Interrogatories to OEB Staff

1. Reference: Exhibit M1, page 37, 38; Exhibit A, Tab 4, Schedule 1

The evidence states that, under the C-Factor, "capital revenue is chiefly determined on a cost of service basis" and that "British distributors operating under several generations of IR based on cost forecasts have repeatedly spent less on capex than they forecasted." Please confirm that, unlike cost of service, Hydro One's proposed C-Factor:

a. contains an in-service variance account that returns underspending to customers; and

b. Is made subject to a "productivity factor" so that the recovery is less than forecasted amounts.

c. PEG states that "another problem with the proposal is that customers must fully compensate Hydro One for expected capital revenue shortfalls." Please explain how this statement is true given that Hydro One's Custom IR proposal includes a capital in-service variance account as described in Exhibit A, Tab 4, Schedule 1 of the Application.

2. Reference: Exhibit M1, page 37

The evidence speculates that Hydro One may be timing the construction of its Integrated System Operating Centre in a way to increase its revenue.

a. Please advise of the facts upon which this statement is made and whether PEG made any attempt to investigate any facts in this regard.

b. Please explain how the impact on the C factor would be much less if the center was finished in 2019.

3. Reference: Exhibit M1, page 9

The evidence notes that the C-Factor "is similar to that which the Board approved for Toronto Hydro." Please confirm that PEG provided evidence on the Toronto Hydro C-Factor proposal and did not raise concerns with the incentives that it claims are inherent in a C-Factor that it is raising here.

4. Reference: Exhibit M1 Page 9

In the Toronto Hydro proceeding, PEG's pre-filed evidence stated:

> "THESL's C factor employs a sound method for ensuring that the C factor reflects only incremental capital spending, but the proposed C factor does not appropriately translate those cost changes into price changes. THESL's C factor will lead to revenue adjustments that exceed the change in capital costs because it does not account for the revenue growth resulting from changes in billing determinants.

Please confirm that the concern raised by PEG with respect to changes in billing determinants does not apply to Hydro One's proposal given that it is proposing a revenue cap, and not a rate cap.

5. Reference: Exhibit M1, page 41

Also with respect to the Toronto Hydro decision, the evidence refers to regulatory incentives that are postulated as capable of reducing capital costs and refers to the fact that the OEB disallowed 10% of Toronto Hydro's proposed capex in that decision. Although the footnote and the context suggest that this disallowance was for the purposes of adjusting the C factor, please confirm that the disallowance was made on its merits in a different part of the decision and not as a formulaic adjustment to the C factor.

6. Reference: Exhibit M1, page 38

The evidence asserts that "customers must fully compensate Hydro One for expected capital revenue shortfalls when capex is high". Please confirm your understanding that Hydro One will not be compensated for capex above what is forecasted.

7. Reference: Exhibit M1, page 38

The evidence states that customers "are not offered timely revenue reductions for expected cost reduction opportunities such as the acquisition of other utilities." Please confirm your understanding that the allocation of utility acquisition costs and revenues are addressed through a different OEB policy than IRM, i.e., in its policy respecting mergers, acquisitions, amalgamations and divestitures.

8. Reference: Exhibit M1, page 39

The evidence notes the author's disappointment with the ability of regulators such as Ofgem, the OEB and the AUC to address capital costs and proposes a new policy of addressing capital. The evidence also refers to "a future 5th GIRM proceeding" (e.g., at p. 20). Please confirm that there is also value in the OEB providing consistency and predictability in its regulatory treatment under the current IR regime before changing it in the middle of a proceeding without notice.

9. Reference: Exhibit M1

Please provide all working papers associated with the Pacific Economics Group ("PEG") study titled "IRM Design for Hydro One Networks, Inc." ("PEG Report"). These working papers should include the following:

i. All data in Excel Format.
ii. Calculations in Excel format or program code to show the derivation of the results from publicly available data.
iii. Identification of variable names and company ID numbers.
iv. Any other information needed for an experienced consultant to be able to replicate the work.

10. Reference: Exhibit M1, page 4

Please confirm that (1) the cited PSE TFP trend for Hydro One of -1.4% is the reported unadjusted TFP trend put forth by PSE, and (2) that the PSE-reported adjusted TFP trend for 2003-2015 for Hydro One is -0.9%.

