Empirical Research in Support of Incentive Rate-Setting: 2024 Benchmarking Update

Report to the Ontario Energy Board

August 2025

Pacific Economics Group Research, LLC

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1. Introduction

In 2013, the Ontario Energy Board (OEB) issued a report titled "Rate Setting Parameters and Benchmarking under the Renewed Regulatory Framework for Ontario's Electricity Distributors"[1] (Board Report) in which it set forth the framework for setting rate adjustment formulas for local distribution companies (LDCs or "distributors"). The Board Report provides the OEB's final determination on its policies and approaches to the distributor rate adjustment parameters and the benchmarking of electricity distributor total cost performance. This 2024 Benchmarking Update determines the 2025 stretch factor assignments for distributors in relation to the 2026 rate year.

According to the Board Report, rates will be indexed by a formula "which is used to adjust the distribution rates to reflect expected growth in the distributors' input prices (the inflation factor) less allowance for appropriate rates of productivity and efficiency gains (the X-factor)."[2] The productivity part of the X-Factor is the same for all LDCs. The efficiency gains part of the X-Factor is called the stretch factor and can vary by company. This stretch factor reflects the potential for incremental productivity gains by a given LDC under incentive regulation (i.e., incentive rate mechanism or IRM) which in turn depends on an individual distributor's level of cost efficiency.

These stretch factor assignments are based on the results of a statistical cost benchmarking study designed to make inferences on individual distributors' cost efficiency. An econometric model is used to predict the level of cost associated with each distributor's own operating conditions. Distributors that achieved an actual cost lower than the cost predicted by the model were assigned lower stretch factors than those that did not. The October 18, 2013 report by Pacific Economics Group (PEG) titled "Productivity and Benchmarking Research in Support of Incentive Rate Setting in Ontario" describes the model used to produce the benchmarking results. The work was subsequently updated to include 2013 data in July of

[1] Issued on November 21, 2013 and corrected on December 4, 2013.

[2] Board Report, page 5.

2014[3] and has been updated each year since. This report presents updated benchmarking results that incorporate 2024 data to update the stretch factors.

Section 2 of this report discusses the methodology used for the 2024 update. Section 3 discusses the data used. Section 4 presents the benchmarking results and updated stretch factors. Section 5 discusses additional resources available to distributors to validate the results contained in this report.

2. Benchmarking Methodology

The model used to determine the cost efficiency of distributors is based on econometrics. Distributor cost in this model is estimated as a function of business conditions faced by each distributor. These business conditions include the number of customers served and the price of inputs such as labour and capital. The parameters of this model establish the relationship between each business condition and distributor cost. These parameters were estimated using Ontario distributor data from 2002-2012.

The model can make a prediction of each distributor's cost given its business conditions by multiplying the company's business condition variables by the model parameters and summing the results[4]. The distributor's actual cost is then compared to that predicted by the model. The percentage difference between actual and predicted cost is the measure of cost performance. Companies with larger negative differences between actual and predicted costs are considered better cost performers and therefore eligible for lower stretch factors. A detailed description of the econometric model including estimation technique and other technical details are contained in sections 6 and A2.1 of the PEG report.

[3] "Empirical work in Support of Incentive Rate Setting: 2013 Benchmarking Update".

[4] The table of parameters published in the PEG report was for the full sample. When making predictions of cost for each company, the econometric program estimated the model without including the subject of benchmarking in the sample. Therefore, there exist 59 different sets of parameters which are very similar to each other. For ease of presentation, the PEG report did not present the parameters specific to each distributor. These company-specific parameters are necessary for the calculations and are contained within the working papers associated with this report. Due to amalgamations after 2013, there are now 53 sets of parameters used.

The econometric model used to obtain the updated stretch factors is identical to the model described in the 2013 PEG report. The OEB intentionally decided not to update the parameters of the econometric model to include future years' data. The goal was to establish a fixed benchmark via the unchanged model parameters which would allow distributors a fair opportunity to demonstrate continuous improvement of cost performance and earn a lower stretch factor. The parameters from the model were combined with each company's data – including 2013-2024 data - to produce 2024 predicted cost. The rationale for this decision is discussed in the Board Report and in a memorandum by PEG.[5]

To apply the 2024 values to the model parameters, the data must be transformed to be consistent with how the data were specified for the estimated econometric model. One such transformation is to express many of the explanatory variables as logarithms prior to the model being estimated. The PEG report describes the details of the estimation process in section A2.1. The spreadsheet model and associated documentation discussed in section 5 contain the calculations leading to the cost benchmarking results.

The purpose of the benchmarking work is to evaluate the total cost incurred by each distributor. Table 1 shows the formulas used to calculate the measure of total cost used in PEG's benchmarking analysis. As described in the PEG benchmarking report, adjustments were undertaken with the purpose of standardizing cost to facilitate more accurate cost comparisons among distributors. These adjustments included the treatment of high voltage and low voltage costs.

The variables used to explain total cost are the same as in the previous PEG report. They include outputs such as customers, kWh deliveries, and capacity. Prices for capital and OM&A along with other business conditions such as customer growth and average length of lines are also included. A complete discussion of the explanatory variables can be found in section 6 of the PEG report and the supporting documents to this report discussed in section 5. The

[5] Available on the OEB website in the file "PEG_Memorandum_OEB on_corrections_20131220.pdf"

explanatory variables are used to explain the level of cost incurred by each LDC. Cost that is not accounted for by the variables is deemed to be an estimate of management performance.

