year fluctuations in capital related revenue requirements are not well suited to an I-X approach.

Summary of Concentric's Recommendations

Plan Parameter	Conclusion
X Factor	<ul style="list-style-type: none"> • Recommendation of -0.6% based on a combination of HQT's actual experience and industry research. • Reliance on the 5-year Kahn factor result is consistent with the structural shift in HQT's operating expenses after 2012. • More aggressive than the 5-year Australian Opex trend or HQT's 10-year trendline. • Aligned with the Régie's approved I Factor. • Recommended Stretch factor is 0.0%, consistent with the Régie's D-2018-067.
Off Ramp	<ul style="list-style-type: none"> • Symmetric Exit Clause with a ± 150 basis points threshold, post-MTÉR. • Based on a single year's performance. • If the Exit Clause is triggered, rates are established based on a forecasted cost of service.
Parametric Formula for Capital	<ul style="list-style-type: none"> • BC approach is most responsive to the Régie's directive. • However, HQT's scenario analysis of this approach indicates that year-to-year fluctuations in capital related revenue requirements are not well suited to an I-X approach.