June 27, 2013

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, Suite 2700
Toronto, ON M4P 1E4

via RESS and courier

Dear Ms. Walli:

Re: Defining and Measuring Performance of Electricity Distributors
Submission of the Coalition of Large Distributors
Board File No. EB-2010-0379

On May 3, 2013, and later updated on May 31, 2013, the Ontario Energy Board (the "OEB" or the "Board") released a report prepared by Board staff's expert consultant, entitled "Empirical Work in Support of Incentive Rate Setting in Ontario" (the "PEG Report").The PEG Report makes specific recommendations for the inflation, productivity and stretch factor parameters for incentive rate setting, and for the benchmarking of electricity distributor total costs.

Following two days of stakeholder conferences held in May, the Board released a letter dated May 30, 2013 which provided additional steps in the consultation process, as well as consultative questions to which stakeholders were requested to respond in their submissions. From the details provided in the Board's letter, stakeholder comments including responses to the questions the Board asked in the aforementioned letter were to be filed with the Board, no later than June 27, 2013.

The Coalition of Large Distributors ("CLD"), which comprises Enersource Hydro Mississauga Inc., Horizon Utilities Corporation, Hydro Ottawa Limited, PowerStream Inc., Toronto Hydro-Electric System Limited and Veridian Connections Inc., is pleased to participate in this important process and provides its submission in this consultation.

On June 13, 2013, the experts, Mr Fenrick of Power System Engineering, Inc. ("PSE", for the CLD), Dr. Yatchew (for the Electricity Distributors Association, "EDA") and Dr. Cronin (for the Power Workers Union "PWU") filed their reports with the OEB.

The following CLD submission is organized as follows:

- General 4th Generation IRM overview comments;
- Comments on four key decision areas : inflation, productivity factor, stretch factors and peer grouping
- Responses to the Board's questions.

I. General Comments

The CLD offers the following general comments:

- The 4th Generation IRM formula will affect electricity customers and electricity distributors for the next five years. Therefore it is important that the OEB consider carefully the individual elements of the model as well as the total result of the different elements. The CLD submits that both individually and together the 4th Generation IRM formula must be sustainable, predictable and a reliable methodology. The following summary table shows the proposals of the experts for the individual elements and the resulting total.

Summary of Experts' Proposals for 4th Generation Formula Parameters

	PEG	PSE	Dr. Yatchew	Dr. Cronin
Inflation ("I")	0.51	2.16	N/A	N/A
Productivity ("X")	0.10	-1.10	-0.75	-2.40
Stretch Factor ("S")	0.0 to +0.60	0.0 to +0.50	-0.30 to +0.30	N/A
I-X-S	-0.19 to +0.41	2.76 to 3.26	N/A	N/A

- The CLD believes that the following key principles must be considered in any determination of a 4th Generation IRM formula:
    - It is in the best interests of its customers to have gradual and predictable rate increases not only during the IRM term but also at rebasing. This has not been the case under 3rd Generation IRM and should be addressed in the design of the 4th Generation IRM formula.
    - It is imperative that the formula used to adjust rates in 4th Generation IRM be sufficient to fund distributors' costs to provide the necessary services to customers while at the same time ensuring that customer rate increases are at reasonable levels.
    - The formula should encourage continued attention by distributors to productivity and the benchmarking process should allow distributors to understand the consequences of their efficiency efforts .

- The CLD believes that a balancing of these key principles is best accomplished by the recommendations laid out by Mr. Fenrick of PSE, in particular, how to calculate a more stable inflation factor, the calculation of the Ontario industry productivity factor and the use of a unit cost econometric model for benchmarking.

- The CLD believes that the recommendations from PEG fail to address the key principles since PEG's overall formula yields an effective rate freeze for the foreseeable future while PEG's benchmarking approach of a complex econometric model together with a peer grouping model does not encourage and properly reward continued attention by distributors to productivity. The formula from PEG's analysis essentially results in a rate freeze which will likely restrain the operational needs for most, if not all, distributors. This will have the unintended consequence of causing these distributors to apply for

additional funding using the Incremental Capital Module or submitting Custom IR applications. It may also cause "rate shock" at rebasing.

- PEG uses both an econometric model and peer grouping for benchmarking. The use of these two approaches makes the PEG methodology more complex to understand and explain. In particular, the PEG econometric model uses a translog cost function that has a number of quadratic and interaction terms that are difficult to interpret, explain, and that will be difficult to communicate to stakeholders. Additionally, the translog cost function is a key component of PEG's peer grouping approach. Consequently, the peer group approach is not an independent double check on the econometric method, since it uses results from the econometric method.

- The total cost benchmarking can be made less complex by eliminating the peer group approach. It can also be made less complex and more robust by moving away from PEG's translog cost function and instead using PSE's unit cost econometric model. PSE's model includes more business condition variables, is easier to explain, and provides LDC's with a better understanding of how the variables relate to their costs per customer.

II. Comments on the Key Parameters of 4th Generation Incentive Regulation

a) Inflation

The CLD endorses the Board's recommendation of a "Three Factor" composite inflation factor. The three factors to inflation are separate recognition of labour costs, capital costs and non-labour costs. Only two of the four expert reports addressed inflation in detail, namely PSE and PEG.