3. Benchmarking Data

The source of the cost and output data used in the calculations is from the distributors as reported in the reporting and record-keeping requirements (RRR) filings. The study assumes that the data as reported by the distributors conforms to accounting policies and procedures described in the Accounting Procedures Handbook for Electricity Distributors that includes the Uniform System of Accounts and other instructions contained within the RRR filing system. It also assumes that the LDCs have taken ownership of the data provided to the OEB and significant revisions are not anticipated.[6]

Data sources apart from the RRR are related to input prices. OEB-approved rates of return were obtained from the published OEB Cost of Capital Parameter Updates[7]. Statistics Canada is the source for other input price data. The input price indexes used were the same as those used in PEG's original study with one exception. Statistics Canada no longer calculates the Electric Utility Construction Price Index (EUCPI). The growth in the GDPIPI (FDD) was used to escalate the EUCPI values used in the calculations.[8]

The update was done in the same manner as the original work with an exception. The OEB has improved the quality of data collected related to capital additions. As a result, improved data are available for 2013-2024. PEG has accordingly relied upon these more recently available capital additions data filed in the RRRs instead of inferring these data from changes in gross plant.

[6] The Ontario Energy Board (OEB) released the Report of the Board on Performance Measurement for Electricity Distributors: A Scorecard Approach (EB-2010-0379) on March 5, 2014. This report states that: '*While the Board will create consistent Scorecard reports for distributors, ownership of the data and Scorecard resides with the distributor.'*

[7] https://www.oeb.ca/regulatory-rules-and-documents/rules-codes-and-requirements/cost-capital-parameter-updates

[8] GDPIPI (FDD) is the Gross Domestic Product Implicit Price Index for Final Domestic Demand.

The calculations have also been adjusted for amalgamations that have taken place since the original study was done. The historical cost performance of the combined entity was calculated from the historical results of the predecessor distributors that were amalgamated or acquired.[9] In each of these cases the companies have consolidated reporting and are benchmarked as single entities under the new company names. There was one amalgamation in 2024; Hydro One Networks acquired Chapleau Public Utilities.

This report also addresses the impact of data revisions by LDCs for informational purposes only. The OEB requires distributors to be accountable for the integrity of their reported data. As part of its procedures to improve data quality, the OEB invited distributors to submit corrections to previously provided data. However, a key determination is that already established and published benchmarking results for prior years would not be modified as a result of revised data. This includes any year that comprised the three-year average used to determine the current year's stretch factor. As stretch factors are used directly to set the distribution rates of distributors, they are not subsequently adjusted in order to avoid retroactive rate setting (i.e., rates are final once set unless approved on an interim basis). Consequently, the three years of data used to derive the three-year average for any year's stretch factors are locked-in such that the underlying data used do not change due to any subsequent data revisions. [10] Just as distributors occasionally revise data, PEG sometimes encounters small issues with previous work that it seeks to correct. There were two such corrections this year and neither resulted in a change to previously assigned stretch factors.[11]

[9] The method used to calculation the hypothetical historical cost performance of the combined entity is to sum the actual costs, sum the costs predicted by the model, and calculate the percentage difference. This method is essentially a cost-weighted average of the historical cost performances of the amalgamated distributors.

[10] The previous results were "locked-in" by pasting the values of previous cost performance into the current calculations worksheet. This means that these values will not be affected by subsequent data revisions. This allows for the calculation of a new three-year average of the new 2023 result consistent with the previously published 2020, 2021 and 2022 results while still allowing the calculation of revised results for previous years, if applicable, to show the impact of any data revision.

[11] The first correction was to use the Ontario average weekly earnings for 2021-2023 where we had mistakenly used the analogous values for Canada instead. The average impact of performance scores was 0.02% on average, meaning for the 2021-2023 period distributors appeared to have 0.02% better cost performance than they actually had. The second correction was that part of the amalgamation of Enova Power Corp. from predecessor distributors was done incorrectly. The impact of this correction was to change the average performance score

To show the impacts of data changes on the stretch factors, revised data have been incorporated into the benchmarking databases and model to allow previous results to be recalculated. The revised 2023, 2022, and 2021 results are presented only for the purposes of showing the impact of the data changes. As discussed above, they were not used to calculate the new 2021-2023 average cost performance used to determine the 2024 stretch factors assignments.

Several tables are included at the end of this report. Table 1 describes the calculation of total cost. Table 2 shows each distributor's growth in total cost from 2023 to 2024. Table 3 (A) presents the 2024 benchmarking results and a comparison to prior years' results. Table 3 (B) summarizes data revision impacts on cost performance although they have no bearing on the derivation of the current stretch factors. Table 4 presents average cost performance and associated stretch factors. Table 5 presents the companies assigned to each cohort according to their updated stretch factors. Changes from the previous years' assignments are shown in bold.

The goal of the benchmarking work is to evaluate levels of distributor cost. Table 2 presents the actual OM&A, Capital, and Total (real) cost for each distributor for 2023 and 2024. As can be seen, industry total cost increased by 5.9% on average from 2023-2024. Total OM&A cost grew by 6.82% and capital cost grew on average by 5.11%. The percentage change in capital and total costs are substantially lower than the percentage change in cost growth in 2023 and 2022. Growth in real OM&A cost was the highest of any year (from 2013-2024), while growth in real Capital and Total cost were the fourth- and third-highest rates, respectively.

from -4.2% to -7.4%. For the purposes of calculating 2022-2024 average performance, only the 2024 calculations reflect these corrections and the previously published values for 2022 and 2023 were used when calculating the average performance scores for assigning 2026 stretch factors.

Growth in Real Cost			
Year	OM&A	Capital	Total
2024	6.82%	5.11%	5.90%
2023	5.31%	19.07%	13.05%
2022	6.67%	11.65%	9.29%
2021	2.28%	1.94%	2.01%
2020	1.30%	-3.12%	-0.92%
2019	1.53%	4.32%	3.10%
2018	2.34%	7.20%	4.69%
2017	2.07%	-2.52%	-0.23%
2016	3.38%	1.79%	2.52%
2015	2.73%	4.53%	3.98%
2014	1.53%	5.06%	3.25%
2013	5.86%	-0.46%	2.33%

The econometric model estimates LDCs' costs as a function of distributor output, input price growth, and other business condition variables which are considered as beyond management control. The model will also produce a prediction of the level of cost consistent with these business conditions, and thus "explain" some of the observed cost level. As described in the PEG benchmarking report, changes in distributor cost not accounted for by these factors are deemed to be due to management performance. The parameter estimates measure the average cost impact of the different business conditions and are presented on Table 16 of the PEG benchmarking report. The discussion below provides some details about the parameters and their associated impacts established for the 2002 to 2012 period.

