Ontario Energy Board | Commission de l'énergie de l'Ontario

BY EMAIL

February 12, 2024

Nancy Marconi
Registrar
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto ON M4P 1E4

Dear Ms. Marconi:

Re: EB-2023-0195 Application for 2025 Rates

In accordance with Procedural Order NO. 1, please find attached the Ontario Energy Board (OEB) staff interrogatories in the above proceeding, except those OEB staff interrogatories that reference evidence that has been afforded confidential treatment in the OEB's Decision and Order dated February 5, 2024. The applicant and intervenors have been copied on this filing. OEB staff will submit a second filing with interrogatories requiring confidential treatment.

Toronto Hydro-Electric System Limited's responses to interrogatories are due by March 11, 2024.

Any questions relating to this letter should be directed to Thomas Eminowicz at Thomas.Eminowicz@oeb.ca or at 437-880-4363 ext. 363. The OEB's toll-free number is 1-888-632-6273.

Yours truly,

Thomas Eminowicz

Digitally signed by Thomas Eminowicz
Date: 2024.02.12 15:22:49 -05'00'

Thomas Eminowicz
Electricity Distribution Rates

Encl.

OEB Staff Interrogatories
Toronto Hydro-Electric System Limited
EB-2023-0195

Please note, Toronto Hydro-Electric System Limited (Toronto Hydro) is responsible for ensuring that all documents it files with the OEB, including responses to OEB staff interrogatories and any other supporting documentation, do not include personal information (as that phrase is defined in the *Freedom of Information and Protection of Privacy Act*), unless filed in accordance with rule 9A of the OEB's *Rules of Practice and Procedure*.

0-Staff-1
Preamble:
Updated Revenue Requirement Work Form (RRWF) and Models

Question(s):

a) Upon completing all interrogatories from Ontario Energy Board (OEB) staff and intervenors, please provide an updated RRWF in working Microsoft Excel format with any corrections or adjustments that the Applicant wishes to make to the amounts in the populated version of the RRWF filed in the initial applications. Entries for changes and adjustments should be included in the middle column on sheet 3 Data_Input_Sheet. Sheets 10 (Load Forecast), 11 (Cost Allocation), and 13 (Rate Design) should be updated, as necessary. Please include documentation of the corrections and adjustments, such as a reference to an interrogatory response or an explanatory note. Such notes should be documented on Sheet 14 Tracking Sheet and may also be included on other sheets in the RRWF to assist understanding of changes.
b) In addition, please file an updated set of models that reflects the interrogatory responses. Please ensure the models used are the latest available models on the OEB's 2024 Electricity Distributor Rate Applications webpage.

1-Staff-2
Ref 1: Chapter 2 Filing Requirements, p. 3 (update for 2024 FRs)

Question(s):

a) As required in the Chapter 2 Filing Requirements, please provide a summary of any updates or amendments to an OEB model to accommodate Toronto Hydro's circumstance, if applicable.

1B-Staff-3
Ref 1: Report of the Board, Renewed Regulatory Framework for Electricity, p. 11
Ref 2: Report of the Board, Handbook for Utility Rate Applications, p. 26

Preamble:
Reference 1 states the following:

> "[Performance-based rate-setting] decouples the price (the distribution rate) that a distributor charges for its service from its cost. This is deliberate and is designed to incent the behaviours described by the Board in 2000. This approach provides the opportunity for distributors to earn, and potentially exceed, the allowed rate of return on equity. It is not necessary, nor would it be appropriate, for ratebase to be re-calibrated annually."

Reference 2 states the following:

> "If a five-year forecast is provided, it is to be used to inform the derivation of the custom index, not solely to set rates on the basis of multi-year cost of service."

Question(s):

a) Please provide a table showing each element of THESL's revenue requirement resulting from its 2025-2029 investment and spending plans if its rates were established on a cost of service basis, as well as the total for each year.
b) Please provide a table showing each element of THESL's revenue requirement from 2025-2029 as proposed in this application, prior to the application of a Performance Incentive Mechanism (PIM), stretch or productivity factor, as well as the total for each year.
c) Please explain similarities and differences between the tables in a) and b) and THESL's proposed revenue requirements, by element, while demonstrating how the resulting revenue changes throughout the term accord with the OEB's policy expectations expressed at the references above.
d) Please discuss the extent to which Toronto Hydro's custom index is the result of anything other than a forecast of its annual costs supplemented by a PIM, stretch and productivity factor.

1B-Staff-4
Ref 1: Exhibit 1B / Tab 1 / Schedule 1

Preamble:
Of the four strategic priorities for Toronto Hydro's integrated planning, sustainment and stewardship, modernization, growth and electrification and general plant, Toronto Hydro aligns performance objectives with customer feedback. Such feedback is to "prioritize investments in technology…", and to "invest proactively in system capacity…".

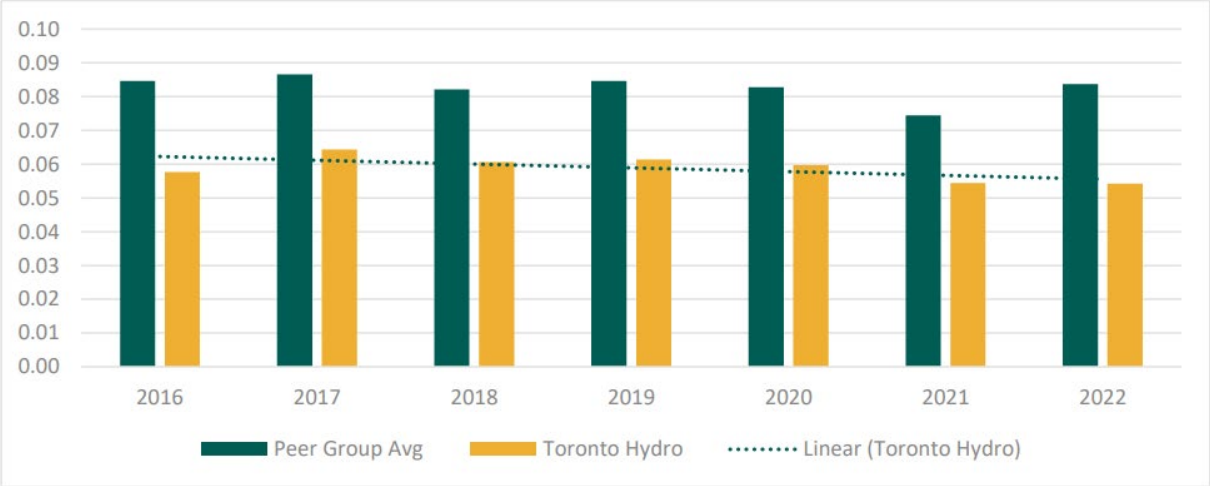
Question(s):

a) Please confirm that this objective applies exclusively to new technology investments that will reduce Toronto Hydro's costs (i.e., revenue requirement), as noted in section 3.1. If not confirmed please explain why not.
b) Confirm that all new technology investments planned for the test period have been evaluated to reduce Toronto Hydro's costs. If not confirmed, please list all such investments that will not reduce Toronto Hydro's costs in the planning period and explain why they are being proposed.
c) Confirm that all proactive system capacity investments have been evaluated using the "least regrets" principle described in section 2.2.
d) Please identify Toronto Hydro's marginal system capacity investment, i.e., the project demonstrated to have just made the threshold of an acceptable probability of creating unacceptable regrets by applying Toronto Hydro's "least regrets" investment principle.

1B-Staff-5
Ref 1: Exhibit 1B / Tab 1 / Schedule 1 /

Preamble:
Figure 6 is reproduced below.

Figure 6: FTE per GWh of Load Served



Question(s):
a. Why was GWh of load chosen as the normalization parameter to compare against other utilities?
b. Why does Toronto Hydro believe GWh of load is a more appropriate parameter to utilize versus one of the following:
   i) Service area
   ii) Customer count
b. Provide FTE per each of the following parameters for each year inclusive of 2016-2022 for Toronto Hydro and the peer group:

i. Service area
ii. Customer count
iii. Km of line

1B-Staff-6
Ref 1: Exhibit 1B / Tab 1 / Schedule 1 /

Preamble:
Toronto Hydro makes multiple references to the "Horseshoe area" within its service area.

Question(s):
a) Of Toronto Hydro's service area, what percentage is made up of the horseshoe?
b) Of Toronto Hydro's customer count, what percentage are within the horseshoe?
c) What is Toronto Hydro's calculated building density for:
    i. the service area as a whole,
    ii. within the horseshoe,
    iii. outside the horseshoe?

1B-Staff-7
Ref 1: Exhibit 1B / Tab 1 / Schedule 1

Preamble:
The material challenges outlined in section 3, along with customer feedback and the principle of least regrets investments established investment priorities for Toronto Hydro's capital plan. Specifically, Toronto Hydro notes the importance of investments including Distributed Energy Resources to support "Growth & City Electrification".

Question(s):
a) Does Toronto Hydro evaluate proposed DERs to determine if they will increase or decrease system reliability during summer peak demand, winter peak demand, or during peak generation periods of the proposed DER technology?
b) How does Toronto Hydro allocate the costs of system investments needed to mitigate any negative reliability impacts that may be associated with implementation of specific DER technologies in specific parts of its system?
c) Please identify the incremental investments in this application that are required to enable Toronto Hydro to integrate new energy storage batteries into its system.
    i. Please explain why such investments would be needed in the planning period.
d) Considering that energy storage batteries have been utilized by other utilities as a non-wires alternative technology to help defer or eliminate the need for wires investments, please explain why this would not also apply to Toronto Hydro.

1B-Staff-8
Ref 1: Exhibit 1B / Tab 1 / Schedule 3 / p. 5, Table 5
Ref 2: Exhibit 1B / Tab 1 / Schedule 1 / p. 2
Ref 3: "Toronto Metropolitan University, Toronto Second Fastest Growing Metropolitan Area, City of Toronto the Fastest Growing Central City, in the United States/Canada in 2022" (May 23, 2023) <https://www.torontomu.ca/centre-urban-research-land-development/blog/blogentry7311/>
Ref 4: Ontario Ministry of Finance "Ontario Population Projections Update, 2022-2046" (July 19, 2023) https://www.ontario.ca/page/ontario-population-projections

Preamble:
In Reference 1, Toronto Hydro shows that Toronto Hydro's customer count has been slowing and is projected to average 0.3% annually in the last three years of the rate period. The same reference shows a downward trend in normalized MVA that is forecast to continue.

In Reference 2, Toronto Hydro states that

> "Toronto Hydro distributes electricity to Canada's largest – and North America's second fastest growing city."

Reference 4 indicates the City of Toronto's population growth rate will slow.

Question(s):

a) Please explain Toronto Hydro's view of the importance of absolute increase in population as compared to the growth rate of a population in the context of planning a distribution system. Please confirm that in the context of Toronto Hydro's distribution system planning, absolute growth is a more important consideration than the rate of growth. If not, please explain.
b) Please reconcile the apparent discrepancy between the statement that the City of Toronto's population is growing, in absolute terms, more than other cities with Toronto Hydro's forecasts showing slowing system load growth rates and the Ontario Ministry of Finance's projections that population growth is slowing for the City of Toronto.

1B-Staff-9
Ref 1: Exhibit 1B / Tab 1 / Schedule 1 /
Ref 2: Exhibit 1B / Tab 3 / Schedule 1 / pp. 8-21

Preamble:
Requesting clarification of components of individual PIM measures.

Question(s):

a. Does the Total Recordable Injury Frequency PIM measure include subcontracted field resources or only Toronto Hydro employees?
b. Does the Emissions Reduction PIM measure include emission reductions (ex. Fleet reductions or building square footage reductions) resulting from the contracting out of work or business activities?
c. Regarding Ref 2 please provide the data and calculations used to create Figure 1 and Figure 2. For Figure 1 provide the data by cause code and year including and excluding MEDs. Also include the calculation for the standard deviation.
d. Regarding Ref 2 Provide the detailed calculation for the 5 yr projected values of Figure 1 and Figure 2. Was each individual cause code projected? Please provide the projection per cause code? If a projection was not completed by cause code how were random failures (such as weather) versus non-random failures (such as aging defective equipment) incorporated into a single projection model? Did these projections incorporate the submitted investment plans as per the application?

1B-Staff-10
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / p. 33

Preamble:
Toronto Hydro has proposed funding for an Innovation Fund to support work that is exploratory and development in nature, where outcome is uncertain, but benefits could be significant.

Question(s):
a) Please list grant funding that Toronto Hydro has applied for from different government agencies over the past 5 years, along with a list of what was granted.
    i. If Toronto Hydro has not applied, please explain why not?

1B-Staff-11
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / p. 34

Preamble:
Toronto Hydro states that it “decided to allocate 0.3 percent of the proposed revenue requirement to the Innovation Fund, which amounts to approximately $16 million over the 2025-2029 rate period.”

Question(s):
a) Please provide examples of the other jurisdictions that have this type of funding, describe their programs and with their rationale for their proposed funding levels.
b) What was Toronto Hydro’s rationale to conclude that 0.3% was appropriate?

1B-Staff-12

Ref 1: Exhibit 1B / Tab 2 / Schedule 1, Figure 1
Ref 2: Exhibit 1B / Tab 2 / Schedule 1
Ref 3: EB-2014-0219: Report of the Board: New Policy Options for the Funding of Capital Investments: The Advanced Capital Module, September 2014

Preamble:
Reference 1 is reproduced below:

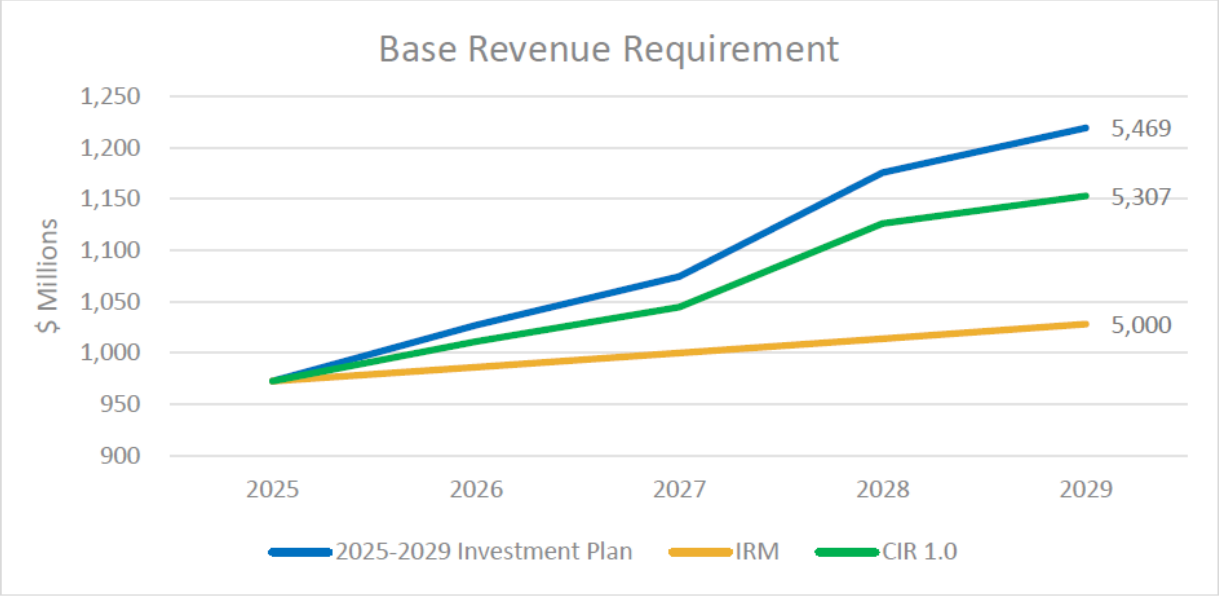


Figure 1: Cumulative 2025-2029 Base Revenue Requirement

Question(s):

a) Please populate the following table, adding the proposed Custom Revenue Cap Index (CRCI):

Revenue Requirement ($ million, two decimal places)	**2025**	**2026**	**2027**	**2028**	**2029**
2025-2029 Investment Plan					
IRM					
Current Custom IR formula (Custom Price Cap Index (CPCI) / CIR 1.0)					
Proposed CRCI					

b) Please populate the following table with the values that correspond with developing Reference 1:

CPCI Components	2026	2027	2028	2029
I				
X – productivity				
X – stretch				
Xcap				
Cn				
Scap				
g				
CPCI				

c) To what extent did Toronto Hydro consider other, non-Custom IR regulatory tools, such as, but not limited to, options discussed in Reference 3, to solve the funding gap identified throughout Reference 2. Please explain why Toronto Hydro rejected these other regulatory options.
d) Please confirm that the IRM scenario in Reference 1 does not include consideration for the capital modules available to utilities on a Price-Cap IRM. Please add an "IRM with Capital Module(s)" scenario to both Figure 1 and the table in part a).
e) Based on the Capital Module regulatory mechanism, which projects or initiatives, would qualify? Please explain how they would apply.
f) Please confirm that the revenue requirement projection presented in Reference 1 includes projects that would be subject to variance account treatment in the DRVA of the proposed plan. Please calculate the residual annual revenue requirement that would result if costs of generation protection monitoring and control, externally-initiated plant relocations and expansions, Hydro One contributions, metering, and non-wire alternatives were not funded by the index. Please then adjust this for Toronto Hydro's proposed X factor and place the results as a new row in the table of part a), or a new table, whichever suites Toronto Hydro.

1B-Staff-13
Ref 1: Exhibit 1B / Tab 2 / Schedule 1, section 3.2.2
Ref 2: EB-2014-0219, Report of the Board: New Policy Options for the Funding of Capital Investments: The Advanced Capital Module, September 18, 2014

Preamble:
Toronto Hydro has proposed an Innovation Fund to address needs that cannot be met by existing funding mechanisms. Toronto Hydro states that the variance account proposal and resultant rate rider will provide transparency to rate payers on their bill.

Question(s):

a) Please summarize Toronto Hydro's evaluation of the Incremental and Advanced Capital Modules and articulate how these mechanisms are unable to fund the work Toronto Hydro proposes for the Innovation Fund.
b) Please confirm it is Toronto Hydro's proposal, that if this proposal is approved, to identify the "Innovation Fund" as a separate line item on customer bills. Please identify which customer bills are proposed to display this charge. Please explain whether Toronto Hydro will request an exemption from the regulation on invoices for low volume customers to make this charge visible to them.
c) Please articulate how this proposed rate rider differs from, and is superior, to an Advance Capital Module rider to provide transparency, of any form.

1B-Staff-14
Ref 1: Exhibit 1B / Tab 2 / Schedule 1, Table 1
Ref 2: Report of the Board: Renewed Regulatory Framework for Electricity Distributors: A Performance-Base Approach, October 2012

Preamble:
Reference 1 provides a comparison of Toronto Hydro's current Custom Incentive Rate-setting Framework with that which is proposed in this application.

Reference 2 states:

> "The Board expects a distributor's application under Custom IR to demonstrate its ability to manage within the rates set, given that actual costs and revenues will vary from forecast."

Question(s):
a) Please explain and quantify which cost and revenue deviations Toronto Hydro is managing within the rates to be over the 2025-2029 rate term, given the proposed revenue growth factor, demand-related variance account, and a revenue cap approach.

1B-Staff-15
Ref 1: Exhibit 1B / Tab 2 / Schedule 1
Ref 2: EB-2007-0673: *Report of the Board on 3rd Generation Incentive Regulation for Ontario's Electricity Distributors*

Preamble:
In Reference 1, Toronto Hydro makes the following statements:

> "Under a standard IRM scenario, Toronto Hydro's 2025-2029 capital investment plan would be underfunded by approximately 35% or $1.5B."

> "The needs of Toronto Hydro's 2025-29 investment plan remain unmet under the current custom framework….[Its] investment plan would be underfunded by approximately $450 million."
>
> "Adoption of a plan constrained by this funding envelope would force the utility into a sustainment plan that would be almost entirely reactive in nature, resulting in roughly an 8 percent deterioration in system reliability by the end of the rate period."

Table 2 of Reference 1, which is titled as "ROE Implications of the Existing Custom Framework" is reproduced below:

	2025	2026	2027	2028	2029
2025-2029 Investment Plan Revenue Requirement (A)	972	1,027	1,074	1,176	1,219
2025-2029 funding under the existing custom framework (B)	972	1,011	1,044	1,126	1,153
Variance (A) – (B)	-	16	30	50	66
ROE Impact (basis points) *	-	59.6	110.8	183.5	245.6

Question(s):

a) Please provide a forecast of financial performance under a standard IRM scenario while maintaining capital expenditures as proposed in this application, detailing net income, depreciation, regulatory return on equity performance, and values which correspond to the 300 basis point dead band which may trigger a review under the OEB's rate-setting policy. Present these figures in a manner that supports comparison to the analysis contained in Table 2 of Reference 1.

b) Please calculate the expected change in reliability performance in the case where Toronto Hydro continues under its current custom framework, using the same methodology applied to estimate an 8% decline in reliability performance were Toronto Hydro to proceed with "a standard IRM scenario" discussed on page 13 of Reference 1 above.

c) Please discuss the acceptability of Toronto Hydro's financial performance were Toronto Hydro to continue under its current custom framework, with specific reference to the ROE impacts outlined in Table 2 of Reference 1 and the 300 basis point threshold at which a regulatory review may be initiated, in accordance with the policy established under Reference 2.

d) Please describe the actions Toronto Hydro would take if ROE results were to materialize as projected in Table 2.

1B-Staff-16
Ref 1: Ontario Energy Board, Handbook for Utility Rate Applications

Preamble:
At page 26, Reference 1 states:

> "Custom IR is not a multi-year cost of service; explicit financial incentives for continuous improvement and cost control targets must be included in the application."

Question(s):

a) Please describe Toronto Hydro's proposals for continuous improvement within the rate term, with specific reference to its preference for targets to be established on a five-year basis rather than annually, as noted at page 31 of Reference 2.
b) What commitments, if any, does Toronto Hydro make to customers about improvements in cost and service performance to be achieved within the five-year term?

1B-Staff-17
Ref 1: Exhibit 1B / Tab 2 / Schedule 1, Table 5
Ref 2: Exhibit 1B / Tab 2 / Schedule 1

Preamble:
Reference 1 is reproduced below:

Table 5: Efficiency Factor (0.15%) Revenue Reduction ($ Millions)

	2025	2026	2027	2028	2029
Revenue Requirement based on the 2025-2029 Investment Plan	972.4	1,027.0	1,074.4	1,175.7	1,219.2
Revenue Collected after 0.15% Efficiency Factor	972.4	1,025.5	1,071.3	1,170.9	1,212.2
Revenue Reduced by 0.15% Efficiency Factor	-	1.5	3.1	5.0	6.9

Note: There could be minor differences due to rounding.

In addition to the proposed 0.15% efficiency factor, Toronto Hydro also proposes a 0.6% performance incentive factor, and revenue growth factor of varying degrees for each of 2026 to 2029.

Question(s):

a) Please confirm Toronto Hydro agrees with the following table produced by staff. If not, please provide Toronto Hydro's table for the revenue reduction in each year due to the proposed 0.6% performance incentive factor. For any changes

to the values of the table, please provide all calculations to demonstrate the derivation of the number(s).

	2025	2026	2027	2028	2029
Revenue Requirement based on the 2025-2029 Investment Plan	972.4	1,027.0	1,074.4	1,175.7	1,219.2
Revenue Collected after 0.6% PIM factor	972.4	1,021.2	1,061.8	1,156.0	1,192.2
Revenue Reduction	-	6.2	12.6	19.7	27.0

b) Please confirm Toronto Hydro agrees with the following table produced by staff. If not, please provide Toronto Hydro's table for the revenue enlargement in each year due to the proposed revenue growth factor. For any changes to the values of the table, please provide all calculations to demonstrate the derivation of the number(s).

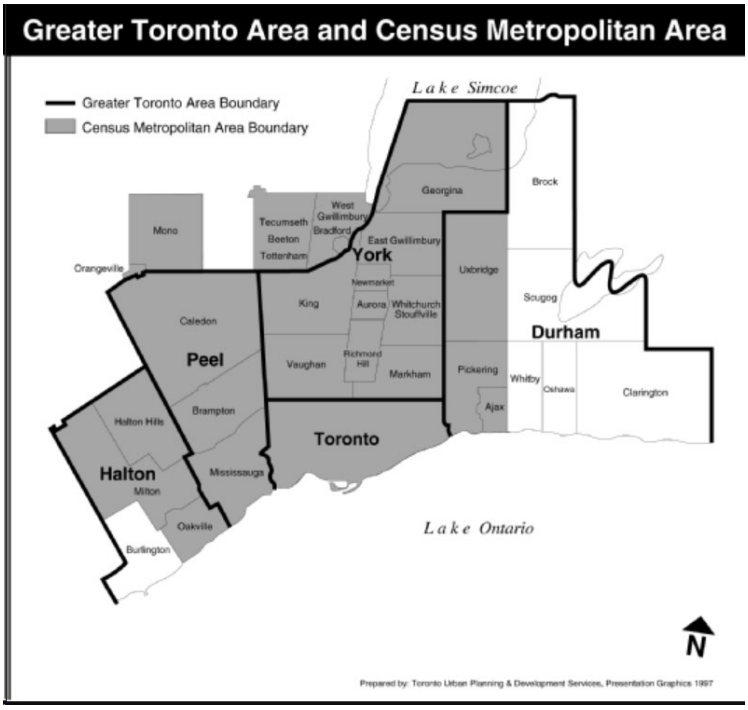
	2025	2026	2027	2028	2029
Revenue Requirement based on the 2025-2029 Investment Plan	972.4	1,027.0	1,074.4	1,175.7	1,219.2
Inflation Adjusted RGF	-	3.61%	2.62%	7.43%	1.71%
Revenue Enlargement	-	35.1	62.0	141.9	162.0

1B-Staff-18
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / p. 7
Ref 2: Exhibit 1B / Tab 2 / Schedule 1 / Table 3
Ref 3: Statistics Canada Map of Census Metropolitan Area 535 – Toronto, retrieved from: https://www12.statcan.gc.ca/census-recensement/geo/maps-cartes/pdf/S0503/2016S0503535.pdf
Ref 4: Simplified Toronto CMA map: https://www.toronto.ca/wp-content/uploads/2017/10/90c1-EDC-Map-GTA-CMA.png

Preamble:
Toronto Hydro states that "over the 2025-2029 period, its operations and capital investment needs are growing by approximately 37.5% due to a number of distinct and interrelated drivers." These drivers include:

"Responding to the extraordinary inflationary pressures experienced over the 2020-2024 period, wherein the non-residential Construction Index in the Toronto Census Metropolitan area rose 37.7% from Q1 2020 through Q1 2023."

Reference 3 is reproduced below:



Question(s):

a) Please provide details of the calculations that support the claimed need for 37.5% growth in "operations and capital investment needs." In particular, what definition of cost is used? If not the revenue requirement, why use an alternative definition of cost for this commentary?

b) Please explain Toronto Hydro's view regarding the relationship between the design of attrition relief mechanisms and the growth rate of revenue requirement for the years of the rate term that are affected by these mechanisms. Please confirm Toronto Hydro's proposed growth rate for revenue requirement in these years, i.e., 2026 to 2029.

c) Please explain how extraordinary inflation in 2020-2024 presages rapid cost growth for the 2026-2029 period.

d) Please identify what other indices Toronto Hydro considered for assessing inflation for the unit costs for power distribution system construction in Toronto Hydro's service territory. Please explain how Toronto Hydro determined the non-residential Construction Index in the Toronto Census Metro Area is the most relevant index of inflation in the unit cost of power distribution system construction in its service territory.

e) Provide the filters and settings used on the Statistics Canada website to derive these values in Reference 2. Please detail the type of building and divisions selected. Explain why these filters and settings were selected and how all the categories selected are applicable to Toronto Hydro's inflationary pressures?

f) Please confirm the percentage land area of the Toronto Census Metropolitan Area that is served by Toronto Hydro.

1B-Staff-19
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / Appendix A

Preamble:
Page 2 of Reference 1, Toronto Hydro states:

> "the Company's proposed *changes* to the Rate Framework are generally consistent with how other electric *utilities* have responded to developments in the energy industry. [italics added]"

On page 3:

> "Given these developments in the energy industry, many regulatory jurisdictions have implemented changes to ratemaking frameworks and practices. These changes are designed to incorporate expanded objectives and priorities, such as clean energy goals, affordability, reliability, emission reduction, and utility financial integrity."

Question(s):

a) Please confirm the following statements. If Toronto Hydro disagrees with any or all of these statements, please explain why.
   i) Toronto Hydro already operates under an approach to custom incentive rate-setting that it has dubbed CIR 1.0.
      (1) This ratemaking system includes a price cap index formula with a C factor that effectively replaces capital revenue growth based primarily on inflation and productivity indexing with capital revenue growth based primarily on a cost forecast.
      (2) The inflation measure in this formula includes a relevant input price index: the average weekly earnings on Ontario workers.
      (3) An asymmetrical Capital-Related Revenue Requirement Variance Account returns any and all capital-related revenue requirement savings to customers.
      (4) There is also a two-way variance account for miscellaneous externally-driven costs.
   ii) Toronto Hydro's new CIR proposal entails the following changes from its old proposal.
      (1) A revenue growth factor ("RGF") would effectively replace OM&A as well as capital revenue growth based primarily on inflation and productivity indexing with growth that is based primarily on cost forecasts.
      (2) A revenue cap index would replace the price cap index, and a demand revenue variance account ("DRVA") would effectively establish weather-normalized revenue decoupling.

(3) The DRVA would also establish two-way variance account treatment for a wide range of demand-sensitive costs.
(4) The Capital-Related Revenue Requirement Variance Account would be discontinued.
(5) There would, additionally be an Innovation Fund, a Getting Ontario Connected Act Variance Account, and PIM tied to customer service quality and various policy goals.

b) Does Toronto Hydro mean that *each* of these changes is individually consistent with industry trends or instead that many of these changes are consistent with industry trends?
c) Is Toronto Hydro stating that ratemaking in North America is moving away from the use of price and productivity indexing to escalate OM&A revenue and towards its escalation based on forecasts? If so, please substantiate.
d) Is Toronto Hydro stating that that ratemaking in North America is moving towards variance account treatment of most costs of demand growth, including the traditional costs of customer connections, billing, and collection? If so, please substantiate.
e) Please list the approved multi-year rate plans that Toronto Hydro thinks are most similar to Toronto Hydro's proposed CRCI plan and explain the similarities and differences.

1B-Staff-20
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / Appendix A / pp. 3-4.

Preamble:
Reference 1 states that

"The changing energy industry has prompted various modifications to ratemaking frameworks and practices. These changes are generally designed to provide cost recovery flexibility and stability to help address challenges related to the changing grid needs. Specifically, multi-year rate plans and performance-based regulation ("PBR") frameworks and practices have been modified as follows.

1. Attrition Relief Mechanisms ("ARMs") modified to reflect the scale and timing of investments.
   − For example, regulatory jurisdictions, such as the United Kingdom ("UK"), Australia, Philippines, and Malaysia, utilize a "building blocks" approach that reflects forecasted capital investments and operations, maintenance, and administration ("OM&A") expenditures within multi-year ratemaking frameworks. This approach better aligns cost recovery with the scale and timing of capital and OM&A needs."

Question(s):

a) Please confirm the following statements. If Toronto Hydro disagrees with any statements, please explain why.
   i. Basing ARM escalation on cost forecasts is nothing new. This approach has, for example, been used for many years for OM&A and capital costs in New York and Great Britain and for capital cost in Australia.
   ii. The British energy utility regulator Ofgem has extensive experience with cost forecasting. Insofar as Ofgem's building block approach to ARM design is based on cost forecasts, is it therefore not necessarily based on *utility* forecasts.
   iii. Stairstep rates in New York are usually the outcome of settlements.
   iv. Indexing and forecasting are not the only established bases for escalation of capital revenue in ARMs. In particular, capital revenue has been based on a utility's recent average historical plant additions (sometimes adjusted for inflation) in the out years of multi-year rate plans (MRPs) in several jurisdictions that include Alberta, California, and Massachusetts.
   v. Indexing is currently used or has recently been used to escalate OM&A revenue in a number of jurisdictions that include Australia, British Columbia, Ontario, Massachusetts, and Québec.
   vi. Interest is growing, not diminishing, in indexed ARMs, as evidenced by recent developments in British Columbia, Connecticut, and Indiana ratemaking.
   vii. Several MRPs have no explicit provision for OM&A revenue growth other than that which results from billing determinant growth and depreciation of plant value. Examples include the "tracker/rate freeze" ARMs of Cleco Power in Louisiana, Florida Power & Light, and Appalachian Power in West Virginia.
   viii. The focus on the modernization of *PBR* rather than ratemaking generally sidesteps the reality that MRPs are increasingly popular in North America even though these may afford more risk of cost recovery than frequent rate cases. Jurisdictions that have recently adopted MRPs include British Columbia (for BC Hydro), North Carolina and West Virginia.

1B-Staff-21
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / Appendix A / p. 15
Ref 2: Exhibit 1B / Tab 2 / Schedule 1 / Appendix B

Preamble:
At Reference 1, Toronto Hydro identifies certain advantages of forecasting OM&A as well as capital costs.

Throughout Reference 2, Toronto Hydro cites Ofgem.

Question(s):

a) Please explain Ofgem's Information Quality Incentive. Please explain the context under which the IQI was developed and implemented by Ofgem, particularly noting the regulatory risks it aims to address.

1B-Staff-22
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / Appendix B / pp. 3-11

Preamble:
At Reference 1, Toronto Hydro states that

"PBR mechanisms have been "modernized" to reflect energy transition.

- Modernized PBR mechanisms address cost recovery uncertainties that facilitate meeting *policy objectives* and utility financial health… (p. 3)

- Alternative Cost Recovery Mechanisms, such as cost trackers, provide cost recovery related to certain *public policy goals* (p. 5).

Modernized PBR mechanisms provide utilities with flexibility to address changing grid needs while maintaining safe and reliable service

- Address cost recovery challenges of achieving *policy objectives*
- Fund traditional and new investments to meet *clean energy transition*
- There is recognition that *policy objectives* cannot be achieved without ensuring cost recovery for necessary investments (p. 10)

Jurisdictions have implemented cost trackers for *traditional utility projects* and emerging cost categories (such as clean energy programs) (p. 11) [italics added]"

Question(s):

a) Please confirm the following statements. If Toronto Hydro disagrees, please explain.
   iii) In multiyear rate plans, regulators are increasingly approving cost variance accounts to encourage utility activities that advance public policy goals such as beneficial electrification and accommodation of distributed energy resources on the customer side of the meter. The cost of these activities is hard to predict accurately and utilities in some circumstances have weak incentives to pursue them. However, major expansions of distribution system (e.g. substation) *capacity* to accommodate the energy transition have rarely been accorded tracker treatment in MRPs to date.
   iv) Cost trackers for traditional utility capex in the States (e.g., distribution system improvement charges) have usually been approved not in the context of a multiyear rate plan but instead where the alternative is frequent rate cases.

Roughly half of all US jurisdictions do not employ forward test years in rate cases.

1B-Staff-23
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / Appendix B / pp. 11, 13

Preamble:
Reference 1 states the following regarding Hawaiian electric utility regulation:

- Hawaii's Exceptional Project Recovery Mechanism (EPRM) provides cost recovery certainty for eligible projects (primarily clean energy-related infrastructure and grid modernization investments) placed in service between rate cases (p. 11)
- The Commission has taken a broad approach to eligible projects, noting that "limiting eligible projects to pre-determined plans made in other dockets may limit the flexibility to address unforeseen events or take advantage of unexpected opportunities (e.g., improvements in technology, changes in consumption behavior, etc.)" (p. 11)
- The Hawaii PUC noted, "The PBR Framework approved in this D&O has been carefully designed to include multiple safeguards and review opportunities to protect the Companies' financial health from extreme hardship" (p. 13)

Question(s):

a) Please confirm that the Hawaii Public Utilities Commission approved a revenue cap index formula that was much more favorable to consumers than the one that the Hawaiian Electric (HECO) companies requested.

1B-Staff-24
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / Appendix B / p. 20

Preamble:
Reference 1 provides a table that contains a taxonomy of "ARMs Cost Forecasting Methodologies" and includes the statement that a Forecasted/"Stairstep" methodology is "based on forecasted revenue requirements."

Question(s):

a) For each item in the table, please explain the forecasting methodology employed for each attrition relief mechanism (ARM). For example, please explain how a "Rate Freeze" is a cost forecasting methodology for an attrition relief mechanism. Please do so for each item in the table.
b) Please confirm that some approved stairstep and hybrid ARMs have not involved much if any capital cost forecasting. Budgets for most gross plant additions (or

capex) have, for example, been set for several years at an average of recent historical capex or at the approved test year value (and these budgets have sometimes been adjusted for inflation). If Toronto Hydro disagrees with any of these statements, please explain why.

1B-Staff-25
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / Appendix B / p. 21

Preamble:
Toronto Hydro provides information regarding the first generation of multiyear rate plans in Alberta ("PBR1") but not later generations. In the PBR1 plans, cost trackers provided supplemental capital revenue.

Question(s):
a) Please confirm the following statement. Insofar as Toronto Hydro disagrees, please explain.

The Alberta Commission has since approved two additional generic MRP design frameworks that it has called "PBR2" and "PBR3". In these frameworks the role of capital cost trackers and cost forecasting was greatly reduced. In each plan, most supplemental capital revenue has been provided by a "K-Bar" mechanism linked to the utility's recent historical capex. OM&A revenue has been escalated chiefly by a price cap index (for power distributors) or a revenue per customer index (for gas distributors).

1B-Staff-26
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / p. 5

Preamble:
Toronto Hydro proposes to replace the Custom *Price* Cap Index in its current plan with a Custom *Revenue* Cap Index ("CRCI").

Question(s):
a) Why does the CRCI formula not include an escalator for growth in the number of customers that Toronto Hydro serves and/or some other external metric of Toronto Hydro's operating scale?
b) Please confirm that, in the absence of such an escalator, the entire cost of customer growth must instead be addressed by some combination of forecasting and variance accounts.
c) Please describe Toronto Hydro's view on the advantages and disadvantages of a growth escalator in a revenue cap index. Please discuss any additional considerations, highlighting advantages and disadvantages, in the context of

rapid growth in the number of customers in classes that are especially costly to serve.

i. In the above context, please explain how common is it for Toronto Hydro to serve bulk-metered residential apartment buildings or condominiums or residential apartment buildings with a single or bulk meter?
ii. What costs does Toronto Hydro incur for the ownership of assets or the provision of services inside these buildings?

d) Funding for connections to large commercial establishments can be increased using a revenue-weighted index of growth in various customer categories, such as a scale escalator in a revenue cap index formula. Please accordingly divide the number of customers served by Toronto Hydro into residential and other and, if practicable, itemize as well the revenue and customers receive general service 1,000 to 4,999 KW and larger) for the forecast period and back to 2015.

1B-Staff-27
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / pp. 26-27

Preamble:
Toronto Hydro states that

> "Toronto Hydro proposes to replace the Ontario Average Weekly Earnings ("ON-AWE") inflation index within the OEB's inflation factor methodology with a custom Toronto Hourly Salary and Wages Index. This index can either be derived by the Conference Board of Canada ("CBC") economic data subscription service or can be reproduced by purchasing relevant tax data from Statistics Canada. For efficiency purposes, Toronto Hydro proposes to rely on the Conference Board of Canada index."

Question(s):

a) Please provide a live spreadsheet (e.g., with formulas intact) with the calculations for the proposed custom Toronto Hourly Salaries and Wages Index and a detailed description of the methodology underlying these calculations, including but not limited, to the timeseries file IDs for the Conference Board of Canada data used in the calculations and any assumptions underlying the calculations.
b) Please confirm that the salary and wages data provided by the Conference Board of Canada are derived from tax data purchased from Statistics Canada such that whether the data are purchased from the Conference Board of Canada or Statistics Canada, the result will be the same. If not confirmed, please explain why.
c) Are tax data used in the construction of Statistics Canada's indexes for Average Hourly Earnings, Average Weekly Earnings, or fixed weighted index of average hourly earnings?

d) Please provide the live spreadsheet (e.g., with formulas intact) with the calculations for Toronto Hydro's Average Blended Salary Increase (Appendix 2-K) and a detailed description of the methodology used for these calculations including any underlying assumptions (e.g., number of hours worked).
e) Please confirm that the Alberta Utilities Commission chose the fixed-weighted index of average hourly earnings as the labor price index for its inflation factor formula in PBR3. What is Toronto Hydro's view of this alternative?

1B-Staff-28
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / p. 25

Preamble:
Toronto Hydro states that

> "Aside from achieving the objective of providing funding certainty and stability in rates which is necessary to enable *effective multi-year planning and operations*, the RGF offers the added benefit of simplicity relative to the current C-factor since the entire revenue requirement is being escalated by the same inflation and productivity factors. [italics added]"

Question(s):
a) Please confirm that firms in unregulated markets have achieved effective multiyear planning and operations without funding certainty and price stability. If not, please explain.

1B-Staff-29
Ref 1: Exhibit 1B / Tab 2 / Schedule 1

Preamble:
Toronto Hydro proposes that future revenue from the PIM-DA rate rider, if achieved, should be exempt from Earnings Sharing Mechanism treatment.

Question(s):
a) Please elaborate Toronto Hydro's proposal that the future PIM-DA riders be exempt from ESM treatment. Please also articulate Toronto Hydro's view of how this potential rider would qualify as "certain adjustments" cited on page 47 of Reference 1. What other Toronto Hydro riders are, or have been, exempt from ESM treatment.
b) Referencing only OEB policy and other OEB regulated utilities, please provide all examples known to Toronto Hydro where an incentive measure is exempt from that utility's ESM. Please articulate how Toronto Hydro's proposal is similar to these examples.

c) Referencing only OEB policy and other OEB regulated utilities, please provide all examples known to Toronto Hydro where an incentive measure is not exempt from that utility's ESM. Please articulate how Toronto Hydro's proposal is different from these examples.

1B-Staff-30
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / p. 3, 30

Preamble:
Toronto Hydro proposes to add a "pro-active 0.6% performance factor" to its revenue cap index formula. Toronto Hydro further states that this factor would provide customers with "a significant upfront rate reduction benefit of approximately $ 65 million over the 2025-2029 rate term." This factor is linked to the proposed custom scorecard.

Question(s):
a) Please address the notion that if Toronto Hydro does not achieve the scorecard targets, the "up front rate reduction" constitutes compensation to customers for Toronto Hydro's poor performance. In this context, please explain Toronto Hydro's view of the nature of the proposed PIM. That is, does Toronto Hydro view the PIM proposal as an asymmetrical penalty-only PIM? Please explain.
b) Please explain, from a ratemaking and design perspective, Toronto Hydro's view as to why is this ratemaking treatment preferable to separate ratemaking treatment of the PIM (e.g., a penalty-only PIM not linked to the X factor) or to a $ 65 million rate discount in the first year of the plan)?
c) Please describe whether and how Toronto Hydro established that customers accept the PIM cost and design.

1B-Staff-31
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / pp. 30-31

Preamble:
Toronto Hydro states that

> "Toronto Hydro carries the risk of achieving the performance outcomes since, if the targets are not achieved, Toronto Hydro cannot earn its approved return on equity ("ROE"). As such, the PIM is an asymmetrical incentive to the benefit of customers in that it provides Toronto Hydro with the opportunity (not the guarantee) to earn the approved ROE and make a fair return for its shareholder. It is aligned with the RRF, and responsive to the OEB's feedback in Toronto Hydro's 2020-2024 decision encouraging the utility to consider an alternative approach in the future that meets RRF requirements and improves the balance of risk between customers and the utility."

Question(s):

a) Please confirm the following statements, explaining any disinclination to confirm statements.
   i. If the proposed PIM were ultimately to result in a net penalty, this would compensate customers for Toronto Hydro's failing to achieve targets.
   ii. Customer revenue under the proposed plan would in many cases fund activities, such as vegetation management and replacement of aging assets, that made achievement of the target possible.
   iii. The asymmetrical design of the PIM improves the balance of risk between Toronto Hydro and customers in favor of customers.

1B-Staff-32
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / p. 32

Preamble:
Toronto Hydro states that

> "To implement the PIM, Toronto Hydro proposes a new deferral account – the Performance Incentive Mechanism Deferral Account (PIM-DA) – to record the PIM earnings. This account would be brought forward for review and disposition in the utility's next rebasing application, based on known (or forecasted) performance results for the 2025-2029 rate period. Only if the set performance targets are achieved (*or forecasted be achieved with a high degree of confidence*) by the end of the rate term would the incentive be recovered from customers in the next decade. [italics added]"

Question(s):

a) On what ground would TH believe the likely outcome of performance on a specific measure ought to be sufficient to dispose of the balance in the account, rather than the actual results, regardless of when they are known?

1B-Staff-33
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / p. 30

Preamble:
Toronto Hydro states that "Toronto Hydro carries the risk of achieving the performance outcomes since, if the targets are not achieved, Toronto Hydro cannot earn its approved return on equity."

Question(s):

a) Please confirm that Toronto Hydro will have other means of achieving its target ROE, including accelerated efficiency gains and unexpectedly favorable external business conditions. If Toronto Hydro disagrees, please explain.

1B-Staff-34
Ref 1: Exhibit 1B / Tab 3 / Schedule 1 / Table 1
Ref 2: Exhibit 1B / Tab 2 / Schedule 1, Appendix A
Ref 3: Report of the Board: Renewed Regulatory Framework for Electricity Distributors: A Performance-Base Approach, October 2012

Preamble:
Toronto Hydro proposes linking its custom scorecard to a performance incentive mechanism. At pages 17 and 18 of Reference 2, Toronto Hydro's evidence states that Toronto Hydro's proposed performance incentive mechanisms are consistent with similar mechanisms employed by other electric utilities.

In the questions below, for any utilities that have a combined regulated business type, for example a utility with both electricity distribution and transmission, or electricity and gas distribution, or any other such combination, respond only in the context of their electricity distribution service. Also, for the questions below, only consider what has been approved through a decision and order, or equivalent regulatory action, and thus in place at this moment in time. Please do not include "proposals" or examples in a currently ongoing proceeding where the given utility has not previously had a performance incentive mechanism.

