

**TÉMOIGNAGE DE M. JAMES M. COYNE DE
CONCENTRIC ENERGY ADVISORS SUR
LE FACTEUR X RECOMMANDÉ POUR LE DISTRIBUTEUR**

PERFORMANCE BASED REGULATION: RECOMMENDED X FACTOR

PREPARED FOR:
HYDRO-QUÉBEC DISTRIBUTION

BEFORE THE: RÉGIE DE L'ÉNERGIE

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Section 1: Introduction

The Régie determined in D-2017-043 the principal characteristics of a first-generation performance based regulation plan (MRI) for HQD.¹ In its April 2017 Decision, the Régie outlined the general framework for a revenue cap incentive regulation plan. The MRI is to be based on a cost-of-service methodology for year 1, and an indexed-based MRI for years 2, 3 and 4. In reaching this decision, the Régie determined certain parameters in its Phase I Decision, found that a Phase II would not be necessary, and left other parameters to be determined in Phase III, the subject of this immediate proceeding.

Concentric has been asked by HQD to provide an assessment and recommendation for the X factor. This report contains Concentric's analysis and recommendations for this parameter, and builds on the previous research Concentric has provided before the Régie on these matters.²

¹ D-2017-043, R-3897-2014 Phase 1, April 7, 2017.

² Performance Based Regulation: Recommendations, Prepared for: Hydro-Québec Distribution & Hydro-Québec Transmission, R-3897-2014, before the: Régie de L'énergie, Concentric Energy Advisors, Revised February 10, 2016. Performance Based Regulation: Productivity Factor for HQD, Prepared for: Hydro-Québec Distribution, R-3897-2014, before the: Régie de L'énergie, Concentric Energy Advisors, June 30, 2017. This report was attached to HQD's submission filed with the Régie on June 29th, however, the date on the Concentric report was left at June 30th. This report is referenced as Concentric June 30, 2017 Report.



Section 2: X Factor

A. OVERVIEW

The purpose of the X factor (“X”) in an MRI or PBR program, such as that approved for HQD, is to establish a revenue path for the company related to inflation (“I”) rather than actual costs, thereby creating a direct incentive to control costs. The X parameter is a measure of “productivity”, determining if revenues should increase at a faster or slower rate than inflation. In its simplest form, this relationship is expressed as:

$$\text{Revenues}_{(t+1)} = \text{Revenues}_{(t)} * (1 + I - X)$$

Additional factors for growth (G), capital (K), variable cost items (Y), or one-time events (Z) may also be included in the formula. Productivity studies differ with respect to the approaches and inputs utilized in measuring the efficiency of individual companies, industries, or the entire economy. In utility regulation, productivity studies are intended to derive an estimate that can inform the establishment of X when applying an I-X PBR methodology, as recommended for HQD.

There are alternative ways to derive “X” that range from past observed productivity gains for the specific company to industry benchmarking studies and industry productivity studies. No one method is determinative and ultimately the X factor must be set using informed judgment by the regulator. The Régie, in agreeing that it would apply its judgement in determining the X factor for this first-generation MRI, required the Distributor to submit evidence on the appropriate X for HQD.³

Concentric’s previously submitted research to the Régie summarized the studies, analyses, and reports available to it to inform the Régie as to the determination of X in this Phase 3.⁴ Concentric highlighted recent trends in productivity research including:

- An update of its survey on productivity studies examined in response to the Régie’s information request R4.2 at HQT D-4, document 1 (R-3897-2014, phase 1); and
- Recent trends in Canadian and US multifactor productivity.

This submission draws on that evidence, as well as HQD’s past performance, and concludes with a recommended X factor for HQD in this first-generation MRI.

B. X FACTOR RESEARCH FROM OTHER JURISDICTIONS

Utility productivity studies are not routinely submitted in North American jurisdictions as these studies are costly and time consuming, and relatively few jurisdictions adhere to an I-X form of utility

³ The Régie specifically ordered: “[T]he Distributor to submit, by June 30, 2017, the studies, analyzes and reports available to it in order to inform the Régie as to the determination of Factor X in Phase 3;” D-2017-043, R-3897-2014 Phase 1, April 7, 2017 at ¶ 167

⁴ Concentric June 30, 2017 Report.



regulation. As cited by Concentric in its June 30, 2017 Report, there have been recent studies submitted in Alberta and Ontario.⁵ Since that time, a more recent study was decided on in Massachusetts. The results of those studies are summarized here. Concentric is not aware of any other productivity studies that have been submitted since that time.

1. ALBERTA

The current PBR plans for Alberta’s electric and gas distributors expire on December 31, 2017. The Commission initiated a proceeding to establish the “next generation of PBR plans” to be implemented for the 2018-2022 period in May 2015. Plan proposals, including recommended X-factors, were submitted in March 2016 and the Commission issued its decision in December 2016. Several experts provided productivity related evidence and studies, including: The Brattle Group (“Brattle”), Christensen Associates (“Christensen”), Pacific Economics Group (“PEG”), PCMG Associates (“PCMG”)⁶ and other individual experts.⁷ Brattle and Christensen submitted evidence on behalf of the utilities, while PEG and PCMP submitted evidence on behalf of intervenors.

In its Decision, the Commission reduced the X-factor to 0.3% from the 1.16% (Total Factor Productivity “TFP” growth of 0.96% plus a stretch factor of 0.2%) adopted in 2012 for the prior plans. This current Decision is primarily based on three studies submitted in the proceeding, from Brattle, Christensen, and PEG as highlighted in Table 1. Each of the three studies produced results lower than the 0.96% adopted by the Commission in 2012. The AUC noted:

The three studies filed in this proceeding provide a relatively wide range of TFP growth values, with all final recommendations smaller than, and in some cases much smaller than, the TFP growth number adopted by the Commission in Decision 2012-237. The issue that the Commission must address, therefore, assuming the Commission finds any of the studies to be acceptable, is not whether the TFP growth component of 0.96 per cent adopted in Decision 2012-237 needs to be lowered for the next generation PBR plans, but rather the extent to which it needs to be lowered.⁸

⁵ Performance Based Regulation: Productivity Factor for HQD, Prepared for: Hydro-Québec Distribution, R-3897-2014, before the: Régie de L’énergie, Concentric Energy Advisors, June 30, 2017.

⁶ PCMG submitted evidence but did not undertake a TFP or MFP study.

⁷ AUC Decision 20414-D01-2016, December 16, 2016, at 1-3.

⁸ AUC Decision 20414-D01-2016, December 16, 2016, at 24.



