

Establishment of a *Mécanisme de
Réglementation Incitative (MRI)*
for
Hydro-Québec Distribution
Phase 3

Hearings before the Régie de l'énergie

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Contents

1. Overview of Concentric Recommendations
2. Productivity “X” Factor
3. Stretch Factor
4. Calibrating X
5. Relationship Between I and X
6. Y Factors
7. Z Factors
8. Response to Intervenor Positions
9. Conclusions

Overview of Concentric Recommendations

1. X Factor to be established using the judgment approach, informed by recent studies of industry productivity and regulatory decisions
2. Stretch Factor to be calibrated with X based on precedents in other jurisdictions and consideration of HQD's first generation MRI

X Factor = (0.75%)
Stretch Factor = 0.25%
Net X = (0.5%)

3. Y Factors & Z Factors adapted to HQD to reflect costs out of management's direct control
 - \$5M threshold for Y Factor treatment
 - \$15M threshold for Z Factor treatment
4. Details concerning additional productivity analysis determined in the next phase

Productivity “X” Factor

- **The purpose of this proceeding**
 - Establish the remaining parameters of HQD’s first-generation MRI (X, I, Y, Z)
 - Provide the Régie with the necessary information to reasonably inform its judgment in establishing the X factor
- **The reliance on informed judgment is particularly necessary**
 - Address the shortcomings of TFP studies, and
 - Reflect prior HQD efficiency gains and other relevant HQD-specific circumstances
- **By accepting the judgment approach, the Régie has focused this proceeding**
 - Not recreate the evidentiary record of other proceedings
 - Not re-litigate the outcomes of other regulatory decisions
 - Not challenge the qualifications of experts in other proceedings
 - Avoid debate on the numerous assumptions underlying productivity studies

Productivity “X” Factor: Recent Studies

A range of methods, samples, and time periods studied yield varying analytical results requiring regulatory judgement in setting productivity factors

Study	Range	Midpoint
Brattle (Alberta)	-0.37% to -1.37%	-0.87
Christensen (Alberta)	-1.11%	-1.11
PEG (Alberta)	0.36% to 1.03%	0.70
PSE (Ontario)	-0.90%	-0.90
Christensen (Massachusetts) ¹	-0.41% to -0.46%	-0.44
Median		-0.87
Mean		-0.52

¹ The Christensen TFP results are unadjusted for input price differentials.

Productivity “X” Factor: Can X be Negative?

Q17. Can an RPI-X performance-based regulatory plan work without a positive *X-factor*?

A17. Yes, of course it can. The *X-factor* is there only to square the deemed inflation index to the relative input growth and TFP growth of the company in question. Whether the result of that squaring is positive or negative has no effect on the incentives provided by such a regulatory regime.

EB-2017-0307 Makhholm Testimony for Enbridge Gas & Union Gas, at 10.

...[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...**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 at 278-9.

