

May 16, 2008

Board Secretary
Ontario Energy Board
P.O. Box 2319
27th Floor
2300 Yonge Street
Toronto, ON M4P 1E4

Via Board's web portal and by courier

Dear Board Secretary:

**Re: Board File No. EB-2007-0673
3rd Generation Incentive Regulation for Electricity Distributors
Board Staff Proposal of May 6, 2008**

The Electricity Distributors Association (EDA) is the voice of Ontario's local distribution companies (LDCs).

The EDA would like to provide the attached submission in response to the Ontario Energy Board Staff proposal issued on May 6, 2008 for 3rd Generation Incentive Mechanism for electricity distributors. The EDA submission was prepared by Prof. Adonis Yatchew of the University of Toronto in consultation with EDA members.

Yours truly,

“original signed”

Richard Zebrowski
Vice President, Policy and Corporate Affairs

Attach.

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3rd Generation Incentive Regulation for Electricity Distributors: EB-2007-0673

Comments on behalf of the Electricity Distributors Association

Prepared by Adonis Yatchew, Ph.D. May 16, 2008.

Summary

Board Staff has conducted an extensive and thoughtful process to develop a sustainable incentive regulation mechanism for Ontario distributors. After many months of analyses, proposals, stakeholders meetings and the interchange of ideas, Board Staff has invited final comments on its proposals. The comments provided here are in addition to previous submissions on behalf of the Electricity Distributors Association.

1. The Core Plan:

- a. **Price-Caps:** A comprehensive price-cap incentive regulation mechanism is the preferred approach for many utilities. A substantive “capital module” through which utilities with significant incremental capital requirements can obtain rate relief is essential, particularly since Staff now proposes a four-year term. (Under previous proposals, utilities concerned about future capital costs could have selected a three-year term.)
- b. **Revenue-Caps and Alternatives:** Utilities which may be unduly disadvantaged by the core plan may submit an alternative proposal to the Board. The alternative may involve different price-cap parameters or a distinct regulatory approach, such as a revenue-cap.
- c. **Earnings Sharing Mechanism:** Board Staff proposes an asymmetric earnings sharing mechanism with a threshold of +2% above the approved rate of return. Given that public utilities are substantially more susceptible to uncompensated government policy directives which can contribute to low returns, the earnings sharing mechanism – if implemented – should be symmetric with a threshold of say $\pm 2\%$ around the approved rate of return.

2. Calibration of the X-factor:

- a. **Long Term Productivity Factor:** The best available evidence supports a long-term average productivity growth factor of 0.72%.
- b. **“Start-Year” Analysis:** The Pacific Economics Group, which has acted as Board Staff consultant proposes a long-term productivity factor of 0.88%. This figure is based upon a “start-year” analysis which can be readily shown to be both conceptually and empirically deficient.

- c. **Recent Deceleration in U.S. Productivity Growth:** There is no statistical evidence of systematic acceleration in U.S. distributor productivity growth which could justify above average productivity factors in the near term. The most recent years of data suggest a period of deceleration. Recessionary effects in the U.S. are likely to have an adverse impact on forthcoming productivity trends.
- d. **Empirically Supported Target for Ontario Distributor Productivity Growth:** Consistent with the U.S. results, Ontario distributor data for the period 2002-2006 also indicate a slowdown in productivity growth. Growing emphasis on conservation and demand management, increasing regulatory requirements and aging infrastructure are likely contributory factors. Recent manufacturing job losses in Ontario are also likely to have an adverse impact on productivity growth. Taking these various factors into consideration, and keeping in mind the long term average productivity growth rate of 0.72%, a reasonable and sustainable target for the industry average productivity factor is in the range of 0.5% to 0.6%.

