TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1:

Reference(s): Exhibit KT1.1: VECC Letter Filed April 2, 2024

VECC's written Technical Conference questions for Panels 1, 2, 3, and 4.

RESPONSE:

Please see attached responses labeled Schedules JT1.1.1 to JT1.1.22.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.1:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-DRC 14 b), c) & d)
Exhibit 2B, Section E7.4, page 17

Preamble:

DRC 14 b) states: *"Toronto Hydro is unable to disaggregate EV charging infrastructure-specific costs from other cost drivers in these capital and operation demand-related programs."*

DRC 14 c) states: *"In the 2020-2024 rate period, Toronto Hydro received a Natural Resources Canada ("NRCAN") contribution of $255,000 related to the installation of EV charging infrastructure for Fleet and employee vehicles."*

DRC 14 d) states: *"Toronto Hydro continues to be of the opinion that these forecasts are reasonable, given future uncertainties in load materializing. Toronto Hydro has proposed a Revenue cap and Demand-Related DVA to address this concern".*

QUESTION (A) AND (B):

a) Exhibit 2B, Section E7.4 (page 17) indicates that THES' planned capital spending for 2025-2029 includes spending related to the installation of EV charging infrastructure? Has THES included any capital contributions from NRCAN associated with this spending?

b) Is any of the 2020-2024 or 2025-2029 spending on EV charging infrastructure associated with the installation of public EV charging stations that will be owned by THES?
    i. If yes, please outline THES's plans with respect to public EV charging stations (e.g., number of stations planned to be in-service each year and the kW rating for such stations).
    ii. If yes, where are the kWh/kVA associated with these stations included in THES's load forecast, what is the forecasted associated kWh/kVA usage for each year and what is the distribution revenues associated with these stations?

RESPONSE (A) AND (B):

Toronto Hydro notes that the January 29, 2024, evidence update removed the referenced Stations Expansion evidence because it related to City development plans triggering the need for an expansion at Scarborough TS which is no longer part of Toronto Hydro's application. For further clarification, the "plan" for EV charging mentioned in the original submission relates to the City of Toronto's Golden Mile Secondary Plan and not Toronto Hydro's Distribution System Plan.

Toronto Hydro's 2020-2024 and 2025-2029 investments have not included and do not include plans to install nor own public EV charging infrastructure as part of rate base. The utility has also not included capital contributions from NRCAN associated with such spending.

QUESTION (C):

c) With respect to DRC 14 d), is the a "Revenue cap and Demand-Related DVA" referenced here the same as the "Demand-Related Variance Account (DRVA)" referenced in Exhibit 9, Tab 1, Schedule 1, page 40?

RESPONSE (C):

The Revenue Cap and Demand-Related VA are separate, however the Demand-Related VA referenced in 1B-DRC-14 part (d) is the same as the Demand-Related Variance Account referenced in Exhibit 9, Tab 1, Schedule 1, page 40.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.2:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-VECC-45 (a)

Preamble:

3-VECC-45 a) states: *"The EV battery will be further depleted, assuming the same driving distances, during cold weather versus mild or hot weather. This will require more kWhs at charging. The average kWs in each hour will, therefore, increase by a corresponding amount to deliver the energy to the EV battery."*

QUESTION:

a) Please explain why the average kW would increase when the kW used in a charging session will be determined by the lesser of: i) the EV charging station kW rating and ii) the charging speed capability of the EV's battery? Won't the requirement for more kWh increase the charging time required as opposed to the average kW used?

RESPONSE (PREPARED BY CLEARSPRING):

The difference is that the load profile for the EV battery is for the average customer. So as the time expands for each individual customer that will tend to increase the kW used for the average EV load profile.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.3:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-VECC-48 (f)
Exhibit 3, Tab 1, Schedule 1, Page 24

Preamble:

3-VECC-48 f) asked for the 2022 energy delivered to THESL by rate class under the net metering program and what this represented as a portion of the total renewable energy produced in 2022 (per Table 27) for each customer class. The response referred to 3-VECC-45 c) which in turn referenced Clearspring working papers filed on a confidential basis.

Exhibit 3 states: *"The Renewable capacity forecasted for Toronto Hydro is allocated to the different rate classes. The Integration Model uses the 2022 participation percentages in Toronto Hydro's net metering program by rate class to estimate the rate class allocations."*

QUESTION (A):

a) Please provide a publicly accessible response to the specific questions posed in 3-VECC-48 f). If considered confidential, please explain why.

RESPONSE FROM CLEARSPRING (A):

The data used by Clearspring in our model is accessible via the working papers provided and discussed in our response to 3-VECC-45.

QUESTION (B):

b) With respect to the reference from Exhibit 3, what was the basis for the "participation percentages" used (e.g., were they based on number of customers, total energy produced, net energy delivered to THES, or some other metric).

RESPONSE FROM CLEARSPRING (B):

The allocation is based on the installed capacity for each rate class.

QUESTION (C):

c) Please clarify whether the forecasted Renewable (and the forecasted Non-Renewable capacity) includes or excludes generation capacity directly connected to (and selling to) the THES system (e.g., microFIT facilities).

RESPONSE FROM TORONTO HYDRO (C):

Toronto Hydro considers the DER capacity connected to its system to build its DER forecast, without distinguishing whether or not that generation capacity is selling to Toronto Hydro's system.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JTC1.1.4:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-VECC-50 (a) and (b)
Exhibit 3, Tab 1, Schedule 1, Appendix J, Pages 28-29

Preamble:

Appendix J states: *"Toronto Hydro provided the behind-the-meter Non-Renewable nameplate capacity forecast and historical data to Clearspring. It is Clearspring's understanding that these Non-Renewable DERs will be actively dispatched by the IESO."*

And

"Toronto Hydro provided the capacity factors by hour for the existing Non-Renewable generation on its system that are dispatched by the IESO."

And

3-VECC-50 a) states: *"Toronto Hydro does not collect detailed information about the number of DERs that are currently Market Participants (i.e., dispatched by the IESO)."*

QUESTION (A):

a) Please reconcile the response to 3-VECC-50 a) with the statement in Appendix J that "Toronto Hydro provided the capacity factors by hour for the existing Non-Renewable generation on its system that are dispatched by the IESO", as the statement suggests that THES does know which non-renewable DERs are dispatched by the IESO.

RESPONSE FROM CLEARSPRING (A):

Upon further review, Clearspring clarifies that our understanding on this point was mistaken, in terms of the load profiles being a sample and dispatched by the IESO. In fact, the report should now state that Toronto Hydro provided a load profile comprised of a sample of non-renewable DERs which were connected to the Toronto Hydro system in 2022 irrespective of IESO dispatching. This clarification does not affect the results of the model since both the 2022 sample load profile used in the model and the forecasted non-renewable DERs are consistent in their definition of being connected to the Toronto Hydro system irrespective of IESO dispatching.

RESPONSE FROM TORONTO HYDRO (A):

Toronto Hydro confirms its response to the interrogatory 3-VECC-50 (a). Toronto Hydro does not collect detailed information about the number of DER's that are currently Market Participants (i.e. dispatched by IESO).

QUESTION (B):

b) If not provided by Toronto Hydro (as suggested by VECC 50 a)), what is the basis for Clearspring's understanding that Non-Renewable DERs will be actively dispatched by the IESO?

RESPONSE FROM CLEARSPRING (B):

Please see the response to part (a).

QUESTION (C):

c) The Non-Renewable Production profile provided in Appendix J (page 29) indicates that production is virtually constant across all hours of the day suggesting that: i) customer owned Non-Renewable capacity is not used

dispatched by the IESO to manage system peaks and ii) customer owned Non-Renewable capacity is not used by customers to manage their own billing demands either overall or in terms of their coincidence with system peaks. Please confirm that this matches THES' understanding of how customer-owned Non-Renewable generation capacity is operated.

RESPONSE FROM CLEARSPRING (C):

Clearspring can confirm that in our model the Non-Renewable Production profile is close to constant across all hours of the day.

RESPONSE FROM TORONTO HYDRO (C):

Toronto Hydro does not collect detailed information about the production profiles of the DER's in its service territory that are Market Participants. In Toronto Hydro's experience, customers can and do manage their own billing demands with owned Non-Renewable DER.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.5:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
4-STAFF 295 e) & f)

QUESTION (A):

a) Does the response to STAFF 295 e) represent the allocation of 2025 Key Accounts costs to customer classes per the cost allocation model? If not, what to the results represent?

RESPONSE (A):

Yes, the table provided in response to 4-Staff-295(e) represents the allocation of the 2025 Key Accounts segment costs to customer classes, as per the cost allocation model.

QUESTION (B):

b) Please explain why, in 4-Staff 295 e), the Key Accounts costs allocated to the GS 50-999, GS 1,000-4,999, Large Use, Street Light and USL classes are all negative.

RESPONSE (B):

The allocated costs related to the Key Accounts segment for 2025 presented in 4-Staff-295(e) were derived by comparing the output of the cost allocation model with and without the Key Accounts segment costs. The negative impacts of the GS 50-999, GS 1,000-4,999, Large Use, Street Lighting and USL classes can be primarily attributed to O&M costs and the change in percentage allocation used to allocate Key Accounts-related costs within the model. Table 1 below demonstrates that as the O&M amount is

increasing, the allocation percentages are decreasing within the GS 50-999, GS 1,000-4,999, Large Use, Street Lighting and USL rate classes.

1 **Table 1: O&M Costs and Allocation Percentages by Rate Class, Including and Excluding Key Accounts Segment Costs**

O&M	Total	Residential	GS <50	GS 50-999 kW	GS 1,000-4,999 kW	Large Use >5MW	Street Light	USL	CSMUR
O&M Including Key Accounts Costs	**193,349,380**	80,359,397	31,853,228	45,466,739	14,161,894	6,026,509	4,748,432	643,527	10,089,652
O&M Excluding Key Accounts Costs	**191,883,922**	79,430,344	31,566,145	45,398,162	14,160,132	6,026,298	4,748,422	642,454	9,911,966
Variance	**1,465,458**	929,053	287,083	68,577	1,762	212	11	1,074	177,687
O&M Including Key Accounts Costs	**100.00%**	41.56%	16.47%	23.52%	7.32%	3.12%	2.46%	0.33%	5.22%
O&M Excluding Key Accounts Costs	**100.00%**	41.39%	16.45%	23.66%	7.38%	3.14%	2.47%	0.33%	5.17%
Variance	**0.00%**	0.17%	0.02%	-0.14%	-0.06%	-0.02%	-0.02%	0.00%	0.05%

QUESTION (C):

c) Does THES believe it would be appropriate to directly assign Key Account costs to customer classes?

RESPONSE (C):

The current methodology allocates the costs of the Key Accounts segment under the Customer Operations program[1] to a number of customer classes. The Key Accounts segment provides customer support primarily to Toronto Hydro's largest customers. As the team has evolved to meet customer needs, Toronto Hydro's strategic relationships with essential public service providers and developers have expanded, with support provided by this segment extending across all customer classes. In addition, the Key Accounts segment supports customers with multiple individual sites across rate classes that collectively exceed the 1,000 kW threshold, such as Real Estate Income Trusts ("REITs"). However, Toronto Hydro is open to revising the allocation of these costs to better reflect cost causality.

[1] Exhibit 4, Tab 2, Schedule 8.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.6:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
7-STAFF-325

The question asked for the derivation of the Billing and Collections weighting factors. Please provide a schedule (Excel Worksheet) that sets out the actual derivation by setting out the various metrics (i.e., cost categories) used, the total costs associated with each, the allocation factor used for each, the resulting allocation of each metric's costs to customer classes and the determination the resulting weighting factors.

RESPONSE:

Please refer to the appendix to this undertaking response.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.7:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
7-STAFF-326 a), b) & c)

QUESTION (A):

a) How was the sample size for each of the Residential, CSMUR and GS<50 customer classes determined? In particular, were they chosen so as to provide a certain level of confidence as to the accuracy of the results?

RESPONSE (A):

Toronto Hydro selected a sample size for these rate classes based on a sample size calculation with a confidence level of 95% and a 2% margin of error. For these rate classes, the percentages shown in IRR 7-STAFF-326 a) compared to the total large population selected on a random basis and statistically representative of the total.

QUESTION (B):

b) For the GS 50-999, GS 1,000-4,999 and Large Use classes, please confirm that the percentages reported represent the percentage of customers for whom there were “full data sets” and what is meant by a customer having a “full data set”. If not confirmed, what do the percentages represent?

RESPONSE (B):

Toronto Hydro selected the full data sets of active customers in the year 2019. Some data sets were excluded from the population due to factors such as move-in/move-out,

reclassification and missing data reads. “Full data sets” refer to the remaining customers after the exclusions.

The percentages are representative of customers with full data sets. For the GS 50-999, GS 1,000-4,999 and Large Use rate classes, Toronto Hydro selected totals from the full population that represents a 70% average of the population.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.8:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
7-VECC-79 e)
7-VECC 90 a), Appendix A, Tab I6.2

The response to 7-VECC-79 e) indicates the number of buildings in the CSMUR class is 472. However, the cost allocation model provided in response to VECC 90 a) indicates that the number of CSMUR buildings is 383. Please reconcile and update the calculation of the CSMUR Services weighting factor as required.

RESPONSE:

Toronto Hydro confirms that 383, the number used in the cost allocation model, is the correct number of buildings in the CSMUR rate class. The reference to 472 buildings in CSMUR rate class in response to 7-VECC-79(e) was an oversight and will be corrected in the updated version of cost allocation model.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.9:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
7-VECC-82
Exhibit 7, Tab 1, Schedule 3, Cost Allocation Model, Tabs I7.1 & I7.2

In THES' Cost Allocation Model, for the GS<50, GS 50-999, GS 1,000-4,999 and Large Use classes, the number of meters used for purposes of allocating meter capital costs (Tab I7.1) and meter reading costs (Tab I7.2) is set equal to the number of customers. However, VECC 82 indicates that for these classes the number of meters owned and read by THES exceeds the number of customers in each class. Please confirm that the number of meters and meter reads used for these classes in Tabs I7.1 and I7.2 should be increased accordingly. If not, why not.

RESPONSE:

Toronto Hydro confirms that the number of meters and meter reads used for these classes in Tabs I7.1 and I7.2 continue to be appropriate. The additional meters noted in 7-VECC-82 are paid for by customers and reflected in the capital contribution. The cost to read these additional meters is immaterial in the calculations, given the highly automated nature of this specific meter reading process.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.10:

Reference(s): **VECC'S Technical Conference Questions (PDF)**
7-VECC 86 c) – j)
Exhibit 7, Tab 1, Schedule 2

QUESTION (A):

With respect to Schedule 2, please confirm that columns (a) and (b) represent the best information THES has as to the customer class' relative use of electricity in each hour (i.e., its load profile)?

RESPONSE (A):

Schedule 2 shows an illustrative example of our methodology. Columns (a) and (b) represent the reasonable information available for Toronto Hydro's sampling methodology. This approach is consistent with Toronto Hydro's previous methodology approved by the OEB.

QUESTION (B):

Is it fair to say that the purpose of the calculations performed in Schedule 2, columns (c) through (g) is to, using these results, determine the load profile for the class' actual 2019 load which is then weather normalized in column (h)?

RESPONSE (B):

Toronto Hydro confirms the above statement.

QUESTION (C):

Is it fair to say that if one were to calculate the total of the values in column (c) for each rate class as a percentage of actual kWh use by each rate class the percentage would likely vary by rate class?

i. If not, why not?

ii. If yes, doesn't this impact the results in column (g) – i.e., for those classes were column c) represents a higher percentage of the class' actual load column (g) will overstate that class' percentage of total system load?

RESPONSE (C):

Yes, there is a small degree of variability as the methodology relies on the percentages.

QUESTION (D):

With respect to VECC 86 (i), in principle, if the sample provides the best estimate as to the relative hourly loads for the customer class then shouldn't the hour identified using the sample as having the highest load be the same as the hour where the highest load occurs for the estimated actual hourly load profile?

iii. If not, why not?

RESPONSE (D):

Toronto Hydro is aligned with the above statement. The methodology results in the highest load from the sample and the estimated actual load occurring in the same hour. Upon additional review, Toronto Hydro identified a minor oversight in its illustrative example submitted as part of Schedule 2 under Exhibit 7, Tab 1. Please refer to Appendix

A and Table 1 below for the updated version with revisions made to hour 17 and 19 in the sample data.

Table 1: Revised Demand Data Sample Methodology

Reference	Date	Hour	Cust 1	Cust 2	Cust 3	Cust 4	Cust 5	Cust 6	Cust 7	Cust 8	Cust 9	Cust 10	Total
Exhibit 7 Schedule 2	01-Jan-19	~~17~~ 19	0.46	1.03	1.01	0.79	1.18	0.51	0.37	0.19	0.35	1.63	**7.52**
Exhibit 7 Schedule 2	01-Jan-19	~~19~~ 17	2.29	2.4	0.88	0.89	0.78	1.13	1.33	0.52	0.96	1.51	**12.69**

QUESTION (E):

VECC 86 (e) asked "why wouldn't it be more appropriate to determine the hourly profile for the class by multiplying the hourly profile for the sample by the ratio of class's total energy to the energy use accounted for by the sample". The response outlines the approach THES used but does respond to the question posed. If the sample provides the best estimate of the customer class' relative hourly loads, please explain why the simpler approach proposed in VECC 86 (e) would not be appropriate.

RESPONSE (E):

There might be certain variations as to how the load profiles for the class are derived. Toronto Hydro believes that its methodology reasonably calculates the load profiles by rate class, for both non-coincident peak and coincident peak demand, because it relies on reliable sample data set, rate class information, and wholesale data, it estimates the rate class allocation by the hour. Toronto Hydro's methodology is also consistent with the last rate application approved by the Board.