Question(s):
a) Please identify how many utilities were considered as part of the jurisdictional review. How many jurisdictions/regulators/commissions? Please provide a list or table identifying each jurisdiction/regulator/commission and the number of utilities for each.
b) For all the utilities in the jurisdictional review, provide a distribution of the number of measures in the performance incentive, with a resolution of one for the distribution. For example, how many utilities have only one measure? Two measures? And so on. As a further example, Toronto Hydro has proposed 12 measures. Please include the number of utilities that do not have any such performance incentive and thus the number of measures would be zero.
c) For all the utilities in the jurisdictional review, provide a count of utilities with: no performance incentive, penalty only performance incentive, reward only performance incentive, and mix of penalty and reward incentives. Please confirm Toronto Hydro's definition of a "penalty only performance incentive" and a "reward only performance incentive."
d) Regarding part c), please comment on any general trends in the jurisdictional scan regarding penalty or reward incentive mechanisms. For example, is there a trend or relationship regarding incentive measures that are reliability based and whether they are penalty or reward focused? Similarly, is there a trend or

relationship regarding incentive measures related to government or regulatory policy?

e) For all the utilities in the jurisdictional review, provide a count of the number of utilities that have and a count of the number of utilities that do not have a performance incentive mechanism in place, by the length of the multi-year rate period in their currently effective rate period. For utilities that have more than one type of business, provide information only for its electricity distribution service. For example, for a multi-year rate plan that was set for a period of two years, identify how many such electrical distribution utilities have an incentive, and how many do not, across the jurisdictional review.

1B-Staff-35
Ref 1: Exhibit 1B / Tab 2 / Schedule 1, Appendix A

Preamble:
Pages 17 and 18 of Reference 2 state that Toronto Hydro's proposed performance incentive mechanisms are consistent with similar mechanisms employed by other electric utilities.

Question(s):

a) Please explain why the first question of Part D to Reference 1 uses the plural of "performance incentive mechanisms"? Is Toronto Hydro proposing one mechanism with multiple measures, or multiple mechanisms? Please explain.
b) If Toronto Hydro is proposing more than one mechanism, please list and describe each of the mechanisms in the context of part a).

1B-Staff-36
Ref 1: Exhibit 1B / Tab 2 / Schedule 1, section 3.2.3
Ref 2: Exhibit 9 / Tab 1 / Schedule 1, section 9.2

Preamble:
With both references, Toronto Hydro proposes a subaccount to the DRVA to track externally driven capital expenditures. Toronto Hydro states it proposes a symmetrical variance account that protects both ratepayers and the utility from structural unknowns in forecasted costs and revenues. Toronto Hydro states this particular subaccount, is approved, would enable Toronto Hydro to respond to unforeseeable increases in demand-related investment needs without having to defer other priority work and put customer outcomes are risk. Toronto Hydro further states that this subaccount would protect ratepayers by ensuring that they do not pay for demand-driven work that can be deferred and that funds are not repurposed to manage variance in other programs.

Question(s):

a) Please summarize the internal decision-making process that would, in the rate-setting term, evaluate Toronto Hydro's policy environment and decide to reduce capital expenditure as a response to the policy environment. Please provide examples.
b) Please explain how Toronto Hydro would manage workforce capacity or other potential constraints, including such considerations as impact on centralized planning and coordination functions, in the face of increases in unforeseen or unforeseeable demand-related investments. Even if additional work were funded, please explain how incremental demand could be satisfied "without having to defer other priority work" while still delivering and completing the planned capital program.
c) Please demonstrate, with examples from this current proceeding and by illustrative scenarios, how Toronto Hydro would determine a change in its stations expansion program or regional planning process was tied to an external factor and would lead to a debit entry in this proposed sub-account.
d) Please demonstrate, with examples from this current proceeding and by illustrative scenarios, how Toronto Hydro would determine a change in its stations expansion program or regional planning process was tied to an external factor and would lead to a credit entry in this proposed sub-account.
e) Please provide a list of all externally driven factors that occurred in the current 2020-2024 rate period that have or are anticipated to have a material impact on the need, pacing, or prioritization of Toronto Hydro's demand related expenditure plan.
f) For the items in part e), please identify commensurate measures or responses from the OEB. For any externally driven factors where the OEB provided a regulatory mechanism to respond to, identify any which Toronto Hydro decided to not use or pursue. For any such items, please explain why Toronto Hydro did not utilize the regulatory mechanism provided by the OEB.

1B-Staff-37
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / p. 36

Preamble:
The DRVA would also include a Revenue Variance subaccount that

> "would record the revenue impacts resulting from weather-normalized variances in billing determinants (i.e. customer count, kWh and kVA)."

Question(s):
a) Please provide more details of how the decoupling mechanism would work. For example, is Toronto Hydro proposing any caps on the amounts of refunds or surcharges to customers? When and how would true ups occur? Please provide numerical examples of how the true up and revenue adjustments would function.

b) Please confirm that, in noting that the DRVA would be weather normalized, Toronto Hydro means that it would shield customers from the risk of high or low loads that result from unusual weather conditions. If not, please explain.

1B-Staff-38
Ref 1: Exhibit 1B / Tab 2 / Schedule 1, Table 1

Preamble:
Toronto Hydro has proposed a custom incentive rate-setting framework, as summarized with Reference 1.

Question(s):
a) For all parameters or components in Toronto Hydro's proposed custom framework, please provide a table identifying which of each is set as per established OEB policy and which of each is set as per the proposals set out in this application.
   i) For example, Toronto Hydro proposes a 0% productivity factor in accordance with current OEB policy.
   ii) For example, Toronto Hydro proposes the labour component of the industry-specific price index to be set as per this application.
b) Please explain Toronto Hydro's position regarding the potential for a generic proceeding to issue a decision during the rate term that affects a parameter or component identified in part a) and whether Toronto Hydro would seek to update it in accordance with that policy or maintain it as per this proceeding. Please indicate Toronto Hydro's position in this regard for each item.
   iii) For example, if a generic proceeding resulted in a non-zero productivity factor, how would Toronto Hydro respond?
   iv) For example, if a generic proceeding resulted in a change to use a different labour inflation index, how would Toronto Hydro respond?
   v) For example, if a generic proceeding established a new variance account, how would Toronto Hydro respond?

1B-Staff-39
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / p. 1
Ref 2: Exhibit 1B / Tab 2 / Schedule 1 / pp. 8-9
Ref 3: Exhibit 8 / Tab 6 / Schedule 1

Preamble:
Toronto Hydro states in Reference 1 that one of the principles that guided development of its 2025-2029 Custom Rate Framework is to "*maintain rate stability and funding predictability* to enable effective multi-year utility and customer planning and decision making."

In Reference 2, Toronto Hydro states that "the investment priorities and associated outcomes are aligned with customers' needs and preferences, as demonstrated by the results of Toronto Hydro's two-phased customer engagement process.

Reference 3 shows the bill impacts for various Toronto Hydro customer classes.

Question(s):

a) How are annual residential distribution rate service charge increases averaging 7% during the proposed plan consistent with the principle of rate stability?
b) Where do Toronto Hydro's customer survey results indicate that 7% annual rate increases are acceptable?

1B-Staff-40
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / pp. 10-11

Preamble:

Toronto Hydro states on page 10 that

> "While the pace and nature of electrification required to decarbonize the economy remains unsettled, there is broad societal and public consensus that an energy transition is required to mitigate the existential and economic impacts of climate change."

Toronto Hydro states on p. 11 that

> "system peak demand could grow significantly, or more moderately, depending on technology, policy and consumer choices that will be made in the future."

Question(s):

a) Please confirm the following statements. If Toronto Hydro disagrees, please explain.
    i. If beneficial electrification is a public policy priority, matching capacity to demand is one of the biggest cost management challenges facing North American electric utilities.
    ii. With Toronto Hydro expecting brisk demand growth, peak load management will play a key role in cost containment.
    iii. Just as it is prudent to lay the groundwork in the next five years for future capacity expansion, it is prudent to lay the groundwork for more dynamic load management options, including distribution rate design, that reduce the need for such expansions.
    iv. The regulatory cost savings from the new multiyear rate plan will free up Company resources to reconsider rate designs and experiment with changes.

b) Is Toronto Hydro proposing peak load management initiatives in the next five years that are top quartile by industry standards? If not, why not?

1B-Staff-41
Ref 1: Exhibit 1B / Tab 2 / Schedule 1, section 3.2.3
Ref 2: Exhibit 9 / Tab 1 / Schedule 1, section 9.2
Ref 3: EB-2010-0060: *Review of Distribution Revenue Decoupling Mechanisms*, Pacific Economics Group Research, LLC, March 2010

Preamble:
Toronto Hydro proposes a revenue variance subaccount as part of the proposed demand related variance account. Toronto Hydro proposes this subaccount to symmetrically record revenue variances resulting from differences between forecasted and actual billing determinants on a weather normalized basis, doing so by rate class. Toronto Hydro states this account would record the revenue impact due to variances in billing determinants, kVA, kWh, and customer count, as set out in Exhibit 3, Tab 1.

Question(s):
a) Please explain any differences between the proposed normalization process and that used for forecasting customer load for rate setting purposes as part of this application. Please confirm all billing determinants Toronto Hydro proposes to weather-normalize, such as kVA, kWh, customer count, or other variables if applicable and not explicitly mentioned in the evidence. For each, please explain why it is appropriate to do so.
b) Please confirm whether Toronto Hydro proposes to only track variances on a weather normalized basis, or to also normalize for other identifiable variances in energy usage such as economic and population factors that are also captured in its load forecasting methodology.
c) Please identify the data sets that underly the proposed variance account normalization process. Historically, how often has Toronto Hydro reviewed and updated these data sets? Please describe the circumstances under which Toronto Hydro would review and update these data sets in the future.
d) Identify any other data sets or assumptions that Toronto Hydro would utilize in this weather normalization process. Similar to b), when is the last time these data sets were updated. Under what circumstances would Toronto review and update these data sets?
e) By way of both monthly summary tables and any underlying calculations and modelling, please demonstrate the proposed “weather-normalization process for actual billing determinants” and the resulting account additions for each of:
   vi) 2020 actual in comparison the forecast(s) that underly the rates in place that year, i.e., those of EB-2018-0165

vii) 2023 actual in comparison the forecast(s) that underly the rates in place that year, i.e., those of EB-2018-0165
viii) 2023 actual in comparison to the 2019 forecast(s) that underly this proceeding

f) For part e), please explicitly identify inputs and outputs to the process, including any intermediate steps or steps where one model, tool, or methodology interacts with another in the overall process. Please identify which data items are held constant as the reference forecast(s) and which items are inputs based on actual data. For all inputs, identify the source. Please identify any data variables that are calculated, derived, or otherwise require a mathematical operation to perform the process to derive variance account entries. Please explain the basis for those operations. For example, if a piece of recorded data requires conversion or "normalization" identify the operation and the technical basis for the mathematical operation.
g) Please confirm that, in accordance with footnote 40 in Reference 1 and Reference 3, Toronto Hydro is proposing a variance account that will allow revenues to track costs. Is Toronto Hydro proposing a variance account that allows revenues to fully track costs, or only partially? Please explain.

1B-Staff-42
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / pp. 36, 41

Preamble:
Toronto Hydro proposes a Demand-Related Variance Account ("DRVA") with two subaccounts (p. 36). An Expenditure Variances subaccount

> "would record the symmetrical revenue requirement impacts, including PILs, arising from the variance between 2025-2029 planned and actual expenditures related to the following capital and operations programs: Customer Connections, Customer Operations, Stations Expansion, Load Demand, Non-Wires Solutions, Generation Protection Monitoring and Control and Externally-Initiated Plant Relocations and Expansions (collectively the "Demand-Related Investments")."

Toronto Hydro states on p. 41 that

> "In circumstances where demand-related investments are lower than planned, the subaccount would protect ratepayers by ensuring that (i) they do not pay for demand-driven work that can be deferred, and (ii) funds are not repurposed to manage variances in other aspects of the plan that are not driven by demand."

Question(s):
a) Please provide analysis which demonstrates that the use of a variance account best serves customers from a cost perspective, including, but not limited to, the

aggressive use of load management and other techniques to efficiently accommodate demand growth and other changes in system use.

b) Why is it necessary to track the *entirety* of these various costs when
   ix) a sizable share of these costs will result from normal demand growth;
   x) a customer growth escalator can address many/most costs of customer connections and customer operations with minimal regulatory cost or diminution of cost-containment incentives;
   xi) variance account treatment is less controversial and likely to be approved for costs of NWAs, beneficial electrification, generation protection monitoring and control, Getting Ontario Connected Act compliance, and externally-initiated plant relocations and expansions.
c) Toronto Hydro proposes to eliminate its capital-related revenue requirement variance account. Does this mean that the cost of capital that is *not* driven by demand (e.g., replacement capex) will no longer be subject to a cost savings claw back?

1B-Staff-43
Ref 1: Exhibit 1B / Tab 3 / Schedule 1 / p. 10

Preamble:
Toronto Hydro states: **"**While the projection suggests that Toronto Hydro's investment plan is sufficient only to maintain Outage Duration as measured by the custom SAIDI metric over the 2025-2029 period, the utility challenged itself to set a modest improvement target, recognizing the importance of outage duration to customers when it comes to reliability performance. To set an achievable improvement target, Toronto Hydro calculated the statistical variability of the historical rolling five-year average (relative to the historical trendline), and on this basis applied two standard deviations to the most recent five-year historical reliability (48.2 min), resulting in an improvement target of 46.2 min."

Question(s):
a) Does Toronto Hydro expect more or fewer scheduled outages for the 2025-2029 period than the previous 5-year period?
b) What were Toronto Hydro's projections of SAIDI using the IRM Scenario in the previous application?

1B-Staff-44
Ref 1: Exhibit 1B / Tab 3 / Schedule 1 / pp. 3 and 4
Ref 2: Exhibit 1B / Tab 3 / Schedule 1 / Table 1
Ref 3: Amended and Restated Shareholder Direction Relating to Toronto Hydro Corporation, retrieved from:

https://www.torontohydro.com/documents/20143/411589/Shareholder-Direction-THC.pdf/4b8173bf-751e-82df-8593-90c61f33550c?t=1554134778000

Preamble:
Toronto Hydro proposes an incentive mechanism that would allow it to "earn-back" forgone revenue by achieving specific targets. Toronto Hydro proposes targets related to, generally, system reliability, customer service, environmental initiatives, and initiatives related to enhancing the grid for the future. The City of Toronto, as shareholder, has set objectives and principles to guide the Toronto Hydro Corporation, and thus, Toronto Hydro. The objectives and principles include providing a reliable and effective distribution system and operating Toronto Hydro in an environmentally responsible manner consistent with the City of Toronto's energy and climate change policies. The City of Toronto has established numerous energy and climate change policies that Toronto Hydro references throughout this application.

Question(s):
a) Please explain why Toronto Hydro propose a supplemental incentive mechanism to meet objectives established by its shareholder.
b) Please explain why the objectives and principles set by Toronto Hydro's shareholder are insufficient for Toronto Hydro to meet the reliability, customer service, environmental, and grid enhancement initiatives set out in its 2025-2029 investment plan.

1B-Staff-45
Ref 1: Exhibit 1B / Tab 3 / Schedule 1
Ref 2: Exhibit 1B / Tab 3 / Schedule 3

Preamble:
On page 42 of Reference 1, Toronto Hydro states that it "expects to achieve efficiencies of approximately $5.6M per year by 2024, consisting of $1.5M of cost reductions and $4.1M in cost avoidances."

On page 16 of Reference 2, Toronto Hydro states that the 2025 rebasing revenue requirement "is approximately $5.7M lower than it otherwise would be if Toronto Hydro had not undertaken" more than 30 initiatives which constitute a collective value of "over $23 million in costs that the utility expects to avoid or reduce by the end of the rate term."

Question(s):
a) Please explain whether the $5.6 million figure of Reference 1, and the $5.7 million figure of Reference 2 denote the same annual savings activities.

b) Please explain the relationships between the $23 million, $4.1 million, and $1.5 million cited.

1B-Staff-46
Ref 1: Exhibit 1B / Tab 3 / Schedule 1, Table 1
Ref 2: Decision and Order, EB-2018-0165, December 19, 2019, Table 4

Preamble:
Toronto Hydro has proposed a 2025-2029 custom scorecard with 12 measures. In its EB-2018-0165 Decision and Order, the OEB set a 2020-2024 custom scorecard with 15 measures.

Question(s):
a) Please confirm, by a list identifying each, which items in the proposed 2025-2029 custom scorecard are ***exactly*** the same measure as the 2020-2024 scorecard measure, without considering the target itself.
b) Please list and explain the rationale supporting all measures that have the same or similar name, but Toronto Hydro proposes a different definition of the measure for 2025-2029.
c) For each applicable measure, please explain the rationale supporting the removal of a 2020-2024 scorecard measure from the 2025-2029 scorecard.
d) For each measure and target on the proposed custom scorecard, please identify which initiatives would not be pursued in the absence of a performance incentive related to the initiative. For each such measure, please explain why not.

1B-Staff-47
Ref 1: Exhibit 1B / Tab 3 / Schedule 1
Ref 2: Report of the Board: Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach, October 2012

Preamble:
With Reference 1, Toronto Hydro describes its overall PIM proposal as an outcomes-based performance framework. Toronto Hydro provides some explanation for the proposed performance measures within this framework.

Question(s):
a) Regarding system security, Toronto Hydro proposes to earn a performance incentive for the completion of a range of cybersecurity projects. Please explain why the completion of planned projects, which represent milestones rather than a measurable outcome, merits an incentive payment within an outcomes-based performance framework.

b) Similarly, regarding grid automation readiness, Toronto Hydro proposes to earn a performance incentive for carrying out projects. Please explain why the completion of planned projects merits an incentive payment.
c) Regarding grid automation readiness, please explain the contribution of the 23 projects included in the custom measure, including manual FLISR, to Toronto Hydro's expected reliability performance over the term.
d) Please explain any overlap between the PIM measures related to reliability and related to the results associated with grid automation readiness outlined in c)
e) Toronto Hydro provides a qualitative rationale for the selection of 99% as a target for timely connection of new services, which mentions expected growth in demand, DER connections and expected complexity. Please explain whether there is a quantitative basis for selecting a 99% target for timely connections of new services and provide it as part of this response.
f) Please provide annual results for TH's on-time performance related to new connections since 2014, both in aggregate and for the three connection categories identified.
g) Please explain the justification for a performance outcome associated with maintaining current customer satisfaction levels in the context of the OEB's statement that "the [Renewed Regulatory Framework] is intended to elevate utility performance by creating incentives for superior performance."
h) Please provide in table form annual data, from 2014 to 2022, on Toronto Hydro's success in resolving escalated customer inquiries within 10 days.
i) Please quantify transportation fuel savings over the 2025-2029 period arising from the adoption of electric vehicles in accordance with projections indicated in the table entitled 'GHG Emissions (Scope 1') on page 37 of Reference 1.
j) Please confirm whether emissions from contracting out of work or business activities, that could reduce fleet size or building square footage, are included. Please explain Toronto Hydro's choice.
k) Please explain whether Toronto Hydro will quantify emissions reductions from the portion of its vehicle fleet that will not be electrified, such as through reduced idling time. If it does not plan to do so, please explain why.
l) Please provide the business case underpinning Toronto Hydro's decision to pursue ISO 550001 certification, including any calculations, estimates or representations of the benefits and costs of doing so.
m) Please provide the business cases underpinning maintenance of ISO 140001 and 450001 certifications, including costs and benefits of doing so or failing to do so.
n) Does the Total Recordable Injury Frequency PIM metric include subcontracted field resources or only Toronto Hydro employees?

1B-Staff-48
Ref 1: Exhibit 1B / Tab 3 / Schedule 1

Preamble:
On pages 2, 7, and 43 of Reference 1, Toronto Hydro has proposed a stretch or efficiency factor of 0.15%, valued at $16.4 million over the term. Achieving the stretch factor is forecast to represent a sustained savings of $6.9M per year by 2029. Toronto Hydro has assigned a performance incentive to the achievement of these forecast efficiency achievements, valued at 15% of the $65M total PIM performance factor.

Question(s):
a) Please confirm the value of the PIM attached to efficiency savings, which appears to be $9.75M (15% of $65M).
b) Please recalculate the value of the stretch factor net of the achievement of the PIMs, or confirm that it is 0.09% ((9.75/16.4)*(0.15)). Please show all calculations.
c) Please explain the rationale for this stretch factor design and net value, including its interaction within the PIMs framework, and with reference to the OEB's standard stretch factor values.

1B-Staff-49
Ref 1: Exhibit 1B / Tab 3 / Schedule 1

Preamble:
Table 18 of Reference 1, which outlines the net present value (NPV) of the benefits of capital deferral and avoidance based on the Local Demand Response (LDR) program proposed for the scored, is reproduced below.

	Deferred Capital	Avoided Capital
Parameters	$2.50 million in load transfer capital investment deferred for 5 years at an operational cost of $0.71 million	$7.50 million in load transfer capital investment avoided over the life of the assets (48 years) at an operational cost of $4.99 million
Costs	NPV of the operational costs of the non- wires solution (2025-2029): $0.57 million + NPV of the revenue requirement associated with the load transfer capital investment to be made in 2030: $1.80 million = $2.37 million NPV Costs	NPV of the operational costs of the non- wires solution (2025-2029): $4.00 million
Benefits	NPV of revenue requirement associated with capital investment deferred from 2025-29: $2.42 million *Less (-)* NPV Costs: $2.37 million *Equals (=)* $55.07 thousand NPV Benefits	NPV of revenue requirement associated with capital investment avoided in 2025 over the 48-year EUL: $7.27 million *Less (-)* NPV Costs: $4.00 million *Equals (=)* $3.27 million NPV Benefits
Total NPV Benefits =$3.32 million		

Table 19 of Reference 1 is reproduced below.

	Deferred Capital	Avoided Capital
Approach	Quantify the net present value (NPV) of the foregone ROE associated with the deferred and avoided capital investments.	
Parameters	$2.50 million in load transfer capital investment deferred for 5 years (i.e. from 2025 to 2030)	$7.50 million in load transfer capital investment avoided over the estimated useful life (EUL) of the assets (48 years)
Lost NPV of ROE	NPV of foregone ROE: $0.99 million *Less (-)* NPV of ROE associated with capital investment in 2030: $0.73 million *Equals (=)* $0.26 million NPV of Foregone ROE[29]	NPV of Foregone ROE: $2.97 million
Total NPV of Foregone Revenue: $3.23 Million		

Question(s):

a) Please provide detailed calculations that show the derivation of all amounts shown in tables 18 and 19.

1B-Staff-50
Ref 1: Exhibit 1B / Tab 3 / Schedule 1

Preamble:
In Reference 1, Toronto Hydro provides some information regarding local demand response (LDR).

Question(s):

b) Please explain the basis for the assumption that "5 years of LDR is sufficient to avoid the capital investment," citing examples or direct experience if available.

1B-Staff-51
Ref 1: Exhibit 1B / Tab 3 / Schedule 1

Preamble:
In Reference 1, Toronto Hydro provides some information regarding new High Voltage and Low Voltage connections. Toronto Hydro provides the value of the benefit of the connection on the basis of overall average loads for the given customer groups.

Question(s):

a) For a representative sample of new HV and LV connections, please provide the actual average customer load during the first 21 days following a new HV connection, and 13.5 days following a new LV connection.
b) For part a), please provide the total number of new HV and LV connections to identify the proportion of the representative samples relative to the total.
c) Please recalculate the value of the benefit of connection, using the same customer interruption cost and other inputs, but based on the actual average load in those post-connection periods rather than the overall average loads of these customer groups.

1B-Staff-52
Ref 1: Exhibit 1B / Tab 3 / Schedule 1, Table 1

Preamble:
With Reference 1, Toronto Hydro shows the proposed 2025-2029 custom scorecard with 12 measures and targets.

Question(s):

a) Please reproduce Reference 1 with the following information:
   i) A column which indicates the total revenue requirement during the rate term of all identified key programs associated with the delivery of the result, as detailed throughout Reference 1.
   ii) A column which indicates the dollar value of the PIM at proposed weight and total PIM envelope of $65M as proposed.
   iii) A column which indicates the calculated value of customer benefits realized in the 2025-2029 period (as identified in Table 21, p. 57, or elsewhere if applicable).
   iv) A column which indicates the ratio of iii) to ii) for each proposed PIM
b) Please Discuss:
   i) The proportion and significance of the PIM and its weighting within the PIM framework, relative to the proportion and significance of identified key programs, as provided in part i) above, in the context of Toronto Hydro's overall spending plan. Please evaluate how well the scope and value of its proposed PIMs correspond with the scope and value of Toronto Hydro's key spending and investment areas within its plan
   ii) The rationale and basis for the proportions of costs and benefits calculated in iv) above, including variations in the observed ranges.
   iii) For any value where iii) is less than or equal to i), please explain Toronto Hydro's rationale for the particular PIM proposed, including its weight.

1B-Staff-53

Ref 1: Exhibit 1B / Tab 3 / Schedule 1

Preamble:
At page 6 of Reference 1, Toronto Hydro states "only if the set performance targets are achieved….by the end of the rate term would the incentive be recovered from customers."

Question(s):

a) Please explain Toronto Hydro's proposal for recovery of the PIM-DA account balance in the event that not all performance targets are achieved in full. For instance: what amounts, if any, should be paid in the event that only some targets are achieved in full?
b) Does Toronto Hydro propose partial disposition in the event that a particular target is partially achieved?
c) In determining the amount for disposition, does Toronto Hydro propose that outperformance in one area should compensate for underperformance in another?

1B-Staff-54
Ref 1: Exhibit 1B / Tab 3 / Schedule 1 / pp. 12-13

Preamble:
Toronto Hydro details its proposed PIM in Tab 3 Schedule 1. Key attributes include the following.

- The incentive factor term of the revenue cap index formula would include a 0.6% performance factor that has an estimated value to customers of $ 65 million during the five years of the proposed plan.
- The PIM would give Toronto Hydro a means to earn back the $ 65 million depending on its performance as measured using 12 metrics.
- The potential revenue impact of each metric is a share of the $ 65 million.
- Results of the PIM metrics would be detailed on a Custom Scorecard.
- Rewards would be based on performance over the five years of the plan and would be considered in the next rebasing.

Question(s):

a) For each PIM performance category j in year t, suppose that
   $\bar{M}_j^{\text{Actual}}$ = Toronto Hydro's average value of metric 2025-2029
   M_j^{Target} = target value of the metric
   α_j = share of the maximum $65 million penalty
   Does one of the following formulas accurately characterize the proposed net reward from the PIM?

i. *Net Penalty* = $\max\left[65 - SUM_j \alpha_j \cdot 65 \cdot \left(\frac{\bar{M}_j^{Actual}}{M_j^{Target}}\right), 0\right]$

ii. *Net Penalty* = $SUM_j \max\left[\alpha_j \cdot 65 - \alpha_j \cdot 65 \cdot \left(\frac{\bar{M}_j^{Actual}}{M_j^{Target}}\right), 0\right]$

$= SUM_j \max\left[(\alpha_j \cdot 65) \cdot \left(1 - \frac{\bar{M}_j^{Actual}}{M_j^{Target}}\right), 0\right]$

If not, please provide an alternative formula that does provide an accurate characterization.

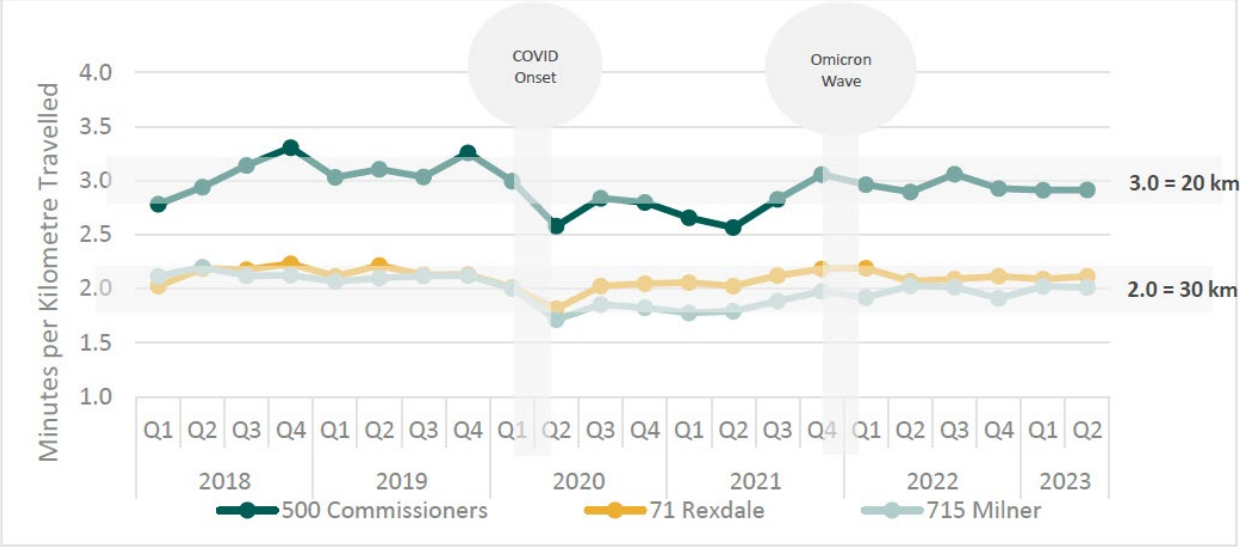
b) Please confirm that the design of the PIM would only permit Toronto Hydro to earn back the $65 million value of the proactive 0.6% performance factor. Explain any disinclination to affirm.

c) Does this PIM design preclude the use of metrics that should be paired with rewards? Is there merit in permitting rewards in some performance areas?

d) Why does demand response receive only a 5% weight in the PIM given the sizable capacity additions that the Company suggests are looming for the energy transition?

1B-Staff-55
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / pp. 7-8
Ref 2: THESL_Drive Time Data_20240207

Preamble:
Toronto Hydro provides Figure 1 outlining drive times per kilometer from its 3 work depots; Figure 1 is reproduced below.



Question(s):

a) What drive trips were incorporated into the data for the analysis? Does the data utilize include only the drive time to and from the job site? Does it include any ancillary driving activities?
b) What was the calculated average drive time per work activity?
c) What was the average drive distance per work activity?
d) What is the percentage of time driving of the overall work activity?
e) What was the total number of trips used for the calculation of each field depot?
f) What is defined as the Home Zone?
g) Are cars used for typical field work activities or more for supervision and administrative purposes? Why are cars included in the calculations?
h) In Ref 2 why are there multiple entries per vehicle in a given month in the yearly data tabs? What does each row signify?
i) Would 5km or less of driving for a vehicle in a given month be representative of typical drive times for field productivity?
j) Was the drive time per kilometer benchmarked against another city or utility?

1B-Staff-56
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / p. 12

Preamble:
Toronto Hydro provide Table 3 which is reproduced below:

Table 3: Non-Residential Buildings Construction Index for Metropolitan Areas[18]

		Toronto		Canada 11 Census Metropolitan Area Composite	
		Qtr to Qtr	Cumulative	Qtr to Qtr	Cumulative
2020	Q1	0.0%	0.0%	0.0%	0.0%
2020	Q2	0.5%	0.5%	0.1%	0.1%
2020	Q3	0.7%	1.2%	0.5%	0.6%
2020	Q4	0.2%	1.4%	0.1%	0.6%
2021	Q1	1.9%	3.3%	1.4%	2.0%
2021	Q2	5.0%	8.4%	3.9%	6.0%
2021	Q3	4.3%	13.0%	2.9%	9.0%
2021	Q4	3.4%	16.9%	2.9%	12.1%
2022	Q1	3.8%	21.3%	3.0%	15.5%
2022	Q2	5.0%	27.4%	4.0%	20.1%
2022	Q3	2.6%	30.7%	2.1%	22.6%
2022	Q4	2.5%	33.9%	1.6%	24.6%
2023	Q1	1.7%	36.2%	1.7%	26.7%
2023	**Q2**	**1.1%**	**37.7%**	**1.5%**	**28.6%**

Question(s):

a. Provide the filters and setting used on the Statistics Canada website to derive these values? Please detail the type of building and divisions selected?
b. Explain why these filters and settings were selected and how all the categories selected are applicable to Toronto Hydro's inflationary pressures?

1B-Staff-57
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / pp. 15-16

Preamble:
PEG wishes to better understand the Toronto Hydro cost data used in Clearspring's benchmarking study.

Question(s):

a) Please discuss what labor costs besides salaries and wages might be present in Toronto Hydro's O&M expenses used in the study.
b) What types of cost are included in the pension and benefits expenses that Clearspring removed from the Company's O&M expenses?

1B-Staff-58
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 19

Preamble:
The sample period for the power distributor cost research is the twenty-one years from 2000 to 2021. There are data from 78 US distributors in the sample.

Data for 9 of the sampled utilities are excluded from the total cost benchmarking sample only in 2021, the final year of the dataset.[1]

Question(s):
a) Please explain why data for 9 utilities were excluded only in 2021.
b) Were there additional major omissions with publicly available data which could potentially have been included in the sample, but were excluded altogether? If so, please provide the reasons for the exclusion of each. For example, did Clearspring exclude any subset of utilities because they are small?
c) Why did the sample not include 2022 data?

1B-Staff-59
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / pp. 20-21 and 38

Preamble:
The model parameters presented in the report result from a sample that excluded Toronto Hydro. While PEG acknowledges that excluding the subject utility is the appropriate way to estimate the model that is actually used for benchmarking Toronto Hydro's cost performance results (and to do the same for each individual company's results), it is common in econometric benchmarking for the model development and presentation to be based on the entire sample.

Question(s):
a) Please provide the econometric model parameter estimates that result when Toronto Hydro is included in the estimation.
b) Please comment on whether any changes in the parameter estimates when Toronto Hydro is excluded are of a magnitude which indicates a possible problem with the variable or model specification.

1B-Staff-60
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 21
Ref. 2: Cunningham, M., Hirschberg, J., and Giovani, A. (Quantonomics) (2023), *Memorandum to the Australian Energy Regulator/Australian Competition and Consumer Commission, Subject: Opex Cost Function – Options to Address*

[1] Data for 3 additional utilities are excluded from the sample for longer periods. These are California utilities that experienced massive wildfire damage. PEG and Clearspring have discussed and agreed to exclude these data in other proceedings.

***Performance Issues of Translog Models*, October 25.**
https://beta.aer.gov.au/system/files/2023-11/Quantonomics%20–%20Memorandum%20–%20Opex%20Cost%20Function%20Development%20–%20October%202023.pdf

Preamble:
Clearspring's power distributor cost model has three scale variables: the number of customers served, a peak load variable, and area. This model also includes second-order (quadratic and translog) terms for these variables. This treatment adds six scale-related variables to the model for a total of nine and results in custom cost elasticities with respect to scale variables for Toronto Hydro.

An ongoing discussion in Ontario Custom IR proceedings is whether a rolling average of past peak demands or a ratcheted peak demand variable are better for a power distributor cost model.

An important result of cost theory is that cost should rise monotonically with output.

Question(s):
a) What are the estimated custom cost elasticities with respect to these three scale variables for Toronto Hydro?
b) Parameter estimates for output variables may be assessed for consistency with the monotonicity condition predicted by cost theory. Reference 2 is an example of such a study in a report to the Australian Energy Regulator. Are Clearspring's scale variable parameter estimates in each year of the sample consistent with the monotonicity conditions predicted by cost theory? Do any other sampled companies have violations?
c) The peak load variable that Clearspring uses in its model is a rolling average of past peak load values. Up to ten past values are averaged to the extent that data are available. If the sample period were shortened by ten years, wouldn't this permit ten-year averages for all years? If ratcheted peak demand was then calculated the same way for Toronto Hydro as for the sampled US distributors, why would a moving average peak demand variable be better than a ratcheted peak demand variable?
d) Did Clearspring try ratcheted peak demand as an alternative to the rolling average? If so, which had stronger statistical support?
e) Does the company believe that the number of customers it reports on the RRR is significantly affected by high rise housing where the building is only counted as one "customer"? If so, please provide a rough estimate of the number of unmetered residential customers (1 dwelling = 1 customer) that are jointly served from a single meter. Is serving one customer with 100 tenants more costly than serving 100 separately-metered and separately sited households? If so, why?

f) Did Clearspring consider using other normalization factors other than number of customers due to the stated concern regarding the quantity of high rise building? What other normalization factors were considered but rejected? If no other normalization factors were considered, why not in consideration of Toronto Hydro concerns regarding using customer count?

1B-Staff-61
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 34

Preamble:
Clearspring used an employment cost index ("ECI") for the utility industry as the wage rate trend index for US utilities in its sample. The wage rate trend index chosen for Toronto Hydro was Ontario Average Weekly Earnings ("AWE").

The wage rate level chosen for Toronto Hydro was based upon 2011 Census data.

Question(s):
a) Why was the Ontario AWE chosen as the wage rate trend index for Toronto Hydro?
b) Please confirm that, in its recent "PBR3" decision, the Alberta Utilities Commission decided to replace the Alberta AWE with Statistics Canada's Alberta fixed weighted index ("FWI") of average hourly earnings in its inflation factor formulas for jurisdictional energy distributors.
c) Did the AWE or the FWI yield more plausible estimates of wage rate inflation in Ontario and Canada during the recent recession and recovery?
d) Is the methodology for the US Employment Cost Index (ECI) used in Clearspring's study more similar to the Ontario FWI for average hourly earnings or the AWE that Clearspring used?
e) Did Clearspring use forecasted values of AWE in its benchmarking in some years (other than 2023) where actual values are now available? Is this a problem with other variables in its cost benchmarking study as well? If so, which?

1B-Staff-62
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / pp. 30-31
Ref 2: Exhibit 1B / Tab 2 / Schedule 1

Preamble:
Clearspring provides benchmarking values for SAIFI, SAIDI and CAIDI.

Question(s):
a. Why is there the expectation that the SAIDI benchmark value increase with time? What is the physical justification for this versus theoretical modelling? Please

provide empirical quantitative evidence and not qualitative correlation explanation.

b) How does the proposed benchmark and forecasted SAIFI, CAIDI and SAIDI values differ in consideration of Toronto Hydro's proposed IRM as compared to the IRM scenario in Reference 2?

1B-Staff-63
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / p. 33

Preamble:
Toronto Hydro states that increase in costs occurred in 2019 and 2020 due to switching from bi-monthly billing to monthly billing.

Question(s):
Provide detailed explanation of increase in Billing O&M cost from 2018 to 2022 of more than double 2018 customer billing costs.
Explain how productivity and economies of scale was not achieved with the adjustment of billing period?

1B-Staff-64
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A /pp. 36-37

Preamble:
The service price approach that Clearspring uses to calculate capital costs, prices, and quantities depends on asset price indexes such as Handy Whitman construction cost indexes. It also depends on the assumed rate of decay.

Question(s):

a) Please explain the rationale for escalating post-2021 asset prices in Ontario by a 50/50 average of Conference Board projections of growth in the Ontario AWE and the gross domestic product implicit price index ("GDP-IPI"). Why wasn't the Conference Board of Canada's forecast of the Implicit Price Deflator, Business gross fixed capital formation, Non-residential structures for either Ontario or Canada used? Did Clearspring consider incorporating forecasts of Handy Whitman indexes that are available from S&P Global? What other indexes for asset price forecasts were considered if any?

b) The assumed 4.59% rate of decay was taken from the TCB benchmarking work in 4th GIR and it applied to all Ontario distributors. Did Clearspring consider other decay rates that might be more appropriate for Toronto Hydro and US distributors? If so, what were they and how did the results differ with an alternative specification?

1B-Staff-65
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 34

Preamble:
The price of materials and services is an important cost driver for many utilities in an age when a sizable share of utility OM&A expenses often takes the form of outsourced services. PEG notes the use of a propriety macroeconomic price index such as the GDP-PI as a stand-alone proxy for trends in the prices of materials and services that utilities use.

Question(s):
a) For a selected year in the 2020 to 2022, please provide a break-down of all components of the OM&A expenses, explicitly showing and defining the OM&A expenses of Toronto Hydro exclusive of salary and wage and pension and benefit OM&A that take the form of outsourced services. If not unduly burdensome, please also provide an estimate for additional prior years of the sample period and years in the 2025 to 2029 forecast period.
b) What are Toronto Hydro's four biggest uses of outsourced services?

1B-Staff-66
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 18

Preamble:
Clearspring's distribution cost model also includes a scope of electric services provided variable.

Question(s):
a) Did Clearspring consider any alternative specifications for this scope variable? If so, what were the results?

1B-Staff-67
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 18

Preamble:

Mr. Fenrick's new model adds two substation variables that he has not used in prior power distributor cost benchmarking studies he has submitted in OEB proceedings. However, he previously used a substation variable in a transmission cost benchmarking model he prepared for a Hydro One proceeding (EB-2021-0110).

Question(s):
a) Please confirm whether the US substation data used in this study reflect the corrections to the double-counting issue PEG identified in Clearspring's transmission substation variable during the Hydro One proceeding (see EB-2021-0110 Exhibit M Appendix B.2)?

b) Please describe how stations were identified in cases in which either no T or D identifier was available or a station was not exclusively designated as distribution.
c) Please explain the rationale for the ".5" multipliers in the formulas for "nsub", "mva" and "ntrans". Was this to divide stations designated as T&D?

1B-Staff-68
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 40
Ref. 2: ACIL Allen, "Opex Partial Productivity Study 2022" report to Australian Gas Networks (Victoria and Albury), Multinet and Ausnet, June 16, 2022

Preamble:
PEG believes that discussions in ratemaking proceedings of the properties of alternative econometric estimators should be theoretically correct even if the use of a particular imperfect estimator in research is reasonable.

Mr. Fenrick states in Reference 1 that "Two common issues arise in multivariate regression using real world data: heteroscedasticity and autocorrelation. Neither of these issues causes the coefficient values to be biased or less precise."

Question(s):
a) Please confirm that, in statistical theory, heteroskedasticity and autocorrelation cause ordinary least squares ("OLS") coefficient estimates to be less precise than the appropriate generalized least squares ("GLS") estimator.
b) Please confirm that, in the Reference 2 study by an Australian utility consultant, benchmarking results using a feasible GLS estimator are preferred to results using OLS.
c) The ACIL Allen report also favors stochastic frontier benchmarking over econometric benchmarking with OLS. What is Clearspring's view?

1B-Staff-69
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 40

Preamble:
On page 40, Clearspring says "Under the assumptions of the model, this coefficient value (obtained from the OLS estimation procedure that Clearspring uses) is considered an unbiased estimator of the relationship."

The finite sample properties of time series data in OLS require strict exogeneity.[2] This is a strong assumption and if it fails, model parameters estimated with OLS are not unbiased. This strict exogeneity assumption is unlikely to be met in this model due to use of proxy variables, the likely presence of measurement error, and known omitted relevant variables such as system age.

Rather than claiming unbiased parameters, it may be more appropriate to claim consistency of the OLS parameter estimates. This assumption only requires contemporaneous exogeneity[3], which is more plausible for these data and models. PEG believes that the type of retrospective, observational time series data needed for distributor benchmarking will only ever meet claims of consistency, which can be appropriate and sufficient.

To further clarify, PEG is not implying Clearspring's choice of model estimation method is incorrect or inappropriate; rather PEG believes Clearspring's specific claim of unbiased parameters is incorrect. Importantly, as a result of the conclusions above, PEG believes that other estimation methods such as Feasible Generalized Least Squares may also meet claims for consistency in the estimated model parameters and can be an appropriate choice for distributor benchmarking.

Question(s):

a) Please confirm whether Clearspring agrees with this assessment of the requirements of the sample properties for the unbiasedness of OLS parameters, as stated in the Preamble.
b) Does Clearspring believe its model meets the definition of strict exogeneity?
c) If yes, please provide Clearspring's theory and data to support this answer.

1B-Staff-70
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 22

Preamble:
Clearspring states that "The first order terms of all variables have the theoretically expected signs and are statistically significant at a 90% level of confidence, except for the distribution substation variable which is significant at an 85% confidence level. In fact, all the other first order explanatory variables are statistically significant at a 99% confidence level. The adjusted R-Squared of the model equals a robust 0.977."

[2] This means that the error term (which by definition must contain all measurement error in the variables, all omitted variables, and any sample bias) is uncorrelated with all explanatory variables in every time period, past and future.
[3] For contemporary exogeneity, the only necessary claim is that the error term is uncorrelated with the variables in the same time period (with no claims about past or future correlation required).

Question(s):

a) Please confirm that the use of panel data is known to result in artificially high R-Squared values.
b) Please confirm that in the portion of the report quoted above, Clearspring meant to say the distribution substation *capacity* variable is significant at an 85% confidence level.
c) Given the lower significance of the substation capacity variable, please explain Clearspring's decision to include it.
d) Did Clearspring test any alternative forms of this variable (e.g., MVA per substation)?
e) Were other variables considered in the modelling that had parameter estimates with significance in the 75% to 90% range but were excluded from the model? If so, what were they?

1B-Staff-71
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 18
Ref 2: EIA 861: https://www.eia.gov/electricity/data/eia861/

Preamble:

Clearspring states that

> "The percentage of smart meters variable measures the percentage of customers that have an installed smart meter. Smart meters enable hourly or sub-hourly interval use data to be collected from the meter. While installing more capable meters and the necessary infrastructure is expected to increase distribution costs, these meters enable time-of-use ("TOU") electricity rates that can create efficiencies mainly in the realm of power supply."

Question(s):

a) Does Clearspring's definition of smart meters exclude meters that only permit automated meter reading?
b) Please confirm that Clearspring relied solely on Form EIA-861 for smart meter data beginning in 2007. If confirmed, please explain why the number of AMI meters for Arizona Public Service in 2007 in the Clearspring working papers is nearly double that reported in the EIA-861 in that year. If not confirmed, please identify your data source.
c) What data source did Clearspring use to get values for the percentage of smart meters variable for years prior to 2007?

1B-Staff-72
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 17
Ref 2:
https://www.eia.gov/naturalgas/ngqs/#?year1=1997&year2=2022&company=Name

Preamble:
Clearspring states that "The **percentage of electric customers** measures the percentage of electric customers served by a utility out of total gas and electric customers. This variable measures the economies of scope available from serving both electric and gas customers."

The query system at Ref 2 shows that Dominion Energy South Carolina had natural gas volumes for residential, commercial, and industrial customers for the 1997-2022 period.