The first of the cost drivers is output quantity. The model uses three measures of the quantity of distributor output. The first is the number of customers served, the second is kWh delivered, and the third is a proxy for the capacity of the distribution system. The capacity variable is described in the PEG report and is equal to the largest peak load experienced as of the current year of data. For example, the 2012 value for the capacity variable is equal to largest reported system summer or winter kW in all the years 2002-2012. Therefore, for 2013 forward, this capacity variable only increased if the distributor's kW demand in that year exceeded kW demand in every year between 2002 and 2012. Of the three output variables, the model estimates that the number of customers has the largest impact on cost, followed by

system capacity. The kWh delivered was the least important of the output variables. For the average company, the number of customers was observed to be a more important cost driver than the other two combined. For each 1% change in number of customers, cost was estimated to change by 0.44%.

The second group of cost drivers were the input prices for capital and OM&A. For the average company, the cost impact of changes in the capital price was found to be almost twice as important as that for OM&A. For every 1% change in capital price, the impact on total cost was about 0.63%. The corresponding impact for changes in the OM&A price was 0.37%. The relevant indexes were updated to include 2024 data. For the OM&A price, the growth in average weekly earnings and that for the GDP implicit price index for final domestic demand ("GDPIPI (FDD)") were calculated. The 2023 growth in the OM&A price index is calculated as 70% times average weekly earnings growth plus 30% times GDPIPI (FDD) growth. The 2023 values for the OM&A price index from the previous report were escalated by the growth that occurred in 2024.

The capital price calculation is based upon an asset price index, an economic depreciation rate, and a rate of return. The asset price index was the Electric Utility Construction Price Index as calculated by Statistics Canada. As this index is no longer available, the previous values are escalated by an alternate index. The index chosen was the GDPIPI (FDD) which is the same index used to represent all non-labour price inflation in the Board-approved inflation measure formula[12]. The depreciation rate is fixed at 4.59% consistent with the previous work. The rate of return is a weighted average of the rates for return on equity, long-term debt, and short-term debt as approved by the OEB. The capital price used to calculate total cost is also used as an explanatory variable. Therefore, any changes in the rate of return or asset price index that affect the cost calculation will also affect the price calculation which will in turn "explain" the observed changes in cost.

[12] The weight given to the non-labour index in the inflation formula includes capital cost.

The last group of cost drivers consists of other business condition variables. The first was the percentage of customers added over the last ten years. The second was the average km of distribution line. For each 1% change in average line length, total cost was estimated to increase by 0.29%. The model also contains a time trend that accounts for changes in cost over time that are not accounted for by the other cost drivers. This variable estimates that cost should rise by 1.7% per year for reasons not identified by other variables in the model. All of these business condition variables were updated to include 2024 data.

4. Benchmarking Results and Updated Stretch Factors

Table 3 (A) presents a summary of the current benchmarking results for each distributor from 2021-2024. The updated average cost performance is based on a three-year rolling average calculated from the 2022-2024 values and is used to assign updated stretch factors to distributors. The last column presents the difference between the updated average cost performance and the previous one (2021-2023).[13] The electricity distributor sector has shown consistent year-over-year cost performance improvements. The average level of cost performance in 2024 for the distributors is 14.8% lower than forecast (or predicted) cost that builds upon cost performance improvement in previous years. Previous years also have shown performance improvements for the currently benchmarked distributors but not as good compared to the recent years.

As discussed above, the OEB requires distributors to be accountable for the integrity of their reported data and sets out reporting procedures to improve data quality. OEB Staff reviewed and approved distributors' data corrections requests to previously filed data when reasonable justification is provided. The revised data were incorporated into the benchmarking databases and the 2021, 2022, and 2023 results were recalculated to demonstrate the impact on the previously published 2021-2023 average cost performance.

[13] Changes in average cost performance are due to not only the addition of 2024 results, but the removal of 2021 results. It is therefore possible to simultaneously have improved 2024 cost performance and deteriorating average performance.

Table 3 (B) shows the impact of LDC data revisions on 2021, 2022, and 2023 cost performance for those companies that had approved changes since the previous update. No revisions would have changed previously determined cohort placement.

Updated stretch factors are assigned based on a three-year average of actual less predicted cost over the 2022-2024 period. As discussed in the Board Report, distributors that averaged 25% or more below predicted cost received the lowest stretch factor of 0%. Those that averaged in excess of 10% and up to 25% below predicted cost received a stretch factor of 0.15%. Those within 10% of predicted cost received a stretch factor of 0.30%. Those distributors that had cost in excess of 10% and up to 25% above predicted cost received a stretch factor of 0.45%. Any distributors that had actual costs in excess of 25% more than predicted were assigned the highest stretch factor of 0.60%.

Table 4 presents a summary of the current and previous years' cost performance results and corresponding stretch factors. The assigned stretch factor for all but one company was not affected by the 2024 update. One company has been assigned a different stretch factor, and it is a lower stretch factor. Table 5 presents the updated stretch factor assignments in the format of Appendix D of the Board report.

5. Validation and Other Supporting Documents

As part of their reporting requirements, distributors are asked to validate the numbers contained in their scorecard. The Spreadsheet Model as updated produces the updated benchmarking results contained in this report. It builds on the previous version by adding additional worksheets related to the 2024 calculations.

The format of the additional worksheets used in the update are similar to those provided earlier and the User's Guide will be applicable to the new worksheets. The guide is intended to serve as a tool for distributors to better understand these calculations and their cost performance. The spreadsheet model and users guide are available in the Total cost benchmarking – updates section of the Performance Assessment page on the OEB's website.