ALL DATA are for ILLUSTRATIVE USE ONLY

	HouR	Cust 1	Cust 2	Cust 3	Cust 4	Cust 5	Cust 6	Cust 7	Cust 8	Cust 9	Cust 10	Total	Avg	Sample Rate Class Hourly Profile for Jan	Total of All rate Classes (Includes Sample Rate Class)	Sample Rate Class % of Sum of all Rate Classes	IESO Purchased and Whoesale Market Participants Metered Load	Sample Rate Class portion of the Total System Load.	Weather Correction Factor for Sample Rate Class is 0.964395		Demand scaled to the 2025 load forecast based on the ratio of 2025 sample rate class kWh to sample rate Class Test year kWh.	EV and DER Consumption Combined	Net Load with EV and DER Consumption
									21.056				Sample size = 10	Total Number of Customers in Sample Rate Class in test year = 20									
													(b) = (a) / 10	(c) = (b) * 20		(e) = (c) / (d)		(g) = (e) * (f)	(h) = (g) * 0.964395		(i) = (h) * 1.003497		
												(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)		(i)	(j)	(k)
01-Jan-19	1	0.37	1.01	0.85	0.67	0.52	1.5	0.34	0.19	0.38	1.4	7.23	0.723	14.46	318.12	5%	349.93	15.91	15.34		15.39	2.16	17.56
01-Jan-19	2	0.25	0.92	0.58	0.62	0.51	0.99	0.56	0.19	0.54	1.45	6.61	0.661	13.22	290.84	5%	349.01	15.86	15.30		15.35	1.68	17.03
01-Jan-19	3	0.32	0.86	0.51	0.62	0.59	0.72	0.44	0.2	0.55	1.22	6.03	0.603	12.06	265.32	5%	318.38	14.47	13.96		14.01	1.28	15.29
01-Jan-19	4	0.29	0.67	0.59	0.63	0.53	0.68	0.37	0.17	0.46	1.42	5.81	0.581	11.62	174.30	7%	209.16	13.94	13.45		13.49	0.96	14.46
01-Jan-19	5	0.26	0.81	0.6	0.65	0.5	0.7	0.34	0.2	0.27	1.28	5.61	0.561	11.22	145.86	8%	175.03	13.46	12.98		13.03	0.64	13.67
01-Jan-19	6	0.33	0.87	0.61	0.72	0.6	0.8	0.6	0.22	0.39	1.44	6.58	0.658	13.16	128.97	10%	154.76	15.79	15.23		15.28	0.41	15.69
01-Jan-19	7	0.24	0.65	0.6	0.71	0.52	0.99	0.47	0.17	0.3	1.3	5.95	0.595	11.90	110.67	11%	132.80	14.28	13.77		13.82	0.23	14.05
01-Jan-19	8	0.18	0.65	0.83	0.66	0.44	0.98	0.44	0.21	0.32	1.37	6.08	0.608	12.16	109.44	11%	131.33	14.59	14.07		14.12	0.14	14.26
01-Jan-19	9	2.16	0.81	1.03	0.61	0.54	0.85	0.37	0.21	0.35	1.41	8.34	0.834	16.68	141.78	12%	226.85	26.69	25.74		25.83	0.09	25.92
01-Jan-19	10	0.63	0.59	0.79	0.63	0.54	0.67	0.47	0.36	0.32	1.44	6.44	0.644	12.88	103.04	13%	123.65	15.46	14.91		14.96	0.06	15.02
01-Jan-19	11	1.45	1.12	0.82	0.95	0.61	0.88	1.21	0.19	0.27	1.44	8.94	0.894	17.88	107.28	17%	128.74	21.46	20.69		20.76	0.06	20.82
01-Jan-19	12	0.66	1.02	0.82	0.88	0.58	0.8	0.58	0.28	0.32	1.33	7.27	0.727	14.54	116.32	13%	209.38	26.17	25.24		25.33	0.07	25.40
01-Jan-19	13	2.71	0.91	0.93	1.18	0.72	0.79	0.71	0.23	0.75	1.42	10.35	1.035	20.70	175.95	12%	193.55	22.77	21.96		22.04	0.08	22.11
01-Jan-19	14	0.83	0.95	0.8	0.96	0.62	0.87	0.59	0.19	0.58	1.67	8.06	0.806	16.12	145.08	11%	**365.04**	40.56	**39.12**	**Sample Rate Class Jan CP**	**39.25**	0.09	**39.34**
01-Jan-19	15	0.64	0.98	0.67	1.14	0.57	0.53	0.5	0.2	0.58	1.45	7.26	0.726	14.52	145.20	10%	188.76	18.88	18.20		18.27	0.13	18.40
01-Jan-19	16	0.57	0.78	0.75	0.77	1.43	0.51	0.25	0.14	0.5	1.6	7.3	0.73	14.60	160.60	9%	192.72	17.52	16.90		16.96	0.19	17.15
01-Jan-19 /C	17	2.29	2.4	0.88	0.89	0.78	1.13	1.33	0.52	0.96	1.51	12.69	1.269	25.38	152.28	17%	261.97	43.66	**42.11**	**Sample Rate Class Jan NCP**	**42.25**	0.27	**42.53**
01-Jan-19	18	1.14	2.79	1.01	0.84	0.7	1.03	0.33	0.26	0.44	1.49	10.03	1.003	20.06	220.66	9%	264.79	24.07	23.21		23.30	0.35	23.64
01-Jan-19 /C	19	0.46	1.03	1.01	0.79	1.18	0.51	0.37	0.19	0.35	1.63	7.52	0.752	15.04	165.44	9%	335.02	30.46	29.37		29.47	0.40	29.87
01-Jan-19	20	0.8	2.54	0.88	0.94	0.88	0.96	1.85	0.58	0.57	1.38	11.38	1.138	22.76	273.12	8%	327.74	27.31	26.34		26.43	0.44	26.87
01-Jan-19	21	1.16	2.1	1.19	1.2	0.75	1.26	0.91	0.66	0.7	1.77	11.7	1.17	23.40	304.20	8%	334.62	28.08	27.08		27.17	0.48	27.66
01-Jan-19	22	0.8	1.15	1.12	1.04	0.62	1.15	0.79	0.53	0.73	1.88	9.81	0.981	19.62	274.68	7%	329.62	23.54	22.71		22.79	0.50	23.29
01-Jan-19	23	0.6	0.98	1.02	0.79	0.63	1.12	0.51	0.81	0.7	1.93	9.09	0.909	18.18	272.70	7%	327.24	21.82	21.04		21.11	0.50	21.61
01-Jan-19	24	0.52	1.02	0.64	0.78	0.64	1.01	0.34	0.34	0.71	1.86	7.86	0.786	15.72	251.52	6%	301.82	18.86	18.19		18.26	2.55	20.81

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.11:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
7-VECC-79 e)
7-VECC-90, Appendices A & C, Tabs I5.2 & I6.2
Exhibit 7, Tab 1, Schedule 3, Cost Allocation Model, Tabs I5.2 & I6.2

The Application's Cost Allocation model uses number of units as the basis for the customer count for the CSMUR class and a Services weighting factor of 0.0047956353439605. In VECC 90, Appendices A & C the number of buildings is used as the basis for the customer count for the CSMUR class. However, a weighting factor of 0.0047956353439605 is still used for the allocation of Services costs to CSMUR. Shouldn't the Services weighting factor in Appendices A & C be revised (and set equal to 1.0)?

RESPONSE:

Toronto Hydro agrees that Services weighting factor Appendices A & C should be revised to "1" for CSMUR.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO

VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.12:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
8-CCMBC-21
OEB March 28, 2024 Letter re: Consultation on Policy for Standby Rates
Exhibit 8, pdf page 8

Preamble:

Exhibit 8 (pdf page 8) states:

"*Toronto Hydro is not proposing final standby rates in this application*."

The OEB's March 28th Letter states:

"*Electricity distributors with interim standby rates should inform their standby customers of the intention to apply to make the existing interim standby rates final, and then apply for this at the time of the next rate application. Distributors may choose to seek finalization of interim stand by rates in either rebasing or incentive rate-setting mechanism (IRM) applications as long as there is evidence of notice provided to customers for which any standby rate applies*."

The response to 8-CCMBC-21 describes the application of the Standby Power Service Classification's variable Distribution Volumetric Rate as follows:

"*The Distribution Volumetric Rate normally applies to the amount of backup distribution capacity a customer contracts for and the variable rate (per kVA) is the same as is applicable to the customer's demand under the standard*

distribution rates. However, to the extent that the backup capacity is actually drawn upon by the customer, as reflected in the customer's peak metered demand for the billing period, the Distribution Volumetric Rate is correspondingly reduced."

QUESTIONS (A) AND (B):

a) Given the OEB's Letter of March 28th, is it still THES' proposal not to seek finalization of its Standby rate as part of this Application?

b) If not seeking finalization as part of this Application, when would THES anticipate doing so?

RESPONSE (A) AND (B):

In accordance with direction provided by the OEB in its letter dated March 28, 2024, regarding the Consultation on Policy for Standby Rates (EB-2023-0278), Toronto Hydro is amending its position regarding relief sought for standby rates in this application. Toronto Hydro seeks finalization of its interim standby rates on or before December 31, 2024, and the discontinuation of the standby rate effective January 1, 2025.

Toronto Hydro's standby rate is currently applied to six customers. In 2023, these charges resulted in revenue of $20,000, as indicated in interrogatory response 8-CCMBC-21(e).

Toronto Hydro's methodology and harmonization of standby rates was approved on an interim basis in the 2006 rate application (EB-2005-0421) post-amalgamation of its five former standby rates.[1] The purpose of the standby rates was to recover the cost of providing reserve capacity to customers with a load displacement nameplate generation

[1] Ontario Energy Board (EB-2005-0421) Decision with Reasons, April 12, 2006, section 6.2.1, page 40.

capacity equal to or greater than 500 kVA as well as a requirement for backup distribution capacity if the load displacement (parallel) generation is not operating.[2]

The purpose of standby rates was to recover cost of capital, operations and maintenance, taxes and administration to provide capacity that was not recovered by standard rates, as the standard rates were driven on the historical assumption of continuous use[3]. The standby rates original intent was to ensure the expected uptake in the standby rate customers class avoided burdening all other ratepayers.

In the OEB's letter dated March 28, 2024, the OEB recognized that distributors are best positioned to know their system and cost causation and are encouraged to understand their customers' needs concluding that, in some cases "circumstances may not warrant the need for a standby rate."[4] In alignment with the OEB's letter, and the feedback provided by stakeholders are part of (EB-2023-0278). Toronto Hydro proposes to discontinue the standby rate effective January 1, 2025 because it is no longer aligned with the policy objectives of encouraging the adoption of Distributed Energy Resources (DER) and advancing the integration of non-wires solutions into distribution system planning. In the future, as DER proliferation and non-wires capabilities advance and mature, it may be worthwhile to revisit the merits of standby rate proposal, based on more advanced data analytics and operational experience managing the integration of these technologies onto the local grid. However, at this early stage of the energy transition, Toronto Hydro believes that the objectives of enabling and integrating DERs safely, reliably and efficiently would not be well served by a standby rate.

[2] Ontario Energy Board (EB-2005-0421) Tab 10, Appendix 10-D, page 1 to 9
[3] Ontario Energy Board (EB-2005-0421) Tab 10, Appendix 10-D, page 1 of 9
[4] Ontario Energy Board, (EB-2023-0278) Consultation on Policy for Standby Rates, March 28, 2024, p. 4

Toronto Hydro's maintains regular communication with Key Account customers, including current standby rate customers, and is committed to collaborative efforts and understanding future rate design needs that best fit future circumstances. Written notice with a period of 30 days to invite comment on this revised proposal to finalize and terminate the standby rate is being provided to the six standby rate customers with follow-up communication efforts by the Key Accounts team.

The standby rate and the bill impacts of discontinuing it are negligible for the affected customers, all of which are in the General Service 1-5MW or Large Use rate classes. Given the modest revenues of $20,000, terminating the standby rate will not have a material impact to the 2025 revenue requirement.

QUESTIONS (C) AND (D):

c) With respect to the response to CCMBC 21, please explain how THES determines that backup capacity has actually been drawn upon by the customer.

d) In such events is it the Distribution Volumetric Rate that is reduced or is it the billing demand (i.e., kVA) to which the standard distribution rates are applied that is reduced. Please also explain how the amount of the reduction is determined.

RESPONSE (C) AND (D):

As question (c) suggests, there are technical challenges to identifying electricity not drawn. Accordingly, Toronto Hydro has only applied a fixed standby rate. For example, in the current rate period, Toronto Hydro charges $283.28 per 30 days.

QUESTION (E):

e) Are customers with their own generation required to contract for Standby Power Service?

i. If not, would a customer with its own generation that contracts for Standby Power have a higher or lower bill than one who does not (all other things being equal) when: i) the backup capacity provided by the LDC (i.e., Standby Power) is not used in a given month and ii) backup capacity provided by the LDC (i.e., Standby Power) is used in a given month?

RESPONSE (E):

Eligible customers with their own generation are given the choice to contract standby backup power service. The customer is charged $283.28 per 30 days in scenario i) and ii).

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.13:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
7-VECC-78 a) & b)
8-STAFF-334
8-ED-45 d)
Exhibit 6, Tab 1, Schedule 2 (2025 RRWF), Tab 11 (Cost Allocation)

Preamble:

STAFF 334 sets out the forecast fixed and variable distribution revenue by customer class for 2025-2029.

ED 45 d) states:

> "Toronto Hydro proposes in Exhibit 1B, Tab 1, Schedule 3, section 7 that for the years 2026 to 2029, the final approved base revenue requirements be allocated to each rate class based on the same allocations to rate classes established in this proceeding for 2025. …..Toronto Hydro will hold constant the fixed/variable revenue split for each rate class determined in 2025 for the purpose of designing rates from 2026 to 2029."
>
> *(emphasis added)*

VECC 78 a) states:

> "The revenue requirement for 2025 will be escalated using the Custom Revenue Cap Index (CRCI) to come up with revenue requirement for 2026. Subsequently, the base revenue requirement for 2026 will be distributed across various rate classes and divided into fixed and variable split, both based on the 2025 data. In

the final stage of rate design, the fixed and variable revenue for each rate class will be divided by the forecasted 2026 billing determinants to determine the distribution rates."

VECC 78 b) states:

"Yes, the distribution rates increase will vary across the classes, depending on the annual projected growth in billing determinant for each rate class."

QUESTION (A):

a) With respect to ED 45 d), does THES propose to use the percentage allocations to rate classes as shown in the 2025 RRWF, Tab 11 (Cost Allocation), Table A to establish the service revenue requirement by rate class for 2026 to 2029?
   i. If yes, how does THES propose to allocate the forecast Miscellaneous Revenues to rate classes for each of the years 2026-2029 in order to determine the base revenue requirement by rate class for each of these years?
   ii. If not, how does THES propose to determine the base revenue requirement by customer class for each of the years 2026-2029?

RESPONSE (A):

No, Toronto Hydro uses the final base revenue requirement for 2025 from Tab 11 (Cost Allocation Model), Table B, Column 7D to allocate the base revenue requirement for 2026-2029.

QUESTION (B):

b) It is noted that THES has not applied its Cost Allocation Model to the forecast revenue requirements for 2026-2029. However, if cost allocations were

undertaken for these years please confirm that for the results to produce overall percentage allocations to customer classes similar to those in 2025, the proportion of costs allocated to the various USOAs and the allocation factors (%) for each customer class would have to be similar to those for 2025.

RESPONSE (B):

Toronto Hydro cannot speculate on the approach presented above to confirm if it would be similar to those in 2025. Toronto Hydro kept a mechanistic approach for 2026-2029 to develop the rates in alignment with the Renewed Regulatory Framework for Electricity Distributors.

QUESTION (C):

c) With respect to VECC 78 b) please confirm that it will be those customer classes whose billing determinants are growing at a slower rate than average that will experience the higher distribution rate increases.

RESPONSE (C):

Toronto Hydro confirms that customer classes whose billing determinants are growing at a slower rate than average will experience higher distribution rate increases.

QUESTION (D):

d) Would it be reasonable to assume that for those customer classes where the billing determinants for 2026-2029 are growing at a slower rate, their allocation factors (as used in the cost allocation model) would also be growing at a slower rate?

RESPONSE (D):

Yes, it is reasonable to assume that for those customer classes where the billing determinants for 2026-2029 are growing at a slower rate, their allocation factors (as used in the cost allocation model) would also be growing at a slower rate.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.14:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
8-STAFF-335
8-SEC-123 b)

Preamble:

The response to STAFF 335 describes THES' rate smoothing proposal as follows:

> "Toronto Hydro's proposal for rate smoothing does not defer cost recovery; it carefully times the disposition of DVA balances in order to smooth the overall change in the distribution portion of the customer bill. In accordance with OEB rules for DVAs, the balances of those accounts accumulate interest – a credit or debit as applicable – so long as they carry a balance."

SEC 123 b) shows the annual customer bill impacts before the rate smoothing proposal.

a) What were the assumed recovery periods for the various DVA balances for purposes of SEC 123 b)?

RESPONSE:

Toronto Hydro assumes a recovery period of five years for all the DVA's balances.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.15:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-VECC-22 d)
3-VECC-23 d)
3-VECC 23 e), Appendix A

Preamble:

VECC 22 d) states:

> "Toronto Hydro sources its population data from the Conference Board of Canada, and extends the forecast using simple linear trend when the forecast does not cover the full rate application period."

VECC 23 d) states:

> "Toronto Hydro sources its employment data from the Conference Board of Canada, and extends the forecast using simple linear trend when the forecast does not cover the full rate application period."

QUESTION (A):

a) With respect to the 2022-2029 population data provided in VECC 23 e), Appendix A (Variables Tab, Column L) please indicate which values are based on:i) actual population, ii) the CBOC forecast values and iii) a simple linear trend.
    i. For those population values based on a simple linear trend, what was the basis for the trend (e.g. what years' values were used to establish the trend)?

RESPONSE (A):

The customer forecast submitted on April 2, 2024 relies on CBOC values for the 2022-2028 population data, while 2029 is based on a simple linear trend. The simple linear trend for the 2029 forecast relies on the 2024-2028 CBOC forecasted values.

QUESTION (B):

b) With respect to the 2022-2029 employment data provided in VECC 23 e), Appendix A (Variables Tab, Column M) please indicate which values are based on: i) actual employment, ii) the CBOC forecast values and iii) a simple linear trend.

   i. i. For those employment values based on a simple linear trend, what was the basis for the trend (e.g. what years' values were used to establish the trend)?

RESPONSE (B):

The customer forecast submitted on April 2, 2024 relies on CBOC values for the 2022-2028 employment data, while 2029 is based on a simple linear trend. The simple linear trend relies on 2024-2028 CBOC forecasted values.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.16:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-STAFF-278 b)
Exhibit 3, Tab 1, Schedule 1, Appendix H

QUESTION (A):

a) With respect to Staff 278 b), for each of the years 2020 to 2022 the reduction in the GS 50-999 customer count due to reclassification exceeds the increase in the GS<50 customer count due to reclassification. For each of these years what accounts for the difference?

RESPONSE (A):

The reclassification captured in these two classes is the product of the model output and not the manual adjustments. Even with the high-degree of predictive accuracy and adjusted R of 98-99%, there is a small degree of the variability of reclassification count between the two classes.

QUESTION (B):

b) In Appendix H, for the forecast years 2023-2029 why was the RECLASS3 dummy variable assigned a value of 1.0?

RESPONSE (B):

The dummy variable was assigned a value of 1.0 because the customer trends suggest that the customer numbers would not immediately revert back to pre-reclassification levels; assigning it any value other than 1.0 may suggest that.

