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March 13, 2019

via *RESS*

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
PO Box 2319
2300 Yonge Street, 27th floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

**Re: OEB File No. EB-2018-0165Toronto Hydro-Electric System Limited ("Toronto Hydro") Custom Incentive Rate-setting ("Custom IR") Application for 2020-2024 Electricity Distribution Rates and Charges –Responses to PEG Follow-Up Questions**

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On March 4, 2019, Toronto Hydro filed responses to a number of Technical Conference undertakings. On March 7, Toronto Hydro received a number of follow-up clarification questions from Board Staff's consultant, Pacific Economics Group (PEG), about the undertaking responses filed on March 4, 2019.

Please find enclosed an electronic version of Toronto Hydro's responses to PEG's follow-up questions. For ease of reference, the utility has organized these responses as supplemental undertakings to the original undertakings referenced. Seven physical copies of the responses will follow via courier.

For the convenience of the record, when Toronto Hydro files the remaining undertakings responses at the end of March, it will also file a consolidated electronic copy of the responses, inclusive of the responses filed on March 4, 2019 and the supplemental responses enclosed herein.

Please contact me directly if you have any questions or concerns.

Respectfully,

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cc: Lawrie Gluck, OEB Case Manager
Michael Miller, OEB Counsel
Parties of Record
Amanda Klein, Toronto Hydro
Andrew J. Sasso, Toronto Hydro
Charles Keizer, Torys LLP

# TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO OEB STAFF

**UNDERTAKING NO. JTC4.17.1:**

**Reference(s): Undertaking No. JTC4.17**

a) Has Toronto Hydro participated in the UDI survey that gathers information for its *Directory of Electric Power Producers and Distributors*? If so, please provide the copy of its response to the survey from which the reported overhead distribution pole (aka route structure) miles datum reported in the 2014 edition of the directory were drawn. If this response is difficult to find, please provide a copy of any recent response that includes the line length data.

b) Please confirm that UDI line length data for the U.S. companies in the PSE sample are contained in the working papers that PSE provided. Why were these data purchased by PSE and included in the working papers?

c) In what sense do the referenced pole miles data for the company in the UDI directory seem unreasonable? Bearing in mind that participation in the UDI survey is voluntary and the Company is not obliged to provide accurate data, did the Company basically report circuit miles data even though pole mile data were requested?

d) In view of the fact that the Company includes secondary lines in its circuit miles data, Is it likely that the Company's overhead circuit miles exceed its pole miles?

**RESPONSE (PREPARED BY TORONTO HYDRO):**

a) To the best of the utility's current knowledge, Toronto Hydro has not participated in the UDI survey that gathers information for its *Directory of Electric Power Producers and Distributors*.

**RESPONSE (PREPARED BY PSE):**

b) Yes, this is confirmed. The UDI line data included as part of the overall working papers was not used in PSE's models and should not be relied on for econometric cost benchmarking purposes. The UDI line data was not purchased by PSE for this project. The data is a legacy data element that PSE included in its material. PSE did not limit the dataset included in the working papers but provided the full working papers for parties to examine.

PSE no longer includes the UDI line data as a variable in our benchmarking models due to the inconsistent reporting of the line miles relating to different utilities. There is no mandatory reporting nor definition for utilities to report their line mile data to UDI. PSE has found, for example, that between Toronto Hydro and Hydro One, line mile data was reported by UDI on a different and inconsistent basis, and this problem of inconsistent bases of reporting likely persists with other utilities throughout North America. The issue is that some utilities only have records for primary line miles and, thus, only report primary line miles. It is PSE's understanding this is the case for the Hydro One Networks data reported by UDI. Other utilities report primary plus secondary (secondary lines meaning those lines that connect the service transformer and meter to the primary lines). Toronto Hydro has begun reporting primary plus secondary to the Board. The differences in reported line miles can be substantial. The UDI line data is therefore not reliable for econometric cost benchmarking purposes.

**RESPONSE (PREPARED BY TORONTO HYDRO):**

c) The referenced pole miles data for Toronto Hydro in the UDI directory seem unreasonable and inaccurate for the following reasons:

- 2013 to 2017 data is identical, which should not be the case for a dynamic system such as Toronto Hydro's;
- the 2012 information is not at all consistent with pre- or post-2012 values;
- 2010 and 2011 values are again identical.

Toronto Hydro notes that the 2013 UDI data appears to align with the utility's 2012 circuit miles data (i.e. the utility's circuit-kilometers data converted to miles). As noted in response to part (a) of this supplemental undertaking, as far as Toronto Hydro is aware, it has not participated in a UDI survey related to this report.

d) Toronto Hydro's poles feature various combinations of primary and secondary circuits. On the overhead system, a secondary bus can run on the same pole line as one or more primary circuits, or it can run on the opposite side of the street, on a separate pole line from the primary circuit(s). Furthermore, secondary services, which run between the secondary bus and the customer meter, almost never run in parallel with the primary circuit. Further complicating matters is the existence of combined underground and overhead systems (i.e. where the primary infrastructure is underground but the secondary busses are overhead). Without undertaking a detailed spatial analysis, Toronto Hydro cannot say with certainty whether its overhead circuit miles are likely to exceed "pole miles."[1]

[1] It should be noted that the utility is not in possession of the formal definition of "pole miles" used in this context.

# TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO OEB STAFF

**UNDERTAKING NO. JTC4.32.7:**

**Reference(s):** **Undertaking No. JTC4.32.1**
**Undertaking No. JCT4.32.2**

a) With regard to part a) of JTC4.32.1, please provided the shares of THESL's *total* circuit miles of line that are 1) overhead, 2) direct-buried, and 3) (by implication) otherwise undergrounded.

b) With regard to the response to part d) of question JTC4.32.1 and part a) of question JTC4.32.2, how does a propensity to report secondary distribution line lengths affect the reporting of structure miles. Aren't secondary lines typically carried on the same poles?

