

Scorecard - Toronto Hydro-Electric System Limited

9/29/2019

Performance Outcomes	Performance Categories	Measures	2014	2015	2016	2017	2018	Trend	Target		
									Industry	Distributor	
Customer Focus Services are provided in a manner that responds to identified customer preferences.	Service Quality	New Residential/Small Business Services Connected on Time	91.50%	96.90%	97.70%	98.32%	99.80%	↑	90.00%		
		Scheduled Appointments Met On Time	99.80%	99.90%	99.50%	99.37%	99.66%	↓	90.00%		
		Telephone Calls Answered On Time	71.90%	76.80%	64.70%	77.92%	80.15%	↑	65.00%		
	Customer Satisfaction	First Contact Resolution	81%	84	86%	88%	89%				
		Billing Accuracy	96.62%	97.54%	98.86%	99.24%	99.25%	↑	98.00%		
		Customer Satisfaction Survey Results	91%	91%	83%	83%	92%				
Operational Effectiveness Continuous improvement in productivity and cost performance is achieved; and distributors deliver on system reliability and quality objectives.	Safety	Level of Public Awareness		71.00%	71.00%	69.00%	69.00%				
		Level of Compliance with Ontario Regulation 22/04 ¹	C	C	C	C	C	→		C	
		Serious Electrical Incident Index	Number of General Public Incidents	3	0	0	1	6	↑		2
			Rate per 10, 100, 1000 km of line	0.295	0.000	0.000	0.035	0.209	↓		0.074
	System Reliability	Average Number of Hours that Power to a Customer is Interrupted ²	0.89	0.99	0.91	0.91	0.81	↓		1.11	
		Average Number of Times that Power to a Customer is Interrupted ²	1.18	1.31	1.28	1.18	1.14	↓		1.36	
	Asset Management	Distribution System Plan Implementation Progress	147%	100%	113%	99%	95%				
	Cost Control	Efficiency Assessment	5	5	5	5	5				
		Total Cost per Customer ³	\$967	\$1,000	\$1,044	\$1,042	\$1,123				
		Total Cost per Km of Line ³	\$70,688	\$73,309	\$27,819	\$27,825	\$30,210				
Public Policy Responsiveness Distributors deliver on obligations mandated by government (e.g., in legislation and in regulatory requirements imposed further to Ministerial directives to the Board).	Conservation & Demand Management	Net Cumulative Energy Savings ⁴		12.51%	34.58%	63.11%	78.00%			1,556.05 GWh	
	Connection of Renewable Generation	Renewable Generation Connection Impact Assessments Completed On Time	97.12%	100.00%	100.00%	81.08%	100.00%				
		New Micro-embedded Generation Facilities Connected On Time	100.00%	100.00%	100.00%	92.41%	100.00%	↓	90.00%		
Financial Performance Financial viability is maintained; and savings from operational effectiveness are sustainable.	Financial Ratios	Liquidity: Current Ratio (Current Assets/Current Liabilities)	0.68	0.67	0.61	0.64	0.53				
		Leverage: Total Debt (includes short-term and long-term debt) to Equity Ratio	1.65	1.57	1.45	1.34	1.20				
		Profitability: Regulatory Return on Equity	Deemed (included in rates)	9.58%	9.30%	9.30%	9.30%	9.30%			
			Achieved	7.41%	10.71%	12.18%	9.08%	9.33%			

1. Compliance with Ontario Regulation 22/04 assessed: Compliant (C); Needs Improvement (NI); or Non-Compliant (NC).

2. The trend's arrow direction is based on the comparison of the current 5-year rolling average to the distributor-specific target on the right. An upward arrow indicates decreasing reliability while downward indicates improving reliability.

3. A benchmarking analysis determines the total cost figures from the distributor's reported information.

4. The CDM measure is based on the 2015-2020 Conservation First Framework. 2018 results are based on the IESO's unverified savings values contained in the March 2019 Participation and Cost Report.