QUESTION (C):

c) For the forecast years 2023-2029 were any specific adjustments made to the forecast customer counts for the other customer classes (i.e., other the GS<50 and GS 50-999) to account for the fact that the RECLASS3 dummy variable decreases the monthly customer count for the GS 50-999 class by 373.04 but only increases the GS<50 monthly customer count by 122.44 (per Exhibit 3, Tab 1, Schedule 1)? It not, why not?

RESPONSE (C):

No manual adjustments were made to the forecast customer counts in these classes. Toronto Hydro's proposed methodology accounts for reclassification through the statistical model. Please see response a) above.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.17:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-STAFF-276 b)
3-SEC-79 b)
3-VECC-25 b)

Preamble:

STAFF 276 b) states:

"Customer reclassification contributes to the decreasing trends in the GS 1,000-4,999 kW and Large Use rate classes."

SEC 79 b) states:

> "The GS 1000-4999 kW and Large Use class customer count forecasts were developed with a combination of 1) customer counts from new connections during this period, and 2) forecasted changes in customer counts due to reclassification."

VECC 25 b) states:

> "The GS 1,000-4,999 customer count forecast declines between 2023 and 2025 due to forecasted impacts from reclassification. The forecasted reclassification was based on a 10-year average reclass (prior to the COVID-19 pandemic)."

QUESTION (A):

a) With respect to Staff 276 b) and SEC 79 b), for each of the GS 1,000-4,999 and Large Use classes, please provide a schedule that breaks down the annual increase in customer count forecast for each of the years after 2022 up to 2029 as between: 1) customer counts from new connections during this period, and 2) forecasted changes in customer counts due to reclassification.

RESPONSE (A):

Please refer to the table below for the analysis of the annual changes in customer count forecast for years 2024-2029 for the GS 1,000-4,999 and Large Use classes.

Please note that the information is based on the rate application update, submitted to the OEB on April 2, 2024.

	GS 1,000-4,999 kW	
Year	**Customer counts from new connections during this period**	**Forecasted changes in customer counts due to reclassification**
2024	6	-2
2025	4	-2
2026	12	-2
2027	0	-2
2028	5	-2
2029	0	-2
	Large User	
Year	**Customer counts from new connections during this period**	**Forecasted changes in customer counts due to reclassification**
2024	0	-1
2025	0	-1
2026	5	-1
2027	0	-1
2028	0	-1
2029	0	-1

QUESTION (B):

b) Between the results of the regression equations used for the GS<50 and GS 50-999 classes customers counts and the assumptions underlying the forecast customer counts for GS 1,000-4,999 and Large Use, do the impacts of customer reclassification across all classes net out to zero for each of the years 2023-2029?

i. If yes, please provide a schedule setting out impact of customer reclassification for each of these customer classes demonstrating that the net impact is zero.

ii. If not, do any adjustments need to be made to the forecast customer counts?

RESPONSE (B):

No, Toronto Hydro believes the proposed reclassification reasonably captures reclassification impacts. For GS 1,000-4,999 and Large Use rate classes, Toronto Hydro's methodology accounts for reclassification based on a 10-year average reclass (prior to COVID-19 pandemic). Please refer to JT1.1.16 parts a) and c) for Toronto Hydro's reclassification methodology for GS<50 kW and GS 50-999 kW rate classes.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.18:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-Staff-277 (b)
3-Staff-284 (a)

Preamble:

STAFF-277 b) states:

"*The City of Toronto is the sole customer in the Street Lighting rate class for both historic and forecast years. Toronto Hydro does not own street lighting on Ministry of Transportation expressways (e.g. Hwy 401*)."

STAFF 284 a) states:

"*Since the completion of the transactions in EB-20090180/1/2/3, Toronto Hydro has owned certain street lighting assets in the city of Toronto that were deemed by the OEB to serve a distribution purpose and Toronto Hydro Energy has owned other street lighting and expressway lighting assets that were deemed not to serve a distribution purpose.*"

QUESTION (A):

a) Please clarify whether it is the City of Toronto, Toronto Hydro Energy or some other party that owns street lighting on expressways and pays for the electricity distribution service provided by THES.

RESPONSE (A):

Toronto Hydro Energy Services Inc. ("THESI"), which is a non-rate regulated affiliate of the LDC, owns the street lighting assets on the Don Valley Parkway ("DVP"), William R. Allen Road and Gardiner expressways. The Province of Ontario owns the street lighting assets on the provincial highways (i.e. 401, 427). The utility usage for the DVP, William R. Allen Road and Gardiner expressways street lighting is paid for by the City of Toronto. The provincially-owned assets are metered and billed and included in the appropriate commercial rate class.

QUESTION (B):

b) If not the City of Toronto then why is the City of Toronto the sole street lighting customer and what customer class is street lighting on expressways considered to be in?

RESPONSE (B):

THESI-owned expressway streetlighting is billed as part of the streetlight rate class.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.19:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-VECC 41 (a)
3-VECC 42 (a) and (b)

Preamble:

VECC 41 a) states: *"Toronto Hydro utilized data from the Ontario Ministry of Transportation to obtain the number of LDEVs in Toronto for 2018 to 2021. Toronto's share of Ontario's new vehicles is assumed to be constant over time at 12.7%. The forecast of new vehicle registration and total vehicles registered each year was built up to achieve 20% of the total LDV fleet in 2030, a target provided by City of Toronto's Electric Vehicles Strategy."*

VECC 42 b) states: *"The resulting MD and HD vehicles in Toronto were used, in conjunction with the EV adoption rates described in 3-VECC42, a) to develop the MDEV and HDEV vehicle forecasts. Please to refer to Appendix A for supporting calculations."*

QUESTION (A):

a) Does the City of Toronto have any specific policies or programs designed to achieve its 20% EVLD target by 2030?

RESPONSE (A):

Yes, the City of Toronto has specific policies and programs designed to achieve its goals for its 2030 targets. Further details on the City of Electric Vehicle Strategy and the most recent information can be found on the City's website at the following links:

- City of Toronto, Electric Vehicle Strategy: https://www.toronto.ca/wp-content/uploads/2020/02/8c46-City-of-Toronto-Electric-Vehicle-Strategy.pdf
- City of Toronto, Electric Vehicles: https://www.toronto.ca/services-payments/water-environment/environmentally-friendly-city-initiatives/reports-plans-policies-research/electric-vehicles/

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.20:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-VECC 31 (c) & (d)
Exhibit 3, Tab 1, Schedule 1, Appendix C

Preamble:

VECC 31 c) states:

"Toronto Hydro used a 5-year average monthly distribution of consumption to account for the fact that in the first year the CDM savings realized will be less than the annualized value. Please refer to Exhibit 3, Tab 1, Schedule 1, Appendix C for the full calculations."

QUESTION (A):

a) A review of Appendix C indicates that application of the monthly distribution percentages results in the full annualized savings being allocated to all months even in the first year the CDM savings are realized. Does THES agree?
   i. If not, please indicate precisely where and how Appendix C accounts for the fact that the first year CDM savings will be less than the annualized value.
   ii. If yes, please revise the values (both historic and forecast) for the CDM variables used to reflect this fact, re-estimate the regression models and provide a revised forecast by customer class for 2023-2029, as originally requested in VECC 31 d).

RESPONSE (A):

Yes, Toronto Hydro used a 5-year average monthly distribution of consumption to account for the fact that the annual CDM savings need to be distributed throughout the year and has not made any adjustments to account for the fact that in the first year the CDM savings realized will be less than the annualized value. However, the utility no longer has the level of project installation and savings details to calculate realization rates since its calculations for the 2015 CIR application, and can not determine how the CDM savings may actually be realized.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.21:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-VECC-35 (a)-(c)

Preamble:

The responses indicate that THES has not undertaken nor is it planning on undertaking any Local (CDM) Initiatives in the 2022-2024 period.

The response to VECC 35 a) states:

> *"However, the IESO's local initiatives program was developed to deliver CDM savings in targeted areas of the province. Part of Toronto was identified as one of the first four targeted areas*."

QUESTION:

a) The IESO web-site indicates that the Toronto-area local initiative is being delivered in collaboration with Toronto Hydro (https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Local-Initiatives/BizEnergySaver). Please provide any information that THES has regarding the current status of the Toronto-area local initiative including the period the program will be in effect, the savings to date, and the planned overall annualized savings.

RESPONSE:

Toronto Hydro does not have the information requested as the program is administered and maintained by the IESO. The IESO have not yet released any CDM results from the program as it began in 2023. Toronto Hydro's non-regulated business supports the IESO administered program through marketing and outreach to eligible customers.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.1.22:

Reference(s): **Exhibit KT1.1: VECC Letter Filed April 2, 2024**
3-VECC-54
8-VECC-94 (a)

Preamble:

VECC 94 a) states:

"Toronto Hydro proposes to update Other Revenue on an annual basis using the CRCI formula."

With respect to microFIT revenues, VECC 54 states: "Toronto Hydro has forecasted 2025 revenues using trending from 2021-2023 and escalated it by inflation for the 2026-2029 period."

QUESTION:

a) With respect to VECC 54, when the response states that for 2026-2029 the microFIT revenues will be escalated by inflation does THES mean the CRCI formula? If not, please reconcile this response with the response to VECC 94 a).

RESPONSE:

Toronto Hydro has escalated Other Revenues in OEB Appendix 2-H for 2026-2029 by inflation. Whereas, the funding for Other Revenues in the base revenue requirement calculation is proposed to be updated on an annual basis using the CRCI formula.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION

UNDERTAKING NO. JT1.2:

Reference(s): 2B-SEC-31

To reproduce the table in 2B-SEC-31 for the 2018 to 2023 period.

RESPONSE:

Please see Table 1 below for the Assets at End of Useful Life by the years 2018 to 2023 using the breakdown from interrogatory response 2B-SEC-31.

Table 1: Assets at End of Useful Life from 2018 to 2023

	2018	2019	2020	2021	2022	2023
OH Conductor	0.41%	0.43%	0.35%	0.33%	0.60%	0.57%
OH Switches	0.02%	0.02%	0.05%	0.07%	0.07%	0.10%
OH Transformers	0.86%	0.81%	0.80%	0.29%	0.32%	0.85%
Poles	2.75%	2.77%	2.44%	2.35%	2.33%	2.59%
UG Cables	9.12%	8.54%	7.60%	9.36%	9.32%	7.38%
UG Switches	0.06%	0.06%	0.04%	0.07%	0.07%	0.06%
UG Transformers	1.03%	0.89%	0.86%	0.40%	0.41%	2.70%
Network Assets	0.44%	0.62%	0.63%	0.60%	0.60%	0.42%
Switchgear	3.31%	3.30%	3.62%	3.54%	3.77%	3.65%
DC Systems	0.03%	0.03%	0.04%	0.05%	0.07%	0.06%
Power TX	1.05%	1.08%	1.09%	1.07%	1.08%	1.02%
Circuit Breakers	0.59%	0.60%	0.64%	0.63%	0.62%	0.59%
Civil Assets	4.65%	3.80%	4.04%	3.95%	4.10%	4.24%
Meters	0.00%	0.00%	0.02%	0.55%	1.00%	0.95%
TOTAL	**24%**	**23%**	**22%**	**23%**	**24%**	**25%**

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO SCHOOL ENERGY COALITION

UNDERTAKING NO. JT1.3:

Reference(s): 2B-SEC-43, Appendix A

To provide further risk management information about Appendix A of 2B-SEC-43.

RESPONSE:

Toronto Hydro's Enterprise Risk Management ("ERM") framework employs a consistent and disciplined methodology which incorporates judgment of subject matter experts within Toronto Hydro, informed by qualitative and quantitative risk indicators, risk trends and risk interdependencies. The quantification of the status of the enterprise risk areas is periodically translated to a heat map which is directed by the relative impacts and likelihoods of enterprise risk-level events and plausible scenarios.

The risk criteria used to assess each enterprise risk relate to: reputational, financial, stakeholder management, distribution system, information system, compliance, occupational health and safety, and public safety impact factors. The assessment of risk likelihood reflects the occurrence of similar events at Toronto Hydro and electricity industry levels. Toronto Hydro has assigned designated responsible persons for each enterprise risk to ensure that such risks are being monitored and that short interval controls and medium to long-term mitigation plans, including both individual action plans and programmatic mitigations, are in place. Action plans and programmatic mitigations are identified by these responsible persons where emerging risks or plausible risk scenarios are expected to have risk impacts which are beyond Toronto Hydro's risk tolerance.

The utility conducts a business plan risk review in accordance with the business planning process. This includes assessing the rationale for investment requests against most current statuses or ratings for enterprise risks. The review identifies areas where potential additional risk exposure could exist and provides recommendations to ensure risk-adjusted decisions are made in alignment with Toronto Hydro's strategic priorities.

Toronto Hydro does not have a single document that details the extensive analysis and information collected through the ERM process described above, as this analysis and information is embedded in different organizational systems and processes and is managed in a programmatic fashion through in-depth and iterative discussions with numerous subject matter experts across the organization. It is not possible to meaningfully extract, summarize and produce a summary of this information within the timelines for responding to undertakings. Nor is this information likely to provide any incremental probative value, since the 2025-2029 Investment Plan (detailed in the pre-filed evidence at Exhibits 2B and 4 and supporting interrogatories, technical conference testimony and undertakings), already reflects in a programmatic manner the outputs of the ERM framework.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO SCHOOL ENERGY COALITION

UNDERTAKING NO. JT1.4:

Reference(s): 2B-SEC-34, Appendix A, Clause 9.2

To file the audit document referred to at Clause 9.2 and the document it references.

RESPONSE:

The external audit referenced in the 2023 AM Gap Assessment (2B-SEC-34, Appendix A) refers to the external audit conducted in 2022 for the maintenance of ISO 14001 and ISO 45001 certification of the Environment Health & Safety ("EHS") Management System. AMCL considered this audit in assessing Toronto Hydro's internal audit processes as it demonstrated that the utility follows the Deming Cycle of PDCA (Plan-Do-Check-Act), which is a systematic continuous improvement process common to other ISO frameworks including ISO 55001. The 2022 EHS audit report is attached as Appendix A to this response.

Toronto Hydro Electric System Limited

AUDIT REPORT

Surveillance 1- Remote + On-site

Report issued at 19:18 GMT on 23-Nov-2022

Toronto Hydro Electric System Limited AUDIT REPORT

Client ID#:	CMPY-044021
Client/Address:	Toronto Hydro Electric System Limited 14 Carlton St., Toronto, Ontario, M 5B 1K5, Canada Other 500 Commissioners St., Toronto, Ontario, M4M 1B4, Canada Other 71 Rexdale Blvd, Etobicoke, Ontario, M9W, Canada Other 715 Milner Ave, Scarborough, Ontario, M1B 6B6 , Canada
Audit Criteria:	ISO 14001:2015, ISO 45001:2018
Audit Activity:	Surveillance 1- Remote + On-site
Date(s) of Audit:	Toronto, Canada: 19-Sep-2022 to 22-Sep-2022
Auditor(s) (level):	Baljinder Singh (Lead Auditor, Toronto, Canada) Nitin Shahani (Auditor, Toronto, Canada) Payman Saffari (Auditor, Toronto, Canada)
Scope of Audit and Scope of Certification:	***Site: Toronto Hydro Electric System Limited, Toronto, Ontario, Canada*** **ISO 14001:2015:** Overall scope/Main and additional sites scope: The provision of all activities and operations associated with the distribution of electricity throughout the City of Toronto. **Exclusions from scope:** No Exclusions. **ISO 45001:2018:** Overall scope/Main and additional sites scope: The provision of all activities and operations associated with the distribution of electricity throughout the City of Toronto.

OVERALL RESULT:

Action Required

The management system was found to be effectively implemented although minor nonconformities were cited.

EXECUTIVE SUMMARY

The current ISO 14001:2015 and ISO 45001: 2018 Surveillance audit was conducted at Toronto Hydro at its head office, Work centre locations and Field operations. Due to COVID 19 pandemic situation, the current audit was conducted partially remote (3.0 MDs) through use of ICT: WebEx meetings for interviews with Management and admin. processes, and In-person (3.5 MDs) visit to audit the Work centre operations and field activities. The audit was conducted by interviewing the various levels of management team, office employees and field crew members. The management team and employees demonstrated good commitment levels through the audit process as evidenced during the audit. Prior assessment identified 02 minor nonconformities and the corrective actions verified in this audit for effective closure. The current audit also identified, 01 minor nonconformity and 05 opportunities for improvement as reported in this audit report. Based on the audit evidences verified and interviews conducted, it can be concluded that the overall EHS management system requirements are effectively implemented pending corrective action plan acceptance for the minor finding identified in this audit.

SWOT ANALYSIS

Strengths	• Robust, well-managed EHSMS, proving to be very effective in helping THESL to fulfil its EHS commitments (outlined in the organization's EHS Policy). • Strong framework to support EHS monitoring and measurement: Corporate scorecards cascaded to divisional and department level scorecards. • Integration of EHS requirements into Supplier selection and procurement management processes. • Detailed Incident investigation and corrective action process; Periodical analysis for continual improvement. • Good knowledge and awareness were demonstrated by the Managers, crew lead and crew members during audit of field operations, regarding EHSMS requirements. • Continual improvement focus: ○ EHS objectives/ Stringent targets; ○ Improved waste diversion rates year over year; ○ Electronic tailboards; ○ Ergonomic bins for used battery storage; ○ More stable and duration Galvanized metal secondary containment for used transformer storage.
Weaknesses	• Operational controls for identified OH&S hazards/ risks found not effective always.
Opportunities	• While the scope of EHSMS documented in the EHSMS manual was developed considering the context of the organization, an opportunity for improvement exists to provide more clarity for the permanent locations/WorkCentre in the defined scope. (Repeat from previous year audit) • While the OH&S risk assessments are reviewed at annual frequency, it may be beneficial to formalize the process of periodical review of task specific Job safety risk assessments (JSA) maintained by the fleet maintenance. • Although the EHS management system are properly implemented in Stations, more attention to shared areas/activities with "TTC" and "Hydro one" may have value added. • While the competence of Toronto Hydro employees are properly covered by LMS, more attention to monitoring the competence of contracted employees/work force via ISN/…..would be beneficial. • While the internal audit processes found effectively implemented, it may be added value to include expand the Audit evaluation checklist for post audit evaluation questions.
Threats	• None that the management team is no aware off (e.g. COVID 19 pandemic).

INTERTEK MATURITY MODEL

The score descriptions are generic to all management systems and cannot be customized by the auditor, thus allowing for the consistency of interpretation and standardization of audit results worldwide. The scores provided to your organisation are for benchmarking purposes only and are based on the audit team's evaluation.

Management

Mature

Consistent evidence of management commitment, customer and/or interested party satisfaction, knowledge/awareness of policy and objectives being demonstrated by the majority of staff. Responsibility and authority is evident and supported via data, trends and related KPI's. Management reviews are complete and demonstrate support by the majority of personnel. Records are complete and demonstrate positive trends in improvement and lessons learned.

