



3rd Generation Incentive Regulation for Ontario's Electricity Distributors

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Presentation on behalf of the
Electricity Distributors Association

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Introduction

- Ontario Energy Board Staff has distributed two extensive and thoughtful documents:
 - “Staff Discussion Paper on 3rd Generation Incentive Regulation for Ontario Distributors”, February 28, 2008.
 - “Calibrating Rate Indexing Mechanisms for Third Generation Incentive Regulation in Ontario”, prepared by the Pacific Economics Group, LLC, February 2008.
- Together with further inputs provided by various stakeholders and working group members, these should form the basis of a credible 3GIRM.



Introduction

- The purpose of this presentation is to highlight certain areas where, in our view, refinements or improvements can be achieved.
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- We will focus on
 - A. the base productivity factor;
 - B. the “stretch factor”;
 - C. the role of Ontario data in the calibration process;
 - D. capital expenditures;
 - E. the proposed approach to incentive regulation and elements of the proposed core plan.

A. Productivity Factor

- PEG has proposed that the X-factor be comprised of two components:
 - an industry productivity factor estimated using U.S. data,
 - a “stretch factor” based on Ontario data.

A. Productivity Factor

- PEG proposes a 0.88% per year industry-wide productivity factor.
- The figure relies on a sample of 69 U.S. utilities for the period 1988-2006.

A. Productivity Results: U.S. Sample

Table 11
PRODUCTIVITY RESULTS: U.S. SAMPLE

Year	Output Quantity Index	Input Quantity Index	TFP Index	Annual Growth in TFP
1988	1	1	1	
1989	1.040	1.020	1.020	2.00%
1990	1.060	1.037	1.022	0.20%
1991	1.077	1.064	1.012	-0.98%
1992	1.089	1.068	1.020	0.79%
1993	1.111	1.106	1.005	-1.47%
1994	1.131	1.114	1.015	1.00%
1995	1.152	1.115	1.033	1.77%
1996	1.171	1.128	1.038	0.48%
1997	1.190	1.123	1.060	2.12%
1998	1.213	1.145	1.060	0.00%
1999	1.233	1.157	1.066	0.57%
2000	1.260	1.158	1.088	2.06%
2001	1.272	1.150	1.107	1.75%
2002	1.291	1.153	1.119	1.08%
2003	1.309	1.181	1.109	-0.89%
2004	1.333	1.173	1.136	2.43%
2005	1.357	1.191	1.139	0.26%
2006	1.371	1.205	1.138	-0.09%
	Average Annual Growth Rate		0.72%	0.73%

A. Productivity Results: U.S. Sample

	Average Annual Growth Rate		
	Output Quantity Index	Input Quantity Index	TFP Index
1988-2006	1.77%	1.04%	0.73%
1989-2006	1.64%	0.99%	0.65%
1990-2006	1.62%	0.94%	0.68%
1991-2006	1.62%	0.83%	0.79%
1992-2006	1.66%	0.87%	0.79%
1993-2006	1.63%	0.66%	0.97%
1994-2006	1.62%	0.66%	0.96%
1995-2006	1.59%	0.71%	0.89%
1996-2006	1.59%	0.66%	0.93%
1997-2006	1.59%	0.79%	0.80%
1998-2006	1.54%	0.64%	0.90%
1999-2006	1.53%	0.58%	0.94%
2000-2006	1.42%	0.67%	0.75%
2001-2006	1.51%	0.94%	0.57%
2002-2006	1.51%	1.11%	0.41%
2003-2006	1.55%	0.67%	0.88%
2004-2006	1.42%	1.35%	0.06%
2005-2006	1.03%	1.18%	-0.14%

1995 was selected as start year because it was the most "similar" to 2006.

A. Productivity Factor

- The productivity factor over the longest period for which U.S. data have been available, averages 0.72% per year.
- Absent consistent Ontario data, this figure may be an appropriate long term target at this time.

A. Productivity Factor

- Productivity growth in electricity distribution during recent years has been slow in the U.S. and in Ontario.
- For the period 2002-2006:
 - U.S. electricity distributors – 0.41% per year;
 - Ontario electricity distributors – 0.01% per year.



A. Productivity Factor

- Possible reasons for recent low productivity growth rates:
 - In Ontario – changing and expanding service mandates for distributors, aging infrastructure, expanding regulatory requirements.
- Are these factors likely to abate or reverse themselves?