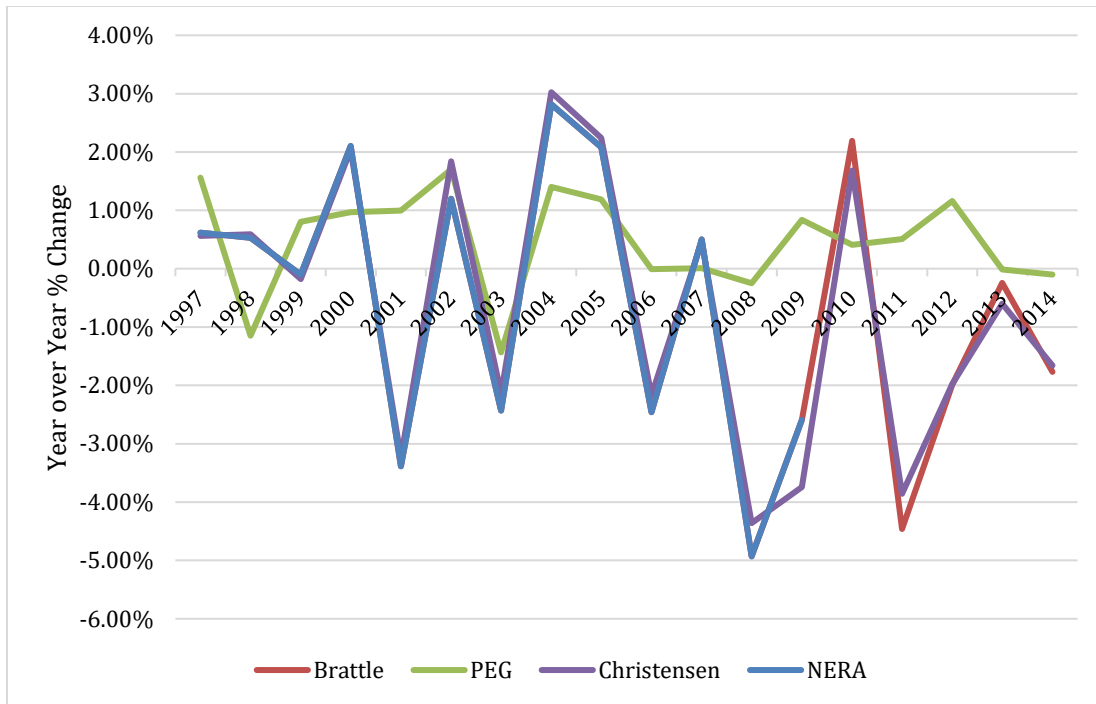
Table 1: 2016 Alberta Productivity Studies

<i>Expert</i>	<i>Participant</i>	<i>TFP Study Results</i>	<i>Proposed X Factor (%)</i>	<i>Sample / Time-Period</i>
Brattle (Brown and Carpenter)	Distribution Utilities (other than EPCOR)	-0.37% to -1.37%	-0.79%	67 utilities, 2000-2014
Christensen Associates (Meitzen)	EPCOR	-1.11%	-1.11%	68-72, Average of last 15 (2000-2014) and last 10 (2005-2014) years
PEG (Lowry)	CCA	0.36% to 1.03%	0.43% 0.78%	88, 21, 1997-2014
Final Commission Decision			0.30%	

The annual productivity estimates from these studies, as well as the 2012 NERA study upon which the 2012 AUC decision was based, are illustrated in Figure 1 as separate lines. The calculation of TFP is based on the difference between measured outputs (MWHs or customers) and inputs (labor, capital, and materials). Both outputs and inputs vary by year, and taking the difference between the two indices creates a volatile year-to-year profile, so the data is typically compiled over many years to reflect the industry trend. All the studies show an industry trend in productivity converging at or below zero over this two-decade period, indicating negative productivity growth. This does not mean the utilities in the sample are becoming less productive, per se, but that the rate of growth of inputs is exceeding the rate of growth in outputs. A contributing factor has been the decline in electric demand growth without offsetting declines in labor, capital and other operational costs required to maintain and upgrade these utility systems.



Figure 1: Productivity Study Results Submitted in Alberta



The AUC indicated that it considered several factors in its assessment of each study, including: objectivity; consistency and transparency of the three studies; the utility data set employed in each study; the calculation methods and assumptions; the output measures; and the time periods of each study.⁹ The AUC also offered insight into its previous decision in the 2012 generic proceeding,¹⁰ noting:

Although NERA’s was not the only TFP growth study considered in that proceeding, the Commission found the NERA study to be preferable because of the “objectivity and transparency of the data and of the methodology used, the use of data over the longest time period available and the broad-based inclusion of electric distribution utilities from the United States.” The final approved TFP growth value of 0.96 per cent, determined as the difference between growth in output and growth in inputs, was obtained as the average of 37 annual TFP growth values for the 1972-2009 period...¹¹

The AUC discussed the value of, and the differences in, transparency, objectivity, and consistency of the studies. It considered the considerable differences between the utility studies and the study performed by PEG, but ultimately chose to give all studies the same weight.

⁹ AUC Decision 20414-D01-2016, December 16, 2016, at 45.

¹⁰ Alberta 2012 Generic PBR Proceeding resulted in Decision 2012-237, September 12, 2012.

¹¹ AUC Decision 20414-D01-2016, December 16, 2016, at 22-23.



The AUC noted that in its judgment, “[T]he issue of whether the TFP growth value should be determined based on a customization or tailoring of firms selected to be included within the TFP growth study based on characteristics similar to the Alberta distribution utilities is directly related to the underlying objectives of a PBR plan.” Ultimately, the Commission decided that since PBR in Alberta is meant to emulate competitive markets, it is preferable to use a broad sample that will represent the many factors that influence productivity in a market.¹²

Responding to varying input and output measures used in the studies, the AUC noted it was unwilling to state a preference for the set of assumptions used by any one TFP study over another. Underscoring the challenges of interpreting the results of TFP studies from alternative experts with varying assumptions and methods, the Commission noted:

In the Commission’s view, there is no overwhelming new evidence in this proceeding that any of these assumptions are correct or incorrect. The assumptions chosen reflects the practitioner’s decisions and beliefs based on the available choices that can be applied to the data, and there is generally no test presented in evidence that can be applied to determine which assumptions are more applicable to particular data or the purposes for which it is used. It is unlikely that any group of unassociated practitioners will make the same choices for all the assumptions, even with the same universe of data series available to them. For this aspect of the analysis, the Commission is, therefore, unwilling to specify a preference for the set of assumptions used by any particular one of the three TFP growth studies.¹³

However, the AUC acknowledged that with the prevalence of both fixed and variable revenue components for distribution utilities, the number of customers (the output measure used by PEG) is a relevant output measure along with volume (the output measure used by Brattle and Christensen), where the relative weights assigned to these two output measures would ideally reflect the proportion of revenues generated through fixed versus variable (volumetric) charges.¹⁴ The Commission noted that “after controlling for differences between the studies, the difference in output measures, number of customers versus volume, affects annual growth by between 0.24 and 0.41 percentage points for this period, a number that translates directly into TFP growth differences since TFP growth is output growth less input growth.”¹⁵ In other words, this difference can be accounted for and of itself does not account for the differences between the studies.