Question(s):
a) Please confirm that beginning in 2019, South Carolina Electric & Gas began filing FERC Form 1s as Dominion Energy South Carolina Inc.
b) Please explain why Dominion Energy South Carolina (f/k/a South Carolina Electric and Gas) has a percent electric value of 100% in all years.

1B-Staff-73
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / pp. 25-29
Ref 2: Exhibit 2B / Section C / p. 4

Preamble:
On page 25 of Ref. 1, Clearspring states

> "Several jurisdictions, including Ontario in recent years, exclude extraordinary events from reliability statistics, with the goal of reducing year over year volatility due primarily to extreme weather. If a day is excluded, it is denoted as a major event day ("MED"). The bulk of MEDs stem from major storms. These severe storms vary in number and intensity from year to year."

On p. 4 of Ref. 2, Toronto Hydro presents System Level SAIFI reported in several ways: total SAIFI, SAIFI excluding Loss of Supply ("LOS"), SAIFI Excluding Major Event Days ("MEDs"), SAIFI excluding MEDs and LOS, and SAIFI Excluding MEDs, LOS, and Scheduled Outages.

Question(s):
a) Please confirm that the Toronto Hydro reliability data are for five minute sustained outages, exclude loss of supply outages, and exclude outages for Major Event Days based on the IEEE 2.5 beta methodology. If not confirmed, please explain. Were planned outages also excluded? Are any other characteristics of the outage definition notable?
b) What versions of SAIFI and CAIDI were used in Clearspring's research for the sampled US utilities (e.g., did the data include or exclude loss of supply or transmission outages, were planned outages included or excluded)?

1B-Staff-74
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Attachment A/ pp. 25-28

Preamble:
PEG is seeking to better understand the sample and data Clearspring used in its reliability benchmarking models.

Question(s):
a) Please provide the location of the calculations in the working papers that show how Clearspring combined reliability data for US utilities that serve multiple states into a single value for each year. If this information is not included in the working papers, please provide these.
b) Please confirm that the database takes the form of an unbalanced panel. Please provide the rationales for excluding some observations of each utility that contributed data for the model.
c) Please explain why the data for some US utilities were excluded from the reliability sample entirely.
d) What is the source for Toronto Hydro's forecasted SAIDI, SAIFI, and CAIDI? What assumptions underlie these forecasted values?
e) If now available, please provide the 2023 actual SAIDI, SAIFI, and CAIDI values for Toronto Hydro.

1B-Staff-75
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Attachment A/ pp. 25-28
Ref 2: EB-2019-0261 / Exhibit 1 / Tab 1 / Schedule 12 / Attachment A / pp. 28-29

Preamble:
On pages 27-28 Clearspring stated

> "Clearspring did not change the variables for either the SAIFI or CAIDI models that were included in the prior Toronto Hydro research, except to take out the percentage AMI variable in the CAIDI model because it was not statistically significant. The procedure for estimating the two reliability models is much the same as the procedure for the cost models, except that different variables are used."

Question(s):
a) Please explain why the Clearspring model was not updated when:
   i. several years of additional data are available;
   ii. Mr. Fenrick subsequently presented different reliability models in a Hydro Ottawa proceeding;
   iii. the literature on reliability modelling has grown; and

iv. it is usually possible to improve a model when revisiting the issue with fresh eyes after several years.

b) Did Clearspring not consider the variables (e.g., congested urban in the SAIFI model and rural density, percentage of plant underground, and average wind speeds above 20 MPH in the Hydro Ottawa CAIDI model) included in its SAIFI and CAIDI models from the previous Hydro Ottawa proceeding (EB-2019-0261)? If Clearspring did consider these variables, please provide the results and associated working papers.
c) Please confirm that the 2025-2029 average value in Table 11 for SAIFI (% difference) should be 94.9% rather than 99.4%.
d) Clearspring's working papers show that it had the data for SAIFI and SAIDI, but had to calculate CAIDI in its code. Why did Clearspring present an econometric model for CAIDI rather than SAIDI?
e) Form EIA-861 has data on whether outages are recorded automatically (e.g., yes/no). Did Clearspring consider using these data in its reliability benchmarking results? If so, please provide these models and associated working papers.
f) Why don't the SAIFI and CAIDI models include trend variables?
g) Why isn't the IEEE MED Definition variable in the CAIDI model?
h) Why is the number of customers included in the CAIDI model when it has a p-value of 0.341?
i) Please provide the adjusted R-squared values for each model. Are these values robust?
j) Does Clearspring have any insights as to why Toronto Hydro is an extreme outlier in both the SAIFI and CAIDI models? Does this speak to the possibility that the models are missing some relevant variables or have other possible errors?

1B-Staff-76
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 10

Preamble:
"Both Clearspring and PEG used the Driscoll-Kraay ("DK") method in the Joint Report and Clearspring continues to use the DK method for this study."

PEG would like to clarify that the estimation method is pooled Ordinary Least Squares ("OLS"), which is followed by Driscoll-Kraay corrections to the standard error estimates. While the dataset consists of panel data, pooled OLS treats each company's data for each variable as though it all occurs in one time period. As a result, each coefficient estimate reflects the variable's average effect on distributor cost over the entire 20-year sample period.

Question(s):

a) Please confirm the estimation method and standard error adjustment method Clearspring used in its econometric benchmarking.
b) Please confirm that, other than the sample-wide yearly cost trend coefficient estimate, the individual coefficients produced by the pooled OLS model reflect a time-indifferent average of the variable's effect.
c) If (b) is confirmed, does Clearspring consider this to be a strength or weakness for its model?
d) If (b) is confirmed, does Clearspring have any concerns about the implications of a two-decade sample period?
e) Did Clearspring consider or test the model using a shorter sample period? If so, please provide results.

1B-Staff-77
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 40

Preamble:
Clearspring says "This is important because it means the researcher does not need to worry about correcting the coefficient values: they are not misleading." Clearspring goes on to claim that the "standard correction procedure" for dealing with serial correlation and heteroskedasticity was to "figure out the nature of each problem" and "strategically [weight] the regression."

Question(s):
a) Please confirm that there are numerous standard statistical tests and procedures, available as programmed commands within any modern econometric software program, to identify and rule out the presence of different forms of serial correlation and heteroskedasticity.
b) Please confirm that it is proven that researchers can consistently (the same statistical claim which applies to time-series model parameters) estimate the rho-squared – a.k.a. the autocorrelation coefficient – in the model and thus it can be appropriate to use.
c) Please confirm that if specific forms of serial correlation and/or heteroskedasticity are identified, there are programmed systematic procedures which correct for the problem in a clear and reproducible way.
d) Please confirm that the systematic procedures for serial correlation and heteroskedasticity do not, in fact, alter the regression estimation procedure, but instead make the appropriate systematic corrections to the data which will then result in different coefficient values.

1B-Staff-78
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 23

Preamble:
In previous econometric models of total distribution cost presented on behalf of Toronto Hydro (two studies with different samples in 2014, and one study in 2019), Mr. Fenrick has found the Company to be a superior cost performer in early years followed by a markedly large, steady deterioration in cost performance going forward and through the forecast period. These models all predicted Company performance in the forecast period to be generally in the "average" range. The 2014 model with the US-only sample and the 2019 model produced largely similar results. Clearspring's updated model of distribution cost improves Toronto Hydro's entire series of historic and forecasted cost performance by 13-29% across the board compared to the previous models.

Question(s):
a) What in Clearspring's view are the main drivers of this wholesale cost performance shift for Toronto Hydro?
b) Are there any material differences in variables or methods between this work and that done earlier not discussed in the current Clearspring report?
c) Did any other utilities common to the sample have similar shifts?

1B-Staff-79
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / pp. 11, 35-36

Preamble:
When using a service price approach to the calculation of capital costs, calculation begins in a "benchmark" year in which the capital quantity is the ratio of plant value to an average of asset prices in prior years.

Question(s):
a) The computer code shows that various capital benchmark years were used for US distributors. Please explain why.
b) The OEB's Ontario total cost benchmarking work uses pre-2002 Toronto Hydro data in the capital cost calculations whereas the Clearspring study does not. Please discuss why the exclusion of the pre-2002 data leads to more accurate capital stocks than its inclusion. Does Toronto Hydro have actual values for any plant additions data that were estimated in the Ontario total cost benchmarking work? If so, please provide.
c) Given the general inaccuracy of benchmark year cost calculations and Clearspring's recent benchmark year for Toronto Hydro (2002), should benchmarking results for some of the early years since 2002 be disregarded or downplayed?

1B-Staff-80
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / p. 34

Preamble:
Toronto Hydro states that "To construct the overall OM&A input price we weighted each [sub]index using the customized labour and non-labour cost shares calculated from the FERC Form 1 data or based on data provided to us from Toronto Hydro."

Question(s):
a) The SST code in the provided working papers has a remark indicating a 70% weight for Toronto Hydro labor in the calculation of the O&M price index whereas the data files and formulas suggest a 40% value was used in the historical period. Please confirm that the 70% labor weight is no longer used in the calculations.
b) If a 40% share is instead used, what is the basis for this calculation?

1B-Staff-81
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / Appendix A / pp. 22-23, 38

Preamble:
In order to make econometric projections of Toronto Hydro's proposed cost, Clearspring needed to obtain forecasts of labor OM&A, non-labor OM&A, and asset prices. Clearspring did not provide a detailed description to address these in its report or in the working papers.

Question(s):
a) Please provide full descriptions and Timeseries File IDs for each of the input price forecasts that Clearspring used in its research.
b) Please explain why forecasts from January 23, 2023, were used when the report was dated October 31, 2023?

1B-Staff-82
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / p. 38

Preamble:
Toronto Hydro states that the ION meter is more expensive than a typical meter and implies small installed quantities of ION meters can have a material effect on Meters CAPEX unit costs.

Question(s):
a) Why is the ION meter being utilized and has a lower cost alternative been investigated and considered?
b) What percentage of installed meters in each of 2018 to 2022 were ION meters?
c) What is the cost difference between an ION meter and a typical meter?

1B-Staff-83

Ref 1: Exhibit 1B / Tab 3 / Schedule 3, Appendix C

Preamble:
In its unit cost benchmarking study, UMS Group states that the seven asset categories represent 52% of the planned capital budget and that the five maintenance programs represent approximately 57% of the preventive and predictive maintenance costs.

Question(s):
a) Please show the detailed calculations to derive the above percentages.
b) Please show the detailed calculations to derive the respective percentages for the 2025-2029 period.

1B-Staff-84
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / section 3.0

Preamble:
In Reference 1, which is titled "2020 to 2024 Productivity Achievements," Toronto Hydro states it has achieved more than $2.2 billion of savings since 1999 through the amalgamation of the six utilities that served the former municipalities that now make-up the City of Toronto.

Question(s):
a) Of the cited $2.2 billion in savings generated by the utility since Toronto Hydro was created in 1999, please quantify the new savings that were actually, as opposed to being forecast, realized since 2020.

1B-Staff-85
Ref 1: Exhibit 1B / Tab 3 / Schedule 3 / section 3.1

Preamble:
Toronto Hydro provides forecast reduced expenditures and forecast avoided operating costs for several corporate projects.

Question(s):
a) Please complete the following table to identify the actual realized reduced expenditures in each year:

Project	2020	2021	2022	2023
Enterprise Resource Planning, Enterprise Connect, and People Connect				
e-Tailboard				
Streetlight Management System Project				
Non-conformance Reporting				
Electronic Red Construction Folder				
Accounts Payable Processing Automation				
Storm Prediction Impact Tool				
SAP Business Warehouse Project				

b) Please complete the following table to identify the actual realized cost avoidance in each year:

Project	2020	2021	2022	2023
Enterprise Resource Planning, Enterprise Connect, and People Connect				
e-Tailboard				
Streetlight Management System Project				
Non-conformance Reporting				
Electronic Red Construction Folder				
Accounts Payable Processing Automation				
Storm Prediction Impact Tool				
SAP Business Warehouse Project				

1B-Staff-86
Ref 1: Exhibit 1B / Tab 3 / Schedule 1, section 3.2.2
Ref 2: Report of the Board: Renewed Regulatory Framework for Electricity Distributors: A Performance-Base Approach, October 2012

Preamble:
On page 10 of Reference 1, Toronto Hydro reports that its investment plan is "sufficient only to maintain outage duration as measured by the custom SAIDI metric over the 2025-29 period" (p.10), yet set a target two standard deviations below this level – 2 minutes lower than historical 5 year average of 48.2 minutes.

On page 16 of Reference 1, Toronto Hydro proposes to maintain outage frequency and has established a target range enveloping its most recent five-year historical outage frequency measure of 0.42. Regarding outages, its investment plan is to invest "the minimum level necessary to manage asset condition"; this intent is informed by customers' prioritization of reduced outage duration rather than frequency.

Question(s):

a) Please explain what actions and management decisions Toronto Hydro would need to undertake in order to achieve the 46.2 minute SAIDI target attached to the performance incentive mechanism.
b) Please confirm whether the steps in a) are included in Toronto Hydro's investment plan.
c) Please explain under what conditions the steps in a) would be included in Toronto Hydro's plan, and whether any other work would not be carried out if the steps in a) were undertaken.
d) In the event Toronto Hydro follows its investment plan, which is not sufficient to achieve this target, and it achieves this target nevertheless, to what factors could its success be attributed?
e) Please explain why an incentive is warranted in the circumstances referenced above.
f) Regarding outage frequency please explain why an incentive is required or justifiable to prevent deterioration from current service levels and investing "the minimum level necessary."
g) Please discuss the proposal to maintain outage frequency in the context of the OEB's statement in Reference 2 that "The [Renewed Regulatory Framework] is intended to elevate utility performance by creating incentives for superior performance."

1B-Staff-87
Ref 1: Exhibit 1B / Tab 3 / Schedule 1 / p. 48
Ref 2: Exhibit 2B / Section E7.2

Preamble:
Toronto Hydro states the use of Local Demand Response (LDR) to avoid capital spent on load transfers resulting in significant long-term savings for ratepayers.

Question(s):

a) Please provide the benefit-cost analysis, or equivalent document, that supports Toronto Hydro's selection of target stations for demand response and those which have not been proposed, including: Fairbank TS, Finch TS, Bathurst TS, Manby TS, Leslie TS, Cecil TS, Strachan TS, and Copeland TS.
b) Please list any other LDR projects that were considered but rejected for the 2025 to 2029 period.

1B-Staff-88
Ref 1: Exhibit 1B / Tab 3 / Schedule 1 / Section 2.4.3 / pp. 46-56
Ref 2: Exhibit 2B / Section E7.2.1

Preamble:

Toronto Hydro provides details of its proposed system capacity (non-wires) proposals, including the LDR and performance incentive structure. Toronto Hydro proposes a budget of $5.7 million to deploy an expanded version of its LDR initiative to address system capacity constraints and procure 30 MW of flexible system capacity to displace and defer the need for load transfers in the Horseshoe North area over the 2025-2029 term.

Question(s):

a) Please discuss what considerations Toronto Hydro undertook about expanding the LDR program greater than 30 MW, including cost, impact on neighboring stations, ability to procure necessary capacity and any subsequent changes to performance incentive structures.
b) Please discuss the rationale for limiting LDR capacity at 30 MW for the 2025 to 2029 period.
c) Please discuss what considerations are required if the LDR program was to be leveraged to alleviate long-term capacity needs for the various stations identified.
d) Please discuss and provide any analysis undertaken to consider similar LDR initiatives in other areas of Toronto Hydro's system that have identified constraints, including Horseshoe East and West. Please indicate why similar projects have not been proposed for additional areas on the system.
e) Please discuss what considerations and analysis was conducted by Toronto Hydro related to CDM programs being offered in its service territory, including those in partnership with other entities, including the IESO and the Local Initiatives Program during the 2025-2029 period.
f) Please discuss the Benefit Stacking Pilot that is supported by the IESO Grid Innovation Fund and OEB's Innovation Sandbox, including project timelines and how Toronto Hydro expects to apply findings from the pilot project.

1B-Staff-89
Ref 1: Exhibit 1B / Tab 3 / Schedule 1 / Section 2.4.3 / pp. 49-55
Ref 2: OEB Filing Guidelines for Incentives for Electricity Distributors to Use Third-Party DERs as Non-Wires Alternatives, March 28, 2023
Ref 3: OEB Draft Benefit-Cost Analysis Framework for Addressing Electricity System Needs, December 2023

Preamble:
Toronto Hydro has proposed a performance incentive related to the LDR program as well as has conducted a Benefit Cost Analysis on the proposal. As part of this analysis, Toronto Hydro outlines the NPV of the benefits of capital deferral and avoided based on the LDR program based on a set of assumptions informed by prior experience with load transfer projects.

Question(s):

a) Please provide any data from Toronto Hydro's existing LDR program that supports the assumption of 75% of load transfer projects in scope can be avoided entirely, while 25% deferred for at least 5 years.
b) Please discuss the impacts to the analysis, including operational cost figures, summarized in Table 18 using different assumptions, including 50% of load transfer projects in scope are avoided entirely while 50% are deferred for at least 5-years; and, if 100% of projects are avoided entirely.
c) Please discuss any consideration or analysis Toronto Hydro has conducted on its BCA analysis following the OEB's release of the draft BCA Framework. If Toronto Hydro has conducted any analysis using the OEB's BCA Framework examples, please provide.
d) Please clarify if the WACC was used as the sole discount rates as part of the BCA analysis to calculate net present values, or if additional discount rates (e.g., social discount rate, inflation rate) were used.
e) Please discuss the analysis and consideration Toronto Hydro conducted related to possible bulk system benefits related to the proposed LDR program.
f) Please confirm that if successful, the LDR program will not require Toronto Hydro to raise the capital required for the traditional wires solution, either in whole or in part, depending on the level of transfer projects entirely avoided or deferred.
g) Please provide the factors and considerations that led Toronto Hydro to the conclusion that the Shared Savings Mechanisms incentive options were not sufficient to level the playing field between the LDR program and load transfers.
h) Please discuss how the LDR program will be evaluated to verify its performance and calculate total costs and benefits, after the fact, and determine final net benefits.
i) Please discuss the proposed method for determining final incentive value for the LDR program if it will be based on final actual or forecast values.

1B-Staff-90
Ref 1: Exhibit 1B / Tab 3 / Schedule 1 / p. 10
Ref 2: Exhibit 2B / Section A / p. 2
Ref 3: Exhibit 2B / Section E2 / p.23
Ref 4: Exhibit 2B / Section D3 / p. 40
Ref 5: Exhibit 2B / Section D3 / p. 53

Preamble:
In determining its SAIDI target excluding LoS, MEDs and Scheduled Outages, Toronto Hydro appears to be conflating the stated customer desires of maintaining overall system reliability with the stated customer desires of addressing long outage durations which are primarily caused by MEDs.

Question(s):

a) Please provide a list of projects that contribute to achieving the SAIDI target of 46.2 shown in Figure 1 in Reference 1, and the contribution of each project to achieving that target.
b) Please reconcile the stated customer preference of reducing the impact of MEDs against Toronto Hydro's stated target of improving SAIDI excluding LoS, MEDs and scheduled outages. Why should the target for SAIDI excluding LoS, MEDs and scheduled outages not be maintained at 48.2 minutes as per stated customer preference?
c) Please provide a capital and O&M budget that would achieve a target SAIDI of 48.2 minutes.
    i. Please provide the list of capital projects that are not required or are reduced as part of maintaining a 48.2 minute SAIDI target.
d) Please provide an updated Figure 1 (with supporting tabular data) that separates SAIDI (excluding LoS, MEDs, and scheduled outages) between the Horseshoe and Downtown areas.
e) Please provide a capital, O&M budget, and resultant SAIDI & SAIFI that would result from a target increase in rates that is the same as the rate increases of the past 5 years.
f) Please provide a capital, O&M budget, and resultant SAIDI & SAIFI that would result from a target increase in rates that is the same as the forecast rate of inflation for the next 5 years.

1B-Staff-91
Ref 1: Exhibit 1B / Tab 3 / Schedule 1 / pp. 16-18
Ref 2: Exhibit 2B / Section A / p. 2

Preamble:
Please refer to Figure 2 from Reference 1 and the associated commentary, and that Toronto Hydro notes in Reference 2 that its key objectives and outcomes for the execution of this plan included "Replacing assets at a pace sufficient to maintain reliability with historical levels of performance and to maintain system health in line with 2017 condition".

Question(s):
a) Please update Figure 2 from Reference 1 and provide the supporting tabular data and the associated calculation of target SAIFI (Defective Equipment) starting in 2013 and ending in the year 2029.
    i. If a revised target SAIFI (Defective Equipment) based on the 10-year average is higher than the 5 year average in the original Figure 2, please provide updated capital (and O&M if applicable) budgets that would achieve this revised SAIFI (Defective Equipment) target.

ii. Please provide the list of capital projects (and their capital costs) that are not required or are reduced as part of meeting the revised SAIFI (Defective Equipment) target.

b) Please provide an updated Figure 2 starting in 2013 (with supporting tabular data) that separates SAIFI (Defective Equipment) between the Horseshoe and Downtown areas.

1B-Staff-92
Ref 1: Exhibit 1B / Tab 2 / Schedule 1 / pp. 25, 26

Preamble:
Toronto Hydro stated that to allow for updates of the annual inflation factor in rates without double-counting the impact of inflation, Toronto Hydro adjusted the Revenue Growth Factor (RGF) by removing a 2% forecasted annual inflation factor for the 2026 to 2029 period. Toronto Hydro stated that it is presenting the RGF as an increase in revenue requirement, on an inflation-adjusted basis for rate-setting purposes.

Toronto Hydro also noted that there is "current volatility in national and global inflation, which may or may not subside over the 2025 to 2029 rate period."

OEB staff notes that the Canadian consumer price index rose 3.4% in December from a year ago, following a 3.1% increase a month earlier, as reported by Statistics Canada in January 2024.

Question(s):
a) Please explain the basis for the 2% forecasted annual inflation that will adjust the RGF.
b) Please explain how the 2% forecasted annual inflation relates to capital expenditures, gross plant additions, and OM&A expenses.
c) Please explain why a higher amount than 2% to adjust the RGF may be more appropriate, given that inflation remains trending in Canada at a rate greater than 3% and Toronto Hydro also noted that inflation may not subside over its rate term.

1B-Staff-93
Ref 1: Exhibit 1B / Tab 2 / Schedule 1, pp. 3, 23, 26, 27, Table 4
Ref 2: THESL_4_T04_S02 - OEB Appendix 2-K_20240208

Preamble:
Toronto Hydro explained that the CRCI includes an inflation factor component. Toronto Hydro stated that the inflation factor (I) is aligned with the OEB's methodology. However, Toronto Hydro noted that it includes an alternative Toronto-based salary and

wages index to establish the labour component of the inflation factor to better reflect the real cost drivers of attracting and retaining talent in the Toronto labour market.

Toronto Hydro noted that the inflation factor will be updated annually as per the OEB's standard methodology, with an alternate labour index for Toronto salary and wages.

Toronto Hydro proposes to replace the Ontario Average Weekly Earnings (AWE) inflation index within the OEB's inflation factor methodology with a custom Toronto Hourly Salary and Wages Index. This index can either be derived by the Conference Board of Canada (CBC) economic data subscription service, or can be reproduced by purchasing relevant tax data from Statistics Canada.

Toronto Hydro stated that for efficiency purposes, it proposes to rely on the CBC index. In its evidence, Toronto Hydro has provided "Table 4: 2016-2022 Labour Inflation" which is reproduced below.

Toronto Hydro Table 4: 2016-2022 Labour Inflation

	Statistics Canada Average Weekly Earnings (AWE) Ontario	Toronto Hydro Average Blended Salary Increase (Appendix 2-K)	Conference Board of Canada Toronto Hourly Salary & Wages
2016	2%	1.2%	4.9%
2017	2.6%	2.5%	3.3%
2018	1.1%	3.2%	0.2%
2019	1.9%	3.7%	3.4%
2020	2.9%	3.9%	5.4%
2021	2.8%	3.8%	1.5%
2022	7%	4.6%	4.3%
2016-2022 Average	**2.9%**	**3.3%**	**3.3%**

Question(s):

a) Please provide and summarize Toronto Hydro's analysis of the pros and cons of a custom Toronto Hourly Salary and Wages Index using the CBC economic data as compared to "relevant tax data" from Statistics Canada. Please identify what is meant by relevant tax data and provide an explanation as to the rationale supporting its relevance.

b) Please provide the webpage links to the specific CBC economic data subscription service and the relevant tax data from Statistics Canada that Toronto Hydro references in its application. Please explain step-by-step the process Toronto Hydro used to derive the amounts shown in the column "Conference Board of Canada Toronto Hourly Salary & Wages."

c) As Toronto Hydro is proposing to rely on the CBC index, please confirm that the relevant output from CBC index is identical to the "relevant tax data from Statistics Canada". If this is not the case, please explain, including the impacts on the numbers shown in the above Table 4.
d) Please provide the source data and all calculations that support the data in Toronto Hydro's Table 4.
e) Please confirm that the amounts shown in Toronto Hydro's Table 4 relating to "Toronto Hydro Average Blended Salary Increase (Appendix 2-K)" relate to salary and wage increases only and exclude benefits. If this is not the case, please explain.
f) Please show how the amounts shown in Toronto Hydro's Table 4 "Toronto Hydro Average Blended Salary Increase (Appendix 2-K)" are derived based on Toronto Hydro's Appendix 2-K.
g) Please demonstrate, by way of calculations using one example, the flow through impacts of Toronto Hydro's proposal in each year of the term for each of the three labour inflation parameters considered in Toronto Hydro's "Table 4: 2016-2022 Labour Inflation".

1B-Staff-94
Ref 1: Exhibit 1B / Tab 2 / Schedule 1, Table 4
Ref 2: OEB Letter, 2024 Inflation Parameters, June 29, 2023

Preamble:
In its evidence, Toronto Hydro has provided "Table 4: 2016-2022 Labour Inflation" which is reproduced below.

Toronto Hydro Table 4: 2016-2022 Labour Inflation

	Statistics Canada Average Weekly Earnings (AWE) Ontario	Toronto Hydro Average Blended Salary Increase (Appendix 2-K)	Conference Board of Canada Toronto Hourly Salary & Wages
2016	2%	1.2%	4.9%
2017	2.6%	2.5%	3.3%
2018	1.1%	3.2%	0.2%
2019	1.9%	3.7%	3.4%
2020	2.9%	3.9%	5.4%
2021	2.8%	3.8%	1.5%
2022	7%	4.6%	4.3%
2016-2022 Average	**2.9%**	**3.3%**	**3.3%**

As noted in the OEB Letter, 2024 Inflation Parameters, the OEB's methodology uses a labour component "Average Weekly Earnings (AWE) – All Employees – Ontario."

OEB staff has calculated the Statistics Canada AWE Ontario using the OEB's methodology in the table below.

Table 1B-1: Statistics Canada AWE Ontario using the OEB's Methodology

	Statistics Canada AWE - downloaded January 7, 2024	Average % Annual Change - arithmetic growth rate	Average % Annual Change - logarithmic growth rate
2015	$ 963.37		
2016	$ 974.41	1.1%	1.1%
2017	$ 993.23	1.9%	1.9%
2018	$ 1,022.00	2.9%	2.9%
2019	$ 1,049.72	2.7%	2.7%
2020	$ 1,126.30	7.3%	7.0%
2021	$ 1,166.72	3.6%	3.5%
2022	$ 1,194.21	2.4%	2.3%
Average		3.1%	3.1%

OEB staff observes that the OEB typically uses the logarithmic growth rate in its calculations, as noted in the OEB Letter, 2024 Inflation Parameters, June 29, 2023, Appendix.

> As set out in the EB-2021-0212, OEB 2022 IPI Generic Proceeding, Procedural Order No. 1, Fact Sheet, August 27, 2021, the calculations of the "Annual % Change" ….are based on the logarithmic growth rate, as opposed to the arithmetic growth rate.

Question(s):

a) Please explain whether the years noted in Toronto Hydro's Table 4 represent rate years rather than calendar years. If yes, please restate Toronto Hydro's Table 4 with data relating to calendar years, as opposed to rate years. If no, please explain what is being shown.
b) Please reconcile the numbers shown in "Table 1B-1: Statistics Canada AWE Ontario using the OEB's Methodology" to the "Statistics Canada Average Weekly Earnings (AWE) Ontario" values shown in Toronto Hydro's Table 4.
c) Please confirm that Toronto Hydro agrees with the values and calculations shown in "Table 1B-1: Statistics Canada AWE Ontario using the OEB's Methodology". If this is not the case, please update this table.

1B-Staff-95

Ref 1: Exhibit 1B / Tab 2 / Schedule 1, Table 4
Ref 2: OEB Letter, 2024 Inflation Parameters, June 29, 2023, Appendix
Ref 3: Filing Requirements For Electricity Distribution Rate Applications - 2023 Edition for 2024 Rate Applications, Chapter 2, Cost of Service. December 15, 2022, p. 6

Preamble:
OEB staff notes that the impact of Toronto Hydro's proposal to replace the Ontario AWE inflation index with a custom Toronto Hourly Salary and Wages Index has an immaterial impact on Toronto Hydro's revenue requirement.

OEB staff's calculations demonstrating the immaterial impact are shown below. OEB staff has incorporated the values shown in the above "Table 1B-1: Statistics Canada AWE Ontario using the OEB's Methodology" derived by OEB staff,

Table 1B-2: OEB Staff's Calculations of Immaterial Impact of Toronto Hydro's Proposal

Toronto Hydro's Table 4 – Conference Board of Canada Toronto Hourly Salary & Wages 2016-2022 Average	3.3%
Less: OEB staff's Table 1B-1: Statistics Canada AWE Ontario using the OEB's Methodology 2016-2022 Average	3.1%
Difference	0.2%
Multiplied by the OEB's standard weighting of the inflation factor labour component of 30% for electricity distributors	30%
Equals an approximate net impact of 0.06% on Toronto Hydro's revenue requirement	0.06%
Toronto Hydro's 2025 Base Revenue Requirement as per RRWF	$972,362,213
Approximate net impact of 0.06% on Toronto Hydro's revenue requirement	$583,417
Toronto Hydro's materiality threshold	$1,000,000

As noted in the OEB Letter, 2024 Inflation Parameters, the labour component weighting used in the OEB's calculations of inflation parameters is 30% for electricity distributors.

As per the filing requirements, Toronto Hydro's materiality threshold is $1 million.

Question(s):
a) Please confirm that Toronto Hydro agrees with the values and calculations shown in "Table 1B-2: OEB Staff's Calculations of Immaterial Impact of Toronto

Hydro's Proposal". If this is not the case, please update this table, showing all associated calculations.

b) Please elaborate whether Toronto Hydro agrees or disagrees with OEB staff's demonstration that the impact of Toronto Hydro's proposal to replace the Ontario AWE inflation index with a custom Toronto Hourly Salary and Wages Index has an immaterial impact on Toronto Hydro's revenue requirement.

1B-Staff-96
Ref 1: Exhibit 1B / Tab 2 / Schedule 1, p. 26

Preamble:
Toronto Hydro stated that substituting the labour component of the inflation factor with a Toronto-specific index is responsive to the consideration that labour is a key cost driver within the utility's plan.

Toronto Hydro noted that a Toronto-specific labour index could be more suitable to account for the localized inflationary cost pressures that the utility faces in the 2025-2029 rate period.

Toronto Hydro observed that while it is not possible to predict what these pressures would be, or how they would differ regionally, the historical trend over the last six years (i.e. 2016 to 2022) suggests that regional differences may be a factor.

Question(s):

a) Please explain why Toronto Hydro should be treated differently than other Ontario electricity distributors in respect of the labour component of Toronto Hydro's proposed inflation factor.

b) Please provide an OEB precedent (including EB#) where the OEB approved a region-specific labour component of the inflation factor.

1B-Staff-97
Ref 1: Exhibit 1B / Tab 3 / Schedule 1 / pp. 37-38 and Table 13 (summary)
Ref 2: Exhibit 2B / Section E8.2 / pp. 18-20 (Facilities Reductions)
Ref 3: Exhibit 2B / Section E8.3 (Fleet)
Ref 4: Exhibit 4 / Tab 2 / Section 11 (Fleet)
Ref 5: Exhibit 4 / Tab 2 / Section 12 (Facilities reductions)

Preamble:
Toronto Hydro indicates that to further reduce its fleet and facilities emissions to 2.5 kt of (Scope 1) CO2e by 2029, it plans to: 1) electrify 50% of its fleet by the end of the rate term, and 2) reduce GHG emissions produced at its work centers by 3% annually through fuel switching, conservation and energy efficiency measures.

Question(s):

a) Please confirm that Toronto Hydro's scorecard measure titled "Emissions Reductions" which it has proposed a 5% overall weight, includes the proposed activities to electrify 50% of its fleet and reduce GHG emissions at its work centers by 3% each year.
b) Please discuss and define how Toronto Hydro will consider its fleet to be electrified.
c) Please confirm that the 3% annual GHG reductions from Toronto Hydro work centers is an incremental annual target and that by 2029, a minimum GHG emissions reduction of 15% will have been achieved.
d) Please discuss what baseline Toronto Hydro proposes to establish in order to calculate annual GHG emissions reductions. For example, does Toronto Hydro proposes that annually, 3% net incremental GHG emissions reductions will take place relative to 1990 (consistent with the City of Toronto's TransformTO Net Zero Strategy)?
e) Please discuss and provide the criteria Toronto Hydro proposes to use to determine and verify that it has achieved 3% GHG emissions reductions from improvements at its work centers during the 2025 to 2029 term.
f) Please discuss how site closures will be included in the calculation of GHG emissions reductions as part of this scorecard item.
g) Please provide the detailed plan and decision-making process that Toronto Hydro will use to identify, analyze and prioritize the capital improvements targeted at reducing GHG emissions at its work centers, including fuel switching and improving building efficiency.
h) Please discuss if all GHG emissions related capital improvements are proposed to be funded through rates or if any portion will be funded by the shareholder.

1B-Staff-98
Ref 1: Exhibit 1B / Tab 3 / Schedule 2 / Table 1 / p. 1
Ref 2: Exhibit 2B / Section D5 / p. 4, 14-17

Preamble:
Regarding stated investments to improve SAIDI and SAIFI in the above referenced sections.

Question(s):

a) Are Toronto Hydro's historical investments in grid sensor, remote-operable switches, smart meters and SCADA controlled switches (advancing "self-healing" grid operations) the primary drivers for the improvements achieved in SAIDI and SAIFI since 2013?
   i. If not, what are the primary drivers of the improvements?
   ii. If yes, please discuss the impact that continued investment in these activities at the same pace will have on improvements in SAIDI and SAIFI results.

b) Please compare the historic and forecast substantial reliability improvements in SAIDI and SAIFI achieved by Toronto Hydro with the improvements reported by the US Department of Energy for utilities that implemented FLISR.
c) Are the forecast substantial incremental reliability improvements "three to seven percent for SAIFI and four to seven percent for SAIDI on the overhead system"?
iii. If not, what are the forecast substantial incremental reliability improvements for SAIDI and SAIFI?

1B-Staff-99
Ref 1: Exhibit 1B / Tab 4 / Schedule 1 / pp. 1-20
Ref 2: Exhibit 1B / Tab 4 / Schedule 2
Ref 3: Exhibit 2B / Section D5

Preamble:
In its description of innovation over the 2020 to 2024 rate period, Toronto Hydro describes its approach to building innovative strategies across numerous dimensions of its business including the creation of an Innovation Sandbox.

Question(s):
a) Please explain how Toronto Hydro funded its Innovation Sandbox, how it measured success of the initiatives and provide additional details on which initiatives have been scaled into normal operations.
b) Outside of its sandbox, please explain how Toronto Hydro determines what innovative pilots it will fund and how it assesses when an initiative is ready for scale?
c) Please explain how Toronto Hydro determines which initiatives fall under the heading of innovation and why this isn't considered a part of normal utility management. For example, under System Observability: Network Condition, Monitoring and Control (1.2 of above noted scheduled), Toronto Hydro references how it continues to advance its Network Condition Monitoring and Control to increase situational awareness the low voltage distribution network.
d) Please explain how the areas in which Toronto Hydro plans to test specific new distribution capabilities in the upcoming rate period differ from the areas explored and funded previously by Toronto Hydro in the current rate period (during which it did not have an Innovation Fund).
e) Please explain why Toronto Hydro requires both the support of the Future Energy Scenarios tool as well as the Innovation Fund to stress test grid modernization investments in the 2025-2029 rate period.
f) The four pilot areas tagged for the Innovation Fund were identified as part of the Grid Modernization Strategy in reference 3. What focus areas of the strategy do they fall under and can Toronto Hydro please explain why they can't be incorporated into the initiatives already planned?
g) Please provide any additional analysis of comparable jurisdictions innovation funding amounts, other than those included in the application (i.e., Ofgem, New York, Enbridge Gas).

h) Please provide more details regarding the proposed governance framework, including titles and responsibilities of the steering committee members, anticipated timelines for review of each project, how innovation projects will be staffed (e.g., will existing staff people be leveraged, will new FTEs be dedicated to pilot project owner roles, etc.), and if Toronto Hydro proposes to keep the OEB and industry updated on its progress so opportunities and lessons learned can be considered.
i) Please discuss the likelihood of the innovation fund exceeding the requested $16M. If so, what mechanisms does Toronto Hydro propose be put in place to ensure that any additional funding is appropriate and will provide benefits to ratepayers.

1B-Staff-100
Ref 1: Exhibit 1B / Tab 5 / Schedule 1 / pp. 8-10
Ref 2: Exhibit 2B / Section E2 / p. 5

Preamble:
In Reference 1 Toronto Hydro states Phase 2 of the customer engagement "solicited detailed customer feedback on the $5.9 billion draft plan… In direct response to customer feedback, Toronto Hydro challenged itself to reprioritize certain investment, and reduce the overall capital plan by approximately $70 million, as further described in Exhibit 2B, Section E2."

In reference 2 Toronto Hydro states it "set upper limits of $4,000 million for the capital plan and $1,900 million for the operational plan over the 2025-2029 period".

Question(s):
a) OEB staff are unclear where in Exhibit 2B, Section E2 the $70M reduction to the $5.9 billion draft plan is described. Please reference the section of the application that outlines the $70 million reduction Toronto Hydro made in response to the Phase 2 customer engagement or provide the description.
b) Please confirm that the $70M reduction is reflected in the capital and OM&A budgets presented in Exhibit 2, Exhibit 4 and the Exhibit 2 excel models.

1B-Staff-101
Ref 1: Exhibit 1B / Tab 5 / Schedule 1, Appendix A
Ref 2: A Renewed Regulatory Framework for Electricity Distributors: A Performance Based Approach, October 2012

Preamble:
With Reference 1, Toronto Hydro provides the summary of its customer engagement. On page 1 of this report, Innovative Research Group, Inc. provides context regarding the importance of meaningful customer engagement, citing OEB policy documents. The statement is made that the OEB's "consumer-centric" approach to rate applications

requires electricity distributors to demonstrate that their services are provided in a manner that responds to identified customer needs and preferences.

Footnote 1 is duplicated below:
OEB Renewed Regulatory Framework for Electricity Sections 2.4.2, 5.0, and 5.0.4.

Question(s):

a) Please confirm that, in footnote 1, Innovative Research Group, Inc, intended to reference the OEB's October 2012 report *A Renewed Regulatory Framework for Electricity Distributors: A Performance Based Approach*. If not, please identify which report is referenced.
b) Please provide, as attachments to this interrogatory response, section 2.4.2, section 5.0, and section 5.0.4 of the "OEB Renewed Regulatory Framework for Electricity."
c) Please identify where, in Toronto Hydro's view, Reference 2 identifies a "consumer-centric" approach to rate applications. Please articulate Toronto Hydro's view as to the relative weight and priority of customer "needs and preferences" in relation to each of prices, adequacy, reliability, and quality of electricity service.
d) Please explain Toronto Hydro's definition of "customer needs and preferences." How does Toronto Hydro distinguish between needs and preferences? How would Toronto Hydro prioritize these compared to economic efficiency and cost effectiveness?

1B-Staff-102
Ref 1: Exhibit 1B / Tab 6 / Schedule 3 / Appendix A / pp. 11-13, 17

Preamble:
Several of Clearspring's recent models have contained an urban congestion variable of general form $Area^{Congested\ Urban} / Area^{Total}$. In this study, Clearspring has created time-variant values for this variable using data on the number of tall buildings ("skyscrapers") in various urban areas. Skyscrapers are defined as buildings with a height of at least 100 meters.

Adding the high-rise building data to the congested urban variable appears to boost the elasticity estimate for this variable. This matters to Toronto Hydro's score because it has an unusually high value for the variable.

Question(s):

a) Please confirm that the sensitivity of the parameter estimate for the congested urban variable to the inclusion in the sample of one company (Consolidated Edison of New York) that has an extremely high value is disadvantageous.

b) Please provide Toronto Hydro's cost performance scores and rankings with and without the congested urban variable in the model.
c) Why were Atlantic City Electric (serving Atlantic City, NJ), Puget Sound Energy (serving Bellevue, WA), Consumers Energy (serving Grand Rapids, MI), and Connecticut Light and Power (serving Hartford, CT) assigned zero values for this variable? All of these cities had skyscrapers higher than 100 meters.
d) Please confirm that some utilities serving cities with congested urban areas (e.g., El Paso, TX) do not have skyscrapers that are at least 100 meters tall. Does that suggest that the 100-meter basis for the skyscraper definition is optimal?
e) Did Clearspring produce results using alternative minimum heights for skyscrapers? If so, please provide these results.
f) Please provide the full skyscraper database (e.g., including skyscrapers less than 100 meters in height) so PEG can undertake its own sensitivity analyses.
g) Please confirm that Clearspring only included data for at most congested urban areas in a single city of a utility's service territory. If a utility served multiple metropolitan areas with one or more congested urban zones (e.g., Pacific Gas & Electric serves the cities of San Francisco and San Jose, two of the twenty largest cities in the United States), was only the metro area with the largest congested urban zones counted?
h) For metropolitan areas with sizable suburban business districts (e.g., St. Louis, MO), did Clearspring include the suburban business districts in its calculations?
i) Did Clearspring confirm that all of the qualifying skyscrapers are served by the utility and located in the congested urban area?
j) Did Clearspring change the estimated size of the congested urban data for any utilities since the last Toronto Hydro Custom IR proceeding? If so, please provide the new maps.

1B-Staff-103
Ref 1: Exhibit 1B / Tab 7 / Schedule 3 / Appendix A / pp. 22-24

Preamble:
While Clearspring did not present a table of the rankings of each utility in the sample, cost performance data are automatically produced as part of obtaining the values for Toronto Hydro's performance evaluation and forecasting.

Question(s):
a) In the econometric model for total distribution cost, where does Toronto Hydro rank among the sampled utilities?
b) How does this compare to their rankings in previous power distribution total cost econometric models and studies authored by Mr. Fenrick?

2A-Staff-104

Ref 1: Appendix 2-AA and Appendix 2-AB

Question(s):

a) Please update actual capital expenditures for 2023 bridge year in Appendix 2-AA format and Appendix 2-AB format (and update other related tabs in Chapter 2 Appendices accordingly). Please specify for which months actual data has been used versus forecast.

2A-Staff-105
Ref 1: Exhibit 2A / Tab 1 / Schedule 2 / OEB Appendix 2-BA
Ref 2: Exhibit 2B / Exhibit E4 / Appendix A / OEB Appendix 2-AB
Ref 3: Exhibit 2B / Section E4 / Table 3

Preamble:
OEB staff have compiled information from the references above to compare yearly expenditures to yearly in service additions in the table below. The "difference" row in the table below also aligns with the difference in closing CWIP in Table 3 in reference 3.

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Net Capital Expenditures	448.1	533.2	597.9	582.9	625.3	734.6	767.3	836.2	837.9	825.7
Additions	447.9	485.2	554.4	607.9	606.3	645.9	699.4	795.6	769.2	875.4
Difference	0.2	48.0	43.4	(24.9)	19.0	88.8	67.9	40.6	68.7	(49.6)

Question(s):

a) Please outline the reasons for the year over year variances in the difference between net capital expenditures and in service additions.

2A-Staff-106
Ref 1: Exhibit 2A / Tab 2 / Schedule 1 / Appendix D

Preamble:
In its depreciation report for Toronto Hydro, Concentric noted that "Through the completion of the depreciation study, Concentric was made aware that the currently utilized account structure for facilities was leading to non-homogeneous assets being grouped together. Concentric recommends Toronto Hydro examine the facilities accounts and create a set of accounts that better aligns with the actual use of facilities assets." Concentric then provided a recommended account structure with proposed useful lives.

Question(s):

a) Using Concentric's proposed account structure, please provide a comparison of the depreciation expense included in Toronto Hydro's forecast rates for 2025-2029 and the depreciation expense using the account structure recommended by Concentric.
b) Please discuss if Toronto Hydro has addressed this recommendation in the current application. If not, why not and how Toronto Hydro plans to address Concentric's recommendation.

2A-Staff-107
Ref 1: Exhibit 2A / Tab 3 / Schedule 1 / p.1

Question(s):

a) Please file the Lead-Lag study done by Guidehouse based on 2023 actuals. If the study is not yet completed, please advise when it will be.

2A-Staff-108
Ref 1: Exhibit 2A / Tab 5 /
Ref 2: Exhibit 2B / Section E5.5 / pp. 8, 18, 19
Ref 3: Exhibit 2B / Section E7.2 / p

Preamble:
In reference 1 Toronto Hydro presents Table 1 which includes investments over the 2025-2029 rate period, with footnote 8 that states "Toronto Hydro is not proposing any specific Renewable Expansion investments during 2025-2029."

In Reference 2, Toronto Hydro outlines the specific locations where bus-tie reactors will be installed in Table 9.

Question(s):

a) Please explain if the plan to install Bus Tie Reactors as outline in reference 2, Table 9 and the related exhibit, are Toronto Hydro's plans for installation over the 2025-2029 period.
b) In reference 2, page 8 Toronto Hydro states it has engaged Hydro One to coordinate bus-tie reactor installations. In reference 2 page 18, Toronto Hydro states the "bus-tie reactor installations will occur in accordance with Hydro One feasibility studies."
    i. What is the status of the approvals required by Hydro One to install this equipment?

ii. If the locations identified are not approved for reactor installation by Hydro One, what actions will Toronto Hydro take to both alleviate the restrictions and handle the excess funds?

c) Will the reactors be installed in advance of committed generation connection request to allow for future connections, or will the reactors be installed when and where required for committed generation connection requests?
d) Is Toronto Hydro's plans for the Energy Storage System (ESS) to install the equipment on the 9 feeders in advance of committed generation connection requests to allow future generation, or in response to committed generation connection requests?
e) For c) and d) above, if the approach is other than in response to a committed generation connection request,
   i. Please explain why these expenditures prior to committed generation are prudent enhancements to the distribution system.
   ii. Please outline how this meets the requirements of the renewable enabling funding program.
f) Please provide the number of applications from renewable generators over 10 kW for connection on each of the locations where ESS and reactors are planned to be installed.
g) If the forecast demand for Generation Protection – Monitoring Control expenditures does not materialize, how will Toronto Hydro handle the excess funds?

