ENERGY PROBE RESEARCH FOUNDATION INTERROGATORIES

L1.INTERROGATORY EP-1

Reference: Exhibit M1 Page 38 Table 5

a) Please clarify which Canadian/Ontario utilities were included in the sample of 83 utilities.

b) How does the current Ontario data set differ from the prior PEG study presented in Toronto Hydro evidence at Exhibit 1B Tab 4 Schedule 3 (PEG Benchmarking Data).

Response to EP-1: The following response was provided by PEG.

a) The question incorrectly states the number of sampled utilities in Exhibit M1 Page 38 Table 5. The total count is 84: 83 U.S. power distributors and Toronto Hydro.

b) PEG's models in this proceeding were estimated using data for only one Ontario utility: Toronto Hydro. In contrast, the benchmarking spreadsheet in Exhibit 1B/Tab 4/Schedule 3 is based on a model that is estimated using data for numerous Ontario utilities. Please see the response to EP-2 for additional details on the difference between the current dataset and the dataset used in IRM4.

L1.INTERROGATORY EP-2

References: Exhibit M1 Page 7 and Figure 2 and Page 43; Exhibit 1B Tab 4 Schedule 2 PSE Report Pages 4 and 15/16; Exhibit 1B Tab 4 Schedule 3 PEG Benchmarking Data

a) Please confirm that PSE's results show Toronto Hydro Total Costs are 18.7% below the Peer Group Benchmark moving to 6% below in 2024 compared to the PEG Benchmark showing Toronto Hydro Cost Performance is 54% of above peer group.

b) PEG concludes that during the term of the proposed plan, the Company's projected/proposed OM&A expenses would be about 12.1% *below* the model's predictions whereas the Company's capital cost would be about 43.0% *above* the predictions and capex would be about 21.7% above predictions. The results of these studies are summarized in Figures 1 and 2. Why is the result materially different from that presented in Exhibit 1B,Tab 4, Schedule 3 and from PSE? Please list and discuss the key points similar those on Page 43.

c) Discuss which result (PEG or PSE) should ratepayers and the OEB use in setting the CIR rate plan and the X/stretch factor and list all of the reasons why the Board should adopt the PEG recommendation rather than PSE.

Response to EP-2: The following response was provided by PEG.

a) PSE reported Toronto Hydro's total cost performance to be 18.6% below its model's prediction during the last three years for which historical data were available (2015-2017). The Company's total cost would be 6% below the model's prediction on average during the five years of the proposed IRM (2020-2024). Using the revised total cost model that PEG reports in response to Exhibit L1/Tab 1/Schedule 26 (d), Toronto Hydro's total cost was essentially equal to the model's predictions, on average, from 2015-2017. The Company's proposed total cost would be 15.6% above the revised model's predictions on average during the 2020-24 period.

b) Results of PEG's OM&A and capital cost benchmarking can, in principle, vary considerably from total cost benchmarking results that are produced using PEG or PSE models. During the five years of the proposed plan, Toronto Hydro's OM&A expenses would be 12.1% *below* the PEG OM&A model's prediction on average. Using the revised capital cost and capex models that PEG presents in its response to Exhibit L1/Tab 1/Schedule 26 (d), Toronto Hydro's proposed capital cost would be 35.7% *above* the model's predictions on average during these years, while proposed capex would be 14.9% above the model's predictions on average. These results are not inconsistent with a total cost that is 15.6% above the revised model's predictions.

   Exhibit 1B/Tab 4/Schedule 3 is based on Toronto Hydro's recent and forecasted total cost benchmarking scores under the IRM-4 Ratemaking Framework. These scores are generated from annual updates of PEG's 2013 benchmarking study[1] and are different than the results from PEG's revised total cost model. Key differences, expanded upon in the table below, are the companies in the econometric study sample, sample periods, price indexes, cost definitions, estimation procedures, and model specifications. "IRM-4" refers to the 2013 PEG study (and its annual updates) and Exhibit M1 refers to the PEG's revised benchmarking study of Toronto Hydro submitted in response to M1-TH-026. The table also lists differences found between the latter study and PSE's study in Exhibit 1B Tab 4 Schedule 2.