Legend:

5-year trend
 ↑ up ↓ down → flat

Current year
 ● target met ● target not met

2018 Scorecard Management Discussion and Analysis

The link below provides an Ontario Energy Board (“OEB”) document titled “Scorecard - Performance Measure Descriptions” that contains the technical definitions, plain language descriptions and an explanation of the measures included in the Distributor Scorecards (“Scorecard”) and examined through the related management discussion and analysis (“Scorecard MD&A”) which may inform the reader about how the measures and results for the year ended December 31, 2018 may be compared:

http://www.ontarioenergyboard.ca/OEB/Documents/scorecard/Scorecard_Performance_Measure_Descriptions.pdf

Scorecard MD&A – Overview

Toronto Hydro-Electric System Limited’s (“Toronto Hydro” or “utility”) Scorecard reflects its emphasis on the four corporate pillars: provide value for money; reliable and sustainable system operations; a fully engaged, safe and healthy workforce; and financial strength. As a mature utility serving a dense urban environment, Toronto Hydro continues to address the many challenges in rebuilding its deteriorating system to meet the needs of its customers during rapid growth.

For the 2018 reporting year, Toronto Hydro’s Scorecard performance shows several improvements to timely connections for new services, customer response timeliness, first contact resolution, billing accuracy, system reliability, and financial performance. The utility also continued its strong performance for all its customer service quality, connections of renewable generation, financial management, capital plan implementation, and conservation efforts. Moreover, Toronto Hydro faces a number of business conditions, the scope and nature of which are largely unique in the Ontario context. The utility’s cost efficiency performance, as measured by the OEB, is materially improved when normalized for the presence of these conditions (further described below).

Additionally, in the course of the utility’s 2015-2019 Custom Incentive Rate-setting application (EB-2014-0116) (“CIR Application”), the utility proposed to annually report certain performance measures specified in its Distribution System Plan (“DSP”). The CIR scorecard and related management’s discussion are included in Appendix A.

Important Note: The information disclosed in Toronto Hydro's Scorecard and discussed in the Scorecard MD&A is prescribed by and determined in accordance with the OEB's: *Report of the Board - Performance Measurement for Electricity Distributors: A Scorecard Approach* ("Scorecard Report"), *Electricity Reporting & Record Keeping Requirements* ("RRR"), *Accounting Procedures Handbook for Electricity Distributors* ("APH"), *Electricity Distribution Rate Handbook* ("EDR") and other related guidance documents (collectively, "OEB Documents"). In particular, the Scorecard's performance measures and the underlying financial figures are determined exclusively by reference to the calculation methods set out in the OEB Documents. Notably, unlike the financial statements that Toronto Hydro Corporation ("Corporation") is required to prepare and disclose, the Scorecard's performance measures are not prepared in accordance with International Financial Reporting Standards ("IFRS"). As a result, the performance measures presented in the Scorecard and Scorecard MD&A may differ from similarly-termed information disclosed in the Corporation's securities documents filed with the Ontario Securities Commission and available to the public. For an analysis of Toronto Hydro's financial performance as determined in accordance with IFRS, refer to the Corporation's audited consolidated financial statements for the year ended December 31, 2018 which may be read in conjunction with the *Management's Discussion and Analysis of Financial Condition and Results of Operations for the year ended December 31, 2018* ("Corporate MD&A") and the *Annual Information Form*, all of which are available on Toronto Hydro's website at www.torontohydro.com and System for Electronic Document Analysis and Retrieval ("SEDAR") website at www.sedar.com.

Note to Readers

The information provided by the utility regarding future performance (or what can be construed as forward-looking information) may be subject to a number of risks, uncertainties and other factors that may cause actual events, conditions or results to differ materially from historical results or those contemplated by the utility regarding its future performance. Some of the factors that could cause such differences include legislative or regulatory developments, financial market conditions, general economic conditions and the weather. For these reasons, the information on future performance is intended to be management's best judgment on the reporting date of the Scorecard, and could be markedly different in the future. Toronto Hydro undertakes no obligation to update or revise any forward-looking information, whether as a result of new information, future events or otherwise after the date hereof, except as required by law or by the OEB for the purposes of the Scorecard MD&A.

Service Quality

- **New Residential/Small Business Services Connected on Time**

In 2018, Toronto Hydro connected over 99% of the 5,575 new residential and small business services requested within the prescribed five business day standard once all conditions were met (or as otherwise agreed to by the customer and Toronto Hydro). This represents Toronto Hydro's best reported result to date and surpassed the industry target of 90% for the tenth consecutive year. Serving one of the fastest growing cities in North America, Toronto Hydro receives significant volumes of requests to connect new residential developments and businesses each year, and strives to connect all customers within the five business day standard.

