

Ms. Nancy Marconi
Registrar
Ontario Energy Board
P.O. Box 2319, 27th Floor
2300 Yonge Street
Toronto, ON M4P 1E4

February 12, 2024

**EB-2023-0195 – Toronto Hydro-Electric System Limited (Toronto Hydro) 2025-2029 Custom Rate
Application
Pollution Probe Interrogatories to Applicant**

Dear Ms. Marconi:

In accordance with Procedural Order No. 1 for the above-noted proceeding, please find attached
Pollution Probe Interrogatories to the Applicant.

Respectfully submitted on behalf of Pollution Probe.



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ONTARIO ENERGY BOARD

**Toronto Hydro-Electric System Limited
2025-2029 Custom Rate Application**

POLLUTION PROBE INTERROGATORIES

February 12, 2024

**Submitted by: Michael Brophy
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Consultant for Pollution Probe

1A-PP-1

Reference: THESL indicates that relative to the previous plan, this rate plan “Enhanced the capacity planning process consider electrification drivers and municipal energy plans in producing the system peak load forecast that underpins the 2025-2029 Investment Plan.” [Exhibit 1A, Tab 3, Schedule 1, Page 3]

- a) Please describe what THESL has already completed (if anything) to enhance the capacity planning process to consider electrification drivers and municipal energy plans in producing the system peak load forecast that underpins the 2025-2029 Investment Plan.
- b) Please explain why efforts over the current (2020-2024) rate term (and in preparation for this application) were not a sufficient foundation to prepare the Investment Plan, requiring incremental focus in the new rate period (2025-2029).
- c) The Investment Plan (and Distribution System Plan) underpin the THESL application for the 2025-2029 term. Please explain how the OEB can approve the application and related budgets at this time if there is incremental information that is not available at this point supporting investments that will be made over the 2025-2029 period?
- d) Has THESL included opportunities to share (or leverage) investments from other stakeholders (including building owners, City of Toronto, industrial sites, etc.) on Distributed Energy Resources over the 2025-2029 Rate term. If no, please explain why not. If yes, please provide a summary, the process used and what results (cost avoidance and kW/kWh) are forecasted to be achieved.

1A-PP-2

Reference: THESL indicates that it has “Enhanced the load forecast to consider electrification drivers and changes to the availability of conservation and demand management (“CDM”) savings in producing the revenue forecast that underpins to 2025-2029 rates” [Exhibit 1A, Tab 3, Schedule 1, Page 4]

- a) Please provide what CDM results THESL will have achieved by end of the 2024 rate term against the total achievable CDM results and what potential remains, by sector if possible
- b) Please indicate what CDM results (total and incremental to those forecasted to the end of the current rate plan) are forecasted to be achieved by year of the 2025-2029 rate plan. Please indicate what portion of the total potential achievable CDM results that will represent.
- c) Please explain why only CDM is included in the above noted item and not the broader scope of DER.

1A-PP-3

Reference: DER definition from [National Standard Practice Manual - NESP \(nationalenergyscreeningproject.org\)](https://www.nationalenergyscreeningproject.org/):

Distributed Energy Resources (DERs) are resources located on the distribution system that are generally sited close to or at customers’ facilities. DERs include EE, DR, DG, DS, EVs, and increased electrification of buildings. DERs can either be on the host customer side of the utility interconnection point (i.e., behind the meter) or on the utility side (i.e., in front of the meter). DERs are mostly associated with the electricity system and can provide all or some of host and/or support the utility system by reducing demand and/or providing supply to meet energy, capacity, or ancillary services (time and locational) needs of the electric grid.

- a) Please provide the definition of DER that THESL is using.
- b) Regulatory initiatives including the Future for Energy Innovation have leveraged the NSPM for DER best practice information and approach. Please indicate what variance (if any) there is between the NSPM definition for DERs, what THESL is using and the potential impact (e.g. are some categories of DER excluded).

