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

Hearings before the Régie de l'énergie

February 7, 2018
R-4011-2017
HQD-22, Document 2

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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: 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 Makholm 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.

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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%