The period of each study was the last major consideration of the AUC in determining the X factor. Brattle and Christensen each highlighted the evolution of productivity results over time and argued that more weight should be given to results from more recent years. The Commission decided that the time period used remains an “open question.”¹⁶

¹² AUC Decision 20414-D01-2016, December 16, 2016, at 28.

¹³ AUC Decision 20414-D01-2016, December 16, 2016, at 30.

¹⁴ AUC Decision 20414-D01-2016, December 16, 2016, at 30-33.

¹⁵ AUC Decision 20414-D01-2016, December 16, 2016, at 34.

¹⁶ AUC Decision 20414-D01-2016, December 16, 2016, at 36.



Expressing its view on the range of results from alternative studies, the Commission ultimately concluded:

[T]he Commission views the variety of results that have been provided as confirming that the TFP growth value is likely not a correct single number, but that a reasonable value likely falls within a range of values, demarcated by the breadth of assumptions and data sets that may be reasonably employed in producing the studies.¹⁷

The Commission's conclusion is consistent with Concentric's observations regarding the estimation of utility productivity. In reaching its final determination of the appropriate X factor, the AUC reasoned:

The Commission has determined an X factor, using its judgement and expertise in weighing the evidence and in taking into account the multitude of considerations set out above, in particular evidence demonstrating that the TFP growth value cannot with certainty be identified as a single number, but rather, in view of the variability resulting from the assumptions employed, must be considered as falling within a reasonable range of values, between -0.79 and +0.75. **The Commission finds that a reasonable X factor for the next generation PBR plans for electric and gas distribution utilities in Alberta, inclusive of a stretch factor, will be 0.3 per cent.**¹⁸ (emphasis added)

In approving this second-generation plan, the AUC reconsidered the capital tracker element of the first-generation plan. The Commission summarized:

In Decision 2012-237, the Commission recognized that while the TFP study used in determining the X factor for the Alberta distribution utilities reflected a rate of long run productivity growth for a set of distribution utilities over time and, therefore, necessarily included capital input costs, there are nevertheless circumstances where an Alberta distribution utility may require capital funding in addition to the funding generated under the I-X mechanism in order to provide for necessary capital additions. To address this need, a capital funding mechanism referred to as a "capital tracker" was established. The capital tracker mechanism provided for a COS application process, whereby the revenue requirement associated with approved capital projects or programs could be reviewed, approved, and collected from ratepayers by way of a K factor adjustment to the annual PBR rate-setting formula.¹⁹

On reconsideration in this second-generation plan, the AUC determined that incremental capital (not fully covered under I-X) should be broken into two categories:

- Type 1 Capital – capital investments outside of management's control, are unforecastable, or have a high degree of variability from year to year, and do not

¹⁷ AUC Decision 20414-D01-2016, December 16, 2016, at 40.

¹⁸ AUC Decision 20414-D01-2016, December 16, 2016, at 45.

¹⁹ AUC Decision 20414-D01-2016, December 16, 2016, at 46-47.



qualify for Y²⁰ or Z factor treatment, for example: “These types of capital additions might include capital additions required by new government programs not previously experienced but would not include types of expenditures required by governments in the normal course of expectations, such as moves required to accommodate road or interchange reconfigurations.” (These would be Type 2 capital). In sum, to qualify for Type 1:

- (i) The project must be of a type that is extraordinary and not previously included in the distribution utility’s rate base, and
 - (ii) The project must be required by a third party.
- Type 2 Capital – most other capital that is not fully funded by I-X, or covered by a Y or Z factor. The amount of this capital will be predetermined for each distributor for all, or a portion of the PBR plan. For example: “Growth, short-lived assets and replacement projects or programs would also be included in Type 2 because they have been experienced in the past.” This approach to funding incremental capital is referred to as “K-bar”.²¹

In justifying this change, the AUC noted:

The Commission considers that any choice of the capital mechanism will result in trade-offs. The Commission accepts that there is considerable benefit to the distribution utility and to customers to ensuring that the same high-powered incentives present under the I-X mechanism apply to capital. A K-bar approach maximizes the ability of each distribution utility to manage its business and to discover and pursue efficiencies and costs saving by providing flexibility in how it plans and allocates capital funding throughout the next generation PBR plans while fulfilling its obligation to serve. **This increased flexibility and reduced regulatory burden is preferable to the present annual capital tracker forecast, approval, and true-up mechanism for all incremental capital requirements.** The Commission further considers that an amended pure I-X proposal, which only allows for restricted access to incremental capital funding, may be insufficient to provide the incremental capital funding for necessary capital additions given that the distribution utilities were able to demonstrate under existing capital tracker criteria that incremental capital funding was required to allow the distribution utilities to fund necessary capital additions under the 2013-2017 PBR plans.²² (emphasis added)

In sum, the AUC’s latest PBR plan allows for the recovery of capital costs outside of the I-X mechanism in two ways: Type 1 recovers the incremental revenue requirement of qualified projects on a cost of service basis; Type 2 recovers the incremental revenue requirement of

²⁰ The AUC’s examples for Y factor treatment are typically non-capital related: (a) AESO flow-through items, (b) Farm transmission costs, (c) Accounts that are a result of Commission directions (e.g., AUC assessment fees, intervener hearing costs, UCA assessment fees, AUC tariff billing and load settlement initiatives, Commission-directed Rural Electrification Associations, (REA) acquisitions, effects of regulatory decisions)(d) Income tax impacts other than tax rate changes, (e) Municipal fees, (f) Load balancing deferral accounts, (g) Weather deferral account (ATCO Gas only), (h) Production abandonment costs. AUC Decision 20414-D01-2016, December 16, 2016, at 89-90.

²¹ AUC Decision 20414-D01-2016, December 16, 2016, at 49-50, 52.

²² AUC Decision 20414-D01-2016, December 16, 2016, at 57



a predetermined dollar amount of qualified investment. These replace the prior K factor. In reaching this decision, the AUC reasoned:

Consistent with the findings in Decision 2012-237, the Commission continues to find that there is sufficient evidence that a capital mechanism in addition to I-X is required to deal with the unique circumstances of individual distribution utilities that may be in different places in their capital programs and business cycles.²³

The Commission's decision to divide capital into the two categories appears to be based on the suggestion by some parties that utilities should be incented to control predictable capital expenditures (Type 2), reserving Type 1 for non-predictable capital.

Several parties in the proceeding suggested dealing with incremental capital funding requirements by dividing capital additions on the basis of characteristics; for example, the ability of the distribution utility to forecast and control the capital additions.²⁴

And:

K-bar is able to provide incremental capital funding for programs that fail the Type 1 criteria while maintaining strong incentives for efficiency.²⁵

Concluding:

The significance of the capital tracker program was that its operation had the unintended effect of removing considerable capital from the productivity incentives created by the I-X mechanism.²⁶

2. ONTARIO

Ontario's electric distributors are operating under the Ontario Energy Board's ("OEB's") 4th generation performance based ratemaking plans. Since that time, Hydro One, the province's largest electric distributor, has submitted a proposal for a five-year rate plan, covering the 2018-2022 rate period. The company's proposal is supported by a productivity study conducted by Power System Engineering ("PSE"). The study incorporates estimates of productivity for Hydro One, covering the 2002-2015 period, and an estimate based on updates to a study previously performed by PEG, the Board's consultant, for the entire Ontario electric industry. The updates by PSE added data for 2013, 2014 and 2015 to the 2002-2012 period previously analyzed.²⁷ These results are presented in Table 2.