1A-PP-4

Reference: “customers having a non-coincident peak demand equal to or greater than 5 MW shall be charged their share of the capital contribution for a new or modified transmitter-owned connection facility” [Exhibit 1A, Tab 3, Schedule 1, Appendix A]

- a) Please explain how the Capital Contribution Policy change would impacts customers (in whole or part) planning to install DERs that could benefit the system.
- b) Please explain if this Capital Contribution Policy change is applied broadly regardless of the whether a customer (in whole or part) is planning to include or add a DER that could benefit the system.
- c) Please explain how this Capital Contribution Policy change aligns with the approach being developed for the OEB BCA Framework.
- d) Please explain how (if at all) THESL policies and charges encourage customers to include DERs that could provide benefits to the system and how those will be managed during the 20205-2029 rate term to unlock those system benefits.

1B-PP-5

Toronto Hydro indicates that the Energy Transition is already underway and that it needs to get ready for this electrified future now by preparing its grid and operations.

- a) What has THESL already done to ready its grid and operations and what is still outstanding?
- b) Does THESL have a long-term roadmap (or equivalent) for Grid modernization out to 2040 or beyond. If yes, please provide a copy.
- c) THESL outlines that the Energy Transition will continue to progress over the next few decades. This timeframe exceeds the 2025-2029 rate period. Please provide the analysis and documents THESL has available that show the temporal requirements to make the required grid and operational changes of the next few decades and what portion of these are required to be done over the 2025-2029 period (vs. in future rate periods).
- d) Please indicate which Energy Transition demands THESL grid and operations are currently not able to deliver on (e.g. EV charging, embedded generation/storage, etc.) and indicate how THESL identified that its system was not able to meet those needs (e.g. customer complaints, rejecting DER requests, third-party analysis and reports, etc.).

1B-PP-6

- a) Has THESL assessed what portion of the demand increases over the coming decades could be mitigated by CDM (including enhanced efficiency and design for new buildings)? If no, please explain why not. If yes, please provide a copy of the analysis, reports, presentation and other related materials.
- b) Please provide details on incremental CDM programs, activities and forecasted results (demand and energy reduction). THESL intends to undertake during the rate term (2025 – 2029). Please indicate which are to be led by THESL and which are supporting others programs (e.g. IESO, OEB, City, etc.).

1B-PP-7

Reference: “However, market evolution and public policy are changing this trajectory, driving customers to adopt advanced electrified technologies – such as electric vehicles (EVs), solar panels, home energy storage, heat pumps and electric water boilers – which are increasing customer demand and expectations for outcomes.” [Investment Plan Section 2.2]

- a) Please explain why the following require increasing system demand capacity, rather than enabling system peak demand to be decreased.
 - electric vehicles (EVs) with bi-directional charger
 - solar panels and/or related on-site battery storage
 - home energy storage
 - heat pumps (particularly in mitigating AC load)
- b) Please explain what THESL would need in place to leverage DERs (including those above) to reduce system peak demand and related traditional poles-and-wires investments.
- c) Please provide the scorecard metrics and results related to DER (including CDM) that THESL is committing to over the 2025-2029 rate period.
- d) Please indicate how THESL has included decentralization of electricity supply (including storage) and distribution into its planning for the future and what those changes mean compared to the historical centralized generation and distribution of electricity.

1B-PP-8

- a) Please explain what role (if any) THESL has to proactively plan the Energy Transition and to inform, incent and enable customers (and related enabling stakeholders) to execute in line with that plan as opposed to THESL reacting to the Energy Transition drivers and demands.
- b) Please explain what actions and outcomes THESL has undertaken already plus will undertake over the 2025-2029 rate term to proactively define Energy Transition pathways in its service territory and lead customers/stakeholders to adopt those pathways via communications, programs, incentives, etc.
- c) Please explain what initiatives and activities THESL intends to undertake to provide net zero or low carbon energy solutions as required to support the Energy Transition, while acknowledging that the proposed IESO grid mix estimate is indicating higher carbon emissions for electricity generation.