		IRM-4	Exhibit M1 (Revised)	PSE
Sample	Region of sampled Utilities	Ontario	U.S., Ontario (THESL only)	U.S., Ontario (6 utilities)
	Sample Size	73	84	90
	Sample Period	2002-2012	1995-2017	2002-2016
Cost Definition	Distribution O&M	Included	Included	Included
	Sales Expenses	Included	Included	Included
	Customer Accounts (less uncollectible)	Included	Included	Included
	Customer Service and Information	Included	Excluded	Excluded
	Pensions and Benefits	Included	Excluded	Included
	Capital Benchmark Year	1989 or 2002	1964 (U.S.), 1989 (THESL)[2]	1989 (U.S.), 2002 (Ontario)
	Contributions in Aid of Construction	Included	Excluded	Excluded
	High Voltage Expenses	Excluded	Included	Included
Price Indexes	Labor Price Index	Ontario AWE	Regionalized ECI[4] (US), Ontario AWE (THESL)	ECI (US), ECI*PPP[6] (Ontario)
	Materials Price Index	Canada GDP-IPI	Canada GDP-PI (US), GDP-IPI (THESL)	GDP-PI (US), GDP-PI*PPP (Ontario)
	Construction Cost Trend Index	EUCPI[3]	HW (US), Custom[5] (THESL)	HW (US), HW*PPP (Ontario)
	O&M Cost Share Weights	Fixed	Varied	Fixed

[1] Kaufmann, Lawrence, Hovde, Kalfayan, Rebane. *Productivity and Benchmarking Research in Support of Incentive Rate Setting: Final Report to the Ontario Energy Board.* November 5, 2013.

[2] Exceptions are Toronto Hydro and Northern States Power – WI, which both received a 1989 benchmark year.

[3] Electric utility construction price index for distribution systems (Statistics Canada).

[4] Regionalized Utility Salaries and Wages ECIs (Employment Cost Indexes from the U.S. Bureau of Labor and Statistics). Note that PSE uses the salaries and wages version of ECI too even though pensions and benefits are included in their cost.

[5] PEG's preferred Ontario LDC plant additions deflator originates from Statistics Canada Stock and Consumption of Fixed Non-Residential Capital ("SCFNRC") program. The annual survey collects data on utility-business capital expenditure on over 140 different types of machinery, equipment, and construction assets, which is then used to construct an annual index of deflated capital investment. Since deflated investment is provided in both constant (2012) and current prices, the ratio of the two implicitly yields capital asset price change over time. The indexes are constructed by industry and region and in particular, are available for the utility business in Ontario. Handy-Whitman (HW) regional power distribution construction cost indexes are used for the U.S. companies.

[6] Utility Employment Cost Index (U.S. Bureau of Labor Statistics). Purchasing Power Parity between U.S. and Canada.

Function	Translog Treatment of Scale Variables	Yes	Yes	Yes
Estimation Procedure	Cost-share equations, SUR[7]	Yes	No	No
	Composite price index, one equation	No	Yes	Yes
	Correction for Autocorrelation	Yes	Yes	No
	Correction for Heteroskedasticity	Yes	Yes	Yes
Total Cost Model Variables	Number of Customers	Yes	Yes	Yes
	Ratcheted Maximum Peak Demand	Yes	Yes	Yes
	Retail Deliveries	Yes	No	No
	Average Line Length	Yes	No	No
	Customer Growth over 10 Years	Yes	No	No
	Percent Congested Urban	Yes	Yes	Yes
	Percent of Plant Underground	Yes	No	Yes
	Area Not Congested Urban	No	Yes	No
	Percent Forested	No	Yes	Yes
	Percent of Customers Electric	No	Yes	Yes
	Percent of Customers with AMI	No	Yes	Yes
	Elevation Deviation	No	Yes	Yes
	Trend	Yes	Yes	Yes
	Ontario Binary Variable	No	No	Yes
	%UG*%CU	No	No	Yes
	Percent Plant Overhead	No	Yes	No

c) PEG believes that its revised benchmarking results prepared for OEB Staff in this proceeding should provide the basis for Toronto Hydro's stretch factor. The advantages of PEG's benchmarking work include the following.

- A considerably larger sample size was used for model estimation due to the inclusion of additional years of data that include 2017. Thus, estimates of model parameters should be more precise.
- The PEG model has a more balanced treatment of urban and rural challenges. The Company does face urban challenges but does not face rural challenges. Cost benchmarks should reflect both of these realities.
- Pension and benefit expenses are excluded because these are hard to benchmark accurately and will be addressed by variance accounts in the proposed IRM. In addition, Toronto Hydro may have different health insurance obligations than does the typical U.S. utility.
- Using a 1964 benchmark year for the U.S. utilities to start the calculation of capital costs means that capital costs were estimated more accurately.
- Better input price indexes were used for Toronto Hydro.
- PEG also presents benchmarking results for OM&A expenses, capital cost, and capital expenditures using econometric models that are experimental but informative.