Both PSE and PEG agreed on the calculation and update of the labour and non-labour components of the inflation factor. Their only area of disagreement was the calculation of the capital cost portion of the inflation factor.

Table 2 of the PSE report has been reproduced here to demonstrate the impact of the different methods for calculation of inflation:

PSE Report Table 1 PEG Inflation Factor vs. PSE Inflation Factor

Year	GDP-IPI (3GIR)	PEG "Three Factor" (Annual)	PEG "Three Factor" (3-Year Moving Average)	PSE "Three Factor" (Annual)
2006	1.90%	0.12%	0.97%	2.57%
2007	2.10%	2.68%	1.52%	3.22%
2008	2.30%	2.36%	1.72%	2.73%
2009	1.30%	1.24%	2.09%	2.21%
2010	1.30%	2.44%	2.01%	2.86%
2011	2.00%	0.70%	1.46%	2.31%
2012	1.60%	-1.62%	0.51%	2.16%
Standard Deviation	**0.39%**	**1.55%**	**0.56%**	**0.39%**

The CLD has a number of concerns with the inflation factor calculated by PEG:

1) PEG's annual calculation of inflation results in a highly volatile number;
2) PEG's annual calculation of inflation results in extremely low inflation/deflation numbers in three separate years (2006, 2011, 2012) especially when compared to GDP-IPI for the same years;
3) PEG's 2012 annual inflation number is actually a deflation of 1.6% which does not make sense in today's economic environment and certainly when compared to GDP-IPI;
4) To combat the volatility of the annual inflation number, PEG arbitrarily introduces a three-year rolling average to reduce the volatility. This only prolongs the impact of the significant deflation calculated by PEG for 2012; and
5) Even with a three-year rolling average method, the standard deviation of PEG's inflation number is still very high compared to the standard deviation for the 3rd GIRM GDP-IPI and to the proposed method of PSE.

The volatility and inconsistency of PEG's methodology for inflation raises concerns among the CLD members that the PEG methodology contains serious flaws and is an unreliable method for determining inflation. Even PEG recognized that the volatility of its proposal was too severe and arbitrarily chose a three-year rolling average method in an attempt to somewhat reduce the

volatility. However, even the three-year rolling average method results in an inflation factor that is substantially below any other current index for inflation (CPI or GDP-IPI).

Therefore, the CLD recommends that if the Board adopts a "Three Factor" inflation number that the Board adopt PSE's proposed methodology. This methodology provides a number of benefits including:

1) Less volatility in the annual inflation number;
2) No need to have a three-year rolling average which would extend the extreme ups and downs produced by the PEG method; and
3) The most recent annual data can be used to provide a more current inflation measure.

The CLD strongly supports the adoption of a "Three Factor" inflation measure; however the methodology must provide sound and reasonable annual results which the PEG methodology does not produce. Therefore, if the Board were unwilling to accept the PSE methodology for the calculation of the inflation factor, the CLD believes that the serious shortcomings of the PEG methodology warrant the continuation of the inflation factor used in 3rd GIRM ("GDP-IPI").

b) Productivity

The CLD provides the following table to summarize the positions of the experts on methodologies and values of the productivity factors.

Summary of Experts' Positions on Productivity Factor

	PEG's Recommendation	PSE's Recommendation	Dr. Yatchew's Recommendation	Dr. Cronin's Recommendation
Methodology	TFP Indexing excluding Toronto Hydro and Hydro One	TFP Indexing with entire Ontario Electricity Industry	Econometric TFP (corrected for error in PEG model)	Price Dual Approach
Proposal	0.10%	-1.10 %	-0.75%	-2.40%

The CLD provides the following comments on each of the proposed recommended approaches to develop the Total Factor Productivity Index.

PEG Proposal

The CLD supports the PEG methodology of TFP indexing to determine a productivity factor but with one major adjustment. The PEG methodology must include the full industry data and no utilities should be excluded from the data.

The CLD rejects PEG's methodology of arbitrarily excluding nearly 40% of the industry (Toronto Hydro and Hydro One). A recommendation of using the full industry TFP trend (with no exclusions) would be more in-line with the requirements put forth by the Board in the "*Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach*" ("RRFE"), dated October 18, 2012. On page 17 the RRFE states:

> *"The Board has concluded that X-factors for individual distributors under 4th Generation IR will continue to consist of an empirically derived industry productivity trend (productivity factor) and stretch factor, but will be based on Ontario Total Factor Productivity (TFP) trends."*

The CLD cannot reconcile how excluding 40% of the industry will result in an empirically-derived total industry productivity trend.

The exclusion of Toronto Hydro and Hydro One appears quite arbitrary to the CLD members. PEG explained that Toronto Hydro and Hydro One were excluded because they were large utilities, and were outliers in the analysis. However, as pointed out by PSE, Hydro Ottawa is a bigger outlier than Toronto Hydro. Therefore, it is unclear to the CLD how both Toronto Hydro and Hydro One were chosen to be excluded.

Even if one accepts PEG's reasoning for excluding Toronto Hydro and Hydro One and then accepts PEG's recommendation for the industry productivity factor, it does not make any logical sense to then apply that adjusted industry productivity factor to Toronto Hydro and Hydro One.