2A-Staff-109
Ref 1: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S02-3 – OEBAppendices 2-FA-FB – Energy Storage_20231117
Ref 2: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S04-5 – OEBAppendices 2-FA-FB – GPMC_20231117
Ref 3: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S05-6 - OEB Appendices 2-FA-FB- Stations Expansion_20240129
Ref 4: Exhibit 9 / Tab 2 / Schedule 1 / THESL_9_T02_S01-Continuity_Schedule_20231117, Tab 2b Continuity Schedule

Preamble:
OEB staff has identified some issues which may require updates to the Excel models in references 1, 2 and 3 as well as Account 1533 recorded in the continuity schedules in reference 4.

OEB staff notes that the Excel models in references 1 and 2 are hard coded and do not contain any formulas used to derive revenue requirement calculations.

Question(s):

a) Please provide the Excel models with formulas after Toronto Hydro incorporates all the changes to the Excels models as part of its responses to interrogatories for renewable generation connection rate protection (RGCRP).
b) Based on updated evidence in (a), please provide:
   i) A spreadsheet detailing all the changes made.
   ii) A summary table comparing the following information from the historic period (including 2023 actuals if available) to the forecast period up to 2029:
      - Approved revenue requirement amounts from the OEB's previously approved decisions
      - Actual/forecast revenue requirement amounts for provincial rate protection
      - Variance account balances

2A-Staff-110
Ref 1: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_X04-5 – OEBAppendices 2-FA-FB – GPMC_20231117
Ref 2: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S02-3 – OEBAppendices 2-FA-FB – Energy Storage_20231117
Ref 3: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S05-6 - OEB Appendices 2-FA-FB- Stations Expansion_20240129

Preamble:
In references 1, 2 and 3, OEB staff notes that the cost of capital calculations are derived using the same working capital allowance, ROE, short term interest rate, and long term interest rate for each of the entire five year custom IR terms (from 2020-2024 and from 2025-2029).

Question(s):

a) Please confirm that the working capital allowance, ROE, short term interest and long-term interest rates are fixed for each of the custom IR terms.
   i) If not, please recalculate the cost of capital calculations in references 1 and 2 using approved cost of capital parameters (or proposed numbers if the approved numbers are not available) for each of the years and comment whether the changes in short term and long-term debt values produce revenue requirement amounts that are materially different from those calculated in the original models.
   ii) If the changes in revenue requirement amounts in (i) are material, please revise Excel models in references 1 and 2 as needed.

2A-Staff-111

Ref 1: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_X04-5 – OEBAppendices 2-FA-FB – GPMC_20231117
Ref 2: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S02-3 – OEBAppendices 2-FA-FB – Energy Storage_20231117
Ref 3: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S05-6 - OEB Appendices 2-FA-FB- Stations Expansion_20240129

Preamble:
In references 1 and 2, Tab App.2-FA shows the total capital cost per year in line 62 and Tab App.2-FB shows capital additions per year in line 73. In each model, OEB staff notes that the value in line 62 does not reconcile with line 73 for each of the years.

In reference 3, Tab App.2-FA Proposed REG Inves Cx and Tab App. 2-FA Proposed REG ISA show the total capital cost per year in line 62 and Tab App.2-FB shows capital additions per year in line 73. In the model, OEB staff notes that the sum of the values in line 62 in App.2-FA Proposed REG Inves Cx and in Tab App.2-FA Proposed REG ISA for each year does not reconcile with the value in line 73 for each of the years.

Question(s):
a) Please explain why the total capital costs in Tab App. 2-FA are different from the capital additions for each of the years and revise the evidence as needed.

2A-Staff-112
Ref 1: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_X04-5 – OEBAppendices 2-FA-FB – GPMC_20231117, tab App.2-FB

Preamble:
From the Excel models in the reference, cells E72, E76 and E88 in tab App.2-FB show the opening gross fixed assets of $5,856,601, opening accumulated amortization of $576,913, and opening UCC of $3,760,802 respectively.

Question(s):
a) Please explain in detail how Toronto Hydro derives these numbers and include references to support the derivation (e.g. EB#, exhibit, tab, schedule, date, and page number, etc).

2A-Staff-113
Ref 1: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_X04-5 – OEBAppendices 2-FA-FB – GPMC_20231117
Ref 2: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S02-3 – OEBAppendices 2-FA-FB – Energy Storage_20231117

Ref 3: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S05-6 - OEB Appendices 2-FA-FB- Stations Expansion_20240129

Preamble:
In tab App.2-FB in the references, Toronto Hydro provides values for amortization period, CCA Rate Class and CCA Rate in cells B71, B93 and B94.

Question(s):

a) Please explain the rationale for using these values in the models and provide references to support the use of these numbers (e.g. EB#, exhibit, tab, schedule, date, and page number, etc).

2A-Staff-114
Ref 1: Filing Requirements For Electricity Distribution Rate Applications - 2023 Edition for 2024 Rate Applications – Chapter 2, Appendix A
Ref 2: Decision and Order, Green Energy Plan Electricity Rate Protection Benefit and Charge, EB-2016-0170, May 19, 2016
Ref 3: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_X04-5 – OEBAppendices 2-FA-FB – GPMC_20231117
Ref 4: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S02-3 – OEBAppendices 2-FA-FB – Energy Storage_20231117
Ref 5: Exhibit 9, Tab 1, Schedule 1, December 19, 2023, p. 19, Table 11

Preamble:
Reference 1 states that:

> "For distributors that are already receiving rate protection as a result of a previous application and approval (in many cases, based on a forecast of capital expenditures on qualifying connection assets), the new (current) cost of service application should include an update to include the actual costs incurred for the investments as well as a depreciation adjustment to calculate a new capital amount for input into Appendices 2-FA through 2-FC. This would generate a new up-to-date rate protection amount for the test year and beyond, which will be subject to the materiality threshold in section 2.0.8."

OEB staff notes that Toronto Hydro received funding for renewable generation connection prior to 2020. For example, in Reference 2, the OEB approved renewable generation connection funding for Toronto Hydro in the amount of $1,173,258 for May 1 to December 31, 2016.

In references 3 and 4, OEB staff notes that the Excel models contain revenue requirement calculations for provincial rate protection starting from 2020 (there are no previous calculations prior to 2020).

OEB staff also notes that the revenue requirement amounts for provincial rate protection for the 2020-2022 period in the Excel model (reference 3) do not reconcile with actual revenue requirement amounts in Table 11 (reference 5) for the period 2020 – 2022.

Question(s):

a) Please provide a list of all the renewable generation connection investments that Toronto Hydro made and received funding from the IESO prior to 2020 as well as a short description of each investment.
b) In references 3 and 4, please confirm whether revenue requirement amounts in tab App.2-FB in both Excel models are derived based on previously approved investment projects prior to 2020 (if any), plus the revenue requirement derived from capital expenditures from the approved projects from 2020 to 2024 and the proposed projects from 2025-2029 or not.
c) If not in (b), based on the Excel models in references 3 and 4 and all the past approved investments in (a), please provide the following:
    i) Extend the historic period in the Excel models to reflect the actual capital and start-up OM&A costs incurred starting from the first year that Toronto Hydro made renewable generation connection investments which were approved by the OEB.
    ii) If the investments made prior to 2020 are substantially different from the investments made during 2020-2024 and from 2025-2029 which require different assumptions for WCA percentage, debt percentages, interest rates, kWh, tax rates, amortization period, and CCA, please create and provide a new Excel model instead of extending the historic period as described in (i). In the new Excel model, please include the revenue requirement calculations starting from the first year that Toronto Hydro made renewable generation connection investments until 2029.
    iii) For the Excel models in (i) and (ii), please calculate actual revenue requirement amounts for provincial protection resulting from actual capital costs, start-up OM&A costs (if any), and depreciation adjustments. Please include 2023 actual results if available at the time of preparing interrogatories.
d) From the revised excel models in (c), please provide a summary table showing the revised actual and forecast revenue requirement amounts for provincial rate protection per year for each of the Excel models for the historic period (starting from the first year the investments were made) up to the forecast period ending 2029.
e) From the summary table in (d), please comment whether the revised actual revenue requirement amounts for provincial rate protection for 2020-2022 reconcile with Table 11 in reference 5 or not.

   i) If not, please revise all the evidence affected by the changes in actual revenue requirement amounts (e.g. revise amounts recorded in Account 1533 in the Continuity Schedule) as needed.

f) From the revised models in (b), for the historical actual capital/start-up OM&A spendings, please provide details of the work related to renewable generation connection projects that required these spendings and include the following:
   i) Please provide a list of generation connected, the type of connection, and the actual amount of spending for each type.
   ii) Please describe the work involved.
   iii) Please explain drivers for any material increases in capital costs and start-up OM&A costs (if applicable).

2A-Staff-115
Ref 1: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_X04-5 – OEBAppendices 2-FA-FB – GPMC_20231117
Ref 2: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S02-3 – OEBAppendices 2-FA-FB – Energy Storage_20231117
Ref 3: Exhibit 2A / Tab 5 / Excel Model - THESL_2A_T05_S05-6 - OEB Appendices 2-FA-FB- Stations Expansion_20240129

Preamble:
Toronto Hydro provides the forecast revenue requirement amounts for provincial rate protection derived from forecast capital additions in the references.

Question(s):

a) For the forecast period, please provide the following for each of the models referenced:
   i) Please describe the information that has led to the forecast of capital additions and start-up OM&A costs (if applicable) for each of the forecast years.
   ii) Please provide a list of forecast renewable generation connection and type of connection if available.
   iii) Please explain drivers for any material increases in capital additions and start-up OM&A costs (if applicable).

2A-Staff-116
Ref 1: THESL_2A_T03_S01_AppA - Cost of Power_20231117.xls

Preamble:
In the sheet titled “App.2-ZB_2028 Cost of Power” at cell D69, the kW value for Streetlighting class is the exact same as Large User class, of 3,390,747 kW. It appears that this may be a data entry error.

Question(s):

a) Please confirm that this is a data entry error.
    i. If this is a data entry error, please verify that no other errors exist in the sheets of this file.
    ii. If any other errors are noted, please identify them.
b) Please provide a corrected excel file.

2B-Staff-117
Ref 1: THESL_2A_T01_S02 - OEB Appendix 2-BA_20231117.xls

Question(s):

a) Please provide appendix 2-BA for 2019 actuals. Please ensure to reconcile any differences between closing 2019 balances and opening 2020 balances, as provided in reference 2.

2B-Staff-118
Ref 1: **THESL_2A_T04_S02_AppA - OEB Appendix 2-D Overhead Costs_Redacted_20231117.xls**
Ref 2: Exhibit 2A / Tab 4 / Schedule 2

Question(s):

a) Please provide a variance analysis of OEB-approved overhead costs in Toronto Hydro's last CIR and actuals as provided in reference 1 for the years 2018-2023. If any of the variances result in a ±10% difference, please explain in detail.

2B-Staff-119
Ref 1: THESL_2A_T02_S01_AppC - OEB Appendix 2-BB - Useful Life Comparison_20231117.Xls
Ref 2: THESL_9_T01_S01_App A - Calculation of Useful Life Change Impacts_20231117.xls

Question(s):

a) Please provide the $ amount change in depreciation expense for 2023 and 2024 associated with the asset useful lives that changed when Toronto Hydro applied Concentric's depreciation methodology.
b) Please provide a variance analysis of historical depreciation expense to approved depreciation expense for 2018-2023 by asset class. If any variances are greater than ±10%, please provide a detailed explanation.

2B-Staff-120

Ref 1: THESL_2B_E4_AppB - OEB Appendix 2-AA – Program Summary_20231117.xls

$	2025	2026	2027	2028	2029
AFUDC	6.3	7.0	8.7	10.3	12.0

Question(s):

a) Please confirm the interest rate applied to the eligible capital amounts.

2B-Staff-121
Ref 1: Exhibit 2B / Section A / PDF Page 2/356
Ref 2: Alectra Utilities 2020-24 Distribution System Plan/ Exhibit 4 / Tab 1 / Schedule 1, pp. 17,186,211., PDF Pages 37,205,231/1007
Ref 3: Hydro Ottawa Distribution Revenue Requirement & Rate Application/ Exhibit 4 / Tab 1 / Schedule 8, pp 4., PDF Pages 88
Ref 4: Hydro Ottawa Distribution Revenue Requirement & Rate Application/ Exhibit 1 / Tab 3 / Schedule 3/Attachment A, pp 22., PDF Pages 1408

Preamble:
Please see the table below that shows a subset of utility parameters per 1,000 customer basis for Toronto Hydro and several of its peers.

Utility	# of Customers	Service Area sq. km	# of Employees	# of Terminal Stations	# of Municipal Substations	# of Poles	Circuit kms Overhead Wires	Circuit kms Underground Wires	# of Distribution Transformers
Toronto Hydro	790,000	631.1	1,245	37	139	183,620	15,393	13,765	61,300
# per 1,000 customers		0.80	1.58	0.047	0.18	232	19.5	17.4	77.6
Alectra	950,000	1924	1600	14	155	130,000	16400	22,000	125,000
# per 1,000 customers		2.03	1.68	0.015	0.16	137	17.3	23.2	131.6
Ottawa	340,000	1,116	720	18	88	49,247	5609		45414
# per 1,000 customers		3.28	2.12	0.053	0.26	145	16.5	-	133.6
Enwin	88,000	120	198	11	50	20,293	2,703	1965	6713
# per 1,000 customers		1.36	2.25	0.125	0.57	231	30.7	22.3	76.3
Brantford	39,300	74	60	3		10,021	254	229	5,063
# per 1,000 customers		1.88	1.53	0.076	-	255	6.5	5.8	128.8
Synergy	56,000	441	129	3	7	23,391	993	277	7673
# per 1,000 customers		7.88	2.30	0.054	0.13	418	17.7	4.9	137.0
Hydro One (Distribution)	1,400,000	961,142	9,300		1000	1,600,000	113,000	10000	522,000
# per 1,000 customers		686.53	6.64	-	0.71	1,143	80.7	7.1	372.9

Question(s):

a) Please review and update this table with corrected Toronto Hydro information if necessary.
b) Please discuss the ability of utilities serving more densely populated service areas to achieve more optimal utilization of assets relative to utilities serving less densely populated service areas.
c) Please compare and contrast Toronto Hydro's customer density and asset utilization relative to its Ontario peers.

2B-Staff-122
Ref 1: Exhibit 2B / Section A / p. 6
Ref 2: RRR Data, 2022

Preamble:
Figure 1 in Reference 1 indicates unknown causes of outage make ups 7% of outage causes from 2018 – 2022.

From the RRR data filed by Toronto Hydro, the contribution of unknown outage cause is increasing with time.

	2015	2016	2017	2018	2019	2020	2021	2022
SAIFI – Unknown	0.21	0.32	0.30	0.29	0.31	0.54	0.39	0.49

Question(s):
a) How did Toronto Hydro restore the outages where the cause was unknown?
b) Please explain the increase in unknown outages and what Toronto Hydro is doing to improve this measure.

2B-Staff-123
Ref 1: Exhibit 2B / Section A / p. 15

Preamble:
Toronto Hydro states: “Toronto Hydro now incorporates climate data projections into its equipment specifications and station load forecasting.”

Question(s):
a) Does Toronto Hydro update the depreciation rates of assets to reflect climate hardening activities it has undertaken? If yes, please provide examples. If no, please explain why not.
b) Does Toronto Hydro update the useful lives of assets to reflect climate hardening activities it has undertaken? If yes, please provide examples. If no, please explain why not.
c) Please explain how Toronto Hydro determined asset hardening needed to be done to preserve asset life and provide examples of analyses.

2B-Staff-124
Ref 1: Exhibit 2B / Section A / p. 2
Ref 2: Exhibit 2B / Section E6.1 / p. 6
Ref 3: Exhibit 1B / Tab 5 / Schedule 1/ Appendix A

Preamble:
Toronto Hydro's recent customer engagement demonstrated that residential customers' first priority is controlling rates, their second priority is maintaining reliability, and their third priority is investing in new technologies that reduce rates or reduce their exposure to long duration outages due to extreme weather. Toronto Hydro's capital expenditures are targeting improved SAIDI, which excludes the MEDs that residential customers consider a priority.

Question(s):

a) Please describe how Toronto Hydro planned to achieve the first priority of lowest possible rates and the second priority of maintaining reliability in light of its targeted SAIDI improvement.

2B-Staff-125
Ref 1: Exhibit 2B / Section B / p. 2

Preamble:
Toronto Hydro indicates that as part of proactive customer engagement, large customers and developers with upcoming projects are engaged to understand their needs and timelines and these engagements enable Toronto Hydro to incorporate anticipated connections into its Peak Demand Forecast with a higher degree of confidence.

Question(s):

a) Given the emergence of new electrification trends such as commercial electric vehicle charging, building electrification etc., please confirm if Toronto Hydro has evolved its proactive customer engagement processes to engage a broader range of customers.
   i. If yes, please explain how Toronto Hydro has evolved its proactive customer engagement processes to engage prospective customers that are interested in connecting loads for electrification trends such as commercial electric vehicle chargers, building electrification etc.

2B-Staff-126
Ref 1: Exhibit 2B / Section C / pp. 5-6

Question(s):

a) Please confirm that the existing outage management system underreported scheduled outages.
   i. If not confirmed, please reconcile with the stated text "Increased number of scheduled outages reported".
   ii. Would the same underreporting issues apply to unscheduled outages?

b) Please explain how Toronto Hydro is ensuring that historical underreporting of outages does not drive increased reliability spending that is unnecessary to maintain actual reliability.
c) Has the historic increase in sectionalization enabled Toronto Hydro to reduce the impact (customer minutes out) of scheduled outages? Please explain.

2B-Staff-127
Ref 1: Exhibit 2B / Section C / p. 5, 12

Preamble:
Toronto Hydro notes that the **"**recent rise in reliability impacts was caused by a range of factors. The predominant cause for the increase in SAIFI was unknown impacts, which consist of outages that have no apparent cause."

Question(s):
a) Will Toronto Hydro's upgrade from the existing Outage Management System to Oracle's Network Management System facilitate improved identification of these "unknown impacts"?

2B-Staff-128
Ref 1: Exhibit 2B / Section C / p. 22

Preamble:
With respect to Figure 22 in Reference 1.

Question(s):
a) Do Toronto Hydro's overhead conductor system failures primarily comprise splice and termination failures?
   i. If yes, please quantify the percentage of conductor failures that are due to conductor splice and termination failures.
   ii. If no, please explain where conductor splice and termination failures are tracked,
   iii. If no, please explain what typical overhead conductor failures are.
b) What percentage of conductor system failures represent actual conductors failing between conductor splices and/or terminations. If Toronto Hydro does not have accurate numbers, please provide an estimate.
c) What is Toronto Hydro's standard practice to mitigate conductor splice and termination failures?
   iv. Please provide the average cost of replacing only a conductor splice, the average cost of replacing only a termination, and the average cost of following Toronto Hydro's standard practice.

2B-Staff-129

Ref 1: Exhibit 2B / Section D1 p. 12 of 34
Ref 2: Exhibit 2A / Tab 2 / Schedule 1/ Appendix D, Rate Base
Ref 3: Exhibit 2B /Section D3 / Appendix A / p. 2
Ref 4: Exhibit 2B / Section E6.6 / p. 22

Preamble:
With regards to the above references, please answer the following questions:

Question(s):

a) Please define useful life in terms of the causes of retirement that useful life includes and does not include.
b) Please compare and contrast the causes of asset retirement as they pertain to useful life and depreciation life.
c) Please explain why depreciation life is always (except in exceptional circumstances) less than useful life.
d) For asset classes with useful life estimates, please provide a table showing the useful life and depreciation life of those asset classes, and for those with equal depreciation life and useful life, please explain why they are equal.
    i. Please explain how Toronto Hydro updates its useful life expectations when actual failure rates deviate from expected failure rates (e.g. power transformers Reference 4).
e) For each of the assets listed in Table 1: Material Refinements to ACA Asset Models, please explain why updates to the Depreciation Study by Concentric triggered revisions to the useful life values used by the asset managers at Toronto Hydro.
    ii. For each of the assets listed in Table 1, what information did Concentric have about Toronto Hydro's assets that Toronto Hydro did not have?
    iii. Did Toronto Hydro hire Concentric for its expertise in determining asset depreciation lives, or its expertise in assessing asset condition and the resulting useful life?

2B-Staff-130
Ref 1: Exhibit 2B / Section D1 / p. 12
Ref 2: Exhibit 2B / Section D5 / pp. 15-16

Question(s):

a) When leveraging risk-based decision making to ensure System Renewal investments are sufficient to maintain historical reliability, please explain how SCADA operated switch investments in self-healing grids changes the consequence of asset failures and the resulting risk calculations?
b) When leveraging risk-based decision making please confirm that when 2100 or 1400 customer group line segments are sectionalized into 700 customer group

segments the consequence of individual asset failure decreases relative to the pre-sectionalized configuration.

i. If confirmed, please explain what change would need to occur to the probability of asset failure to maintain a constant overall risk profile when consequence of failure is reduced?
ii. If not confirmed, please explain what happens to the consequence of asset failure post-sectionalization?
iii. In either case, please explain the process Toronto Hydro uses to adjust the acceptable probability of failure (or useful life or acceptable asset condition) to maintain a constant overall risk profile when consequence of asset failure changes.

2B-Staff-131
Ref 1: Exhibit 2B / Section D1 / p. 17
Ref 2: Exhibit 2B / Section D2 / p. 20, 43
Ref 3: Exhibit 2B / Section D3 / p. 29

Preamble:
Given the large percentage of Toronto Hydro assets that are beyond their useful lives and given Toronto Hydro's historically improving SAIDI and SAIFI metrics, it is possible that Toronto Hydro has incorrectly estimated the useful lives of some of its asset classes.

Question(s):

a) Please describe the process that Toronto Hydro uses to update its useful life expectations based on actual asset performance.
b) For all asset classes with ACA data provide the following data in an MS Excel worksheet:
   i. Useful life used in this filing.
   ii. Useful life used in the previous distribution system plan.
      i. For any useful lives that were updated, please explain the primary driver of the update.
   iii. Assets Past Useful Life (APUL) percentage for this filing
   iv. APUL percentage in 2017
   v. Forecast APUL percentage in 2029
   vi. Presence or absence of a probability of failure curve, and the year in which Toronto Hydro plans to either update the curve or create it for the first time.
      i. For all the probability of failure curves, please indicate if the curves are based on Toronto Hydro specific data or 3rd party data.
c) Please explain why Toronto Hydro has selected asset age as its "comprehensive indicator of failure risk across the system" rather than performing an actual risk

assessment based on actual asset condition (currently Toronto Hydro's proxy for probability of failure) and consequence of failure.

2B-Staff-132
Ref 1: Exhibit 2B / Section D2 / p. 10
Ref 2: Exhibit 2B/ Section E6.5 / p. 37

Question(s):

a) Please confirm that the historically achieved reduction in risk and the recommendation by the consultant to not relax Toronto Hydro's existing adaptation measures means that those adaptation measures meet or exceed Toronto Hydro's requirements.
   i. If confirmed, please explain why a new budget line item of $85.9 for "Overhead Infrastructure Resiliency" is being introduced in this test period.
   ii. If not confirmed, please explain what adaptation measures are in excess of the recommended adaptation measures and why.

2B-Staff-133
Ref 1: Exhibit 2B / Section D2 / p. 25

Preamble:
Regarding "Obsolete and deteriorating overhead accessories" and example of catastrophic failure of a porcelain insulator.

Question(s):

a) Please explain how the risk of failure is high when the reason given relates solely to the typical probability of failure (i.e. the probability of electric tracking) and not typical consequence of failure.
   i. What is the typical failure mode of an insulator.
   ii. What is the typical consequence of an insulator failure.
b) Of all the failures in the past 5 years, what percentage resulted in a catastrophic failure that caused property damage or human injury, and what percentage did not?
   iii. Please explain why a single incident of property damage is the consequence used to justify the insulator replacement program.
   iv. Please provide the risk comparison between the typical insulator failure risk (i.e. typical failure probability and typical consequence of failure) versus the risk of property damage failure (i.e. single/exceptional occurrence and property damage consequence) as measured on Toronto Hydro's risk matrix.

2B-Staff-134

Ref 1: Exhibit 2B / Section D2 / Table 2 / p. 27
Ref 2: Exhibit 2B / Section D2 / Table 3 / p. 33
Ref 3: Exhibit 2B / Section D2 / Table 4 / pp. 40,41
Ref 4: Exhibit 2B / Section D2 / Table 5 / pp. 46,47
Ref 5: Exhibit 2B / Section D2 / Table 6 / p. 49
Ref 6: Exhibit 2B / Section D3 / Appendix B / p. 19

Question(s):

a) Please update Table 2 through Table 6 indicated in the references above to show the following columns with equivalencies determined by Toronto Hydro's risk matrix:
   a. Typical Failure Mode(s)
   b. Probability of the Typical Failure Mode
   c. Consequence of the Typical Failure Mode
   d. Exceptional Failure Mode(s) (or Catastrophic Failure Mode(s))
   e. Probability of the Exceptional Failure Mode (or Catastrophic Failure Mode)
   f. Consequence of the Exceptional Failure Mode
   g. Locations of the Typical and Exceptional Failure Modes on Toronto Hydro's risk matrix.

   Please note if Toronto Hydro does not have the probabilities of the typical and exceptional failure modes, then please provide an estimate of those values or an estimate of the relative probabilities of those values (e.g. the typical mode is 100 times more likely than the exceptional).

2B-Staff-135
Ref 1: Exhibit 2B / Section D2 / p. 42

Question(s):

a) Toronto Hydro notes that it owns "approximately 139 MSs". What is the exact number of MSs owned by Toronto Hydro?
   i. If an actual number is not available, please explain why not.
b) If there is a decommissioning plan, please provide the number of stations operational at the time of responding to Irs, and the plan for decommissioning over the forecast period.

2B-Staff-136
Ref 1: Exhibit 2B / Section D2 / p.11

Question(s):

a) Does Toronto Hydro routinely compare the costs of rehabilitation and replacement to extend the operating life of assets found to be in poor condition? If so, please provide some representative costs for asset classes conducive to

rehabilitation.

2B-Staff-137
Ref 1: Exhibit 2B / Section D2 / p.18

Question(s):

a) Are priority deficiencies only evaluated for assets found to be in HI5 condition, or are they evaluated for a broader range of asset conditions? Please explain.

2B-Staff-138
Ref 1: Exhibit 2B / Section D2 / p.23

Question(s):

a) Please indicate the assessed health index ratings that would trigger pole replacement.
b) How does Toronto Hydro prioritize pole replacements given that it replaces poles that have different health indices?
c) How does Toronto Hydro determine the appropriate economic trade-off between the value to customers of the foregone lost service life due to replacing poles and pole top transformers before they fail against the risks associated with running these assets to failure?
d) Please provide the benefit-cost analysis that Toronto Hydro used to evaluate its proposed proactive wood pole and pole top transformer replacement programs.

2B-Staff-139
Ref 1: Exhibit 2B / Section D3/ p.6

Question(s):

a) What has changed such that Toronto Hydro is adding concrete and steel poles to its dedicated pole inspection program in 2025?

2B-Staff-140
Ref 1: Exhibit 2B / Section D3 / Appendix B

Preamble:
Appendix B provides the ACA Summary for 2017, 2022 and the Forecast for 2029 year end if no investments are made.

Question(s):

a) For both tabs in Appendix B, please provide Forecasts for 2029 YE under the following scenarios.
    i. If the proposed capital and maintenance plans are implemented

ii. If Toronto Hydro's capital program was reduced by 25%
iii. If Toronto Hydro's capital program amounts for 2025 was approved, and Toronto Hydro was to operate under a Price Cap IR regulatory framework for the forecast period.

2B-Staff-141
Ref 1: Exhibit 2B / Section D3/ Appendix A / pp. 4,6

Question(s):

a) How many SF6 switches broken down by category (e.g., insulated padmount) are planned to be replaced in the planning period?
b) Please explain why it was prudent to have 1 Hi4 and 16 Hi5 SF6 insulated padmount switches in 2022.
   i. Please explain why it is now necessary to replace switches that have effectively the same health rating in 2029 as they did in 2022?

2B-Staff-142
Ref 1: Exhibit 2B / Section D3 / p. 6
Ref 2: Exhibit 2B / Section D3 / pp. 12,13

Preamble:
With regards to Toronto Hydro's asset replacement programs for poles.

Question(s):

a) Similar to submersible transformers, please explain why Toronto Hydro chose to inspect all poles on an 8-year cycle, rather than only inspecting those poles approaching or past their useful lives (or previously identified as being in poor condition) more frequently?
b) Why does Toronto Hydro not inspect poles on a cycle time that is tied to actual asset condition (or age if condition is not known)?

2B-Staff-143
Ref 1: Exhibit 2B / Section D3 / pp. 15,16

Question(s):

a) Please provide the list of asset classes that are considered critical spares.
b) For each of the critical spares asset classes please describe the long-term asset retirement strategies in terms of the expected natural failure rate, planned retirement rate, risk profile over time, and role that critical spares play in achieving that strategy.

c) Please explain why a “wall” or “wave” within a 10 to 15-year period is the optimal window within which to manage asset demographics for long lived assets.
d) Please explain why asset management strategies such as Critical Spares cannot also extend the replacement lifespan over which a subset of assets can be replaced.

2B-Staff-144
Ref 1: Exhibit 2B / Section D3 / p. 24
Ref 2: Exhibit 2B / Section D5 / p. 20
Ref 3: Exhibit 2B / Section D5 / p. 38
Ref 4: Exhibit 2B / Section D5 / p. 69

Question(s):

a) Please explain from a risk perspective why Advance Metering Infrastructure (AMI) meters cannot be run to fail (i.e. replaced reactively) and provide the business case justifying asset retirement before failure.
b) Please provide the asset age demographics (by age, asset count and asset condition) for residential and small commercial AMI meters currently in service.
c) Based on useful life and actual failure data to date, what is the expected natural failure rate for AMI meters in each year of the planning period?
d) Please provide the planned retirement pacing (in dollars and number of units) by year for AMI meters as per the above plan to replace $248.1M worth of AMI meters during the planning period.
e) What is the value of AMI 2.0 meters that are planned to be replaced in advance of their natural failure rate in each year of the planning period.
f) Please explain why AMI 2.0 needs to be done in advance of DER penetration increases rather than selectively around areas where DER penetration may cause voltage concerns.
g) What level of AMI 2.0 penetration is required on a feeder to provide adequate voltage violation and overloading monitoring?
    i. Why cannot a comparatively few AMI 2.0 meters scattered amongst existing AMI meters provide adequate feeder monitoring?

2B-Staff-145
Ref 1: Exhibit 2B / Section D3 / p. 40

Preamble:
In section D3, Toronto Hydro notes that it “considers a broad range of risks that the corporation faces through the Enterprise Risk Management (“ERM”) process. Toronto Hydro’s ERM framework has been designed to manage risks at the corporate level and

considers the risks facing individual asset classes and risks relevant to investment programs."

Question(s):

a) Please provide the ERM risk results in tabular format for each of the past 5 years and yearly projections for the test period.

2B-Staff-146
Ref 1: Exhibit 2B / Section D3 / Appendix B / p. 8

Preamble:
Regarding the asset health methodology of Toronto Hydro's wood pole assets.

Question(s):

a) Please provide the basis for selecting a useful life of 45 years.
b) Please confirm that Normal Expected Lives as used in the Reference is the same as "useful life" as used by Toronto Hydro in this filing.
    i. If not confirmed, please explain the differences between Normal Expected Lives and useful life.
c) Please explain why Toronto Hydro has not re-calibrated the useful life (or Normal Expected Life) of wood poles despite evidence that the useful life (or Normal Expected Life) is too low, thus resulting in elevated health scores.
d) What percentage of Wood Poles have health score collars applied to the final health score determination?
    ii. Does this percentage imply a problem with the underlying health score formulation?
        i. If no, at what percentage would a problem with the underlying health score formulation likely exist, and why?

2B-Staff-147
Ref 1: Exhibit 2B / Section D3 / p. 15

Preamble:
Toronto Hydro states, "Where appropriate, Toronto Hydro undertakes targeted refurbishments in the field to maximize the serviceable life of existing assets. For example, as mentioned above, the utility will rebuild a deteriorated vault roof, extending the useful life of the entire vault."

Question(s):

a) Has Toronto Hydro considered utilizing pole stubs to extend the life of wood poles that have ground line rot but are otherwise in good condition? If not, please explain why not. If yes, what were the results?

2B-Staff-148
Ref 1: Exhibit 2B / Section D3 / p. 45

Preamble:
Toronto Hydro uses peak demand forecasting to identify capacity constraints at substations and undertake planning to accommodate the forecasted growth.

Question(s):
a) Please provide a table listing all Toronto Hydro's stations and show the forecast capacity constraints in each station for each of the next 20 years for the summer and winter peaks.
b) Please provide a table of the restricted feeders and the substations they are located within, and the capacity deficit for each restricted feeder for each of the next 20 years.

2B-Staff-149
Ref 1: Exhibit 2B / Section D3 / p. 45

Preamble:
Toronto Hydro considered three new specific drivers in the development of the System Peak Demand Forecast: (i) hyperscale data centres, (ii) electrification of transportation, and (iii) Municipal Energy Plans.

Question(s):
a) Please provide an overview and justification for why these three specific drivers were considered.

2B-Staff-150
Ref 1: Exhibit 2B / Section D3 / p. 53

Preamble:
Toronto Hydro indicated that "The various risk analyses presented in Section D3.2 and Section D3.3 drive the overall investment required to manage the distribution system."

Question(s):
a) Please provide a table showing the pre-investment and post-investment risks and the costs of mitigation for each of the risk analyses presented in section D3.2 and D3.3.

2B-Staff-151
Ref 1: Exhibit 2B / Section D3 / Appendix A

Question(s):

a) Why is a minimum H of 4 the appropriate choice for calculating Probability of Failure (PoF).
b) Does setting a minimum H score constrain PoF so that it is not suitably close to 0 for assets in the best condition?
c) For wood poles and power transformers asset classes, please provide a table showing the range of PoF for each health score and health index.

2B-Staff-152
Ref 1: Exhibit 2B / Section D3 / Appendix A

Preamble:
In Table 2, Health Index bands and definitions, Toronto Hydro sets ranges for each HI band.

Question(s):

a) Please explain how the health score ranges are mapped onto the different health indices.
b) Please explain why the future forecast range of health scores is different (upper limit of 15) than the current range for those assets (upper limit of 10).
c) Why can't assets with a health score greater than 10 be in service today?

2B-Staff-153
Ref 1: Exhibit 2B / Section D4 / p. 2
Ref 2: Exhibit 2B / Section D4 / Appendix B / p. 2
NOTE: The report did not provide page numbers so OEB staff is unsure what constitutes Page 1 of Appendix B.
Ref 3: Exhibit 2B / Section D2 / p. 6

Preamble
Toronto Hydro is planning expenditures on the basis of being a summer peaking utility when its studies indicate that it is moving towards becoming a winter peaking utility in the 2030s.

Question(s):

a) Please explain why using the Summer Peak to drive the investment in long lived (multi-decade) assets is the prudent choice when the FES clearly indicates in all cases that Toronto Hydro is a Winter Peaking utility in the 2030s and beyond.
b) Please explain how Toronto Hydro's plans can be optimal if it is using a summer peak for planning purposes when it is becoming a winter peaking utility.

i. Is Toronto Hydro only planning investments for the 2025-2029 period, and how does this summer peaking planning strategy reconcile with the "least regrets"[4] strategy it purports to use?
ii. How was the shift from summer to winter peaking accounted for in long-term regional planning with the IESO given that those forecasts are for 20 years?

2B-Staff-154
Ref 1: Exhibit 2B / Section D4 / pp. 10-18

Preamble:
Toronto Hydro discusses the primary drivers of capacity needs and related investments over the 2025-2029 rate period, including customer connections, electrification of transit, electric vehicles, hyperscale data centres and Municipal Energy Plans and has shown the anticipated impact of these drivers relative to base load. Specific areas of Toronto Hydro's service territory are highlighted where significant load growth is expected, including: Port Lands, East Harbour, Horseshoe East (including the Golden Mile) and Horseshoe West (including Downsview).

Question(s):
a) Please identify how Toronto Hydro adopted the direction from the OEB's January 2023 *Framework for Energy Innovation* both in how it investigated the use of third party owned DERs to meet planning needs as well as meaningfully investigated a market-driven solution before building/owning the solution themselves.
b) Please explain in detail how Toronto Hydro is responding to the policy direction outlined in the OEB's *Framework for Energy Innovation*?
c) Please list all non-wires solutions Toronto Hydro has considered for the areas identified to see significant load growth over the near and medium term, including grid modernization, geo-targeted conservation and demand management programs and discuss the decision factors for each, including benefit-cost analysis for various options to address these areas with non-wires solutions.
d) Please discuss and provide any analysis conducted of how expanded EV charging, predominantly during off-peak hours, could potentially lower costs for utility customers due to greater utilization and revenues from existing distribution system assets.
e) Please discuss and provide any analysis conducted that indicates when various aspects of Toronto Hydro's system would require capital upgrades to support various EV and DER adoption levels.

2B-Staff-155
Ref 1: Exhibit 2B / Section D4 / p. 11

[4] Exhibit 2B / Section D4 / p. 9 of 18

Preamble:
With regards to “Figure 4: Toronto Hydro System Peak Demand Forecast by Driver”.

Question(s):

a) Does Toronto Hydro consider DERs a negative peak demand or a source of capacity supply?
b) Are DERs considered a negative energy load or a source of energy generation?
c) Please restate Figure 4 from Reference 1 and provide tabular data so that System Peak Demand Forecast by Driver is stated in MW.
    a. If applicable, update Figure 4 to show DERs separately.
d) Please provide a new figure and provide tabular data that shows System Energy by Driver in GWh or MWh, and as applicable show DERs separately.

2B-Staff-156
Ref 1: Exhibit 2B / Section D4 / Appendix A
Ref 2: Exhibit 2B / Section D4 / Appendix B

Preamble:
Toronto Hydro has explained the “Future Energy Scenarios tool” and provided an appendix with an explanation of its outputs and a detailed report from the consultant that performed the study.

Question(s):

a) Please confirm that the Future Energy Scenarios tool is not an internal tool, and more akin to a service purchased from a consultant. Please elaborate.
b) Please provide the “Business Case” or similar document produced by the business unit that “uses” the Future Energy Scenarios tool to justify its acquisition or development. Please provide any other documentation used by or presented to Toronto Hydro decision makers to release the funding to acquire / develop the tool.
c) Please provide a brief summary of the benefits and costs for this tool, as portrayed to Toronto Hydro decision makers at the time of deciding to pursue this tool. Please reference the material from part b).

2B-Staff-157
Ref 1: Exhibit 2B / Section D4 / Appendix B

Preamble:
Toronto Hydro’s Future Energy Scenarios utilizes a multitude of external data sources

Question(s):

a) Please complete the following table:

Data Source	Model Input that uses the source	Date that source was published

b) What is the time period over which Element Energy performed its work to run their model. Please explain the instances where Element Energy did not use the most recently available information. For example, staff note Element Energy references the "City of Toronto 2012 Growth Plan" in Figure 21, where the City of Toronto has published more recent growth plans.[5]

2B-Staff-158
Ref 1: Exhibit 2B / Section D4 / Appendix A
Ref 2: Exhibit 2B / Section D4 / Appendix B
Ref 3: Exhibit 2B / Section D4 / Figure 5
Ref 4: Exhibit 2B / Section D4

Preamble:
Figure 3 from Reference 1 is reproduced below.

[5] The City of Toronto's Official Plan Review notes a 2019 growth plan that came into effect and other related strategies and assessments available since the 2012 Growth Plan. The City's Official Plan Review website is available at https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/official-plan/official-plan-review/

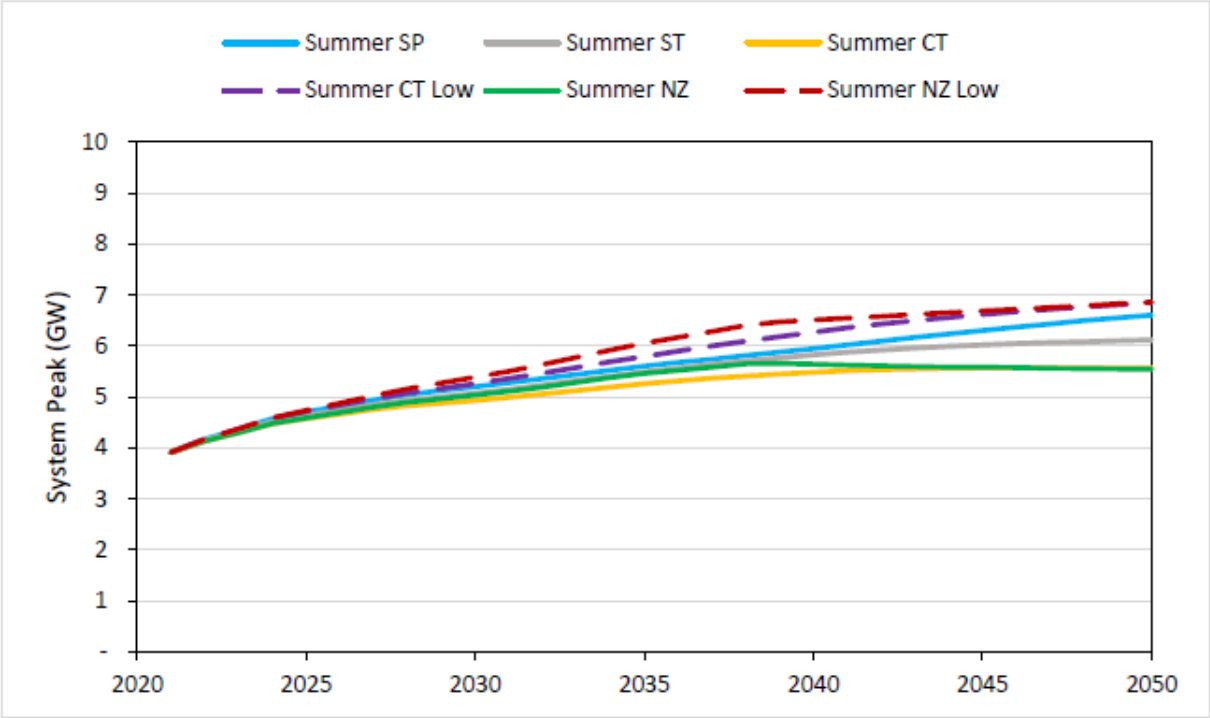
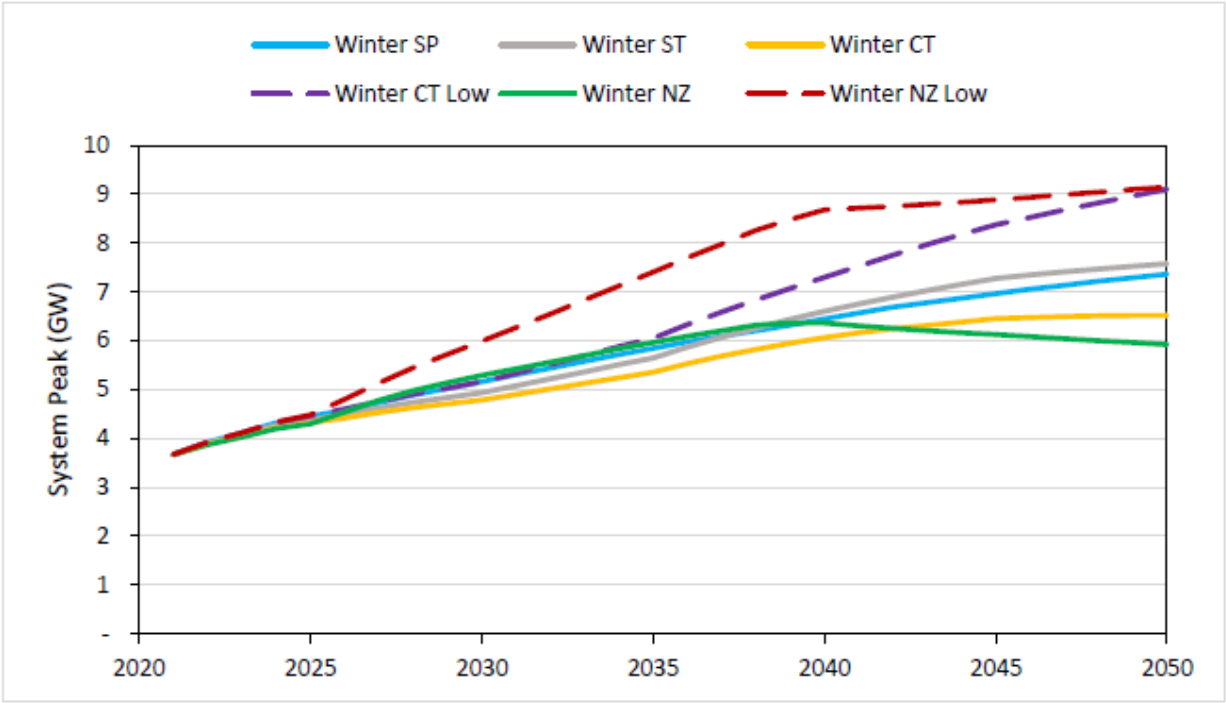
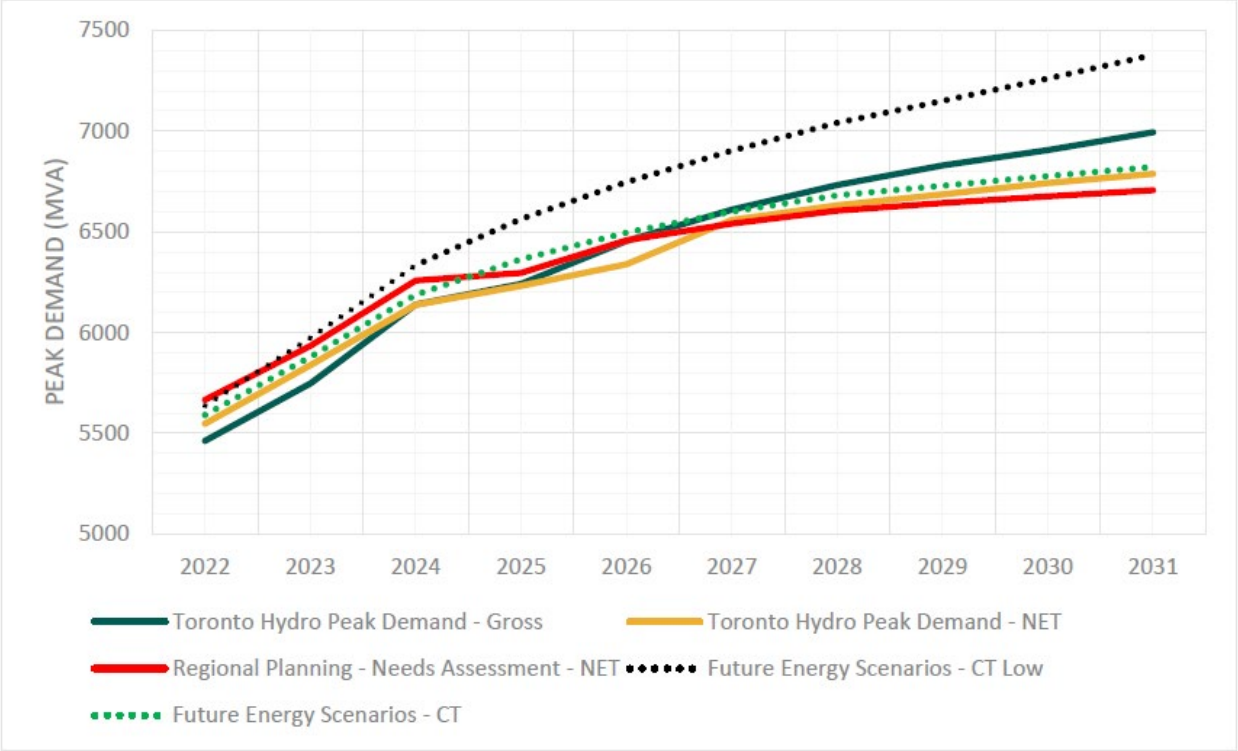


Figure 4 from Reference 1 is reproduced below.