3. **Benchmarking Analysis:**

- a. **Distortion of Incentives:** The Pacific Economics Group proposes to benchmark distributor efficiency using OM&A data. Regulatory focus on OM&A costs rather than total costs distorts incentives and can lead to over-capitalization by utilities seeking to reduce OM&A expenditures, under-spending on OM&A and sub-optimal decisions with respect to own vs. lease alternatives.
- b. **Absence of Capital Data:** Distributor efficiency should be benchmarked using total costs and should incorporate the different operating environments and business conditions in which utilities operate. The absence of capital data precludes the estimation of models of total costs in Ontario at this time. Even a cost function restricted to OM&A expenditures cannot be estimated properly since a utility's OM&A costs will in general vary with the quantity and characteristics of its capital stock.
- c. **Misclassification of Utilities:** Board Staff has proposed that utilities be divided into three groups based on their relative efficiency with approximately two thirds in the central group and one third divided between the two tails of the efficiency distribution. Allocation to groups would be based on the OM&A benchmarking analysis of Ontario utilities performed by the Pacific Economics Group. Our analysis suggests that 23% of utilities would be misclassified if they are allocated to the three categories based on their OM&A costs rather than total costs. This misclassification is in addition to the 10% of utilities which would, on average, be incorrectly classified as significantly inferior or superior using the Pacific Economics Group

efficiency testing methodology. Given the likelihood of substantial misclassification, we believe that distributor benchmarking in Ontario has not reached a stage where it can be used for assignment of X-factors in a regulatory environment.

- d. **Previous Methodological Issues:** Based on Pacific Economics Group descriptions of their approach to testing distributor efficiency, we concluded in earlier submissions that “the procedure that has been implemented incorporates only the uncertainty associated with the estimate of the benchmark and ignores the inherent random variation in the actual cost data that are being compared to the benchmark.” Since that time we have been provided with the computer code. Based on our examination of that code, we find that the implementation does indeed incorporate both sources of variation. We would suggest that the descriptions provided by the Pacific Economics Group in its documents be amended so that they are reflective of the actual implementation.
- e. **Additional Methodological Issues:** Based on our examination of Pacific Economics Group computer code, it is our view that too many utilities are classified as “significantly inferior” and “significantly superior” performers. According to the most recent benchmarking analysis, 18 utilities are “significantly superior” and 15 utilities are “significantly inferior”. Our calculations suggest that these figures should be 14 and 7 respectively.

4. Stretch Factors

- a. In the discussion of stretch factors, two types of arguments have been advanced:
 - i. **Precedential Arguments:** The Pacific Economics Group has repeatedly asserted that stretch factors have precedents in other jurisdictions and suggested that the actual levels elsewhere are relevant for calibrating stretch factors in Ontario. Board Staff has stated that “Precedents exist for on-going applicability of stretch factors”. In our view, the existence of precedents does not provide a justification for their inclusion.
 - ii. **Theoretical Arguments:** The Pacific Economics Group has put forth theoretical arguments which would rationalize stretch factors 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. **Proposed X-factors:** Based on precedential and theoretical arguments, the Pacific Economics Group is proposing updated stretch factors ranging from 0.0% to 0.5%

with resulting X-factors between 0.88% and 1.38%. The median industry X-factor would be 1.13% which is 57% higher than the long term empirically based X-factor of 0.72%.

- c. **Absence of Empirical Evidence to Support Proposed X-factors:** The proposed X-factors are being put forth despite the absence of any empirical evidence that productivity growth rates, which are presently well below long-term average levels (in the U.S. and in Ontario), can achieve the proposed levels in the near future. In our view, the proposed stretch factors have not been justified and should therefore be excluded.
- d. **OEB Precedent Would Incorporate Recent Decelerating Productivity Growth:** Finally, we note that though the Pacific Economics Group have repeatedly relied upon precedent to support its positions, it has chosen not to incorporate the Ontario Energy Board precedent at the 1st Generation Incentive Regulation proceeding which gave $\frac{2}{3}$ weight to the long-term rate of productivity growth and $\frac{1}{3}$ weight to the most recent growth. Application of this precedent would result in an average X-factor between 0.5% and 0.6% for Ontario distributors.