Auditor Comments:

The processes including policy deployment and integrated system management review were reviewed. The records of the management review held on August 25, 2022, were reviewed. All the inputs and outputs of the review were found to be addressed well and in accordance with the standards. The Integrated Master Plan and the Projects including the Box construction, Arc Flash, Electronic Tailboards, PCB Asset Replacement were reviewed. Also, the plan is to incorporate sustainability criteria in ISN.

Internal Audits

Mature

Internal audits are being performed at planned intervals and are based on status and importance of the Management System. Data is being collected analyzed and reviewed by senior management on a regular basis. There exists a link between the internal audit results and the overall health of the Management System. Audit teams are trained, impartial and objective in their approach. Audit reports are clear, concise and supported with applicable correction actions. Management is involved in the corrective action process ensuring timely implementation and overall effectiveness of resolution.

Auditor Comments:

THESL is performing the EMS and OH&S Management system internal audits at annual frequency and compliance to EMS and OH&S in alternative years. Last audit cycle was conducted on June 13-17, 2022 by external provider: Integrated Management Solutions (IMS) – by Tony Tarsitano and Jessica Staples-Campetelli.
The EHSMS and Environmental Compliance audit report of July 15, 2022 including, 5 minor nonconformities related EHSMS and 08 OFIs. All the nonconformities are posted on Intelex software i.e. NC # 194 to 197, # 200 and # 204 for further root cause analysis and corrective action implementation and follow up per due date(s). While the internal audit processes found effectively implemented, an OFI identified in this area and reported in this audit report.

Corrective Action

Mature

The corrective action process has demonstrated to be effective in practice. Data from sources such as customer and/or interested party complaints, internal audits, warranty analysis, defects, internal metrics and supplier performance

show stability over time as the system matures. The process includes a thorough review of the effectiveness of the actions taken. There is evidence of problem solving tools being used to support the process.

Auditor Comments:

THESL is using Intelex (e-tool) for addressing the nonconformities through corrective actions process and maintaining the documented info. The nonconformities identified through audits (internal/ external), inspections and incident/ accidents are posted on Intelex for follow up actions per assigned responsibilities and authorities. The process was sampled for internal audit and compliance audit findings e.g. Nonconformance # 194, # 197, # 200, # 204 and found effectively implemented.

Incident investigation, corrective and preventive actions: Incidents are reported, and corrective actions plans are followed up and recorded through Intelex. PRC-1810-06 (rev10) / Incident documentation procedure and Incident # 1225 (Sept 13, 2022), # 1183 (July 13, 2022), 1124 (In progress) and # 1213 (Aug 22, 2022) have been reviewed. The process is effective.

Continuous Improvement

Mature

Data streams are being used as sources to drive continual improvement over time. These may include management system policy, objectives, and audit results, analysis of data, CAPA and management reviews. There is some evidence of advanced techniques being used during the improvement cycle. Economic benefits have been realized.

Auditor Comments:

The EHS scorecard 2022 maintained including various performance indicators to monitor the performance of EMS and OHSMS programmes. Some of the examples of EHS objectives/ targets and performances reviewed as below;

- Total Recordable Injury Frequency, target: ≤ 1.15 (previously: <1.30) / Year 2019: 0.82/ Year 2020: 0.58/ Year 2021: 0.56
- Lost Time Injury Frequency and Severity rates, target: 0.10 and 2.0 respectively / actual Year 2019: 0.21; 6.72/ Year 2020: 0.22, 8.25 / Year 2021: 1.91, 0.24.
- Restricted work severity rate, target: 27 (35 previously) / actual Year 2019: 10.5 / Year 2020: 21.12 / Year 2021: 21.89.
- Total Near Miss incidents, target: 27/ actual Year 2021: 41 (New objective).
- Attendance (Absence rates), target: 2.10/ actual Year 2020: 1.29/ Year 2021: 0.83.
- IMP (Integrated Master Plan) tasks, target: 90% / actual Year 2019: 2 / Year 2020: N/A / Year 2021: 99%. (Changes to monitoring method).
- Safety leadership – EHS, target: 110%/ actual Year 2020: 131%/ Year 2021: 145%.
- Contractor safety rating, target: 85% / actual Year 2019: 89% / Year 2020: 88%/ Year 2021: 90%.
- Non-hazardous waste to landfill, target: 400 tonnes/ actual Year 2020: 316.32/ Year 2021: 203. (tracked on Sustainability card).
- P1 Spill investigation completion time, target: 12 days/ actual Year 2021: 4.35 days (New objective)
- Incident investigation closure time, target: 85% (previously 2.0 days) / actual Year 2019: 1.56 / Year 2020: NA / Year 2021: 91% (Changes to monitoring method) – tracked as part of Investigation quality score.
- Tailboard quality audit score, target: 80%/ actual Year 2020: 87.5%/ Year 2021: 86%.

- Inspection Quality score, target: 72% (previously 70%) / actual Year 2019: 84%/ Year 2020: 73%/ Year 2021: 81%.
- Serious incident action closure on-time, target: 90%/ Year 2021: 100%.
- Reduction of PCB spills to waterways, target: NA (Previously, Zero)/ actual Year 2019: 1 / Year 2020: 1/ Year 2021: 0
- Corporate recycling rate, target: 70% / actual Year 2019: 87% / Year 2020: 90%/ Year 2021: 91%.

An EHS annual plan 2022 including Environmental and OH&S objectives, targets and programs maintained. Objectives and targets are monitored on monthly basis and supported with actions for under-performing targets. Analysis of the score (separate tab) maintained for the follow up actions for under-performing areas.
Monthly review during the OSR meeting (Operational status review meeting) with involvement of EHS dept. These meetings are filtered to divisional levels.

Operational Control

Meets Intent

Operational Controls are planned and developed. Planning is consistent with many of the other Management processes. Objectives, process requirements, needs for appropriate additional documents and resources, verification and monitoring activities and records requirements have been determined, as appropriate. Processes and activities run consistently. Some data is collected to verify the adequacy of operational controls with evidence of some improvement trends.

Auditor Comments:

EHS Operational Controls:
The field, station and facility visits were conducted and the field, station and facility activities of the Toronto Hydro's crews and employees were audited at those locations incl. 14 Carlton, 71 Rexdale, 715 Milner, and 500 Commissioners. Employees at these facilities and crew members at the stations, field crews from the stations, metering, above ground, DCW - overhead and DCC - underground, were involved in the audits. Some of the significant hazards included those arising from traffic, use of vehicles and working with electrical energy and controls included procedures, permits, risk assessments and tailboards, traffic management plan, use of PPEs (harness, gloves, hard hat, safety boots, high visibility clothing), equipment and tools (emergency equipment such as fire extinguisher, eye wash, first-aid kit and spill kits). Some of the significant environmental aspects reviewed included air emissions from fleet vehicles and waste generation from field activities and the respective controls include anti-idling (use of Grip system), use of hybrid and electrical vehicles and waste segregation, collection, labeling and disposal.
EHS monitoring and measurement for the field activities included EHS operational control audits, monthly safety meetings, multiple site safety inspections in a month by the supervisors (at least 20 per month) and regular inspections of the fleet vehicles, PPEs and field equipment/tools used by the field crew.
Based on the evidence gathered during the interviews of crew members, crew leaders, Managers, and review of controls, while the controls found to be effectively implemented, a minor nonconformity related OH&S operational controls identified and reported in this audit report.

Communication, consultation & participation (incl. Worker's representation, JHSC member interview):
Interviews were conducted with JHSC member and Co-chair for worker's representation. There are monthly meetings with participation from management team and JHSC members for reviewing the issues escalated by the crew

members, open items from monthly JHSC inspections and other OH&S developments. The output from the management review is tracked for follow up actions. The open items from JHSC inspections are also tracked for closure. Based on the interviews and documentation review, the Communication, consultation & participation processes found to be effective.

Waste Management:
Solid waste management procedure ref: PRM-1810-019 outlines the requirements for managing the different waste streams and disposal methods. The waste management processes were sampled for segregation and identification of different waste stream at different WorkCentres, stations and during field visits. Last annual waste audit was conducted in Oct 2021 by GFL including observations for mixed recycle waste and organic waste into Garbage bin with recommendations for improvement. A waste reduction work plan established and implemented to ensure continual improvement. The hazardous waste is disposed through manifestation process and sampled for waste manifest # 10027404, # MX551020 and MX446238-2. The waste management processes found effectively implemented.

EHS Performance monitoring and measurement:
A framework of performance management established including, Corporate: Scorecard, Strategic projects; Divisional: Scorecard; Div. projects; Department: Scorecard & other initiatives and Individual: Objectives, Core job, Competencies. EHS 2022 Scorecard was sampled for Threshold, Targets and actual performances. The management team is conducting monthly operations status review (OSR) meetings at executive, division and department levels including reviewing the performances against scorecards. A KPI profiler is maintained including the planning actions to ensure tracking and achieving the set targets. The EHS performance monitoring and tracking processes found effectively implemented.

External Communications and Complaints, Concerns of interested parties:
EHS related external communication, concerns and complaints received through social media or municipal offices, are handled by the Media and public relation dept. and Office of the President. All the reported issues and complaints are tracked for follow up actions. There were total 28 EHS issues reported during last period and addressed through necessary follow up actions. Based on the interviews conducted and documentation reviewed, the external communication and complaint handling processes found effectively implemented.

Consultation & participation of workers:
PRC 1810-013 Communication, Participation and consultation, Rev V6, Aug 2022 outlines the process requirements. There are various methods used by the organization for ensuring consultation and participation of workers related to EHSMS requirements and processes such as, review of EHS risk assessments, daily tailboards, safety meetings, identify and trailing new tools/ equipment, Incident investigation processes etc.

Procurement:
Procurement policy, V7.02020-05-26 is followed by the organization’s procurement/supply chain department. EHS requirements are ingrained into the procurement process. Suppliers are selected, monitored and evaluated based on the organization’s quality, EHS and cost requirements. Sustainability questionnaire is built into the Request for proposal packages for suppliers. EHS requirements are scaled up or down based on the nature of work with safety requirements

taking priority in construction projects. The performance of the suppliers is monitored and evaluated. If performance of a supplier/ service provider is not meeting the criteria, then an notification letter is issued to vendor for performance requirements to improve the performance. Bi-annual meetings are held with suppliers. NCRs are raised in case of any deficiencies with regards to the performance criteria set in the contract with the supplier/service provide. Based on the review of request for proposals, submission evaluation, sustainability questionnaire, performance summary and other procurement documents, the process was found to be effectively implemented.

Emergency Preparedness and Response:
Emergency situations (including Fire, Severe weather and…) and relevant responses are addressed in PRG 1810-029. Fire drills are conducted annually. Grid emergency management system (GEM) covers the emergency situations during operation. Relevant trainings are also addressed and covered by GEM. Samples of emergency situations/incidents have been reviewed. The process is effective.

Management of change process:
MOC process for some samples (equipment/facility/….) have been reviewed. Evaluation process and link to risk assessment are properly documented and followed up. Records of FRM-1810-021 (Rev 07) and FRM-1810-168 (Rev 01) have been sampled and reviewed. The process is effective.

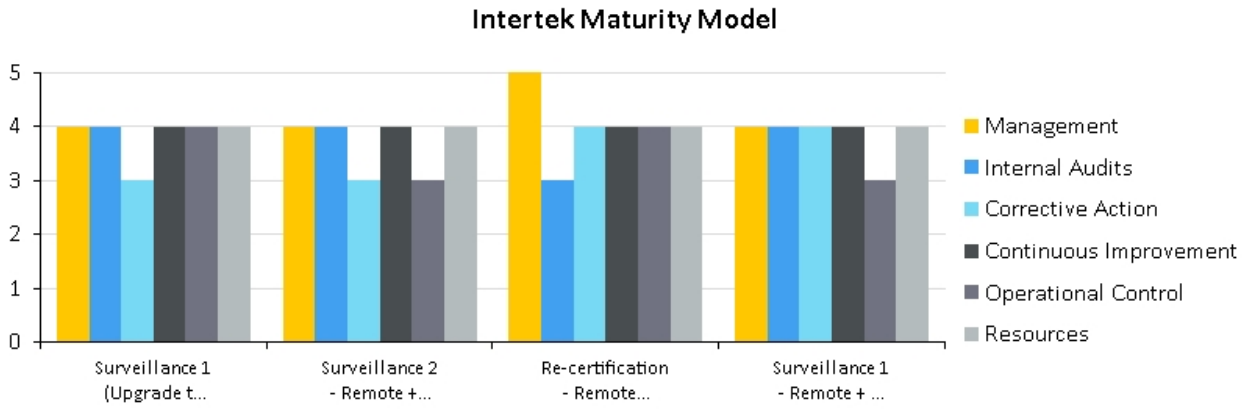
Resources

Mature

Resources required for the effective maintenance and improvement of the management system have been defined and deployed. Improvements have been noted in areas such as customer and/or interested party satisfaction, continual improvement, process variation. Levels of competency have been defined and documented within the existing management system.

Auditor Comments:

The management team has ensured adequate resources to fulfill EHSMS requirements. The employees interviewed were found experienced and knowledgeable.
Competence, Training and Awareness: Training process for new employee/employee are managed via Learning Management System. Target is 85% in compliance. Learning profile of some employees have been reviewed. Learning administration/learning management processes for employee and students are effective. However, an OFI identified in this area and reported in this audit report.



Rating: 5=Benchmark | 4=Mature | 3=Meets Intent | 2=Beginning | 1=Not Evident

FINDING SUMMARY

	Minor	Major
Issued during current activity	1	0
Closed from previous activities	2	0

Opportunities for improvement have been identified

Yes

STATUS OF PREVIOUS AUDIT FINDINGS

Follow-up on findings issued at previous audit:

Non conformities raised at the last audit have been closed. No further actions required.

Report on closure of previous findings

Prior assessment identified 2 minor nonconformities and the corrective action effectiveness verified in this audit as below;

Finding 1052889 - 1:

· An internal NC # 160 initiated on Oct 15, 2021 incl. corrective actions: 3 action items, closed as of Nov 30, 2021.

· An audit checklist to support the evaluation of internal EHSMS audit is implemented for effectiveness review post completion of internal audit by external provider i.e. Internal audit evaluation dt. June 07, 2022, Intelex audit # 120.

Finding 1052889 – 2:

· An internal NC# 161 dt. Oct 15, 2021 to ensure EHS communication to external visitors/ contractors incl. corrective actions: 8 action items, status: closed as of Aug 30, 2022. (Management approval for delayed action items evident through email).

· Visitor orientation packages were sent to audit team in advance to audit week for each WorkCentre location.

· Visitor sign in/ sign out logs were sampled during WorkCentre audit and found maintained effectively.

· An electronic system for visitor sign in implemented for generating visitor pass at each WorkCentre.

Based on the documentation reviewed and processes sampled, both the above findings stand closed now.

Findings from the previous activity that could not be closed

No

FINDING DETAIL

Finding #:	Audit Criteria:	Corrective Action Plan Due Date:	Corrective Action Implementation Date:
Finding 1224926 - 1	ISO 45001:2018	23-Oct-2022	22-Nov-2022
Issued by:	**Classification:**	**Document Ref#:**	**Action Required:**
Baljinder Singh	Minor	MSE-1810-005	Submit corrective action plan

Finding:

The operational controls for identified OH&S hazards and risks found not effective always.

Requirement:

Others: 8.1

8.1.1 General

The organization shall plan, implement, control and maintain the processes needed to meet requirements of the OH&S management system, and to implement the actions determined in Clause 6, by:

a) establishing criteria for the processes;

b) implementing control of the processes in accordance with the criteria.

Objective Evidence:

The following discrepancies were observed related to OH&S Operational controls;

500 Commissioners:

- Building C – lower parking area found having SF6 cylinders tied up with rope, and not properly secured.
- Vehicle parked at Loading dock ramp (downward slope) found not having chalks applied to prevent rollover.

71 Rexdale Blvd:

- Outdoor Generator area: No safety signage provided such as, Flammable, No Smoking…for diesel storage tank.

EVIDENCE SUMMARY

The state of the management system is summarized below:

Process for Monitoring and Maintaining Compliance with Legal and Other Requirements

The organization has a robust process in place to maintain knowledge of its compliance status. A registry of Environmental, health & safety requirements MSC-1810-003 is maintained and updated on a quarterly basis. The registry was last updated by an external company (Integrated Management Solutions Limited/IMS) in year 2022. Changes to the legal and other requirements are evaluated for applicability to THESL's operations and captured as part of the operational status review (OSR) meetings. The changes are also discussed in the management reviews.
THESL is performing the EMS and OH&S Management system internal audits at annual frequency and compliance to EMS and OH&S in alternative years. Last audit cycle was conducted on June 13-17, 2022 by external provider: Integrated Management Solutions (IMS) – by Tony Tarsitano and Jessica Staples-Campetelli.
The EHSMS and Environmental Compliance audit report of July 15, 2022 including, 1 minor noncompliance related to Environment and couple of OFIs. All the nonconformities are posted on Intelex software i.e. NC # 194 to 197, # 200 and # 204 for further root cause analysis and corrective action implementation and follow up per due date(s). The status of corrective actions was reviewed.
Permits and registrations including Equivalency Certificate (Permit of Equivalent Level of Safety), HWIN registration and Environmental Compliance Approval are in place for WorkCentres. Manifests, NPRI, ESDM and other monitoring requirements were reviewed and found in order.
Based on the records reviewed and interview held, no adverse trend in the results of compliance evaluations over the last three years was noted. THESL's process of monitoring and maintaining compliance with EHS legal and other requirements is mature and effective.

Assessment of Implementation related to Significant Environmental Aspects

THESL has identified the aspects applicable to its activities; these are tracked in the Environmental Aspects Database using the criteria based on Likelihood X (Severity/Benefit+ Scale+ Duration+ Legal Requirements+ Concerns of Interested Parties). Aspects scoring 300 and higher are considered significant.
Annual Environmental Risk assessment workshop identified the SEAs as below;
The negative SEAs e.g. Air emission – Combustion by-products, Release of SF6 gas; Potential for spill or leak of PCB oil; Operation of air conditioners, refrigerators and chillers: Reduction in air quality; Increase in ozone depleting substances/ GHG.
The positive SEAs e.g. Recycling of non-hazardous materials (Scrap, Aluminium, Wood etc.) and hazardous materials (Fluorescent tubes, street lights, batteries etc.); Generation of electricity with solar panels: Improved air quality - reduction of GHG; Electrification of the fleet: reduction in Air emission.
The SEAs register includes the identified potential risks and opportunities based on the environmental aspects/ impacts. The risks and opportunities are tracked through IMPs and 2022 EHS annual plan.