11. Reference: Exhibit M1

PSE put forth two TFP indexes to measure Hydro One's productivity, labelled "unadjusted" and "adjusted." In PEG's opinion, which TFP index is a more comprehensive measure of Hydro One's performance trend?

12. Reference: Exhibit M1

Does PEG believe that negative stretch factors should be considered in certain circumstances? If so, please describe the circumstances that would warrant a negative stretch factor.

13. Reference: Exhibit M1

Does PEG believe that a negative productivity factor should be considered in certain circumstances? If so, please describe the circumstances that would warrant a negative productivity factor.

14. Reference: Exhibit M1, page 18

Please describe the "Utility Sector Capital Stock Deflator" for the Canadian utility sector mentioned in Table 1 on page 15 of the report, including any sources used. (This Stock Deflator is also referred to as the "implicit capital stock deflator" in other parts of the PEG report.) Is the sole source Statistics Canada? Please provide the calculations and specific indexes used by PEG using the Statistics Canada data or other data to arrive at this Stock Deflator.

15. Reference: Exhibit M1, page 13

What other asset price inflation measures did PEG consider? Please provide a list of the asset price inflators or deflators, along with any data gathered by PEG, and the reasons the alternatives were not preferred to the Utility Sector Capital Stock Deflator for the Canadian utility sector.

16. Reference: Exhibit M1, page 19

Is the data for the Canadian utility sector from Statistics Canada mentioned on p. 19 of the exhibit inclusive of utility functions other than electric distribution (i.e. power production and transmission)? Please list the possible utility functions included in the measure of the utility capital stock.

17. Reference: Exhibit M1, page 18

For the PEG preferred implicit Utility Sector Capital Stock Deflator, is PEG aware of how each utility function (e.g., distribution, transmission, production) is weighted within the measure?

a. If so, please provide the weights.
b. If PEG is not aware of the weights used in the implicit Utility Sector Capital Stock Deflator, what percentage of the Canadian utility capital stock does PEG reasonably expect would be associated with electric distribution functions, as opposed to non-distribution functions (i.e. power production and transmission)?

18. Reference: Exhibit M1, page 18

Does PEG believe that one weakness to the Utility Sector Capital Stock Deflator used by PEG for the Canadian utility sector is that it is not specific to the electric distribution industry? If PEG does not believe this is a weakness, please explain the reasoning for this conclusion.

19. Reference: Exhibit M1

The table below provides the North Atlantic American Handy Whitman indexes for total steam production plant, total nuclear production plant, total hydraulic production plant, total transmission plant, and total distribution plant from 2002 to 2015.

Note: the table below uses the reported Handy-Whitman in July of each year to simplify.

Year	Total Steam Production	Total Nuclear Production	Total Hydraulic Production	Total Transmission	**Total Distribution**
2002	438	403	364	416	**368**
2003	441	407	365	416	**373**
2004	465	427	384	455	**398**
2005	493	457	405	486	**428**
2006	515	479	418	523	**473**
2007	546	501	451	564	**521**
2008	596	545	486	629	**576**
2009	578	531	480	610	**591**
2010	604	556	497	638	**617**
2011	631	581	513	669	**649**
2012	645	595	519	682	**679**
2013	653	603	523	695	**701**
2014	672	620	534	712	**720**
2015	700	654	550	724	**735**
2002-2015	3.6%	3.7%	3.2%	4.3%	**5.3%**

a. According to the North Atlantic Handy Whitman indexes, have total distribution construction costs increased more rapidly than any of the major power production or total transmission construction costs from 2002 to 2015?

b. Please calculate and provide a revised TFP estimate for Hydro One, found in Table 2, using the Utility Sector Capital Stock Deflator for the Canadian utility sector, and adjusting PEG's index by adding the difference in annual growth rates of the North Atlantic Handy Whitman index for total electric distribution to total steam production plant.

c. Please calculate and provide a revised TFP estimate for Hydro One, found in Table 2, using the Utility Sector Capital Stock Deflator for the Canadian utility sector, and adjusting PEG's index by adding the difference in annual growth rates of the North Atlantic Handy Whitman index for total electric distribution to total nuclear production plant.

d. Please calculate and provide a revised TFP estimate for Hydro One, found in Table 2, using the Utility Sector Capital Stock Deflator for the Canadian utility sector, and adjusting PEG's index by adding the difference in annual growth rates of the North Atlantic Handy Whitman index for total electric distribution to total hydraulic production plant.

e. Please calculate and provide a revised TFP estimate for Hydro One, found in Table 2, using the Utility Sector Capital Stock Deflator for the Canadian utility sector, and adjusting PEG's index by adding the difference in annual growth rates of the North Atlantic Handy Whitman index for total electric distribution to total transmission plant.