0. Background

The Ontario Energy Board is presently engaged in a consultative process with the objective of developing a 3rd Generation Incentive Regulation Mechanism (3GIRM), EB 2007-0673. Since its commencement in August 2007, numerous stakeholder meetings have been held which have permitted the interchange of ideas and analyses. Board Staff has invited comments on its latest proposal which was presented at the May 6th, 2008 stakeholder meeting. The Pacific Energy Group, which has acted as consultant to the Board, also presented its latest positions.

Over the course of many months, the Electricity Distributors Association (EDA) has consulted with its members and provided input into the Board process. The purpose of the present document is to provide comments on behalf of the EDA on the latest proposals and positions. It should be viewed in conjunction with previous EDA submissions, in particular:

*“3rd Generation Incentive Regulation for Ontario’s Electricity Distributors EB 2007-0673, Submissions on behalf of the Electricity Distributors Association, Adonis Yatchew, April 14, 2008”.*¹

EDA comments pertaining to the related Ontario Energy Board process on the Comparison of Ontario Distributor Costs, EB 2006-0268 are also relevant here.²

1. The Core Plan

A number of regulatory mechanisms were considered by Board Staff and by stakeholders. They were evaluated according to four criteria: sustainability, predictability, effectiveness and practicality. After careful consideration, it would appear that a properly designed comprehensive price-cap mechanism is the preferred approach for many utilities.

¹ See http://www.oeb.gov.on.ca/OEB/Documents/EB-2007-673/submission_EDA_Yatchew_20080415.pdf.

² See “Review of ‘Benchmarking the Costs of Ontario Power Distributors’, Pacific Economics Group, April 25, 2007”, prepared for the Electricity Distributors Association by Adonis Yatchew, June 26, 2007, available at http://www.oeb.gov.on.ca/documents/cases/EB-2006-0268/eda_peg-comments_20070704.pdf.

The corresponding presentation provided as part of the September 2007 Technical Conference may be found at http://www.oeb.gov.on.ca/documents/cases/EB-2006-0268/presentations/eda_20070912.pdf.

See also “Commentary on ‘Benchmarking the Costs of Ontario Power Distributors’, Pacific Economics Group, March 20, 2008” prepared for the Electricity Distributors Association, by Adonis Yatchew, submitted to the Ontario Energy Board, April 28, 2008.

Given diverse capital requirements across utilities, it is essential that utilities be afforded the opportunity to submit multi-year capital plans. The Board Staff proposal incorporates a capital module. Arguments in relation to price-caps and the capital module have been made extensively in prior submissions by the EDA and other stakeholders and will not be repeated here.

There is one additional element of the updated Staff proposal which bears on the capital investment issue. Previous Staff proposals allowed utilities to select a 3 to 5 year term. Under this approach, utilities having concerns about future capital expenditures or facing irregular investment requirements could choose the 3 year term. The present proposal recommends a fixed 4 year term as part of the core plan. This in turn strengthens the arguments favouring the submission of multi-year capital plans and increases the importance of an effective intra-term capital module.

Board Staff has proposed an asymmetric earnings sharing mechanism with a threshold of +2% above the approved rate of return. This may be appropriate for private sector companies. However, publicly owned companies are substantially more susceptible to uncompensated government policy directives which can contribute to low returns. In earlier submissions we have argued that earnings sharing mechanisms can dilute incentives and should therefore not be implemented. However, if the Board decides to incorporate such a mechanism in the regulation of Ontario distributors, it should be symmetric with a threshold of say $\pm 2\%$ around the approved rate of return.

2. Calibration of the X-factor

Partly as a result of the absence of capital data for Ontario utilities, the Pacific Economics Group has argued that the best alternative data on which to base productivity targets is on the U.S. data that it has assembled and analyzed. Those data are for the period 1988-2006 and during this period total factor productivity (TFP) growth averages 0.72% per year.