EMS Operational Controls:
Field Visit: (DCC - Underground)

1 underground switching visit (Hold off: 72356 with truck # 803) was conducted in Toronto. The field activities of the Toronto Hydro's crew were audited at that location: 98 Vanderhoof Avenue. Employees at 500 Commissioner and crew members at the municipal transformer station, field crews, which included both underground and above ground operations, were involved in the audit. Some of the significant environmental aspects reviewed included air emissions from fleet vehicles and waste generation from field activities and the respective controls include anti-idling (use of Grip system), use of hybrid and electrical vehicles and waste segregation, collection, labeling and disposal.

Field Visits: (DCW - Overhead)
One DCW Overhead field visit was conducted at Project: Thornecrest phase 10 at Princess Margret, and the field, station and facility activities of the Toronto Hydro's crews and employees were audited at those locations. Employees at 71 Rexdale Blve and field crews, which included both underground and above ground operations, were involved in the audits. Some of the significant environmental aspects reviewed included air emissions from fleet vehicles and waste generation from field activities and the respective controls include anti-idling (use of Grip system), use of hybrid and electrical vehicles and waste segregation, collection, labeling and disposal.

Field Visits: (Metering)
One meter exchange field visits at 59 Lakeside avenue (Fleet vehicle # 0647V) was conducted, and the field activities of the Toronto Hydro's crews were audited at that location. Employees at 715 Milner Ave and field crews were involved in the audits. Some of the significant environmental aspects reviewed included air emissions from fleet vehicles and waste generation from field activities and the respective controls include anti-idling (use of Grip system), use of hybrid and electrical vehicles and waste segregation, collection, labeling and disposal.

Field Visits: (Stations)
Carlaw station has been audited. Orientation, maintenance, inspection, waste management and….. processes including NOP (notice of project) process have been reviewed with the team. Risk assessment is addressed the relevant risks properly and updated per project. Emergency response including fire alarm, communication with responders have been reviewed. Maintenance/inspection/recording/labeling for some of lifting equipment and Battery Test have been checked in this station. Housekeeping and using of PPE are properly followed up by the team.

Based on the evidence gathered during the interviews of crew members, crew leaders' supervisors and review of controls including use of tailboard, training records, vehicle anti-idling, inspections, employee awareness, waste management and handling, the controls were found to be effectively implemented and maintained for the significant environmental aspects.

Assessment of Implementation related to Hazards and Risks

THESL has identified the OHS Hazards & Risk applicable to its activities and assessed them using the criteria based on Risk = Severity (1-10) x Frequency of exposure - FE (1-10) x Duration of exposure – DE (1-10). Hazard control registry ref: MSE-1810-005 maintained.
Operational controls are considered based on the hierarchy while evaluating the risk. The risks are considered as High (700 to 1000), Medium (300 to 699), Low (60 to 299) and Negligible (1 to 59).

The hazards and risks are separated by work group or sub-groups e.g. Overhead, Underground, Facilities, Office staff, IT etc.
The identified high/ medium levels hazards/ risks include e.g. General workplace activities involving designated substances (Customer location only) (Friable/ Non-Friable); Contact with hot objects including slag (during hot work operations); Crushed and struck (while working near mobile work equipment); Exposure to primary electric voltage >750 (while working on energized power system equipment); Equipment at same level tipping or falling onto workers; Working alone: Lack of detection/ response (emergencies); Exposure to pandemic infections/ diseases; and Working outdoor – winter – Exposure to cold stress (excluding water), Caught b/w or compressed by equipment or material while loading or unloading on trailers or trucks., and Harassment or violence due to interacting with the public (incl. Customers).

OH&S Operational Controls:

Field Visits: (DCC - Underground)
1 underground switching visit (Hold off: 72356 with truck # 803) was conducted in Toronto. The field activities of the Toronto Hydro's crew were audited at that location: 98 Vanderhoof Avenue. Employees at 500 Commissioner and crew members at the municipal transformer station, field crews, which included both underground and above ground operations, were involved in the audits. Some of the significant hazards included those arising from traffic, use of vehicles, Slip/ trip & fall and working with electrical energy and controls included safety procedures, risk assessments and tailboards, traffic management plan, use of PPEs (harness, gloves, hard hat, safety boots, high visibility clothing), equipment and tools (emergency equipment such as fire extinguisher, eye wash, first-aid kit and spill kits).

Field Visits: (DCW - Overhead)
One DCW Overhead field visit was conducted at Project: Thornecrest phase 10 at Princess Margret, and the field, station and facility activities of the Toronto Hydro's crews and employees were audited at those locations. Employees at 71 Rexdale Blve and field crews, which included both underground and above ground operations, were involved in the audits. Some of the significant hazards included those arising from Working at height, traffic, use of vehicles and working with electrical energy and controls included procedures (Bucket rescue and evacuation), risk assessments and tailboards, traffic management plan, use of PPEs (harness, gloves, hard hat, safety boots, high visibility clothing), equipment and tools (emergency equipment such as fire extinguisher, eye wash, first-aid kit and spill kits).

Field Visits: (Metering)
One meter exchange field visits at 59 Lakeside avenue (Fleet vehicle # 0647V) was conducted, and the field activities of the Toronto Hydro's crews were audited at that location. Employees at 715 Milner Ave and field crews were involved in the audits. Some of the significant hazards included those arising from traffic, use of vehicles and working with electrical energy and controls included procedures, risk assessments and tailboards, traffic management plan, use of PPEs (harness, gloves, hard hat, safety boots, high visibility clothing), equipment and tools (volt meter, emergency equipment such as fire extinguisher, first-aid kit and spill kits).

Field Visits: (Stations)

Carlaw station has been audited. Orientation, maintenance, inspection, waste management and….. processes including NOP (notice of project) process have been reviewed with the team. Risk assessment is addressed the relevant risks properly and updated per project. Emergency response including fire alarm, communication with responders have been reviewed. Maintenance/inspection/recording/labeling for some of lifting equipment and Battery Test have been checked in this station. Housekeeping and using of PPE are properly followed up by the team.

Based on the evidence gathered during the interviews of crew members, crew leaders and review of controls including use of tailboard, training records, vehicle anti-idling, inspections, employee awareness, waste management and handling, the controls were found to be effectively implemented.

Identified opportunities for improvement

- While the scope of EHSMS documented in the EHSMS manual was developed considering the context of the organization, an opportunity for improvement exists to provide more clarity for the permanent locations/WorkCentre in the defined scope. (Repeat from previous year audit)
- While the OH&S risk assessments are reviewed at annual frequency, it may be beneficial to formalize the process of periodical review of task specific Job safety risk assessments (JSA) maintained by the fleet maintenance.
- Although the EHS management system are properly implemented in Stations, more attention to shared areas/activities with “TTC” and “Hydro one” may have value added.
- While the competence of Toronto Hydro employees are properly covered by LMS, more attention to monitoring the competence of contracted employees/work force via ISN/…..would be beneficial.
- While the internal audit processes found effectively implemented, it may be added value to include expand the Audit evaluation checklist for post audit evaluation questions.

Conclusions regarding risk assessment/risk treatment processes

THESL identify the risks and opportunities related to its EHSMS by taking into consideration the context issues, environmental aspects, OH&S hazards and compliance obligations. Based on the documentation review and interviews with management, the key risks include, COVID-19 and Vehicle and work equipment, Air and noise emissions, water and waste management were reviewed. The management team is monitoring and reviewing the risks and opportunities and mitigation actions through monthly operations and yearly management review meetings. The process for addressing the risks and opportunities found effective.

Conclusions regarding context of the organization

THESL has determined the organizational context issues and requirements. An Annual EHS plan 2022 has been established including the Context issues. The interested parties, and their needs and expectations are gathered through feedback on submitted reports, Surveys, regulatory applications, social media monitoring and direct line to the Office of President. The process for determining interested parties and compliance obligations is outlined in the MSC-1810-003. Interested parties include; Shareholders, Government agencies, NGO, Media, Customers, Suppliers, Contractors, Employees (including the Union) etc. The environmental context issues and interested party requirements

are reviewed during the management review meetings for any changes or new requirements to be addressed. Based on the documentation review and interviews with management, the determination of organizational context found effective.

Impact of Significant Changes (If Any)

iEnable database can be updated for the current EC: 1316 (previously: 1432)

Additional information/unresolved issues

Performance monitoring and measurement (Employee Health monitoring including interview of employees' health representative including nurse, doctor or other professional) :
Health monitoring process has been reviewed. Shelley Quinlin (Nurse) has been interviewed and also invited to attend on closing meeting. Sample of health monitoring (biological monitoring) of relevant team/project has been reviewed. The process will be followed by an internal audit/Inspection.

Communication/Changes during the visit (if applicable)

N/A

References to appendices:

Interview record; Audit plan (as executed)

Have all shifts been audited:

Yes

The audit has been performed according to audit plan meeting audit objectives, scopes and duration (on-site and off-site) as given within the audit plan

Confirmed.

Extent of use and effectiveness of Information and Communications Technology (ICT).

ICT was used for 37% of this audit.

ICT used was effective in achieving the audit objectives.

LEAD AUDITOR RECOMMENDATION

Lead Auditor's Recommendation for ISO 45001:2018

The nonconformity(ies) identified do not jeopardize the certification of the management system. Continued certification is therefore recommended pending acceptance of the corrective action plans(s) for identified nonconformity(ies).

Lead Auditor's Recommendation for ISO 14001:2015

The management system is in conformity with the audit criteria and can be considered effective in assuring that objectives will be met. Continued certification is therefore recommended.

OTHER OR ADDITIONAL LEAD AUDITOR RECOMMENDATION

N/A

CLIENT ACKNOWLEDGEMENT

Client Representative Name and Mailing Address:	Pat Allen 14 Carlton St., Toronto, Ontario, M 5B 1K5, Canada
Acknowledged By:	Phil Genoway - Director, Environment, Health & Safety

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO SCHOOL ENERGY COALITION

UNDERTAKING NO. JT1.5:

Reference(s): 2B-SEC-42

To provide assistive or explanatory material for the Alteryx Model.

RESPONSE:

At this time, Toronto Hydro does not have a manual or guide regarding the Alteryx Model beyond the workflow provided as an appendix to Toronto Hydro's detailed explanation of the Reliability Projection Methodology ("RPM") in its response to interrogatory 2B-SEC-42, part (a). As such, in the response below, Toronto Hydro is providing additional details regarding the RPM process, specifically the defective equipment reliability projection modelling used for major asset classes.

<u>Preamble on Defective Equipment Reliability Modelling</u>

Each major asset class is calibrated with asset class-specific parameters and inputs to project the likely impact of asset replacements and additions through time. For each major asset class, SAIFI and SAIDI is calculated based on the forecasted number of interruptions, multiplied by the average SAIFI and SAIDI contribution per interruption, respectively, based on a five-year historical average. For assets with limited historical data and/or those deemed to pose a low risk to system-wide reliability metrics (i.e., Network, Secondary Distribution, etc.), a five-year historical average was used.

The methodology models defective equipment outages by projecting failures and outage impacts at an asset class level based on:

1. asset demographics data and associated failure projections;
2. historical reliability performance; and
3. planned program investments.

Procedure Used for Defective Equipment Projections

Figure 1 below outlines the procedure for projecting SAIFI/SAIDI contributions rooted in system outages caused by major asset classes, as implemented in the Alteryx models.

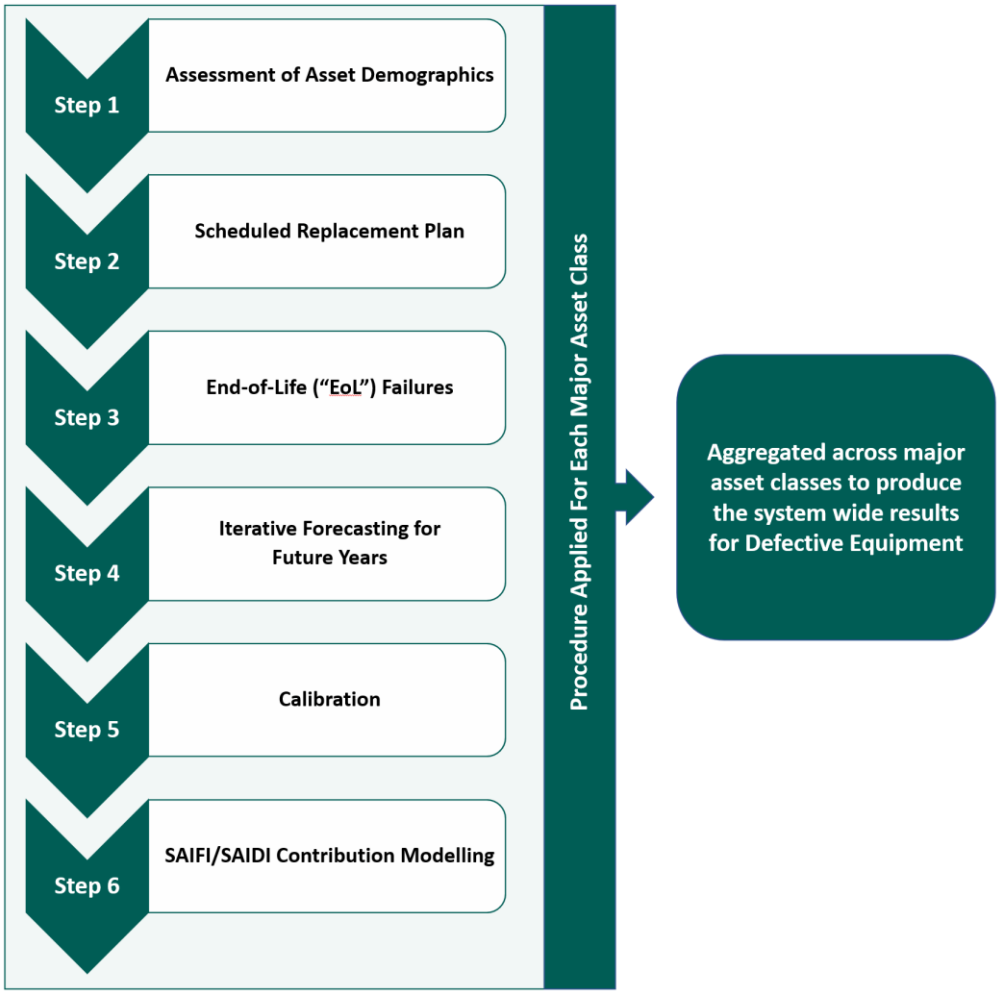


Figure 1: Process for developing SAIFI & SAIDI projections for Defective Equipment Forecasting

The steps outlined in Figure 1 above are explained in further detail below.

1. **Assessment of asset age demographics:** The modelling approach begins with an assessment of current asset class demographics and the effects of turnover and new additions. This approach accounts for the aging of assets through time, which are gradually replaced through planned and reactive replacement volumes. In addition, it accounts for new assets that are installed each year. The following inputs were considered:
    a. 2022 year-end asset age demographics from Toronto Hydro's information systems.
    b. New asset additions based on historical trends, i.e., average rate of historical growth for each asset class.

2. **Scheduled replacement plan:** Planned replacement volumes are then considered.
    a. Planned asset replacement volumes for relevant programs as set out in the 2025-2029 Rate Application are applied in order to estimate the impact of investments on failure risk for the 2023-2029 period. Alternative scenarios are run by increasing or decreasing volumes of replacement in specific asset classes.

3. **End-of-Life ("EoL") failures:** the corresponding failure curve is applied to the asset population to project the expected end-of-life ("EoL") failures for a specific asset class. The resulting failures are inclusive of all failure modes.

4. **Iterative forecasting for future years**: The asset population is aged from one year to the next, resulting in a shift in the population demographic. The

population is adjusted for EoL failures from the previous year, which are reset in age. Furthermore, additions and replacements are made to the adjusted asset population. EoL failures for the year are then calculated using the adjusted asset population.

5. **Calibration:** The model is then calibrated to ensure failure projections are reflective of only those failures which result in outages by right-sizing it to the 3-year historical average number of outages for each asset class.

6. **SAIFI/SAIDI contribution modelling:** the historical 5-year average SAIFI and SAIDI contribution per interruption, from Toronto Hydro's Interruption Tracking system, is then applied to the projected number of system outage failures to calculate the SAIFI and SAIDI projection for the respective asset class.

The asset class level information obtained from the procedure is then aggregated across asset classes to produce the system wide results.

The outputs of the Defective Equipment reliability forecasts (Alteryx model) are then combined with projections for other cause codes and the estimated benefits of grid modernization investments to arrive at the final system wide forecast.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO SCHOOL ENERGY COALITION

UNDERTAKING NO. JT1.6:

Reference(s): 2B-SEC-66 part (c)

To clarify the response to 2B-SEC-66c.

RESPONSE:

The correction Toronto Hydro made in 2B-SEC-66 part (c) was intended to address the fact that the units of measure used for the two periods in the original Table 8 (2020-2024 vs. 2025-2029) were different. Specifically, conductor length ("km") was used for the 2020-2024 units (actuals and bridge), while circuit length ("cct-km") was used for the 2025-2029 forecast. Both units are valid measures for underground cable. In 2B-SEC-66, part (c), Toronto Hydro elected to convert the units for the 2020-2024 period to cct-kms to create consistency with the presentation used for the 2025-2029 plan.

Toronto Hydro has reviewed the evidence in EB-2018-0165 and notes that the units in the 2020-2024 Distribution System Plan (Exhibit 2B, Section E6.2, Table 11 at page 28) were presented as conductor length. To avoid further confusion, Toronto Hydro offers the following tables, which present the planned and actual (or bridge year) cable volumes for 2020-2024, as well as the planned 2025-2029 cable volumes, in both conductor length and circuit length.

Table 1: 2020-2024 Forecast and Actual/Bridge Cable Volumes

		2020	2021	2022	2023	2024	Total
EB-2023-0195, Exhibit 2B, Section E6.2, Table 8 at Page 30, Total Cable (2020-2023 Actuals and 2024 Bridge)	*conductor -km*	114	83	128	83	55	**463**
EB-2023-0195, Exhibit 2B, Section E6.2, Table 8 at Page 30, Total Cable (2020-2023 Actuals and 2024 Bridge)	*circuit length-km*	45	33	51	33	22	**184**
EB-2018-0165, Exhibit 2B, Section E6.2, Table 11 at Page 28, Cable (2020-2024 Forecast)	*conductor -km*	103	96	96	98	98	**491**
EB-2018-0165, Exhibit 2B, Section E6.2, Table 11 at Page 28, Cable (2020-2024 Forecast)	*circuit length-km*	41	38	38	39	39	**196**

Table 2: 2025-2029 Planned Cable Volumes

		2025	2026	2027	2028	2029	Total
EB-2023-0195, Exhibit 2B, Section E6.2, Table 8 at Page 30, Total Cable (2025-2029 Forecast)	*conductor -km*	75	181	211	198	188	**854**
EB-2023-0195, Exhibit 2B, Section E6.2, Table 8 at Page 30, Total Cable (2025-2029 Forecast)	*circuit length-km*	30	72	84	79	75	**340**

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO SCHOOL ENERGY COALITION

UNDERTAKING NO. JT1.7:

Reference(s): 2B-AMPCO-33

To provide more detail on the Distribution Assets Failure Curve Study.