Table 1

Calculation of 2024 Total Cost

Variable		Reference	Formula	Source
Total Cost			= OM&A + Capital Cost	Formula
OM&A			= A+B+C+D+E+F+G-I+J	Formula
2024	Operation	A		RRR
2024	Maintenance	B		RRR
2024	Billing and Collection	C		RRR
2024	Community Relations	D		RRR
2024	Administrative and General Expenses	E		RRR
2024	Insurance Expense	F		RRR
2024	Advertising Expenses	G		RRR
Adjustments to OM&A				
2024	HV Adjustment	I		RRR
2024	LV Adjustment	J		Hydro One Networks
Capital				
2023	Asset Price Index	K		Previous Year Calculations
2023	Capital Quantity	M		Previous Year Calculations
2024	Asset Price Index	O	=K x (GDPPI-FDD 2021 / GDPPI-FDD 2020)	Formula, Statistics Canada
2024	Capital Additions	P		RRR
2024	HV Capital Additions	Q		RRR
2024	Quantity of Capital Additions	R	=(P-Q) / O	Formula
	Depreciation Rate	S	Fixed at 4.59% for All Years	PEG Report for 4GIR
2024	Capital Quantity	T	= M - S x M + R	Formula
2024	Rate of Return	U		OEB Decision
2024	Capital Price	V	=U x K + S x O	Formula
2024	Capital Cost	W	= V x T	Formula

Table 2

Total Cost by Distributor: 2023 vs. 2024

	OM&A Cost			Capital Cost			Total Cost		
	2023	2024	Percent Change	2023	2024	Percent Change	2023	2024	Percent Change
Alectra Utilities Corporation	275,740,715	280,029,797	1.54%	667,033,540	704,199,058	5.42%	942,774,255	984,228,855	4.30%
Algoma Power Inc.	13,796,191	14,472,132	4.78%	21,053,071	22,361,909	6.03%	34,849,263	36,834,041	5.54%
Atikokan Hydro Inc.	1,188,653	1,333,261	11.48%	697,539	762,769	8.94%	1,886,192	2,096,030	10.55%
Bluewater Power Distribution Corporation	13,684,765	14,325,713	4.58%	18,631,928	19,648,655	5.31%	32,316,693	33,974,368	5.00%
Burlington Hydro Inc.	23,087,139	23,481,258	1.69%	35,988,491	37,966,834	5.35%	59,075,631	61,448,092	3.94%
Canadian Niagara Power Inc.	10,655,338	11,036,706	3.52%	24,171,235	25,557,064	5.58%	34,826,573	36,593,770	4.95%
Centre Wellington Hydro Ltd.	2,804,726	3,127,272	10.89%	3,037,050	3,249,911	6.77%	5,841,776	6,377,182	8.77%
Cooperative Hydro Embrun Inc.	794,475	901,953	12.69%	655,016	655,574	0.09%	1,449,491	1,557,526	7.19%
Elexicon Energy Inc.	46,787,704	52,948,563	12.37%	93,608,204	96,316,805	2.85%	140,395,908	149,265,369	6.13%
E.L.K. Energy Inc.	4,152,335	4,533,419	8.78%	3,360,301	3,659,062	8.52%	7,512,635	8,192,480	8.66%
Enova Power Corp.	39,292,264	44,511,907	12.47%	89,392,498	91,354,324	2.17%	128,684,762	135,866,231	5.43%
Entegrus Powerlines Inc.	16,182,654	17,448,850	7.53%	28,662,967	30,053,298	4.74%	44,845,621	47,502,148	5.75%
ENWIN Utilities Ltd.	27,447,841	30,147,802	9.38%	47,269,397	48,371,913	2.31%	74,717,237	78,519,715	4.96%
EPCOR Electricity Distribution Ontario Inc.	6,068,316	6,581,740	8.12%	6,982,251	7,451,659	6.51%	13,050,567	14,033,399	7.26%
ERTH Power Corporation	8,178,713	8,609,863	5.14%	11,806,645	12,500,077	5.71%	19,985,358	21,109,940	5.47%
Essex Powerlines Corporation	8,624,718	8,669,504	0.52%	13,749,241	14,479,220	5.17%	22,373,959	23,148,724	3.40%
Festival Hydro Inc.	7,046,504	7,438,918	5.42%	9,934,514	10,692,761	7.36%	16,981,018	18,131,680	6.56%
Fort Frances Power Corporation	1,899,201	1,920,340	1.11%	1,185,896	1,190,857	0.42%	3,085,096	3,111,198	0.84%
GrandBridge Energy Inc.	32,538,677	34,830,865	6.81%	52,734,670	55,551,790	5.20%	85,273,346	90,382,655	5.82%
Greater Sudbury Hydro Inc.	16,102,895	17,035,465	5.63%	22,642,502	23,735,005	4.71%	38,745,397	40,770,471	5.09%
Grimsby Power Incorporated	3,889,144	3,918,347	0.75%	4,881,498	5,048,367	3.36%	8,770,642	8,966,714	2.21%
Halton Hills Hydro Inc.	7,576,862	8,340,798	9.61%	15,347,476	15,767,015	2.70%	22,924,338	24,107,813	5.03%
Hearst Power Distribution Company Limited	1,286,493	1,452,278	12.12%	505,938	518,635	2.48%	1,792,430	1,970,913	9.49%
Hydro 2000 Inc.	679,372	744,507	9.16%	212,074	219,723	3.54%	891,446	964,231	7.85%
Hydro Hawkesbury Inc.	1,453,948	1,409,278	-3.12%	772,099	801,969	3.80%	2,226,047	2,211,247	-0.67%
Hydro One Networks Inc.	684,623,857	643,574,939	-6.18%	1,310,817,211	1,400,872,805	6.64%	1,995,441,068	2,044,447,744	2.43%
Hydro Ottawa Limited	106,888,209	107,226,008	0.32%	233,661,781	245,885,215	5.10%	340,549,990	353,111,223	3.62%

Table 2 (cont'd)