20. Reference: Exhibit M1, page 21

In a separate table (or in a new column in Table 2), please add PSE's reliability and safety adjustments to Table 2 for both the PEG-calculated TFP and the PSE-calculated TFP for Hydro One. How does including PSE's reliability and safety adjustments affect Hydro One's productivity results?

21. Reference: Exhibit M1, page 21

In a separate table (or in a new column in Table 2), please add the PEG-calculated customer-only output index adjustment in Table 1 to the PEG-calculated TFP and PSE-calculated TFP for Hydro One found in Table 2. How does adding the customer-only index impact Hydro One's productivity results?

22. Reference: Exhibit M1, page 11

a. Has PEG used Handy-Whitman indexes for productivity or benchmarking studies in the past?
b. If so, approximately how many studies in the past ten years have used the Handy-Whitman indexes?
c. If so, please provide copies of the studies.

23. Reference: Exhibit M1, page 11

Please provide a list of all North American productivity or benchmarking studies conducted by PEG and include the asset price inflation measure used by PEG for each.

24. Reference: Exhibit M1, page 18

Please update Table 1 that provides the Ontario TFP trend estimates for the more recent 2011 to 2015 period.

25. Reference: Exhibit M1, page 14

On page 11 of the report, Dr. Lowry states: "Under Canadian GAAP, distributors were permitted to capitalize more costs than are permitted under IFRS." Please provide and describe the evidence used as the basis for this statement.

a. If it is assumed that the move to IFRS caused less capitalization of costs, would PEG expect lower capital costs under IFRS compared to the hypothetical where Canadian GAAP had remained in place?

b. If so, what effect on the Ontario industry TFP trend would this lower capitalization likely have had?

   i. If this cannot be exactly quantified, what general direction would lower capitalization have on the industry TFP trend?
   ii. Would lower capitalization of costs move capital costs in the opposite direction of the OM&A IFRS adjustment suggested by PEG in Table 1?

26. Reference: Exhibit M1, page 18

On pp. 9 and 10, the PEG report states, "We found that HWIs and EUCPIs both have drawbacks. Both were designed many years ago and have some cost-share weights and inflation subindexes that are now quite dated." Please provide any data or documentation for this claim, regarding both the HWI and EUCPI cost-share weights and inflation subindexes. Please further describe why these are now dated.

27. Reference: Exhibit M1, page 15

On p. 12, PEG states: "PSE found that the addition of reliability and safety variables to the scale index accelerated the estimated TFP trend of Hydro One over the full sample period by a substantial 90 basis points. We believe that system capabilities that depend on smart grid facilities (e.g., the quality of metering and the ability of distribution systems to handle 2-way power flows) are also legitimate candidates for inclusion in an elasticity-weighted output index."

a. Does PEG believe that the reliability and safety adjustments made by PSE are legitimate candidates for inclusion in an elasticity-weighted output index?

b. Do the PSE adjustments for reliability and safety provide a more complete portrayal of cost efficiency trends than the unadjusted TFP trends without those adjustments?

28. Reference: Exhibit M1, page 17

On p. 14 of the report, PEG states: "If not now, it will soon be time to incorporate the full cost of AMI into calculations of the productivity trends of Ontario power distributors. This complicated exercise is beyond the scope of this project." PSE appreciates this is a complicated issue and beyond the scope of this project. If a customer-only output index were used, (or an elasticity-weighted output index that did not incorporate the potential benefits of AMI), would incorporating the full cost of AMI since 2007 for the Ontario industry into the TFP calculation likely increase or decrease the calculated Ontario TFP estimate?

29. Reference: Exhibit M1, Page 17

Please provide the source and any calculations of the contributions in aid of construction (CIAC) that were removed from the cost data by PEG in 2013-2015 for the Ontario industry.

30. Reference: Exhibit M1, Page 17

Please provide the source and any calculations of the smart meter OM&A and capital costs that were removed from the cost data by PEG in 2013-2015 for the Ontario industry.

31. Reference: Exhibit M1, Page 17

Did the removal of smart meter expenses that PEG conducted for the Ontario TFP trend include the removal of meter reading expenses?