Reference 3 is reproduced below.



Question(s):

a) Please complete the following table for all the years shown in Figure 3 above, with MW values:

Summer System Peak for Scenario Worlds

Peak Load (MW)	SP	ST	CT	CT-low	NZ	NZ-low
2021						
2022						
2023						
2024						
2025						
Through to						
2050						

b) Please complete the following table for all the years shown in Figure 4 above, with MW values:

Winter System Peak for Scenario Worlds

Peak Load (MW)	SP	ST	CT	CT-low	NZ	NZ-low
2021						
2022						
2023						
2024						
2025						
Through to						
2050						

c) Please add the summer and winter peak system load forecasts that underly the investment plan, as shown in Reference 3 to the tables of a) and b), acknowledging that the forecasts of Reference 3 may not be performed through to include 2050.
d) Reference 2 states that the "steady progression" (SP) scenario world is aligned with the TransformTO "Business as Planned" scenario. With Reference 4, Toronto Hydro states that its system peak demand forecast is generally aligned with the Consumer Transformation (CT) scenario. Please articulate the key differences and similarities, as they relate to Toronto Hydro's investment plan, between the SP scenario, the CT scenario, and the forecasts that underly the proposed investment plan in this proceeding.
e) Please articulate how the Future Energy Scenarios (FES) tool has informed system planning for the rate period of this application. How did the FES tool inform capital investments and operations and maintenance plans for this period? How will the FES tool continue to be used moving forward?

2B-Staff-159
Ref 1: Report of the Board: *Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach*, October, 2012
Ref 2: Exhibit 2B / Section D4 / Appendix B

Preamble:
Reference 1 states that "the output of any methodology will need to be transparent, robust and reproducible, and include forecast information from independent and authoritative sources where these are publicly available."

None of the links in the footnotes in Reference 2 are functioning hyperlinks.

Question(s):

f) Please provide all the links in the report as attachments to the response to this interrogatory. Where the footnote references a data file, provide as xlsx/csv file where it is available in that format from the source.

2B-Staff-160
Ref 1: Exhibit 2B / Section D5 / p. 4
Ref 2: Exhibit 2B / Section D5 / p. 69

Preamble:
Regarding Toronto Hydro's forecasted DER penetration, DER caused potential complexity to system operations, and DER hosting and load capacity map.

Question(s):

a) Please provide Toronto Hydro's DER connection policies that are being put into place to limit the complexity and instability caused by DERs?
b) Is Toronto Hydro implementing policies to incentivize DER development in areas where the grid has excess capacity, and disincentivize DERs in areas with restricted capacity?
    i. If yes, please provide documentation.
    ii. If no, please explain why this is prudent from a ratepayer and legislative perspective.
c) Who bears the cost of expenditures needed to enable DER connections on feeders that do not have excess hosting capacity?
    i. Why is this prudent from a ratepayer perspective?
d) Does the Hosting Capacity Analysis (HCA) discourage or otherwise inhibit potential DER candidates from connecting to the grid in areas that have capacity constraints? Please discuss.
    ii. If not, what is the value to ratepayers of the expenditures required for the HCA?

2B-Staff-161
Ref 1: Exhibit 2B / Section D5.2.1 / p. 11

Preamble:
Toronto Hydro writes that it is **"**adding more sensors, relays and monitoring technology at specific nodes across the distribution grid, including customer meters. These assets will provide additional data collection points across the grid, which Toronto Hydro will leverage to improve overall situational awareness ("grid transparency"), facilitate quicker fault location, and gain access to important insights at the edge of the grid."

Question(s):

a) Please provide several representative examples where Toronto Hydro is proposing to put these sensors and relays and explain why they are being proposed for these locations relative to the rest of Toronto Hydro's territory.

2B-Staff-162
Ref 1: Exhibit 2B / Section D5.2.1.2 / p. 14

Preamble:
"One of the most significant objectives for Toronto Hydro's Grid Modernization Strategy in the 2025-2029 rate period is to advance the ongoing process of readying Horseshoe system feeders for the transition to a self-healing operation beginning in 2030."

Question(s):
a) Please quantify the anticipated improvement in SAIDI and SAIFI after Toronto Hydro transitions to self-healing operations in the Horseshoe region.
b) If Toronto Hydro anticipates a material improvement in SAIDI and SAIFI due to self-healing operations, please reconcile the associated investments against Toronto Hydro's strategy of maintaining historic reliability.
c) Why is the horseshoe the area of focus versus the downtown or other parts of Toronto?

2B-Staff-163
Ref 1: Exhibit 2B / Section D5.2.1.2 / p. 15
Ref 2: Exhibit 1B / Tab 3 /Schedule 3 / App A / p. 30

Preamble:
Toronto Hydro states that a U.S. Department of Energy report on FLISR implement found that "FLISR reduced the number of Cis ("Customers Interrupted") by up to 45 percent and reduced the CMIs ("Customer Minutes of Interruption") by up to 51 percent for a relevant outage event." The footnote indicates that the time basis of calculating momentary outages in the study is different than that used by Toronto Hydro.

Question(s):
a) Please quantify the reported improvement in Toronto Hydro's FLISR metrics if Toronto Hydro uses the same metric definition as in the U.S. Department of Energy Study.
b) Please update Table 11 in Reference 2 (PDF Page 364/1113) based on using the same definition of SAIFI for Toronto Hydro and its peers.

2B-Staff-164
Ref 1: Exhibit 2B / Section D5.2.2 / p. 28
Ref 2: Exhibit 2B / Section D5.2.2 / p. 35

Ref 3: Exhibit 2B / Section E3 / p. 14

Preamble:
Toronto Hydro states, in Table 3. Grid Readiness Program Summaries, Technology – Grid protection, Monitoring and Control, "Toronto Hydro has identified and forecasted a number of stations with short circuit capacity limits, capping the amount of DER connections. Additionally, several feeder circuits have surpassed the recommended generation to minimum load ratio..."

Question(s):
a) Which stations have been identified and forecasted to experience short circuit capacity limits in the planning period?
b) Please expand Table 3 from the second reference to include columns that indicate for each station: i) the first year in which its short circuit capacity will be exceed in its present configuration, ii) the year in which the bus-tie reactors will be installed, iii) the new short circuit capacity once bus tie reactors are installed, and iv) the first year in which that capacity will again be exceeded.
c) What is the lead time required to acquire and install each of the bus tie reactors planned for the upcoming test period?

2B-Staff-165
Ref 1: Exhibit 2B / Section D5.2.2.4 / p. 42

Preamble:
Toronto Hydro states, "As of the end of 2022, Toronto Hydro has 2,424 unique DER connections to its distribution grid with a total capacity of 304.9 MW."

Question(s):
a) Please provide a table that breaks down the DERs connected to Toronto Hydro's system by technology (CHP, solar PV, battery, etc.) type, capacity (MW), customer class, and connected station.

2B-Staff-166
Ref 1: Exhibit 2B / Section D5 / p. 59

Preamble:
With regards Toronto Hydro's commentary around AMI 2.0 and future-proofing the meter to provide over-the air updates.

Question(s):
a) Would updating meters after they are sealed require a re-sealing event?

2B-Staff-167

Ref 1: Exhibit 2B / Section D5 / p. 30

Preamble:
In order to equip customers with easily accessible and up-to-date information as to where DERs can be accommodated most efficiently, Toronto Hydro has proposed a creation of a Hosting and Load Capacity Map (or equivalent data portal) which will provide estimate available capacity for DER interconnection and load capacity at different locations on the network.

Question(s):
a) Please confirm whether the Hosting and Load Capacity map (or equivalent data portal) will provide estimated available capacity for connections other than DERs (for example, load connections such as EV charging connections).
b) Please confirm how often the data on the Hosting and Load Capacity Map (or equivalent data portal) will be updated.
c) Please provide the "Business Case" or similar document produced by the business unit related to the creation of a Hosting and Load Capacity Map (or equivalent data portal). Please provide any other documentation created by Toronto Hydro that provides an overview of the technical requirements of this map or data portal.

2B-Staff-168
Ref 1: Exhibit 2B / Section E1.1 / p. 1
Ref 2: Exhibit 1B / Tab 1 / Schedule 3 / p.5

Preamble:
Toronto Hydro states **"**In the current rate period, Toronto Hydro's operating parameters shifted from a relatively linear and stable environment to a more dynamic growth-oriented context."

Question(s):
a) Please reconcile the statement above with the negative Total Normalized MVA (% change), and Total Normalized GWh (% change) as shown in Table 5 in Reference 2.
b) Is the described shift in operating parameters from "linear and stable" to "more dynamic growth-oriented" a key driver of Toronto Hydro's step-increase in overall capital spending relative to historical spending?
c) Does the shift from "linear and stable" to "more dynamic growth-oriented" materially affect the pace of renewal spending? If yes, please explain why.

2B-Staff-169
Ref 1: Exhibit 2B / Section E1.1 / p. 2
Ref 2: Exhibit 2B / Section E1.2 / p. 4

Ref 3: Filing Guidelines for Incentives for Electricity Distributors to Use Third-Party DERs as Non-Wires Alternatives, March 28, 2023, Ontario Energy Board
Ref 4: FRAMEWORK FOR ENERGY INNOVATION: Setting a Path Forward for DER Integration, January 2023, Ontario Energy Board

Preamble:
Toronto Hydro states **"**Sustainment and Stewardship: Risk-based investments in the renewal of aging, deteriorating and obsolete distribution equipment to maintain the foundations of a safe and reliable gird."

Question(s):

a) Toronto Hydro is proposing to increase its renewal spending by 35% relative to historical levels (reference 2). Please explain the extent to which this overall increase is being driven by any of the following factors:
   - changes in the rate of deterioration of Toronto Hydro's assets
   - a backlog in historically unaddressed renewal needs
   - a change in the deemed acceptable failure risk threshold for specific asset types
   - other reasons.
b) Please provide a copy of Toronto Hydro's internal distribution system planning process and identify how it addresses non-wires solutions.
   i. What are the planned changes to the planning process to better address identified non-wires objectives as per References 3 and 4.
c) In the present application did Toronto Hydro evaluate Non-Wires Solutions whenever existing traditional "wires" assets (such as poles, conductor systems, underground cable, transformers, switchgear, etc.) were identified as requiring replacement?
   i. If yes, please provide documentation of some representative evaluations that have been undertaken.
   ii. If no, please explain why not, considering the recent guidance in References 3 and 4.

2B-Staff-170
Ref 1: Exhibit 2B / Section 1.1 / p. 2
Ref 2: Exhibit 2B / Section E1.2 / p. 4

Preamble:
Toronto Hydro states **"**Modernization: Developing advanced technological and operational capabilities that enhance value and make the system better and more efficient over time."

Question(s):

a) Does Toronto Hydro quantify the expected value enhancement and system efficiency improvements per dollar spent "developing advanced technological and operational capabilities"?
    i. If yes, please provide documentation of value quantifications of representative modernization investments.
    ii. If no, please explain why Toronto Hydro is confident that all of its planned modernization investments cost effectively add value for ratepayers. Contextualize your answer in consideration of the proposed 56% increase in System Service spending over the upcoming test period relative to historical as shown in reference 2.

2B-Staff-171
Ref 1: Exhibit 2B / Section E1.2 / p. 4

Preamble:
With respect to Table 2: Planned Capital Investment by OEB Investment Category ($ Millions)

Question(s):
a) Please compare the proposed increase in System Access spending to the historical and forecasts rates of energy and demand growth.
b) Please provide a chart showing actual and forecast trends in System Access spending, peak load demand and annual energy deliveries for each year from 2020 to 2029, expressed in terms of percentage change relative to the prior year.

2B-Staff-172
Ref 1: Exhibit 2B / Section E1.3 / p. 5
Ref 2: Exhibit 1B / Tab 5 / Schedule 1 / Appendix A / p. 5

Preamble:
Toronto Hydro states that: **"**Toronto Hydro strives to maintain and improve reliability at local, feeder-wide, and system-wide levels by continuously optimizing its system and deploying cost-effective technologies and solutions."

Question(s):
a) Does Toronto Hydro quantitatively evaluate its reliability investments to determine if they are cost neutral or cost reducing?
    i. If yes, please provide some representative benefit-cost analyses.
    ii. If no, please explain how Toronto Hydro determines that its proposed reliability improvement investments are benefit-cost effective.
b) Has Toronto Hydro identified unacceptable reliability trends relative to its historical performance or its peers? Please explain.

i. If no, is Toronto Hydro only undertaking reliability improvement investments that are either cost neutral or cost reducing?

2B-Staff-173
Ref 1: Exhibit 2B / Section E1.3 / p. 5

Preamble:
Toronto Hydro States: **"**Expected load changes can impact service consistency and demand requirements for the system. To address this, Toronto Hydro proactively adjusts and expands its infrastructure to optimize reliability and meet evolving customer needs."

Question(s):
a) Please explain how Toronto Hydro evaluates non-wires solutions, for example, to ensure that the capacity of its existing wires assets is being optimally utilized prior to undertaking incremental system investments to expand capacity.
   i. Please provide several representative examples.

2B-Staff-174
Ref 1: Exhibit 2B / Section E2 / p. 41

Preamble:
Regarding the number of network transformers that materially deteriorated and will be undergoing replacement.

Question(s):
a) Please reconcile the quantities of network transformers to be replaced, the numbers indicated that Toronto Hydro is replacing 225 units by the end of 2029, but only 192 units are currently and forecasted to be in HI4 and HI5 condition by 2029.

2B-Staff-175
Ref 1: Exhibit 2B / Section E2.1.1 / p. 4

Preamble:
From Table 1: 2025-2029 Performance Objectives Toronto Hydro states: "Improve system reliability through enhanced fault management, leveraging automation and advanced metering through AMI 2.0"

Question(s):
a) On its face, this objective conflicts with the "Maintain Reliability" objective cited in the Sustainment and Stewardship investment priority. Please explain how

Toronto Hydro harmonizes these conflicting objectives when assembling its investment portfolio?

2B-Staff-176
Ref 1: Exhibit 2B / Section E2.1.1 / p. 4

Preamble:
From Table 1: 2025-2029 Performance Objectives Toronto Hydro states:

> "Connect customers efficiently and with consideration for an increase in connections volumes due to electrification"
>
> "Expand stations capacity to alleviate future load constraints, with consideration for increased EV uptake, decarbonization drivers, and other growth factors (digitization and redevelopment)"

Question(s):

a) What analysis does Toronto Hydro undertake to evaluate the risk of temporarily or permanently stranding capital investments should the anticipated connection volume trends fail to materialize over the planning period, to align with the principle of "least regrets" investments?

2B-Staff-177
Ref 1: Exhibit 2B / Section E2.1.1 / p. 5

Preamble:
Toronto Hydro states: "In addition to setting these performance objectives, Toronto Hydro adopted top-down financial constraints to ensure that the principle of balancing price and service quality outcomes remained top of mind throughout the planning process."

"Price Limit: Toronto Hydro set an upper limit of approximately 7 percent as a cap on the average annual increase to distribution rates and charges."

Question(s):

a) Please create a chart comparing historical and forecast Toronto Hydro annual rate increases against the historical and forecast annual Ontario Consumer Price Index from 2020 to 2029.
    i. Please explain any significant deviations between Toronto Hydro rates and inflation.

2B-Staff-178
Ref 1: Exhibit 2B / Section E2 / p. 7

Preamble:
Toronto Hydro states: **"**The utility developed initial capital program expenditure proposals with the aim of fulfilling strategic objectives in the focus areas of Growth, Sustainment, Modernization and General Plant. From this starting point, an iterative process generated multiple versions of the capital expenditure plan, eventually producing a draft plan that formed the basis of Phase 2 of Customer Engagement. The differences between the initial version of the plan – which on an aggregate basis was higher than the $4,000 upper limit on capital expenditures."

Question(s):

a) How was the upper limit capital expenditure envelope size of $4 billion determined?
b) Does the resulting capital expenditure plan satisfy Toronto Hydro's acceptable risk exposure assessment?
    i. If yes, does this indicate that the initial capital expenditure plan was larger than necessary?
    ii. If no, is Toronto Hydro's position that the proposed capital expenditure plan is imprudent?
c) Given that the capital expenditure constraints that were imposed appear to have been generated top-down, rather than using Toronto Hydro's Asset Management processes, please explain how Toronto Hydro validated that the resulting solution is optimal as per Toronto Hydro's Asset Management or Risk Management processes.
d) Please provide documentation demonstrating that capital expenditure levels lower than the $4 billion upper limit did not satisfy Toronto Hydro's Asset Management and Risk Management processes.

2B-Staff-179
Ref 1: Exhibit 2B / Section E4.2.6 / p. 20

Preamble:
Toronto Hydro states: "Toronto Hydro is expanding inspection and maintenance activities in key areas through the Preventative and Predictive maintenance programs, resulting in an 11 percent increase between 2024 and 2025, followed by a moderate 1 percent average annual increase from 2026-2029."

Question(s):

a) Toronto Hydro is significantly increasing spending in at least three areas that directly affect system reliability, i) System Renewal spending by 35%, ii) System Service – System Enhancement program spending by 473%, and iii) Preventative and Predictive maintenance program spending by 11% followed by

1% compounding, in addition to significant amount of other program spending increases that will either directly or indirectly improve system reliability. Please reconcile these parallel spending increases with Toronto Hydro's strategy of maintaining reliability in response to indicated customer preferences.

2B-Staff-180
Ref 1: Exhibit 2B / Section E4.2.6 / p. 21

Preamble:
Toronto Hydro states: "The increase in the Corrective Maintenance Program is driven by the need to address a growing backlog of P3 deficiencies within the system."

Question(s):
a) Is the planned 35% increase in Renewal spending expected to help address the backlog of P3 deficiencies within the system?
   i. If yes, does this mean that the Corrective Maintenance Program will be reduced in future test periods? Please explain.
   ii. If no, are P3 deficiencies not correlated with asset condition, or is the planned Renewal spending not being directed to assets with P3 deficiencies that require urgent attention? Please explain.

2B-Staff-181
Ref 1: Exhibit 2B / Section E5.1. / p. 20

Preamble:
Toronto Hydro states it proposes to increase the Basic Connection Fee allowance for Class 1 to 5 from $1,396 to $3,059.

Question(s):
a) Please provide the actual amounts incurred by Toronto Hydro for the basic connection fee, per year, from 2020 to the end of 2023.
b) Please provide the forecast expense for Toronto Hydro, per year, for the basic connection fee, over 2025 through 2029, at the new rate.

2B-Staff-182
Ref 1: Exhibit 2B / Section E5.1.3.1 / p. 3

Preamble:
Toronto Hydro states: "The energy transition is also an important driver of the Load Connections segment as customers look to the electricity grid to meet more of their energy needs."

Question(s):

a) Please reconcile this statement with Toronto Hydro's projected decrease in forecast energy sales and billable demand.

2B-Staff-183
Ref 1: Exhibit 2B / Section E5.1.3.1 / p. 6

Preamble:
With respect to Figure 2 Historical and Forecast number of Toronto Hydro Customers.

Question(s):

a) Please overlay on Figure 2 Toronto Hydro's historical and forecast annual capital spending on System Access connections.
b) Please provide the average growth rate for both customer count and connections spending for each of the following periods: 2012 – 2019, 2020 – 2024, 2025 – 2029.
c) Please explain any discrepancies between the growth rates of connections spending and customer count.

2B-Staff-184
Ref 1: Exhibit 2B / Section E5.1.3.1 / p. 8

Preamble:
With respect to Figure 3 High Voltage Connections 2020-2022

Question(s):

a) Please update Figures 3, 4 and 6 to include the years 2023-2029. Please differentiate actual, estimated and forecast values.

2B-Staff-185
Ref 1: Exhibit 2B / Section E5.1.3.2 / p. 15

Preamble:
Toronto Hydro states: "Toronto Hydro forecasts over 1700 additional renewable connections (totalling over 74 MW) to the distribution system."

Question(s):

a) Please explain how Toronto Hydro developed the additional renewable connections forecast and provide the confidence interval around the annual values given in Tables 6 and 7 (e.g.: +/- 5%, +10%/-25%, +/- 50%, etc.).
b) The values shown in Tables 6 and 7 appear to be cumulative totals. Please provide tables showing the incremental annual additions for these same years.

c) Please describe the representative generation technologies comprising the Renewable and Non-Renewable categories shown in these tables.
d) What is the forecast Energy storage volume (in MWh) in each year?

2B-Staff-186
Ref 1: Exhibit 2B / Section E5.1.3.2 / p. 15

Preamble:
Toronto Hydro states: "Toronto Hydro forecasts over 50 additional Energy Storage connections…to the distribution system. This would increase…the total installed Energy Storage capacity to 89.5MW."

Question(s):
a) Does Toronto Hydro anticipate that the total volume of energy storage connected to its system by 2029 will materially assist in mitigating customer outage durations associated with events caused by freezing rain, windstorms or floods, i.e., similar to the events listed in the Extreme Weather and Major Event Day sections of this application (e.g. Exhibit 1B Section 2.3.4, Exhibit 2B Section C2.3)? Please explain.

2B-Staff-187
Ref 1: Exhibit 2B / Section E5.1.4.2 / p. 24

Preamble:
Toronto Hydro states: "Toronto Hydro does not propose any net expenditure under this Program for the years 2025 to 2029. If during the course of the project, Toronto Hydro does not use all of the fees collected from the customer to facilitate the DER connection, Toronto Hydro will refund the difference back to the customer."

Question(s):
a) Please identify all capital expenditures planned for 2025-2029 intended to enable the Toronto Hydro system to host new DERs connecting solely within the 2025-2029 test period.
b) Please identify all capital expenditures planned for 2025-2029 intended to enable the Toronto Hydro system to host new DERs connecting beyond the test period.

2B-Staff-188
Ref 1: Exhibit 2B / Section E5.2.4 / p. 7

Preamble:
With respect to Table 1: Program Summary

Question(s):

a) Toronto Hydro projects a $21.7M (40%) increase in net spending on this program, which appears to be largely driven by a $28.6M (9%) decrease in forecast Capital Contributions (i.e. a decreased in average contribution rate from 85% in the historic period to 79% in the forecast period). Please explain why Capital Contributions are expected to decrease and quantify the projects driving the bulk of the net spending increase.

2B-Staff-189
Ref 1: Exhibit 2B / Section E5.3.2 / p. 2

Preamble:

With respect to the measures listed by Toronto Hydro for "Operational Effectiveness-Reliability" outcome.

Question(s):

a) Although the preamble to the Measures cell indicates that the Load Demand expenditures will contribute to Maintaining Toronto Hydro's System Capacity each of the four load demand measures indicate that the proposed investments are specifically intended to improve reliability. Please reconcile the apparent contradiction in corporate and program targets and quantify the proportion of spending in each element of this program that is intended to improve rather than maintain reliability.

2B-Staff-190
Ref 1: Exhibit 2B / Section E5.3.3 / p. 3

Preamble:

Toronto Hydro notes that "an overloaded bus is defined as reaching 95 percent of its firm capacity under normal and emergency operating conditions.".

Question(s):

a) Please explain which of these conditions typically rules and why.
b) Since these are planning limitations, are they evaluated in N-1 conditions?
    i. If yes, please explain why utilizing 95 percent of firm capacity limitation while also imposing an N-1 contingency is not an overly conservative planning criterion?
c) Does Toronto Hydro evaluate bus constraints at non-coincident bus loading peak or coincident system peak for planning purposes?
d) Please quantify the average annual hours where a typical bus is loaded at 95% or greater of its peak loading.

2B-Staff-191
Ref 1: Exhibit 2B / Section E5.3.3.4 / p. 16

Preamble:
Toronto Hydro states: "Due to capacity constraints, Toronto Hydro is forced to impose summer switching restrictions during peak load conditions, such that certain feeders cannot be taken out of service during those periods. If restricted feeders are taken out of service, their corresponding standby infrastructure (standby feeders, adjacent network units) will be overloaded. This practice constrains Toronto Hydro's ability to complete new customer connections and hinders its ability to plan and execute other capital maintenance work in a timely and efficient manner."

Question(s):
a) Toronto Hydro is projecting that it will change from a Summer Peaking to a Winter Peaking system. Please identify which of the proposed investments in become redundant after Toronto Hydro becomes a winter peaking utility or explain why if none of the investments will become redundant.

2B-Staff-192
Ref 1: Exhibit 2B / Section E5.3.3.4 / p. 18

Question(s):
a) Table 7: Summer Restrictions by year, indicates that by 2022, the number of summer feeder restrictions had dropped significantly from 2021. Table 2 indicates that Toronto Hydro plans to improve reliability by further reducing the number of feeder restrictions. Please reconcile this program target with the corporate goal of maintaining reliability.

2B-Staff-193
Ref 1: Exhibit 2B / Section E5.3.3.4 / p. 19

Preamble:
Toronto Hydro states: "When certain stations are expanded or their switchgear is upgraded, Toronto Hydro must undertake supporting civil enhancement work in the egress cable chambers to enable additional capacity at the station. Table summarizes the expected station upgrades within the 2025-2029 rate period that may require civil egress rebuilds in order to optimally serve customers. These areas are shown geographically in Figure."

Question(s):
a) Some of the spending in this program component appears to be intended to address existing deteriorated or obsolete civil structures, or else is driven by

Renewal projects that will replace end of life substation equipment. Please explain why all such spending has not been categorized under System Renewal.

2B-Staff-194
Ref 1: Exhibit 2B / Section E5.4.5.1 / p. 18

Preamble:

Toronto Hydro states that: "Toronto Hydro will not be able to capture the entire benefits of AMI 2.0 meters until the majority of the current meters are replaced."

Question(s):

a) In a table, please enumerate the benefits that the AMI 2.0 meters are providing and classify which of those benefits can or cannot be achieved until a majority of the current meters are replaced. In this table indicate the proportion of benefits achieved at 25%, 50%, 75% and 100% replacement penetrations.

2B-Staff-195
Ref 1: Exhibit 2B / Section E5.4.5.1 / p. 19

Preamble:
Toronto Hydro states "Option 4 is selected based on the following criteria as summarized in Table 7."

Question(s):

a) Has Toronto Hydro conducted a quantified risk assessment of each of the listed options?
   i. If yes, please provide documentation.
   ii. If no, please explain why not.
b) What is the typical annual probability of failure of a meter that has reached age-derived EOL but whose seal has not yet expired?
c) Does Measurement Canada allow re-sealing of meters that have a material likelihood of failing prior to the seal expiry? Please explain.

2B-Staff-196
Ref 1: Exhibit 2B / Section E5.5.1 / p. 1

Preamble:
Toronto Hydro states "Installation of 315 monitoring and control systems ("MCS") for renewable DER facilities greater than 50 kW to provide situational awareness and control of DER facilities on the distribution system."

Question(s):

a) Are DERs and Energy Storage projects responsible for the costs of providing adequate operational visibility to Toronto Hydro to enable safe operation of its system?
    a. If not, please explain why not.

2B-Staff-197
Ref 1: Exhibit 2B / Section E5.5.3.3 / p. 10

Preamble:
Toronto Hydro states: "With the proliferation of DER in Toronto in recent years, several feeder circuits have already surpassed the generation to minimum load ratio of one-third. A total of eleven distribution feeders have ratios ranging from 0.30 to 11.51 (refer to Table 6: Existing Feeders with Generation to Load Ratio Greater Than One-Third below). These feeders currently present an increased risk of unintentional islanding conditions to the distribution system."

Question(s):

a) Does Toronto Hydro calculate the expected output of DERs at the time of minimum feeder loading, or does Toronto Hydro use nameplate DER rating in its feeder analysis?
    i. If yes, does this mean that solar DERs, which can be expected to have zero production at the time of minimum feeder loading (typically during nighttime light load hours), are being overcounted in Toronto Hydro's analysis? Please explain.

2B-Staff-198
Ref 1: Exhibit 2B / Section E6.1.1 / p. 1 / Table 1: Program Summary

Question(s):

a) Rear Lot conversion spending is forecast to increase by $58.7M (95%) relative to historical. Considering that Toronto Hydro has been implementing this conversion program for some time, and presumably the most problematic segments have been addressed first, what has changed to drive this sudden doubling in planned program spending?
b) Do any of the feeders being improved via the Rear Lot program also appear on the worst performing feeder list?
    i. If yes, does Toronto Hydro intend to offset the proposed increase in Rear Lot spending by commensurately reducing spending on the Worst Performing Feeders program?
c) Does Toronto Hydro anticipate that completion of the Rear Lot program will improve or maintain its overall reliability performance?

d) Please provide the total contribution of Rear Lot outages to Toronto Hydro's SAIDI and SAIFI results for 2012-2022.

2B-Staff-199
Ref 1: Exhibit 2B / Section E6.1.1 / p. 10

Preamble:
Toronto Hydro states: "64 percent of the poles with available asset condition assessment information are showing moderate to material deterioration."

Question(s):
a) What is the expected annual failure probability for poles in HI3 and HI4 condition?
b) What is the typical failure mode of Rear Lot Poles and what is the typical triggering event?

2B-Staff-200
Ref 1: Exhibit 2B / Section E6.1.3.1 / p. 18

Question(s):
a) What is the useful life of primary overhead conductors?
b) What is the annual probability of failure per km of primary overhead conductor that is past its useful life?

2B-Staff-201
Ref 1: Exhibit 2B / Section E6.1 / p. 24

Preamble
Toronto Hydro states that for the 2020-2024 period, "cost variance is driven by changes to the project schedule, including a number of projects that carried over from the 2015 – 2019 rate period."

Question(s):
a) Does Toronto Hydro anticipate that any projects scheduled for completion in the 2020-2024 period will carry on to this test period. If yes, please provide a list of these projects, the expenditures that will occur in this test period, and the reason for the schedule change.

2B-Staff-202
Ref 1: Exhibit 2B / Section E6.2.1 / p. 2, 15

Preamble:

Toronto Hydro states “As of 2022, there are 286 circuit-kilometers of direct-buried cable in dirt.”

Question(s):

a) What would be the expected impact on Toronto Hydro’s SAIDI and SAIFI if the underground cable replacement program focused upon replacing the cables that are buried in dirt for the period 2025-29? In your answer, discuss Toronto Hydro’s claim that XLPE cables installed in PVC ducts have expected service lives double those of XLPE cables directly buried in dirt.
b) What is the annual expected failure rate per km for XLPE cables that are buried in dirt and for cables installed in PVC ducts?
c) What is causing the PVC ducts to become clogged with dirt?
d) What mitigation alternatives are there to clear the dirt from these PVC ducts other than replacing the cables?
    i. For the mitigation alternatives please provide comparative unit costing relative to cable replacement.
e) Please explain the scope of Toronto Hydro’s plans to “install new TRXLPE cable in concrete-encased ducts instead of burying cable directly into the soil or in PVC duct” throughout the horseshoe area. For example, is the concrete-encasement for road crossings only, or road crossings and industrial locations.
    i. If the ducts are to be concrete encased in residential neighbourhoods, please provide the business case for the incremental costs and any examples of other jurisdictions that have similar construction standards.
    ii.

2B-Staff-203
Ref 1: Exhibit 2B / Section E6.2.1 / p. 2

Preamble:

Toronto Hydro states *“As of 2022, there are 286 circuit-kilometers of direct-buried cable in dirt.”*

Question(s):

a) Please provide the historical actual and forecast all in per km costs for the periods 2020-2024, and 2025-2029 for the following activities:
    a. New XLPE underground cable in concrete duct .
    b. Removal of existing XLPE underground cable in concrete duct with new XLPE.
    c. New XLPE underground cable in PVC duct.
    d. Removal of existing XLPE underground cable in PVC duct with new XLPE in concrete duct.

e. New XLPE underground cable direct buried in dirt.
f. Removal of existing XLPE underground cable direct buried in direct with new XLPE in concrete duct.
g. Removal of existing PILC/AILC in duct and replacement with new XLPE.
h. Removal of existing PILC/AILC direct buried in dirt and replacement with new XLPE in concrete duct.

b) Please identify if there was no significant activity in any of the above categories.
c) Please identify if there was significant activity in a category not listed above.

2B-Staff-204
Ref 1: Exhibit 2B / Section E6.2.1 / p. 2

Preamble:
Other distributors are undertaking extensive programs using cable injection remediation for earlier generation XLPE cables to mitigate water tree damage, as the per km costs are significantly lower than complete cable replacement.

Question(s):
a) Has Toronto Hydro evaluated the costs and benefits of undertaking a cable injection program as an alternative to cable replacement?
   i. If yes, please provide benefit-cost analysis of the evaluation and explain why cable injection is not considered to be an economically viable solution to mitigate at least some of Toronto Hydro's underground XLPE cable deficiencies.
   ii. If no, please explain why not.

2B-Staff-205
Ref 1: Exhibit 2B / Section E6.2.3 / p. 8

Question(s):
a) Please provide the ratio of Underground System Contribution to Overall System Customer Hours Interrupted for the 5-year period 2013-2017 vs. the 5-year period 2018-2022.
b) Please provide the ratio of Overall System Customer Hours Interrupted for the period 2013-2017 vs. the period 2018-2022.
c) Please provide Toronto Hydro's total average customer count for the period 2013-2017 and the period 2018-2022

2B-Staff-206
Ref 1: Exhibit 2B / Section E6.2.3.2 / p. 18

Question(s):

a) Per Figure 14, 2022 appears to represent an outlier year versus the improving trend from 2017 to 2021. What occurred in 2022 to cause such a significant single year deterioration in performance?
    i. Did a large number of underground transformers suddenly deteriorate from acceptable to non-acceptable condition or were there other factors? Please explain.
b) Please plot the actual or estimated annual results for 2023 on Figure 14 and discuss the resulting trend implications.

2B-Staff-207
Ref 1: Exhibit 2B / Section E6.2.3.2 / p. 18

Question(s):
a) Per Figure 15, explain why despite there being more Customer Hours Interrupted in 2022 than in 2021, the 2022 results are significantly better than the results for the period 2013-2019.
b) Do the 2022 results indicate that Toronto Hydro maintained or improved the reliability performance of its Underground Transformer portfolio?

2B-Staff-208
Ref 1: Exhibit 2B / Section E6.2.3.2 / p. 19

Question(s):
a) Please provide the tabular data for Figure 16.
b) Please update Figure 16 to show data from 2013-2022 and include a trend line for externally reported oil spills from 2013-2022.

2B-Staff-209
Ref 1: Exhibit 2B / Section E6.2.3. 2/ p. 21

Preamble:
Toronto Hydro states: “As of 2022, 26 percent of underground transformers in the Horseshoe area (i.e. 6,727 units) were at or beyond useful life (i.e. 30 years for padmount, submersible, and vault transformers).”

Question(s):
a) Please explain how Toronto Hydro determined that the useful life for padmount, submersible and vault transformers should be set at 30 years, given that in 2022 6,727 of these transformers had been in service for more than 30 years, and in some cases significantly more than 30 years. In your response consider the information shown in Table 5 indicating that just 79 units out of the entire fleet of 25,209 units were assessed as being in HI5 – End of Serviceable Life condition

in 2022, despite 6,727 of the units age-categorized as being beyond useful life.

2B-Staff-210
Ref 1: Exhibit 2B / Section E6.2.3.3 / pp. 25-26

Question(s):

a) What occurred in 2021 to create the outlier results shown in Figures 22, 23 and 24?

2B-Staff-211
Ref 1: Exhibit 2B / Section E6.2.4 / p. 29

Question(s):

a) Toronto Hydro plans to increase Horseshoe Underground System Renewal spending by $115.9M (32%) in 2025-2029 relative to 2020-2024. Please explain the spending increase in the context of Toronto Hydro's stated corporate goal of maintaining reliability performance and the improving reliability performance outcomes achieved for these assets at historical expenditure levels.

2B-Staff-212
Ref 1: Exhibit 2B / Section E6.2 / p. 30,

Preamble:
Table 8 provided by Toronto Hydro on Underground Circuit Renewal Horseshoe Program.

Question(s):

a) In the last test period for the asset classes indicated in Table 8 what were the placeholder planning unit costs to determine program estimates and what were the actual unit costs incurred at program completion.
b) What percentage of the planned costs for this program for the period 2020-2022 were spent by the end of 2022?
c) What percentage of the planned costs for this program for the period 2020-2024 are forecast to be spent by the end of 2024?
d) What percentage of the program scope that was planned to be completed for the period 2020-2022 was completed?
    i. If less than 100%, what actions has Toronto Hydro taken to improve its execution effectiveness?
e) What percentage of the program scope that was planned to be completed for the period 2020-2024 is forecast to be completed by end of 2024?

2-Staff-213

Ref 1: Exhibit 2B / Section E6.3 / p. 20
Ref 2: Scorecard – Toronto Hydro-Electric System Limited, 2020
Ref 3: Scorecard – Toronto Hydro-Electric System Limited, 2021
Ref 4: Scorecard – Toronto Hydro-Electric System Limited, 2022

Question(s):

a) *Figure 15: Number of Lid Incidents* in reference 1 shows that there were 9 lid incidents in 2020. Page 5 of the 2020 Scorecard MD&A states that of the 24 serious electrical incidents, "four involved lid ejections as a result of underground cable failures". Please reconcile the inconsistencies between these reports.
b) *Figure 15: Number of Lid Incidents* in reference 1 shows that there were 3 lid incidents in 2021. Page 5 of the 2021 Scorecard MD&A states that of the 22 serious electrical incidents, "four involved lid ejections due to underground cable failures". Please reconcile the inconsistencies between these reports.
c) *Figure 15: Number of Lid Incidents* in reference 1 shows that there were 5 lid incidents in 2022. Page 5 of the 2022 Scorecard MD&A states that of the 29 serious electrical incidents, "one (1) involved lid ejections due to underground cable failure". Please reconcile the inconsistencies between these reports.

2-Staff-214
Ref 1: EB-2018-0165 / Exhibit 2B / Section E6.3 / p. 18
Ref 2: Exhibit 2B / Section E6.3 / p. 19

Preamble:
In reference 1, Toronto Hydro's 2020-2024 DSP, Toronto Hydro stated it planned to replace 252 cable chamber lids by the end of 2019 and 200 per year going forward.

In reference 2 Toronto Hydro states it has replaced 470 cable chamber lids since 2020, and plans to replace another 2,800 lids over 2025-2029, and that the increased pace is required to address the risk.

Question(s):

a) Please confirm how many cable chamber lids Toronto Hydro replaced per year in the period 2020 through the end of 2023, and the cost per year.
b) How many chamber lids does Toronto Hydro forecast replacing in 2024?
c) If the total number of lids replaced from 2020 through 2024 is less than 1,000 (i.e. 5 x 200) please explain the reason for the reduction in scope to this program.
d) After the 2024 program is complete, how many cable chamber lids remain that require replacement to mitigate the ejection risk?

e) Have there been any injuries to workers or members of the public since 2020 due to the manhole lid ejection issue?
f) Does the replacement of the cable chamber lids involve replacing the frame and cover, or replacing only the cover?
g) Are the new cable chamber lids installed in new and rebuilt locations, or is another method used to mitigate the risk, such as arc proof tape?

2B-Staff-215
Ref 1: Exhibit 2B / Section E6.3.3.2 / p. 16
Ref 2: Exhibit 2B / Section E6.4.3.2 / p. 8

Question(s):

a) For both of these programs (cable chamber renewal and network vault renewal) please confirm that all associated costs driven by replacement of the deteriorated civil works (e.g., electrical equipment replacements and/or cable replacements) are included in the civil works program spending.
    i. If not confirmed, please quantify the equipment and cable replacement costs primarily driven by civil remediations.
    ii. If not confirmed, please identify where the associated equipment and cable replacement costs are found in this application.

2B-Staff-216
Ref 1: Exhibit 2B / Section E6.3.1 / p. 2

Preamble:
Toronto Hydro states: “Replacement of legacy PILC and AILC cables will allow Toronto Hydro to maintain reliability performance by proactive replacement of high risk cables. This will also decrease the presence of designated substances (i.e. lead and asbestos) on the grid.”

Question(s):

a) Please describe and quantify the “designated substances” risks associated with leaving PILC and AILC cables in use vs. removing these cables.
b) How does Toronto hydro dispose of these cables following removal?

2B-Staff-217
Ref 1: Exhibit 2B / Section E6.3.3.3 / p. 22

Preamble:

Toronto Hydro states “Defective equipment was the largest contributor to annual customer reliability representing about 70 percent and 80 percent of Customers Interrupted (CI) and Customers Hours Interrupted (CHI), respectively.”

Question(s):

a) The trend shown in Figure 18 indicates that defective equipment failures trended down significantly from 2018 to 2022, and failures from other causes trended up significantly. Please discuss the reasons for these apparent performance trends.
b) How many customers are supplied by this system?

2B-Staff-218
Ref 1: Exhibit 2B / Section E6.3.3.3 / p. 22

Preamble:
Many Ontario distributors, as well as utilities in other Provinces, utilize a run-to-fail asset management strategy for pole-top transformers, to maximize the value extracted by customers from these assets, since they are relatively low-cost, quick to replace and economical warehoused in a range of standard sizes. Furthermore, because they have long service lives and can be replaced quickly upon failure, the net reliability impact of unit failure upon the customers connected to it is minimal over the longer term. Each unit failure interrupts customers for at most a few hours over a multiple decade reliable service life.

Question(s):

a) Please provide a Benefit Cost Analysis supporting Toronto Hydro’s decision to follow a proactive lifecycle management strategy for pole-top transformers.

2B-Staff-219
Ref 1: Exhibit 2B / Section E6.5.3.1 / pp. 7-8

Preamble:
Figure 1 indicates that less than a quarter of overhead system outages are caused by defective equipment, yet Toronto Hydro is accelerating its overhead system renewal expenditures by $139.5M (64%).

Question(s):

a) Please explain why Toronto Hydro is increasing spending by 64% above historical levels to address a situation that is only responsible for 24% of historic overhead system outages.
b) Please discuss what Toronto Hydro is doing to address the other 75% of outages and relevant costs.

2B-Staff-220
Ref 1: Exhibit 2B / Section E6.5.3.1 / p. 10

Preamble:
Toronto Hydro states: "Through the Overhead System Renewal segment, Toronto Hydro replaces overhead transformers beyond useful life, which are at risk of failing and potentially posing an environmental risk due to oil leaks that may contain PCBs"

Question(s):
a) What percentage of the transformers planned for replacement in 2025-2029 are suspected to contain PCBs.

2B-Staff-221
Ref 1: Exhibit 2B / Section E6.5.3.1 / pp. 11-12
Ref 2: Exhibit 2B / Section E6.5.1 / p. 1

Question(s):
a) Please reconcile the results shown in Figures 6, 7 and 8 with the statement made on lines 17-20 of Reference 2 that:

"Toronto Hydro has reduced the number of transformer related customers interrupted and customer hours interrupted from over 10,000 customers interrupted and 6,000 customer hours interrupted and per year on average to 4,133 customers and 4,360 customer-hours interrupted per year on average over the last five years (2018-2022)."

2B-Staff-222
Ref 1: Exhibit 2B / Section E6.5.3.1 / p. 12

Question(s):
a) What drove the outlier results in 2022 shown in Figures 7: Customers Interrupted ("CI") for Pole-top Transformers and Figure 8: Customers Hours Interrupted ("CHI") for Pole-top Transformers?
b) Please update Figures 7 and 8 to show results from 2013-2022.

2B-Staff-223
Ref 1: Exhibit 2B / Section E6.5.3.1 / p. 14

Question(s):
a) Please explain why failures due to External Factors, Other and Unknown appear to significantly diminish for transformers older than 35 years relative to transformers that are younger than 35 years as indicated in Figure 11: Age and

Cause Distribution for Failed Overhead Transformers 2018-2022.

2B-Staff-224
Ref 1: Exhibit 2B / Section E6.5.3.1 / p. 17

Preamble:
Toronto Hydro states: "Figure 15 illustrates that, despite ongoing renewal, approximately 287 poles on average had to be replaced reactively per year between 2019 and 2022."