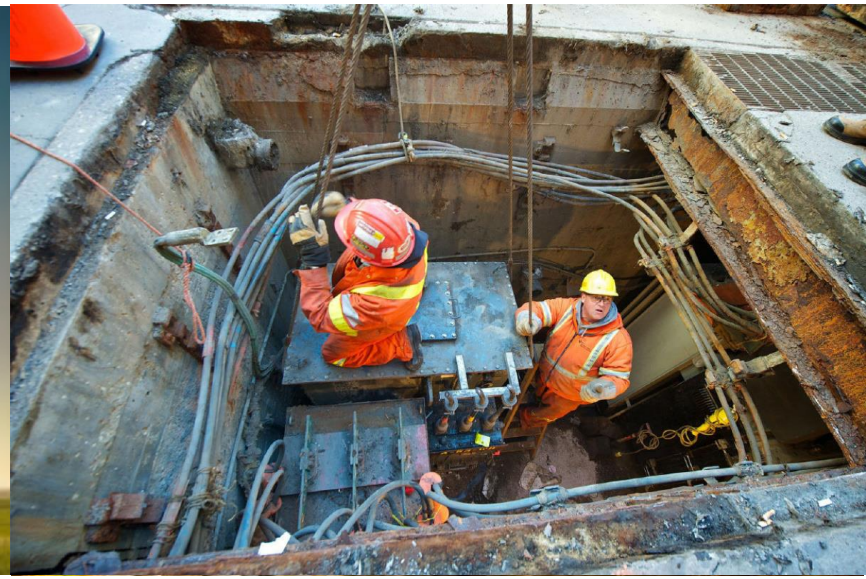
RESPONSE:

Please see Appendix A to this response for the "Distribution Asset Failure Curves" report produced by HATCH. Note that some parts of this document have been redacted for confidentiality purposes.

Toronto Hydro-Electric
System Limited
EB-2023-0195
JT1.7
Appendix A
FILED: April 22, 2024
ORIGINAL
(17 pages)

Distribution Asset Failure Curves





Toronto Hydro

Notice to the Reader

This report was prepared by Hatch Ltd. (“Hatch”), for the sole and exclusive benefit of Toronto Hydro-Electric System Limited (“Toronto Hydro”, “Toronto Hydro”, or “Client”) for the purpose of this Asset Failure Curve Analytics Project (the “Project”), and may not be provided to, relied upon, or used by any third party.

Any use of this report by the Client is subject to the terms and conditions of the Master Agreement for the Purchase of Services between Hatch and the Client dated January 1, 2021, including the limitation on liability set out therein.

This report is meant to be read as a whole, and sections should not be read or relied upon out of context. The report includes information provided by Client and by certain other parties on behalf of Client. Unless specifically stated otherwise, Hatch has not verified the accuracy or completeness of such information and disclaims any responsibility or liability in connection with such information.

This Report contains the expression of the professional opinion of Hatch, based upon information available at the time of preparation. The quality of the information, conclusions, and estimates contained herein is consistent with the intended level of accuracy as set out in this report, as well as the circumstances and constraints under which this report was prepared. Therefore, while the work, results, estimates and projections herein may be considered to be generally indicative of the nature and quality of the Project, they are not definitive. No representations or predictions are intended as to the results of future work, nor can there be any promises that the estimates and projections in this report will be sustained in the future.

Table of Contents

Overview

Toronto Hydro-Electric System Limited ("THESL") is looking to advance in-house asset failure curves analytics to improve the value-based asset management processes. The overall objective of the project was to advance the existing failure curves form industry consensus-based to data-driven evidence based.

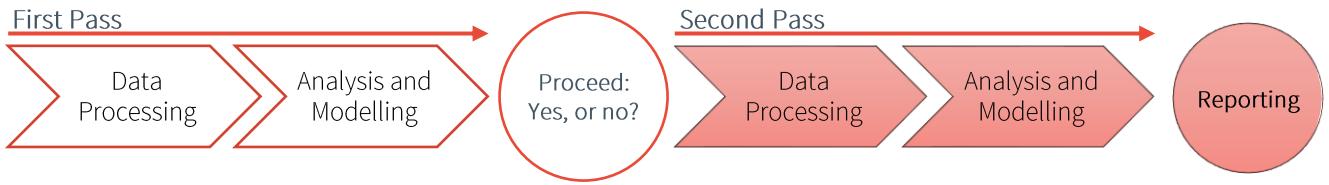
Through this project, Hatch has developed data-driven failure curves leveraging THESL's own failure records. The client-provided datasets were cleaned, validated, and engineering judgement was applied to data anomality.

The following analysis were performed for twelve (12) asset classes:

- ✓ Transformers: Vault transformer, Pad-mounted transformer, Submersible transformer, and Overhead transformer.
- ✓ Poles: Wood poles and Concrete poles.
- ✓ Switches: Pad-mounted SF6-insulated switches, Pad-mounted Air-insulated switches, Submersible SF6-insulated switches, Submersible Air-insulated switcher, Overhead load break switches, and Overhead Scadamate switches.

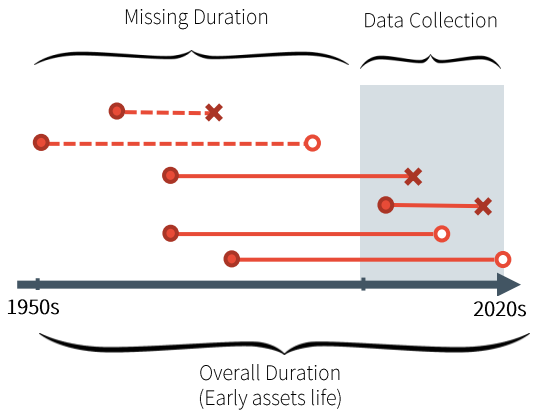
The failure curve project was started by reviewing the THESL existing methodologies and complementing them to further incorporate the accuracy and utility of the available data.

The project team had devised a streamlined process of data cleaning and modeling in two stages. The first pass is to determine the overall characteristics of the asset and analyze the data with respect to the asset's inherent behavior. Within the second pass, the project team would engage with asset data in higher resolution to combine all data sources, consider all data scenarios, use all methodologies, and arrive at the most accurate results.



Methodologies

Data Driven Reliability Engineering Methodology



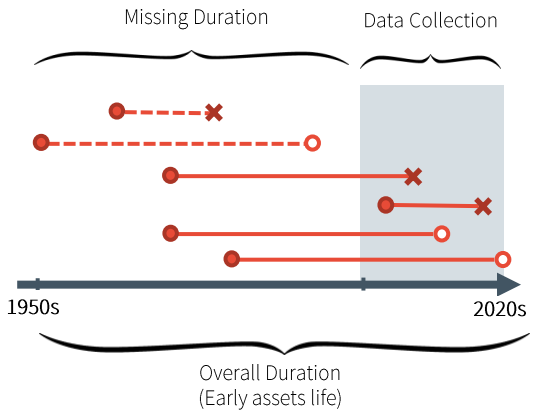
Hatch's experience in asset management, risk-based capital and maintenance planning, and reliability engineering, provides valuable insights into the strengths and weaknesses of various mathematical methods for addressing asset management challenges in various industry sectors.

The transmission and distribution (T&D) domain, due to various complexities and nature of its historical operations is particularly prone to various data challenges (e.g., lack or incompleteness of data). This problem presents itself in several ways, including poor data quality due to past system migrations and consolidations, or simply because of insufficient data collection efforts. This can overlook past failures or other relevant information (e.g., assets not included in the data set from the start). To address these challenges, Hatch has applied advanced reliability engineering methods, incorporating artificial intelligence (AI) and machine learning, probabilistic data imputation techniques, as well as various simulation methods to fill these gaps.

The methodologies used in this report include scientific reliability engineering techniques suitable for analyzing data that is right-censored or left-truncated. In cases where assets have been replaced due to technological advancements or as part of policy-driven age replacements, [redacted] while assessing their reliability. Furthermore, [redacted] were employed to enhance the utility of the available data where its availability was limited. Crucially, to account for potential data biases and the impact of replacing older asset classes, various data scenarios were defined and analyzed. This approach helps in understanding the implications of significant asset replacement programs in the past or major vintage asset changes.

It is important to note that any probabilistic analysis relying heavily on data, such as this one, comes with limitations and that the results should be interpreted considering data quality and availability challenges.

Modelling Methodology/ Data Scenario



Hatch's combined expertise in risk analytics and asset management has fostered innovative approaches to better deal with uncertainties raised due to data challenges and to accurately model and estimate failure characteristics.

Multiple reliability analysis methodologies are used to capture the behavior of the data, as well as to understand and validate the extent of uncertainty.

- ✓ M0: [redacted]
- ✓ M1: [redacted]
- ✓ M2: [redacted]
- ✓ M3: [redacted]
- ✓ M4: [redacted]
- ✓ M5: [redacted]

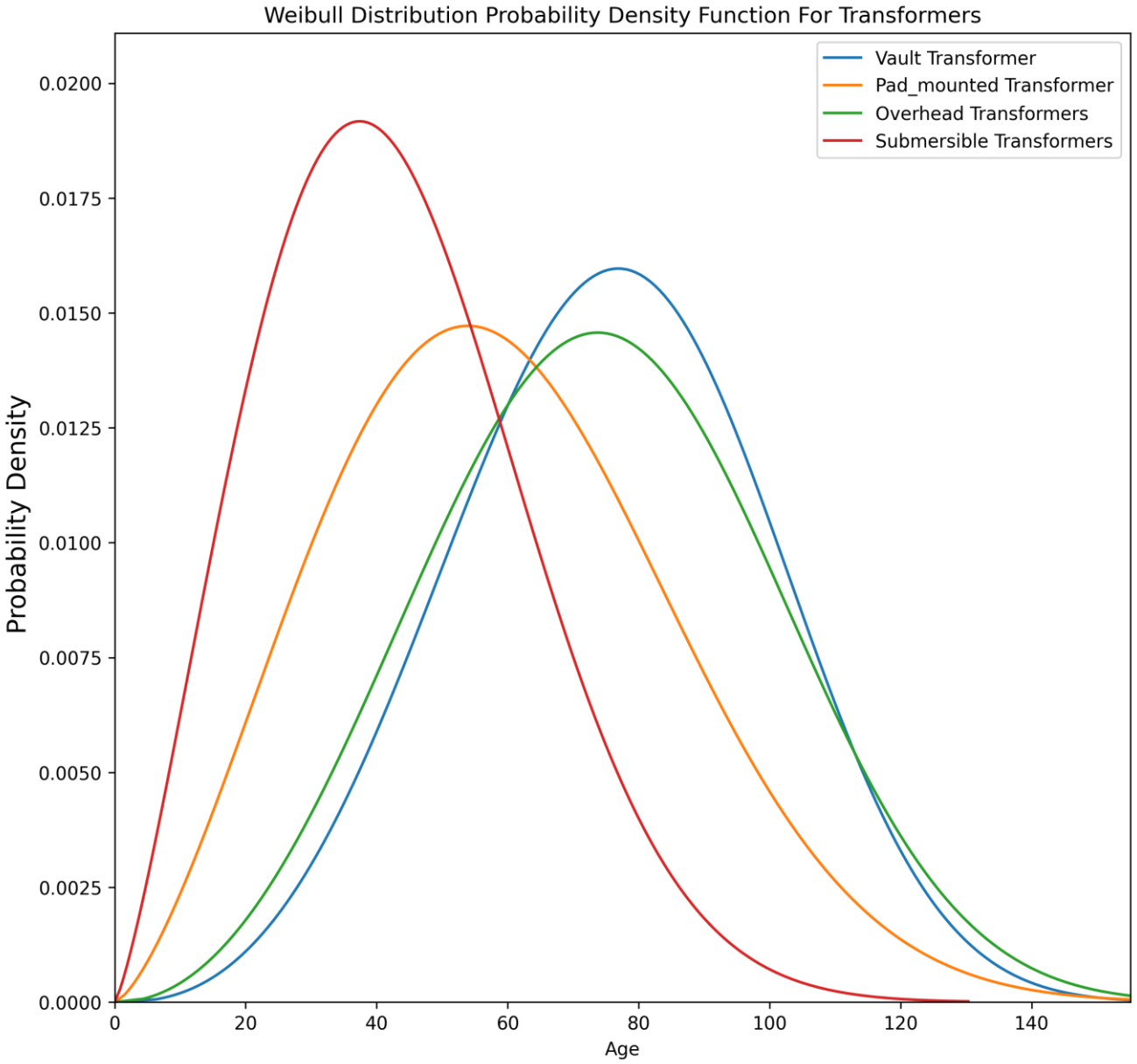
Multiple data scenarios were developed to understand the effect of right and left trimming on the data (i.e., infant mortality and burn out periods). This was particularly useful in distinguishing against various vintages within assets vintage, manufacturer and technologies.

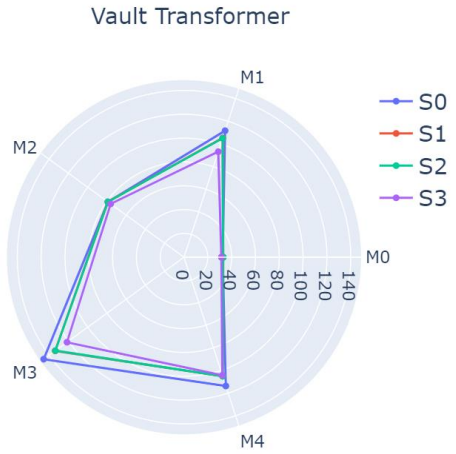
- ✓ S0: [redacted]
- ✓ S1: [redacted]
- ✓ S2: [redacted]
- ✓ S3: [redacted]

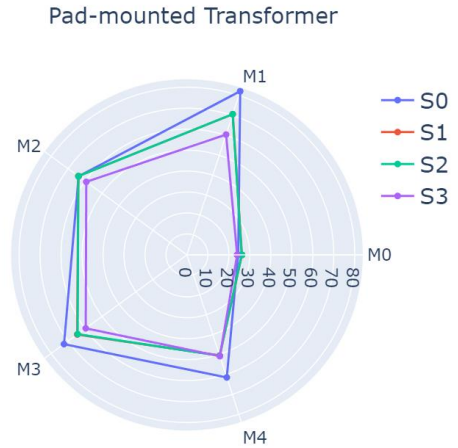
Results Presentation

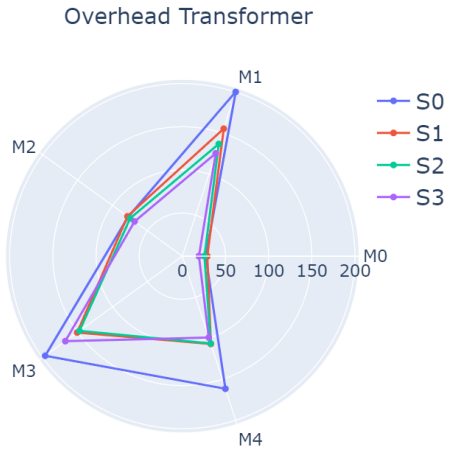
Assets Results Summary (Transformers)

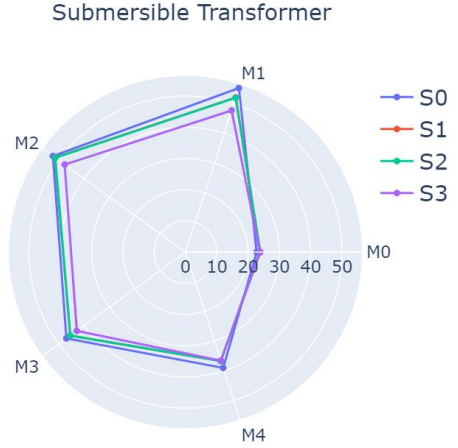
Asset	Contribution	Data Scenario	Method	Shape	Scale
Vault Transformer	5.02%	Installation Year >= 1970 & Age >=4	(M0)	3.09	35.1
			(M1)	2.79	104.61
			(M2)	3.51	84.61
Pad-mounted Transformer	9.57%	Installation Year >= 1970 & Age >=4	(M0)	2.45	26.99
			(M1)	2.74	67.86
			(M3)	2.43	67.09
Overhead Transformer	4.81%	Installation Year >= 1960 & Age >=3	(M0)	2.01	29.02
			(M1)	1.90	154.09
			(M2)	3.12	83.47
Submersible Transformer	12.14%	Installation Year >= 1965 & Age >=3	(M0)	2.53	26.87
			(M1)	2.51	53.77
			(M3)	2.25	48.58