[7] SUR = seemingly unrelated regression technique for estimating parameters of multiple equations.

- PSE's lack of adjustment for serial autocorrelation lowers the accuracy of the model by unnecessarily biasing estimates of the standard deviations of the parameter estimates.[8] The consequence is that some parameter estimates could be falsely considered statistically significant.
- PSE's model suffers from being over-fit with extra quadratic and interaction terms that can lower the model's ability to predict cost within a reasonable range of error.
- PSE's model is particularly sensitive to small methodological changes.[9] On the other hand, PEG's model is robust to small changes in specification and sample.

[8] A statistical test detected serial autocorrelation in PSE's dataset with high confidence. As its presence is usually assumed in panel data, it is not clear why PSE chose not to correct for this problem as stated in undertaking Schedule JTC4.32.3, p. 3.

[9] Exhibit M1, p. 26.

Stretch Factor

L1.INTERROGATORY EP-3

Reference: Exhibit M1 Page 9

Preamble: *"On the basis of our research, we believe that a 0.45% stretch factor is indicated for Toronto Hydro provided that the Board is comfortable fixing the stretch factor for the full plan term. Combined with a 0% base productivity factor, this would yield an X factor of 0.45%. The PCI formula would then be Inflation - 0.45% exclusive of Z or growth factors".*

a) In the context of the RRFE, please provide more detail, why the results of PEG's analysis suggest the Toronto Hydro 2020-2024 CIR Plan should have a 0.45 stretch factor and an X factor of - 0.45.

b) Discuss the main reasons this differs from the PSE recommendation.

c) If the actual revenue requirement and ROE during the term is lower or higher than allowed should there be an interim adjustment to the formula?

Response to EP-3: The following response was provided by PEG.

a) In 4th GIRM X factors are the sum of the industry productivity growth trend and a company-specific "stretch" factor. There are 5 possible stretch factors depending on individual company total cost benchmarking results. Base productivity growth was set at 0. The relationship between benchmarking scores and stretch factors is as follows:

Cohort	Range of Benchmarking Scores	Stretch Factor
1	≤ -25%	0%
2	(-25%, -10%)	0.15%
3	(-10%, 10%)	0.3%
4	(10%, 25%)	0.45%
5	≥ 25%	0.6%

Based on the benchmarking results using the revised total cost model that PEG presented in response to M1-TH-026 (d), Toronto Hydro's average score of 15.6% during the five years of the proposed IRM would be commensurate with a stretch factor of 0.45%. The X factor recommendation is therefore X = 0% Base Productivity Growth + 0.45% Stretch Factor = 0.45%.

b) The considerable differences in the total cost benchmarking scores of PSE and PEG are due to differences in methodology which PEG discussed in response to Exhibit L1/Tab 2/Schedule 2. PSE's benchmarking research would place Toronto Hydro in Cohort 3 with a stretch factor of 0.3%. PSE's X factor recommendation is therefore X = 0% Base Productivity Growth Trend + 0.3% Stretch

Factor = 0.3%.

c) Whether to update the stretch factor during the plan to reflect new benchmarking results is a judgment call. On the plus side, this practice would strengthen Toronto Hydro's incentive to contain cost. On the minus side, a benchmarking model would have to be chosen and updated results would have to be produced during the plan and reviewed by the Board for each annual rate update.

Reliability Benchmarking Econometric Models

L1.INTERROGATORY EP-4

Reference: Exhibit 1BTab 4 Schedule 2 Page 44, Tables 2 & 3, Figures 2 & 3; EB-2014-0116 Exhibit B, Tab 2, Schedule 5, Table 15 and, Figures 4&5

Preamble: PSE States: "*We find that Toronto Hydro's 2015-2017 average SAIFI is 47.2% above the benchmark value. Our research on Toronto Hydro's 2015-2017 average CAIDI indicates that the reliability level is 63.4% below the benchmark value".*