The Pacific Economics Group has advanced an argument for selection of a sample period which should be used for determining TFP trends.³ The essence of their argument is that the period

³ "PEG therefore believes the long-run TFP trend for US distributors is the most appropriate estimate of the productivity factor for 3rd Generation IRM. As previously discussed, when selecting an appropriate time period for measuring long-run TFP trends, it is important for TFP to be estimated over a period that is long enough to balance the year-to-year fluctuations in TFP change. At the same time, the sample should not be so long that it includes information that is "stale" i.e. conditions in the distant past rather than recent TFP developments. In most regulatory proceedings, a sample period of about 10 years has been viewed as providing a reasonable balance of these two considerations. It is also important in regulatory proceedings for the start and end points of the sample period not to be impacted by transitory conditions, such as abnormal economic or weather conditions, which can in turn distort measured TFP trends." *Calibrating Rate Indexing*

should be sufficiently long to average out year-to-year fluctuations, yet not so long as to include data that are not likely to be representative of the future.

Refutation of the “Start-Date” Analysis:

The Pacific Economics Group then puts forth a specific methodology for determining such a period.⁴ The statistical procedure selects a past year that is “the most similar” -- from the point of view of weather and economic conditions -- to the most recent year for which data are available. On the face of it, this might seem to be sensible. On closer examination, it can be readily demonstrated that the approach has a fundamental conceptual flaw. A simple example illustrates the deficiency.

Suppose productivity growth follows the cyclical curve in Figure 1, varying between 0 and 1 and averaging about 0.5 over the period 1989 to 2006. Suppose further that the methodology proposed by the Pacific Economics Group is used to estimate long term productivity growth. Then since 1997 and 2006 both have identical productivity growth of 0.5, the long term estimate will be the average over the period 1997-2006 which is about .75. The period of lower productivity growth 1989-1996 has been ignored and long-term productivity growth has been overestimated by fifty percent.⁵

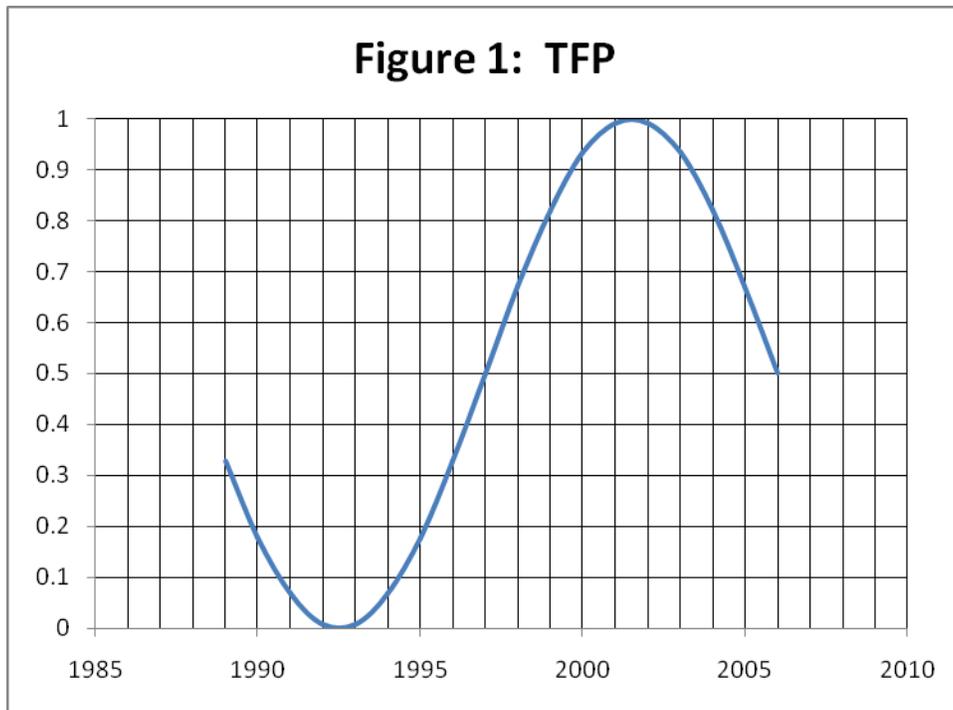
In simplest terms, the approach fails because it searches for *a single year* that is most similar to the most recent year, rather than for *an entire period* that is likely to be representative of the future. Omission of earlier data might be justified, if it were found to be non-representative, but the Pacific Economics Group has not suggested that the earlier data represent a departure from the period 1995-2006 on which its long-term estimate is based.⁶