- **Scheduled Appointments Met On Time**

In 2018, Toronto Hydro scheduled approximately 19,700 appointments with its customers and successfully met 99.66% of these appointments as scheduled. This is consistent with past performance and surpasses the industry target of 90% for the tenth consecutive year. Providing excellence in customer service is at the core of Toronto Hydro's corporate philosophy, and the utility is consistently looking for new ways to foster meaningful two-way communication, expand the range of service offerings, improve service convenience, and integrate new technological advancements to drive service level improvements.

- **Telephone Calls Answered On Time**

In 2018, Toronto Hydro received more than 431,800 calls (over 1,700 calls per business day) from its customers, which represents a decrease in call volume of 11% from 2017. Toronto Hydro's Call Centre agents answered 80% of these calls within 30 seconds after customers selected or were directed to speak to the utility's representatives, surpassing the industry target of 65%.

Customer preference for contacting the utility via email versus the telephone continued to climb in 2018. Toronto Hydro has deployed a strategy of offering self-serve options to customers and focusing on continuous improvement efforts to help manage call volumes and ensure customers are well served.

Customer Satisfaction

- **First Contact Resolution**

First Contact Resolution (“FCR”) measures a utility’s success in addressing customer inquiries the first time they contact the utility. This result represents the proportion of telephone enquiries regarding a residential or commercial account which were resolved in the first call. If a customer did not call back regarding the same account enquiry within 21 days of the initial call, the matter was deemed to be resolved within the first call. A broad range of topics are eligible for measurement including billing, moves, payments, online tools, and conservation programs.

In 2018, 89% of customer inquiries were resolved in the first instance of contacting the utility, which continues the steady improvement seen since 2013. This result is attributed to ongoing continuous improvement efforts to identify and mitigate process issues, improve staff training and optimize technology, all aimed at creating positive customer experiences.

- **Billing Accuracy**

Billing inaccuracies may be caused by a variety of reasons, including incomplete or inaccurate meter data and account information. In 2018, Toronto Hydro issued approximately 9.3 million bills, of which over 99% were accurate. The 2018 result surpassed the industry target of 98% and sustains the utility’s steady improvement in billing performance since 2014. Success in this area was primarily achieved through continuous improvement efforts to monitor, maintain or further prevent billing errors through process enhancements, training, and meter technology investments that reduce the need for estimated bills.

- **Customer Satisfaction Survey Results**

Distributors are required to report customer satisfaction results at least once every two years. Toronto Hydro adopted a survey methodology by the Innovative Research Group to meet evolving OEB performance requirements.

Toronto Hydro's overall customer satisfaction score as of the end of 2018 is 92%, which represents an increase of 9 percentage points from Toronto Hydro's 2016/2017 customer satisfaction score. Toronto Hydro saw the largest increase in customer satisfaction measures among billing and payment options, customer communications and price. The increased satisfaction in these areas are attributable to the utility's ongoing continuous improvement efforts such as increased communications around emergencies.

Safety

- **Public Safety**

Toronto Hydro takes public safety very seriously and regularly carries out activities to maintain and promote public safety in the vicinity of its distribution equipment. These activities include proactive contact voltage scans on street-level assets, taking prompt corrective action where potential safety issues are identified by staff and/or customers, and fostering a robust corporate safety culture.

- **Component A – Public Awareness of Electrical Safety**

Distributors are required to report the results of a standard safety awareness survey of the general public residing within their service territory at least once every two years. The survey, as designed by the Electrical Safety Authority ("ESA"), tests the respondents' electrical safety awareness across several topics, including powerline clearance distances, emergency procedures related to vehicular collisions with utility equipment and safety precautions related to excavation work.

For 2017 and 2018, the overall Public Safety Awareness Index across various categories for Toronto Hydro was 69%. The results remain stable from the previous survey being within the 4% margin of error.

- **Component B – Compliance with Ontario Regulation 22/04**

In 2018 and for the sixth consecutive year, the ESA deemed Toronto Hydro to be compliant with the requirements of the Ontario Regulation 22/04 which establishes the requirements for electrical distribution safety related to the design, construction and maintenance of electrical distribution assets owned by the utility. These results, which successfully met the utility’s established target, were achieved through the successful completion of and/or responses to due diligence inspections, public safety concerns, compliance investigations and annual compliance audits.