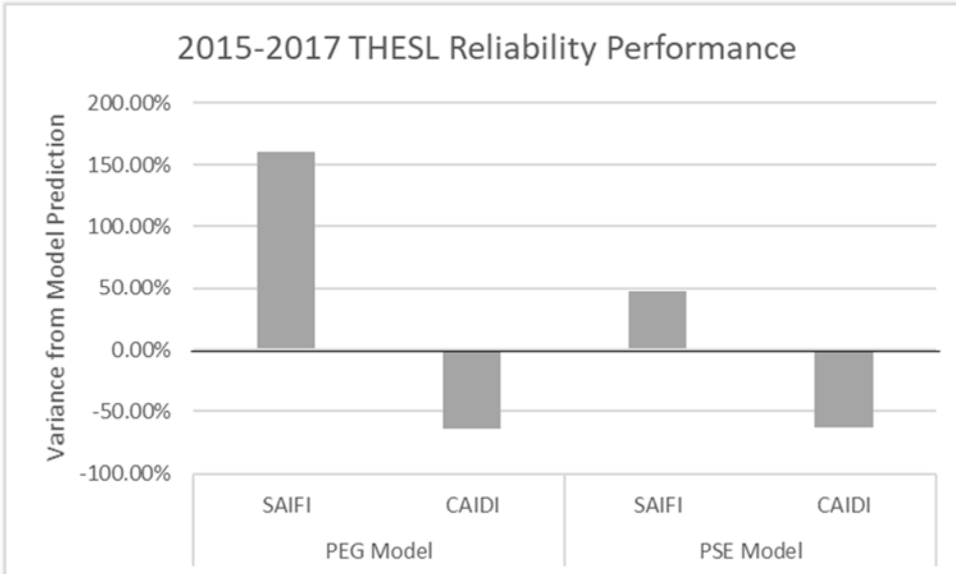
a) Please provide a comparison summary table and bar chart with PEG and PSE results.
b) Please comment on the accuracy of the two econometric reliability models.
c) Does PEG believe econometric reliability models should be used in custom IR Plans or in all applications (transmission and distribution)?

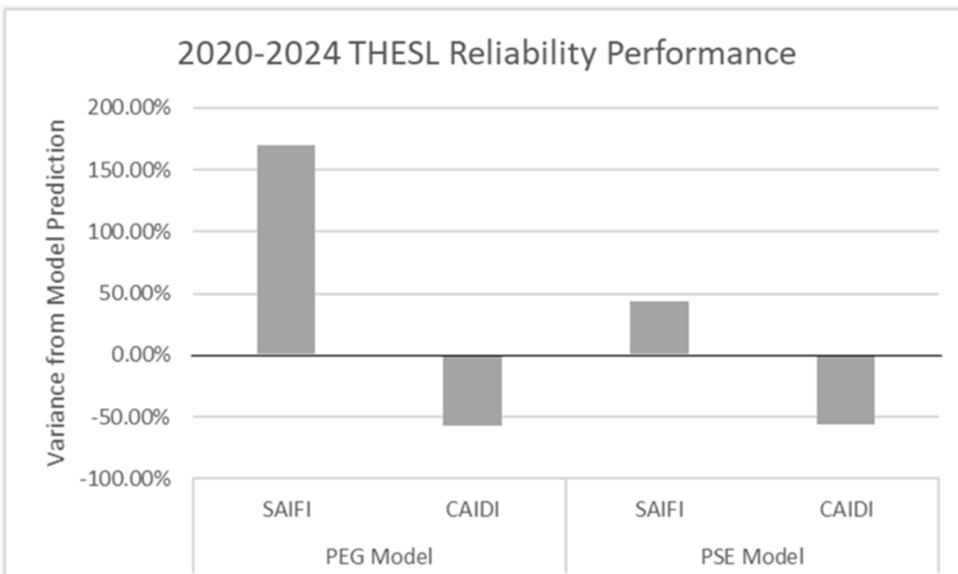
Response to EP-4: The following response was provided by PEG.

a) Here are a summary table and bar charts of the PEG and PSE Reliability Benchmarking results over the 2005-2022 period.