32. Reference: Exhibit M1, Page 17

Does PEG believe there is an inconsistency in the cost definition in the TFP research when the start year of 2002 contains all metering costs, but subsequent years have a large portion of metering costs subtracted?

33. Reference: Exhibit M1, Page 20

On page 17 of the report, in discussing the Ontario TFP estimate PEG states: "This leaves us at -0.25%. This is our best current estimate of the cost efficiency trend of Ontario power distributors. However, other drivers of cost such as reliability, safety, and metering capabilities are excluded from the analysis."

a. Does the -0.25% estimate of Ontario TFP imply that, according to PEG's best estimate, there is already a 0.25% implicit stretch factor when a 0.0% productivity factor is used?

b. We note PEG is stating that other outputs could be incorporated into the TFP analysis in the future. Please answer the following questions on a general basis; we understand that more research would be necessary for you to answer on a more specific basis.

   i. For a price cap plan, what would PEG's suggested output index consist of?

   ii. For a revenue cap plan, what would PEG's suggested output index consist of?

iii. In measuring the trend in distributor performance, what would PEG's suggested output index consist of?

34. Reference: Exhibit M1, Page 21

Please confirm that Table 2 found on page 18 of the PEG report does not include the PSE-adjusted TFP estimates that incorporated reliability and safety into the output index.

35. Reference: Exhibit M1, Page 22

On p. 19, PEG mentions that OM&A expenses, capital costs, and capital expenditures ("capex") were not separately benchmarked by PSE.

a. Please confirm these categories were not separately benchmarked in the 4th Generation IR benchmarking conducted by PEG. Also please confirm that in the 4th Generation IR benchmarking, only total cost was benchmarked and used as the basis for determining the stretch factor.

b. How would PEG envision using the component OM&A, capital, and capex benchmarking models in the framework of an incentive regulation plan?

c. Did PEG estimate and put together these component models and results for Hydro One? If so, please provide the models and results.

36. Reference: Exhibit M1, Page 22

On p. 19, PEG states: "PSE's benchmarking results are improved by an optimistic forecast of Hydro One's OM&A expenses. These expenses appear to have been forecasted using an inflation – 0.45% formula that includes no growth factor."

In its application, on page 19 of Exhibit A, Tab 3, Schedule 1, Hydro One states that "Hydro One is focused on delivering service expected by customers while managing costs and improving operational efficiencies, all within the revenue requirement envelope set by the Custom IR approach."

a. Please confirm that the inflation – 0.45% formula corresponds with Hydro One's proposal for the OM&A escalator formula during the CIR years.

b. Please confirm that Hydro One is not proposing the inclusion of a growth factor that would escalate allowed OM&A higher than the inflation – 0.45% formula.

c. Why is it "optimistic" for PSE to assume Hydro One's OM&A will follow its proposed escalation of OM&A expenses (if allowed)?

d. Does PEG believe OM&A expenses should be allowed to escalate more rapidly than Hydro One has proposed?

e. Please explain why PEG believes the OM&A envelope set by the Custom IR represents "an optimistic forecast" rather than a conscious decision and commitment to finding operational efficiencies.

f. Please explain the incentive a utility would have to lock itself into a 5 year rate structure that underfunds its operating expenses?

37. Reference: Exhibit M1, Page 23

On p. 20, PEG states: "The service territory estimate for Hydro One exceeds the entire land area of Ontario."

a. Please confirm that the PSE estimate does not exceed the total land plus water area of Ontario.

b. Hydro One notes that its assets include submarine (i.e. under-water) cables to provide service to remote locations such as islands. Given that fact and given the approach taken by PSE in their analysis, please confirm that it is reasonable for Hydro One's service territory estimate to exceed the entire land area of Ontario as assets are located in water, as well as on land.

38. Reference: Exhibit M1, Page 23

PSE notes PEG's preference for using line miles per customer, rather than the land area. However, there can be substantial differences in reported line miles, depending on whether the reported line miles are (1) primary-only, or (2) primary + secondary.

a. Is PEG concerned about possible inconsistent reporting by utilities with regard to primary versus secondary miles?

b. Has any attempt been made to correct for these potential inconsistencies?

c. Does PEG know whether the other utilities in the sample are only reporting primary miles and not adding in secondary miles?

d. If some utilities are reporting primary + secondary line miles, and others are reporting only primary line miles, would this likely have the effect of unfairly harming the results of those utilities reporting only primary miles?