²³ AUC Decision 20414-D01-2016, December 16, 2016, at 49.

²⁴ AUC Decision 20414-D01-2016, December 16, 2016, at 49.

²⁵ AUC Decision 20414-D01-2016, December 16, 2016, at 56.

²⁶ AUC Decision 20414-D01-2016, December 16, 2016, at 57.

²⁷ EB-2017-0049 – Hydro One Networks Inc.'s 2018-2022 Distribution Custom IR Application and Evidence Filing, March 31, 2017, Exhibit A, Tab 3, Schedule 1, p. 6; and Exhibit A-3-2, Attachment 1, Total Factor Productivity Study of the



Table 2: Productivity Study Results Submitted by Hydro One

Expert	Participant	Productivity Study Results	Proposed X Factor (%)	Stretch Factor (%)	Sample / Time-Period
Power System Engineering	Hydro One Distribution	Hydro One TFP Unadjusted: -1.4% Adjusted: -0.9% Ontario Industry TFP (PEG Update): -0.9%	0.0%	0.6%	2002-2015, Hydro One TFP: 1 firm PEG Update: 73 firms

PSE did not recommend an X Factor based on Hydro One’s productivity trend, but rather based on the Ontario trend consistent with the prior Board Decision on this matter. PSE explains:

During the 4th Generation Incentive Regulation proceeding (EB-2010-0379), PEG conducted a TFP study for the Ontario electric distribution study (PEG Study). The study objective, as PSE understands it, was to provide an empirically-based recommendation on the productivity factor. This focused objective did not include an evaluation of the performance trend of individual distributors. Rather, the study was meant to inform the Board regarding the most appropriate productivity factor.

The PEG study determined the Ontario electric distribution TFP for 2002 to 2012 was -0.3%. Since the time of that study, industry data has become available for the years 2013, 2014, and 2015. PSE has replicated PEG’s methodology for the 2002 and 2012 period and updated the Ontario industry TFP study to 2015.

The updated average annual growth rate in the Ontario TFP is -0.9%. Consistent with the prior study, this excludes Hydro One and Toronto Hydro.²⁸

PSE’s report, incorporated in the Hydro One filing, presented the following conclusions:

After updating the Ontario industry TFP to 2015, PSE found the 2002-2015 trend is -0.9%. The 2002-2012 Ontario TFP trend was -0.3%. Based on the empirical evidence of declining industry TFP and the OEB’s 4th Generation IR decision to set the productivity factor at 0.0%, **PSE recommends setting Hydro One’s productivity factor no higher than 0.0%.** (emphasis added)

The X-factor is calculated as the sum of the productivity factor and the stretch factor. Stretch factors are normally determined using benchmarking research. PSE is of the opinion that accurate total cost benchmarking is the best approach in setting stretch factors. The long term 2002-2015 Hydro One adjusted TFP trend of -0.9% and the

Electric Distribution Functions of Hydro One and the Ontario Industry, Power System Engineering, Inc., November 4, 2016, at 1.

²⁸ EB-2017-0049 – Hydro One Networks Inc.’s 2018-2022 Distribution Custom IR Application and Evidence Filing, March 31, 2017, Exhibit A, Tab 3, Schedule 1, p. 6; and Exhibit A-3-2, Attachment 1, Total Factor Productivity Study of the Electric Distribution Functions of Hydro One and the Ontario Industry, Power System Engineering, Inc., November 4, 2016, at 4.



recent positive TFP growth of +0.5% provides evidence that there is the chance for modest TFP growth in the near term. On this basis, PSE recommends setting the stretch factor no higher than 0.6%. This is the maximum stretch factor put forth in 4th Generation IR and combined with a 0.0% productivity factor would amount to an X-factor of 0.6%.²⁹

It is worthy to note that Hydro One's proposal falls under the OEB's Custom Incentive Rate-Setting "(IR)" option, and Hydro One's proposal is of the form:

$$\text{Revenue Cap Index} = I - X + C$$

Where:

"I" is the inflation factor, as determined annually by the OEB.

"X" is the productivity factor that is equal to the sum of Hydro One's Custom Industry Total Factor Productivity measure and Hydro One's Custom Productivity Stretch Factor.

"C" is Hydro One's Custom Capital Factor, determined to recover the incremental revenue in each test year necessary to support Hydro One's proposed Distribution System Plan, beyond the amount of revenue recovered in rates.³⁰

As illustrated in the table below, the proposed custom capital factor adds between 2.46% – 3.66% to the prior year's annual revenue requirement. As Hydro One explains:

The Custom Capital Factor proposed in this Application and used in the RCI is designed to ensure that total revenue resulting from the Custom IR is able to meet Hydro One's specific circumstances arising from the proposed capital investments set out in Hydro One's DSP (Exhibit B1). The Custom Capital Factor is the percentage change in the Total Revenue Requirement (line 11 of Table 1 below) attributable to new capital investment that is not otherwise recovered from customers. This includes depreciation, return on equity, interest, and taxes attributable to new capital investment placed in-service each year of the Custom IR term. The Capital Related Revenue Requirement (line 6) each year is based on the change in rate base.³¹

The projected impact of the capital factor is seen below, where the impact ranges from 1.64% to 2.86% above the revenue requirement that would otherwise be set by I-X. In effect, the nominal X factor of 0.6% is negative, ranging from -1.04 to -2.26% when the capital factor is considered.

²⁹ EB-2017-0049 – Hydro One Networks Inc.'s 2018-2022 Distribution Custom IR Application and Evidence Filing, March 31, 2017, Exhibit A, Tab 3, Schedule 1, p. 6; and Exhibit A-3-2, Attachment 1, Total Factor Productivity Study of the Electric Distribution Functions of Hydro One and the Ontario Industry, Power System Engineering, Inc., November 4, 2016, at 5-6.

³⁰ Hydro One Application, Exhibit A, Tab 3, p. 6.

³¹ Hydro One Application, Exhibit A, Tab 3, Schedule 2, pp. 5-6.