Total Cost by Distributor: 2023 vs. 2024

	OM&A Cost			Capital Cost			Total Cost		
	2023	2024	Percent Change	2023	2024	Percent Change	2023	2024	Percent Change
Innpower Corporation	8,088,934	9,106,744	11.85%	16,974,531	20,283,892	17.81%	25,063,464	29,390,636	15.93%
Kingston Hydro Corporation	8,001,856	8,438,504	5.31%	10,898,408	11,102,441	1.85%	18,900,264	19,540,946	3.33%
Lakefront Utilities Inc.	3,107,067	3,188,053	2.57%	4,094,258	4,462,964	8.62%	7,201,325	7,651,017	6.06%
Lakeland Power Distribution Ltd.	6,085,963	6,757,482	10.47%	6,939,695	7,334,616	5.53%	13,025,657	14,092,098	7.87%
London Hydro Inc.	44,158,081	47,225,902	6.72%	73,140,920	76,465,334	4.44%	117,299,001	123,691,237	5.31%
Milton Hydro Distribution Inc.	11,721,468	12,706,432	8.07%	23,607,598	24,311,775	2.94%	35,329,066	37,018,206	4.67%
Newmarket-Tay Power Distribution Ltd.	14,099,664	15,079,727	6.72%	21,773,796	24,401,486	11.39%	35,873,459	39,481,213	9.58%
Niagara Peninsula Energy Inc.	19,942,692	21,894,508	9.34%	33,710,993	34,559,397	2.49%	53,653,685	56,453,905	5.09%
Niagara-on-the-Lake Hydro Inc.	3,367,064	3,825,385	12.76%	5,720,060	5,969,970	4.28%	9,087,124	9,795,355	7.50%
North Bay Hydro Distribution Limited	8,572,962	9,298,073	8.12%	15,406,223	16,082,882	4.30%	23,979,185	25,380,955	5.68%
Northern Ontario Wires Inc.	3,304,043	3,825,875	14.66%	1,744,750	1,971,480	12.22%	5,048,793	5,797,355	13.83%
Oakville Hydro Electricity Distribution Inc.	19,609,317	21,439,118	8.92%	47,200,783	50,991,770	7.73%	66,810,100	72,430,887	8.08%
Orangeville Hydro Limited	3,687,355	4,142,958	11.65%	4,885,998	5,082,411	3.94%	8,573,353	9,225,368	7.33%
Oshawa PUC Networks Inc.	14,608,277	17,290,034	16.85%	30,361,104	31,091,054	2.38%	44,969,381	48,381,088	7.31%
Ottawa River Power Corporation	4,154,241	4,073,876	-1.95%	3,684,454	3,850,026	4.40%	7,838,695	7,923,902	1.08%
PUC Distribution Inc.	12,628,187	12,775,971	1.16%	20,737,214	21,306,116	2.71%	33,365,402	34,082,087	2.13%
Renfrew Hydro Inc.	1,589,812	1,727,396	8.30%	1,637,346	1,690,174	3.18%	3,227,159	3,417,570	5.73%
Rideau St. Lawrence Distribution Inc.	2,763,847	2,929,824	5.83%	1,675,179	1,731,451	3.30%	4,439,026	4,661,275	4.89%
Sioux Lookout Hydro Inc.	1,564,855	1,617,458	3.31%	1,146,181	1,179,618	2.88%	2,711,036	2,797,076	3.12%
Synergy North Corporation	19,053,314	20,027,876	4.99%	28,434,670	29,486,101	3.63%	47,487,984	49,513,977	4.18%
Tillsonburg Hydro Inc.	2,846,612	3,231,949	12.70%	3,559,869	3,738,650	4.90%	6,406,481	6,970,599	8.44%
Toronto Hydro-Electric System Limited	272,554,835	301,886,323	10.22%	936,283,805	994,297,355	6.01%	1,208,838,641	1,296,183,677	6.98%
Wasaga Distribution Inc.	3,461,500	3,809,359	9.58%	5,464,224	5,849,819	6.82%	8,925,724	9,659,178	7.90%
Welland Hydro-Electric System Corp.	7,111,431	8,058,891	12.51%	7,341,487	7,932,934	7.75%	14,452,918	15,991,825	10.12%
Wellington North Power Inc.	2,320,071	2,125,193	-8.77%	1,947,650	2,002,663	2.79%	4,267,721	4,127,856	-3.33%
Westario Power Inc.	6,548,025	7,401,451	12.25%	11,144,186	11,811,549	5.82%	17,692,210	19,213,000	8.25%
Average	**35,234,400**	**35,923,318**	**6.82%**	**76,194,536**	**80,714,343**	**5.11%**	**111,428,936**	**116,637,661**	**5.90%**
Median	**8,001,856**	**8,438,504**	**8.07%**	**11,806,645**	**12,500,077**	**4.74%**	**19,985,358**	**21,109,940**	**5.68%**