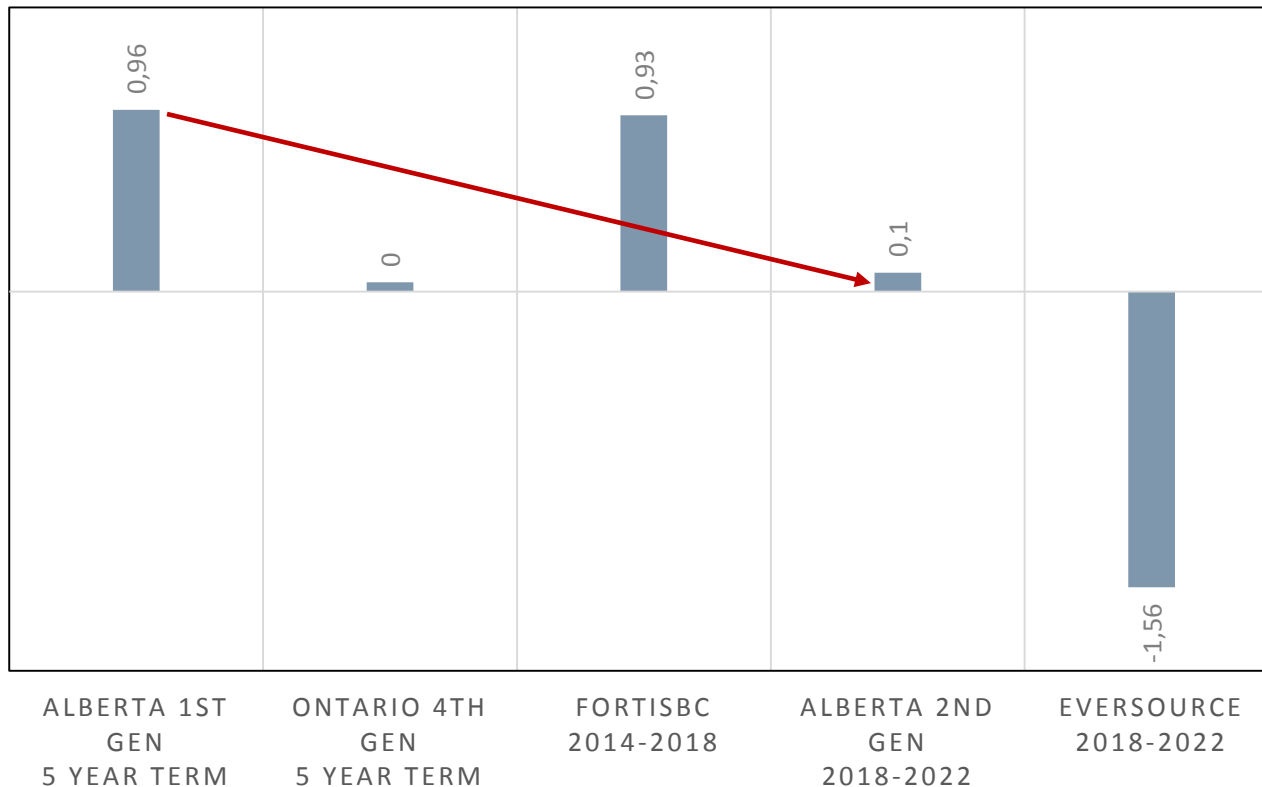
Productivity “X” Factor: Recent Trends

The negative trend in productivity is confirmed across multiple experts and sources

	StatCan MFP	2012 AUC Proceeding	2016 AUC Proceeding	2016 AUC Proceeding	2016 AUC Proceeding	Christensen Eversource	PSE - Hydro One	Makholm EGD
Year	Utility Sector Multifactor Productivity	NERA Results	Brattle Update of NERA	PEG Study for CCA	Christensen Study	Industry TFP	Ontario Industry TFP	TFP Growth
2000	2.4%	2.1%	2.1%	1.0%	2.0%			1.9%
2001	-7.9%	-3.4%	-3.4%	1.0%	-3.2%			-2.9%
2002	7.8%	1.2%	1.2%	1.7%	1.8%	-0.1%		2.2%
2003	-3.0%	-2.4%	-2.4%	-1.4%	-2.1%	-2.1%	0.8%	-2.8%
2004	-3.0%	2.8%	2.8%	1.4%	3.0%	1.9%	1.3%	3.3%
2005	2.8%	2.1%	2.1%	1.2%	2.2%	0.1%	2.2%	2.4%
2006	-3.1%	-2.5%	-2.5%	0.0%	-2.2%	-1.0%	0.2%	-3.0%
2007	4.2%	0.5%	0.5%	0.0%	0.5%	-0.4%	-1.5%	0.8%
2008	0.5%	-4.9%	-4.9%	-0.2%	-4.4%	-2.3%	-0.6%	-4.9%
2009	-6.7%	-2.6%	-2.6%	0.8%	-3.7%	2.0%	-0.1%	-2.9%
2010	-1.5%		2.2%	0.4%	1.7%	-2.2%	0.8%	2.1%
2011	-1.0%		-4.5%	0.5%	-3.9%	-1.9%	-1.3%	-4.4%
2012	-2.4%		-2.0%	1.2%	-2.0%	0.6%	-3.9%	-2.1%
2013	-3.1%		-0.2%	0.0%	-0.6%	-0.2%	-4.5%	-0.4%
2014	-1.9%		-1.8%	-0.1%	-1.7%	-1.0%	-2.0%	-1.9%
2015	-2.1%					0.2%	-2.8%	-1.4%
Post-2000 Average	-1.1%	-0.7%	-0.9%	0.5%	-0.8%	-0.5%	-0.9%	-0.9%
Last 5 Years Average	-2.1%	-1.5%	-1.3%	0.4%	-1.3%	-0.5%	-2.9%	-2.0%

Productivity “X” Factor: Recent PBR Proceedings in Canada & US

The regulatory trend in approved PBR X factors reflect the actual downward trend in industry productivity