Question(s):
a) What are the primary failure modes of wood poles that require reactive replacement, and what are the most common triggering events?
b) On average, how many poles per year does Toronto Hydro replace (or retire) under all of its capital and operating programs and projects; for example, road moves and widenings, reactive capital (storms, vehicle accidents, treefalls), Back Lot program, Box Frame program, voltage upgrades, underground conversions, and overhead system renewal?
c) What is the ratio of poles replaced under the overhead renewal program to the poles replaced or retired under all other programs and projects?
d) Does Toronto Hydro consider all the pole replacements or retirements it is doing under these other programs or projects when evaluating the need to replace poles under the overhead system renewal program?

2B-Staff-225
Ref 1: Exhibit 2B / Section E6.5.4.1 / p. 35

Question(s):
a) Does Toronto Hydro typically replace overhead conductors due to the condition of the conductors, or only when it is replacing a line segment for other reasons?

2B-Staff-226
Ref 1: Exhibit 2B / Section E6.5 / p.35
Ref 2: Exhibit 2B / Section D3 / Appendix A / pp. 4,6
Ref 3: Exhibit 2B / Section D3 / Appendix B / p. 8

Preamble:
Over the planning period Toronto Hydro plans to replace 8,337 poles over 4 years which yields an average annual replacement rate of 2,084 poles per year. The condition assessment tables indicate that the number of wood poles in Hi4 and Hi5 will increase by 9,459 in 2022 and 32,158 in 2029. If Toronto Hydro was to maintain Hi4 and Hi5 at

2022 levels 22,699 poles would need to replaced between 2022 and 2029, yielding an annual replace rate of 3,242 poles per year.

Question(s):

a) Toronto Hydro owns approximately 183,620 poles and approximately 107,000 wood poles were evaluated for asset condition between 2018-2022. Please explain why approximately 76,620 poles were not evaluated for condition assessment.
b) Comparing the planned annual average replacement for wood poles of 2,084 per year to a condition replacement rate of 3,242, a shortfall of 1,158 assets appears to exist. Please explain how Toronto Hydro is achieving asset demographics, for example are there Hi4 and Hi5 pole replacements occurring in other spending categories that close the observed shortfall.
    i. Do the wood pole health indices for 2029 overstate the projected decay in wood pole asset condition, given that Toronto Hydro's consultant has indicated a potential miscalculation of wood pole useful life.

2B-Staff-227
Ref 1: Exhibit 2B / Section E6.5 / p. 35
Ref 2: Exhibit 2B / Section D3 / Appendix A / pp. 4,6

Question(s):

a) Please update the following 3 tables to show pole top transformers.
    i) Table 3: Summary of Health Index Distribution as of year end 2017
    ii) Table 4: Summary of Health Index Distribution as of year end 2022
    iii) Table 5: Summary of Health Index Distribution as of year end 2029
b) Provide an estimation of the pole top transformer asset condition assessment that are solely or primarily based on age.

2B-Staff-228
Ref 1: Exhibit 2B / Section E6.6 / pp.1-3

Preamble:
Toronto Hydro states that: **"**Toronto Hydro plans to invest $282.7 million in the Stations Renewal Program in 2025-2029, which is a $107.3 million or 61 percent increase over the projected 2020-2024 spending in the Program." From the previous application the projected station renewal program was $141.6M rather than $175.4M that is forecast above in the current application.

Source: EB-2018-01652B -DSP **Section E6.6 Stations Renewal pp. 1-2**	**Source: EB-2023-0195 2B-E6.6** **Section E6.6 Stations Renewal pp. 1-2**
Transformer Stations 5 TS Switchgear 9 TS Outdoor Breakers 61 TS Outdoor switches **$74.5M**	**Transformer Stations** 3 TS Switchgear Complete four TS from the 2020-2024 period. 12 TS Outdoor Breakers 63 TS Outdoor Switches Refurbish one station building in preparation for switchgear replacements required over the 2030-2034 period. **$134M**
Municipal Stations 12 MS Switchgear 10 Power Transformers 10 Primary Disconnect Switches 1 MS Primary Breaker **$37.7M**	**Municipal Stations** 12 MS Switchgear 15 Power Transformers 1 MS Primary Supply **$70.3M**
Control and Monitoring 6 new RTU Renew 39 RTUs Upgrade Protections a 5 Pilot-Wire Locations Replace 45km Cu Control Cable **$22.1M**	**Control and Monitoring** 33 RTU Renew 251 Obsolete Relays **$64.7M**
Battery and Ancillary Systems 3 Sump Pumps 67 Battery and Charger Systems 6 Station Service Transformers 2 Air Compressors **$7.3M**	**Battery and Ancillary Systems** 55 Batteries 8 Charger Systems 3 Station Service Tx 5 Station AC Service Panels 3 Sump Pumps **$13.6M**
Plans to invest $141.6M	**Plans to invest $282.7M**

Question(s):

a) Please reconcile the discrepancy between $141.6M detailed in the station renewals in the 2020-2024 period from the previous application and the $175.4M detailed in the 2025-2029 application.
b) For each grouping in the table above for the period of 2020-2024 provide the planned scope of work, and what scope was completed. The scope descriptions should include a count of the items planned and completed.
c) For each grouping in the table above for the period of 2020-2024 provide the planned expenditures and actual expenditure.
d) Please explain the basis for the forecasts for the scope of work for 2025-2029.
    i. Please provide the detailed estimates.

2B-Staff-229
Ref 1: Exhibit 2B / Section E6.6.3.1 / p. 13

Preamble:
Toronto Hydro states: "The failure risk of KSO circuit breakers is high and the impact of failure is significant."

Question(s):
a) Figure 9 indicates that all KSO breakers are in asset condition HI2 or HI3. What is the annual probability of failure of breakers in each of these categories?
b) Risk is the product of probability x consequence. Is the consequence of failure of these breakers so high that even with a low failure probability they represent an unacceptable risk to Toronto Hydro? Please quantify and discuss any associated risk analysis that has been undertaken.

2B-Staff-230
Ref 1: Exhibit 2B / Section E6.6.3.2 / p. 18

Preamble:
Toronto Hydro states: "Toronto Hydro's MS supply power to Toronto's suburban areas consist largely of residential and a few small general service customers (<1 MW). Major MS assets include switchgear, power transformers, and MS primary supplies composed of disconnect switches and power cable. A large portion of these assets are operating well beyond their useful life and are consequently at a heightened risk of failure."

Question(s):
a) When Toronto Hydro states throughout this application that assets operating beyond their useful lives are at a heightened risk of failure, does Toronto Hydro actually mean that such assets exhibit a heightened probability of failure?
b) Where ACAs are not solely based on age, confirm that probability of failure should be determined based on the assessed ACA rather than asset age, since some older assets may be in good condition, and some relatively new assets may be in unsatisfactory condition.
    a. If not confirmed, why not?

2B-Staff-231
Ref 1: Exhibit 2B / Section E6.6.3.2 / p. 21

Preamble:
Toronto Hydro states: "The useful life of a power transformer is 45 years."

Question(s):

a) Would the same useful life apply to a transformer in a winter peaking system?
b) Toronto Hydro forecasts that it will become a winter peaking system. Should it be modifying the planning criteria it applies to make station asset investment decisions, since most station asset types will have higher capacity ratings in winter peak ambient temperature conditions than they will in summer peak ambient temperature conditions.

2B-Staff-232
Ref 1: Exhibit 2B / Section E6.6.3.2 / p. 22

Preamble:
Toronto Hydro states: "Toronto Hydro has revised its target maximum age for its power transformers down from 70 to 65 years, in alignment with previous rate applications."

Question(s):

a) Please explain why this revised target maximum age remains appropriate since Toronto Hydro is becoming a winter peaking utility.

2B-Staff-233
Ref 1: Exhibit 2B / Section E6.6.3.2 / p. 23

Preamble:
Regarding Table11: Power Transformers Proposed for Replacement

Question(s):

a) Please confirm Dunsany MS Power Transformer 2408, Centennial MS Power Transformer 2412 are all scheduled for replacement solely due to age and not because of additional concerns.
    i. If not confirmed, please explain why not.
b) Explain why Belfield MS Power Transformer 2504 is scheduled for replacement in 2029 at an age of 60 years despite exhibiting no concerns other than age, even though it will still be 5 years younger than Toronto Hydro's reduced maximum target age of 65 for Power Transformers in 2029.

2B-Staff-234
Ref 1: Exhibit 2B / Section E6.6.3.3 / p. 29

Preamble:
Toronto Hydro is planning to increase its Stations Control and Monitoring Renewal spending by $36.6M (130%).

Question(s):

a) What is the annual probability of failure of any of the existing electromechanical relays?
b) Are electromechanical relay failures trending up significantly?
    i. If yes, please provide documentation showing the increasing failure trends.
c) Is adherence to Toronto Hydro's Grid Modernization Roadmap a major driver of the significantly increased planned spending on relay replacements relative to the historical period? Please discuss.
d) What percentage of the electromechanical relays targeted for replacement operate obsolete or poor condition breakers or switchgear?

2B-Staff-235
Ref 1: Exhibit 2B / Section E6.6.3.3 / p. 30

Question(s):

a) Is the use of "(Without Investment)" in the header cells in Tables 14 and 15 a typo?
    i. If no, how is the number of obsolete/past useful life assets being reduced in all instances by 2029 without investment?

2-Staff-236
Ref 1: Exhibit 2B / Section E6.7 / p. 13
Ref 2: Exhibit 2B / Section E5.4 / p. 16-17

Preamble:
Toronto Hydro states that the Reactive Meter Replacement costs for 2025-2029 were "derived based on a four-year weighted average of historical costs. The average percentage of meters failing remains the same but the population is increasing yearly".

Question(s):

a) Please explain why Toronto Hydro used historic performance of aged meters and did not consider the impact of replacing meters in the AMI 2.0 program when projecting meter failures in the 2024-2029 period.

2-Staff-237
Ref 1: Exhibit 2B / Section E7.4 / pp. 30-32

Preamble:
OEB Staff have created the following table which summarizes actual and forecast costs for 2020-2024 from the variance explanation in the reference 1.

Reactive Hydro One Contribution and True-Up Costs	2020-2024 $ million
Copeland TS Phase 1 True-Up	9.9
Switchyard Expansion Bermondsey and Richview TS	8.5
New Cable Carlaw TS to Gerrard TS	2.4
Additional Unforeseen	1.9
Reactive Total	**22.7**

Question(s):

a) Table 18 in reference 1 shows a 2020-2024 Actual/Forecast Costs of $24.9M for Reactive Hydro One Contribution and True-Up Costs. Please reconcile the difference between this value and the value compiled in the table above.
b) For each of the projects in Table 19: Hydro One Contributions 2020-2024 Variances, and the projects that make up the Reactive Contributions and True-Ups:
    i. Please categorize the costs as construction costs or load true-up.
    ii. Please provide the agreements between Toronto Hydro and Hydro One.
    iii. Please provide any invoices and calculations from Hydro One (i.e. output of the Hydro One DCF model).
    iv. For those costs not yet invoiced by Hydro One, please provide the cost estimate and calculations from Hydro One (i.e. output of the Hydro One DCF model). In the absence of documentation from Hydro One, please provide Toronto Hydro's detailed DCF calculations for the true-up payment.
    v. In cases where Toronto Hydro was, or may be, required to make a payment during 2020-2024 due to reduced or unrealized load, please explain why the load forecast at the time of the agreement with Hydro One was not realized. (For example, the $5.7M incurred on the Copeland TS Phase 1. Project).

2-Staff-238
Ref 1: Exhibit 2B / Section E7.4 / p. 27

Preamble:
Table 15: Historical & Forecast Program Costs by Segments includes costs for Hydro One Contributions segment for the 2025 to 2029 forecast period totalling $103M.

Question(s):

a) For each year of the forecast period please provide a list of projects and forecast costs, as well as a categorization of the costs as construction costs or load true-up.
b) For each project please provide:
    i. A copy of the agreement between Toronto Hydro and Hydro One.
    ii. Load realized for each year of the agreement to date.
    iii. Past invoices and calculations from Hydro One for true-payments.

iv. Where there is a load true-up payment due in the period, please provide estimates and calculations from Hydro One for the true-up payment. In the absence of estimates from Hydro One, please provide Toronto Hydro's detailed calculations of the true-up payment.

2B-Staff-239
Ref 1: Exhibit 2B / Section E6.7.1 / p. 2

Preamble:
Under worst performing feeders Toronto Hydro states: "The objective of this segment is to identify feeders performing poorly over a rolling 12-month period and perform work in an effort to mitigate further interruptions."

Question(s):
a) How does Toronto Hydro identify and rank feeders that are performing poorly?
b) What is the reliability threshold for being included in the Worst Performing list, or is the Worst Performing feeder list comprised of a fixed number of feeders?
   i. If a fixed number, what is that number?
   ii. If a threshold, what is that threshold?
   iii. If a feeder is scheduled to be addressed under either the Back Lot, Box Frame or other programs, will another feeder be added to the Worst Performing Feeder list to replace it?
c) Please provide the SAIDI and SAIFI for the worst performing feeders over the last 10 years, and the number of feeders that were on the Worst Performing Feeder list for each of the last 10 years.
d) Please provide the average capital and OM&A spent to improve performance of the worst performing feeders, per year, for the last 10 years. Please discuss the effectiveness of these investments in terms of improved feeder performance.

2B-Staff-240
Ref 1: Exhibit 2B / Section E6.7.1 / p. 23

Preamble:
Figure 15: 2019-2029 Reactive Capital Work Requests Actuals and Forecast shows that the number of work requests decreased from 2019 to 2021 and increased slightly in 2022. Toronto Hydro predicts a steady level of work requests over the forecast period.

Question(s):
a) Please explain the trend of work requests in this budget category.

2B-Staff-241
Ref 1: Exhibit 2B / Section E7.1 / p. 1

Question(s):

a) Confirm that the System Enhancements program will reduce the consequence of individual asset failures in many or most cases.
   i. If not confirmed, explain the purpose of the program, since it will not reduce the probability of asset failures.

2B-Staff-242
Ref 1: Exhibit 2B / Section E7.1 / p. 1

Preamble: The proposed Contingency Enhancement investment represents a $113M (568%) increase in segment spending.

Question(s):

a) Please confirm that this increase is necessary to maintain rather than improve system reliability.
   i. If confirmed, please explain how Toronto Hydro has been able to significantly reduce its outage durations over the historical period despite a much slower pace of spending in this segment.
   ii. If not confirmed, please reconcile Toronto Hydro's strategic decision to increase spending in this segment by 568%, given its residential customers' preference to maintain reliability and control costs.
b) Toronto Hydro indicates elsewhere in the Application that Toronto Hydro has already implemented majority of its contingency enhancement plans. Has Toronto Hydro undertaken a benefit-cost analysis demonstrating that the proposed accelerated spending to rapidly complete this plan provides offsetting benefits of equal or greater value to customers?
   i) If yes, please provide the benefit-cost analysis documentation.
   ii) If no, please explain why not.

2B-Staff-243
Ref 1: Exhibit 2B / Section E7.1.1 / p. 2

Preamble:
Toronto Hydro states: "Under the Downtown Contingency, this segment provides for plans to add provisions in the downtown core for incremental Toronto Hydro-controlled back-up supply stations… The planned enhancements will provide N-2 (i.e., two station loss-of-supply issues at the same time) operational capability to address serious loss-of-supply scenarios."

Question(s):

a) Please identify all N-2 loss of supply events that have caused significant Downtown customer outage over the past 5 years.

b) Please identify all Toronto Hydro service areas where Toronto Hydro is proposing to apply an N-2 planning standard going forward.
c) Please identify any other North American utilities Toronto Hydro is aware of which apply a similar N-2 planning standard and explain the circumstances under which the N-2 standard is applied by these utilities.

2B-Staff-244
Ref 1: Exhibit 2B / Section E7.1.2 / p. 4

Preamble:
Toronto Hydro states: "Continues to maintain Toronto Hydro's Total Recorded Injury Frequency (TRIF) measure and safety objectives by installing remote switching, thereby reducing crew exposure to safety risks associated with manual switching."

Question(s):
Please provide a list of switches that have a known safety issue that are subject to a manufacturer's recall/bulletin or ESA safety alert or product recall. Include the manufacturer, model, make, number in service and if available, link to the public announcement.

2B-Staff-245
Ref 1: Exhibit 2B / Section E7.1.3.1 / p. 7

Preamble:
Toronto Hydro states: "This configuration ensures a contingency power source is available for the faulted feeder regardless of whether the fault occurs at the feeder, bus, or station level, effectively reducing the duration of an outage. During the 2018-2022 period, the average duration for outages on feeders with less than three SCADA tie-points was approximately 707 minutes per year per feeder, whereas the average duration of those feeders with three or more SCACA tie-points was approximately 496 minutes."

Question(s):
a) How does Toronto Hydro's SAIDI performance trend for the Horseshoe area compare with the SAIDI trends of its Ontario peers?

2B-Staff-246
Ref 1: Exhibit 2B / Section E7.1.3.1 / p. 8

Preamble:
Toronto Hydro states: "This work is expected to result in an average of approximately 12.6 percent reliability improvement on the 94 feeders where SCADA switch installation

work is expected to take place. This will result in an average yearly total customer minute out (CMO) reduction from 180,113 during the 2018-2022 period to an improved average yearly total CMO of 162,889. The potential SAIDI improvement as a result of this work is expected to be approximately 0.022 minutes per feeder per year."

Question(s):

a) Please provide the cost in dollars per estimated "customer minute out" reduction for this project and all other projects that reduce customer outage minutes.
b) Please explain how making incremental investments to materially reduce CMOs aligns with Toronto Hydro's stated strategy of making necessary expenditures to maintain rather than materially improve reliability.

2B-Staff-247
Ref 1: Exhibit 2B / Section E7.2.1 / p. 1

Preamble:
Toronto Hydro states: "The NWS strategy for the 2025-2029 period is focused on being flexible and adaptable to help system planners respond to load growth while navigating the underlying uncertainty that stems from changing demand patterns and increased reliance on electrification. This strategy builds on Toronto Hydro's experience utilizing DERs to reduce peak demand, helping to defer grid expansions or, in most cases, avoid grid expansions should demand not materialize as expected (e.g., lower than expected demand, fluctuating demand)."

Question(s):

a) Please quantify by technology type the alignment of energy production by the DERs presently installed in Toronto Hydro's service area with the summer and winter peak demand hours on Toronto Hydro's distribution system.
b) Given the response to the prior question, please describe the effectiveness of Toronto Hydro's existing DER portfolio in mitigating capacity constraints encountered by Toronto Hydro during summer and winter peak demand periods.

2B-Staff-248
Ref 1: Exhibit 2B / Section E7.2.1 / p. 1

Preamble:
Toronto Hydro states: "NWSs are viewed as additive to conventional utility expansion strategies, enabling Toronto Hydro to expand its planning toolbox to include additional strategies for keeping up with load growth."

Question(s):

a) Please provide examples of DERs or other Non-Wires Solutions presently

existing on Toronto Hydro's system that enabled it to avoid more costly wires solutions to address system constraints.

i. Please quantify the cost savings for each of the examples.

2B-Staff-249
Ref 1: Exhibit 2B / Section E7.2.2.1 / p. 19

Preamble:
Toronto Hydro states: "Toronto Hydro will build on its experience with BESS to move from individual pilot projects towards a standardized approach for design and deployment. The planned deployments will target areas with grid constraints to enable Renewable Energy Generation (REG) connections."

Question(s):

a) Please quantify the capital and operating cost impacts of developing BESS using presently available commercial technology to address outage durations. Please express your answer in terms of average annual dollars per unit SAIDI improvement.

2B-Staff-250
Ref 1: Exhibit 2B / Section E7.2.2 / pp. 18-35
Ref 2: EB-2018-0165, OEB Decision and Order, pp. 114-115, 119

Preamble:
Toronto Hydro has proposed an expanded Energy Storage System as part of its Non-Wires Solutions for 2025-2029 to assist in providing distribution-level grid support. Toronto Hydro forecasts expenditures of $22.5 million over the 2025-2029 period to support the deployment of 9 projects with an aggregate capacity of 10.2 MW.

As part of the OEB's Decision in EB-2018-0165 it provided direction that it expected Toronto Hydro to respond to as part of any future application that seeks approval of Renewable Enabling Investments and Energy Storage Systems, including evidence of the benefits to power quality, reliability and capacity and an assessment of appropriate sharing of benefits for ESS projects as part of future requests for funding for provincial rate protection.

Question(s):

a) Please discuss the pace of the BESS investment strategy. In particular, please provide more detail regarding the process Toronto Hydro will undertake in determining when to proceed with a BESS investment during the 2025-2029 term, including how Toronto Hydro plans to overcome the challenges faced in the recent past (siting, supply chain, integration into the existing system, low vendor interest).

b) Please discuss the status of the technical requirements currently in development to support the standardized process of ESS design and procurement, including what Toronto Hydro is using as the basis for the technical requirements.
c) Please discuss how maintenance costs have been incorporated into the overall cost proposal for the ESS plan.
d) Please provide more information on how the annual forecast BESS expenditures were developed, including the increase in planned expenditures in 2027 relative to other years.
e) Please provide more information on the how the total proposed cost of $22.5 million is broken out between that which is allocated to Toronto Hydro's rate base (i.e., six percent or $1.6 million) and that the remaining funding component through the provincial renewable enabling improvement revenue stream.
f) Please provide an assessment of the appropriate sharing of benefits for the proposed BESS projects between Toronto Hydro's customers and broader electricity customers across Ontario for those amounts requested to be recovered under the provincial renewable enabling improvement funding component.
g) Please discuss the nature of the proposed BESS investments and indicate if any are proposed to be behind-the-meter. If so, please discuss the nature of these projects and the anticipated benefits.
h) Please discuss the analysis Toronto Hydro has undertaken to understand the pace of battery technology evolution. As part of your response, please address how Toronto Hydro will assess the long-term viability and performance of battery technologies installed. Please also discuss the risk mitigation efforts to avoid investing in technologies that become obsolete in a short period of time.
i) The ESS strategy is being prioritized to reduce the minimum load to generation ratio for specific feeder stations. Please discuss the process Toronto Hydro proposes to undertake to assess the performance and reliability of planned BESS investments to ensure they meet or exceed performance requirements.
j) Please discuss the consideration of life cycle environmental impacts of the planned BESS investments, including the process to disposing of batteries after their useful life.
k) Please discuss how Toronto Hydro proposing to assess how potential BESS projects contribute to the resilience and security of Toronto Hydro's system.
l) Please discuss how current and future ESS projects may contribute to the Local Demand Response program, if at all.
m) Please provide a project schedule and expected completion date for the Optimal Planning Program developed in partnership with Toronto Metropolitan University.

2B-Staff-251
Ref 1: Exhibit 2B / Section E7.2.2.3 / pp. 21-22

Preamble:
With regards to Toronto Hydro's commentary on "Renewable Enabling BESS"

Question(s):

a) Must increased REG penetration in Toronto Hydro's service area be accompanied by associated ESS developments to avoid creating system capacity deficiencies? Please discuss.
   i. If yes, quantify the revenue requirement impacts of the associated ESS needed to support the anticipated REG developments over the test period.

2B-Staff-252
Ref 1: Exhibit 2B / Section E7.4 / App A / p. 6

Question(s):

a) Toronto Hydro is anticipating overall area load growth for the Downsview area of 40-70% due mainly to electrification of heating and transportation. Please provide a load forecast for the Downsview area (for each station) that breaks out the heating and transportation demand. Please also confirm what percentage of the transportation demand is due to Evs and the percentage due to electrification of public transit.

2B-Staff-253
Ref 1: Exhibit 2B / Section E7.4 / App A / pp. 18, 19

Question(s):

a) Please confirm that the cost of option 6 – New TS incudes the cost of load transfers that will need to be implemented to manage local station capacity at 90% until Downsview TS comes into service.
   i. If not confirmed, please provide the total cost of Downsview TS that takes necessary load transfers into account.
b) Please update Table 4-Summary of Options to include the total costs of each of the options. If this is not feasible, please explain why not.
c) Did Toronto Hydro consider the use of non-wires options in the area including flexibility options and energy storage solutions to defer the need for a new TS?
   i. If yes, please provide the benefit cost analysis.
   ii. If not, why not.

2B-Staff-254
Ref 1: Exhibit 2B / Section E7.4 / App B / p. 6

Question(s):

a) Toronto writes that it is anticipating Scarborough area load will grow by 75-105 % due mainly to electrification of heating and transportation. Please provide a 20-year demand and energy forecast for the area that breaks out heating, EV charging, and public transit for each station.

2B-Staff-255
Ref 1: Exhibit 2B / Section E7.4 / App B / pp. 18,19

Question(s):

a) Please confirm that the cost of option 5 – New DESN incudes the cost of load transfers that will need to be implemented to manage local station capacity at 90% until the new DESN comes into service.
   i. If not confirmed, please provide the total cost accounting for load transfers.
b) Please update Table 7-Summary of Options Outcomes to include the total cost of each option.
c) What non-wires options were considered in this area to defer the need for the new DESN?
   ii. Please provide the benefit cost analysis.

2B-Staff-256
Ref 1: Exhibit 2B / Section E7.4.1 / pp. 1

Preamble:
Toronto Hydro states: "A demand study of the Downsview area has forecasted a load demand of 195 MW by 2035."

Question(s):

a) Assuming the Downsview TS is not constructed, please provide the summer and winter planning capacity and forecast peak summer and winter demand for each year from 2030 – 2035 for Bathurst TS, Finch TS, Fairchild TS and Fairbank TS.
b) When is Downsview area forecast to become winter peaking?
c) What is the annual duration of the period in which demand is forecast to exceed the available Bathurst TS, Finch TS, Fairchild TS and Fairbank TS planning capacity in each year from 2030 to 2035.
d) Please explain how the summer and winter planning capacity is determined for each of the above substations.
e) Assuming all equipment is in service what is the operational capacity at each of these substations in each year from 2030 to 2035?
f) What is the probability of a contingency exceeding the operational capacity at each of these substations in each year from 2030 to 2035?
g) Please provide any risk analysis that Toronto Hydro has undertaken to determine the risk of not being prepared to serve all loads in the Downsview Area post 2030.

2B-Staff-257
Ref 1: Exhibit 2B / Section E8.1 / pp. 1,4, 6

Preamble:
Toronto Hydro notes the following regarding EDC 1, “for example, EDC 1 will continue to require at least two to three shutdowns per year to allow for the execution of necessary and essential facilities operations and maintenance activities aiming to safeguard the integrity of the location.”

Question(s):

a) Please clarify the sentence above, what kinds of operations and maintenance activities need to be undertaken at EDC 1 owing to its particular site condition.
b) Would these same activities and mitigations not need to be undertaken at EDC 2 or the newly proposed site?
   i. If yes, how does Toronto Hydro propose to manage these issues and what are the related costs?
c) Please provide a table that shows EDC1, EDC2 and the new site’s square footage and how each of the sites compare in capital cost/square footage.
d) Is the proposed cost of $72M for a new EDC site an all-in cost? In other words, does this cost include facilities and IT infrastructure and security?
   ii. If not, please provide the all in cost for the new EDC.

2B-Staff-258
Ref 1: Exhibit 2B / Section E8.1 / pp. 7.

Preamble:
Toronto Hydro notes that the assets at EDC 1 will be retired.

Question(s):

a) Could the existing assets at EDC 1 be used to reduce the costs of assets needed at the new proposed location?
   i. If yes, what are the related cost savings and are they included in the proposed costs of the new EDC?
   ii. If no, why not?
b) How do the EDC 1 assets compare in age and useful life to assets at EDC 2? Please provide this information in a table and aggregate by asset type, as necessary.

2B-Staff-259
Ref 1: Exhibit 2B / Section E8.1 / p. 8
Ref 2: Exhibit 2B / Section E8.1 / p. 11

Preamble:
Toronto Hydro notes the Tier Classification System of the Uptime Institute.

Question(s):

a) Is Toronto Hydro required to abide by certain Tier Classification requirements?
    a. If yes, what are these requirements?
    b. What standard, legislation and/or guidance governs the operations of Toronto Hydro's EDCs?
b) What is the Tier Classification for EDC 2, and how does that compare to the classification proposed for the proposed EDC?
    a. If they will be different, will EDC2 need to be upgraded to a new classification?
    b. If yes, when would this upgrade need to take place and at what cost?

2B-Staff-260
Ref 1: Exhibit 2B / Section E8.1 / p.18

Preamble:
With respect to EDC redundance and replacing EDC 1, Toronto Hydro states that, "A complete EDC failure would result in all of Toronto Hydro's business applications becoming unresponsive and non-functional. In the event of a distribution system outage, this would have cascading and substantial financial and economic impacts on customers within the City of Toronto."

Question(s):

a) Please confirm that this comment refers to failure of both EDC sites and not just EDC 1, given that there are two locations to provide back up capability in the event of one site failing?

2B-Staff-261
Ref 1: Exhibit 2B / Section E8.1 / p. 21

Preamble:
Toronto Hydro is requiring $72 million over the 2025-2029 rate period to relocate the existing EDC 1 to the new site and be operational by 2029.

Question(s):

a) Please provide a table showcasing the progressive spending for the EDC relocation over the next 5 years

2B-Staff-262
Ref 1: Exhibit 2B / Section E8.1 / p.28

Question(s):

a) Please provide the benefit-cost analysis that justified Toronto Hydro's selected option for the new EDC.

2-Staff-263
Ref 1: Exhibit 2B / Section E8.1 / pp. 23-24
Ref 2: Exhibit 2B / Section D8
Ref 3: Accounting Order (003-2023) for the Establishment of a Deferral Account to Record Incremental Cloud Computing Arrangement Implementation Costs[6]

Preamble:
On November 2, 2023, the OEB released a letter regarding a new Accounting Order to establish a deferral account to record cloud computing implementation costs. Amongst other things, the establishment of the generic deferral account allows utilities to perform optimized planning by allowing cloud computing implementation costs to be recovered outside of a rate rebasing year and potentially reduces rate impacts through a disposition period.

Question(s):

a) Please provide the forecasted capital and OM&A spend on cloud computing solutions for the 2025-2029 period at the project level.
b) Please discuss whether Toronto Hydro has assessed the impact of having a generic account available for cloud computing implementation costs in their 2025-2029 plan. If not, why not.
    i. Please discuss any barriers to implementing cloud based solutions as a result of the analysis.
c) In light of the new deferral account is Toronto Hydro reassessing its position on cloud computing as an alternative to the EDC project?
d) In light of the new deferral account and the expanding number of cloud computing offerings, would Toronto Hydro consider reducing the size of the new EDC by implementing more cloud computing solutions? Please explain and include financial impacts to the new EDC project, as well as potential future savings for the existing EDC.

2B-Staff-264
Ref 1: Exhibit 2B / Section E8.2 / pp. 8, 9, 11, 14,17

Preamble:

[6] OEB Letter re Cloud Computing

With respect to Toronto Hydro's proposed Facilities Management and Security Investments and Figures 3, 4, 5, 8 and 16, and fire alarm systems.

Question(s):

a) Please confirm whether the pictures included in the figures references above that depict architectural, structural and mechanical and plumbing deterioration are in fact outliers and not representative of the majority of facilities managed by Toronto Hydro?
b) Please explain in detail how Toronto Hydro has been managing these facilities prudently given the state of the deterioration at some of these facilities as depicted in the figures.

2B-Staff-265
Ref 1: Exhibit 2B / Section E8.2 / pp. 2, 26

Preamble:
In describing general plant investments related to work centres, Toronto Hydro states it plans to invest to decarbonize in line with its Net Zero 2040 Strategy.

Question(s):

a) What are the annual capital expenditures in Facilities Management and Services related to Toronto Hydro's Net Zero 2040 Strategy?

2B-Staff-266
Ref 1: Exhibit 2B / Section E8.3 / pp. 3-4
Ref 2: EB-2018-0165 / Decision and Order, December 19, 2019 / p. 104

Preamble:
In reference 2 the OEB directed Toronto Hydro "to provide more detailed cost benefit analysis between EV, hybrid and combustion engines for its fleet program for future rebasing applications. In addition, the OEB directs Toronto Hydro to develop utilization measures beyond fleet use in standard hours." In response to the cost benefit analysis, Toronto Hydro's evidence stated that various phasing and cost options were analyzed for electrifying its fleet and the results of this analysis informed Toronto Hydro's procurement strategy for EVs and hybrid vehicles.

Question(s):

a) Please provide a copy of the analysis done to assess the costs and benefits between EVs, hybrids and combustion engine vehicles and the results of this analysis.
b) Please explain Toronto Hydro's proposal for developing utilization measures beyond fleet use in standard hours.

2B-Staff-267

Ref 1: Exhibit 2B / Section E8.3 / p. 3-4
Ref 2: EB-2018-0165 / Decision and Order, December 19, 2019 / p. 104

Preamble:
In reference 2 the OEB directed Toronto Hydro "to provide more detailed cost benefit analysis between EV, hybrid and combustion engines for its fleet program for future rebasing applications. In addition, the OEB directs Toronto Hydro to develop utilization measures beyond fleet use in standard hours." In response to the cost benefit analysis, Toronto Hydro's evidence stated that various phasing and cost options were analyzed for electrifying its fleet and the results of this analysis informed Toronto Hydro's procurement strategy for Evs and hybrid vehicles.

Question(s):
a) Please provide a copy of the analysis done to assess the costs and benefits between Evs, hybrids and combustion engine vehicles and the results of this analysis.
b) Please explain Toronto Hydro's proposal for developing utilization measures beyond fleet use in standard hours.
c) Please indicated the number of units and associated percentage of internal combustion engines vehicles to be replaced by Evs.

2B-Staff-268
Ref 1: Exhibit 2B / Section E8.3 / p. 7
Ref 2: Exhibit 2B / Section E8.3 / p.2

Question(s):
a) Please provide Toronto Hydro's fleet asset management plan.
b) Please provide several representative examples of life cycle analyses for short term (0-2 year) turnover assets, and long-term turnover (2-7years) assets.
c) Are corrosion related impacts a major driver of fleet turnover?
    i. If yes, what actions does Toronto Hydro take to mitigate corrosion related impacts to its fleet?
d) What fleet vehicles does Toronto Hydro outsource?
    i. For outsourced fleet vehicles, do the forecast capital costs for the test period include outsourcing costs?
    ii. For outsourced fleet vehicles, please provide benefit-cost analysis.

2B-Staff-269
Ref 1: Exhibit 2B / Section E8.3 / p. 4

Preamble:
Toronto Hydro writes that "In view of the size and dense urban nature of its service territory, Toronto Hydro estimates that all vehicle types (ICE, EV, and hybrid) would perform at the same level of reliability."

Question(s):

a) Please provide several representative examples of when the above statement would and would not be true in the Toronto Hydro service territory for heavy-duty vehicles.
b) How will Toronto Hydro ensure that its EV fleet maintains its ability to be dispatched during prolonged power outages?
    i. What are the limitations of the selected strategy with regards to the geographic extent and duration of power outages?

2B-Staff-270
Ref 1: Exhibit 2B / Section E8.3 / p. 12

Question(s):

a) Please reconcile the apparent change in Heavy-Duty vehicle unit cost between 2025 and 2027 (year 2025, 13 vehicles to be replaced at a cost of $7M, and in 2027, 23 vehicles to be replaced at a cost of $7.7M)?
b) Please provide total number of assets owned by Toronto Hydro under each of the categories of Heavy Duty, Light Duty and Equipment.

2B-Staff-271
Ref 1: Exhibit 2B / Section E8.3 / p. 18

Question(s):

a) Please provide the benefit-cost analysis that shows that option 2 “sustainment” is the preferred solution of the three options considered.
    i. If a benefit-cost analysis was not performed please provide the quantitative analysis justifying the selection of the preferred solution.

2B-Staff-272
Ref 1: Exhibit 2B / Section E8.4 / pp. 18, 19.

Preamble:
With respect to hardware volumes that are proposed to be replaced.

Question(s):

a) Please provide the percentage and number of units indicated in Table 5 that fall within the 4, 5, 6 and 7 year age buckets.
b) Please also indicate the percentage of hardware that is still operational, and vendor supported.

2B-Staff-273

Ref 1: Exhibit 2B / Section E8.4 / p. 24

Preamble:
With regards to the $11.5M proposed in spending under Regulatory Compliance.

Question(s):
a) Please provide the list of regulatory compliance initiatives that occurred during the 2020-2024 period, the total capital cost of each, and the capital cost of each that is potentially recovered through a revenue recovery mechanism other than existing rates (for example, a DVA).
b) Please provide a list of incremental regulatory compliance initiatives that Toronto Hydro expects to comply with over the next five years, and their associated costs.
c) Why are these incremental initiatives necessary beyond current regulatory program spending?

3-Staff-274
Ref 1: Exhibit 3 / Tab 1 / Schedule 1 / Section 6.1
Ref 2: Load Forecast Guideline for Ontario, Guidance for the Development of Regional Planning Demand Forecasts, Oct 13, 2022

Preamble:
Toronto Hydro has included CDM as a multivariate regression variable as part of its proposed load forecast in an attempt to represent conservation that occurs through formal programming as well as naturally.

Question(s):
a) Please discuss how Toronto Hydro considered guidance from the OEB's Regional Planning Process Advisory Group's Load Forecast Guideline for Ontario, including how it considered how to adjust the gross demand forecast to reflect the forecast impact of non-wires alternative activities (including DERs, CDM and distributed generation).
b) Toronto Hydro has based its annual forecasted CDM savings for the 2025 to 2029 period on the assumption that there will be a continuation of the current IESO CDM Framework. Please confirm that should there be any changes to IESO CDM program delivery, including expanded delivery to residential and business customers, that there will be no subsequent changes to Toronto Hydro's proposed 2025-2029 CDM savings after the OEB has approved Toronto Hydro's application.
c) Please discuss the basis for Toronto Hydro's forecasted 2025-2029 Gross Energy Efficiency and Demand Response savings. In particular, please discuss the basis for the increase in demand savings for the residential class.
d) Please discuss how Toronto Hydro has included any naturally occurring conservation during the 2025 to 2029 period?

e) Please discuss how Toronto Hydro has incorporated information from the IESO's Annual Planning Outlook to inform its CDM forecasts.
f) On what basis has Toronto Hydro concluded that the impact of heat pumps on overall load and demand is not yet material. Please discuss how, if at all, Toronto Hydro has considered recommendations from the Electrification and Energy Transition Panel and/or OEB findings in Enbridge Gas Inc.'s recent rate proceeding (EB-2022-0200) related to the revenue horizon for new customer connections.
g) Please list and discuss the ways in which the Future Energy Scenarios modelling tool was used to inform and develop the proposed load forecast.
h) Please discuss if Toronto Hydro reviewed either the IESO's Pathways to Decarbonization report (December 15, 2022) and/or the Enbridge Gas Inc. Pathways to Net-Zero Emissions report (revised April 2023) and how these reports were considered in the development of its Future Energy Scenarios model and load forecast, including assumptions related to electrification of buildings, vehicles and commercial and industrial activities.

3-Staff-275
Ref 1: Exhibit 3 / Tab 1 / Schedule 1 / p. 1
Ref 2: Exhibit 3 / Tab 1 / Schedule 1 / Appendix A, Appendix B, Appendix H, Appendix I

Preamble:
Toronto Hydro's customer and load forecast filed November 17, 2023, includes 2023 as a bridge year.

Question(s):
a) Please provide an updated load forecast where 2023 is provided as a historic actual year and used in the regression equations to forecast 2024 to 2029.

3-Staff-276
Ref 1: Exhibit 3 / Tab 1 / Schedule 1 / pp. 3-4
Ref 2: EB-2018-0165 Decision and Order, December 19, 2019, p 126.

Preamble:
In its Decision on Toronto Hydro's 2020-2024 rate application, the OEB expected Toronto Hydro to enhance its approach to forecasting customers / connections through the consideration of economic and demographic conditions.

Toronto Hydro states that to forecast customer connections in the GS 1,000-4,999 kW, Large Use, CSMUR, and Street Lighting rate classes it relied on market knowledge of construction as well as expert judgement.

In the CSMUR rate class, customer connections increased from 75,028 in 2018 to 94,391 in 2023, a compound average growth rate of 4.7% and are forecast to grow to 104,994 in 2029, a compound average growth rate of 1.8%.

In the GS 1,000-4,999 kW rate class, customer connections increased from 427 in 2018 to 455 in 2023, a compound average growth rate of 1.3% and are forecast to grow to 461 in 2029, a compound average growth rate of 0.2%.

In the Large Use rate class, customer connections increased from 42 in 2018 to 47 in 2023, a compound average growth rate of 2.3% and are forecast to decrease to 46 in 2029.

Question(s):

a) Please explain how the methodology used for these rate classes was an enhancement of the approach Toronto Hydro used in its 2020-2024 Custom IR application.
b) Please explain drivers of the decreasing trend in customer connection additions.
c) Please provide details on Toronto Hydro's market knowledge of construction customer connection additions, aggregated by customer class and year. Please indicate how this translates to the overall forecast for customer connections, and how the later years in the forecast period are derived.

3-Staff-277
Ref 1: Exhibit 3 / Tab 1 / Schedule 1 / p. 1

Preamble:
Toronto Hydro has forecasted one customer for Street Lighting.

OEB staff anticipate that, at a minimum, street lighting would be required on City of Toronto maintained roadways and Ministry of Transportation maintained roadways.

Question(s):

a) Please provide the historical and forecast number of street lighting connections for each year from 2018-2029.
b) Please explain the structure that leads to a single street lighting customer for all historic and forecast years.
c) Please provide the number of end-use customers for street lighting.

3-Staff-278
Ref 1: Regression Model Statistics – Customers

Preamble:

Toronto Hydro used dummy variables RECLASS1, RECLASS2, and RECLASS3. OEB staff understands that these variables would be intended to capture the impact of reclassification in the GS < 50 kW and GS 50 – 999 kW rate classes.

The RECLASS variables start in June 2020, and are used one at a time, in sequence, until the end of the forecast period.

The residential customer connection forecast relied on population as the only external variable with a trend that varies over time. The same variable was used in the GS < 50 kW rate class. The GS 50-999 kW rate class used a measure of employment instead.

Question(s):

a) Please confirm OEB staff's understanding of the purpose of these variables or explain.
b) Is Toronto Hydro able to count the number of customers reclassified?
    i. If so, please provide the number of customers reclassified in/out each month.
    ii. If so, why weren't known values used as a manual adjustment?
c) What steps has Toronto Hydro taken to prevent trends or other causes of connection change from being captured in the RECLASS variables?
d) Please explain the rationale for use of the population variable in the residential and GS < 50 kW rate class, and employment in the GS 50 – 999 kW rate class. Were different variables attempted?
e) To what extent were customer connections impacted by the COVID-19 pandemic?
    i. How is this reflected in the customer connection forecast?

3-Staff-279
Ref 1: Exhibit 3 / Tab 1 / Schedule 1 / p. 7

Preamble:
Each rate class is forecasted using kWh per day as the dependant variable.

OEB staff understands this to be determined calculating kWh per month divided by the number of days in the month. Other variables that include totals for the month such as heating degree days and cooling degree days are also divided by the number of days in the month.

Question(s):

a) Please confirm OEB staff's understanding or explain.
b) Has Toronto Hydro considered using daily data to forecast daily energy use?

c) Does Toronto Hydro have enough data available to it to perform a daily regression? If so, how many years are available?

3-Staff-280
Ref 1: Exhibit 3 / Tab 1 / Schedule 1 / pp. 9, 17
Ref 2: Regression Model Input Data

Preamble:
A positive dewpoint variable was used in several rate classes, but not residential and large use rate classes.

A Lockdown binary variable was used in the GS < 50 kW, GS 50 – 999 kW and Large Use rate classes. This variable reflects the months April and May 2020, and January, February, April, and May 2021.

Question(s):
a) Did Toronto Hydro consider the positive dewpoint variable for the residential and large use rate classes? If so, why was it rejected? If not, why not?
b) Does Toronto Hydro believe that the COVID-19 pandemic impacted load in the Residential, CSMUR, or GS 1,000 – 4,999 kW rate classes? If so, how is this reflected in the explanatory variables?
c) Does Toronto Hydro believe that the COVID-19 pandemic impacted load in months not subject to a complete lockdown? If so, how was this reflected in the remaining explanatory variables?

3-Staff-281
Ref 1: Exhibit 3 / Tab 1 / Schedule 1 / pp. 15-16

Preamble:
Toronto Hydro used linear spline time trends in several rate classes when forecasting energy consumption.

Question(s):
a) Please explain how the time periods were selected for the time trend variables.
b) Please indicate how the trend variables are continued into the forecast period.
c) Please explain whether the historic period of over 20 years necessitated the use of spline time trend variables, and how the use of 20-year-old data in combination with spline time trends aids in forecasting the test years.

3-Staff-282
Ref 1: Exhibit 3 / Tab 1 / Schedule 1 / p. 7

Preamble:
Toronto Hydro states that for rate classes whose billing units are monthly peak demand, the forecasted monthly non-coincident peak by class is forecasted based on historical relationships between energy and demand.

Question(s):

a) Please provide the derivation of the monthly peak demand forecasts, indicating which historic years were used to establish the relationship between energy and demand as well as any equations used such as averages or time trends, etc.

3-Staff-283
Ref 1: Exhibit 3 / Tab 1 / Schedule 1
Ref 2: Exhibit 9 / Tab 1 / Schedule 1, section 9.2
Ref 3: EB-2010-0060: *Review of Distribution Revenue Decoupling Mechanisms*, Pacific Economics Group Research, LLC, March 2010
Ref 4: EB-2018-0165: Decision and Order, December 2019, Findings under Issue 4.0, Load and Other Revenue Forecast

Preamble:
Table 1 of Reference 1 is reproduced below:

		Total Normalized GWh	Total Normalized MVA	Total Distribution Revenue ($Million)	Total Customers
2018	Actual	24,701.0	39,823.2	736.6	770,333
2019	Actual	24,429.6	39,126.0	766.2	777,369
2020	Actual	23,674.7	36,813.7	727.8	781,374
2021	Actual	23,575.0	36,638.0	761.8	786,258
2022	Actual	23,990.1	37,648.0	786.5	790,699
2023	Bridge	23,678.6	37,199.3	834.3	794,025
2024	Bridge	23,676.2	36,993.9	874.3	797,318
2025	Forecast	23,458.7	36,384.5	972.4	800,374
2026	Forecast	23,416.5	36,063.4	1,019.7	803,344
2027	Forecast	23,389.6	35,698.8	1,059.1	806,017
2028	Forecast	23,498.8	35,507.1	1,151.0	808,731
2029	Forecast	23,458.5	35,093.4	1,185.1	811,245

Note 1 that accompanies the table states:

Total Normalized GWh are purchased GWh (before losses) and are weather normalized to the Test Year heating and cooling degree day assumptions.