1B-PP-9

Reference: Approximately a quarter of the utility's grid equipment continues to operate past useful life. [Investment Plan Section 2.3.1]

- a) Please provide how THESL defines "useful life".
- b) Please provide a summary by major category of the equipment that THESL has defined as 'beyond its useful life' and include for each category what percentage and value the portion is that THESL indicates is 'beyond its useful life'.

1B-PP-10

Reference: Table 1: Ontario Cities Population Density [Investment Plan]

THESL indicates that the population density in Toronto is higher than the comparator municipalities listed.

- a) Please explain how increased density would enable more capital and O&M efficiency compared to more disperse municipalities and related systems. If THESL does not believe this is correct, please explain why.
- b) Has THESL done analysis of the Capital and/or O&M cost per customer correlated to population density (per km) compared to other utilities. If not, why not. If yes, please provide a copy of the analysis, reports, presentations or other materials pertaining to this analysis and its conclusions.

1B-PP-11

Reference: “In this process, Toronto Hydro employed the principle of least regrets investment. Through the use of a new tool – the Future Energy Scenarios model – the utility modelled the grid impacts of a range of possible future peak demand scenarios based on the interaction between different policy, technology and consumer behaviour assumptions.”

- a) Please provide the definition of “least regret” as defined by THESL and the methodology/criteria/weighting used to determine which options result in a higher or lower regret. If the process uses THESL human decisions rather than an imperial approach, please explain.
- b) Please provide the guide, user manual or equivalent for the Future Energy Model. If such documents do not exist, please explain how the model and its intended use is documented.
- c) Is the Future Energy Model a Monte Carlo simulator or an NPV model? If neither, please explain.
- d) Please confirm how the inputs to the Future Energy Model are determined, e.g. THESL employee judgement, external data source, etc.
- e) Where does THESL get the cost estimates for each scenario in the Future Energy Model.

1B-PP-12

Reference: “the majority of Key Account customers surveyed have goals to reduce their net GHG emissions to zero, and expect Toronto Hydro to support them in meeting their climate objectives by ensuring that the system has capacity for growth and by providing them advisory services to support their decarbonization-through-electrification journey” [Investment Plan Section 3.1]

Please provide any references that support this observation (e.g. THESL key account interactions, survey questions, etc.).

1B-PP-13

Reference: Table 4: Summary of 2025-2029 Proposed Distribution Rate Change.

Please confirm that the amounts in each column of the table are incremental, i.e. incremental to previous amount changes and not a cumulative amount.

1B-PP-14

References: Ontario has announced plans to build 1.5 million additional homes.

PollutionProbe_IR_AppendixA_CanmetReport (Table 1, page 10)

- a) What portion of the 1.5 million homes Ontario announced are expected to be in the THESL service territory?
- b) Does THESL encourage new buildings to be self-sufficient (i.e. not connect to the grid), Net Zero or net exporters to the grid? If yes, please provide the information/incentives that THESL uses to encourage this. If not, please explain why not given that it would reduce future system demand.
- c) Best available information for Toronto from the Canmet ENERGY Report noted above indicate that new energy efficient home design required 78% less energy (2.6kW compared to older homes at 11.6kW). Please outline what THESL is doing to ensure that new homes align with energy efficient design and technologies.
- d) Please provide an estimate of the additional demand that would occur on the THESL system if traditional design and technologies are used for new homes and buildings instead of best practice energy efficiency design and technologies.

1B-PP-15

Reference: "Toronto Hydro is committed to reducing its direct GHG emissions (referred to as Scope 1 emissions) in order to mitigate the impacts of climate change and reach "net zero" by 2040" [Investment Plan Section 4.4]

- a) Has THESL committed to a Net Zero target? If no, please provide a copy of the actual commitment and related plan. If yes, please provide a copy of the commitment and related plan.
- b) Please explain why THESL is only counting Scope 1 emissions, particularly when Scope 2 emissions are also directly related to THESL operations.
- c) Does THESL use lifecycle carbon (GHG) emission to analyses any of its decisions or operations? If yes, please specify.
- d) Please explain what specific criteria are included in the THESL procurement policies, processes and templates to consider supplier Net Zero commitment and product carbon intensity.