Kahn Method

PEG's Kahn method calculation is not a reasonable basis for HQD's X factor

- Does not reflect the 0.75 G factor, Y or Z factors
- No accounting for change in debt or ROE costs
- Changes in accounting method from CGAAP to IFRS to USGAAP
- Change in amortization method from sinking fund to straight line
- Change in useful asset lives for certain assets
- Introduction of smart meters for all customers (LAD project)

Table 3

Calculating Kahn X Factors for HQD

	Revenu Requis (%)	Inflation (%)	Retail Customers (%)	Implicit X Factor
	[A]	[B]	[C]	[D = (B + C) - A]
2005	4.34	2.44	1.37	-0.52
2006	5.53	1.69	1.65	-2.19
2007	8.47	2.04	1.40	-5.03
2008	4.74	2.03	1.14	-1.57
2009	5.88	0.70	1.19	-3.99
2010	4.97	1.61	1.31	-2.05
2011	-4.30	2.90	1.21	8.41
2012	0.28	2.14	1.17	3.03
2013	1.56	0.82	1.11	0.38
2014	1.13	1.51	0.91	1.29
2015	-7.50	1.25	0.83	9.58
2016	-7.47	0.81	0.71	8.99
2017	9.53	1.12	0.96	-7.45
2018	-2.32	1.72	0.79	4.83
<i>Average annual growth rates:</i>				
2005-2015	2.28	1.74	1.21	0.67

And, an X factor target is typically set based on industry productivity, not a single company's productivity

Stretch Factor

PBR plans include two types of stretch factors: explicit and implicit

Explicit Stretch Factor	Implicit Stretch Factor
Designed to provide guaranteed benefits to customers in relation to the trend in industry productivity	Results from other plan parameters
Concentric recommends 0.25% <ul style="list-style-type: none">• Consistent with Eversource DPU-17-05• Consistent with Alberta D-2012-237• In-line with PEG recommendation	<ul style="list-style-type: none">• Growth Factor of 0.75• No Capital Factor• I Factor not fully reflective of HQD's input cost trends

X Factor Calibration

X Factor is not set in isolation from other plan parameters

- **Revenue Cap vs. Price Cap**

- The Revenue Cap approach, as approved for HQD, adjusts formula revenues for 75% of the annual change in number of customers, a key driver of costs
- Alternatives include: price cap or revenue per customer cap

- **Special Provisions for Capital**

- HQD does not have the same flexibility in its treatment of capital when compared with Alberta (K-bar capital tracker), Ontario (custom capital factor or ICM), Massachusetts (grid modernization), BC (hybrid capital model)

- **Input Price Differential**

- Adjusts for differences between input prices for the utility and input prices for the economy

Capital Factor Example: Toronto Hydro's Current Rate Plan

Table 2 – Annual C_n Factor

	2015	2016	2017	2018	2019
Interest	79.3	87.7	95.4	99.9	104.3
ROE	120.2	133.0	144.7	151.6	158.2
Depreciation	206.0	218.7	242.2	257.7	275.0
PIIs/Taxes	25.0	16.9	24.3	40.2	45.7
Capital-related RR	430.5	456.3	506.6	549.4	583.2
OM&A	243.9	247.6	251.3	255.1	258.9
Revenue Offsets	(41.3)	(41.9)	(42.5)	(43.2)	(43.8)
Total RR	633.1	662.0	715.4	761.4	798.3
C _n		4.07	7.60	5.99	4.43

Units in \$M or %

Toronto Hydro	Implicit X Factor
2016	-1.73%
2017	-5.22%
2018	-3.57%
2019	-2.00%
Average	-3.13%

Table 3 – CPCI Factors and Values

	2016	2017	2018	2019
I	2.1	2.1*	2.1*	2.1*
X – Productivity	(0.0)	(0.0)	(0.0)	(0.0)
X – Stretch	(0.6)	(0.6)	(0.6)	(0.6)
C _n	4.07	7.60	5.99	4.43
S _{cap}	68.9	70.8	72.2	73.1
G	(0.3)	(0.3)	(0.3)	(0.3)
CPCI	3.83	7.32*	5.67*	4.10*

Source: EB-2014-0116
Draft Rate Order Update
Filed: 2016 Feb 29
Page 6 of 10

Relationship between “I” and “X”