Dr. Yatchew

Dr. Yatchew recommends a productivity factor of -0.75%. Further, Dr. Yatchew finds the average TFP index trend to be -0.7%. This is based on calculating all of the TFP indexes for all distributors and then taking a simple average (equal weighting):

> *"We avoid these problems by assigning equal weights to all distributors. In particular, we calculate an individual productivity index for each distributor, then average across distributors. This calculation leads to an average index based productivity factor of -0.7%".* (page 15, EDA report).

PEG uses econometric TFP projections as a secondary approach to verify PEG's recommendation for its TFP index result of 0.10%. Both Dr. Yatchew and PSE believe that PEG has made a serious error in its econometric model by excluding an important variable in the model, namely the OM&A input price. After correcting for the omitted variable, Dr. Yatchew uses PEG's econometric model to yield a productivity factor of -0.75%.

Dr. Yatchew found the econometric TFP trend to be -0.75%. This contrasts with PEG's finding of 0.07% and supports PSE's finding of -0.85%:

> *"TFP calculated using the cost model is just the sum of the technology and scale effect, that is -0.75%."* (page 15, EDA report)

> *"It is useful to compare our cost based estimate of TFP growth rate with the corresponding estimate calculated in Tables 19 and 20, pages 71-72 of the PEG report. Their trend coefficient is 1.2%, the same as ours. The sum of the output elasticities is 0.75 resulting in a scale effect of (1.0-0.75)*1.36% = 0.34%. Therefore, using PEG coefficient estimates we obtain a cost based TFP growth rate of -0.86%."* (footnote page 15, EDA report)

The CLD submits that Dr. Yatchew's analysis using PEG's econometric model (corrected for the error) results in total industry productivity factor in a similar range to PSE's results.

Dr. Cronin

Dr. Cronin recommends a productivity factor of -2.4% based on Dr. Cronin's price-dual approach and a weighting scheme that provides a 2/3rd weight for the recent TFP observations and a 1/3rd weight for the earliest observations:

> *"Over the 2006-2011 period we find widespread negative growth in productivity across a broad sample of LDCs. This impact is pronounced, broad based, and persistent. I would expect only a small portion of this result to be caused by the economy". (*Section 4.4, PWU Report)

The CLD submits that there has been negative productivity growth in the industry, particularly during the period of 2006-2011. This has been caused by a host of reasons, many of which will persist through 4GIRM. However, a weighting scheme adds a layer of complexity. The CLD therefore submits that the long-term trend (assuming the full industry is used) is the most appropriate gauge for calibrating the productivity factor.

PSE Proposal

PSE's TFP Indexing approach is identical to PEG's indexing approach except that the total Ontario electricity industry has been included in the analysis (no exclusion of Toronto Hydro or Hydro One). The resulting productivity factor is -1.10 %.

As a check to the validity of this result, PSE also used PEG's econometric model but corrected for PEG's error of excluding the variable for OM&A price input. Once corrected, PSE calculated a result of -0.85 %. This is not only close to the PSE's result from the TFP indexing approach (of -1.10%) but it is also very similar to Dr. Yatchew's result (of -0.75%) using the econometric model.

Other Issues about Productivity Factor

The CLD was concerned with certain information not being disclosed in the PEG report. During the stakeholder conference on May 28, 2013, PEG informed parties in response to certain questions from Mr. Shepherd that not all costs had been included in PEG's analysis. Dr. Kaufmann informed the stakeholders that PEG had excluded costs for taxes, interest and bad debt expense from its data set. Both Dr. Yatchew and PSE used PEG's data set, so these costs were excluded from their analysis. The reason given by PEG to exclude these costs was that it was the expectation that the trend for these costs included in the data from past years would not be repeated in future years. The CLD believes that this arbitrary exclusion of some costs from the data set should have been properly identified by PEG in its May 3rd, 2013 report and May 24th working papers. The CLD believes that it is arbitrary to exclude any costs and the CLD does not support the exclusion of any costs.

Dr. Cronin includes line losses and reliability in his TFP calculations. Dr. Cronin's report, Section 5, is dedicated to this point. The CLD agrees in principle with Dr. Cronin's points on this topic. Line losses and reliability have important implications for the rates and service received by customers. A TFP index should incorporate these items into the calculations. The current problems with including this data involve the consistency and availability of the data. In the future, as the reliability data becomes more consistent across distributors, this can be done.

Furthermore, line losses and reliability should also be placed into the benchmarking framework once we can trust that the data is accurately collected. This may be a long-term goal that is not yet feasible at the current time.

Summary of CLD Position on Productivity Factor

The CLD makes the following conclusions on the productivity factor:

1) The CLD submits that the PSE methodology for the calculation of the productivity factor is the appropriate model to use:
    a. The PSE model includes the entire electricity industry in Ontario in its calculation;
    b. The PSE model is the same model as proposed by PEG except that it does not exclude Toronto Hydro and Hydro One;
    c. The PSE model can easily incorporate the 2012 data;
2) Both the PSE approach to calculating the productivity factor and Dr. Yatchew's approach result in similar ranges for the productivity factor (-0.75% to -1.10%); and
3) Only PEG's approach of arbitrarily excluding certain utilities (Toronto Hydro and Hydro One) results in a positive productivity factor that is significantly different from both those produced by PSE and Dr. Yatchew.

c) Stretch Factors

The assignment of utilities to different cohorts to determine the stretch factor was addressed by only PEG and PSE. Dr. Yatchew put forth a recommendation on stretch factors. Dr. Cronin did not specifically address stretch factors and neither Dr. Yatchew nor Dr. Cronin addressed cohorts in their reports.