- **Component C – Serious Electrical Incident Index**

Serious electrical incidents are defined in Ontario Regulation 22/04. The OEB measures the number of general public incidents and the ratio of total eligible incidents per kilometer of line comprising a distributor’s distribution system. In the case of Toronto Hydro, the utility’s 2018 ratio was 0.209 incidents per 1,000 km of line, which amounts to a total of six incidents in the course of the year. All six incidents involved overhead lines down, of which four were caused by vehicle collisions.

System Reliability

- **Average Number of Hours that Power to a Customer is Interrupted**

In 2018, the System Average Interruption Duration Index (“SAIDI”) was 0.81 hours which was an improvement on the 2017 result and surpassed the OEB’s distributor-specific performance standard of 1.11 hours. The performance was impacted by slight increases in adverse weather, offset by reductions in defective equipment outages. The increased duration of outages due to adverse weather was predominantly due to the effects of storms.

- **Average Number of Times that Power to a Customer is Interrupted**

In 2018, the average annual number of electricity supply interruptions experienced by a customer was 1.14 which was an improvement on the 2017 result and surpassed the OEB's distributor-specific performance standard of 1.36 outages. The 2018 result is the best result in the last 15 years and the improvement from the previous year was due to a reduction in outages across most reporting categories - most significantly from defective equipment. Although outages from defective equipment have significantly improved as Toronto Hydro has continued to renew its system assets, continued investment is required to ensure that reliability and other risks posed by aging and deteriorating assets are appropriately managed.

Asset Management

- **Distribution System Plan (DSP) Implementation Progress**

This measure reflects the effectiveness of the utility in implementing its DSP by tracking the ratio of actual capital to approved capital for each reporting year. For 2018, the DSP implementation progress was 95%. Overall, by 2019, the five-year DSP Implementation from 2015-2019 on an aggregate basis is expected to be at 100%.

Toronto Hydro has hundreds of individual capital projects each year, and the selection and timing of those projects varies with dynamic customer and system needs, as well as weather, field conditions, permitting, site access, third party co-ordination, and other factors. A regular part of Toronto Hydro's operation is rebalancing the mix and timing of capital projects to adjust for these factors.

Cost Control

- **Efficiency Assessment**

The OEB assesses distributor efficiency using an econometric benchmarking model that compares each utility's actual total costs to total costs predicted by the model, which only includes Ontario-based utilities to determine the benchmark. While Toronto Hydro recognizes the importance of a sophisticated quantitative assessment of distributor efficiency, in the utility's view the methodology underlying the reported results does not optimally assess the efficiency performance of a utility of Toronto Hydro's size, operating conditions, and asset base. In 2018, the utility maintained its efficiency ranking according to the reported methodology.

On a modified benchmarking basis¹, considering total costs of urban utilities in Ontario and the United States, Toronto Hydro's efficiency performance was better than predicted by the econometric benchmarking model.

- **Total Cost per Customer**

This measure is defined as the sum of the utility's operations, maintenance and administration ("OM&A") and capital costs (including certain adjustments applied by the econometric benchmarking model) divided by the number of customers served by the utility. Toronto Hydro notes that the results of this measure do not account for an estimated 353,000 multi-unit dwelling residents occupying buildings that are metered by single "bulk" meters. Adding these residents to the calculation would significantly reduce Toronto Hydro's unitized total cost result.

In 2018, Toronto Hydro's total cost per customer increased by \$81 over the previous year. This increase is primarily due to increases in total cost due to undertaking capital work to replace deteriorating and aging assets and meet the growing demand on its distribution system.

- **Total Cost per Km of Line**

This measure is defined as the sum of the utility's OM&A and capital costs (including certain adjustments applied by the econometric benchmarking model) divided by the number of kilometers of distribution line operated by the utility to serve its customers. In 2018, Toronto Hydro's total cost per kilometer of line increased by \$2,385.

¹ EB-2018-0165, Exhibit 1B, Tab 4, Schedule 2, Econometric Benchmarking of Historical and Projected Total Cost and Reliability Levels.