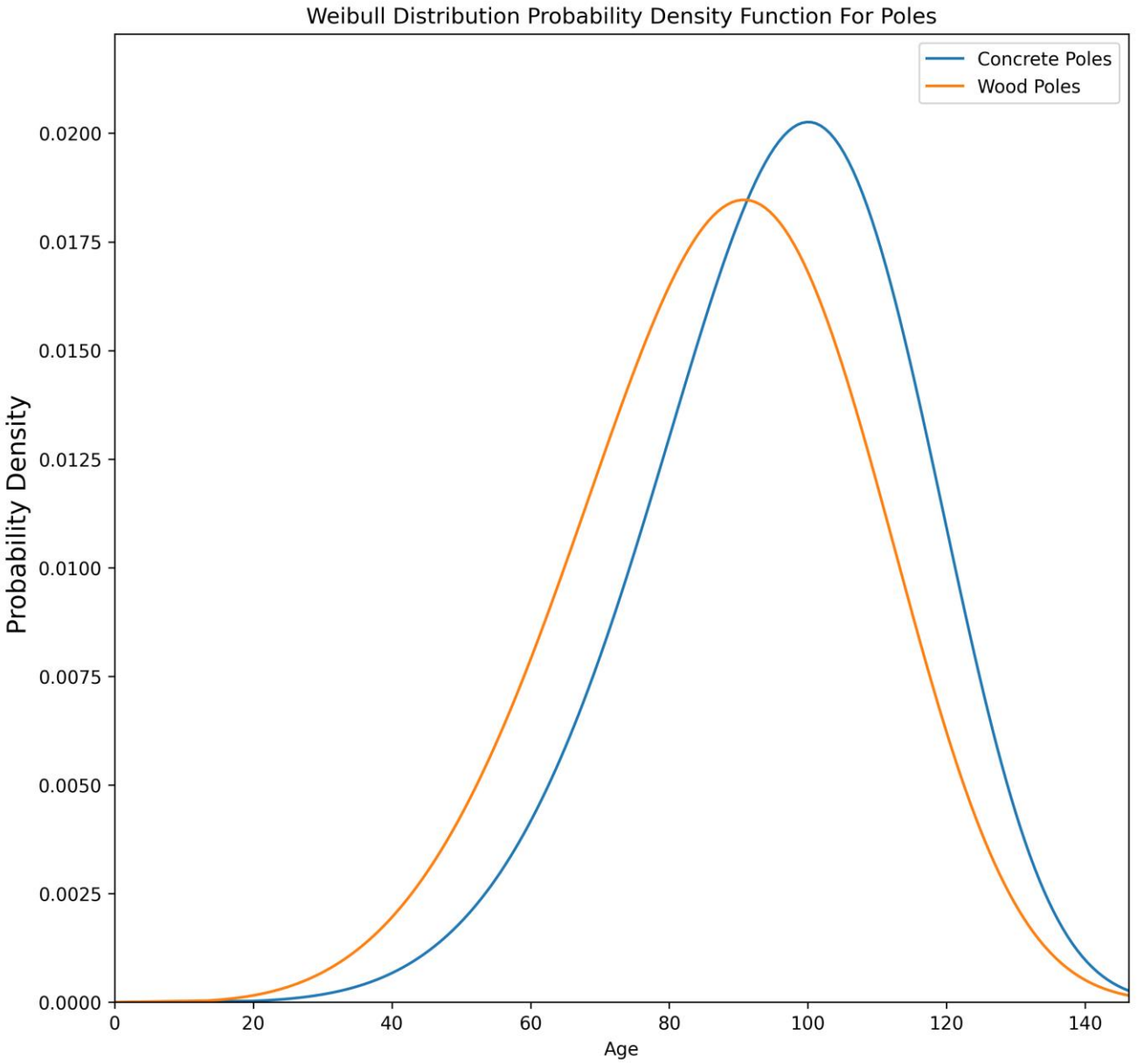


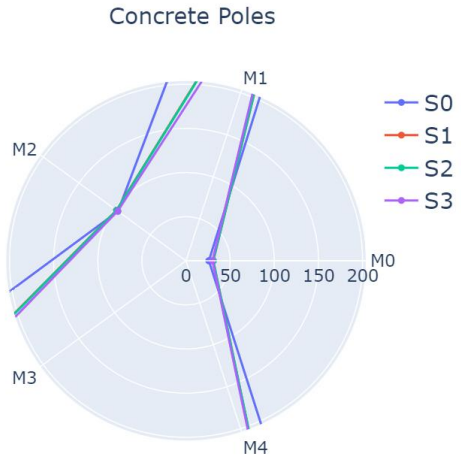


Assets Results Summary (Poles)

CONFIDENTIAL

Asset	Contribution	Data Scenario	Method	Shape	Scale
Concrete Poles	0.67%	Installation Year >= 1960 & Failed Assets Age >=4	(M0) [redacted]	2.25	33.79
			(M1) [redacted]	2.14	418.87
			(M2) [redacted]	5.61	103.62
Wood Poles	0.62%	Installation Year >= 1970 & Failed Assets Age >=3	(M0) [redacted]	2.01	25.68
			(M1) [redacted]	1.82	486.32
			(M2) [redacted]	4.68	95.56



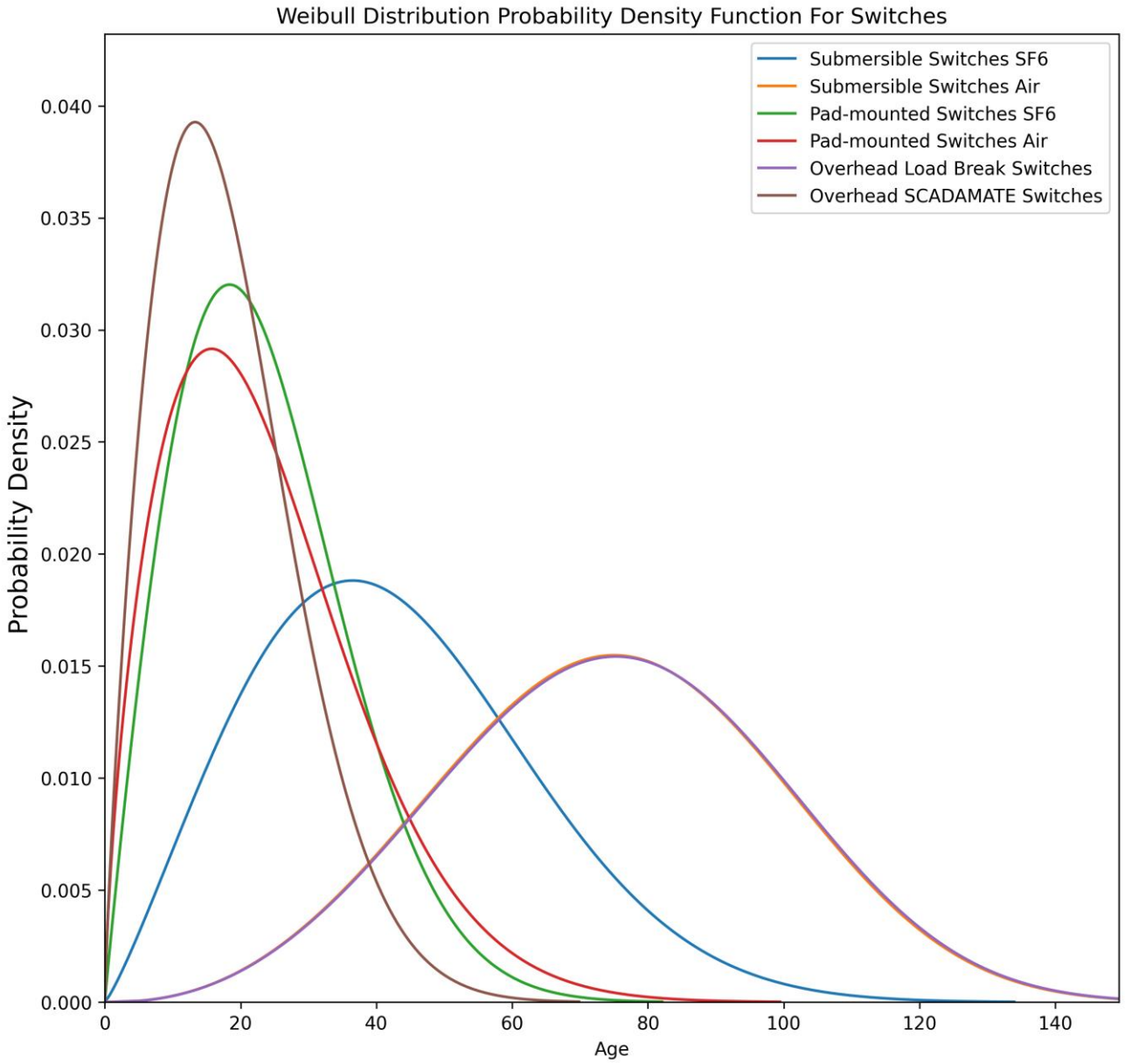


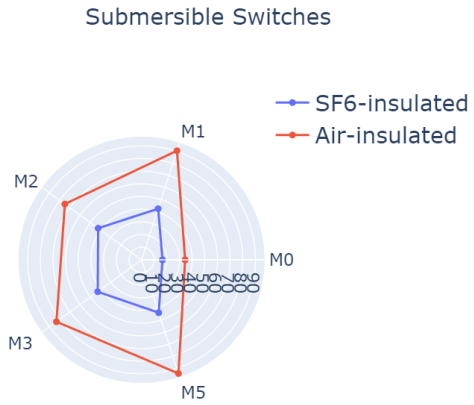
Assets Results Summary (Switches part 1)

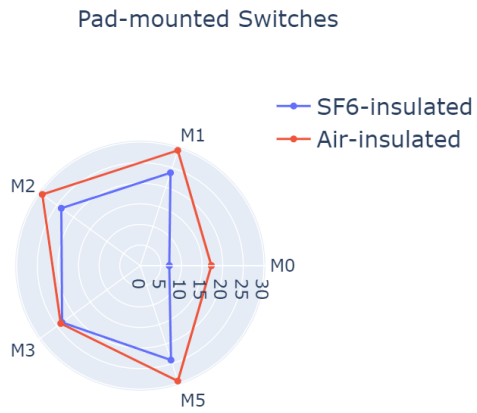
Asset	Contribution	Data Scenario	Method	Shape	Scale
Submersible Switches (SF6-insulated)	8.43%	Failed Assets Age >=3	(M0) [redacted]	2.32	18.66
			(M1) [redacted]	2.39	47.83
			(M3) [redacted]	2.18	48.37
Submersible Switches (Air-insulated)	4.09%	Failed Assets Age >=3	(M0) [redacted]	2.37	38.82
			(M1) [redacted]	2.67	101.83
			(M2) [redacted]	3.34	83.44
Pad-mounted Switches (SF6-insulated)	13.19%	Failed Assets Age >=3	(M0) [redacted]	1.98	7.94
			(M1) [redacted]	1.96	26.72
			(M3) [redacted]	1.96	26.44
Pad-mounted Switches (Air-insulated)	34.52%	Failed Assets Age >=3	(M0) [redacted]	1.54	19.15
			(M1) [redacted]	1.72	32.98
			(M3) [redacted]	1.69	26.73

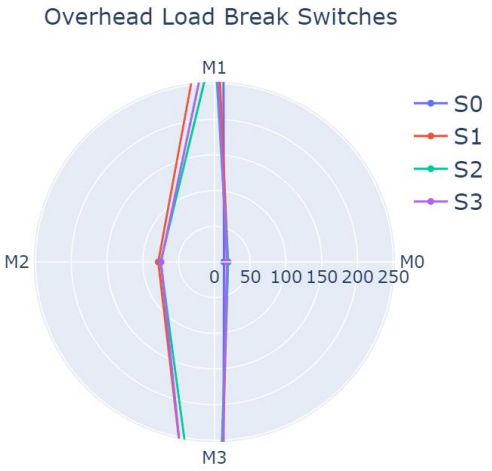
Assets Results Summary (Switches Part 2)

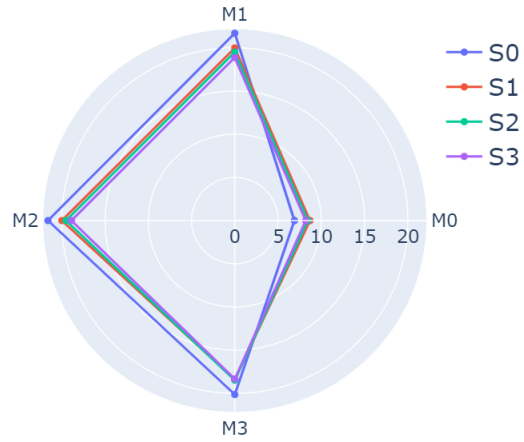
Asset	Contribution	Method	Data Scenario	Shape	Scale
Overhead Load Break Switches	2.66%	(M0) [redacted]	Installation Year >= 1970 & Age >=3	1.68	21.30
		(M1) [redacted]		1.49	343.78
		(M2) [redacted]		3.34	83.75
Overhead SCADAMATE Switches	28.10%	(M0) [redacted]	Installation Year >= 1960 & Age >=3	1.63	9.16
		(M1) [redacted]		1.79	21.22
		(M3) [redacted]		1.82	20.62

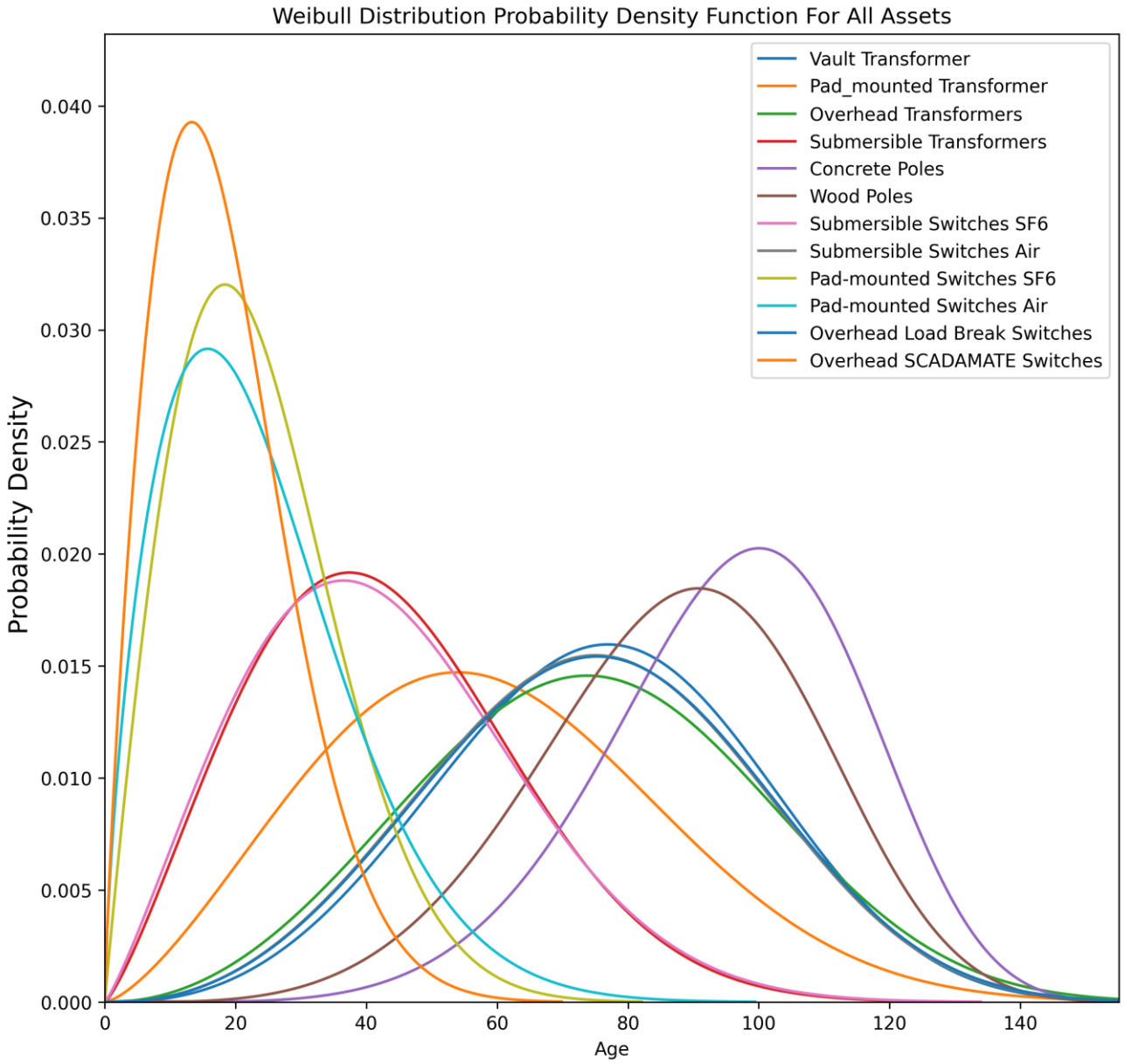


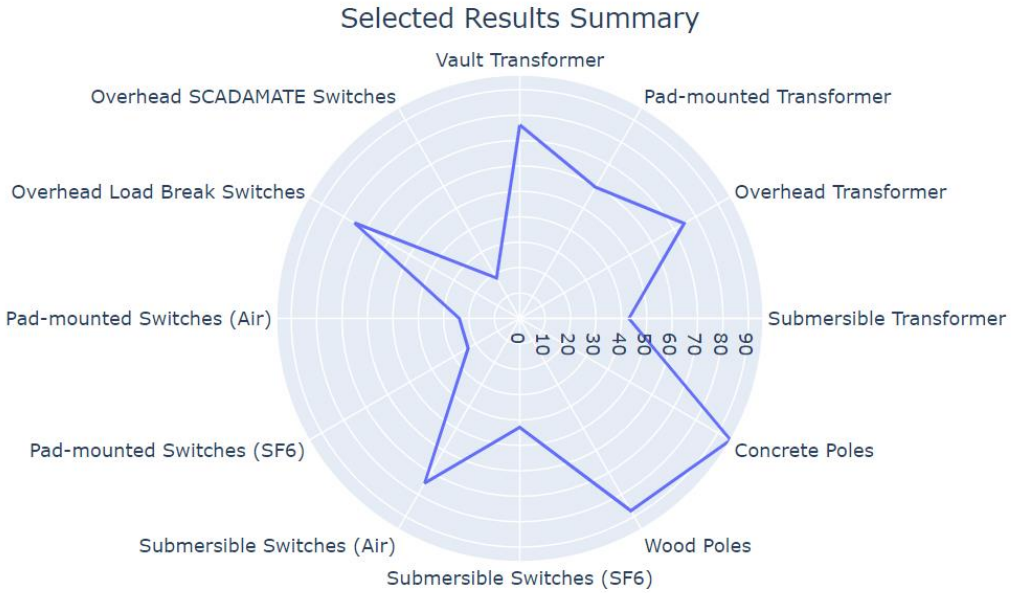












Thank you

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TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO SCHOOL ENERGY COALITION

UNDERTAKING NO. JT1.8:

Reference(s): Exhibit 2B, Section D2, Page 14

To provide the data at page 14, section D2 of the distribution system code in tabular format; to clarify time lag between time of order and time of installation.

RESPONSE:

Please see Tables 1 and 2 below for the moving average unit costs for each major asset class, covering the years 2019 to 2023 underpinning Figure 11 at Page 14 of Exhibit 2B, Section D2.

The moving average price is an inventory costing method wherein the average price of a stock code is calculated after every goods' movement. It is not the same as the current purchase price of the goods, however, it does represent the value of the goods in the system at a particular point in time.

The moving average price for all Top Usage Cable stock codes shown in Table 1 increased from 2019 to 2023.

Table 1: Moving Average Price for Top Usage Cable SKUs ($/m)

	2019	2020	2021	2022	2023	Avg. Increase per Year
9662955 CABLE TRIPLEX 2 #2 AL AL XLPEI 1- #4	$2.44	$2.30	$2.81	$3.29	$3.89	**15%**

	2019	2020	2021	2022	2023	Avg. Increase per Year
7180052 CABLE 1/0 AL 28KV TRXLPE ECNPEJ	$9.19	$9.18	$11.59	$11.73	$11.79	**7%**
7150228 CABLE 300 KCMIL CU 600V TW75 WHITE AS	$14.42	$14.70	$20.43	$16.92	$19.20	**8%**

The moving average price for all Top Usage Transformer stock codes shown in Table 2 increased from 2019 to 2023.