Stretch factors were developed by regulators to recognize that utilities moving from a cost of service environment to an incentive regulatory environment would have an opportunity to find productivity efficiencies potentially greater than the productivity factor based on estimates of historical productivity. As utilities continue to operate within an incentive regulatory environment, however, the need for stretch factors diminishes over time. Therefore the CLD proposes that as electricity utilities in Ontario move towards 4th Generation IRM, the stretch factors used in previous generations should be reduced to recognize the movement to the next generation in the incentive regulatory environment.

PEG has proposed that cohort assignment be completed by using both an econometric modeling approach and a peer grouping approach. PSE recommends that cohort assignment be completed by using only an econometric model. The CLD's position on peer grouping is contained in the next section of this submission and therefore the focus of this section will be on the comparison of the PEG and PSE econometric models.

The CLD has a number of concerns with the PEG econometric model for benchmarking:

1) The PEG econometric model measures a limited number of business conditions. This limited number of business conditions does not allow for the appropriate distinction between utilities and the unique business conditions within which they operate.

2) The PEG model is complicated, requires experts to run the models and interpret the results. Therefore it provides very little opportunity for an individual utility to use the model to determine a future course of action to improve productivity and be rewarded through the annual cohort reassignment.
3) If accepted by the OEB, PEG will be required to collect the annual data and rerun the model and reassign utilities to cohorts. The timing of this reassessment will occur well after the end of the year and therefore does not allow utility management to assess on an ongoing basis whether the company is improving in key areas that affect its cohort ranking and take appropriate action.

Therefore the CLD submits that the PSE Unit Cost Econometric Model be adopted by the OEB as the method for determination of ranking of utilities. The CLD has a number of reasons for endorsing the PSE Unit Cost Econometric Model:

1) The PSE econometric model has 11 different business conditions. The use of an expanded set of business conditions allows for greater recognition of the unique business conditions under which electricity utilities operate within Ontario and therefore will better align their costs to their operating circumstances;
2) Although the PSE econometric model has some complication, it is significantly less complicated than the PEG model and would allow utilities to identify key areas in which to focus their productivity efforts in order to be rewarded through the annual cohort reassignment;
3) Given that PSE's econometric model is less complicated, it is a simpler approach that stakeholders can easily understand and which distributors can manage and distributors are not penalized for finding cost efficiencies resulting from economies of scale;
4) PSE's ranking of utilities from best to worst allows utilities to move up or down within the total ranking. This provides more direct feedback to utilities on their productivity efforts; and
5) PSE's proposed six cohorts provides for greater opportunity among utilities to see the reward for their efforts on productivity.

PSE's proposed scale for stretch factors of 0.0% to 0.5% recognizes that over time stretch factors should be reduced as the Ontario electricity utilities move to more advanced systems of incentive regulation and further away from cost of service regulation.

Dr. Yatchew put forth a range of -0.3% to 0.3%. The CLD believes that Dr. Yatchew's proposal is reasonable as it recognizes that distributors have likely already realized large efficiency gains during 3rd Generation IRM.

d) Peer Groups

PEG has recommended the continued use of peer groups as part of the benchmarking /stretch factor determination process.

The CLD raised concerns about the need for peer groups in the January, 2013 stakeholder conference. The CLD's main concern is that peer grouping effectively neutralizes improvements in performance of distributors versus other distributors and discourages productivity improvements. This is because the initial assignment to a peer group effectively determines any distributor's performance relative to the other members of the group. If a

distributor is a good performer assigned to a peer group of similar performers, that distributor will have difficulty being rewarded if it improves its performance. In contrast, a distributor who is a good performer but is assigned to a peer group of distributors who have significantly weaker performance will be rewarded. Therefore, the initial assignment to a peer group determines a distributor's fate rather than the distributor's improvement in performance over time.

The CLD notes that the Board's RRFE report does not state that peer groups must be used as part of the benchmarking exercise or for stretch factor determination and pointed this out during the stakeholder meetings.

Despite the serious reservations expressed about peer groups during the stakeholder consultation process by the CLD, PEG has continued to recommend the use of peer groups to determine cohorts and the subsequent stretch factors.

In addition to the CLD's reservations about the use of peer grouping, PEG's proposal for determination of the peer groups raises additional concerns:

1) PEG's proposal for peer grouping is highly dependent on the econometric model. PEG proposes to assign utilities to peer groups based upon the following business conditions – service area, undergrounding, customer growth and output growth. However, two of these business conditions are not statistically significant in the econometric work (undergrounding and service area). It is unclear how business conditions which are not statistically significant can be used to determine the key business conditions for assignment of distributors to peer groups.
2) PEG identifies twelve different groups but due to low numbers in the twelve different groups, PEG reassigns distributors to other peer groups in order to derive its proposed six peer groups. This arbitrary assignment raises questions on whether the members of the final six peer groups are truly peers to each other.