- **The I factor should reflect the input costs of utilities in the region**
- **Composite I factors have the advantage of tracking major cost categories which move at different levels of escalation**
 - There is a trade-off between the complexity of the index and its accuracy for utility input costs
- **When an economy-wide inflation measure is utilized, it is necessary to consider whether an input price differential is required**
 - Reflects input price and productivity differentials between the economy and the utility industry
 - Adjustment adds another layer of complexity in the interaction between I and X
 - Eversource input price differential = 2.18% (difference between recommended X factor of -2.64% and industry productivity factor of -0.46%)
- **Concentric recommends no input price differential adjustment given HQD’s proposed inflation factor which reflects input prices for utilities in Québec**

Exclusions: “Y” Factor

Precedent exists for HQD’s proposed Y factor recovery mechanism, but covered costs vary by jurisdiction

	Pensions	EE/BEIE	Bad Debt	Low Income Customer Programs	Vegetation Management	Power Purchases/Fuel Costs
Alberta	Z				No	N/A
Ontario	Partial	Partial		Yes		N/A
BC	Yes					Yes
MA	Yes	Yes		Yes	Partial	Yes

- Y factor treatment determined through a minimum threshold of \$5M
- Once threshold is met all costs are treated on a cost of service basis
- HQD’s Y factors to be forecasted in rates each year, with 100% of variance to be trued up to actuals through an annual filing

Source: Amended from survey results provided to the Régie in DDR No. 5

Exogenous Events: “Z” Factor

Significant industry precedent for Z factor treatment for one-time “exogenous” events to be considered on a case-by-case basis

	Unforeseen Events in Autonomous Networks	Major Outages	Changes to Regulatory Framework	Legislative Changes	Other Major Unforeseen Projects/ Major Connection Projects
Alberta			Yes		
Ontario	Yes		Yes	Yes	Yes
BC					
MA		Yes	Yes	Yes	

- Concentric’s research shows precedent for HQD’s proposed Z factor events
- HQD retains the Régie’s threshold of \$15M
- Covered costs pass through to rates on a cost of service basis

Source: Amended from survey results provided to the Régie in DDR No. 5

Response to Intervenor Positions

Plan Component	Response
<p>X</p> <p>Intervenor proposals range from 0.5% (AQCIE-CIFQ) to 1.5% (AHQ-ARQ; SE)</p>	<ul style="list-style-type: none"> • The new MRI significantly expands the costs subject to the current parametric formula (approx. 81% of service & distribution costs vs. 30% currently) • HQD's X factor should represent the industry productivity trend, not outdated or unvetted studies, or unrealistic stretch targets • CEA's recommended X is a more aggressive efficiency target than any recently adopted X factor with consideration of implicit and explicit stretch components
<p>I</p> <p>Wages: Régie's proposed Québec wage index, or excluding OT (FCEI) Other Expenses: Régie's proposed Québec CPI, or GDP-IPI depending on fuel inclusion (AQCIE-CIFQ, FCEI)</p>	<ul style="list-style-type: none"> • HQD's proposed I factor indices appropriately represent the input costs of a Québec utility without undue complexity • Economy-wide index proposals (CPI or GDP-IPI) introduce the need to consider X factor calibration • 3-year rolling average contributes to a stable measure of inflation
<p>Y</p> <p>Varied proposals for included and excluded cost categories (pension, fuel, bad debt, vegetation, IEE, low income programs, capital cost) Varied proposals for the magnitude of thresholds (\$5-\$15M) and their application to variances</p>	<ul style="list-style-type: none"> • Proposed Y factor cost categories are consistent with the Régie's Phase 1 criteria <ul style="list-style-type: none"> • Beyond management's control • Unpredictable • Recurring • Meet materiality threshold • Pension expense is highly variable, unpredictable, beyond the control of HQD, and the administration of the FCEI and OC's proposal would be complex and counter to the MRI objective of easing the regulatory burden
<p>Z</p> <p>Reject Z Factor for Major Projects (PEG)</p>	<ul style="list-style-type: none"> • Unlike BC, Ontario, MA, and Alberta, HQD does not have special provisions for capital recovery

Conclusions

- **Concentric's recommended X factor is appropriate for HQD's first generation MRI**
 - More aggressive efficiency target than any recently adopted X factor with consideration of implicit and explicit stretch components
 - There will be ample opportunity to study productivity in greater depth in the next phase of this proceeding
- **HQD's MRI introduces significant incentives to manage costs for all major controllable expense categories**
- **Efficiency gains under the I-X+s formula, combined with the MTÉR, provide guaranteed benefits for customers**
- **The proposed I factor is a reasonable measure of a Québec utility's input costs without undue complexity**
- **The Y and Z factor proposals for HQD are appropriately customized for HQD's circumstances as we have seen for other programs**