Mechanisms for Third Generation Incentive Regulation in Ontario, prepared by the Pacific Economics Group, LLC, and authored by Lawrence Kaufmann, Ph.D., Dave Hovde, M.A., Lullit Getachew, Ph.D., Steve Fenrick, Kyle Haemig, M.S. and Amber Moren, February 2008, pages 60-61.

⁴ “PEG has used a rigorous methodology for determining the most appropriate “start point” to be used for estimating long-run TFP trends. The end date for our US TFP research is 2006. Our methodology is designed to select a start date where economic and weather conditions are as similar as possible to those that prevailed in 2006. Electric distributors’ output (particularly kWh deliveries) in any given year is particularly sensitive to overall economic activity and weather conditions. Economic growth affects the demand for electricity in nearly all end uses, and weather greatly influences customers’ demands for space heating and space cooling.” Ibid, page 61.

⁵ $((.75/.5-1)\times 100\%)$.

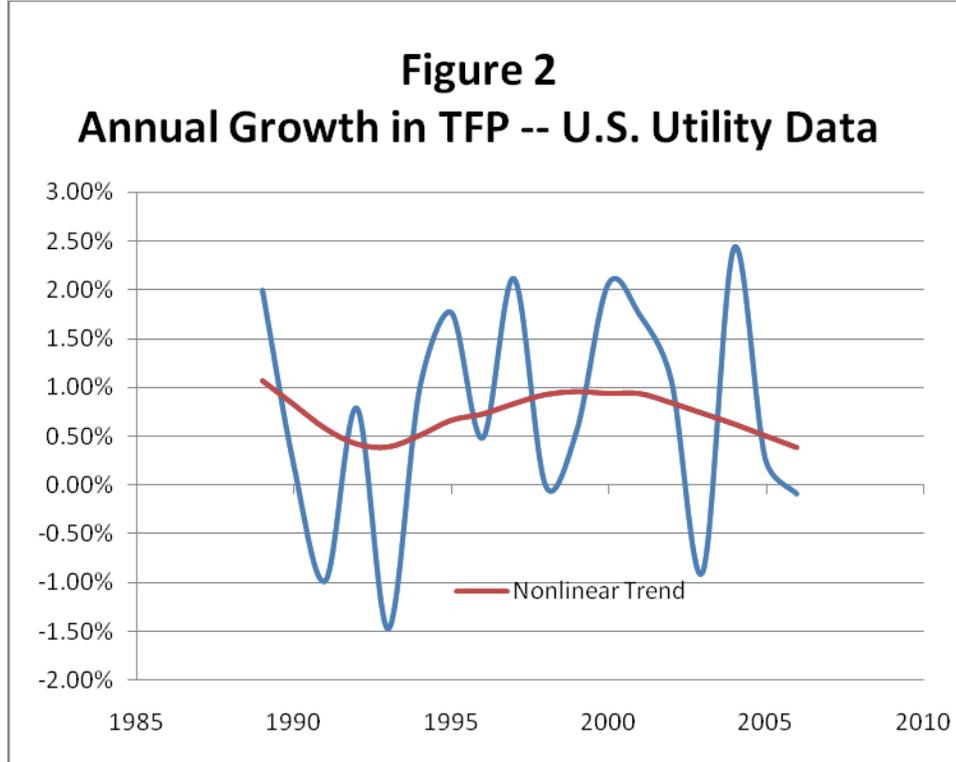
⁶ For example, PEG has not suggested that the data are non-stationary or that there has been a structural break. Either finding might cause one to treat the data differently.