Dr. Yatchew recommends eliminating peer grouping:

> *"Peer group analysis in this context is unreliable and may lead to unreasonable rate-setting."* (page i, EDA report).
>
> *"There are too many variables that can affect distributor costs to give one confidence in the allocation of peer groups".* (page 17, EDA report)

In conclusion, the CLD has continually objected to the use of peer groups as part of the assignment of distributors to cohorts for stretch factor determination. The use of peer groups does not promote efficiency among distributors which is the stated objective of cohort assignment and annual evaluation and reassignment. Finally, peer grouping is not required to assign distributors to cohorts as is demonstrated by the PSE method described above.

III. OEB Questions

The following section provides responses to the OEB's questions in the order that they were presented in the OEB's May 30, 2013 letter.

Inflation Factor

1. For each expert's recommended approach (including PEG's):
a. Is the proposed approach appropriate? Does it meet the Board's policy direction noted above?

Both PSE's and PEG's proposed methodologies for the determination of the inflation factor appear to meet the Board's RRFE policy direction for a "three factor" approach.

The only difference between PEG's and PSE's approach to the sub-indices is the determination of the capital cost sub-indices. The different approaches to the capital cost sub-indices cause a significantly different overall result to the inflation factor.

The CLD, as noted above, believes that the PEG methodology contains serious flaws and is a totally unreliable method for determining inflation. PEG's 2012 annual inflation number is actually a deflation of 1.6% which does not make sense in today's economic environment and certainly when compared to GDP-IPI. Even PEG recognized the volatility of its proposal was too severe and arbitrarily chose a three-year rolling average method in an attempt to somewhat mute the volatility. However, even the three-year rolling average method results in an inflation factor that is substantially below any other current index for inflation (CPI or GDP-IPI).

Therefore, the CLD recommends that if the Board adopts a "Three Factor" inflation number that the Board adopt PSE's proposed methodology. This methodology provides a number of benefits including:

1) Less volatility in the annual inflation number;
2) No need to have a three-year rolling average which would extend the extreme ups and downs produced by the PEG method; and
3) The most recent annual data can be used to provide a more current inflation measure.

Dr. Cronin did not put forth an inflation factor recommendation. Dr. Yatchew suggested using a broad industry inflation index and "banking" differences for the future. This approach is not industry-specific so it may not meet the RRFE policy direction, although it does have the advantage of being less volatile and more reasonable than PEG's inflation factor. Given the choice between PEG's and Dr. Yatchew's suggested inflation factor the CLD believes Dr. Yatchew's to be the better option in the interests of customers. However, of the three expert recommendations, the CLD preference is PSE's inflation factor recommendation.

b. Are the recommended sub-indices appropriate?

The CLD strongly supports the adoption of a "Three Factor" inflation measure; however the methodology must provide sound and reasonable annual results which the PEG methodology does not produce.

Therefore, the CLD recommends that if the Board adopts a "Three Factor" inflation number that the Board adopt PSE's proposed methodology. This methodology provides a number of benefits including:

1) Less volatility in the annual inflation number;

2) No need to have a three-year rolling average which would extend the extreme ups and downs produced by the PEG method; and
3) The most recent annual data can be used to provide a more current inflation measure.

c. Should the Board be concerned with volatility in the inflation factor?

Volatility in the inflation factor should definitely be a concern of the Board. Both customers and the utility benefit if rate increases are gradual and predictable.

Even PEG recognized the volatility of its proposal was too severe and arbitrarily chose a three-year rolling average method in an attempt to somewhat mute the volatility. However Table 2 from the PSE report (reproduced above) shows that standard deviation (hence the volatility) of the three-year rolling average is still significantly greater than either the PSE proposal or the 3rd Generation GDP-IPI method used by the Board.

2. What is your preferred approach and why?

The CLD's preferred approach is the one proposed by PSE. PSE's approach to inflation provides for gradual rate increases that are in-line with the historic unit cost increases of distributors and is an industry-specific measure which tracks the three input factors of labour, non-labour, and capital. The calculation of the PSE inflation factor is transparent, is fairly simple, and uses publicly available data as it only requires inputting the new EUCPI for each year and taking a weighted average of those numbers. This approach meets the RRFE policy direction, since it is industry specific, yet mitigates risk and volatility.

The CLD strongly supports the adoption of a "Three Factor" inflation measure; however the methodology must provide sound and reasonable annual results which the PEG methodology does not produce. Therefore, if the Board were unwilling to accept the PSE methodology for the calculation of the inflation factor, the CLD believes that the shortcomings of the PEG methodology warrant the continuation of the inflation factor used in 3rd GIRM ("GDP-IPPI").

The Productivity Factor

3. For each expert's recommended approach (including PEG's):

a. Is the proposed approach appropriate? Does it meet the Board's policy direction noted above?