39. Reference: Exhibit M1, Page 23

Please provide the report mentioned in footnote 25.

40. Reference: Exhibit M1, Page 26

PEG notes on p26 of the evidence: "PSE uses peak demand data as a variable in the cost model. Available US data overstate distribution peak demand, since they can include the demand of a utility's wholesale customers. PSE did not adjust these data to make them more accurate. This made the performances of US distributors look better than they actually were."

a. Please confirm that this overstatement of peak demand by US distributors likely harmed Hydro One's benchmarking performance, as calculated by PSE.

b. Please estimate the percentage of wholesale demand by customers in the reported peak demands used by PSE.

c. What adjustment would PEG suggest be made so peak demands are more accurate?

d. Does PEG believe peak demands are an important cost driver for electric distribution?

41. Reference: Exhibit M1, Page 26

On p. 23 of its report, PEG took issue with PSE applying the same 70/30 weights for labor and materials that were used as the assumption in 4th Generation IR, rather than applying weights directly derived from the US data.

a. Does PEG believe that the direct salaries reported by US utilities incorporate all labor-driven OM&A costs of the utilities?

b. Are there adjustments for outsourcing by PEG that likely take place, but are not reported as direct salaries?

42. Reference: Exhibit M1, Page 26

a. Please provide the source and data for the labor price levelization for Hydro One used by PEG in their total cost benchmarking model.

b. What alternative levelization procedure should PSE have used for Hydro One, in PEG's opinion?

43. Reference: Exhibit M1, Page 26

PEG states that PSE handled the logarithm of business condition variables inconsistently.

a. What did PEG do differently than PSE when PEG handled these variables (e.g., extreme weather and percent of territory that is artificial surfaces) in PEG's model reported in Table 4?

b. Please describe why PEG's approach is better than how PSE handled the variables.

44. Reference: Exhibit M1, Page 27

On p. 24 of the report, PEG seems to imply that it estimated separate econometric benchmarking models for OM&A expenses, capital cost, capital expenditures, and total cost.

a. Please confirm a separate model was used

b. Please provide the an electronic copy of the models

c. Why were these models not reported in the PEG report?

d. Why would these models provide an advantage when determining the stretch factor over a total-cost-only model?

45. Reference: Exhibit M1, Page 27

Please list the utilities excluded by PEG due to large reported transmission/distribution cost transfers.

a. What criteria did PEG use to define "large" and thus exclude these utilities?

b. How did PEG determine these criteria and on what basis?

46. Reference: Exhibit M1, Page 27

Is the capital data dating back to 1964 that was used by PEG publicly available? If so, please provide the source and data.

47. Reference: Exhibit M1, Page 28

On Table 3, PEG reports new 4th Generation IR benchmarking results for Hydro One after correcting for revised high voltage data that Hydro One and PSE discovered unfairly advantaged Hydro One in the 4th Generation IR benchmarking research. While small differences are expected from Exhibit A-05-02-01 put forth by Hydro One, the results nearly match in 2014, but then PEG reports much larger drops than those calculated in A-05-02-01. Why is there such a large drop in the reported performance scores from 2014 to 2015 and from 2015 to 2016?

48. Reference: Exhibit M1, Page 28

PEG uses a variable described on p. 25 of the report as "an alternative measure of peak demand." This variable is the volume of deliveries per residential customer in 2015.

a. Wouldn't the percent of residential volume (out of total volume) be a better indicator of peak demand and/or load factor? If so, why didn't PEG use this variable instead?

b. Confirm that a variable attempting to provide an alternative measure of peak demand should also include the total volume of the utility?

c. In an extreme example, a utility could have a very high residential use-per-customer, but only have 10% of its volume be residential. Would PEG expect the peak demand of that utility to be high? Would PEG expect a low load factor in the described case? Does PEG believe C&I volumes and total residential volumes are not important factors in realized peak demands?

49. Reference: Exhibit M1, Page 29

Why does PEG only include overhead line miles in their density variable, rather than total line miles?

50. Reference: Exhibit M1, Page 29

In footnote 37, PEG states that they computed line miles per customer for a single year for each sampled utility. Please provide a list detailing which year was used for each utility in the sample. How did PEG determine which year to use for each utility?