A second argument against the exclusion of the earlier data is founded in a fundamental idea in statistics which states that the precision of an estimator increases as one obtains more data. As sample size increases, year-to-year fluctuations, “unusual” observations or “outliers” are averaged out. Thus, if the Pacific Economics Group is concerned that the initial year in the sample can inappropriately influence the estimate of long term productivity growth, a most sensible way to alleviate this concern is to increase the sample size. By including the entire sample period 1988-2006 rather than limiting the data to the sub-period 1995-2006, one effectively increases the sample size by about 50% and thereby increasing the accuracy and reliability of the estimator.

We now turn to the actual data. Figure 2 depicts the productivity growth rates in the U.S. data that have been put forth by the Pacific Economics Group.⁷ Neither the raw data, depicted by the volatile line, nor the “nonlinear trend” model which has been estimated would suggest that the data prior to 1995 should be excluded. Indeed, the early 1990’s were a period of relatively higher unemployment which arguably should not be excluded precisely because the subsequent years enjoyed higher employment levels and are therefore not likely to be representative of the longer term.

⁷ For additional details see *3rd Generation Incentive Regulation for Ontario’s Electricity Distributors EB 2007-0673, Submissions on behalf of the Electricity Distributors Association, Adonis Yatchew, April 14, 2008, http://www.oeb.gov.on.ca/OEB/Documents/EB-2007-673/submission_EDA_Yatchew_20080415.pdf.*



We therefore see neither conceptual nor empirical arguments which would support the start-date analysis proposed by the Pacific Economics Group and which would justify the exclusion of earlier data. While it may be that data prior to 1988 are not representative, there is no evidence that average productivity growth of 0.72 for the period 1988-2006 would underestimate long-term productivity growth.

Indeed, the 0.72 long-term productivity figure is more likely an over-estimate of forthcoming productivity growth:

- a. There is no statistical evidence of systematic acceleration in productivity growth which could justify higher expected productivity factors in the near term.
- b. The most recent years of data suggest a period of deceleration. Recessionary effects in the U.S. are likely to have an adverse impact on productivity trends.

In Ontario, growing emphasis on conservation and demand management, increasing regulatory requirements, aging infrastructure and recent manufacturing job losses are all likely to have an adverse impact on productivity growth. Taking these various factors into consideration, a reasonable and sustainable target for the industry average productivity factor in the medium term (as opposed to the longer term) would be 0.5% to 0.6%.

3. Benchmarking Analysis:

In earlier submissions to the Ontario Energy Board, we have identified several problems with the benchmarking analysis that is intended to calibrate X-factors for individual utilities.⁸

Distortion of Incentives: The Pacific Economics Group proposes to benchmark distributor efficiency using OM&A data. Regulatory focus on OM&A costs rather than total costs distorts incentives and can lead to over-capitalization by utilities seeking to reduce OM&A expenditures, under-spending on OM&A and sub-optimal decisions with respect to own vs. lease alternatives.

Absence of Capital Data: Distributor efficiency should be benchmarked using total costs and should incorporate the different operating environments and business conditions in which utilities operate. The absence of capital data precludes the estimation of total cost functions in Ontario at this time. Even a cost function restricted to OM&A expenditures cannot be estimated properly since a utility's OM&A costs will in general vary with the quantity and characteristics of its capital stock.

Misclassification of Utilities: By using U.S. data, which includes capital costs, we can assess the impacts on efficiency rankings of relying on OM&A rather than total costs. In earlier analysis, we found that over 50% of utilities would be misclassified with respect to efficiency quartiles if one were to use OM&A rather than total costs.⁹

The revised Staff proposal reduces the number of efficiency groupings to three with $\frac{2}{3}$ in the central grouping and $\frac{1}{3}$ divided between the tails. Reducing the number of groupings will generally reduce the number of utilities which are misclassified.¹⁰ We have therefore repeated our misclassification analysis using the U.S. data. We find that with the new approach, about 23% of utilities would be misclassified.