PSE's approach is the only one of the expert approaches to productivity that satisfies the policy direction of the RRFE. On page 17 of the RRFE Report, the Board identified that the productivity factor is intended to be the external benchmark which all distributors are expected to achieve; that such will be based on Ontario Total Factor Productivity ("TFP") trends; and that it will continue to use an index-based approach for the derivation of an industry productivity trend to form the basis for the productivity factor.

PSE recommended an index-based productivity estimate that includes all distributors. This provides an external benchmark which all distributors can be expected to achieve and is based on the Ontario TFP trend.

By contrast, PEG's recommendation to arbitrarily exclude 40% of the Ontario industry through the elimination of Toronto Hydro and Hydro One, (*Empirical Research in Support of Incentive Rate Setting in Ontario: Report to the Ontario Energy Board, Pg. 56*), disqualifies the recommendation on the basis that it no longer is applicable to all distributors and is not a measure of the Ontario industry TFP trend.

Dr. Yatchew's proposal of a productivity factor of -0.75% appears to be based on his econometric TFP estimate; however, is not index-based. Further, taking an average of the industry rather than an aggregate skews the TFP estimate towards a small distributor TFP trend and is not reflective of the aggregate industry TFP trend.

Dr. Cronin's TFP estimate of -2.4% is based on a weighted average which puts more weight on the recent time period of 2006-2011. He has also included new outputs of line losses and reliability. The CLD agrees that line losses and reliability are highly important to the performance of distributors. While a long-term objective should be to include these measures in the TFP and benchmarking evaluation, the CLD suggests that the historical data may not yet be ready for this innovation. While the recent TFP trend is likely to be more indicative of future years, the CLD is hesitant to recommend using this shorter time period because of the potential volatility in TFP estimates and the increased complexity.

b. Are the recommended inputs and outputs appropriate?

The CLD believes that the input and output measures are appropriate for the analysis. centered on a rate making process. The outputs used by PEG are typically those that are revenue-generating (e.g., customer connections, kilowatt hour sales, peak demand). However, while the revenue-weighted TFP is declining by about one percent per year, the CLD submits that distributors are not becoming less efficient. Rather, distributors are performing more functions that are not being measured in this process (e.g., FIT, CDM, LEAP, OCEB, and other regulatory functions).

4. What is the appropriate value for an Ontario electricity distribution Total Factor Productivity trend? Why?

For the reasons cited above, the CLD finds that the measured full industry TFP trend of -1.10% is the appropriate value. This is an empirically-driven TFP index number calculated in PEG's report and recommended by PSE. The CLD finds that the -1.10% value is further substantiated by the econometric TFP estimates of PSE and Dr. Yatchew. PSE, after correcting PEG's research, found an econometric TFP estimate of -0.85%, Dr. Yatchew found the corresponding econometric TFP estimate of -0.75%. While the index-based, full industry result is most appropriate, these two findings provide further support for the index finding.

Total Cost Benchmarking

5. For each expert's recommended approach (including PEG's):
a. What do you perceive to be the strengths and weakness of the various consultants' approaches?

The CLD supports PSE's total cost benchmarking approach for the following reasons: i) it is more transparent; ii) it is a simpler approach that stakeholders can easily understand and to

which distributors can manage; iii) it includes more business condition variables; iv) distributors are not penalized for finding cost efficiencies resulting from economies of scale; and v) it does not rely on a peer group approach.

The CLD believes the peer group approach proposed in the PEG report to be redundant and detrimental to the objectives of providing accurate performance assessments and increasing incentives for efficiency gains. If the econometric model is sound, there should be no need for peer grouping.

The unit cost indexing approach (peer group) has two major flaws. It is not an independent benchmarking evaluation, and it is more misleading than it is informative. Regarding the first flaw, a true "double check" would be independent of the econometric method. However, PEG's approach to the peer grouping uses certain results from the econometric equation as an input in the peer grouping process. Thus, the peer group approach is not truly independent. In fact, it is not obvious whether PEG's peer group approach provides any new information at all.

The second major flaw of the peer group approach is that it ignores the magnitude of business condition variable values, except for their use in constructing the peer groups. For example, PEG's econometric results show that Wasaga Distribution is the second most efficient distributor in the Province (PEG Table 13, Wasaga Distribution is "Distributor Number 5"). However, the peer group results rank Wasaga Distribution 16th (PEG Table 25). This discrepancy arises because the peer group approach does not make any adjustments for how Wasaga Distribution's business conditions compare to that of its peer group. For example, Wasaga Distribution's percent undergrounding is 47.7% in 2011. Its peer group undergrounding average is 39.2%. There is no adjustment in the peer group approach for that difference. However, in the econometric approach, the difference in the business condition variable is incorporated into the benchmark result.

PEG's total cost benchmarking approach is a black box. It includes fewer business condition variables and penalizes distributors for increasing in size. Most importantly, it uses the peer grouping approach on top of the econometric model. In addition, PEG identifies twelve different peer groups but due to low numbers in the twelve different groups, PEG reassigns distributors to other peer groups in order to derive its proposed six peer groups. This arbitrary assignment raises questions on whether the members of the final six peer groups are truly peers. For the above-noted reasons, such is not necessary and, the CLD submits, leads to flawed results.