1B-PP-16

Reference: Figure 6: FTE per GWh of Load Served [Investment Plan]

Please provide a version of Figure 6 that also includes 2023 through 2029 forecasted data. Please also provide the input data (via Excel or other format used)

1B-PP-17

Please explain how the proposed Advanced Distribution Management System is different than the Toronto Hydro Asset and Program Management function which are already supported and budgeted separately. Also, please provide a comparative list of the function, tasks and outcome related to each identifying which are the same or different.

1B-PP-18

Reference: Exhibit 1B, Tab 1, Schedule 3, Page 5, Table 5

THESL has indicated that it expects significant growth due to decarbonization, the Energy Transition and related changes. However, Table 5 indicates decreasing load out to 2029. Please reconcile.

1B-PP-19

Reference: scottmadden management consultant report, page 6. The report indicates that the UK and New York have created separate cost recovery mechanisms for utilities to fund innovation.

- a) Please provide a copy of the exemplar mechanism summary/documentation links, reports or other information for the UK and New York examples referenced.
- b) Please provide a table comparing the main similarities and differences between the proposed THESL Innovation Fund and those of the comparator utilities mentioned in the report.
- c) Please confirm that there are no Ontario or Canadian utilities examples that the consultant has identified for comparison. If there are, please provide details.
- d) Have the example jurisdictions/utilities noted above been used for any of the other benchmarking reports THESL filed in this application? If yes, please indicate which ones.

1B-PP-20

Reference: Table 1: 2025 – 2029 Performance 1 Incentive Scorecard Measures
[Exhibit 1B, Tab 3, Schedule 1, Page 7]

- a) Please provide a copy of Table 1 noted above and include extra columns to indicate:
- Is the metric existing or new.
 - If it is an existing metric, please provide the previous target and actual.
 - If it is a new metric, please indicate the average actual based on the current term (2020-2024) data.
 - The total \$ payout per item if THESL hits the target
 - The total net benefit (\$) per item if the target is achieved (i.e. the total net benefit before the THESL payout)
- b) Please confirm if the proposed payout per metric is 'all or nothing' based on hitting the target or some sort of sliding scale.
- c) Will THESL commit to a third party audit of results prior to any scorecard payout? If not, why not?

1B-PP-21

Reference: For the benefits that can be quantified however, the Investment Plan and Custom Scorecard that underpin the PIM, yields nominal customers benefits that range from approximately \$90 million and \$216 million over the 2025 to 2029 period, and lifetime benefits in the range of \$890 million to over \$1.23 billion, as detailed in section 3 below.

Please provide the breakdown of values and math used to calculate the customer benefit ranges of:

- \$90 million
- \$216 million
- \$890 million to \$1.23 billion

1B-PP-22

Reference: UMS Group Cost Benchmarking Study [Exhibit 1B, Tab 3, Schedule 3, Appendix C]

- a) Please provide a copy of the following graphs with the specific utilities labelled for each bar on the x-axis (i.e. only Toronto Hydro is noted and not the specific utilities being compared in the graphs)
 - Figure II-1: Customer Density
 - Figure II-2: IBEW Average Annual Wage
- b) Please explain how the Peer Group Panel was selected and what characteristics (e.g. population size, rate base, capital envelope, number of assets, etc.) the Peer Group shares with Toronto Hydro.
- c) UMS indicates that Hydro One was excluded because it is not a representative peer for Toronto Hydro. Please confirm and explain why London Hydro is a more appropriate peer than Hydro One for Toronto Hydro.
- d) Please explain why Ontario peer utilities (most comparable to Toronto Hydro like Alectra) were not included in the study.
- e) Please explain why UMS included one Anonymous peer in the study analysis rather than excluding that utility, given that there would be no ability to ensure an Anonymous utility is an appropriate benchmark.
- f) Please confirm how the study finding would be impacted if the Anonymous utility peer is excluded.