Table 3a

Summary of 2024 Cost Performance Results

	Cost Efficiency Assessment						
	2021	2022	2023	2024	**2021-2023**	**2022-2024**	**Difference from 2021-2023**
Alectra Utilities Corporation	-6.9%	-9.1%	-9.7%	-10.9%	-8.6%	-9.9%	-1.4%
Algoma Power Inc.	63.7%	61.1%	61.7%	61.6%	62.2%	61.5%	-0.7%
Atikokan Hydro Inc.	-0.9%	-1.9%	-6.0%	-1.0%	-2.9%	-3.0%	0.0%
Bluewater Power Distribution Corporation	-7.6%	-8.0%	-10.6%	-10.7%	-8.7%	-9.8%	-1.0%
Burlington Hydro Inc.	-11.7%	-13.5%	-10.0%	-11.3%	-11.7%	-11.6%	0.2%
Canadian Niagara Power Inc.	11.8%	9.7%	13.2%	12.2%	11.6%	11.7%	0.1%
Centre Wellington Hydro Ltd.	-16.7%	-16.6%	-18.9%	-15.8%	-17.4%	-17.1%	0.3%
Cooperative Hydro Embrun Inc.	-62.4%	-72.8%	-68.0%	-69.3%	-67.7%	-70.0%	-2.3%
Elexicon Energy Inc.	-2.9%	-3.6%	-4.1%	-3.3%	-3.6%	-3.7%	-0.1%
E.L.K. Energy Inc.	-49.1%	-32.4%	-37.6%	-33.4%	-39.7%	-34.5%	5.2%
Enova Power Corp.	-8.4%	-1.3%	-3.1%	-9.1%	-4.2%	-4.5%	-0.3%
Entegrus Powerlines Inc.	-28.7%	-26.9%	-27.8%	-28.6%	-27.8%	-27.8%	0.0%
ENWIN Utilities Ltd.	-22.4%	-26.8%	-27.8%	-29.2%	-25.7%	-27.9%	-2.2%
EPCOR Electricity Distribution Ontario Inc.	-16.5%	-16.0%	-19.9%	-17.8%	-17.4%	-17.9%	-0.4%
ERTH Power Corporation	-4.8%	-6.5%	-6.5%	-7.2%	-5.9%	-6.7%	-0.8%
Essex Powerlines Corporation	-31.6%	-31.6%	-31.7%	-35.2%	-31.6%	-32.8%	-1.2%
Festival Hydro Inc.	-3.4%	-2.4%	-2.1%	-1.1%	-2.6%	-1.9%	0.8%
Fort Frances Power Corporation	-12.8%	-11.0%	-11.2%	-15.1%	-11.7%	-12.4%	-0.8%

Table 3a (cont'd)

Summary of 2024 Cost Performance Results

	Cost Efficiency Assessment						
	2021	2022	2023	2024	**2021-2023**	**2022-2024**	**Difference from 2021-2023**
GrandBridge Energy Inc.	-11.6%	-13.9%	-15.3%	-15.4%	-13.6%	-14.9%	-1.3%
Greater Sudbury Hydro Inc.	1.4%	-3.8%	-6.9%	-8.0%	-3.1%	-6.2%	-3.1%
Grimsby Power Incorporated	-38.5%	-38.5%	-39.7%	-43.0%	-38.9%	-40.4%	-1.5%
Halton Hills Hydro Inc.	-35.7%	-37.2%	-36.1%	-36.1%	-36.3%	-36.5%	-0.1%
Hearst Power Distribution Company Limited	-30.5%	-33.8%	-33.5%	-29.9%	-32.6%	-32.4%	0.2%
Hydro 2000 Inc.	-16.8%	-14.8%	-20.5%	-18.0%	-17.4%	-17.8%	-0.4%
Hydro Hawkesbury Inc.	-65.3%	-71.0%	-63.6%	-69.6%	-66.6%	-68.1%	-1.4%
Hydro One Networks Inc.	18.1%	20.3%	21.5%	19.2%	20.0%	20.3%	0.4%
Hydro Ottawa Limited	19.5%	23.1%	24.4%	21.6%	22.4%	23.0%	0.7%
Innpower Corporation	-5.2%	-6.2%	-0.8%	5.3%	-4.1%	-0.6%	3.5%
Kingston Hydro Corporation	-12.8%	-10.9%	-15.0%	-17.9%	-12.9%	-14.6%	-1.7%
Lakefront Utilities Inc.	-27.0%	-31.0%	-24.9%	-26.4%	-27.6%	-27.4%	0.2%
Lakeland Power Distribution Ltd.	-19.6%	-16.8%	-16.1%	-13.8%	-17.5%	-15.6%	1.9%
London Hydro Inc.	-5.7%	-6.5%	-8.2%	-8.0%	-6.8%	-7.5%	-0.8%
Milton Hydro Distribution Inc.	-26.8%	-28.1%	-30.1%	-32.3%	-28.3%	-30.2%	-1.8%
Newmarket-Tay Power Distribution Ltd.	-17.6%	-17.5%	-18.1%	-12.3%	-17.8%	-16.0%	1.8%
Niagara Peninsula Energy Inc.	-7.8%	-10.2%	-12.3%	-13.2%	-10.1%	-11.9%	-1.8%
Niagara-on-the-Lake Hydro Inc.	-13.1%	-16.2%	-15.5%	-13.8%	-14.9%	-15.2%	-0.2%
North Bay Hydro Distribution Limited	-3.6%	-3.5%	-4.9%	-4.2%	-4.0%	-4.2%	-0.2%
Northern Ontario Wires Inc.	-45.7%	-45.1%	-46.4%	-37.5%	-45.7%	-43.0%	2.7%

Table 3a (cont'd)