A. Productivity Factor

- If recent growth rates are a good predictor of the upcoming 3-5 year growth rates, then the 0.88% figure proposed by PEG, and even the long term 0.72% U.S. productivity growth rate may be too high.

A. Productivity Factor

- We note that the Board, in its 1st Generation IRM placed additional weight on the most recent Ontario experience.
- The productivity factor of 1.25% was calculated as follows:
 - 0.86% for 1988-97;
 - 2.05% for 1993-97;
 - $1.25\% \approx \frac{2}{3} 0.86\% + \frac{1}{3} 2.05\%$.

A. Productivity Factor

- Applying similar reasoning to present data, that is assigning greater weight to the most recent experience, yields an expected productivity factor of 0.62% if U.S. data are used and .49% if Ontario data are used.
- U.S. experience for 1988 – 2006: 0.72%.
- U.S. recent experience: 0.41% for 2002 – 2006;
 - $0.62\% = \frac{2}{3} 0.72\% + \frac{1}{3} 0.41\%$.
- Ontario recent experience: 0.01% for 2002 – 2006;
 - $0.49\% = \frac{2}{3} 0.72\% + \frac{1}{3} 0.01\%$.

A. Productivity Factor

- Given recent productivity growth rates in the Ontario and in the U.S. sample, the proposed 0.88% productivity factor appears too high as a medium term target.
- A more plausible figure would be in the range 0.49% to 0.62%.



B. The Proposed “Stretch Factor”

- “Stretch factors” are sometimes rationalized on the basis that a utility should experience “accelerated productivity growth” as one transitions from cost-of-service to incentive regulation.
- However, Ontario distributors have been under a form of price-cap regulation for an extended period of time.



B. The Proposed “Stretch Factor”

- The OM&A benchmarking analysis underlying the stretch factors has major shortcomings:
 - perhaps most importantly the absence of capital from the model;
 - furthermore, utilities cannot verify the statistical analyses because of confidentiality issues.



B. Option I: Eliminate the Proposed “Stretch Factor”

- A strong argument can be made in the Ontario setting for not including “stretch factors at this time.”
 - They are arbitrary.
 - They lack sufficient empirical basis.
 - They lack theoretical support.
- Under this approach, all utilities would be assigned a common X-factor.



B. Option 2: Replace “Stretch Factor” With “Diversity Factor”

- The proposed “stretch factor” varies across utilities and is intended to incorporate “distributor diversity”.
- It is in fact a “diversity factor” and perhaps should be renamed as such.

B. Diversity Factor

- If the best estimate of expected productivity growth for the industry is say 0.62%, then the diversity factor for individual utilities should vary on either side of this level.
- That is, utility-specific X-factors would be centered at 0.62%, (ranging say from 0.32% to 0.92%).



C. Ontario Distributor Data

- PEG has relied to a substantial degree on U.S. data to calibrate productivity growth.

- PEG has relied on Ontario OM&A data to produce productivity rankings.
- Ontario data are available for 2002-2006; earlier data for 1988-1997 also exist for a subsample of utilities.

C. Ontario Distributor Data

- Measures of productivity growth can vary across jurisdictions for a variety of reasons including the regulatory regime and CDM programs. This, in turn, hampers inter-jurisdictional comparability.
- Development of a consistent dataset for Ontario beginning in 1997 (or preferably as early as 1988) is therefore highly desirable.

C. Ontario Distributor Data

- The absence of reasonable quality Ontario data hampers the present exercise in two ways:
 - it limits our ability to estimate long-term industry-wide productivity targets for Ontario;
 - it limits our ability to calibrate the diversity factor across Ontario utilities.
- Development of better historical Ontario data should substantially ameliorate these shortcomings.



D. Capital Investment

- Capital investments are required to:
 - maintain integrity and reliability;
 - accommodate system growth;
 - meet evolving environmental and technical standards;
 - meet legal and regulatory obligations.



D. Capital Investment

- Staff Discussion Paper indicates that base rates for 3rd GIRM will incorporate capital investment based on a forward test year.



D. Capital Investment Module

- However, any incremental intra-term capital expenditures would be treated as a “Z-factor”.
- Materiality threshold 3%-5% of net fixed assets.
 - For many utilities a 1%-2% materiality threshold may be more appropriate.
- Staff Discussion Paper notes that as a result there is a shift of risk and cost out of the rate adjustment mechanism.
 - This concern needs to be balanced against the concern that the absence of a capital adjustment mechanism can misalign incentives.