1B-PP-23

Reference: UMS Group Cost Benchmarking Study [Exhibit 1B, Tab 3, Schedule 3, Appendix C] - Table D-1: Recent UMS Group Comparative Analyses / Benchmarking Efforts.

- a) Does the list of utilities in Table D-1 represent the full list of current utility data sets UMS has available? If not, please provide the full list.
- b) Please explain why ATCO Electric was not included as a Peer utility.

2A-PP-24

Reference: Capitalization Policy dated 2023-10-18 [Exhibit 2A, Tab 4, Schedule 1, Appendix A]

- a) Is THESL requesting OEB approval of the updated Capitalization Policy? If not, what is the process to have a new Capitalization Policy approved for use?
- b) Please provide a summary of the major changes compared to the previous version of the Capitalization Policy, or if easier simply provide a copy in track changes of the 2023 version against the previous version.
- c) Cloud computing is typically an O&M expense since there are no physical assets owned by the utility. How does THESL current treat cloud computing (Capital or OM&A) and please explain why these costs should be capitalized in the 2025-2029 rate term.

2A-PP-25

Reference: Concentric Report, plus as summarized in Appendix D at Tables 1 – 3, the financial average service lives of six asset classes were shortened by the Study, and the financial average service lives of 73 asset were lengthened by Study, resulting in a significant overall reduction in depreciation expenses. [Exhibit 2A, Tab 2, Schedule 1, Page 3]

- a) Please explain how the significant increase in service life proposed by Concentric would impact the definition and percent of THESL assets that are at or beyond their useful life. Please also provide a recalculation of the THESL statistics on assets at or beyond useful life if the Concentric recommendations are applied.
- b) Please provide a list of the pros and cons (including impacts on rate payer Energy Transition, temporal risk, etc.) of increasing the average accounting life of THESL assets.
- c) Is the proposed service life change only for new assets or retroactive?

2A-PP-26

Reference: Concentric Report and Table 8: Depreciation and Amortization Expense 2025 to 2029 (\$ Millions) [Exhibit 2A, Tab 2, Schedule 1, Page 6]

Please provide a copy of Table 8 including the impact of the Concentric service life changes. If those were already applied, please provide a copy of Table 8 based on current asset life (i.e. without changes).

2B-PP-27

Reference: This plan continues the utility's effort to renew a significant backlog of deteriorated and obsolete assets at risk of failure, and to adapt to the continuously evolving challenge of serving and operating within a dense, mature, and growing major city. [DSP Page 1]

- a) Please explain what criteria (e.g. age or field condition assessment), data (e.g. how many assets have up-to-date field assessment information in the asset management system) and (system) approach (e.g. is this just harvesting statistical data from the asset management system, asset life statistic or using a different approach) THESL is using to determine that there is a large list of assets that are deteriorated and obsolete.
- b) Please explain what (number & percent of total) of deteriorated and obsolete assets THESL addressed in the most recent rate period (2020 – 2024, or per data available) and how this helped reduce the burden for the new rate period (2025-2029). What residual number of deteriorate and obsolete assets remain.
- c) Please describe how THESL prioritizes which assets to replace against the list of deteriorated and obsolete assets.
- d) Please explain how THESL's proposal to increase the service life of assets (some up to double the current value per the Concentric Report) was taken into account when determining that assets are already deteriorated and obsolete.
- e) Would increasing the asset life decrease the number of assets considered beyond their asset life based on current values? If not, why not?