Conservation & Demand Management

- **Net Cumulative Energy Savings**

Toronto Hydro's cumulative result of 1209 GWh of incremental persistent energy savings includes the achievement of 227 GWh in 2018.

Connection of Renewable Generation

- **Renewable Generation Connection Impact Assessments Completed on Time**

A Connection Impact Assessment ("CIA") is a detailed technical study that a utility must undertake prior to connecting all new qualifying sources of supply to its electricity network. The study ensures that generators seeking connection can be safely accommodated on the system without causing an adverse impact on system reliability for existing customers.

The number of CIAs completed on time improved to 100% in 2018 from 81% in 2017. The improvement is primarily due to enhanced operational processes.

- **New Micro-embedded Generation Facilities Connected On Time**

In 2018, Toronto Hydro successfully connected all 269 new micro-embedded generation facilities within the five business day standard or as otherwise agreed to by the customer and Toronto Hydro. The utility completed 100% of the connections on time, consistently surpassing the industry target of 90% for the sixth consecutive year.

Financial Ratios

Toronto Hydro strives to maintain its financial health and viability for the benefit of its customers, shareholder and other stakeholders. Consistent with the OEB's Renewed Regulatory Framework for Electricity ("RRFE"), which places Financial Performance among the four key outcomes for regulated utilities, Financial Strength is among the four corporate pillars underlying Toronto Hydro's strategic vision.

- **Liquidity: Current Ratio (Current Assets/Current Liabilities)**

Toronto Hydro notes that the OEB's "Liquidity Ratio" is calculated by dividing the sum of a distributor's "Current Assets" by the sum of the distributor's "Current Liabilities" (see the OEB's Scorecard Report). Toronto Hydro's "Current Assets" and "Current Liabilities" are determined in accordance with the requirements of the OEB's RRR and APH, and not by reference to IFRS. As a result, the "Liquidity Ratio" expressed in the Scorecard and this Scorecard MD&A may differ from similarly-termed financial ratios or information presented in documents that the Corporation is required to file under securities laws and which are available on SEDAR (www.sedar.com).

For analysis of the financial performance of the Corporation, including that of the utility, please refer to its Corporate MD&A available on Toronto Hydro's website (www.torontohydro.com) and SEDAR (www.sedar.com).

- **Leverage: Total Debt (includes short-term and long-term debt) to Equity Ratio**

Toronto Hydro notes that the OEB's "Leverage Ratio" is calculated by dividing a distributor's "Total Debt" by the aggregate "Shareholders' Equity" in the distributor (see the OEB's Scorecard Report). Toronto Hydro's "Total Debt" and "Shareholders' Equity" are determined in accordance with the requirements of the OEB's RRR and APH, and not by reference to IFRS. As a result, the "Leverage Ratio" expressed in the Scorecard and this Scorecard MD&A may differ from similarly-termed financial ratios or information presented in documents that the Corporation is required to file under securities laws and which are available on SEDAR (www.sedar.com).

For analysis of the financial performance of the Corporation, including that of the utility, please refer to its Corporate MD&A available on Toronto Hydro's website (www.torontohydro.com) and SEDAR (www.sedar.com).

- **Profitability: Regulatory Return on Equity – Deemed (included in rates)**

Toronto Hydro notes that the OEB Documents prescribe the form and manner in which a distributor is required to report on its “Regulatory Return on Equity” (“Regulatory ROE”) (see the OEB’s Scorecard Report and RRR). The Regulatory ROE is calculated on the same basis that Toronto Hydro uses to establish its “base rates” for a year, which is prescribed by the EDR. The Regulatory ROE is not determined in accordance with IFRS. As such, the Scorecard’s “Profitability” performance measures (“Deemed” and “Achieved” Regulatory ROE) may differ from similarly-termed expressions of profitability and return on equity presented in documents that the Corporation is required to file under securities laws and which are available on SEDAR (www.sedar.com).

For analysis of the financial performance of the Corporation, including that of the utility, please refer to its Corporate MD&A available on Toronto Hydro’s website (www.torontohydro.com) and SEDAR (www.sedar.com).