This misclassification is related to the use of OM&A costs, rather than total costs, to determine the relative efficiency of a utility. However, even if total cost data were available and the model was correctly specified, there remains risk of misclassification. The Pacific Economics Group advances a hypothesis testing procedure which is intended to identify "significantly superior" and "significantly inferior" performers.

The "ninety percent confidence intervals" upon which the test is based imply that there is a ten percent probability of incorrectly concluding that a utility is not an average cost performer even if it is. This 10% misclassification probability is separate from the 23% estimated misclassification probability arising out of the absence of capital data.

The combined effect of these two misclassification drivers, in our view, is sufficiently large to disqualify benchmarking as a basis for assigning X-factors.

⁸ See "Commentary on 'Benchmarking the Costs of Ontario Power Distributors', Pacific Economics Group, March 20, 2008" prepared for the Electricity Distributors Association, by Adonis Yatchew, submitted to the Ontario Energy Board, April 28, 2008.

⁹ Ibid., pages 3-4.

¹⁰ For example, if the number of efficiency categories were reduced to one, there would be no misclassification possible.

Finally, it would seem that simple equity would require that utilities -- particularly those that have been found to be “significantly inferior” performers – be afforded the opportunity to replicate the statistical analyses that have led to these conclusions. It is our understanding that the data are not yet available which would allow utilities to do so.

Previous Methodological Issues: In earlier submissions, we have raised methodological concerns regarding the hypothesis testing procedures used by the Pacific Economics Group in determining which utilities are “significantly superior” and “significantly inferior” performers.¹¹ In particular, based on Pacific Economics Group descriptions of their procedure, we concluded that “the procedure that has been implemented incorporates only the uncertainty associated with the estimate of the benchmark and ignores the inherent random variation in the actual cost data that are being compared to the benchmark.” Since that time we have been provided with the computer code. Based on our examination of that code, we find that the implementation does incorporate both sources of variation. We suggest that the descriptions provided by the Pacific Economics Group in its documents be modified so that they are consistent with the code.

Additional Methodological Issue: The efficiency testing procedure provided in the Pacific Economics Group Calibration Report is described as follows. (Parallel descriptions are provided in other Pacific Economics Group documents.)

“The cost models were then used to generate OM&A cost predictions for each distributor using data on its business condition variables. For each model, ninety percent confidence intervals were then constructed around the distributor’s OM&A cost prediction, and the distributor’s actual OM&A costs were compared to the predicted cost and confidence intervals. If the distributor’s actual costs were below the lower confidence level, the firm is a significantly superior cost performer on that model since there is a statistically significant difference between the firm’s predicted cost and its (lower) actual cost. By the same token, if the distributor’s actual costs were above the upper confidence level, the firm is a significantly inferior cost performer on that model since there is a statistically significant difference between the firm’s predicted cost and its (higher) actual cost. If a utility’s actual cost is within the confidence interval, we cannot reject the hypothesis that the firm’s actual cost differs from its predicted cost and the utility is said to be an average cost performer.”¹²

Based on our examination of the computer code, it is our view that too many utilities are classified as “significantly inferior” and “significantly superior” performers. According to the most recent

¹¹ See “Commentary on ‘Benchmarking the Costs of Ontario Power Distributors’, Pacific Economics Group, March 20, 2008” prepared for the Electricity Distributors Association, by Adonis Yatchew, submitted to the Ontario Energy Board, April 28, 2008, pages 5-7.

¹² *Calibrating Rate Indexing Mechanisms for Third Generation Incentive Regulation in Ontario*, prepared by the Pacific Economics Group, LLC, February 2008, pages 65-66.

benchmarking analysis, 18 utilities are “significantly superior” and 15 utilities are “significantly inferior”.¹³ Our calculations indicate that these figures should be 14 and 7 respectively.¹⁴

4. Stretch Factors

Considerable discussion has been devoted to the subject of stretch factors. In this debate, two types of arguments have been advanced: precedential and theoretical.