2B-PP-28

Reference: Through an outcomes-oriented, customer-focused integrated planning process, this plan was designed to achieve balance between price and service quality performance both in the near-and longer-term, while readying the grid with least regrets investments to serve the needs of an increasingly electrified economy. [DSP Page 2]

- a) Please provide details on the tools, plans or documents that THESL is using to identify metrics/outcome and gauge progress against there over the longer term (i.e. across rate terms and out to 2030/2050).
- b) Please provide an documents THESL has to indicate where it currently is against its long-term outcome-oriented objectives and where it expects to be by the end of the new rate period (end of 2029).

2B-PP-29

Reference: DSP Figure 2: Percentage of Assets Past Useful Life [Exhibit 2B]

- a) Please provide the number of assets against the percentages included in Figure 2. If the detailed breakdown is available in evidence filed already, please provide the reference.
- b) Please provide the equivalent pie chart, percentages and units underlying the percentages for 2020 information (the start of the current rate period, or as close as possible based on information available).

2B-PP-30

Reference: the DSP Page 27 footnote 42 includes external reports relied on by THESL.
Reference: PollutionProbe_IR_AppendixB_Assessment-of-IESO-Pathways-to-Decarbonization

- a) One of the references used by THESL is the Enbridge Pathways to Net Zero Report prepared by Guidehouse. There were 3 versions of the report issued in support of EB-2022-0200 Phase 1 and there was general consensus that the report over-estimated electrification costs and facilities, while under-estimating gas costs and facilities. Please confirm what analysis THESL did (if any) to validate or adjust for the residual errors in that report.
- b) THESL references the IESO Pathways to Decarbonization Report and there has been recent analysis and reports that provide an objective assessment and a focus on the alignment of that study with municipal climate action plans. An example is included as Appendix B noted above. Please provide copies of any analysis THESL did (if any) to validate what was in the IESO report. Please also provide what consideration THESL has given to the Assessment-of-IESO-Pathways-to-Decarbonization Report.
- c) If the information outlined in the Assessment report were applied, please confirm that a lower amount of capital investment would be required. If not correct, please explain.

2B-PP-31

Reference: Needs Assessment Report [Exhibit 2B, Section B]

- a) The Technical Working Group for the Needs Assessment only included utilities. Please explain why no other stakeholders such as the City of Toronto were included in the TWG.
- b) THESL's application and related evidence relies heavily on funding/actions THESL believes are needed to meet customers' needs from the Energy Transition and City of Toronto Net Zero by 2040 objectives. The Needs Assessment, RIP and Infrastructure Plan include needs and recommendations only for traditional poles-and-wires solutions. Please reconcile this discrepancy between the poles-and-wires recommendations and the THESL application which highlights a broader plan.
- c) Please explain how THESL's application (and in particular the DSP and Capital Plan) will deliver on needs and recommendations outlined in the Needs Assessment and subsequent documents [Integrated Regional Resource Plan (IRRP) and Regional Infrastructure Plan (RIP)] that resolve the recommendations from the Needs Assessment.
- d) Please describe how (if at all) Non-Wires Solutions (including DERs) will be included in the current cycle of planning, such as the
 - Needs Assessment
 - Scoping Assessment
 - Integrated Regional Resource Plan (IRRP); and
 - Regional Infrastructure Plan (RIP)
- e) Please describe how (if at all) stakeholder input (including the City of Toronto) will be identified and included in the current cycle of planning, such as the
 - Needs Assessment
 - Scoping Assessment
 - Integrated Regional Resource Plan (IRRP); and
 - Regional Infrastructure Plan (RIP)
- f) Please explain how Non-Wire Solutions (including DERs) can be considered and implemented instead of poles-and-wires solutions when they were not included in the regional planning exercise and related reports.

2B-PP-32

Reference: The previously Toronto RIP was completed in March 2020 and was filed. However, the updated IRRP and RIP are currently in progress. The Toronto RIP for the current cycle is scheduled for completion in March 2025 based on the Needs Assessment completed December 2022 and the Scoping Assessment report in March 2023.