Summary of Reliability Benchmarking Results

	PEG Model		**PSE Model**	
Year	SAIFI	CAIDI	SAIFI	CAIDI
2005	131.2%	-45.4%	43.7%	-47.1%
2006	158.1%	-62.0%	61.2%	-62.2%
2007	161.6%	-52.1%	63.9%	-54.5%
2008	160.9%	-58.4%	58.8%	-56.1%
2009	147.2%	-34.8%	46.4%	-33.4%
2010	155.0%	-42.2%	48.9%	-41.7%
2011	158.9%	-39.9%	56.7%	-38.0%
2012	149.6%	-54.3%	39.8%	-54.2%
2013	159.7%	-52.5%	47.5%	-50.4%
2014	152.6%	-60.8%	44.5%	-60.4%
2015	161.2%	-59.7%	49.7%	-59.8%
2016	161.3%	-66.1%	45.7%	-66.8%
2017	160.2%	-65.3%	46.3%	-63.6%
2018	164.3%	-64.9%	46.7%	-62.9%
2019	164.8%	-58.0%	44.3%	-56.6%
2020	166.5%	-57.8%	44.0%	-56.3%
2021	168.1%	-57.6%	43.8%	-56.1%
2022	169.9%	-57.4%	43.6%	-55.9%
2023	171.7%	-57.2%	43.5%	-55.6%
2024	173.5%	-57.0%	43.5%	-55.3%





b) Reliability benchmarking is still in its early stages compared to cost benchmarking due to issues involving data reporting and collection, non-standard exclusion criteria, and omitted reliability drivers. The U.S. Energy Information Administration ("EIA") only recently (2013) required utilities to report reliability data, and there are differences between utilities in how these data are reported. Some companies record outages at the transformer level while others record at the customer level. Lack of standard exclusion criteria, definitions of a sustained outage, voltage delimiter between distribution and transmission, and major event days exacerbate the problem. Loss of supply and planned outages are included in the reported metrics, exposing distribution reliability models to variation in transmission and generation reliability that should be isolated from distribution reliability.[10] There are also a number of variables that should be included in a reliability model but for which the data are unavailable. These include but are not limited to: age and health of infrastructure; lightning strikes; flooding; and marine salt corrosion problems. The explanatory power of these models is much lower than is typically achieved in PEG's econometric cost research. However, this is partly because both reliability metrics control for differences in utility operating scale, whereas operating scale is addressed by right-hand side variables in cost models. The estimated impacts on reliability of several suspected "drivers" are plausible. Trends in industry reliability are captured.

PEG included several additional variables in its reliability models that were missing from PSE's models. PSE and PEG both find generally the same direction of results. However, PEG ranks Toronto Hydro much worse in SAIFI performance than does PSE.

c) PEG believes that a holistic approach should be taken to utility performance benchmarking such that appropriate balance is given to cost efficiency and reliability. The OEB should invest in the capability to benchmark power distribution reliability as well as cost. It makes sense to benchmark the reliability of all distributors and not just those requesting Custom IR plans. Reliability matters greatly to customers and also affects cost. High (low) cost may be due in part to superior (inferior) reliability. Utilities may be justified in having higher costs in order to meet consumer demand for higher reliability. As stated in PEG's testimony, reliability benchmarking has been a stated intention of the OEB for many years.

[10] To the extent loss of supply and planned outages are random, this is less of a concern.

Deferral & Variance Accounts

L1.INTERROGATORY EP-5

Reference: Exhibit M1, Page 13

Preamble: A Lost Revenue Adjustment would compensate the Company for load losses due to conservation and demand management ("CDM") programs. Costs of CDM programs would continue to be funded by Ontario's Independent Electricity System Operator rather than through rates.

The Government has announced plans to upload conservation programs to the Independent Electricity System Operator. What directional changes/adjustments would that require to the Toronto Hydro CIR Plan, including the LRAM and Load Forecast?

Response to EP-5: The following response was provided by PEG.

PEG was not retained to undertake a careful review of the Company's LRAM or Load Forecast evidence. However, PEG has responded on a "best efforts" basis.

From a review of recent Ontario government activity and proposals with regard to CDM programs, PEG understands that the Ontario government has proposed major revisions to Ontario CDM programs. These would make the Independent Electricity System Operator ("IESO") the primary provider of CDM programs in the province. The government expects that the costs of CDM will drop by approximately 40%, while avoided electricity sales will drop by about 30%. LDCs will no longer be required to participate in CDM activities. While their role may not cease entirely, it is expected to be diminished. A further proposed change is a refocusing of CDM programs to address fewer segments of customers, most notably the exclusion of programs for residential customers who are not low-income or located in a First Nations community. These actions would take effect immediately on an interim basis, with a new multiyear CDM plan being fully developed by 2021. In a separate bill that has been proposed, taxes could be used to fund CDM programs administered by the IESO.