- **Profitability: Regulatory Return on Equity – Achieved**

Toronto Hydro notes that the OEB Documents prescribe the form and manner in which a distributor is required to report on its “Regulatory Return on Equity” (“Regulatory ROE”) (see the OEB’s Scorecard Report and RRR). The Regulatory ROE is calculated on the same basis that Toronto Hydro uses to establish its “base rates” for a year, which is prescribed by the EDR. The Regulatory ROE is not determined in accordance with IFRS. As such, the Scorecard’s “Profitability” performance measures (“Deemed” and “Achieved” Regulatory ROE) may differ from similarly-termed expressions of profitability and return on equity presented in documents that the Corporation is required to file under securities laws and which are available on SEDAR (www.sedar.com).

For analysis of the financial performance of the Corporation, including that of the utility, please refer to its Corporate MD&A available on Toronto Hydro’s website (www.torontohydro.com) and SEDAR (www.sedar.com).

Appendix A – CIR Scorecard

Performance Categories & Measures	2014	2015 ^a	2016 ^a	2017 ^a	2018 ^a
Customer-Oriented Performance Measures					
System Average Interruption Duration Index (“SAIDI”) - (hours)	0.89	0.99	0.91	0.91	0.81
System Average Interruption Frequency Index (“SAIFI”) - (# of times)	1.18	1.31	1.28	1.18	1.14
Customer Average Interruption Duration Index (“CAIDI”) - (hours)	0.75	0.76	0.71	0.77	0.71
Feeders Experiencing 7 or More Sustained Interruptions (“FESI”) - (# of feeders)	36	23	25	12	17
Momentary Average Interruption Frequency Index (“MAIFI”) - (# of times)	2.55	2.72	2.64	2.52	2.78
Plan Efficiency and Effectiveness Measures					
Distribution System Plan Implementation Progress - (%)	147	100	101	99	95
Planning Efficiency: Engineering and Support Costs - (%)	8	8	9	9	9
Supply Chain Efficiency: Materials Handling On-Cost - (%)	14	11	11	10	10
Construction Efficiency: Internal versus Contractor Cost - (%)	See CIR Scorecard Discussion				
Construction Efficiency: Asset Assembly Project Progress - (progress report)	See CIR Scorecard Discussion				
Asset and System Operation Performance Measures					
Outages Caused by Defective Equipment - (# of outages)	711	572	519	484	441
Stations Connection Capacity Availability - (# of stations)	0	0	1	1	2

a. Periods related to Toronto Hydro’s 2015-2019 OEB-approved CIR Application.

b. Shaded results are not comparable to those which are related to the 2015-2019 CIR Application as different calculation methodologies were utilized.

Customer-Oriented Performance Measures

- **System Average Interruption Duration Index (“SAIDI”), System Average Interruption Frequency Index (“SAIFI”), and Customer Average Interruption Frequency Index (“CAIDI”)**

These reliability measures are common measures of customer experience and present the average outage: (i) duration (SAIDI, represented in hours); (ii) frequency (SAIFI, represented by the number of times) experienced across the utility’s distribution system; and (iii) duration experienced by an average utility customer that has been interrupted (CAIDI, represented in hours). Consistent with the manner of presentation in the OEB-approved CIR Application, Toronto Hydro’s reliability measures are presented excluding contributions from items which are largely uncontrollable and unpreventable by the utility.

In 2018, Toronto Hydro customers experienced a (SAIDI) reliability rate of 99.99%. The utility’s performance for both SAIDI and SAIFI improved over the previous year, continuing the overall reliability improvements exhibited in recent years. The year-over-year improvements were primarily due to decreased contributions from defective equipment.

Toronto Hydro’s sustained reliability improvements are attributed to the utility’s focused investment on its distribution system. This investment has mitigated risks associated with aging and defective equipment and has made the system more resilient to adverse weather and environmental conditions. Toronto Hydro estimates that approximately one-third of its distribution assets have already exceeded or will reach their typical (expected) useful lives within the next five-year period, and many of these assets are exhibiting deterioration and poor conditions. As part of its system planning and asset management activities, Toronto Hydro diligently assesses the condition of its electric distribution assets, plans and executes appropriate maintenance and investment programs and regularly monitors its system in order to provide a high level of service reliability to its customers.

- **Feeders Experiencing Seven or More Sustained Interruptions (“FESI”)**

FESI measures the number of feeders on Toronto Hydro’s system that experienced seven or more interruptions exceeding one minute. The FESI measure is subject to significant year-over-year volatility.