Based on the updates in progress, please outline what significant changes are expected from the 2020 RIP and what impact it could have on the 2025-2029 period and beyond.

2B-PP-33

Reference: Scoping Assessment Outcome Report dated March 21, 2023 [Exhibit 2B, Section B, Appendix E]

- a) The Scoping Report indicates that “The implementation of recommendations from the previous planning cycle should continue”. Would locking poles-and-wires recommendations in from the previous planning cycle provide a barrier to more current solutions such as DERs? If not, why not.
- b) Would THESL support City of Toronto being a member of the Technical Working Group? If not, why not.

2B-PP-34

Reference: D4.1.1.4 Electric Vehicle Demand Driver Analysis

- a) Figure 1 is called “Peak Demand Forecast” but appears to be just the forecasted number of EVs. Please confirm why the term ‘peak’ was used.
- b) Please confirm how the number of EVs forecasted is translated into system peak demand forecast and how the following adjustments are factored in.
 - Off-peak Ultra Low EV charging rates (migrating to off peak)
 - Consumer choice and behaviour to charge off peak
 - DER integration or programs to decrease peak load or increase local generation.

2B-PP-35

Reference: Figure 4: Toronto Hydro System Peak Demand Forecast by Driver [D4]

- a) Please provide the numbers underlying the Figure 4.
- b) Figure 4 appears to forecast EV as increasing demand only rather than EVs being a potential DER resource. Please provide details on how THESL plans to leverage EVs to benefit the system over the rate period and beyond.

2B-PP-36

Reference: Future Energy Scenarios, Report by Element Energy [Exhibit 2B, Section D4, Appendix B]

- a) Was the Future Energy Scenario Report peer reviewed. If yes, please provide a list of participants and their feedback.
- b) Please provide a list of the stakeholders consulted or stakeholders otherwise part of the information input, modeling inputs and/or report development process.
- c) Please provide the source of information and related references for each row in Table 1: Technology uptake scenarios
- d) Please indicate if/how the modeling was validated against the City of Toronto energy and emissions plan information, modeling and data.

2B-PP-37

Reference: Grid Modernization Strategy

Please explain how THESL will pick where to deploy each of the Grid Modernization elements (i.e. are there specific geographies or areas of the grid, or will it be spread diffusely across the system).

1B-PP-38

Reference: DER connections have grown in recent years as a result of government policies and declining costs of technologies such as solar panels. By the end of the decade, Toronto Hydro expects to have over 4,400 DER connection projects representing a total installed capacity of approximately 517 MW, an increase of approximately 67 percent compared to 2022. [Investment Plan Section 2.3.1]

Please provide a breakdown by major category of the current and expected (end of decade or best available information) DERs by count and MW contribution.

2B-PP-39

Reference: E3.2.1 Forecasted Connections for Renewable - Between 2023 and 2029, Toronto Hydro forecasts over 1700 additional renewable connections (totaling over 74 MW) to the distribution system.

Please summarize what THESL is doing to promote and enable customers to invest in and connect the over 1700 additional renewable resources.

3-PP-40

Please explain THESL's expectations related to OM&A costs over time as it makes progress on migrating to modern grid assets.

3-PP-41

Reference: Since 2006, Toronto Hydro has experienced a significant decrease in total energy consumption. [Exhibit 3 Tab 1 Schedule 1, Page 6]

- a) Please explain the correlation and/or discrepancy between declining energy consumption and forecasted increasing peak demand.
- b) Please explain if THESL has assessed opportunities to leverage the tools/factors enabling lower total consumption (e.g. CDM, technology, rates, behavior, etc.) to be leveraged in parallel for mitigating peak demand. If not, why not. If yes, please provide a copy of the analysis and findings.

3-PP-42

- a) Please provide the following data points and underlying references from Toronto Hydro for the the Clearspring integration model used to forecast the impacts onto the billing components of energy and demand:
 - Customer-owned renewable DERs ("Renewables"),
 - Customer-owned non-renewable DERs ("Non-Renewables"), and
 - Customer-owned energy storage resources
- b) Please provide the breakdown for energy storage resources if EVs are not included as an energy storage resource, or simply confirm if they were excluded.