PEG believes that as a consequence of these initiatives and rising fixed charges for distributor services, an LRAM would not be as material for Toronto Hydro (and other Ontario distributors). CDM programs would only affect more limited customers and customer classes, and thus lost revenues would only pertain to those classes and groups, and would be smaller in aggregate. Forecasts of load growth would be more difficult and load growth could increase, due to lower avoided sales and demand due to CDM, than would be the case if CDM plans continued as established in 2011. Increased load growth would presumably lead to an increase in the g term of the Custom IR formula, all else being equal. There may, in the longer term, be an increased need for growth-related distribution capex (e.g., substation and transformer capacity) in some areas.

Some form of LRAM is likely needed, for Toronto Hydro, and for other Ontario distributors, with the wind down of the current CDM plan and with a new CDM plan for 2021, but what form this takes, its materiality, or what changes to the current LRAM cannot be determined at this time.

L1.INTERROGATORY EP-6

Reference: Exhibit M1, Page 10

Preamble: *"The proposed ratemaking treatment of capital cost is problematic. Incentives to contain capex would be weakened by the CRRRVA and the Externally-Driven Capital Variance Account. The Company is perversely incented to spend excessive amounts on capital that slows growth of OM&A expenses. Notwithstanding the CRRRVA, the Company is still incentivized to exaggerate its need for supplemental revenue. The regulatory cost for the OEB and stakeholders is substantially raised and, ultimately, it is ratepayers who bear the burden of the capital cost increases."*

As noted above, TH has proposed a CRRRVA account. PEG suggests, inter alia, this reduces the incentive to control Capital Expenditures. Does PEG agree/disagree that another approach could be an Account to adjust for timing of assets in service (ISAs)? Please comment on the merits of such an in-service assets deferral/variance account vs the proposed CRRRVA account, from a regulatory incentive perspective

Response to EP-6: The following response was provided by PEG.

PEG was not asked by OEB Staff to examine the ISA carefully and therefore cannot provide a helpful response.

Performance Targets 2020-2024F

L1.INTERROGATORY EP-7

Reference: Exhibit M1, Pages 14 and16

Preamble: The Company has proposed to add 15 metrics to its existing performance scorecard and service quality reporting requirements. Each of these metrics would be associated with a goal, which may be to monitor, improve, or maintain performance. For each metric associated with the goal of maintaining or improving performance, Toronto Hydro's recent historical average performance was provided. The Company states that these targets are calibrated based on its proposed capital spending and that any change to this spending may affect the proposed targets.

Given the comments of the Board (OEB, Decision and Order EB-2014-0116, *op. cit*., p. 6-7) Cited on Page 16 of the Evidence, does PEG have an opinion and/or comments on the TH Performance Targets, given its experience with other IRM CIR plans, including recently, Hydro Quebec Distribution and Hydro One Distribution? Specifically Energy Probe is interested in the appropriate baseline, qualitative targets vs quantitative, equal vs specific weighting and any other comments such as links to allowed return and ESM.

Response to EP-7: The following response was provided by PEG.

PEG was not asked by OEB Staff to undertake a thorough review of Toronto Hydro's proposed performance metric system. However, in work for other clients, PEG has gained some familiarity with the design of these systems and has responded on a "best efforts" basis.

As part of its Custom IR plan application, Toronto Hydro has proposed to report 44 metrics annually. These consist of the 29 metrics that are currently reported on the Electricity Distributor Scorecard and through the Electricity Service Quality Requirements and 15 new metrics that Toronto Hydro refers to as "Custom Performance Measures". None of these metrics are tied to financial performance, though several scorecard metrics and all of the electricity service quality requirement measures have targets.

Here are some pertinent comments.

- Multiyear rate plans (called incentive rate-setting mechanisms in Ontario) conventionally include performance metric systems that feature several performance metrics. Some of these metrics are coupled with targets, and some that do have targets provide the basis for financial incentives. Financial incentives tied to performance metrics are sometimes called targeted performance incentive mechanisms ("PIMs").
- In most MRPs there are PIMs for several dimensions of service quality (e.g., SAIDI and SAIFI). PIMs are also common to provide a "positive" reward to utilities for conservation programs.

Avant-garde jurisdictions like New York are adding PIMs to provide a reward for peak load management programs. The focus of these new PIMs may be system-wide peak load management and/or the use of non-wire alternatives ("NWAs") in local areas where capital expenditures can be avoided. Peak-load management PIMs are often designed to share net savings. PIMs are not common for safety metrics. One reason is that utilities are often exposed financially to the risk of injuries and damages that their operations cause. In the United States, Pacific Gas and Electric has filed for bankruptcy due to large injury and damage claims.