D. Multi-year Capital Plans

- It would be reasonable to permit a utility to file multi-year capital plans, particularly if it expects unusual changes in, for example, restoration or growth related expenditures.
- This should lead to reduced dependence on “off-ramps” and intra-term capital cost approval processes, and better capital expenditure profiles.



D. K-Factor

- Approved multi-year capital plans could be reflected in a K-factor which would enter directly into the comprehensive price-cap formula.



E. Incentive Regulation Mechanisms

- The Staff Discussion Paper recommends implementation of an incremental approach that is
 - sustainable
 - predictable
 - effective
 - practical.
- Using these criteria, Staff evaluated alternative models.



E. Financial Viability is a Minimum Condition

- The Staff Discussion Paper refers to five principles underpinning the design of multi-year incentive rates. The first of these states:
 - *“The financial viability of the electricity distribution sector should continue to be balanced with the interests of consumers.”*
- Financial viability is a minimum condition that should not be compromised if the objectives of sustainability and effectiveness are to be met.



E. Alternative Approaches to IRM

- Comprehensive multi-year cost of service.
- Hybrid -- Partial index approach
 - “a hybrid approach under which OM&A would be indexed and capital costs would be forecasted”.
- Comprehensive price cap index
 - “a comprehensive price cap index approach with added flexibility to recognize incremental capital investment needs”.



E. Comprehensive Multi-Year Cost of Service

- Incentives are substantially less powerful relative to properly implemented incentive regulation.
- Regulatory burden is high for distributors and for the regulator.



E. Hybrid – Partial Index Approach

- Incentives to increase capital expenditures in order to improve observed OM&A performance.
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- Difficulties in benchmarking OM&A costs for Ontario distributors because of the absence of good capital data.



E. Comprehensive Price-Cap Index

- Highest efficiency incentives if properly implemented.

- Calibration hampered by the absence of sufficient Ontario data.



E. Key Elements of the Proposed Core Plan

- comprehensive price cap index
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- three to five year term
 - industry-specific input price index

E. Term

- The proposed three to five year term is reasonable as long as
 - suitable off-ramps are available, and
 - a mechanism is incorporated for incremental or unexpected capital expenditures.
- The five year term, in particular, provides utilities with more time to implement and benefit from improvements in operating efficiencies.



E. Inflation Factor

- Industry-specific inflation factor is appropriate.

- Additional review required to assess the specifics of the Staff proposal.

E. Z-Factor

- Staff Discussion Paper proposes to increase materiality threshold from 0.2% to 3.0%.
- Again, a materiality threshold between 1% and 2% would seem to be more suitable for utilities.



E. Off-Ramps

- Union Gas settlement involves a trigger point for regulatory review of $\pm 3\%$ ROE (based on weather normalized earnings).
- Need to review volatility of data for Ontario distributors on ROE to determine appropriateness of this range.



E. Earnings Sharing

- Dilutes incentives for efficiency gains.

- Customers capture benefits of efficiency gains in perpetuity at subsequent rebasing.
- If implemented, it should be symmetrical.

Summary of Preliminary Assessments

1. Base productivity factor in the range 0.49%-0.62% per year.
2. Stretch factor:
 - i. Option 1: eliminate
 - ii. Option 2: rename the “diversity factor” and center around the base productivity factor.
3. Reconstruct Ontario data for the period 1997-2002 and perhaps earlier to ensure a continuous capital inclusive database which can be used to calibrate industry X-factors and diversity factors.



Summary of Preliminary Assessments

4. Incremental capital investment module: reduce materiality threshold to 1%-2% of net fixed assets.

5. Multi-year capital plans should be allowed perhaps in conjunction with a “K-factor”. This would reduce dependence on “off-ramps” and intra-term capital cost approval processes and lead to better capital expenditure profiles.

Summary of Preliminary Assessments

6. Given the alternatives, a comprehensive price-cap IRM is the preferred approach for many (but not all) utilities.
 - i. Optional 3-5 year term appropriate.
 - ii. Inflation factor merits further review and refinement. In particular, it may be useful to gather utility-specific wage data rather than relying exclusively on external databases.
 - iii. Off-ramps – further review of ROE volatility of Ontario distributors would be useful before determining the trigger mechanism.
 - iv. Earnings sharing schemes, while they may be politically appealing, they dilute incentives and are therefore preferably excluded.