Line		Reference	2018	2019	2020	2021	2022
1	Rate Base	D1-1-1	7,672.3	8,049.1	8,476.8	9,035.4	9,434.7
2	Return on Debt	E1-1-1	190.9	200.3	211.0	224.9	234.8
3	Return on Equity	E1-1-1	269.5	282.7	297.7	317.3	331.3
4	Depreciation	C1-6-2	394.4	414.4	428.7	448.1	464.7
5	Income Taxes	C1-7-2	58.0	61.3	62.6	68.7	69.6
6	Capital Related Revenue Requirement		912.8	958.7	1,000.0	1,059.0	1,100.5
7	Less Productivity Factor (0.60%)			(5.8)	(6.0)	(6.4)	(6.6)
8	Total Capital Related Revenue Requirement		912.8	953.0	994.0	1,052.6	1,093.9
9	OM&A	C1-1-1	591.9	599.6	607.4	615.3	634.2
10	Integration of Acquired Utilities	A-7-1				10.7	
11	Total Revenue Requirement		1,504.7	1,552.6	1,601.4	1,678.7	1,728.1
12	Increase in Capital Related Revenue Requirement			40.2	41.0	58.6	41.3
13	Increase in Capital Related Revenue Requirement as a percentage of Previous Year Total Revenue Requirement			2.67%	2.64%	3.66%	2.46%
14	Less Capital Related Revenue Requirement in I-X			0.79%	0.80%	0.81%	0.82%
15	Capital Factor			1.88%	1.84%	2.86%	1.64%

The Hydro One rate filing remains under review. According to the OEB’s procedural schedule, OEB staff and any intervenors permitted to file expert evidence will file evidence with the OEB on December 14, 2017,³² and an oral hearing is scheduled to begin on February 5, 2018.³³

3. MASSACHUSETTS

A number of PBR programs for the state’s gas and electric utilities in Massachusetts have expired, returning to a more traditional cost of service model with capital trackers for targeted investments, but Eversource applied for a new PBR program in January of 2017. This plan was approved by the Department of Public Utilities (DPU) on November 30, 2017.³⁴ The Eversource companies had operated under a series of rate freezes and long-term rate plans for the previous sixteen years.³⁵ Eversource serves approximately 1.4 million electric customers in Massachusetts, and 3.2 million in New England. In support of its PBR proposal, the company presented expert evidence including an electric industry productivity study.³⁶ The study utilized two different groups: (1) a sample of 67 electric distribution companies located across the U.S, representing approximately 75% of electric distribution customers in the country; and (2) a smaller sample of 17 electric distribution companies located in the Northeast U.S.

The data covered the 2001-2015 period, and relied on the number of customers as the measure of output, and standard measures of labor, materials, and capital measures of inputs. Based on the results of these studies, and placing reliance on the national sample group, Eversource’s expert

³² As of December 19, 2017, it does not appear any intervenors have filed new TFP evidence.

³³ EB-2017-0049, Hydro One Networks Inc. Application for Electricity Distribution Rates Beginning January 1, 2018 until December 31, 2022, Procedural Order No. 1, August 30, 2017.

³⁴ DPU 17-05, Order Establishing Eversource’s Revenue Requirement, November 30, 2017.

³⁵ DPU. 17-05, Exhibit ES-GWPP-1, January 17, 2017, p 56.

³⁶ Mark E. Meitzen, PhD, of Christensen Associates served as the company’s principal expert on these matters.



calculated a productivity offset (X factor) of -2.56%³⁷ for the national sample and -2.47% for the Northeast sample.³⁸ The company also proposed the use of a national measure of inflation, the Gross Domestic Product Price Index (GDP-PI) with a floor of 1.0%. As a result, if actual inflation falls below 1.0%, the floor would be used in the formula.

The company also proposed a “consumer dividend” (stretch factor) of 0.25% for when inflation exceeds 2%. Eversource offered a consumer dividend to represent its “commitment to provide customers with an explicit, tangible benefit in relationship to operating-cost control.” The company’s evidence describes the consumer dividend rationale: “Dr. Meitzen advised the Company that the ultimate determination of a consumer dividend factor is recognized to be largely subjective and that there is a lack of a quantitative, empirical basis for establishing its magnitude.” And “In this case, the Company is proposing to undertake substantial, incremental financial commitment to grid-modernization without a separate recovery mechanism, and without explicit recognition in the PBRM[echanism]. This commitment represents a consumer dividend of approximately 1.08 percent, which is a magnitude that is larger than the consumer dividend applied in previous PBR plans approved by the Department. In addition, the Company is proposing an additional 25 basis-point Consumer Dividend factor to demonstrate the company’s commitment to provide customers with an explicit, tangible benefit in relation to operating-cost control. Under circumstances where inflation is greater than two percent, the Company’s operating costs will be increasing at a fairly substantial pace, and the 25 basis-point Consumer Dividend will force the Company to work hard to find ways to suppress cost increases to the direct benefit of customers in the next rate case.”³⁹

While the stretch factor proposed was 0.25%, the Company and its expert noted that if customer growth was consistent with the prior 15 years, it would add an additional “implicit stretch factor of 0.56%”, and “A revenue cap would not account for this customer growth and, therefore, the additional costs associated with this growth would be absorbed by the Company.”

³⁷ Subsequently revised to -2.64%

³⁸ The company indicated the X factor would be substantially lower at -4.04% if sales were used as the output measure.

³⁹ DPU 17-05, Exhibit ES-GWPP-1, January 17, 2017, pp. 55-56.



Table 3: Productivity Study Results Submitted by Eversource

Expert	Participant	Productivity Study Results	Proposed X Factor (%)	Stretch Factor (%)	Sample / Time Period
Christensen Associates (Meitzen)	Eversource Energy	National Sample: -0.46% Northeast Sample: -0.41%	-2.56% ⁴⁰ -2.47%	0.25%	2001-2015 67 Companies – U.S. 17 Companies – Northeast Sample
Final Commission Decision			-1.56%	0.25%	

In reviewing the company’s application, and the positions of the opposing intervenors and expert witnesses, the DPU approved the company’s plan with the following modifications and justifications. The DPU agreed that a national sample covering the 2001-2015 period was appropriate. The differences between the X factors for the regional sample and the national sample were small, and a national sample provided a more robust dataset. The Department also found the use of customers as the sole output measure to be appropriate, and better reflected changes in the industry’s distribution system investment requirements. The Department concluded that the resulting X factor was determined in a reasonable manner. The company had indicated that the proposed plan would allow it to absorb the \$400 million of grid modernization investments (equivalent to 1.08% in annual revenue requirement, as noted above), while amounts above that level would be recovered separately. The Department determined it was appropriate to address the \$400 million grid modernization investment outside the PBR plan, and therefore reduced the X factor by that amount, resulting in an approved X factor of -1.56% (-2.64% + 1.08%). The proposed inflation floor of 1.0% was not approved, but approval of the stretch factor of 0.25% was conditioned on inflation exceeding 2%. Taken together, the resulting X factor including the stretch factor is -1.31% (-1.56% + 0.25%).⁴¹ This X factor will be applied to the company’s base revenue requirement.

The recommended X factor was computed based on a combination of the expert’s TFP analysis and the adjustments made by the Company and DPU. The computation is illustrated below:

⁴⁰ Subsequently revised to -2.64%.