Note 2 that accompanies the table states:

Total Normalized MVA are weather normalized MVA.

Question(s):

a) Please provide a forecast of base distribution revenue for each year of 2025 to 2029 assuming values at the 5th, 25th, 75th and 95th percentiles of the probability distribution of forecast consumption given expected variability in weather.
b) For each revenue forecast using these weather-driven consumption inputs, identify the amount to be recorded in the revenue variance subaccount of the proposed revenue variance subaccount of the proposed demand related variance account given the proposed revenue forecast in Reference 1.
c) On page 4 of Reference 1, Toronto Hydro states its forecast of customer count is the product of "model statistics and expert judgment" (Ex 3-1-1 p4).
    i. Please provide an estimate of the customer count at the 5th, 25th, 75th and 95th percentiles of a probability distribution, or reasonable equivalent, reflecting the potential range of change in customer count over the period.
    ii. Please estimate the base distribution revenues associated with each of these different customer forecast inputs, holding all other inputs equal, by rate class.
    iii. Please identify the amount to be recorded in the DRVA for each revenue forecast under different forecast customer count levels, by rate class.

3-Staff-284
Ref 1: Exhibit 1C / Tab 3 / Schedule 3 / Appendix B/ p. 28
Ref 2: Exhibit 1C / Tab 3 / Schedule 3 / Appendix C/ p. 29
Ref 3: Exhibit 3 / Tab 2 / Appendix 2-H
Ref 4: EB-2018-0165 / THESL_APPL_U_T3_S02_App A_OEB Appendix 2-H Other Operating Revenue_20190430

Preamble:
Since the completion of the transactions in EB-2009-0180/1/2/3 Toronto Hydro has owned streetlighting assets in the City of Toronto and Toronto Hydro Energy has owned expressway lighting assets as well as all the light fixtures.

Toronto Hydro's 2021 Financial Statements and Notes state revenues from street lighting services was $7.8M in 2021 and $6.9M in 2020. Toronto Hydro's 2022 Financial Statements and Notes state revenues from street lighting services was $8.3M in 2022. These values match the entries for line 4220 Other Electric Revenues in reference 3.

OEB staff have compiled the following table from Appendix 2-H found in both reference 3 and reference 4.

Table 3-1: USoA 4220

	Actual				Bridge	Actual / Forecast	actual		bridge		Forecast				
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Ref 3						6.9	7.8	8.2	6.1	6.4	6.8	6.9	7.0	7.2	7.3
Ref 4	7.0	8.2	9.2	8.0	8.5	8.1									

Question(s):

a) Please review and either verify or correct the information in the preamble.
b) Is it correct to state that in reference 3, the entries in account 4220 Other Electric Revenues are exclusively for streetlighting?
c) Please explain the reasons for the revenue decreases in 2018, 2020 and 2023.
d) What is the actual revenue for 2019?
e) Please explain the reason for the variance between the forecast and actual revenue in 2020.
f) Please provide the revenue requirement calculations for those assets that were previously referred to as streetlighting assets, for each year from 2020 to 2025.

3-Staff-285
Ref 1: Exhibit 3 / Tab 2 / pp. 1, 4
Ref 2: Exhibit 3 / Tab 2 / Appendix 2-H
Ref 3: Exhibit 4 / Tab 5 / Appendix 2-N

Preamble:
OEB staff have compiled the following table showing costs allocated from Toronto Hydro-Electric System Limited to Toronto Hydro Energy Services Inc. from the information in Appendix 2-N.

Table 3-2: Streetlighting Costs Allocated from THESL to THESI

Row Labels	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Streetlighting Design	-	-	-	300	270	250	260	260	270	280
Streetlighting Support	650	540	280	740	740	760	800	840	880	1,130
Grand Total	**650**	**540**	**280**	**1,040**	**1,010**	**1,010**	**1,060**	**1,100**	**1,150**	**1,410**

Question(s):

a) Please review and either verify or correct the information in the preamble.

b) Do the amounts in the table reflect the total cost for providing streetlighting services to THESI?
    i. If not, what are the other costs per year and where are they captured?
    ii. Please describe what activities are included in streetlighting support.
c) Please confirm that their HR, IT, and facilities services are not provided by THESL to THESI.
d) Please outline THESL's involvement THESI's material procurement, accounts payable, warehousing and site delivery are handled, and accounted for.
e) How does THESI pay for energy consumed by streetlights; is there an allocation as in Appendix 2-N, other revenue as in Appendix 2-H or through a formal billing account as with other third-party unmetered loads?

3-Staff-286
Ref 1: Exhibit 3 / Tab 2 / Appendix 2-H

Question(s):

a) In Appendix 2-H, the table for Account 4330 – Costs and Expenses of Merchandising, the first row containing values is labelled "Reporting Basis". What is the correct description for this line item?
b) The historic average over 2020-2024 for the net of 4325 Revenues from Merchandise and 4330 Costs and Expenses of Merchandising is $7.8M. Why is the net of the cost and revenues in 2025 of $10M forecast to be higher than the historic average?

3-Staff-287
Ref 1: Exhibit 3 / Tab 2 / Appendix 2-H
Ref 2: Exhibit 9 / Tab 1 / Schedule 1 / p. 17

Preamble:
Table 9 in reference 2 shows that the revenue built into rates for pole attachments for 2020 to 2024 is $5.1M.

Question(s):

a) Please provided an updated forecast for the number of pole attachments for 2025.
b) What items generate the revenues in the remainder of account 4210 as shown in appendix 2-H? Please break out by year for 2020 through 2025.

4-Staff-288
Ref 1: Exhibit 4 / Tab 1 / Schedule 1 / pp. 14-19
Ref 2: Exhibit 1B / Tab 3 / Schedule 3 / pp. 32-38

Preamble:
In Exhibit 4, Tab 1, Schedule 1 Toronto Hydro compares its unit costs of OM&A and its employee staffing levels to those of a peer group consisting of Hydro One, Hydro Ottawa, Alectra, Elexicon, London Hydro, EnWin, and Enova Power for the 2016-2022 period. The metrics used in these calculations include OM&A per MWh of load, OM&A per customer, the number of full-time employees per $1 million of capex, the number of full-time employees per GWh of load, the number of full-time employees per 1,000 customers, and the number of full-time employees per circuit kilometer of line. Toronto Hydro also presents its MWh of load per customer, commonly referred to as average use.

On page 14 of Exhibit 4, Tab 1, Schedule 1, Toronto Hydro provided its appraisal of this research:

> "Using publicly available data, the historical benchmarking analysis presented in this section demonstrates that Toronto Hydro (i) has a lean workforce compared to its Ontario peers and (ii) is a strong OM&A cost performer compared to other large and mid-sized distributors in the province. Toronto Hydro's efficient OM&A and staffing cost management to date positions the utility well to address a growing need for investments in operations and resourcing without creating undue cost burdens and rate increases for customers in the next rate term."

Unit cost metrics from the APB work are presented in Exhibit 1B, Tab 3, Schedule 3. Toronto Hydro presented the historical trend in these metrics and did not present results for the 2025 test year. The Company also did not present any unit cost comparisons to peers for these APB metrics.

On pages 32-33 of Exhibit 1B, Tab 3, Schedule 3, Toronto Hydro stated:

> "Furthermore, Toronto Hydro notes that the APB econometric model does not account for recognized differences that set Toronto Hydro apart from other Ontario utilities due to its unique urban environment and customer base that includes many high-rise buildings… As such Toronto Hydro, is not in a position to comment on the results of the econometric model."

Question(s):
a) Did Toronto Hydro additionally commission Clearspring to undertake econometric OM&A, capital, capex or unit cost benchmarking or to comment on the APB econometric research?
b) If not, why not?
c) If yes, what were the results?
d) In Clearspring's view, is econometric or unit cost benchmarking likely to yield more accurate benchmarking results for OM&A expenses?

e) Why is Toronto Hydro comparing itself to other Ontario distributors in appraising its OM&A costs but to US distributors in appraising its total costs?
f) Does the quoted statement on the APB econometric model also apply to the APB unit cost research?

4-Staff-289
Ref 1: Exhibit 4 / Tab 2 / Schedule 1 / pp. 7, 28, 30
Ref 2: Exhibit 4 / Tab 2 / Schedule 4 / p. 7

Question(s):

a) Toronto Hydro describes annual planning of vegetation management program which considers criterial such as feeder reliability and time since last prune. The exhibit also references planned trimming activities which are expected reduce costs through reduction of spot trimming. Please clarify if Toronto Hydro has a multi-year vegetation management plan that with scheduled trimming activities that may have small adjustments, or if it schedules vegetation management focus on an annual basis.
b) Based on Toronto Hydro stating there are 4,800 circuit kilometers of overhead lines to trim, and that it has trimmed an average of 1,399 circuit kilometers annually between 2020 and 2022, would it be correct to say the majority of the overhead lines are trimmed on a three-year cycle? Please explain.
c) The ever expanding tree canopy has been included as a cost driver for the increased costs with time.
    a. Please describe how Toronto Hydro has worked with the City of Toronto and developers regarding tree planting species and location, for example, as outlined in the Electrical Safety Authority's publication *Planting Under or Around Powerlines & Electrical Equipment.*
    b. How have items such as underground conversion and storm damage mitigated the impact of additional tree planting in the city?
d) How does bundling the trimming of feeders out of the same substation produce cost savings?
e) Please explain why there is a need for higher yearly increases in the bridge year and test year.
f) Please provide the annual actual and forecast costs of "vegetation management in response to off-cycle requests" that are included in Preventative and Predictive Overhead Line Maintenance, as stated in reference 2, from 2020 through 2029.

4-Staff-290
Ref 1: Exhibit 4 / Tab 2 / Schedule 1 / p. 40
Ref 2: Exhibit 2B / Section E5.4 / pp. 16-17

Question(s):

a) Please explain the need for increased maintenance spending during the 2024-2029 period when Toronto Hydro is replacing meters in the capital AMI 2.0 initiative.
    a. If the meters are being replaced, why does reference 1 state there will be "increased testing and resealing operational costs"?
b) Please explain why there is a need for higher yearly increases in the bridge year and test years.

4-Staff-291
Ref 1: Exhibit 4 / Tab 2 / Schedule 3 / p. 13
Ref 2: Exhibit 4 / Tab 2 / Schedule 4 / p. 15
Ref 3: Exhibit 2B / Section E5.1 / p. 24

Preamble:
In reference 1 Toronto Hydro states it is "piloting inspections of renewable and non-renewable Distributed Energy Resource ("DER") sites, which are electrical generation and storage sites connected to Toronto Hydro's distribution system".

In reference 2 Toronto hydro states spot tree trimming and corrective work for DER sites is a cost driver for increased costs.

In reference 3 Toronto Hydro indicates that DERs cover their own connection costs.

Question(s):

a) What is the estimated cost that has been included for both inspections, and spot tree trimming and corrective work, for third party owned DER sites for 2023-2029?
b) Why is Toronto Hydro incurring O&M costs for DER sites?

4-Staff-292
Ref 1: Exhibit 4 / Tab 2 / Schedule 4 / pp. 1, 6, 19

Question(s):

a) Please reproduce Table 1 in reference 1 by:
    i. Removing the costs for "vegetation management in response to off-cycle requests",
    ii. Creating a separate line item for items located within substations,

iii. Creating a separate line for items located within the underground distribution system, and
iv. Creating a separate line for items located within the overhead distribution system.

b) For 2020 through 2023 please fill in the table below with:
   i. The number of requests per year in each of the P1, P2, P3 and P4 categories.
   ii. The number of requests that were completed within 15 days for P1s, 60 days for P3s and 180 days for P3s.

Work Requests								
	2020		**2021**		**2022**		**2023**	
	Number Opened	Closed within Metric	Number Opened	Closed within Metric	Number Opened	Closed within Metric	Number Opened	Closed within Metric
P1								
P2								
P3								
P4		NA		NA		NA		NA

c) Toronto Hydro states that installation of animal guards is at risk if this program funding is not fully funding in the forecast period. What are the costs per year for installing animal guards in the historic period?
d) What are the costs per year for replacing faulted circuit indicators in the historic period?

4-Staff-293
Ref 1: Exhibit 2A / Tab 2 / Schedule 4 / p.13

Question(s):

a) Please provide all capital and maintenance costs per year for Delta-Wye corrective work.

4-Staff-294
Ref 1: Exhibit 4 / Tab 2 / Schedule 5 / p. 21
Ref 2: Exhibit 4 / Tab 2 / Schedule 7 / pp. 12-13

Preamble:
Toronto Hydro currently splits work between two independent service providers for the grid response function.

As outlined in reference 2, Toronto Hydro's urban setting has several unique legacy distribution configurations that are not found at the same scale elsewhere in the province, which requires knowledge and experience to effectively respond to unplanned outages.

Question(s):

a) Please provide Toronto Hydro's process for acceptance of assets constructed or repaired under this program, including how Toronto Hydro addresses correction of non-conformances.
b) What is the rate or volume of non-conformances addressed by the contract crews and by Toronto Hydro crews?
c) What has Toronto Hydro recently experienced in terms of employee turn-over rates with the two contractors? How has contracted employee turnover impacted service delivery and outage restoration times?
d) Please outline where in the application evidence, benchmarking for costs, etc. the full-time equivalent employees due to these contractors have been included.
e) Where does the responsibility lay for supplying vehicles, tools, and personal protective equipment to the grid response contractors?
f) Does Toronto Hydro include the emissions of contractor vehicles as part of its emissions in its Net Zero 2040 Strategy?

4-Staff-295
Ref 1: Exhibit 4 / Tab 2 / Schedule 8 / pp. 22 – 27

Preamble:
Since 2020, Toronto Hydro has moved the Key Accounts function into its own segment and increased the scope of work and expenses.

Question(s):

a) How many employees are forecast for this department in 2025?
b) At the end of 2029 expenses for the team will be four times what they were when the unit was in customer care. How has this segment provided savings to offset its cost?
c) How many 1) entities and 2) customers (i.e. individual meter points) are currently addressed by Toronto Hydro's Key Accounts definition.
d) Please describe how costs for this are handled in the cost allocation model.
e) What proportion of the costs are incurred on behalf of each rate class?
f) As a scenario, prepare a cost allocation model where these costs are directly allocated to the causative rate classes.

4-Staff-296
Ref 1: Exhibit 4 / Tab 2 / Schedule 8 / p. 9
Ref 2: Exhibit 9 / Tab 1 / Schedule 1 / p. 27
Ref 3: EB-2023-0143 – Generic Variance Account for Locates – Evidence Filing, July 7, 2023[7]
Ref 4: EB-2023-0143, Decision and Order, October 31, 2023

Preamble:
Reference 3 shows that the annual cost per locate was approximately $31 in 2020 and forecast to increase to $60 in 2023.

Reference 1 states that the segment "includes labour costs and other types of costs known at the time of filing".

Question(s):
a) What cost per locate was used in the preparation of the application? What was the actual average cost per locate in 2023?
b) Does the amount forecast for 2023 and 2024 include all locate costs, or was it prepared with costs in the generic variance account?
c) What are the total forecast volumes and costs, as if there were no variance account for 2023-2025?
d) Does Toronto Hydro plan to update the forecast costs for 2024, or the test period, based on actual costs per locate in 2023 during this proceeding?
e) When will Toronto Hydro file the supplemental evidence to forecast the balances in this account over the current rate period, as stated in Ref 2?

4-Staff-297
Ref 1: Exhibit 4 / Tab 2 / Schedule 10 / p. 9

Question(s):
a) What is the total cost of executed capital managed by this segment, by internal staff and external contractors, per year for 2020-2029?
b) Please provide Toronto Hydro's process for acceptance of assets constructed by external contractors, including how Toronto Hydro addresses correction of non-conformances.

4-Staff-298
Ref 1: Exhibit 4 / Tab 2 / Schedule 14 / pp. 6, 30, 45

[7] https://www.rds.oeb.ca/CMWebDrawer/Record/801395/File/document

Question(s):

a) What impact is AMI 2.0 forecast to have on the expenses for Billing, Remittance and Meter Data Management segment?
b) Please reproduce *Table 5: Collections Segment Expenditures ($Millions)* with a separate row for bad debt expense.
c) Expenses for the collections segment increase by more than $2.6M over 2022 to 2025 due to payroll costs for vacant positions, compensation increases, and staff returning from the CIS project. With staff returning form the CIS upgrade project to support operations, why was there still a need for additional headcount?
d) Please explain why there is a need for additional staff, and therefore expense increases, in the bridge years and test years?

4-Staff-299
Ref 1: Exhibit 4 / Tab 2 / Schedule 15 / p. 12
Ref 2: Powering Ahead, 2020 Annual Report, Toronto Hydro Corporation
Ref 3: Court Bulletin, Ontario Ministry of Labour, Immigration, Skills Development, September 27, 2022[8]

In Reference 1 Toronto Hydro states:

> "Our recordable injury performance has improved by 43 percent since 2018 and we have not had any critical or fatal incidents since that time".

Question(s):

a) Please clarify the inconsistencies between the referenced documents.

4-Staff-300
Ref 1: Exhibit 4 / Tab 2 / Schedule 15 / pp. 20, 22, 26

Question(s):

a) Please confirm that health and safety related training development and delivery costs are in the Talent Management, Change Leadership and Sustainability segment budget.
b) The budget increase from $5.9M in 2021 to $10M in 2025 was attributed to a reorganization in the division.
    i. Please provide details on how the division was reorganized in a manner that resulted in a sustained additional $4.1M of expenses per year.

[8] Worker Fatality During Electrical Maintenance Results in $200,000 Fine for Toronto Hydro | Ontario Newsroom

ii. Why would preparing a rate application, a routine activity at Toronto Hydro, be an initiating factor for a reorganization?

c) Please explain why there is a need for increases in the bridge years and test year.

4-Staff-301
Ref 1: Exhibit 4 / Tab 2 / Schedule 16 / pp. 5, 10-12

Preamble:
Toronto Hydro explains increases in the Controllership segment from $6.5M in 2020 to $9.4M in 2025.

Question(s):

a) How many additional headcount were required to support each of increased capital spending in the 2020-2024 program and preparation of the 2025-2029 rate application.
b) Why was the staffing level required to complete the 2020-2024 rate application not sufficient to prepare the 2025-2029 application?
c) Please explain why there is a need for higher yearly increases in the bridge years and test year for both the Controllership and External Reporting segments.

4-Staff-302
Ref 1: Exhibit 4 / Tab 2 / Schedule 16 / pp. 15-16

Preamble:
Toronto Hydro explains increases in the Financial Services segment from $6.7M in 2020 to $10.5M in 2025 is largely due to higher insurance premiums. OEB staff have created the table below which shows the Gross Financial Services budget, and what is referred to as the Net Financial Services budget, which excludes the impact of the stated insurance premium increases. The $1.2M increase from 2022 to 2025 has been spread equally over the three years for illustrative purposes. The increase of the Net Financial services expenses from 2020 to 2025 is $1.3M (average annual compound rate of 3.6%).

	Expenses ($M)					
Segment	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Gross Financial Services	6.7	7.7	8.4	9.3	9.7	10.5
Subtract Insurance Increases	-	0.8	0.5	0.4	0.4	0.4
Net Financial Services	6.7	6.9	7.1	7.6	7.6	8.0

Question(s):

a) Please review and either verify or correct the information in the preamble.
b) What steps is Toronto Hydro taking to limit and manage increasing insurance premiums?

4-Staff-303
Ref 1: Exhibit 4 / Tab 2 / Schedule 18 / pp. 18-19

Question(s):

a) Please provide a more detailed explanation for the 61% cost increase in Legal Services from $6.1M in 2020 to $9.8M in 2025.

4-Staff-304
Ref 1: Exhibit 4 / Tab 2 / Schedule 18 / p. 24
Ref 2: Excel file: THESL_4_T02_S18_AppA – OEB Appendix 2-M_20231117

Question(s):

a) Please re-file OEB Exhibit 4, Tab 2, Section 18, Appendix 2-M, including the missing data for 2021.

4-Staff-305
Ref 1: Exhibit 4 / Tab 2 / Schedule 18 / pp. 25-26

Question(s):

a) Please provide a more detailed explanation for the 84% sustained cost increase in Regulatory Affairs from $3.8M in 2020 to $7.0M in 2025.
    i. Please outline any one-time costs that may have been included in Regulatory Affairs versus those contained in Regulatory Applications.

4-Staff-306
Ref 1: Exhibit 4 / Tab 2 / Schedule 18 / pp. 38-39

Question(s):

a) Please provide a more detailed explanation for the 83% cost increase in Communications and Public Affairs from $3.6M in 2020 to $6.6M in 2023.

4-Staff-307
Ref 1: Exhibit 4 / Tab 4 / Schedule 2 / OEB Appendix 2-K

Question(s):

a) With respect to individual contributor positions, that is, those employees who have no direct reports, but whose employment is not covered by a collective agreement:
   i. What line item in Appendix 2-K has Toronto Hydro included them in?
   ii. What positions fall under this classification?
   iii. What were the actual FTEs for each year from 2020-2023?
   iv. What are the forecast FTEs for each year from 2024-2029?

4-Staff-308
Ref 1: Exhibit 4 / Tab 4 / Schedule 3 / p. 6
Ref 2: Exhibit 4 / Tab 4 / Schedule 2 / OEB Appendix 2-K
Ref 3: EB-2018-0165 / THESL_Sch08 – Workforce Staffing and Compensation OEB Appendix 2-K_xlsx_20200121

Preamble:
In reference 1 Toronto Hydro states it "needs to expand its workforce by approximately 214 resources starting in 2024 through 2029 to meet the imperatives and objectives of its 2025-2029 investment plan".

Reference 3 is the Appendix 2-K submitted as part of the draft rate order in Toronto Hydro's last CIR application. It contains the forecast information for 2020. OEB staff have compiled the information both versions of Appendix 2-K in the table below.

	Forecast (EB-2018-0165)	Actual			Bridge		Forecast				
	2020	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
FTE – Management	66	71	67	73	86	96	96	96	97	98	98
FTE – Non-Management	1393	1,250	1,136	1,154	1,221	1,367	1,435	1,477	1,499	1,519	1,532
FTE – Total	1459	1,321	1,203	1,227	1,307	1,463	1,531	1,572	1,596	1,617	1,631
FTE Management Change	-	5	-4	6	13	10	0	0	1	1	0
FTE Non-Management Change	-	-143	-114	18	67	146	68	42	22	20	13
% change FTE Management	-	7.9	-5.6	9.0	17.8	11.6	0.0	0.0	1.0	1.0	0.0
% change FTE non -Management	-	-10.3	-9.1	1.6	5.8	12.0	5.0	2.9	1.5	1.3	0.9
% change FTE Total	-	-9.4	-8.9	2.0	6.5	11.9	4.6	2.7	1.5	1.3	0.9
Non-Man / Man	21.2	17.6	17.0	15.8	14.2	14.2	14.9	15.4	15.5	15.5	15.6

Question(s):

a) Please review and either verify or correct the information in the preamble.
b) Please confirm that and explain why, as shown in the preamble, almost half of the 214 hires required for the 2024-2029 period would occur in 2024.
c) Toronto states the non-management staff numbers decreased from the 2020 plan to 2021 actual largely due to impacts of the COVID-19 pandemic. Please confirm that non-management numbers at the end of 2024 are forecast to be below the plan numbers for 2020.
d) Please explain the requirement for a 48% increase in management employees from 2020 plan to 2024 forecast.
e) Please explain the reason for the non-management staff to management staff ratio has decreased from the 2020 plan to the 2024 bridge year and through the 2025-2029 forecast period.
f) How does Toronto Hydro intend to execute its significantly larger capital plan for the forecast period, compared to the historic period, with the proposed increase of non-management staff during the forecast period over 2020 levels?
g) Please outline any projects THESI has, that Toronto Hydro is aware of, that will result in increased services from Toronto Hydro, such as LED conversion of streetlights.

h) What would be the impact be to the 2 management positions and approximately 100 non-management positions to be hired during the forecast period if there were reductions to capital budget for 2025-2029 of 10, 20 or 30%?

4-Staff-309
Ref 1: Exhibit 4 / Tab 1 / Schedule 1 / pp. 32-33, 38
Ref 2: Exhibit 4 / Tab 2 / Schedule 9 / Table 1, Table 3
Ref 3: Exhibit 4 / Tab 2 / Schedule 9 / Section 5.1.2

Preamble:
Toronto Hydro has proposed an increase to its workforce plan, particularly in the area of System Planning, in part to support work related to the energy transition and electrification of its system, including its grid modernization plan, flexibility services, including integration of DERs and Non-Wires solutions.

Question(s):
a) Please provide a table that shows the staffing levels in the system planning group during the current rate period and the proposed 2025-2029 rate period.
b) Please indicate the number of staff proposed to be dedicated to work related to the energy transition, the roles of the staff, a general description of their responsibilities, and salary levels for the roles.
c) Please discuss the need and identify the specific projects/tasks that the proposed new staff related to the energy transition and electrification (including grid modernization, DER integration and non-wires solutions) will be assigned over the 2025-2029 period.
d) Has Toronto Hydro retained staffing with the required knowledge to deliver local and/or Province-Wide CDM programs (currently offered through the IESO) should policy change and local distribution companies be provided a path for greater program activity? If yes, please discuss how these staff have been incorporated into other business functions, and the ease with which they could manage additional responsibilities should they be required.

4-Staff-310
Ref 1: Exhibit 4 / Tab 5 / pp. 2, 6-7
Ref 2: Exhibit 4 / Tab 5 / Appendix 2-N

Preamble:
OEB staff have compiled the following tables showing costs allocated from Toronto Hydro Corporation (THC) to Toronto Hydro-Electric Systems Limited (THESL), from the information in Appendix 2-N.

Table 4-1: Percent of Corporate Costs Allocated from THC to THESL

Year	Corporate Stewardship – Board of Directors	Corporate Stewardship – CEO	Finance Stewardship – CFO
2020	52%	52%	83%
2021	96%	96%	93%
2022	89%	90%	89%
2023	89%	89%	89%
2024	89%	89%	89%
2025	89%	89%	89%
2026	89%	89%	89%
2027	89%	89%	89%
2028	89%	89%	89%
2029	89%	89%	89%

Table 4-2: Amount Allocated from THC to THESL ($ 000)

Year	Corporate Stewardship Board of Directors	Corporate Stewardship CEO	Finance Stewardship CFO	Total
2020	170	2,580	1,100	3,850
2021	260	2,090	1,500	3,850
2022	250	2,950	1,390	4,590
2023	350	2,100	1,240	3,690
2024	360	2,170	1,540	4,070
2025	370	2,250	1,580	4,200
2026	380	2,330	1,630	4,340
2027	380	2,420	1,690	4,490
2028	390	2,500	1,740	4,630
2029	400	2,600	1,790	4,790

Question(s):

a) Please review and either verify or correct the information in the preamble.
b) Reference 1 states “Toronto Hydro’s shared services methodology has not changed since the utility’s last rebasing application.” Please explain why the Corporate Stewardship costs for the Board of Directors and CEO changed from 52% in 2020 to 89% in 2025.
c) Please explain what costs are captured in Corporate Stewardship – Board of Directors, Corporate Stewardship – CEO and Corporate Stewardship – CFO.

4-Staff-311
Ref 1: Exhibit 4 / Tab 5 / Schedule 1

Question(s):

a) Please provide any third-party review of the corporate cost allocation methodology used for transactions between Toronto Hydro and any of its affiliates.

5-Staff-312
Ref 1: Exhibit 5 / Tab 1 / Schedule 1 / p. 7
Ref 2: EB-2009-0084, Report of the Board on the Cost of Capital for Ontario's Regulated Utilities, December 11, 2009, p. 57
Ref 3: EB-2018-0165, 2020 Custom IR, Decision and Order, December 19, 2019, p. 153
Ref 4: Excel Appendix OA-OB, November 17, 2023
Ref 5: Excel Revenue Requirement Workforms (2025, 2026, 2027, 2028, and 2029), November, Tab 7 Cost of Capital, November 17, 2023
Ref 6: OEB Letter, 2024 Cost of Capital Parameters, October 31, 2023

Preamble:
Toronto Hydro stated that its short-term debt rate for ratemaking purposes is based on a "One-Month Banker's Acceptance rates (Bloomberg L.P.)", plus a five-basis point administration fee.

Toronto Hydro provided the following table in its evidence.

Table 5-1: Short-Term Rates

Year	Short Term Rates
2023	5.15%
2024	5.40%
2025	5.40%

OEB staff notes that Toronto Hydro has calculated its short-term debt rate for ratemaking purposes in a different manner than that set for electricity distributors in the *Report of the Board on the Cost of Capital for Ontario's Regulated Utilities.* However, the OEB accepted Toronto Hydro's different approach in its last Custom IR proceeding.

In Appendix-OA filed November 17, 2023, Toronto Hydro proposes a short-term debt rate of 5.25%. A short-term debt rate of 5.25% is also reflected in Toronto Hydro's Excel revenue requirement workforms for the rate years 2025 through 2029.

The deemed short-term debt rate of 6.23% for electricity distributors was issued by the OEB on October 31, 2023.

Question(s):

a) Please confirm that to determine the final revenue requirement for 2025 and the subsequent years (i.e., 2026-2029), Toronto Hydro intends to use a short-term rate of 5.25%, or a different rate as updated through interrogatories. If this is not the case, please explain.
b) Please explain why a short-term debt rate of 5.40% is reflected in Toronto Hydro's Table 6, but a different rate of 5.25% is used in Appendix-OA and the Excel revenue requirement workforms for the rate years 2025 through 2029.
c) Please provide the supporting calculations for the short-term debt percentages shown in Toronto Hydro's Table 6 and Appendix-OA, including which Bloomberg ticker(s) was used.
d) Please confirm that the manner in which Toronto Hydro has calculated its short-term debt rate and to determine the final revenue requirement for 2025 and the subsequent years (i.e., 2026-2029), is consistent with that approved by the OEB in Toronto Hydro's 2020 Custom IR proceeding. If this is not the case, please explain.
e) Please explain why it is appropriate for Toronto Hydro to continue to depart from using the deemed short-term debt rate approved by the OEB (which is generally used by other electricity distributors).
f) Please explain the impact on Toronto Hydro's 2025 through 2029 revenue requirements if Toronto Hydro used the deemed short-term debt rate of 6.23% issued by the OEB on October 31, 2023.

5-Staff-313
Ref 1: Exhibit 5 / Tab 1 / Schedule 1 / p. 4, 6
Ref 2: Excel Appendix OA-OB, November 17, 2023
Ref 3: Exhibit 1C / Tab 3 / Schedule 6
Ref 4: OEB letter, 2024 Cost of Capital Parameters, October 31, 2023
Ref 5: Excel Revenue Requirement Workforms (2025, 2026, 2027, 2028, and 2029), November, Tab 7 Cost of Capital, November 17, 2023

Preamble:
Toronto Hydro stated that is had an all-in coupon rate of 4.93% on Toronto Hydro Corporation's (THC) 30-year issuance on August 28, 2023. However, OEB staff could not find this bond listed in Toronto Hydro's Appendix OB_Debt Instruments for the rate year 2025.

In Appendix OB, Toronto Hydro indicated that on October 2, 2023, it had issued a debenture for $200,000,000 with a rate of 5.25%, however, no promissory note was filed in Toronto Hydro's evidence in Exhibit 1C. Also, "Table 5: Forecasted Long-Term Debt Issues" on page 6 of Exhibit 5 shows a forecasted rate of 5.00% and not 5.25% for the debt issued in October 2023.

The deemed long-term debt rate of 4.58% for electricity distributors was issued by the OEB on October 31, 2023.

Toronto Hydro has calculated a long-term debt rate of 3.95% in Appendix OB for the 2025 rate year. A long-term debt rate of 3.95% is also reflected in Toronto Hydro's Excel revenue requirement workforms for the rate years 2025 through 2029.

Question(s):

a) Please reconcile the debt that Toronto Hydro stated was issued on August 28, 2023 with the debt issuances shown in Appendix OB.
b) Please provide the promissory note for the debenture issued October 2, 2023 for $200,000,000, explain whether the rate was 5.00% or 5.25%, and update the evidence as required.
c) If any debt instruments have been issued since the preparation of the pre-filed evidence for the current proceeding, please update the relevant evidence (including Appendix OA and Appendix OB), and provide a copy of the relevant promissory note(s).
d) For each promissory note shown on Appendix OB with rates greater than the current deemed long-term debt rate of 4.58%. please provide the following:
    i. The start date of the debt.
    ii. The deemed long-term debt rate in place at the time the debt was issued
    iii. The need for the debt and rationale supporting taking the debt at the rate offered
e) Please provide rationale supporting the need for the forecasted debt issues shown in Appendix OB, including any specific capital project(s) that the debt funding is for.
f) Please confirm that to determine the final revenue requirement for 2025 and the subsequent years (i.e., 2026-2029), Toronto Hydro intends to use a long-term rate of 3.95%, or a different rate as updated through interrogatories. If this is not the case, please explain.

5-Staff-314
Ref 1: Exhibit 5 / Tab 1 / Schedule 1 / p. 1
Ref 2: EB-2009-0084, OEB Report, Report of the Board on the Cost of Capital for Ontario's Regulated Utilities, December 11, 2009, p. 50
Ref 3: Filing Requirements For Electricity Distribution Rate Applications - 2023 Edition for 2024 Rate Applications, Chapter 2 Cost of Service, December 15, 2022, p. 36

Preamble:
Toronto Hydro proposes to set its capital structure for ratemaking purposes in accordance with the OEB's cost of capital policy (EB-2009-0084) issued on December

11, 2009 (OEB Report). Toronto Hydro's debt to equity split for the test years is set at 60:40, with the debt component including a deemed 4% short-term debt component.

The OEB's filing requirements require explanations for material changes in actual capital structure or material differences between actual and deemed capital structure.

Question(s):

a) Please provide Toronto Hydro's actual debt to equity ratio for each year 2020 to 2023.
b) Please explain any material differences between the actual debt to equity ratio for each year 2020 to 2023 and the deemed ratio of 60:40 previously used to set rates.
c) Please explain any material changes in the actual capital structure for the period 2020 to 2023, year-over-year.

5-Staff-315
Ref 1: Exhibit 5 / Tab 1 / Schedule 1 / pp. 1, 2
Ref 2: EB-2009-0084, OEB Report, Report of the Board on the Cost of Capital for Ontario's Regulated Utilities, December 11, 2009, p. 50

Preamble:
Toronto Hydro proposes to set its capital structure for ratemaking purposes in accordance with the OEB Report. Toronto Hydro's debt to equity split for the test years is set at 60:40, with the debt component including a deemed 4% short-term debt component.

Toronto Hydro also stated that to determine the final revenue requirement for 2025 and the subsequent years (i.e., 2026-2029), Toronto Hydro intends to rely on the ROE set by the OEB in the final quarter of 2024.

Question(s):

a) Under current and forecasted macroeconomic conditions, what are the key business risks and financial risks faced by Toronto Hydro?
b) Please identify and explain how all risk factors were considered by Toronto Hydro, including energy transition risk, volumetric risk (i.e., energy and demand), financial risk, operational risk, and regulatory risk. Has Toronto Hydro taken into account these risks in its evaluation of its business risk and financial risk, its requested allowed ROE, and its requested deemed capital structure?
c) Please explain whether Toronto Hydro's view is that OEB regulation can mitigate all business risks and financial risks, including the risk associated with the energy

transition, or that there are certain business risks and financial risks that cannot be mitigated by regulation.

5-Staff-316
Ref 1: Exhibit 5 / Tab 1 / Schedule 1 / pp. 1, 2
Ref 2: Exhibit 1C / Tab 3 / Schedule 7 / Appendix A and Appendix B

Preamble:
OEB staff requests further information from Toronto Hydro that relates to its requested allowed ROE and deemed capital structure and other utility comparables.

Toronto Hydro has provided its rating agency reports in Exhibit 1C, as follows:

- Appendix A: S&P, May 11, 2023
- Appendix B: DBRS, May 1, 2023

Question(s):

a) Please provide any subsequent rating agency reports from S&P and DBRS issued after May 2023.
b) Please explain whether any rating agency has expressed concerns with Toronto Hydro's requested allowed ROE and requested deemed capital structure.
c) Has Toronto Hydro performed any analysis that compares its business risk and financial risk, its requested allowed ROE, and its requested deemed capital structure to other large electricity distribution companies in Canada or the U.S.? If so, please provide that analysis.
d) Please confirm that Toronto Hydro has lower business risk and financial risk than most other Ontario electricity distributors due it being able to leverage its sheer size (i.e., considering operational efficiencies and economies of scale). If this is not the case, please explain.
e) Please explain whether Toronto Hydro has any problems attracting capital and provide a comparison of the rates it has recently borrowed at, compared to its utility peers.
f) Please provide evidence that shows how Toronto Hydro's key actual financial metrics have trended from 2016 through 2023.

6-Staff-317
Ref 1: Excel spreadsheet,
THESL_6_T02_S02_2025_Income_Tax_PILs_Updated_20231219
Ref 2: Exhibit 6 / Tab 2 / Schedule 1/ December 19, 2023 / p. 1

Preamble:

OEB staff notes significant fluctuations of PILs submitted for bridge and test years through 2024 to 2029, as shown below in the Table 6-1. The PILs provisions were taken from the above-noted Exhibit 6 reference.

Table 6-1: Comparison of 2024 through 2029 PILs Provisions

	Bridge	**Forecast**				
	2024	**2025**	**2026**	**2027**	**2028**	**2029**
PILs	9.1	27.9	30.5	20.0	56.2	47.7
$ Change		18.8	2.6	(10.5)	36.2	(8.5)
% Change		207%	9%	(34%)	181%	(15%)

Question(s):

a) Please confirm that Toronto Hydro agrees with values and calculations in Table 6-1.
b) If this is not the case, please update Table 6-1 for 2024 through 2029 values.
c) Please also update Table 6-1 to show 2023 values and the associated $ Change and % Change.
d) Please provide an explanation to year over year increases and decreases shown in Table 6-1, or in any updated Table 6-1 by Toronto Hydro.

6-Staff-318
Ref 1: Excel spreadsheet, THESL_6_T02_S02_2025_Income_Tax_PILs_Updated_20231219
Ref 2: Exhibit 6 / Tab 2 / Schedule 3, 2022 T2 Corporation Income Tax Return, November 17, 2023
Ref 3: Exhibit 6 / Tab 2 / Schedule 1, December 19, 2023 p. 5

Preamble:
OEB staff compared the tax return provided by Toronto Hydro to the historical tax data in PILs model. The provided tax return is for the taxation year 2022, while historical data required is for taxation year 2023.

In the Excel PILs model, Toronto Hydro stated that certain sections of the PILs model will be updated once the 2023 tax return is filed in June 2024.

Toronto Hydro stated that it does not have any non-capital or capital loss carry-forwards as of the end of December 2022, and does not expect to have such loss carry-forwards as of the end of December 2029.

Question(s):

a) Please provide the 2023 tax return when it is available.

b) If the 2023 tax return is not available at the time of interrogatory responses, please explain how Toronto Hydro proposes to have discovery on any evidence related to the 2023 tax return.
c) Please update the PILs model for 2023 historical data in all tabs of the PILs model relating to 2023 amounts.
d) Please reconcile the historical data relating to 2023 amounts in the PILs model to the 2023 tax return, including the UCC closing balance in Tab H8 Sch 8 CCA Hist
e) Please confirm that there are no loss carry forwards that will be included on Toronto Hydro's 2023 tax return. If there are loss carry forwards, please incorporate into the PILs model.

6-Staff-319
Ref 1: Excel Spreadsheet,
THESL_6_T02_S02_2025_Income_Tax_PILs_Updated_20231219
Ref 2: Exhibit 6 / Tab 2 / Schedule 1 / December 19, 2023 / p. 2, 6

Preamble:
Toronto Hydro stated that for Tabs "B8 Sch 8 CCA Bridge" and "T8 Sch 8 CCA Test", it updated the following in the "Relevant factor" column for 2024 Bridge year and 2025 Test year:

- Class 43.1 updated from 2.33 to 1.5
- Class 43.2 updated from 1.0 to 0.5
- Added Class 54 row and added relevant factor with 1.5
- Other Classes updated from 0.5 to 0

Toronto Hydro described the phase-out of accelerated CCA in its evidence. Toronto Hydro stated that for eligible assets acquired after November 20, 2018 and put in service after 2023 and before 2028, the accelerated CCA is up to two times the normal first-year CCA deduction.

Question(s):
a) Please explain the rationale for any non-zero relevant factors in the bridge year (2024) and test years (2025), as noted in the preamble to this interrogatory.
b) Please explain why the non-zero relevant factors noted in the preamble to this interrogatory were not factored into Toronto Hydro's 2026 and 2027 CCA schedules in the PILs model.
c) Please confirm that non-zero relevant factors are not applicable to the Toronto Hydro's 2028 and 2029 CCA schedules in the PILs model, as the phase out is expected to be finished on December 31, 2027. If this is not the case, please explain.

d) Please confirm that the relevant factors noted in the preamble to this interrogatory will be used by Toronto Hydro in its actual 2024 tax return to be filed with the Canada Revenue Agency. If this is not the case, please explain.

6-Staff-320
Ref 1: Excel Spreadsheet,
THESL_6_T02_S02_2025_Income_Tax_PILs_Updated_20231219
Ref 2: Excel Spreadsheet, THESL_2A_T01_S02 - OEB Appendix 2-BA_20240129

Preamble:
OEB staff compared the capital additions per year for Bridge (2024) and Test (2025 to 2029) years between Reference 1 and Reference 2 and noted the differences below.

Table 6-2: Comparison of Capital Additions

Capital Additions	PILS module Sch 8	Appendix 2-BA	Difference
Historical Year 2023	-	607,858,845	
Bridge Year 2024	591,256,223	607,861,685	(16,605,462)
Test Year 2025	632,309,581	647,410,639	(15,101,058)
Test Year 2026	685,392,626	696,660,168	(11,267,542)
Test Year 2027	772,784,474	811,377,756	(38,593,282)
Test Year 2028	753,616,719	776,588,421	(22,971,702)
Test Year 2029	853,206,373	898,351,761	(45,145,388)

Question(s):
a) Please update Table 6-2 to show 2023 actual capital additions in the PILs model Schedule 8 and the difference versus Appendix 2-BA.
b) Please confirm that Toronto Hydro agrees with the values and calculations in Table 6-2. If not confirmed, please update as applicable.
c) Please explain the differences for the historical, bridge and test years (2023 to 2029). If required, please provide updated evidence, as necessary.

6-Staff-321
Ref 1: Excel Spreadsheet,
THESL_6_T02_S02_2025_Income_Tax_PILs_Updated_20231219
Ref 2: Excel Spreadsheet, OEB Appendix 2-BA_20240129

Preamble:
OEB staff compared the depreciation per year for years 2023 through 2029 between Reference 1 and Reference 2 and noted the differences below:

Table 6-3: Comparison of Depreciation

Depreciation Expense	PILS module Sch 1	Appendix 2-BA	Difference
Historical Year 2023	-	244,251,250	
Bridge Year 2024	270,629,442	254,366,994	16,262,448
Test Year 2025	285,335,169	266,434,512	18,900,657
Test Year 2026	299,636,600	281,231,459	18,405,141
Test Year 2027	319,928,789	301,948,227	17,980,562
Test Year 2028	342,059,947	325,977,318	16,082,629
Test Year 2029	354,470,110	339,731,877	14,738,233

Question(s):

a) Please update Table 6-3 to show 2023 actual depreciation in the PILs model Schedule 8 and the difference versus Appendix 2-BA.
b) Please confirm that Toronto Hydro agrees with the values and calculations in Table 6-3. If not confirmed, please update as applicable.
c) Please explain the differences for the historical, bridge and test years (2023 to 2029). If required, please provide updated evidence upon any revisions.

6-Staff-322
Ref 1: Exhibit 6 / Tab 2 / Schedule 1 / December 19, 2023 p. 5
Ref 2: Exhibit 9 / Tab 1 / Schedule 1 / December 19, 2023 p. 15
Ref 3: EB-2022-0065, 2023 Custom IR Update Decision and Rate Order, December 8, 2022, p. 15
Ref 4: Exhibit 9, Tab 1, Schedule 1, December 19, 2023, p. 30
Ref 5: EB-2018-0165, 2020 Custom IR Decision and Order, December 19, 2019, pp. 149, 150
Ref 6: Filing Requirements For Electricity Distribution Rate Applications, 2023 Edition for 2024 Rate Applications, Chapter 2, Cost of Service December 15, 2022, pp. 63, 64

Preamble:
Toronto Hydro stated that it claimed the maximum CCA amount in 2025-2029. Toronto Hydro confirmed that the accelerated CCA rules introduced by Bill C-97 were applied in the PILs tax models, and that the maximum accelerated CCA were claimed.

Toronto Hydro confirmed that the revenue requirement impacts of the accelerated CCA rules were reflected in its approved 2020-2024 rates. Toronto Hydro stated that the entire 2018 and forecasted 2019 revenue requirement impact of the accelerated CCA rule changes was recorded within the sub-account of Account 1592.

Toronto Hydro noted that the impact recorded in the new sub-account of Account 1592 was approved for disposition starting on January 1, 2023, and was trued-up as part of the application for rates and other charges effective January 1, 2023. Toronto Hydro stated that any forecasting variances over 2020-2024 period will be captured in the Capital Related Revenue Requirement Variance Account (CRRRVA).

Toronto Hydro has proposed to discontinue the CRRRVA in the 2025-2029 rate period.

In its 2020 Custom IR decision, the OEB agreed with Toronto Hydro's treatment of accelerated CCA and the CRRRVA relating to the 2020-2024 period. Toronto Hydro noted that the PILs impact of Bill C-97 (i.e., accelerated CCA) will be embedded in its 2020-2024 capital forecast at the time of the draft rate order, which means that the CRRRVA will capture any forecasting variances over that period.

However, the OEB also determined that Toronto Hydro was required to record the entire 2018 and forecasted 2019 revenue requirement impact of the CCA tax rule changes within Account 1592, PILs and Tax Variances, Sub-account CCA Changes. The OEB directed Toronto Hydro to dispose of the noted sub-account as part of the 2020 Custom IR proceeding.