**RESPONSE:**

a) Please see Appendix A to this undertaking response.

b) Please refer to Toronto Hydro's response to undertaking JTC4.17.1, part (d).

**JTC 4.32.7 - Appendix A - Detailed Information**

| | Actual 2005 | Actual 2006 | Actual 2007 | Actual 2008 | Actual 2009 | Actual 2010 | Actual 2011 | Actual 2012 | Actual 2013 | Actual 2014 | Actual 2015 | Actual 2016 | Actual 2017 | Forecast 2018 | Forecast 2019 | Forecast 2020 | Forecast 2021 | Forecast 2022 | Forecast 2023 | Forecast 2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OVERHEAD (O/H)** | | | | | | | | | | | | | | | | | | | | |
| TOTAL (O/H) | 9,172 | 9,218 | 10,712 | 12,206 | 13,700 | 15,079 | 15,079 | 15,059 | 15,460 | 15,560 | 15,560 | 15,561 | 15,543 | 15,629 | 15,715 | 15,802 | 15,889 | 15,977 | 16,065 | 16,154 |
| **UNDERGROUND (U/G)** | | | | | | | | | | | | | | | | | | | | |
| Direct Buried (U/G) | 919 | 1,041 | 1,020 | 1,113 | 1,206 | 1,317 | 1,493 | 1,377 | 2,456 | 2,456 | 2,209 | 2,153 | 2,116 | 2,127 | 2,139 | 2,151 | 2,163 | 2,175 | 2,187 | 2,199 |
| All Other (U/G) | 6,443 | 7,302 | 7,809 | 8,202 | 8,595 | 9,122 | 9,410 | 9,446 | 9,834 | 9,834 | 10,834 | 10,893 | 11,104 | 11,165 | 11,227 | 11,288 | 11,351 | 11,413 | 11,476 | 11,540 |
| TOTAL (U/G) | 7,362 | 8,343 | 8,829 | 9,315 | 9,801 | 10,439 | 10,903 | 10,823 | 12,290 | 12,290 | 13,043 | 13,046 | 13,220 | 13,292 | 13,366 | 13,439 | 13,514 | 13,588 | 13,663 | 13,739 |
| **GRAND TOTAL** | **16,534** | **17,561** | **19,541** | **21,521** | **23,501** | **25,518** | **25,982** | **25,882** | **27,750** | **27,850** | **28,603** | **28,607** | **28,763** | **28,921** | **29,081** | **29,241** | **29,403** | **29,565** | **29,728** | **29,893** |

Note: The large step change in direct-buried cable amounts observed between 2012 and 2013 and the smaller change between 2014 and 2015 were both the result of the utility's focused data cleansing initiatives.

# TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO OEB STAFF

**UNDERTAKING NO. JTC4.33.1:**

**Reference(s): PSE Report**

a) In reviewing the working papers, our understanding is that the calculation of the urban congestion variable involved a multistep process in which the total area that a utility served (AREAM2) is subdivided between PCTCORE, PCTURBAN, PCTSUBIC, PCTSUBRC, PCTPARK, and PCTRURAL areas. The urban congestion variable used in the cost model (PCTCU) is the sum of PCTCORE and PCTURBAN. Please confirm that our understanding is correct and, if it is not, please explain what was done.

b) Does the response to this undertaking pertain to just the construction of PCTCORE? If so, how was PCTURBAN calculated? Please explain the difference between PCTCORE and PCTURBAN.

c) Could the service territory boundaries be described as the government-defined boundaries of the locations its authorized to serve or the exact outline of its network? Please elaborate.

d) Do the service territory boundaries used in the construction of %CU include customers that are served by municipals or co-ops? Please provide the map(s) used by PSE for drawing service territory boundaries and calculating service territory area of Oklahoma Gas & Electric.

e) How were the rural and parkland areas calculated?

f) How were the suburban areas calculated?

**RESPONSE (PREPARED BY PSE):**

a) It is confirmed that the total utility area served was subdivided and the sum of PCTCORE and PCTURBAN is the congested urban variable used in the cost model (PCTCU). It was the value of the congested urban variable (PCTCU) that was calculated to be included in the total cost benchmarking model. In our view, the other subcomponent territories should not be used in an econometric total cost model in these circumstances. The other service areas were therefore not vetted, defined or examined on a block-by-block basis like the PCTCU variable was.

b) No, the response pertains to the entire congested urban variable which is the sum of PCTCORE and PCTURBAN. The PCTCORE is the area that is obviously congested urban service territory when conducting an aerial, manual review, whereas the PCTURBAN is the area where a transition is likely to occur between an urban core and non-urban core but is both urban and congested.

c) The service territory boundaries were purchased from S&P Global Platts in the form of a shapefile. Per S&P Global Platts website, "[This shapefile] was created by Platts to show the geographic extent that utilities deliver electricity".

d) PSE relies on the service territory boundaries developed by S&P Global Platts. PSE confirmed that the service territory boundaries of Oklahoma Gas & Electric do not overlap with other electric utility boundaries. The service territory boundary used by PSE for Oklahoma Gas & Electric was included in the working papers that have been

provided, as well as on page 112 of the PSE report titled "Econometric Benchmarking of Historical and Projected Total Cost and Reliability Levels" dated July 16, 2018.

e) Rural and parkland areas came from an ESRI source metafile and were not used for developing the congested urban variable.

f) Suburban areas came from an ESRI source metafile and were not used for developing the congested urban variable.