- Metrics have been added to performance metric systems in some jurisdictions to reflect concerns with other new challenges that utilities face. These metrics include the quality of services to distributed generation customers, utilization of web portals, and participation in peak load pricing programs.
- Targets for utility performance metrics often take the form of an average of the utility's recent values for the metrics. One reason is that the utility values for the metrics are often deemed appropriate for its circumstances. Another is that standardized data on the metrics are frequently unavailable for other utilities. A third is that consumers may be unwilling to pay a premium for improved reliability.
- Reliability metrics typically have the largest weights amongst the PIMs.
- It generally makes more sense to link performance outcomes to revenue than to an ESM. ESMs often share only surplus earnings and utilities operating under MRPs do not always earn surplus earnings.

L1.INTERROGATORY EP-8

Reference: Exhibit M1, Page 20

Preamble: "*PSE also benchmarked the Company's reliability. Econometric models were developed for the System Average Interruption Frequency Index ("SAIFI") and Customer Average Interruption Duration Index ("CAIDI") using U.S. data. These models control for various business conditions, such as forestation and undergrounding, which can affect reliability. The models were developed using data from utility reports to state regulators as well as form EIA 861 data.*

Benchmarking work using these models suggests that the Company has long been an inferior SAIFI performer but a superior CAIDI performer and that these performances will not change much during the new plan."

a) Does PEG agree/disagree with this statement. Please Discuss.

b) Please provide an opinion if ratepayers/customers should accept that reliability will not improve under the CIR plan and if improved reliability a desirable outcome of the Capital Plan

Response to EP-8: The following response was provided by PEG.

a) PEG is the author of the statement about PSE's reliability research and still agrees with the statement. Using PEG's models, Toronto Hydro's recent SAIFI performance has been substandard and will worsen a little during the proposed plan while its CAIDI performance has been good and may worsen a little during the plan. The PEG and PSE appraisals of Toronto Hydro's reliability are therefore fairly similar.

b) Toronto Hydro's CAIDI performance is good. However, the Company ranked last in PEG's model of SAIFI performance, even among utilities facing similar urban challenges. SAIFI benchmarking results are very sensitive to the inclusion of an urban congestion variable in the models. The models do not reveal if consumers in Toronto are currently satisfied with the level of SAIFI and/or are willing to pay the price for better reliability. An appropriate balance must be struck between cost and reliability.

Alternative Cost Models

L1.INTERROGATORY EP-9

Reference: Exhibit M1, Page 26

a) Please provide a multi-year projection of the Toronto Hydro revenue requirement in Excel Format using PEG's recommended econometric model, parameters and assumptions. Please provide explanatory notes.

b) Please compare the results to those provided in PSE's evidence and comment on the main material drivers/differences (Inputs, Stretch Factor, Capital Factor etc.)

Response to EP-9: The following response was provided by PEG.

a) PEG's models are not designed to project revenue requirements since they use different methods for measuring capital cost and exclude certain revenue requirement components.

b) The chief differences between the benchmarking work of PSE and PEG in this proceeding are discussed in response to Exhibit L1/Tab 2/Schedule 2 (b).

Alternative Reliability Models

L1.INTERROGATORY EP-10

Reference: Exhibit M1, Page 31/32, Tables 3 and 4

Preamble: "*PEG developed alternative econometric reliability models using the data provided by PSE in its working papers. We modelled CAIDI and SAIFI using business condition variables obtained from PSE and an additional weather variable that are pertinent to power distributor reliability performance. The sampled companies were the same. We extended the sample period to include 2017."*

a) Please Confirm that Toronto Hydro has prepared a forecast of SAIFI and CAIDI for the CIR Plan period and provided this to PSE and PEG.

b) Please compare the PEG and PSE econometric model results to the Toronto Hydro forecasts for 2018-2024 in tabular and graphic formats.

Response to EP-10: The following response was provided by PEG.

a) PEG confirms that Toronto Hydro has forecasted its SAIFI and CAIDI. PEG used Toronto Hydro's historical and forecasted reliability data in its benchmarking work. These data are found in PSE's working papers.

b) Please see the response to Exhibit L1/Tab 2/Schedule 4 for the requested table and figure.