As per OEB's filing requirements, distributors must provide the following:

i. The full revenue requirement impact recorded in Account 1592, Sub-account CCA Changes and the balance sought for review and disposition.
ii. Calculations for accelerated CCA differences per year, based on actual capital additions. These calculations should include:
    a. The undepreciated capital cost (UCC) continuity schedules for each year, itemized by CCA class.
    b. The calculated PILs/tax differences.
    c. The grossed-up PILs/tax differences.
    d. Any other applicable information.
iii. Confirmation that Account 1592 amounts related to ICM/ACM have been included in the account, if applicable.
iv. A reconciliation of these amounts to the amounts presented in the Account 1592 sub-account for CCA changes in the DVA continuity schedule.
v. If a distributor does not have a balance in this sub-account, the distributor must explain why.

Question(s):

a) Please confirm that the December 31, 2019 balance in Account 1592, PILs and Tax Variances, Sub-account CCA Changes was disposed on a final basis in

Toronto Hydro's 2020 Custom IR proceeding, subject to a subsequent true-up to reflect actual capital additions. If this is not the case, please explain.

b) Please confirm that the balance described in part a) above was approved for disposition in Toronto Hydro's 2020 Custom IR proceeding (subject to a true-up), but the rate rider related to this sub-account was implemented in Toronto Hydro's 2023 Custom IR Update proceeding. If this is not the case, please explain.
c) Please confirm that although the revenue requirement impacts of the accelerated CCA rules were reflected in Toronto Hydro's approved 2020-2024 rates, a true-up to reflect actual capital additions has been recorded in the CRRRVA account. If this is not the case, please explain.
d) Please confirm that Toronto Hydro plans to record any true-ups to reflect actual capital additions for the 2025 through 2029 period in Account 1592, PILs and Tax Variances, Sub-account CCA Changes, given that Toronto Hydro has requested that the CRRRVA account be discontinued in this proceeding. If this is not the case, please explain.
e) Please provide a high level derivation of the accelerated CCA amounts recorded in the CRRRVA account (and/or Account 1592, PILs and Tax Variances, Sub-account CCA Changes, as applicable) for the 2020 to 2029 period. Please show anything that is missing after addressing all of the OEB's filing requirements noted in the preamble to this interrogatory.
f) In Toronto Hydro's response, please also reconcile the 2023 to 2029 accelerated CCA amounts used in the CRRRVA / Account 1592 calculations to the amounts shown in the CCA calculations (Schedule 8) in the PILs model.

6-Staff-323
Ref 1: Excel spreadsheet,
THESL_6_T02_S02_2025_Income_Tax_PILs_Updated_20231219

Preamble:
Toronto Hydro is proposing to re-class $2.5 million of tax credits to OMaA for each of the 2024 through 2029 periods, plus a gross-up of $0.9 million for each of these years.

Question(s):
a) Please confirm that instead of incorporating these $2.5 million of tax credits to reduce the PILs provisions for each of the 2024 through 2029 periods, Toronto Hydro is proposing to reduce OM&A by $3.4 million for each of the 2024 through 2029 periods (including the gross-up impact).
b) If yes, please provide a reference to where the tax credits of $2.5 million (plus the gross-up of $0.9 million) are shown to reduce Toronto Hydro's 2024 through 2029 OM&A budgets.
c) If no, please explain.

d) Please explain what is being proposed for the 2023 period, in relation to the re-class of tax credits and associated gross-up.

7-Staff-324
Ref 1: Exhibit 7 / Tab 1 / Schedule 1 / pp. 1-2

Preamble:
The services weighting factor for all rate classes except CSMUR, USL, and Street Lighting has been set at one. For the Street Lighting and USL rate classes, the customer is required to pay for the services.

Question(s):
a) For customers of rate classes with a services weighting factor of one, when a connection costing more than the basic allowance is required, please detail
    a. If the customer pays the entire cost of the service, please explain why a weighting factor of one is appropriate.
b) For all rate classes, when a service connection requires maintenance, please detail how the cost is apportioned between the Toronto Hydro and the customer.

7-Staff-325
Ref 1: Exhibit 7 / Tab 1 / Schedule 1 / pp. 1-2

Preamble:
Toronto Hydro indicates that the billing and collections weighting factor reflects estimates of billing effort and costs related to each class based on the experience and expertise of Toronto Hydro's billing specialists.

Question(s):
a) Please provide the derivation of the billing and collections weighting factors used.

7-Staff-326
Ref 1: Exhibit 7 / Tab 1 / Schedule 1 / pp. 2-3

Preamble:
The load profiles were updated using 2019 historic actual data. Toronto Hydro states that "For the Residential, CSMUR and General Service rate classes Toronto Hydro used sample metering data sets, while entire rate class data sets were used for Unmetered Scatter Load Class ("USL") and Street Lighting rate classes."

Question(s):
a) Please indicate the sample size used for each rate class, relative to the overall customer base.

b) Please explain the process used to select the sample used for each rate class – e.g. random selection, stratified (based on which criteria), etc.
c) Did Toronto Hydro consider using aggregate data of all customers in any of the residential, CSMUR, or general service rate classes? If not, why not? If so, why was this option rejected?
d) In using a sample of customers for general service, does this include the GS 1,000 to 4,999 and Large Use rate classes, both of which contain under 500 customers?
e) Please explain the methodology used to perform weather normalization of the 2019 load profiles.
f) Please provide the resulting 2019 and 2025 load profiles, including any regression outputs used to weather normalize the 2019 load profiles.
g) Please explain why a single year of historical data, 2019 was used to underpin 2025 load profiles.
h) As a scenario, please provide load profiles using 2023 historical actual data.

7-Staff-327
Ref 1: Exhibit 7 / Tab 1 / Schedule 1 / pp. 3-4
Ref 2: Cost Allocation Model, sheet I6.1 Revenue; sheet O1 Revenue to Cost

Preamble:
Toronto Hydro states that per OEB decisions EB-2014-0116 and EB-2018-0165, approved Street Lighting assets and operating expenses have been included in its 2025 revenue requirement. It goes on to state that for the purpose of cost allocation, these assets and expenses are directly allocated 95% to the street lighting rate class and 5% to the USL class.

Overall, allocated costs for Street Lighting are $26.4M, and allocated costs for USL are $3.8M. Street Lighting therefore reflects 87% of the revenue requirement.

Toronto Hydro states that 100% of the Street Lighting related revenue requirement is offset through a direct allocation to Revenue Offsets. The Cost Allocation model indicates that $19,377,998 of revenue is calculated for the street lighting rate class by multiplying existing base rates times forecasted volumes.

Question(s):
a) Please provide the basis under which the 95% to 5% split remains appropriate ten years after it was first established.
b) Do these assets, used only by street lighting and USL serve a purpose similar to a common distribution asset such that the street lighting and USL rate class does not require the use of the common assets?

i. If so, what steps, if any, has Toronto Hydro taken to ensure that Street Lighting and USL are not allocated costs associated with the common assets.

7-Staff-328
Ref 1: Exhibit 7 / Tab 1 / Schedule 1 / pp. 6-13

Preamble:
The OEB required Toronto Hydro to review the cost allocation to the CSMUR rate class. It stated that "The Board expects that THESL will incorporate the distinction between the secondary and primary systems in future cost allocation studies." Toronto Hydro identified two areas for study, customer count, as well as Line Transformer and Secondary System usage, and noted that these would impact the cost allocation model in sheets I6.2 and I8.

Under the areas of study, Toronto Hydro identified that in addition to CSMUR, portion of customers in each of the Residential, GS < 50 kW rate classes occupied units a building which shared connections with other customers.

Toronto Hydro noted that customers could appropriately refer to customer units served, or buildings served. However, in multi-unit buildings with a bulk meter, it does not have visibility to the number of units and would need to estimate the number. Using a count of buildings is available.

Under the Line Transformer and Secondary System study, estimates were provided for number of buildings that rely on Toronto Hydro's line transformers, and on Toronto Hydro's secondary distribution system. No estimates were provided for the number of kW served using Toronto Hydro Line Transformers and Secondary for each of the examined rate classes.

Impacts of using the building count methodology for total customer counts, or for line transformer and secondary system usage, or the combination of both modifications were provided.

Question(s):
a) Under the alternative line transformer and secondary approach, please indicate any updated values used in sheet I8.
b) If the values in sheet I8 were not updated, please indicate the kW required by each class for Line Transformer and Secondary under each of the 1NCP, 4NCP, and 12NCP scenarios, and please provide the impact of performing such an update.

c) Under the alternative approach of counting units within buildings, including units served behind bulk meters, please explain how unit counts are indicative of cost causation when Toronto Hydro does not provide any service or customer interaction behind the bulk meters, and the aggregate load is already reflected in I8.
    i. If Toronto Hydro believes this is a suitable option for cost allocation, please provide the impacts of using this approach.
d) In the context of the OEB direction around incorporating the distinction between primary and secondary systems in future cost allocation studies, please explain what lead Toronto Hydro to select the status quo methodology as it's proposal for cost allocation.

7-Staff-329
Ref 1: Exhibit 7 / Tab 1 / Schedule 1 / p. 5
Ref 2: EB-2018-0165, Decision and Oder, December 19, 2019, p. 157

Preamble:
The residential rate class revenue-to-cost ratio is proposed to be reduced to 100% from 102.1%, and the CSMUR rate class revenue-to-cost ratio is proposed to be reduced to 100% from 111.7%. Toronto Hydro states that "In accordance with past OEB decisions, rates in the Residential and CSMUR class are set such that the revenue to cost ratios are equal at unity.

In its decision, the OEB stated: "The OEB notes that the revenue-to-cost ratio for the CSMUR class was set at 100% by the OEB when the class was first established for 2012 rates (and as implemented in 2013). There are now several years of actual data for this new class that can be assessed. The OEB concludes that it is appropriate to review in Toronto Hydro's next rebasing application the characteristics of this class, and whether a range should be adopted for the revenue-to-cost ratios going forward."

Question(s):
a) Did Toronto Hydro consider adopting a range approach for revenue-to-cost ratios in the CSMUR rate class?
    i. If this was not considered, please explain why not.
    ii. If this was considered and rejected, please provide the reasons for that determination.
b) Please reference the OEB decision instructing Toronto Hydro to adjust the revenue-to-cost ratios for residential and CSMUR rate classes to 100% and explain why it continues to be appropriate in this proceeding.
c) If a revenue-to-cost ratio range approach were to be adopted for the CSMUR, what range would be most appropriate in Toronto Hydro's view?

8-Staff-330
Ref 1: Exhibit 8 / Tab 1 / Schedule 1 / pp. 4-6

Preamble:
Toronto Hydro is proposing to maintain the current fixed/variable split for its current rates. To do this, it is using estimated 2024 rates, multiplied by 2025 consumption to establish the current fixed/variable split.

Toronto Hydro applies a three-part charge for the unmetered scattered load rate class.

The current fixed charges for the GS < 50 kW, GS 1,000 – 4,999 kW and Large Use rate classes are above the ceiling as calculated by the cost allocation model.

Question(s):
a) Will Toronto Hydro update the proposed 2025 rates using actual 2024 rates to establish the current fixed/variable split?
b) As a scenario, please provide the variable charges that would result from maintaining the existing 2024 fixed charges in the GS < 50 kW, GS 1,000 – 4,999 kW and Large Use rate classes.
c) Please indicate the fixed per connection charge that would result for the USL rate class if the revenue from the per customer charge and per connection were collected from a single per connection charge. Please indicate how this compares to the ceiling from the cost allocation model.

8-Staff-331
Ref 1: Exhibit 8 / Tab 1 / Schedule 1 / pp. 7-8
Ref 2: EB-2018-0165, Decision and Oder, December 19, 2019
Ref 3: EB-2023-0278, Letter Dated September 28, 2023, Consultation on Policy for Standby Rates

Preamble:
Toronto Hydro harmonized its standby rates on an interim basis in 2006. In the 2020-2024 proceeding the OEB directed Toronto Hydro to file a proposal in this proceeding address the interim nature of its standby rates unless it has been otherwise superseded by a generic policy. Toronto Hydro notes that there is an ongoing consultation for standby rates. It also notes that there are ongoing initiatives in the space of DERs which appears to in conflict with standby rates.

Question(s):
a) In the event that the standby consultation does not lead to a policy on standby rates in time for Toronto Hydro's rate order, does Toronto Hydro propose to address the interim nature of its standby rates in any manner?

b) If the standby consultation does provide direction in time to be incorporated, does Toronto Hydro intend to adopt that direction in this proceeding?

8-Staff-332
Ref 1: Exhibit 8 / Tab 1 / Schedule 1 / p. 9

Preamble:
Toronto Hydro used the 2024 RTSR model, with modifications to calculate the 2025 RTSRs, using the 2023 UTRs available at the time of preparation.

Question(s):
a) Please update to the current 2025 model if available at the time of responding to interrogatories.
b) Please update to the current 2024 UTRs.
c) Please incorporate 2023 historic actual host volumes and customer volumes, if available at the time of responding to the interrogatories.

8-Staff-333
Ref 1: Exhibit 8 / Tab 1 / Schedule 1 / pp. 11-12
Ref 2: Appendix 2-R

Preamble:
Toronto Hydro is proposing to maintain its existing loss factors reflecting a distribution loss factor of 1.0249. Appendix 2-R indicates that the actual distribution loss factor in the most recent 5 years is 1.0278.

Over the most recent 4 years, the total loss factor has fluctuated in a relatively narrow band between 1.0281 and 1.0299. In 2018, it was 1.0221.

Question(s):
a) Please explain why Toronto Hydro proposes to use the existing loss factors when more recent loss information is available.
b) Does Toronto Hydro have any insights into the cause of the increase in losses over the most recent 4 years?
c) What are the most cost-effective measures available to Toronto Hydro to offset some of the recent increase in losses?
d) If the required data is available, please provided an updated Appendix 2-R using the years 2019-2023.

8-Staff-334
Ref 1: Exhibit 8 / Tab 1 / Schedule 1 / p. 13
Ref 2: Appendix 2-R

Preamble:
Toronto Hydro proposes implementation of a rate smoothing methodology, aimed at assisting customers in managing bill impacts.

Question(s):

a) Please provide the derivation of the proposed rates for the 2025-2029 years, indicating fixed and variable revenue for each year, division by billing determinants, and implementation of Toronto Hydro's rate smoothing methodology.

8-Staff-335
Ref 1: Exhibit 8 / Tab 1 / Schedule 1 / p. 13

Preamble:
Toronto Hydro states that

> Consistent with EB-2018-0165, Toronto Hydro proposes implementation of a rate smoothing methodology, aimed at assisting customers in managing bill impacts. Toronto Hydro's proposed rate smoothing plan offers several benefits: (i) it avoids a one-time step-change increase for most customers in the rebasing year (2025), while (ii) maintaining relatively consistent year-over-year annual increases for all customer classes.

Question(s):

a) Please confirm that this approach complicates consideration of the ratemaking treatment needed to address cost growth in the out years of the proposed plan.
b) Please provide additional details on how this rate smoothing will be implemented (e.g., over what time frame will the smoothing take place, will Toronto Hydro receive interest on any deferred cost recovery).
c) Please identify the OEB policy that supports using DVA credits for rate smoothing purposes.
d) Please confirm that Toronto Hydro expects to be able to continue with the same rate smoothing mechanism at the next rebase proceeding. If not, please explain.
e) Toronto Hydro's proposed revenue requirement surges in 2028. Since it is open to smoothing its *rate* trajectory during the years of the plan, could it not instead smooth its *revenue requirement* trajectory so that revenue cap indexing is more compensatory?

9-Staff-336
Ref 1: Exhibit 9 / Tab 1/ Schedule 1 / p. 12
Ref 2: THESL 2021 Audited Financial Statements, Note 8 Regulatory Balances

Preamble:

In section 4.4 of reference 1, Toronto Hydro states that they sold one of their surplus properties in 2021 resulting in an actual net gain of $1.6M.

In reference 2, the balance arising in 2021 relating to gains on disposals is $0.1M. In the 2020-2024 CIR decision and rate order, the incremental balance related to the actual realized gain and tax savings that exceeded the approved rate riders in connection with the disposal of the first two LDC properties was approved for disposition over a 22-month period commencing on March 1, 2020. The OEB also approved disposition of the actual realized gain and tax savings in connection with the disposal of the third property over a 22-month period commencing on March 1, 2020.

Question(s):

a) Please explain and reconcile the difference in gains between reference 1 and reference 2.
b) Please confirm whether there are any residual balances to be disposed of from the sale of the three properties noted above.

9-Staff-337
Ref 1: Exhibit 9 / Tab 1 / Schedule 1 / pp. 19-20

Preamble:
In 2018, Toronto Hydro disposed of its property at 5800 Yonge, resulting in a giveback to customers in the current 2020-2024 rate period of $73.7 million based on the fair market value payment that it received for this property. The gain on sale of 5800 Yonge was recorded in Account 1508 subaccount Variance Account for Gains on Sale of Properties Related to the Operating Centres Consolidation Program (“OCCP”), established by the OEB in the 2015-2019 rate application.

In addition to the fair market value of this property, a variable consideration (“bonus payment”) was incorporated into the Agreement of Purchase and Sale (“APS”) based on the potential increase in gross floor area as a result of zoning bylaw applications submitted by the purchaser. The increase in gross floor area was achieved and Toronto Hydro intends to return this variable consideration (bonus payment) to ratepayers to offset rate pressures in the 2025-2029 period, through the OCCP variance account. The amount proposed for clearance is a $33.4 million credit to customers.

Toronto Hydro requests the continuation of this variance account in the 2025-2029 period as there may be further variable consideration available to the utility under the APS.

Question(s):

a) Given that the sale of 5800 Yonge occurred in 2018, please discuss what involvement Toronto Hydro still has with the property.
b) Please discuss what other variable considerations might be available to the utility under the APS.
c) Does Toronto Hydro expect to realize any further variable considerations in the future? Are these considerations forecasted in the 2025-2029 revenue requirement?
d) Please confirm whether Toronto Hydro has variable considerations with a purchaser on any other properties.

9-Staff-338
Ref 1: THESL_9_T01_S01_App A – Calculation of Useful Life Change Impacts_20231117.xls
Ref 2: THESL_2A_T01_S02 – OEB Appendix 2-BA_20231117.xls

Preamble:
OEB staff notes a disposal amount of $454,416 for 2023 in reference 1. This amount agrees to the disposal amount for land in reference 2.

Question(s):

a) Please discuss why the disposal amount is positive rather than negative.
b) Please describe what the $454,416 relates to.

9-Staff-339
Ref 1: Exhibit 9 / Tab 1 / Schedule 1 / pp. 28-29
Ref 2: EB-2018-0165 Exhibit U / Tab 9 / Schedule 1 / p. 5, filed April 30, 2019

Preamble:
The Capital-Related Revenue Requirement Variance Account (CRRRVA) records the variance between the capital-related revenue requirement included in rates and the actual capital related revenue requirement (excluding balances captured in the Externally Driven Capital Variance Account).

The CRRRVA is an asymmetrical account in that it only records for disposition variances that result in a credit (refund) to customers. In the OEB's Decision and Order dated December 19, 2019 for EB-2018-0165, the OEB agreed with Toronto Hydro's proposal to dispose of ($88.4M) in a credit to ratepayers for the CRRRVA.

In reference 2, Toronto Hydro proposes to discontinue this account in the 2025-2029 rate period as it has proven over the last two custom rate periods (i.e. 2015-2019 and

2020-2024) its ability to deliver multi-year capital programs within very reasonable margins of variance. To protect customers against utility overearnings, Toronto Hydro proposes to continue the Earnings Sharing Mechanism approved in the last rate application. Furthermore, the utility proposes to track variances in capital expenditures that have a higher degree of sensitivity or variability due to external factors through the proposed Demand-Related Variance Account ("DRVA").

Question(s):

a) Please provide a table showing $ amount in debits or credits in the CRRRVA for the 2015-2019 period.
b) Please discuss why it is appropriate to discontinue the CRRRVA in light of the significant historical variance noted in EB-2018-0165.
c) Please discuss how the Demand Related Variance Account will offer the same or similar amount of protection to the ratepayer as the CRRRVA for the rate period 2025-2029, if the CRRRVA was discontinued.
d) Please provide the amount of capital forecasted to be included in the DRVA in comparison to the CRRRVA (assuming it continues) for the period 2025-2029.
e) Please discuss Toronto Hydro's thoughts on continuing the CRRRVA if its request to establish the PIM-DA, DRVA and IFVA are not granted.

9-Staff-340
Ref 1: **Exhibit 9 / Tab 1 / Schedule 1 / p. 42**
Ref 2: Decision and Order EB-2018-0165, p. 188

Preamble:
In the 2020-2024 rate application (EB-2018-0165), Toronto Hydro requested approval to clear forecasted net gains on the sale of property at 50/60 Eglinton Avenue through a rate rider without a deferral or variance account. The OEB accepted the disposition of relevant amounts, noting that although the proposed refund of the proceeds of sale from the Eglinton property and other amounts is appropriate, the OEB may not permit in the future the disposition of a regulatory balance without an approved account.

In addition to the sale proceeds previously refunded to ratepayers, Toronto Hydro received a variable consideration (bonus payment) from the purchaser, based on the terms of the relevant agreement of purchase and sale, which stipulate additional consideration to the utility where the purchaser achieves an increase in gross floor area as a result of zoning bylaw applications. Toronto Hydro intends to return this variable consideration (bonus payment) to ratepayers in the 2025-2029 period.

Toronto Hydro is requesting to clear an estimated $10.2 million credit to customers.

Question(s):

a) Please discuss why it is appropriate to create another subaccount for the 50/60 Eglinton bonus payment when a generic gain on sale of property subaccount has already been established.
b) Please discuss what other terms of contract might allow rate payers to receive variable consideration in the future.
c) When does Toronto Hydro expect to finalize the bonus payment amount to customers?

9-Staff-341
Ref 1: Exhibit 9 / Tab 1 / Schedule 1 / p. 40
Ref 2: Exhibit 1B / Tab 2 / Schedule 1 / pp. 29-33
Ref 3: Chapter 2 Filing Requirements Cost of Service, Section 2.9.2 dated Dec 15, 2022

Preamble:
Toronto Hydro's rate framework proposes a proactive 0.6 percent performance incentive factor that further reduces revenues by approximately $65 million over the rate term, providing customers an additional upfront rate reduction. The performance incentive mechanism ("PIM") is linked with the 2025-2029 Custom Scorecard detailed in Exhibit 1B, Tab 3, Schedule 1. Toronto Hydro proposes to defer the finalization of the targets to a second phase of this proceeding that can be run in parallel with the Draft Rate Order process. The PIM deferral account ("PIM-DA") would record the earnings and would be brought forward for revenue and disposition in next rebasing app.

In the event a distributor seeks an accounting order to establish a new DVA, the distributor must file evidence demonstrating how the following eligibility criteria have been met:

- Causation: the forecast amount to be recorded in the proposed account must be clearly outside of the base upon which rates were derived.
- Materiality: the annual forecast amounts to be recorded in the proposed account must exceed the OEB-defined materiality threshold and have a significant influence on the operation of the distributor, otherwise they must be expensed or capitalized in the normal course and addressed through organizational productivity improvements.
- Prudence: the nature of the amounts and forecast quantum to be recorded in the proposed account must be based on a plan that sets out how the amounts will be reasonably incurred, although the final determination of prudence will be made at the time of disposition. For any costs incurred, in terms of the quantum, this means that the distributor must provide evidence demonstrating that the option

selected represented a cost-effective option (not necessarily least initial cost) for ratepayers.

Question(s):

a) Please discuss the PIM-DA considering the 3 eligibility criteria above.
b) What other alternative approaches were considered for achieving the objectives of the PIM that did not make use of a deferral account?

9-Staff-342
Ref 1: Exhibit 9 / Tab 1 / Schedule 1 / p. 41
Ref 2: Exhibit 1B / Tab 2 / Schedule 1 / pp. 33-35
Ref 3: Exhibit 1B / Tab 4 / Schedule 2
Ref 4: THESL_9_T03_S01 – Rate Rider Table_20231117.xls

Preamble:
Toronto Hydro proposes to establish an Innovation Fund to support the design and execution of innovative pilot projects over the 2025-2029 rate period. The pilot projects undertaken through the Innovation Fund would be focused on testing new technologies, advanced capabilities and alternative strategies that enable electrification grid readiness and are responsive to the OEB's expectations with respect to facilitating DER integration, as expressed in the Framework for Energy Innovation (FEI) report.

Toronto Hydro proposes to collect an amount of $16M through a rate rider rather than through base rates to provide transparency to ratepayers on the bill and flexibility to the utility to determine how the funds should be allocated across capital and operational expenditures on the basis of the selected pilot projects. Toronto Hydro proposes to establish a new symmetrical variance account to record variances between the amounts collected by the rate rider and the actual costs incurred to execute the selected pilot projects as part of the Innovation Fund.

Toronto Hydro expects to collect the $16M during 2029.

Question(s):

a) Please elaborate on the rate mechanism of Toronto Hydro's collection of the $16M fund in 2029 and how it plans to track the variance, given that the funding will be collected in 2029.
    i. Please discuss why it is appropriate for the IFDA to be symmetrical.
b) Please elaborate how external stakeholders will be involved in the execution and evaluation phases of the pilot projects selected.

   i. Please confirm whether the steering committee members mentioned in reference 3 will involve external stakeholders, and the proposed composition of the committee of external to internal stakeholders.

c) Please discuss any quantifiable goals and outcomes Toronto Hydro can establish for the pilot projects.
d) Please discuss any evidence demonstrating the utility's current limitations in funding and executing innovative pilot projects without the establishment of the Innovation Fund.
e) Please explain why the total balance for disposition is presented as $19,380,781 in Reference 4 where other references indicate a proposal for a $16 million fund.
f) Please provide reference(s) whereby a utility established a variance account that: had a balance at inception, costs were not yet incurred, and there was no forecast provided of expected costs.

9-Staff-343
Ref 1: Exhibit 9 / Tab 1 / Schedule 1 / pp. 40-41
Ref 2: Exhibit 1B / Tab 4 / Schedule 2
Ref 3: Exhibit 1B / Tab 4 / Schedule 2
Ref 4: Exhibit 9 / Tab 1 / Schedule 1 / pp. 28-29

Preamble:
Toronto Hydro seeks approval to establish a new symmetrical variance account for demand related variances related to structural unknowns in forecasted costs and revenues. Subject to OEB approval, Account 1508 – Demand-Related Variance Account (DRVA) would record:

(i) the demand-driven revenue requirement impacts arising from variances in actual versus forecast capital and operational expenditures for certain demand-based programs; and
(ii) (ii) the revenue impacts arising from variances in (1) forecast versus (2) actual weather normalized billing determinants (customer count, kWh and kVA) over the rate period.

To that end, the account would consist of two subaccounts:

1. The Expenditure Variance subaccount would record the symmetrical revenue requirement impacts, including PILs, arising from the variance between the forecast expenditures for the 2025-2029 period and actual expenditures related to the following capital and operations programs: Customer Connections, Customer Operations, Stations Expansion, Load Demand, Non-Wires Solution, Generation Protection Monitoring and Control and Externally-Initiated Plant Relocations & Expansions (collectively "Demand-Related Investments").

2. The Revenue Variance subaccount would record the revenue impacts resulting from weather-normalized variances in billing determinants (e.g. customer count and billed demand).

Question(s):

a) Please discuss in detail what information is missing currently to allow THESL to build a reasonably accurate forecast related to demand for the 2025-2029 period.
b) Considering Toronto Hydro's statement in reference 4, "Toronto Hydro proposes to discontinue [the CRRRVA] account in the 2025-2029 rate period as it has proven over the last two custom rate periods (i.e. 2015-2019 and 2020-2024) its ability to deliver multi-year capital programs within very reasonable margins of variance." Please discuss how the basis for discontinuing the CRRRVA is not contradictory to establishing the DRVA.
c) Please discuss in detail how Toronto Hydro intends to support the prudency of the expenditures in this account.

9-Staff-344
Ref 1: Exhibit 9 / Tab 1 / Schedule 1 / pp. 34-35
Ref 2: EB-2018-0165 Decision and Order, pp. 190-193

Preamble:
In the Decision and Order for EB-2018-0165, the OEB agreed that the ESM methodology applied by THESL only reflected changes in non-capital related revenue requirement (OM&A and revenue offsets). The OEB accepted the submission by intervenors in that proceeding that changes in both costs and revenues (including changes in load relative to forecast amounts) should be added to the ESM definition.

Question(s):

a) In reference 1, Toronto Hydro provided Table 18 with the 2019 ESM calculation that included OM&A and revenue offsets. Please update the ESM calculations for 2019 through 2022 to include changes in revenue and provide supporting schedules.
b) Please discuss any differences with Toronto Hydro's filings of RRR 2.1.5.6 for 2019-2022.
c) Please provide the actual 2023 ESM and ROE.

9-Staff-345
Ref 1: Exhibit 9 / Tab 1 / Schedule 1 / p. 37
Ref 2: THESL_9_T03_S01 – Rate Rider Table_20231117.xls

Question(s):

a) OEB staff notes that the renewal generation connection funding adder deferral account of ($7.4M) is missing from the rate rider table in reference 2. Please confirm that Toronto Hydro seeks disposition of this account and the disposition to each class by updating the evidence.

9-Staff-346
Ref 1: OEB Accounting Procedures Handbook Guidance issued on March 2015 – APH_Guidance_March2015 (oeb.ca), Question 10, pp. 10-13
Ref 2: Exhibit 9 / Tab 2 / Schedule 1 / THESL_9_T02_S01-Continuity_Schedule_20231117, Tab 2b Continuity Schedule

Preamble:
On page 11, Reference 1 states

> "The following is the account description for Account 1533 Renewable Generation Connection Funding Adder Deferral Account.
>
> This account is used to record the Provincial Rate Protection payments under O. Reg. 330/09 at the end of each fiscal year. The account will include the net of
>
> I. The annual revenue requirement impact on an actual basis applicable to in-service capital assets, depreciation, and incurred OM&A expenses, eligible for Provincial Rate Protection,
> AND
>
> II. Provincial Rate Protection payments, as approved by the Board, and received from the IESO in that year."

On page 12 Paragraph (A), Reference 1 states:

> "No carrying charges are to be recorded on the balance in Account 1533, Sub-account Provincial Rate Protection Payment Variances".

Question(s):
a) Please confirm that Toronto Hydro has complied with the March 2015 Accounting Guidance on Account 1533, specifically:
   i. If the transaction debits/(credits) recorded in the Account 1533 continuity schedules represent the net of annual revenue requirement on the actual basis and the IESO payments for the year. If the transaction debts/(credits) recorded in the Account 1533 does not represent the net difference as referred in the March 2015 Accounting Guidance, please explain in detail what the transaction debits/(credits) represent.
b) Please confirm that there is no interest recorded in all continuity schedules of Account 1533.

i. If not, please write off the interest recorded in all continuity schedules of Account 1533, given the direction in the March 2015 Accounting Guidance.

9-Staff-347
Ref 1: THESL_9_T02_S01-Continuity_Schedule_20231117.xls

Question(s):

a) OEB staff notes closing interest amounts in Exhibit 9, Tab 2b Continuity Schedule for 2023, in BV48 of ($115,161,484), BV70 of ($115,161,484) and BV72 of ($42,159) which appear to be hard coded into the schedule in error. Please confirm and update the evidence accordingly.

9-Staff-348
Ref 1: Exhibit 9, Tab 1, Schedule 1, Updated December 19, 2023, p. 19
Ref 2: Exhibit 9 / Tab 2 / Schedule 1 / Excel Model - THESL_9_T02_S01-Continuity_Schedule_20231117, Tab 2b Continuity Schedule

Preamble:
Table 11 in reference 1 shows the approved revenue requirement amounts for Renewable Enabling investments from 2020 to 2024. OEB staff uses this information to produce a table below comparing the approved revenue requirement amounts from Table 11 and the OEB's previously approved RGCRP funding amounts for Toronto Hydro shown below.

	Table 11 (Ref 1) ($ Millions)	OEB Decisions ($)	EB#
May 1 – Dec 31, 2026	-	$1,173,258	EB-2016-0170
2017	-	$1,514,587	EB-2017-0004
2018	-	$2,068,451	EB-2017-0370
2019	-	2,627,506	EB-2018-0295
2020	1.5	1,448,698	EB-2019-0279
2021	2.2	2,311,021	EB-2020-0238
2022	2.6	2,673,671	EB-2021-0303
2023	3.0	2,998,066	EB-2022-0270
2024	3.3	3,247,440	EB-2023-0267

OEB staff notes that there are some discrepancies between the approved revenue requirement amounts in Table 11 and the OEB's previously approved decisions from 2020 to 2024.

Question(s):

a) Please explain the discrepancies.
b) Please revise the evidence (e.g. the amounts recorded in Account 1533 in reference 2) to reflect the OEB's approved revenue requirement amounts as needed.

9-Staff-349
Ref 1: Exhibit 9 / Tab 1 / Schedule 1 / pp. 24, 28
Ref 2: DVA Continuity Schedule, November 17, 2023
Ref 3: Global Adjustment (GA) Analysis Workform, November 17, 2023.

Preamble:
Toronto Hydro is seeking OEB approval to dispose the 2022 balances in Accounts 1588 and 1589 in the current proceeding, that were not disposed in its 2024 Custom IR Update proceeding.

Toronto Hydro stated that through the discovery phase of this proceeding, it intends to update the evidence that pertain to Group 1 balances accumulated during the 2023 calendar year.

OEB staff notes that the DVA Continuity Schedule included in the pre-filed evidence has many blank tabs that need to be completed. Also, the GA Analysis Workform needs to be updated with 2023 balances.

Question(s):
a) Please update all evidence that pertains to actual Group 1 and Group 2 balances accumulated during the 2023 calendar year, as well as Accounts 1588 and 1589 balances accumulated during the 2022 calendar year.

9-Staff-350
Ref 1: Exhibit 9 / Tab 1 / Schedule 1 / p. 28
Ref 2: EB-2020-0057, 2021 Custom IR Update, Decision and Rate Order, December 10, 2020, pp. 15, 16
Ref 3: Filing Requirements For Electricity Distribution Rate Applications - 2023 Edition for 2024 Rate Applications, Chapter 2 Cost of Service, December 15, 2022, p. 62

Preamble:
Toronto Hydro stated that it is not proposing to dispose any residual balances in Account 1595. Toronto Hydro stated that it does not have any sub-accounts that have not already been approved for disposition and no sub-account will meet the two-year requirement for 2025 disposition.

However, OEB staff notes that DVA balances were cleared in Toronto Hydro's 2021 Custom IR Update decision and Account 1595 (2021) would be eligible for disposition in the current proceeding, consistent with the OEB's filing requirements. Toronto Hydro's rate riders were to be in effect over a one-year period from January 1 to December 31, 2021, relating to its 2021 Custom IR Update decision.

The OEB's filing requirements state that distributors become eligible to seek disposition of residual balances two years after the expiry of the rate rider.

Consistent with the filing requirements, if the 2021 rate riders expired on December 31, 2021, the balance of sub-account 1595 (2021) is eligible to be disposed after the account balance as at December 31, 2023 has been audited. Therefore, sub-account 1595 (2021) would be eligible for disposition in the 2025 rate year, as the respective balance has been audited.

Question(s):

a) Please update all evidence that relates to the disposition of Account 1595 (2021).
b) If there is a material residual balance being proposed for disposition, please provide a detailed explanation, including quantifying any significant drivers of the residual balance.

9-Staff-351
Ref 1: EB-2023-0054, 2024 Custom IR Update, Decision and Rate Order, December 14, 2023, pp. 10, 11
Ref 2: Exhibit 9 / Tab 1 / Schedule 1 / December 19, 2023, pp. 25, 26
Ref 3: OEB Letter, Adjustments to Correct for Errors in Electricity Distributor "Pass-Through" Variance Accounts After Disposition, October 31, 2019
Ref 4: Filing Requirements For Electricity Distribution Rate Applications - 2023 Edition for 2024 Rate Applications- Chapter 3, Incentive Rate-Setting Applications, June 15, 2023, Section 3.2.6

In the 2024 Custom IR Update decision, the following was noted in the background of this decision:

- Toronto Hydro proposed not to dispose of the 2022 balances within Accounts 1588 and 1589, due to the need to further analyze a 2021 principal adjustment of

a credit of $5.7 million that was approved for disposition as part of the Account 1588 balance in its 2023 Custom IR Update proceeding.
- Such a credit would usually be reversed as a debit in the 2024 Custom IR Update proceeding, but Toronto Hydro proposed instead to examine this $5.7 million amount further.
- This principal adjustment is associated with reporting enhancements, specifically an enhanced model for customer billings.
- Toronto Hydro proposed instead to defer the review and disposition of Accounts 1588 and 1589 to this current proceeding.

In the 2024 Custom IR update decision, the OEB approved Toronto Hydro's request to defer the review and disposition of Accounts 1588 and 1589 to the current proceeding. The OEB's expectation was that Toronto Hydro, amongst other items, will address the requirements of the OEB's October 31, 2019 letter and section 3.2.6 of the filing requirements**.** This documentation outlines required documentation to be filed in a proceeding, including any adjustments made to DVA balances that were previously approved by the OEB on a final basis**.**

In the current proceeding, Toronto Hydro stated that its request regarding the $5.7 million amount does not represent a correction of an error (per the OEB's October 31, 2019 letter). Toronto Hydro stated that it relates to an enhancement of a model, rather than an error in the utility's accounting records. Similarly, Toronto Hydro noted that its proposal does not represent an adjustment to an account balance that was previously approved by the OEB on a final basis.

OEB staff notes that the OEB's October 31, 2019 letter and section 3.2.6 of the filing requirements relate to any adjustments made to DVA balances that were previously approved by the OEB on a final basis.

Question(s):

a) Given that the OEB's October 31, 2019 letter and section 3.2.6 of the filing requirements relate to any adjustments made to DVA balances that were previously approved by the OEB on a final basis, as well as the OEB's expectations set out in the 2024 Custom IR Update decision, please address both the OEB letter and the filing requirements.
b) Please explain Toronto Hydro's statement that its $5.7 million debit principal adjustment relates to "an enhancement of a model, rather than an error", in the context of the OEB's requirements which relate to any adjustments made to DVA balances. Please also elaborate on what aspects of the model were enhanced and how the enhancement impacted the DVA balances as of 2021 year end that were cleared in Toronto Hydro's 2023 Custom IR proceeding.

9-Staff-352
Ref 1: Exhibit 9 / Tab 1 / Schedule 1 / December 19, 2023 pp. 25, 26
Ref 2: GA Analysis Workform, November 17, 2023

Preamble:
In the current proceeding, Toronto Hydro proposes to reverse the Account 1588 $5.7 million credit cleared in the 2023 Custom IR Update proceeding, as a debit in the current proceeding. This is demonstrated on the GA Analysis Workform.

OEB staff notes that there could be a permanent disconnect between the Account 1588 balance in the DVA continuity schedule and the Reporting and Record Keeping Requirements (RRR) 2.1.7 balance. This disconnect could occur if the OEB does not approve Toronto Hydro's request to recover the overstated credit of $5.7 million in Account 1588 through a debit adjustment in the current proceeding.

Instead, OEB staff notes that Account 1588 could be debited by $5.7 million and Account 1595 (2025) could be credited by $5.7 million. This would ensure that there would be no permanent disconnect in Account 1588, as noted above, while at the same time ensuring that the extra refund to ratepayers of $5.7 million made in the 2023 Custom IR update proceeding would not be clawed back.

Question(s):
a) If the OEB decides not to approve the $5.7 million debit to Account 1588 in the current proceeding, please explain whether the following approach would be appropriate. To eliminate any permanent disconnect between the Account 1588 balance in the DVA continuity schedule and the RRR 2.1.7 balance, Account 1588 could be debited by $5.7 million and Account 1595 (2025) could be credited by $5.7 million.
b) If Toronto Hydro does not agree with the approach outlined in part a) of this interrogatory, please explain.
c) Please explain how the $5.7 million adjustments (credit and debit) were reflected in the following Toronto Hydro documentation and the associated period(s):
    i. General ledger
    ii. "Transactions Debit / (Credit)" columns of the DVA Continuity Schedule
    iii. "Principal Adjustments" columns of the DVA Continuity Schedule
    iv. Tabs of the GA Analysis Workform

9-Staff-353
Ref 1: EB-2023-0054, 2024 Custom IR Update, Decision and Rate Order, December 14, 2023, pp. 10, 11
Ref 2: GA Analysis Workform, November 17, 2023

Ref 3: EB-2022-0065, 2023 Custom IR Update, Reply Submission, November 22, 2022, p. 5

Preamble:
In its 2024 Custom IR Update decision, the OEB approved Toronto Hydro's request to defer the review and disposition of Accounts 1588 and 1589 (pertaining to balances accumulated during the 2022 calendar year) to the current proceeding.

OEB staff notes that an Account 1589 2022 principal adjustment of a credit of $3,461,257 was shown in the Tab Principal Adjustments of the GA Analysis Workform, but this amount was not shown in Tab GA 2022.

In Toronto Hydro's 2023 Custom IR Update reply submission, it explained that certain principal adjustments on the Principal Adjustments tab of the GA Analysis Workform do not need to be shown on other tabs of the GA Analysis Workform (e.g., Tab GA 2021). Toronto Hydro stated that this is because its general ledger balance and the expected balance calculated in the GA Analysis Workform are both determined based on estimated unbilled consumption. Toronto Hydro concluded that it is not appropriate for the unbilled to actual true-up to be presented as a difference (i.e., reconciling item) on Tab GA 2021.

Question(s):
a) Please confirm that the Account 1589 2022 principal adjustment of a credit of $3,461,257 shown in the Tab Principal Adjustments of the GA Analysis Workform does not need be shown in Tab GA 2022 for the same reasons indicated by Toronto Hydro in its 2023 Custom IR Update reply submission (see preamble above).
b) If this is not the case, please clarify which is the correct balance to use as a 2022 principal adjustment for Account 1589 and update the evidence, including the DVA Continuity Schedule.
c) If this is not the case, after addressing part b) of this interrogatory, if cell C93 (i.e., Unresolved Difference as % of Expected GA Payments to IESO) of Tab GA 2022 is greater than the threshold of +/- 1%, please explain.

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Ref 1: Exhibit 9 / Tab 2 / Schedule 3 / pp. 1-2
Ref 2: Exhibit 9 / Tab 2 / Schedule 3 / Appendix A

Preamble:
Toronto Hydro has requested approval to dispose of the balances in its LRAMVA which has a total debit balance of $5.6 million and are in relation to new savings from CDM programs delivered between 2020 and 2022, and lost revenues from persisting savings

in 2020-2022 from CDM programs delivered from 2018-2021. To help mitigate rate impacts, Toronto Hydro has requested to recover this amount over a 60-month period, beginning January 1, 2025.

Question(s):

a) Please confirm that Toronto Hydro's LRAMVA balance includes all outstanding lost revenues from past and current CDM programs. If any there are any amounts that remain from current CDM programs, please provide details of the amounts, including CDM program, year, and amount and when, if at all, Toronto Hydro will request disposition.
b) Please confirm that there are no LRAMVA balances related to the IESO's wind-down of the CFF nor from the Interim CDM Framework that remain outstanding. If there are, please discuss why these amounts have not been requested for disposition.
c) Please discuss why there are no LRAMVA balances for 2023 or 2024 being proposed, including persisting CDM savings in 2023 and 2024.
d) Please confirm that Toronto Hydro is not requesting approval of any prospective LRAMVA balances and that the LRAMVA will have a balance of zero if all requested amounts are approved.
e) Please indicate if Toronto Hydro is seeking to maintain access to the LRAMVA for the possibility of future entries, either for distribution-rate funded CDM activities or partnership with the IESO for a Local Initiative Program.
f) Please provide a table that clearly identifies what source was used to inform the savings totals in Tab 5 of the LRAMVA workform for the 2019, 2020 and 2021 program years (Tables 5-e, 5-f and 5-g, respectively). As part of your response, provide any additional discussion on how the Net Energy Savings (Column D) and New Demand Savings (column R) values were sourced/developed. Additionally, please provide the IESO CDM persistence reports that support the data included in Tab 7 of the LRAMVA workform.
g) Please confirm if Toronto Hydro is requesting the continuation of the LRAMVA during the 2025 to 2029 period.

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Ref 1: Exhibit 9 / Tab 2 / Schedule 3 / pp.3-7
Ref 2: Exhibit 9 / Tab 2 / Schedule 3 / Appendix A

Preamble:
Toronto Hydro has requested approval of a modified LRAMVA threshold. Toronto Hydro indicates that it has modified the LRAMVA threshold excludes forecast CDM savings from programs that were transferred to the IESO.

Question(s):

a) Please confirm that the LRAMVA balances included in the LRAMVA workform have been calculated using the proposed modified LRAMVA thresholds.
b) Please provide a live MS Excel spreadsheet that includes all calculations Toronto Hydro undertook in developing its modified LRAMVA threshold amount. In particular, please include all CDM programs, the forecast savings at the time of the 2018 rate application, calculations performed to remove programs transferred to the IESO, calculations performed to estimate Toronto Hydro's savings portion of transferred programs, calculations performed to estimate Toronto Hydro's portion of the IESO's Interim Framework programs, and any other calculations conducted to determine the modified LRAMVA threshold amounts.
c) Please discuss how Toronto Hydro's 2018 LRAMVA threshold was used in relation to the CDM adjustment made to its approved 2018 load forecast, if at all, with relevant references and supporting documentation.
d) Please provide a sample calculation of the LRAMVA balances using the LRAMVA threshold as approved by the OEB in EB-2018-0165. Please provide a comparison table to the LRAMVA balance that uses the modified LRAMVA threshold.
e) For the MWh and MW amounts shown in Table 2: LRAMVA Threshold, please confirm:
    i. That the Original row is inclusive of all of Toronto Hydro's CDM programs under the CFF.
    ii. That the Modified row includes only Toronto Hydro's programs that actually proceeded after the cancellation of the CFF.
f) Please discuss why the LRAMVA threshold is higher in the Modified row than the Original row.
g) Please provide an updated Table 2: LRAMVA Threshold that includes additional rows showing all programs and their corresponding LRAMVA threshold energy or demand savings under both the Original and Modified headings.