51. Reference: Exhibit M1, Page 30

Please provide a sample list for the benchmarking model reported in Table 4 of PEG's report.

52. Reference: Exhibit M1, Page 27

What data sources did PEG use for the Alberta utilities? Please list all sources and their use in the study.

53. Reference: Exhibit M1, Page 30

Was the total cost model in Table 4 estimated with a heteroskedasticity and/or autocorrelation adjustment? If so, please describe the procedure used.

54. Reference: Exhibit M1, Page 30

For the Table 4 model in the PEG Report, why limit the volume per residential customer to only the year 2015, rather than having an annual calculation for each year in the dataset?

55. Reference: Exhibit M1, Page 30

For Hydro One's projected OM&A, did PEG use the inflation – 0.45%, or was a growth factor added to the projected OM&A expenses?

56. Reference: Exhibit M1, Page 20, 38

PEG mentions on p. 35 of the report: "Utilities can then be compensated twice for the same capex: once via the C factor and then again by a low X factor in this and future IRMs."

c. Would large C factors that produce higher spending than the industry at large tend to harm a utility's benchmarking score over time?

d. Does PEG believe that the stretch factor being calibrated to these benchmarking results helps partially adjust for this possibility (large C factors)?

e. Please confirm the productivity factor contains an implicit stretch factor.

57. Reference: Exhibit M1, Page 41

On p. 38 of the report, PEG states: "Any of these dead zone approaches can make customers whole for the addition of a growth escalator to Hydro One's RCI."

a. Does PEG believe that adding a growth escalator is appropriate?

b. If so, why would customers need to be made whole?

58. Reference: Exhibit M1, page 13

In its report, PEG states that it has concerns with the conclusions of PSE's TFP analysis. PEG states:

> The biggest driver of the result was TFP declines in excess of 4% in 2012 and 2013. These were chiefly due to sharp declines in OM&A productivity. Over the full sample period, OM&A productivity growth averaged only -0.8% annually despite widespread installation in Ontario of automated metering infrastructure ("AMI") that should have cut OM&A costs. Our Berkeley Lab study found that the OM&A productivity of US power distributors averaged 0.40% annual growth from 2001 to 2014 while capital productivity growth averaged 0.18%.

a) Please confirm that 2012 and 2013 represent years in which a significant amount OM&A costs related to smart meters were included in the cost data for Ontario utilities.

b) Please provide support for PEG's claim that the "widespread installation in Ontario of automated metering infrastructure ("AMI")" "should have cut OM&A costs".

c) Please reconcile PEG's comments regarding expected cost reductions due to smart meters with the observations made by the Auditor General of Ontario in the 2014 audit of Ontario's Smart Metering Initiative.[1] Specifically, the following quote on page 375 of the report:

> With respect to benefits, only 5% of the distribution companies we consulted reported operational savings, mainly from no longer having to send staff to read meters manually, and all of these were of modest size; the other 95% said they realized no savings and their operating costs relating to smart-metering activities since implementation had actually risen.

d) Please provide a copy of the referenced Berkeley Lab study.

e) Please explain whether the peer group in the Berkeley Lab study was subject to similar government-driven policy initiatives as utilities in Ontario such as CDM targets as a condition of license, a mandatory smart meter rollout, requirements to enable the connection of a significant amount of renewable generation, etc. Please comment on whether or not such policy activities could impact TFP performance in a study and could reasonably impact TFP performance for Ontario distributors as compared to their US counterparts.

59. Reference: Exhibit M1, page 16

On page 16, PEG notes concerns over the fact that pension and benefit costs are included in PSE's calculations, as they were in PEG's own 4th generation IRM research. Please confirm that pension and benefits costs are usually removed from studies where the peer groups operate in separate jurisdictions that may have materially different compensation levels. Given that all the comparators in the TFP analysis are in the same jurisdiction, Ontario, is there any reason to require that these costs be excluded from the analysis?

[1] A copy of the report can be found at http://www.auditor.on.ca/en/content/annualreports/arreports/en14/311en14.pdf

60. Reference: Exhibit M1, page 16

PEG makes several assertions regarding the inclusion of smart meter costs in PSE's analysis. Does PEG expect that the one-year inclusion of smart meters costs by PSE in 2013 would result in a materially different end-result for the 15-year TFP trend as compared to the more gradual increases in capital quantify growth from 2007 to 2012 hypothesized by PEG in page 17 of Exhibit M1. In other words, please confirm that the impact of a one year spike in cost data as compared to the gradual inclusion of the same total costs over a 5-year period does not materially impact the results an average over a longer time horizon (e.g. 15 years).