Summary of 2023 Cost Performance Results

	Cost Efficiency Assessment						
	2021	2022	2023	2024	**2021-2023**	**2022-2024**	**Difference from 2021-2023**
Oakville Hydro Electricity Distribution Inc.	-6.4%	-6.6%	-7.5%	-6.0%	-6.8%	-6.7%	0.2%
Orangeville Hydro Limited	-29.6%	-28.4%	-30.6%	-28.6%	-29.5%	-29.2%	0.3%
Oshawa PUC Networks Inc.	-16.8%	-18.9%	-18.9%	-18.2%	-18.2%	-18.6%	-0.5%
Ottawa River Power Corporation	-28.8%	-25.6%	-26.3%	-31.4%	-26.9%	-27.8%	-0.9%
PUC Distribution Inc.	1.8%	-3.0%	15.0%	12.3%	4.6%	8.1%	3.5%
Renfrew Hydro Inc.	-3.1%	-8.4%	-5.7%	-5.7%	-5.7%	-6.6%	-0.9%
Rideau St. Lawrence Distribution Inc.	-15.4%	-11.3%	-15.8%	-14.4%	-14.2%	-13.8%	0.3%
Sioux Lookout Hydro Inc.	-35.1%	-41.9%	-44.1%	-48.0%	-40.3%	-44.7%	-4.3%
Synergy North Corporation	-0.8%	5.0%	2.1%	1.5%	2.1%	2.9%	0.8%
Tillsonburg Hydro Inc.	-9.8%	-15.1%	-17.8%	-15.8%	-14.3%	-16.3%	-2.0%
Toronto Hydro-Electric System Limited	53.2%	52.8%	52.9%	54.7%	52.9%	53.4%	0.5%
Wasaga Distribution Inc.	-56.7%	-45.8%	-44.4%	-42.9%	-49.0%	-44.4%	4.6%
Welland Hydro-Electric System Corp.	-32.6%	-35.7%	-38.9%	-35.0%	-35.7%	-36.5%	-0.8%
Wellington North Power Inc.	-4.0%	-9.8%	-5.3%	-17.2%	-6.4%	-10.8%	-4.4%
Westario Power Inc.	-10.3%	-6.2%	-14.6%	-11.7%	-10.4%	-10.8%	-0.5%
Average	**-14.2%**	**-14.5%**	**-14.8%**	**-14.8%**	**-14.5%**	**-14.7%**	**-0.2%**
Median	**-12.8%**	**-13.5%**	**-15.3%**	**-14.4%**	**-13.6%**	**-14.6%**	**-0.2%**
Max	**63.7%**	**61.1%**	**61.7%**	**61.6%**	**62.2%**	**61.5%**	**5.2%**
Min	**-65.3%**	**-72.8%**	**-68.0%**	**-69.6%**	**-67.7%**	**-70.0%**	**-4.4%**

Table 3b

Summary of the Impact of Revised Data on Cost Performance Results

Distributors with approved 2021, 2022, and/or 2023 data revisions for the 2024 data update	2021 Cost Performance			2022 Cost Performance			2023 Cost Performance			2021-2023 Average Cost Performance*		
	As Previously Calculated	As Revised	Difference	As Previously Calculated	As Revised	Difference	As Previously Calculated	As Revised	Difference	As Previously Calculated	As Revised	**Difference**
Bluewater Power Distribution	-7.6%	na	na	-8.0%	na	na	-10.6%	-10.4%	-0.22%	-8.7%	-8.7%	**-0.07%**
Burlington Hydro Inc.	-11.7%	-11.6%	-0.14%	-13.5%	-13.7%	0.21%	-10.0%	-10.4%	0.39%	-11.7%	-11.9%	**0.15%**
E.L.K. Energy Inc.	-49.1%	na	na	-32.4%	na	na	-37.6%	-37.6%	0.01%	-39.7%	-39.7%	**0.00%**
Entegrus Powerlines Inc.	-28.7%	na	na	-26.9%	na	na	-27.8%	-27.8%	0.00%	-27.8%	-27.8%	**0.00%**
Greater Sudbury Hydro Inc.	1.4%	-0.4%	1.75%	-3.8%	-4.9%	1.18%	-6.9%	-7.6%	0.73%	-3.1%	-4.3%	**1.22%**
Hydro Ottawa Limited	19.5%	18.0%	1.49%	23.1%	20.3%	2.84%	24.4%	20.4%	4.03%	22.4%	19.6%	**2.79%**
Kingston Hydro Corporation	-12.8%	-14.3%	1.40%	-10.9%	-12.2%	1.28%	-15.0%	-16.2%	1.18%	-12.9%	-14.2%	**1.29%**
Milton Hydro Distribution Inc.	-26.8%	na	na	-28.1%	na	na	-30.1%	-30.1%	0.00%	-28.3%	-28.3%	**0.00%**
Oakville Hydro Electricity	-6.4%	na	na	-6.6%	na	na	-7.5%	-7.5%	0.00%	-6.8%	-6.8%	**0.00%**

* The impact of revisions are not cumulative with revisions from previous updates. Other submitted changes were either not used in the 2021-2023 calculations or resulted in no net change to the amounts being used.

Table 4
Summary of Stretch Factor Assignments

	2021-2023		2022-2024		Change in Stretch Factor
	Benchmarking Performance	Stretch Factor	Benchmarking Performance	Stretch Factor	
Alectra Utilities Corporation	-8.6%	0.30	-9.9%	0.30	NO
Algoma Power Inc.	62.2%	0.60	61.5%	0.60	NO
Atikokan Hydro Inc.	-2.9%	0.30	-3.0%	0.30	NO
Bluewater Power Distribution Corporation	-8.7%	0.30	-9.8%	0.30	NO
Burlington Hydro Inc.	-11.7%	0.15	-11.6%	0.15	NO
Canadian Niagara Power Inc.	11.6%	0.45	11.7%	0.45	NO
Centre Wellington Hydro Ltd.	-17.4%	0.15	-17.1%	0.15	NO
Cooperative Hydro Embrun Inc.	-67.7%	0.00	-70.0%	0.00	NO
Elexicon Energy Inc.	-3.6%	0.30	-3.7%	0.30	NO
E.L.K. Energy Inc.	-39.7%	0.00	-34.5%	0.00	NO
Enova Power Corp.	-4.2%	0.30	-4.5%	0.30	NO
Entegrus Powerlines Inc.	-27.8%	0.00	-27.8%	0.00	NO
ENWIN Utilities Ltd.	-25.7%	0.00	-27.9%	0.00	NO
EPCOR Electricity Distribution Ontario Inc.	-17.4%	0.15	-17.9%	0.15	NO
ERTH Power Corporation	-5.9%	0.30	-6.7%	0.30	NO
Essex Powerlines Corporation	-31.6%	0.00	-32.8%	0.00	NO
Festival Hydro Inc.	-2.6%	0.30	-1.9%	0.30	NO
Fort Frances Power Corporation	-11.7%	0.15	-12.4%	0.15	NO