Dr. Cronin's DEA benchmarking approach is not developed sufficiently for the CLD to adequately make comment. However, in general the CLD supports good econometric benchmarking that includes and adjusts for numerous business condition variables.

b. Are the outputs and recommended business condition variables appropriate?

The CLD does not agree with PEG's recommended business condition variables. Firstly, PEG's peer group approach is heavily dependent on the econometric approach to calculate its results, and so the peer group is not a true independent check on the econometric approach. The unit cost indexes for the peer group are calculated by dividing total costs by a bilateral output index, which uses the econometric model's coefficient estimates. Furthermore, the peer groups have been developed using the econometric-dependent bilateral output index, service area, percent undergrounding, and customer growth. Despite the unit cost indexing approach being

dependent on the econometric model, PEG's latest econometric model is showing that certain variables used in designing the peer groups are not statistically significant at a 90 percent confidence level. In PEG's Table 12, service area and percent undergrounding are not statistically significant at the 90 percent level (even though they are still included in PEG's econometric model). Yet these variables are still being used to design peer groups and calculate the bilateral output index. It is the opinion of the CLD that the peer group approach is not an independent benchmarking evaluation, and is actually more misleading than it is informative as it ignores the magnitude of business condition variable values, except for their use in constructing the peer groups.

PEG's latest econometric model has a number of variables that are not statistically significant at a 90% confidence level. This is concerning as it puts into question not only the peer group findings but also the validity of PEG's econometric results.

PSE found that a number of business condition variables can be added to the analysis by using its unit cost approach to econometric benchmarking. The CLD believes that more statistically-significant business conditions being included in the analysis increases accuracy and provides more assurance the model is adjusting for the unique conditions being faced by distributors.

The CLD also submits that PEG's use of gross capital expenditures (including CICA) to determine distributor costs unfairly penalizes distributors in high growth areas where proportionately more capital spending relates to system expansions and road relocations. Much of the costs of such expansions and relocations are uneconomic, as acknowledged by code and legal provisions that permit distributors to require capital contributions from other parties for such work. It is not reasonable to include mandatory, uneconomic capital investments when judging a distributor's performance on a total cost basis. It is the position of the CLD that capital expenditures net of CICA should be used for the benchmarking model.

6. What is your preferred approach and why?

For the reasons identified, the CLD prefers PSE's approach as it will enhance distributor incentives through the improved benchmarking framework, provide utility managers more information on the cost savings their utilities need to achieve to move between cohort groups, and deliver appropriate and gradual rate increases. Gradual and predictable rate increases are in the best interests of both customers and distributors, as are incentives to find and act upon cost saving opportunities.

7. In PEG's unit cost/peer group model:

a. Are the recommended peer groups appropriate?

The CLD submits that the inclusion of peer grouping is not a policy condition of the RRFE, in the first instance. Conversely, PSE's econometric benchmarking model is robust and sufficient to meet the RRFE requirements on benchmarking.

The CLD does not support peer grouping. PEG's peer groups are therefore not appropriate. They are based on variables (undergrounding and area) that are not statistically significant in PEG's latest econometric models. It is impossible to construct proper peer groups because of the large number of business conditions that drive distributor costs. The entire peer group exercise is flawed because of the impossibility of the task. Using a peer grouping approach

ignores these key variable differences and offers a misleading evaluation that is complicated, not transparent and is detrimental to the intention of the benchmarking exercise.

b. If not, what peer groups would you recommend and why?

As noted above, the CLD would not recommend the use of peer grouping. The CLD suggests that it is appropriate to use the entire industry sample data along with PSE's econometric model to adjust the cost benchmarks accordingly.

c. Should each distributor's unit cost be compared to the average unit cost for the peer group or to the median unit cost for the peer group?

Again, the CLD submits that peer grouping undermines the benchmarking exercise and is not aligned with policy principles in the RRFE. However, if one accepts for the sake of response to the question that peer grouping were to be used, then the median unit cost for the peer group would likely be the best alternative.

8. In general, is the approach to dealing with differences in HV & LV services modelled by PEG appropriate?

The CLD observes that this issue remains unresolved and suggests that the OEB consult with distributors to examine the costs being inputted for HV and LV services for clarity and inclusion in the analysis for 2015 rates. It is apparent that PEG's approach is problematic for a number of reasons:

- PEG assigns distributors costs for host LV services, but does not make corresponding adjustments to the business conditions that drive these costs (i.e., circuit length of host facilities, % of km that is underground, etc.);

- In many or perhaps the majority of cases, host LV distribution equipment is located outside of the licensed service area of the embedded distributor, and there is no business condition incorporated in the model to recognize this; and

- LV rates are established on a pooled asset basis, are common province-wide, and are entirely outside of the control of management of the embedded distributor. The costs that an individual embedded distributor incurs do not directly relate to assets deployed to provide host distribution services upstream of a particular connection point (i.e., Common ST Lines charges will be the same regardless of whether 1 km or 20 km of line is deployed upstream of an embedded connection point).

9. Specific to LV services, on December 6, 2012 Board staff posted on the Board's website a set of data that was provided by Hydro One to support the empirical analysis on payments to Hydro One for LV service for each distribution company for the period 2002-2011 (Summary of Hydro One Low Voltage Charges to Distributors 2002–2011). During the Stakeholder Conference the issue of appropriate LV costs to be included in the benchmarking models was raised.

a. Which of the following LV-related charges should be included in total cost benchmarking? If you recommend excluding a charge, please explain.