Table 2: Moving Average Price for Top Usage Transformer SKUs ($/ea)

	2019	2020	2021	2022	2023	Avg. Increase per Year
9665518 TRANSFORMER POLEMOUNT 1PH 100KVA	$3,989.25	$3,753.13	$4,270.17	$5,132.18	$7,525.06	**22%**
9665522 TRANSFORMER POLEMOUNTED 1PH 167KVA	$5,658.58	$5,272.01	$5,881.80	$7,239.86	$8,561.53	**13%**
9665517 TRANSFORMER POLEMOUNTED 1PH 50KVA	$2,362.12	$2,347.07	$2,524.69	$3,410.32	$4,869.39	**27%**
6661303 TRANSFORMER PADMOUNTED 1PH 100KVA	$4,403.94	$4,403.14	$6,772.54	$11,806.14	$9,029.01	**26%**
6661304 TRANSFORMER PADMOUNTED 1PH 167KVA	$6,484.96	$6,219.10	$7,298.47	$13,425.27	$14,070.69	**29%**

The time lag between when equipment is purchased and when it is in service in the field includes the (i) purchase order lead time, (ii) the lead time between material arrival and issuance at the warehouse, and (iii) time for delivery and installation.

The purchase order lead time is the time between placing a purchase order with the supplier and the time the material is delivered and received into the warehouse. Purchase order lead time varies widely across stock codes. Currently, the average purchase order

lead time for Toronto Hydro's top usage cables is approximately 195 days, and the average purchase order lead time for the top usage transformers is approximately 231 days.

On a best-efforts basis, Toronto Hydro analyzed a representative sample of projects and found that the average time lag between material arrival and issuance from warehouse for distribution transformers is 16 business days. However, due to the complexity associated with tracking and the dynamic nature of projects and associated turnover of equipment, Toronto Hydro is unable to provide the overall time lag between purchase and installation for cables within the timelines for responding to undertakings.

Toronto Hydro follows a made-to-stock inventory strategy. Typically, material is ordered for inventory stock based on forecasted project demand. Toronto Hydro will hold a calculated amount of stock in inventory to support reactive and emergency work, planned capital project demand and to protect against variations in lead time and demand. When inventory drops below the set reorder point, new materials are procured to replenish stock. Materials used to replenish critical spares are marked as a critical spare and will remain in the warehouse until there is a failure in the field. The remaining stock will stay in the warehouse until the requested issuance date of demand. In response to periods with excess demand and low inventory stock, the time between material arrival and issuance from the warehouse may be as brief as a week, as material is turned over quickly in response to higher demand.

When material is issued out to crews for a reactive project, the material is typically in the field the same day, or next day in order to support restoration efforts. For planned capital projects, the size of the project, complexity of coordination efforts with third parties, and complexity of outage planning with customers are all factors that will influence the time it

takes for installation of the equipment. On a best-efforts basis, Toronto Hydro analyzed a representative sample of projects and found that after the material is shipped and delivered from the warehouse, the materials would be in service 50-80 business days on average.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO

UNDERTAKING NO. JT1.9:

Reference(s): 1B-AMPCO-15

To clarify amounts for the category, difference in time not spent working on a project.

RESPONSE:

The increase in time not spent working on a specific operating or capital project is due to a refinement in the estimation of these hours being reflected in 2024-2025 resulting in the inclusion of components that were previously not accounted for in the calculation of down-time such as lunch hour, safety meetings, or training.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO

UNDERTAKING NO. JT1.10:

Reference(s): 2B-SEC-31

For the assets described in 2B-SEC-31, to show the representative unit cost for each asset, to show the derivation of the 2.7 billion figure.

RESPONSE:

Please see the requested data corresponding to the interrogatory response 2B-SEC-31 in Table 1 below. The unit costs below are representative averages as some asset classes utilize more granular average unit costs to produce the total cost in this calculation. Note that these unit costs should not be compared to the more up-to-date and tailored unit costs used to estimate program costs in the 2025-2029 Distribution System Plan. Toronto Hydro has maintained the same unit costs used to develop the Assets Past Useful Life percentage since the inception of the metric. These unit costs are held constant in order to have better comparability of the asset demographics year-over-year. By controlling the unit costs for this model, Toronto Hydro is able to monitor the overall rate of aging of its asset population with less obscurity.

Table 1: Detailed Breakdown of Units and Associated Costs Contributing to Assets at End of Useful Life by 2023

Asset Class	Unit	Unit Counts	Average Unit Cost	Cost ($ Millions)
OH Conductor	*km*	1,301	$45,946	$60
OH Switches	*per unit*	2,493	$4,073	$10
OH Transformers	*per unit*	7,646	$11,761	$90

Asset Class	Unit	Unit Counts	Average Unit Cost	Cost ($ Millions)
Poles	*per unit*	36,789	$7,434	$273
UG Cables	*km*	3,062	$254,675	$780
UG Switches	*per unit*	700	$8,917	$6
UG Transformers	*per unit*	19,754	$14,464	$286
Network Assets	*per unit*	512	$87,590	$45
Switchgear	*per unit*	135	$2,860,791	$386
DC Systems	*per unit*	142	$47,073	$7
Power TX	*per unit*	137	$788,358	$108
Circuit Breakers	*per unit*	860	$72,156	$62
Civil Assets	*per unit*	11,124	$40,245	$448
Meters	*per unit*	393,024	$256	$101
Total				**$2,661**

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO

UNDERTAKING NO. JT1.11:

Reference(s): 2B-AMPCO-18

Referring to 2B-AMPCO-18, to provide a start date for the probability of failure initiative.

RESPONSE:

The Probability of Failure analysis started in May 2021.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO

UNDERTAKING NO. JT1.12:

Reference(s): 2B-AMPCO-20

Referring to 2B-AMPCO-20, to confirm a start date for the Engineering Asset Investment Planning initiative.

RESPONSE:

The start date of the Engineering Asset Investment Planning ("EAIP") initiative was Q1 2021 which began with the RFP process. The implementation of the system with the selected vendor began July 2021.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO

UNDERTAKING NO. JT1.13:

Reference(s): 2B-AMPCO-42

Referring to 2B-AMPCO-42 Appendix A, Forecast Units Installed, to provide data for 2025-2029 for all programs in the DSP.

RESPONSE:

Please see Appendix A for the forecast units to be installed over the 2025-2029 period for each segment in the Distribution System Plan.

In developing this response, Toronto Hydro identified some missing and incorrect information in Appendix A to its response to interrogatory 2B-AMPCO-42 regarding 2020-2024 forecast and actual/bridge units. Toronto Hydro has revised data, provided additional clarification, or added new rows for the following programs in an updated version of that appendix, provided as Appendix B to this response (identified by "/C"):

- Generation Protection, Monitoring and Control;
- Customer Connections;
- Underground System Renewal – Horseshoe;
- Network Condition Monitoring and Control;
- System Enhancements;
- IT-OT Systems; and
- Facilities.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO

UNDERTAKING NO. JT1.14:

Reference(s): 4-AMPCO-75

To explain the difference for 2022 year-end figures for priority deficiencies.

RESPONSE:

The P1/P2/P3 deficiencies in 2022 from Table 1 in 4-AMPCO-75, which total to 11,707, only include deficiencies to be addressed by operating and maintenance expenses (i.e. O&M) in the Corrective Maintenance program (Exhibit 4, Tab 2, Schedule 4) whereas the 12,000+ reported in Table 1 in Exhibit 2B, Section D2, Page 17 includes both capital and O&M related-deficiencies addressed through the Reactive and Corrective Capital (Exhibit 2B, Section E6.7) and the Corrective Maintenance (Exhibit 4, Tab 2, Schedule 4) programs.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO DISTRIBUTED RESOURCE COALITION

UNDERTAKING NO. JT1.15:

Reference(s): 2B-DRC-07(i)

To confirm which of the 14 barriers THESL agrees with.

RESPONSE:

The Pollution Probe report referenced in Toronto Hydro's response to interrogatory 2B_DRC-7 part (i), identified the following 14 barriers to EV charging installations in multi-unit residential buildings (Table 1 on page 12 of the report).

Type	Barriers
Grid Preparedness & Charging Infrastructure Barriers	• Electrical Capacity • Metering
Building Design & Physical Infrastructure Barriers	• Parking Supply • Design • Connectivity
Education & Awareness Barriers	• Condo Board or Strata Council Decision-Making and Building Owner Awareness
Regulatory & Policy Barriers	• Physical Barriers • Condo and Strata Legislation • Electricity-related Legislative & Regulatory • Measurement Rules
Financial Barriers	• Installation Costs • Operation & Maintenance Costs • Cost Sharing
Other Barriers	• Rental Specific Barriers

While Toronto Hydro has not adopted this report nor conducted its own research into this area, Toronto Hydro's understanding is that the barriers provided in Table 1 of the referenced report, present challenges to customers in MURB's as well as those with garage arrangements to install electric vehicle charging within their properties/buildings. From a grid perspective, as a licenced distributor of electricity within the City of Toronto, Toronto Hydro is obligated to connect customers (new and upgrades) to its grid and works closely with all customers to understand their requirements and provide a safe and reliable grid connection to meet the needs of their property/buildings.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO CONSUMERS COUNCIL OF CANADA

UNDERTAKING NO. JT1.16:

Reference(s): Exhibit 2B, Section E5.1, Page 20

To provide the calculations behind the increase in the basic connection fee to $3,059, shown at Exhibit 2B, Section E5.1, Page 20.

RESPONSE:

The basic connection allowance is based upon a typical overhead service connection of a residential customer as defined in the Distribution System Code, Section 3.1.4. This includes the cost of the transformer, labour, materials, distribution bus wire, and service wires required to service the connected customers.

The basic connection allowance is further derived by calculating the total cost of servicing twenty customers per transformer, using 30 metres of overhead service wire per customer.

Table 1: Calculation of the Proposed Basic Connection Allowance

Item	Cost	Service Portion = Cost divided by 20 customers
Electrical (Transformer)	$11,557.18	$577.86
Electrical (Wires)	$48,242.90	$2,412.15
Design	$1,377.04	$68.85
	Total	**$3,058.86**

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO CONSUMERS COUNCIL OF CANADA

UNDERTAKING NO. JT1.17:

Reference(s): 2A-CCC-52

In 2A-CCC-52, in the category of Contributions and Grants, to provide actual forecast versus actuals for 2020 to 2024.

RESPONSE:

Please see the table below which provides the 2020-2023 Actuals and 2024 Bridge Contributions and Grants and the 2020-2024 Approved Forecast.

Table 1: 2020-2024 Capital Contribution and Grants ($ Millions)

	2020	2021	2022	2023	2024
2020-2023 Actuals and 2024 Bridge Capital Contributions & Grants[1]	(335.1)	(459.9)	(586.3)	(679.7)	(883.2)
2020-2024 Forecast Capital Contributions & Grants[2]	(378.0)	(448.4)	(504.6)	(556.8)	(789.8)
Variance	**42.9**	**(11.5)**	**(81.7)**	**(122.8)**	**(93.4)**

[1] 1B-SEC-01, Appendix B

[2] EB-2018-0165, Draft Rate Order Update (February 12, 2020), Schedule 2 - OEB Appendix 2-BA

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO POWER WORKERS' UNION

UNDERTAKING NO. JT1.18(2):

Reference(s): 2B-PWU-3

To advise of the dollar figure that corresponds to the 24 percent reference at line 6 of 2B-PWU-3.

RESPONSE:

In reviewing the transcript, Toronto Hydro notes that in the exchange between CCC and Toronto Hydro at Page 142, Lines 1-22 of the Technical Conference Day 1 Transcript (April 8, 2024) no undertaking was provided by Toronto Hydro for JT1.18.

The 24 percent represents $141.9 million, which is the difference between the sum of 2020-2022 Actuals and 2023-2024 Bridge versus the 2020-2024 Planned in its last rebasing application. The updated comparison, referencing 2020-2023 Actuals and updated 2024 Bridge[1] compared to 2020-2024 Planned in the last rebasing application, is a $139.0 million variance, which continues to round to 24 percent.

[1] 2A-Staff-104, Appendix A

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO POWER WORKERS' UNION

UNDERTAKING NO. JT1.19:

Reference(s): 2B-PWU-3

To respond again to 2B-PWU-32.

RESPONSE:

Reviewing the transcript, Toronto Hydro notes this undertaking is intended to refer to 2B-PWU-3 and does not accurately reflect the request made by PWU. The scope of the undertaking is to provide the costs associated with planned work deferred in Tables 1 and 2 of 2B-PWU-3 using the unit costs underpinning the 2025-2029 forecast.[1] Please see Tables 1 and 2 below. Note that these costs do not include inflation and other allocations, nor is any civil work associated with replacing electrical assets accounted for in the estimates. For details on program unit costs, please see Toronto Hydro's response to undertaking JT3.4.

Table 1: 2020-2024 Underground Asset Replacement Deferral Volumes and Associated Cost

Asset Class	Planned Work Deferred	% of Planned Work Deferred	Estimated Cost ($ Millions)
Total Cable (in circuit km)	12	6%	$2.5
Transformers	0	0%	$0
Switches	87	38%	$11.6

[1] EB-2023-0195, Technical Conference Vol. 1 (April 9, 2024) at page 149, lines 7-20

In preparing its response to this undertaking, Toronto Hydro identified an error in the number of URD submersible switches deferred and has corrected it in Table 2 below.

Table 2: 2020-2024 Underground Renewal Downtown Asset Replacement Deferral Volumes and Associated Cost

Asset Class	Planned Work Deferred	% of Planned Work Deferred	Estimated Cost ($ Millions)
PILC (in circuit km)	0	0%	0
AILC (in circuit km)	47	89%	23.5
Cable chamber rebuilds	50	67%	22.5
Cable chamber roof rebuild	87	73%	7.0
URD submersible switches	9	52	1.8
URD transformers	0	0%	0
URD vault roof	9	50%	1.8

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO POWER WORKERS' UNION

UNDERTAKING NO. JT1.20:

Reference(s): 2B-PWU-4

Re Table 1 in 2B-PWU-3, to reformulate with the unit cost as described previously, multiplied by the volumes in the table.

RESPONSE:

In reviewing the transcript, Toronto Hydro notes that this undertaking is intended to refer to 2B-PWU-4.[1]

Please see Table 1 below for an updated version of Table 1 in Toronto Hydro's response to interrogatory 2B-PWU-4 with the estimated costs associated with the deferred volumes of work using the unit costs underpinning the 2025-2029 forecast in the Distribution System Plan. Note that these costs do not include inflation and other allocations, nor is any civil work or secondary assets associated with replacing primary electrical assets accounted for in the estimates. For details on program unit costs, please see Toronto Hydro's response to undertaking JT3.4.

Table 1: 2020-2024 Overhead Asset Replacement Deferral Volumes and Associated Cost

Asset Class	Planned Work Deferred	% of Planned Work Deferred	*Estimated Cost ($ Millions)
Poles	3,727	32%	$30.2
Pole Top Transformers	3,201	48%	$58.8

[1] EB-2023-0195, Technical Conference Vol. 1 (April 9, 2024) at page 152, lines 18-19.

Asset Class	Planned Work Deferred	% of Planned Work Deferred	*Estimated Cost ($ Millions)
Overhead Switches	0	0%	$0
Primary Conductor (km)	27	8%	$0.9

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO POWER WORKERS' UNION

UNDERTAKING NO. JT1.21:

Reference(s): 2B-PWU-14; 2B-PWU-15; 2B-PWU-16; 2B-PWU-17

To provide the data in the table at Figure 9 of 2B-PWU-14.

RESPONSE:

In reviewing the transcript, Toronto Hydro notes that the undertaking also includes 2B-PWU-15, 2B-PWU-16 and 2B-PWU-17. Tables 1-4 provides the tabular data underpinning the charts included in the referenced interrogatories.

Table 1: 2B-PWU-14 – Tabular data corresponding to Age Demographics of Direct-Buried Cable XLPE in Underground Horseshoe as of 2022 and by 2029 (without investment)

Age Range	Circuit Length (km)	
	2022	2029 (without investment)
0-9	3.0	0.2
10-19	11.6	6.8
20-29	83.4	14.0
30-39	70.4	100.9
40-49	72.7	73.2
50-59	39.1	49.3
60-69	5.6	35.8
70-79	0.6	5.6
80+	0	0.6

Table 2: 2B-PWU-15 – Tabular data corresponding to Age Demographics of Direct-Buried Cable in-Duct in Underground Horseshoe as of 2022 and by 2029 (without investment)

Age Range	Circuit Length (km)	
	2022	2029 (without investment)
0-9	4.7	0.2
10-19	47.9	14.8
20-29	209.5	65.2
30-39	63.6	231.8
40-49	13.3	15.9
50-59	30.7	14.1
60-69	8.3	27.7
70-79	1.2	8.3
80+	0	1.2

Table 3: 2B-PWU-16 – Tabular data corresponding to Age Demographics of Cable in Concrete-Encased Ducts as of 2022 and by 2029 (without investment)

Age Range	Circuit Length (km)	
	2022	2029 (without investment)
0-9	1169.8	285.3
10-19	577.1	1196.4
20-29	579.2	319.6
30-39	247.1	613.7
40-49	104.8	174.0
50-59	210.5	95.4
60-69	45.3	205.0
70-79	13.1	44.2
80+	0	13.1

Table 4: 2B-PWU-17 – Tabular data corresponding to Age Distribution of All Transformers in Underground Horseshoe System as of 2022 and by 2029 (without investment)

Age Range	Number of Transformers	
	2022	2029 (without investment)
0-9	8466	1563
10-19	6730	9340
20-29	3830	4849
30-39	3310	4632
40-49	1927	2566
50-59	895	1734
60-69	106	524
70-79	12	63
80+	477	482

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO POWER WORKERS' UNION

UNDERTAKING NO. JT1.22:

Reference(s): 1B-PP-07

To advise the number of customers that would fall within the area of the 30-MW project, and the proportion that number of customers would represent of all customers in the THESL system.

RESPONSE:

143,260 customers are served by the six stations targeted for Local Demand Response over the 2025-2029 period. This represents approximately 18% of Toronto Hydro's total customer base. Please see the table below for the breakdown by station. Toronto Hydro notes that the data represents a snapshot in time (as of April 2024) and does not indicate future growth that may be triggering the need for relief in these areas in the future.

Station	Customer Count as of April 2024	Percentage of Customers
Cecil TS	12,437	1.6%
Copeland TS	3,174	0.4%
Finch TS	36,794	4.7%
Leslie TS	33,547	4.3%
Manby TS	26,842	3.4%
Strachan TS	30,466	3.9%
Total of 6 Station Areas	143,260	18.1%
Total Number of Customers	**789,793**	**100.0%**