In 2018, 17 feeders reached or exceeded the threshold of seven sustained interruptions which represents an improvement when compared to the results of four out of the last five years. The favourable trend in FESI since 2010 reflects the targeted capital investments and maintenance work performed by Toronto Hydro as a part of its investment programs, including the Worst Performing Feeders program.

- **Momentary Average Interruption Frequency Index (“MAIFI”)**

MAIFI measures the frequency of momentary outages (i.e. those less than one minute) and excludes contributions from extraordinary occurrences out of the utility’s control that cause significant disruptions to its distribution system (such as major weather-related events).

For 2018, the MAIFI result was 2.78. This result represents an increase from the prior years, which is due to a number of drivers including weather.

Plan Efficiency and Effectiveness Measures

- **Distribution System Plan Implementation Progress**

This measure reflects the effectiveness of the utility in implementing its DSP by tracking the ratio of actual capital to approved capital for each reporting year. For 2018, the DSP implementation progress was 95%. Overall, by 2019, the five-year DSP Implementation from 2015-2019 on an aggregate basis is expected to be at 100%.

Toronto Hydro has hundreds of individual capital projects each year, and the selection and timing of those projects varies with dynamic customer and system needs, as well as weather, field conditions, permitting, site access, third party co-ordination, and other factors. A regular part of Toronto Hydro’s operation is rebalancing the mix and timing of capital projects to adjust for these factors.

- **Planning Efficiency: Engineering and Support Costs**

This measure is a ratio of the annual capitalized labour for distribution plant activities (that is, excluding those related to the utility's general plant), over the total annual capital expenditures associated with the distribution plant. The measure is reportable on a five-year rolling average basis.

The 2014-2018 rolling average is 9%, which is consistent with the 2013-2017 average. Toronto Hydro notes that the annual results will fluctuate based on the type of capital programs and other factors related to the utility's annual work program.

- **Supply Chain Efficiency: Materials Handling On-Cost**

This measure represents the rate of eligible annual supply chain and warehousing costs, over the annual cost of materials processed through Toronto Hydro's warehouse in a given year.

In 2018, the rate was 10%, which is consistent with the 2017 rate. No significant variances were noted in 2018 compared to 2017.

- **Construction Efficiency: Internal versus Contractor Cost**

In keeping with the confidential treatment of this item during the CIR Application, owing to its commercially sensitive nature, Toronto Hydro reported on this measure in a confidential filing in its Custom Incentive Rate-setting application (EB-2018-0165).

- **Construction Efficiency: Asset Assembly Project Progress**

This annual progress report addresses the status of Toronto Hydro's framework for standardizing the estimation, management and reporting of construction work progress by the utility's internal crews.

In 2018, Toronto Hydro migrated enterprise software systems and implemented its Asset Assembly Units within the new enterprise software systems. Toronto Hydro uses these enhanced units to estimate costs for projects carried-out by internal labour resources. Toronto Hydro continues to work toward implementing the more granular data collection and analysis component of the asset assembly process that will allow the utility to gain additional insights into internal labour productivity on capital projects. Migration to the new system has required revisions to the asset assembly process that are ongoing; once complete, data will need to be collected over time to develop sufficient baselines for enhanced productivity analysis.

Asset and System Operation Performance Measures

- **Outages Caused by Defective Equipment**

This measure tracks the total number of sustained outages attributed to defective equipment which may result from equipment failures due to deterioration in condition.

In 2018, Toronto Hydro recorded 441 outages caused by defective equipment, the lowest number in the last fifteen years. The overall declining trend aligns with Toronto Hydro's general expectations and is consistent with the effects of the capital renewal programs set out in the DSP.

- **Stations Connection Capacity Availability**

This measure tracks the number of transformer stations where station demand is forecasted to exceed 90% of the station's firm capacity within the next 5 years ("threshold").

In 2018, the number of stations with forecasted demand exceeding the threshold increased by one station compared to the previous year for a total of 2 stations. The total number of transformer stations operated by Toronto Hydro remained consistent in 2018. The increasing trend reflects a forecasted need for load relief in Toronto's downtown core, required beyond the forecasted relief provided by Copeland TS Phase I.