⁴¹ DPU 17-05, Order Establishing Eversource’s Revenue Requirement, November 30, 2017, pp. 334-395, and Direct Testimony of Mark E. Meitzen, Ph.D., Christensen Associates, Performance-Based Ratemaking Mechanism On behalf of NSTAR Electric Company and Western Massachusetts Electric Company, Each d/b/a EVERSOURCE ENERGY, January 17, 2017.



Table 4: Eversource X Factor Computation⁴²

TOTAL FACTOR PRODUCTIVITY – U.S. ELECTRIC INDUSTRY SAMPLE, 2001-2015	-0.46%
DIFFERENCE BETWEEN ELECTRIC INDUSTRY PRODUCTIVITY AND OVERALL ECONOMY	-1.35%
DIFFERENCE BETWEEN ELECTRIC INDUSTRY INPUT PRICES AND OVERALL ECONOMY	<u>-1.29%</u>
X FACTOR	-2.64%
REMOVAL OF \$400M INCREMENTAL INVESTMENT UNDER THE I-X PLAN	1.08%
FINAL X FACTOR	-1.56%
CONSUMER DIVIDEND (STRETCH FACTOR WHEN INFLATION >2%)	<u>0.25%</u>
X FACTOR WHEN INFLATION >2%	-1.31%

Note that the TFP result for the industry, which produced a result of -0.46%, is adjusted for differences in productivity and input prices between the industry and the economy overall for an X factor of -2.64%. The need for this adjustment is dependent on the inflation factor (I) used in the PBR plan. As the Company's expert explained: "If the I factor is represented by the change in economy-wide output inflation as in the GDP-PI, then the revenue cap X factor is the combination of TFP and input price differentials."⁴³ The adjustment of TFP results for the I factor used in the PBR plan varies by expert and jurisdiction. Conceptually, if the inflation measure used in the formula is based on measures of input prices (such as a labor price index) then no adjustment is required, but if a measure of output (such as a consumer price index) is used, then an adjustment may be required for these input price differentials. In the Eversource plan, the inflation index is an output measure (GDP-PI), so the adjustment was made. The adjustment accounts for differences in productivity between the economy and the utility industry, and differences between the price indices.

The Eversource plan was also approved with an earnings sharing mechanism. The Department found that "a 200 basis point deadband will provide the Companies with a strong incentive to pursue savings", and "in order to appropriately balance shareholder and ratepayer risk under the PBR as designed, the Department finds that the benefits of any earnings sharing above the deadband must inure largely to ratepayers." The DPU therefore approved a 75/25% sharing above the 200 basis point deadband in favor of ratepayers.⁴⁴

The approved plan commences starting January 1, 2018, for a period of five years, and does not include an off-ramp, absent a showing of "extraordinary circumstances".⁴⁵

B. STRETCH FACTOR

PBR plans often, but do not always, include a "stretch factor". The rationale for a stretch factor is generally that the measured productivity of the industry when largely operating under a cost of service model does not adequately reflect the potential efficiency gains of a performance-based rate

⁴² Christensen, *ibid*, p. 52, as revised and approved by the DPU, DPU 17-05, Decision, pp. 391-395.

⁴³ Christensen, *ibid*, p. 40.

⁴⁴ *Ibid*, at pp. 400-401.

⁴⁵ *Ibid*, at p. 404.



model. A stretch factor provides an immediate benefit for customers above and beyond the industry trend in productivity.

The determination of whether a stretch factor is required, and its magnitude, is largely the judgement of the regulator. In the case of Alberta, the Commission did not separately determine the value of X without the stretch factor, as it did in its previous decision. The 0.3% is inclusive. The AUC reasoned:

Given that current generation PBR plans include a COS-based capital trackers mechanism, which will be mostly replaced in the next generation PBR plans by the K-bar mechanism, the Commission expects that next generation PBR plans will be largely devoid of any significant COS elements. Therefore, the Commission finds merit in including a stretch factor component in the X factor for the next generation PBR plans for all distribution utilities.⁴⁶

If its prior decision is a guide, the AUC determined a stretch factor of 0.2% was appropriate for Alberta's gas and electric distributors in its first-generation PBR.⁴⁷

In Ontario, the OEB has set stretch factors for utilities operating under the I-X plan based on an analysis of the relative efficiency of its distributors. The Board summarizes:

The OEB currently conducts total cost benchmarking for electricity distributors. An econometric model is used to generate efficiency rankings and assign electricity distributors to one of five groups based on their total cost performance, including both capital and OM&A costs. These results are used to set the productivity stretch factors for the incentive rate-setting mechanism (IRM) applications, and will also be a consideration in assessing a utility's cost trend performance.⁴⁸

Based on data provided by Ontario's distributors to the Board, and analysis conducted by PEG, the OEB determined the following stretch factors:⁴⁹

⁴⁶ AUC Decision 20414-D01-2016, December 16, 2016, at 40.

⁴⁷ AUC Decision 2012-237, paragraphs 514-515, the X factor of 1.16 per cent was determined as the sum of the underlying long-term industry TFP growth value of 0.96 per cent and a stretch factor of 0.2 per cent.

⁴⁸ OEB Handbook to Utility Rate Applications, October 13, 2016, p. 18.

⁴⁹ EB-2010-0379, Report of the Board, Rate Setting Parameters, and Benchmarking under the Renewed Regulatory Framework for Ontario's Electricity Distributors, issued on November 21, 2013 and as corrected on December 4, 2013, p. 21. The "predicted" vs. "actual" costs which served as the basis for the OEB's stretch factors were based on an econometric and benchmarking analysis of the Ontario distributors conducted by PEG, using data for each distributor over the 2009-2011 period. The "predicted" value was based on the model's estimates of the utility's costs given its actual output and input characteristics, and the relationship between the utility's costs and its peers.