61. Reference: Exhibit M1, page 18

PEG describes the approach it used to adjust for the transition to MIFRS.

a) On p. 15 and 16 of the report, PEG mentions that a 10.1% markdown is the result of a 12.5% reported cost increase, and the fact that 81% of OM&A costs were affected by the issue.

   i. Is PEG saying the transition to IFRS standards caused a 10.1% increase in OM&A costs? If not, please clarify the claim being made.
   ii. Is PEG asserting that the 12.5% increase in OM&A would have been 2.4% without the transition to IFRS?
   iii. Was a similar calculation conducted for capex costs? If yes, please provide.
   iv. In PEG's opinion, would the transition to IFRS standards likely decrease capex costs (as opposed to increasing OM&A costs)?

b) Please describe the OM&A IFRS adjustment in full, including all data and calculations used. Please provide a list of the 14 distributors mentioned along with the derivation of the 12.5% increase to OM&A under MIFRS.

c) Please identify the utilities that had not adopted MIFRS or indicated that they had previously changed their capitalization policy and show how PEG determined that 81% of OM&A costs were impacted by change.

d) The increase in OM&A expenses due a change in capitalization policy would have had a corresponding reduction in Capital costs that are no longer capitalized. What offsetting adjustments did PEG make in its analysis for the capital costs of utilities that transitioned to MIFRS? If no adjustments were made for capital costs, please explain why.

e) Given that a change in capitalization policy involves an offset in costs between capital and OM&A, please explain why it is reasonable that the overall TFP trend for the industry would be materially impacted by such a change?

62. Reference: Exhibit M1, page 21

On page 19 of the report, PEG states that it replaced the AWE labor price index with the fixed-weight average hourly earnings in Ontario. Hydro One notes that the AWE labor price index was approved by the OEB as the appropriate labor price index and underpins the inflation factor that is used to set rates for electricity distributors in Ontario.

a. Please provide a table showing the performance over the study period of the OEB-approved AWE labor price index as compared to PEG's proposed fixed-weight average hourly earnings in Ontario.

b. Under 4GIRM Ontario distributors have been subject to an Inflation Factor in which the rate of growth for labor costs, from a rates perspective, was limited to the rate of growth of the AWE labor price index. Would a change in labor price index for the TFP analysis, as proposed by PEG, not introduce an element of bias to the TFP results given that utilities were incented to manage their costs to levels allowable through rates? If not, please explain why not.

63. Reference: Exhibit M1, page 20

In footnote 21 the PEG report states:

> Adding the impact of CDM on system use had an even larger effect. According to the Ontario Ministry of Energy, the impact of conservation and load control programs has approximately doubled since the 2012 endpoint of the previous study. Should the MW and MWh be adjusted to add back the impact of these programs, the output and TFP trends would be approximately 0.50% higher than measured by PSE.

a. Please provide details regarding the adjustments PEG made for the impact of CDM programs.

b. Distributors in Ontario receive funding from IESO to fund the costs they incur in the deployment of CDM programs. Were these costs factored in to PEG's analysis when it revised the TFP calculation, as shown in Table 1 of the report? If not, would PEG agree that the 0.5% improvement on industry TFP arising from its proposed CDM adjustments to volumes and peaks would be overstated given that the costs associated with providing those programs are excluded from the analysis?

64. Reference: Exhibit M1, page 21

PEG states that it has recalculated Hydro One's productivity trends. PEG states that "we revised PSE's methodology to use the implicit price deflator for the utility sector capital stock and the fixed-weight average hourly earnings for Ontario."

a. Please provide further details regarding the methodology used to recalculate Hydro One's productivity trends.

b. Did PEG make any of the other adjustments outlined in Table 1 of the report? If so, please provide a version of Table 1 for Hydro One's results. If not, please explain why is it appropriate to include those adjustments for the Industry TFP analysis but exclude those changes for its analysis of Hydro One's performance?

65. Reference: Exhibit M1, page 41

The PEG report states:

> "There is a perverse incentive for the Company to contain salary growth but maintain or sweeten benefits"

Please provide any supporting evidence PEG has that indicates pension costs or other benefits have increased for Hydro One.