The Pacific Economics Group has repeatedly asserted that stretch factors have precedents in other jurisdictions and suggested that the actual levels elsewhere are relevant for calibrating stretch factors in Ontario. Board Staff has stated that “Precedents exist for on-going applicability of stretch factors”.

While precedents can provide a “reality check” for regulators, they do not provide a justification for choosing a course of action. Basing decision on that which is fashionable or done by others can lead to undesirable outcomes.¹⁵ We are therefore inclined to ascribe relatively little weight to that which is done elsewhere and relatively more weight to that which is demonstrably successful elsewhere. Thus, we support incentive regulation not because it is fashionable but because there is growing evidence that it is beneficial.

In addition to arguments based on precedent, the Pacific Economics Group has put forth theoretical arguments which would rationalize stretch factors on the basis that a utility should experience “accelerated productivity growth” as one transitions from cost-of-service to incentive regulation. As we have argued extensively in past submissions, Ontario distributors have been under a form of price-cap

¹³ *Benchmarking the Costs of Ontario Power Distributors*, Pacific Economics Group, Mark Newton Lowry, Ph.D., Lullit Getachew, Ph.D., and Steve Fenrick, March 20, 2008, pages 55-57.

¹⁴ The descriptions of the test procedure clearly specify construction of a two-sided 90% confidence interval for the test statistic. Conventionally, this would imply 5% probability in each tail of the distribution. However, the computer code which is written in the Gauss programming language, uses a one-tailed procedure to calculate P-values. The relevant line of code is given by:

```
"pval = @2*@cdfrc(abs((sc)./setc),df); @ one-tailed test @"
```

where characters between “@” signs are ignored in calculations; “cdfrc” provides the upper tail probability for the *t*-random variable; “abs” is the absolute value function; “sc” is the (possibly vector valued) test statistic; “setc” is its standard error; “./” is the element-by-element division operator; and, “df” denotes degrees of freedom.

Implementation of the proposed 2-sided test procedure at a 10% significance level, as specified in the above quoted passage, would require one to reject the null hypothesis for P-values which are less than 5% (since there is 5% probability mass in each of the two tails). Application of this decision rule to Table 4 at page 56 of *Benchmarking the Costs of Ontario Power Distributors*, Pacific Economics Group, March 20, 2008 implies 14 “significantly superior” performers and only 7 “significantly inferior” performers.

¹⁵ For example, during the 1970’s many central banks expanded money supply in concert with their neighbors leading to world-wide inflation which required drastic increases in interest rates to correct.

regulation for an extended period of time and therefore it would be unreasonable to expect an acceleration in productivity growth on this basis.

Based on precedential and theoretical arguments, the Pacific Economics Group is proposing updated stretch factors ranging from 0.0% to .5% with resulting X-factors between 0.88% and 1.38%. The median industry X-factor would be 1.13% which is far above the long term empirically based X-factor of 0.72%.

The proposed X-factors are being put forth despite the absence of any empirical evidence that productivity growth rates, which are presently well below long-term average levels, can achieve the proposed levels in the near future. **In our view, the determination of productivity factors should not be prejudiced by those that have been imposed elsewhere, but rather informed by productivity factors that have been actually observed.**

The inclusion of the proposed stretch factors has not been justified and therefore they should be excluded. The existence of stretch factors in the regulation of Ontario natural gas distributors also does not necessitate their application to Ontario electricity distributors: there are important differences between the former, which are privately owned, and the latter which are not. Equitable treatment of both sectors neither requires nor implies identical treatment.

Finally, we note that though the Pacific Economics Group has repeatedly relied upon precedent in support of its positions, it has chosen not to incorporate the Ontario Energy Board precedent at 1st Generation Incentive Regulation which gave $\frac{3}{4}$ weight to the long-term rate of productivity growth and $\frac{1}{4}$ weight to the most recent growth. Application of this precedent would result in an average X-factor between 0.5% and 0.6% for Ontario distributors.