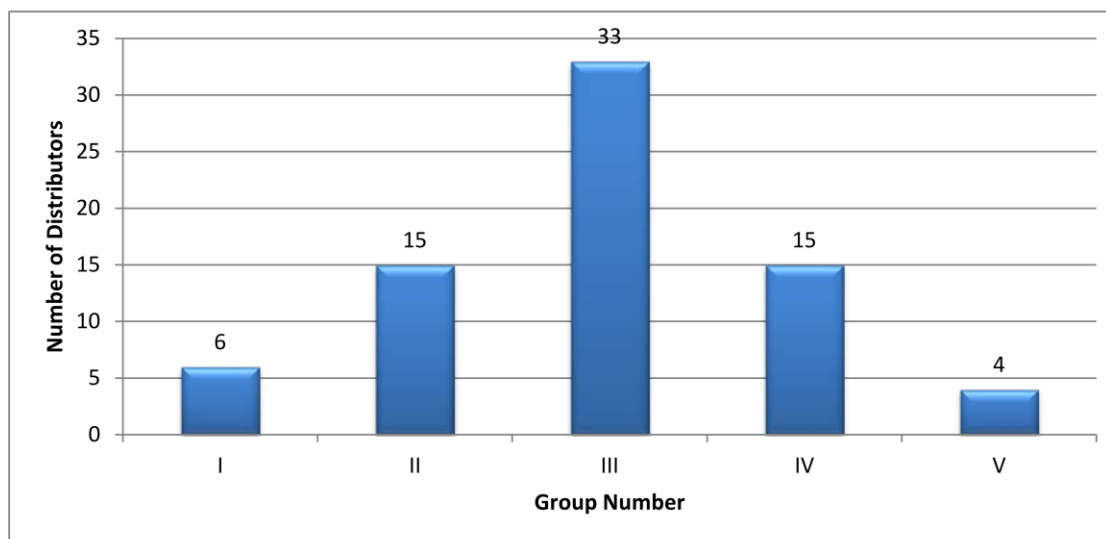


OEB Determined Demarcation Points for Relative Cost Performance

Group	Demarcation Points for Relative Cost Performance	Stretch Factor
I	Actual costs are 25% or more below predicted costs	0.00%
II	Actual costs are 10% to 25% below predicted costs	0.15%
III	Actual costs are within +/-10% of predicted costs	0.30%
IV	Actual costs are 10% to 25% above predicted costs	0.45%
V	Actual costs are 25% or more above predicted costs	0.60%

Interpreting these results and their application, the OEB applies a range of stretch factors based on a distributor's relative efficiency to its Ontario peers of 0% for the most efficient distributors, and 0.6% for the least efficient. The distribution of the 73 distributors according to these rankings is as follows:⁵⁰

Figure 2: Distribution of Ontario Distributors' Relative Cost Performance



Most utilities examined fall into the Group III category, with a stretch factor of 0.3%.

Concentric does not view the Ontario benchmarking as applicable to HQD because HQD was not compared to the Ontario utilities. The study which supported the development of these stretch factors was limited to Ontario's distributors, so HQD was not part of the analysis. And whereas in Ontario, data for 73 distributors was available for comparison, HQD is the sole major distributor in

⁵⁰ *Ibid*, p. 22.



the province of Québec. There is therefore no basis for determining HQD's relative efficiency to the Ontario distributors.

HQD has, however, provided evidence of its productivity in its document "Études, analyses et rapports pour la détermination du Facteur X déposés dans le cadre de l'établissement du mécanisme de réglementation incitative du Distributeur" filed in response to the Régie's decision D-2017-043 (R-3897-2014, A-0161)⁵¹, including a significant decrease in its workforce for the period 2008-2017. HQD has also seen improvements in efficiency indicators as presented in file R-4011-2017⁵².

Furthermore, the Régie has already accounted for an expectation that HQD should have economies of scale built into its formula with the G factor. By selecting a G of 0.75% of HQD's customer growth, the Régie has built in additional efficiency gains beyond those captured in the X factor. The Régie recognized this relationship in its Phase I Decision:

[158] Economies of scale must be reflected in the G growth factor (Factor G). There is therefore a close link between the values of Factors X and G, as CEA points out:

*« And the expectation is that the company is expected to show returns to scale, to the extent it can, and that should be reflected in the overall structure of the parameters that are established in phase 3. And the X factor serves to promote continued efficiencies; the G factor should be selected to show the legitimate relationship between costs associated with serving accounts and the resulting implications on its included OPEX. So, we see that's where X and G get tied together, is in the analysis that supports the selection of those parameters in phase 3 ».*⁵³

As mentioned above, the recently decided Eversource decision in Massachusetts incorporated a stretch factor of 0.25%, as long as inflation exceeds 2.0%. The Régie notes in its Phase I Decision that after examining all the elements covered by the indexing formula it would consider whether any "favorable or unfavorable bias" might warrant accounting in the stretch factor.⁵⁴ This would be an inappropriate use of a stretch factor. Practically speaking, a stretch factor is a judgmental matter designed to guarantee consumers savings greater than the industry trend level. It is not designed to remedy any bias in other plan elements. Taking these recent examples, the previous Alberta and recent Massachusetts stretch factors of 0.2% and 0.25%, respectively, establish reasonable benchmarks.

⁵¹ See also file R-4011-2017, HQD-2, document 1 (B-0009) and HQD-8, document 2 of (B-0026)

⁵² R-4011-2017, HQD-2, document 1 (B-0009)

⁵³ D-2017-043, R-3897-2014 Phase 1, 2017 04 07 at 158.

⁵⁴ D-2017-043, R-3897-2014 Phase 1, 2017 04 07 at 233.



C. INFLATION FACTOR

HQD's evidence presents the Distributor's proposal for the inflation factor. The proposed "I" is a three-part index, with weights based on HQD's projected expenses in year 1 of the 4-year MRI.

- 1) Compensation Growth - fixed weighted index of average hourly earnings in Québec (all industries) to establish the indicator of changes in salary costs (weight: 16.6%)
- 2) Costs Related to Assets - implicit index of business investment, the fixed capital investment component, published in the quarterly economic accounts of Québec's GDP (weight 56.8%)
- 3) Other Expenses - the annual variations in the Québec CPI services, according to the method proposed by the Régie (weight: 26.6%).

Based on the components of the proposed index, 73.4% of the index would be comprised on input-based price indices. The remainder, based on the CPI for services, also approximates an input-based index, as it would reflect HQD's costs for acquiring these services. For this reason, Concentric does not recommend an adjustment to the industry TFP analyses in this case for differences between industry and economy-wide input price differentials. This is the same logic adopted by the AUC in determining if adjustments to X would be required.

426. The interaction between the I factor and the X factor described above is based on a well-established theoretical foundation, as demonstrated by the agreement of parties on the need to adjust TFP in determining an X factor if an output-based inflation measure is chosen for the purpose of the PBR plan. Consequently, the parties advised that, when possible, it is preferable to use input-based price indexes for the I factor of the PBR plan, since using such indexes avoids the need for an input price differential and a productivity differential adjustment to TFP.

427. As set out in Section 5 of this decision, the Commission approved a composite I factor consisting of AWE and CPI indexes for Alberta. While the AWE index represents an example of an input-based measure, the CPI is generally regarded as an output rather than an input price index. However, as the Commission explained in Section 5.2.3 above, in the context of this proceeding, the Alberta CPI will be used only to monitor price trends for the companies' non-labour inputs. EPCOR, AltaGas and ATCO Gas submitted that because the Alberta CPI is a good proxy for the price changes for that particular group of expenditures, it may be considered an input price index for the purpose of their composite I factors. The Commission agrees.

428. Accordingly, since both components of the approved I factors can be considered input based price indexes, there is no need in this case for the Commission to consider an adjustment to TFP for an input price differential or productivity differential in the calculation of the X factor.⁵⁵

⁵⁵ AUC Decision 2012-237, September 12, 2012, at 89.