• Common ST Lines
• HVDS-HIGH
• HVDS-LOW
• LVDS
• Meter Charge
• Monthly Service Charge
• Shared LV Line
• Shared LVDS
• Specific Distribution Line
• Specific LV Line
• Specific Primary Lines
• Specific St Lines

The CLD supports the inclusion of all LV related costs with the exclusion of those relating to Common ST Lines and Shared LV Line, until such time that the concerns raised under item 8 above, are addressed.

Where costs for specific lines are allocated to an embedded distributor, the kilometers of line deployed should be included as a business condition of the embedded distributor.

b. The Performance and Benchmarking Working Group raised concern that in circumstances where a shared LV line spans sparsely populated areas of Hydro One's service area, the inclusion of 100% of the "Shared LV Line" costs in the embedded distributor's benchmarking costs may unfairly overstate the LV costs for that distributor.

How might the Board identify these circumstances and only allocate "Shared LV Line" costs in proportion to the "Shared LV Line" that is in the embedded distributor's service territory?

The CLD agrees with the concern of the working group. The issue might be dealt with by:

1. Directing host distributors (primarily Hydro One) to establish a cost allocation methodology to assign Common ST costs on a embedded supply point basis, with such costs being further segregated based on assets deployed within and outside of the embedded distributor's service area; or,

2. Further exploring Dr. Yatchew's proposal for the use of an explanatory variable to compensate for this business condition.

<u>Efficiency Cohorts/Rankings & Stretch Factors</u>

10. For each expert's recommended approach:

a. Is the proposed approach appropriate? Does it meet the Board's policy direction noted above?

All consultants' proposals appear to meet the criteria laid out by the RRFE, with the exception of Dr. Cronin who did not put forth a recommendation on this topic.

b. What is your preferred approach and why?

The CLD submits that most cost savings have already been identified through prior incentive regulation plans. Therefore, the CLD supports reducing the stretch factor from the current high end of 0.6%. PEG's recommendation leaves the stretch factor at this upper end value of 0.6%. PSE's recommendation reduces it slightly from 0.6% to 0.5%.

If the Board wishes to increase the differentiation between the values, the only means to do so is to have a more symmetric stretch factor that rewards the efficient distributors with a negative stretch factor. Dr. Yatchew put forth a range of -0.3% to 0.3%. PSE, in a footnote to its report, identified another possible alternative of a stretch factor ranging from -0.5% to +0.5%. This differentiation of 100 basis points would increase the range. The CLD would support the recommendations of both PSE and Dr. Yatchew.

11. What are appropriate stretch factor values? Why?

The stretch factors as captured in response to Question 10 b. are appropriate as they reflect a reduced range from 3GIRM since large efficiency gains have likely already been realized. In addition IR plans in other jurisdictions tend to have stretch factors between zero and 0.5% which closely matches PSE's recommendations. Lastly, the use of six balanced cohorts will lead to an increased ability to move between cohorts and create a more actively engaged distributor population, seeking opportunities for improvement. For these reasons the CLD supports PSE's stretch factor recommendations as they more closely align with the Board's policy direction.

Implementation Considerations

12. What indicators should the Board consider monitoring on an on-going basis to test the reasonableness of the results of its PCI formula before it is applied to adjust the distributor's rates (i.e., ex ante)?

The CLD recommends that the Board continue to monitor each LDC's financial results based on the Return on Equity achieved annually in comparison to the Board-approved level of earning. Similar to 3GIRM, an LDC earning over or under 300 basis points from the Board approved level may be required to undergo regulatory review**.**

13. When the Board updates the industry productivity factor every five years, should the new productivity factor be automatically applied to all distributors that are then on 4th Generation IR? Why or why not?

The January 1 2014 IRM filers are faced with submitting applications imminently. These will likely have the "incorrect" factors, and IRM models, due to the timing of this RRFE exercise. The CLD recommends that the Board provide guidance on how LDCs should file for January 1, 2014 IRM rates.

When the Board updates the productivity factor every five years, the new productivity factor should automatically apply to all distributors. This would be consistent with the Board's proposed approach for the adoption of 4th Generation IRM by distributors under 3rd Generation IRM.

General

14. With respect to your preferred approaches, as identified in your answers to prior questions, what other implementation matters, if any, need to be considered by the Board?

The Board needs to ensure that the preferred approach at an individual component level (i.e. inflation factor, productivity factor and stretch factor) and at the combined level is a sustainable, predictable and a reliable methodology.

The CLD is aware that the EDA and individual LDCs have identified a number of data issues, e.g. how the capital costs of smart meters are included and the determination of the LV charges. It is extremely important that all stakeholders understand what data is being used and how it fits into whichever model is chosen. In addition, confidence in the integrity of the data will increase the acceptance of the results.

The CLD strongly encourages the Board to work with utilities to ensure that accurate data is being used correctly. This will also be important once the model is updated with 2012 data.

Should you have any questions, please do not hesitate to contact me.

Yours truly,

[Original signed on behalf of the CLD]

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