Table 4 (cont'd)
Summary of Stretch Factor Assignments

	2021-2023		2022-2024		Change in Stretch Factor
	Benchmarking Performance	Stretch Factor	Benchmarking Performance	Stretch Factor	
GrandBridge Energy Inc.	-13.6%	0.15	-14.9%	0.15	NO
Greater Sudbury Hydro Inc.	-3.1%	0.30	-6.2%	0.30	NO
Grimsby Power Incorporated	-38.9%	0.00	-40.4%	0.00	NO
Halton Hills Hydro Inc.	-36.3%	0.00	-36.5%	0.00	NO
Hearst Power Distribution Company Limited	-32.6%	0.00	-32.4%	0.00	NO
Hydro 2000 Inc.	-17.4%	0.15	-17.8%	0.15	NO
Hydro Hawkesbury Inc.	-66.6%	0.00	-68.1%	0.00	NO
Hydro One Networks Inc.	20.0%	0.45	20.3%	0.45	NO
Hydro Ottawa Limited	22.4%	0.45	23.0%	0.45	NO
Innpower Corporation	-4.1%	0.30	-0.6%	0.30	NO
Kingston Hydro Corporation	-12.9%	0.15	-14.6%	0.15	NO
Lakefront Utilities Inc.	-27.6%	0.00	-27.4%	0.00	NO
Lakeland Power Distribution Ltd.	-17.5%	0.15	-15.6%	0.15	NO
London Hydro Inc.	-6.8%	0.30	-7.5%	0.30	NO
Milton Hydro Distribution Inc.	-28.3%	0.00	-30.2%	0.00	NO
Newmarket-Tay Power Distribution Ltd.	-17.8%	0.15	-16.0%	0.15	NO
Niagara Peninsula Energy Inc.	-10.1%	0.15	-11.9%	0.15	NO
Niagara-on-the-Lake Hydro Inc.	-14.9%	0.15	-15.2%	0.15	NO
North Bay Hydro Distribution Limited	-4.0%	0.30	-4.2%	0.30	NO
Northern Ontario Wires Inc.	-45.7%	0.00	-43.0%	0.00	NO

Table 4 (cont'd)
Summary of Stretch Factor Assignments

	2021-2023		2022-2024		Change in Stretch Factor
	Benchmarking Performance	Stretch Factor	Benchmarking Performance	Stretch Factor	
Oakville Hydro Electricity Distribution Inc.	-6.8%	0.30	-6.7%	0.30	NO
Orangeville Hydro Limited	-29.5%	0.00	-29.2%	0.00	NO
Oshawa PUC Networks Inc.	-18.2%	0.15	-18.6%	0.15	NO
Ottawa River Power Corporation	-26.9%	0.00	-27.8%	0.00	NO
PUC Distribution Inc.	4.6%	0.30	8.1%	0.30	NO
Renfrew Hydro Inc.	-5.7%	0.30	-6.6%	0.30	NO
Rideau St. Lawrence Distribution Inc.	-14.2%	0.15	-13.8%	0.15	NO
Sioux Lookout Hydro Inc.	-40.3%	0.00	-44.7%	0.00	NO
Synergy North Corporation	2.1%	0.30	2.9%	0.30	NO
Tillsonburg Hydro Inc.	-14.3%	0.15	-16.3%	0.15	NO
Toronto Hydro-Electric System Limited	52.9%	0.60	53.4%	0.60	NO
Wasaga Distribution Inc.	-49.0%	0.00	-44.4%	0.00	NO
Welland Hydro-Electric System Corp.	-35.7%	0.00	-36.5%	0.00	NO
Wellington North Power Inc.	**-6.4%**	**0.30**	**-10.8%**	**0.15**	**YES**
Westario Power Inc.	-10.4%	0.15	-10.8%	0.15	NO

Table 5

Stretch Factor Assignments by Group

Group I (17 Distributors)		**Group II** (15 Distributors)		**Group III** (17 Distributors)		**Group IV** (3 Distributors)	**Group V** (2 Distributors)
Stretch Factor = **0%**		Stretch Factor = **0.15%**		Stretch Factor = **0.30%**		Stretch Factor = **0.45%**	Stretch Factor = **0.60%**
Cooperative Hydro Embrun Inc.	Lakefront Utilities Inc.	Burlington Hydro Inc.	Newmarket-Tay Power Distribution Ltd.	Alectra Utilities Corporation	Innpower Corporation	Canadian Niagara Power Inc.	Algoma Power Inc.
E.L.K. Energy Inc.	Milton Hydro Distribution Inc.	Centre Wellington Hydro Ltd.	Niagara-on-the-Lake Hydro Inc.	Atikokan Hydro Inc.	London Hydro Inc.	Hydro One Networks Inc.	Toronto Hydro-Electric System Limited
Entegrus Powerlines Inc.	Northern Ontario Wires Inc.	EPCOR Electricity Distribution Ontario Inc.	Niagara Peninsula Energy Inc.	Bluewater Power Distribution Corporation	North Bay Hydro Distribution Limited	Hydro Ottawa Limited	
ENWIN Utilities Ltd.	Orangeville Hydro Limited	Fort Frances Power Corporation	Oshawa PUC Networks Inc.	Elexicon Energy Inc.	Oakville Hydro Electricity Distribution Inc.		
Essex Powerlines Corporation	Ottawa River Power Corporation	GrandBridge Energy Inc.	Rideau St. Lawrence Distribution Inc.	Enova Power Corp.	PUC Distribution Inc.		
Grimsby Power Incorporated	Sioux Lookout Hydro Inc.	Hydro 2000 Inc.	Tillsonburg Hydro Inc.	ERTH Power Corporation	Renfrew Hydro Inc.		
Halton Hills Hydro Inc.	Wasaga Distribution Inc.	Kingston Hydro Corporation	**Wellington North Power Inc.**	Festival Hydro Inc.	Synergy North Corporation		
Hearst Power Distribution Company Limited	Welland Hydro-Electric System Corp.	Lakeland Power Distribution Ltd.	Westario Power Inc.	Greater Sudbury Hydro Inc.			
Hydro Hawkesbury Inc.							