Section 3: Conclusions & Recommendations

Concentric is of the view that the recent TFP studies submitted in Alberta, Ontario and Massachusetts provide a reasonable basis for informing the Régie’s determination of an X factor for HQD’s initial MRI program. These studies incorporate both broad and targeted samples of U.S. electric utilities in the case of the studies submitted in Alberta and Massachusetts, and an Ontario specific electric utility group in the study submitted in Ontario. The Alberta and Massachusetts studies were subject to considerable scrutiny and tested by intervenors and opposing witnesses. These studies cover the most recent periods for which data was available, incorporating data back to 1997 and up through 2015, depending on the study. The range of results is summarized below.

Table 5: Recent Productivity Study Ranges

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.		

Four of the five experts estimate negative productivity growth for their industry samples over the entire period of analysis, consistent with the broader Canadian utility data Concentric presented in its June report. Statistics Canada’s estimates a utility productivity trend of -1.1% over the 2000-2015 period, and -2.1% over the more recent 2011-2015 period.⁵⁶ As seen in the table below, utility sector multifactor productivity growth has been considerably slower when compared to business sector multifactor productivity growth, confirming the trends revealed in the industry analyses submitted in Alberta, Ontario, and Massachusetts. That data is presented in Table 6:

⁵⁶ Concentric June 30, 2017 Report, *op. cit.*, p. 13.



Table 6: Canada and US Multifactor Productivity Trends

	<i>Statistics Canada</i> ⁵⁷	<i>Statistics Canada</i> ⁵⁸	<i>Bureau of Labor Statistics</i> ⁵⁹
	Utility Sector Multifactor Productivity	Business Sector Multifactor Productivity	Non-Farm Private Business Multifactor Productivity
2000	2.4%	2.1%	1.6%
2001	-7.9%	0.1%	0.5%
2002	7.8%	1.3%	2.2%
2003	-3.0%	-0.7%	2.3%
2004	-3.0%	-0.3%	2.6%
2005	2.8%	0.0%	1.5%
2006	-3.1%	-0.8%	0.4%
2007	4.2%	-1.1%	0.5%
2008	0.5%	-2.3%	-1.3%
2009	-6.7%	-2.6%	-0.4%
2010	-1.5%	1.8%	2.9%
2011	-1.0%	1.5%	0.3%
2012	-2.4%	-0.6%	0.9%
2013	-3.1%	0.9%	0.2%
2014	-1.9%	1.3%	0.7%
2015	-2.1%	-1.0%	0.6%
2000-2015	-1.1%	0.0%	1.0%
2011-2015	-2.1%	0.4%	0.5%

As seen in the evidence submitted in the Alberta, Ontario and Massachusetts evidence, the pattern of declining productivity growth in the utility sector has been exhibited more broadly across the

⁵⁷ Statistics Canada. Table 383-0021 - Multifactor productivity, value-added, capital input and labor input in the aggregate business sector and major sub-sectors, by North American Industry Classification System (NAICS), annual (index, 2007=100 unless otherwise noted), CANSIM (database). (accessed: June 2016)

⁵⁸ Statistics Canada. Table 383-0021 - Multifactor productivity, value-added, capital input and labor input in the aggregate business sector and major sub-sectors, by North American Industry Classification System (NAICS), annual (index, 2007=100 unless otherwise noted), CANSIM (database). (accessed: June 2016)

⁵⁹ Bureau of Labor Statistics, Office of Productivity and Technology, Division of Major Sector Productivity. *Net Multifactor Productivity and Costs, Private Non-Farm Business Sector*. March 30, 2017.



Canadian utility sector, as illustrated in the multifactor productivity data provided by Statistics Canada. The longer-term utility productivity growth of -1.1% declined to -2.1% over the most recent five-year period. All of the studies show lower (or more negative) productivity growth in the more recent time period, suggesting these longer-term averages may overstate current productivity trends due to the leveling of demand growth without a comparable reduction in inputs.

The Régie, in its Phase 1 Decision, set some expectations for an appropriate range for X. The Régie set out its preliminary logic as follows:

[159] As for the determination of Factor X, the Régie notes from a table produced by PEG that the average value of the productivity factors used in the regulation of the North American electricity companies from 1994 to 2011 is 1,51%.

[160] As indicated in the following table, this value is similar to that used by the Régie in the parametric formula to frame, in aggregate, the annual growth in operating expenses of the Distributor.⁶⁰

Concentric notes, however, that the table presented by PEG cited by the Régie presents outdated studies that are not reflective of currently utilized X factors in Canada or the U.S.⁶¹ In fact, 29 out of the 36 utility plans listed represent plans that have already expired, including plans that expired as long ago as 1997 and 1999. As illustrated in Concentric's research, the current range in Canada prior to the Massachusetts Decision is 0.3% (Alberta) to 0 to 0.6% (Ontario), inclusive of stretch factors.

Concentric recommends the Régie place weight on the studies presented by experts in the Alberta, Massachusetts, and Ontario proceedings. These studies incorporate data for relatively large groups of U.S. (the Alberta and Massachusetts studies) and Canadian utilities (the Ontario study). Considering the resulting X factor determined by the AUC of 0.3%, including a stretch factor, this would be an upper-end target for HQD in its first-generation MRI. The Mass DPU's adopted -1.31%, with a 0.25% stretch factor conditional on GDP-I greater than 2.0%, sets an appropriate lower bound. The DPU explicitly ruled that grid modernization investments proposed by the company would be considered outside of PBR, indicating the potential for significant investments outside the I-X revenue cap. The AUC's PBR also includes significant adjustments for capital investments outside of the formula, for which the Régie formula does not. Hydro One's proposal includes capital additions outside I-X that would place its effective X in the -1.04 to -2.26% range. A separate proceeding will be used in Massachusetts to determine how incremental grid modernization investment will be handled. For HQD, all capital investments, other than those excluded for a Z factor, are included in the formula. This creates a greater challenge in that regard than the Alberta utilities, Eversource or Hydro One face under their PBR plans.

Based on this evidence, Concentric recommends the Régie adopt a productivity factor of -0.75% for this first-generation MRI for HQD. This is greater (more negative) than the mean of the recent industry studies cited above, but below the midpoint. It is also below the Statistics Canada estimate

⁶⁰ *Op cit.*, at 159-160.

⁶¹ R-3987-2014, C-AQCIE-CIFQ-0056.



of utility productivity. It recognizes that HQD has some growth in the G factor, but G factor growth is limited to 0.75% of actual growth, so HQD will have a built-in challenge compared to other programs for ongoing capital investments. Including a stretch factor of 0.25% would bring the X factor to -0.5%. Concentric believes this is an appropriate plan parameter, supported by substantial expert evidence submitted, and tested, in other jurisdictions and represents an appropriate starting point for HQD's first MRI.

This productivity factor will be revisited when HQD submits a productivity study within the next three years, as required by the Régie.⁶²

⁶² The Régie ordered the Distributor to conduct a multifactor productivity study within the first three years of the MRI and to transmit the results of the study to the Distributor within the third year, R-3897-2014 Phase 1, April 7, 2017 at ¶ 167.