3-PP-43

Reference: Table 11: DER Billed Demand (kVA) by Technology Type

The % of Total Billed Demand Forecast related to DERs out to 2029 is -1.6%. This value seems really low, particularly in relation to expected DER penetration and the Toronto Net Zero 2040 objective. Please provide any relevant benchmark information THESL has related to this and explain why THESL believes -1.6% is an adequate goal for aggressive DER development.

3-PP-44

Please provide what penetration THESL has forecasted for the IESO funded ASHP program in its forecast.

3-PP-45

Reference: There is a balancing of impacts between the technologies as EVs will increase energy and billing demand, whereas DERs will lower energy and billing demand - Integration of Revenue Forecast with Electric Vehicle and Distributed Energy Resource Forecasts – Exhibit 3 Tab 1 Schedule 1 Appendix J.

- a) Please explain how the Ultra Low Overnight Rate implemented in Ontario was included in the Clearspring modeling and results.
- b) Please explain what the impact would be if the Ultra Low Overnight Rate was excluded.

3-PP-46

Reference: Clearspring Integration of Revenue Forecast with Electric Vehicle and Distributed Energy Resource Forecasts – Exhibit 3 Tab 1 Schedule 1 Appendix J.

- a) Was the Clearspring Report peer reviewed. If yes, please provide a list of participants and their feedback.
- b) Please provide a list of the stakeholders consulted or stakeholders otherwise part of the information input, modeling inputs and/or report development process.
- c) Please indicate if/how the modeling was validated against the City of Toronto energy and emissions plan information, modeling and data.

4-PP-47

Reference: Exhibit 4, Tab 1, Schedule 1, Page 7

Please replicate the layout of Figure 1: Comparing 2014-2029 Linear Trends in CAPEX, OM&A and FTE using the following two datasets as separate figures:

- Comparing 2014-2024 Linear Trends in CAPEX, OM&A and FTE
- Comparing 2025-2029 Linear Trends in CAPEX, OM&A and FTE

4-PP-48

Reference: Exhibit 4, Tab 1, Schedule 1, Page 16 – Figure 4: OM&A Expenditure per MWh of Load

Please replicate this graph with OM&A Expenditure per Customer information.

4-PP-49

Reference: Figure 9: OM&A Expenditure per Customer

- a) Please provide the data for the bars in Figure 9.
- b) Please explain how OM&A Cost per Customer is used in the industry and whether it is a suitable benchmark metric. If it is not a suitable metric, please explain what is better and why.

9-PP-50

Reference: General information on the Innovation Fund in Exhibit 9, plus

“The proposed Innovation Fund is an important part of Toronto Hydro’s 2025-2029 Custom Rate Framework because it addresses needs that are not adequately met by existing funding mechanisms which favour investment where the beneficial outcomes are proven or certain.” [Exhibit 1B, Tab 2, Schedule 1, Page 33]

- a) Please provide any documentation that defines the criteria and boundaries of spending under the proposed Innovation Fund. Please explain how this would be different from other Capital or OM&A spending and how the results would be tracked.
- b) Please provide (or explain if documents do not exist) the governance structure intended to be used for the Innovation Fund, including which external stakeholders would be part of the advisory committee (or equivalent).
- c) The OEB, IESO and others have had programs to enable LDC and industry innovation, including ones that THESL already leverages. Please explain what THESL has done to maximize use of those tools and why a separate Innovation fund just for THESL is required.
- d) Please explain the process THESL will use to leverage results from the proposed Innovation Fund more broadly to benefit other LDCs and stakeholders in Ontario.

9-PP-51

Please explain what the ‘asymmetrical’ Earning Sharing Mechanism means in comparison to the existing ‘symmetrical’ ESM.