

Energy Probe Compendium #2

EB-2019-0082

IN THE MATTER OF *the Ontario Energy Board Act, 1998* (“Act”);

**AND IN THE MATTER OF an Application by Hydro One Networks Inc.
for an order or orders made pursuant to section 78 of the Act approving
rates for the transmission of electricity.**

**Hydro One Transmission
X-Examination Compendium #2
Energy Probe Research Foundation**

October 21, 2019

EB-2019-0082 Hydro One Transmission-Energy Probe Compendium Panel 1 and Panel 2

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A-3-1 Attachment 1 Evolved Transmission Regulatory Scorecard

| Performance Outcomes | Performance Categories | Measures | 2014 | 2015 | 2016 | 2017 | 2018 | Targets | | | | | |
|------------------------------|--|--|-------|-------|-------|-------|-------|---------|-------|-------|-------|-------|-------|
| | | | | | | | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Customer Focus | Customer Satisfaction | Satisfaction with Outage Planning Procedures (% Satisfied) | 86 | 92 | 89 | 94 | 85 | 86 | 86 | 87 | 87 | 88 | 88 |
| | | Overall Customer Satisfaction (% Satisfied) | 77 | 85 | 78 | 88 | 90 | 88 | 88 | 88 | 88 | 88 | 88 |
| | Service Quality | Customer Delivery Point (DP) Performance Standard Outliers as % of Total DPs | 11.8 | 14.3 | 9.7 | 9.5 | 10.1 | 12.0 | 11.7 | 11.5 | 11.3 | 11.0 | 10.8 |
| Operational Effectiveness | Safety | Recordable Incidents (# of recordable injuries/illnesses per 200,000 hours worked) | 1.8 | 1.7 | 1.1 | 1.2 | 1.1 | 1.1 | 1.1 | 1.0 | 0.9 | 0.9 | 0.9 |
| | | T-SAFI-S (Ave. # Sustained interruptions per Delivery Point) | 0.60 | 0.59 | 0.46 | 0.65 | 0.83 | 0.55 | 0.54 | 0.53 | 0.52 | 0.51 | 0.50 |
| | System Reliability | T-SAFI-M (Ave. # of Momentary interruptions per Delivery Point) | 0.48 | 0.50 | 0.33 | 0.47 | 0.50 | 0.49 | 0.48 | 0.48 | 0.47 | 0.46 | 0.45 |
| | | T-SADI (Ave minutes of interruptions per Deliver Point) | 36.7 | 43.9 | 80.8 | 42.8 | 70.0 | 35.4 | 34.66 | 33.96 | 33.28 | 32.62 | 31.97 |
| | | System Unavailability (%) | 0.48 | 0.63 | 0.70 | 0.69 | 0.71 | 0.48 | 0.47 | 0.47 | 0.46 | 0.45 | 0.44 |
| | | Unsupplied energy (minutes) | 12.2 | 11.8 | 11.4 | 13.2 | 19.5 | 9.8 | 9.59 | 9.40 | 9.21 | 9.02 | 8.84 |
| | Asset & Project Management | Transmission System Plan Implementation Progress (%) | 99 | 105 | 100 | 94 | 99 | 100 | 100 | 100 | 100 | 100 | 100 |
| | | CapEx as % of Budget | 90 | 106 | 105 | 100 | 98 | 100 | 100 | 100 | 100 | 100 | 100 |
| | | OM&A Program Accomplishment (composite index) | | 97 | 99 | 108 | 108 | 100 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| | | Capital Program Accomplishment (composite index) | | 122 | 59 | 88 | 116 | 100 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| | Cost Control | Total OM&A and Capital per Gross Fixed Asset Value (%) | 8.4 | 9.0 | 8.6 | 7.9 | 7.7 | 7.3 | 7.8 | 7.9 | 7.7 | 7.3 | 7.0 |
| | | OM&A per Gross Fixed Asset Value (%) | 2.7 | 2.9 | 2.5 | 2.3 | 2.3 | 1.8 | 1.8 | 1.7 | 1.6 | 1.5 | 1.5 |
| | | Line Clearing Cost per kilometer (\$/km) | 2,495 | 2,234 | 1,966 | 2,100 | 2,797 | 2,295 | 2,264 | 2,200 | 2,175 | 2,100 | 2,100 |
| | | Brush Control Cost per Hectare (\$/Ha) | 1,624 | 1,566 | 1,542 | 1,356 | 1,539 | 1,625 | 1,620 | 1,630 | 1,608 | 1,608 | 1,608 |
| Public Policy Responsiveness | Connection of Renewable Generation | % on-time completion of renewables customer impact assessments | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | Regional Infrastructure Planning (RIP) & Long-Term Energy Plan (LTEP) Right-Sizing | Regional Infrastructure Planning progress - Deliverables met, % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | | End-of-Life Right-Sizing Assessment Expectation | | | | Met | Met | Met | Met | Met | Met | Met | Met |
| Financial Performance | Financial Ratios | Liquidity: Current Ratio (Current Assets/Current Liabilities) | 0.69 | 0.13 | 0.20 | 0.13 | 0.12 | | | | | | |
| | | Leverage: Total Debt (includes short-term and long-term debt) to Equity Ratio | 1.16 | 1.39 | 1.43 | 1.47 | 1.53 | | | | | | |
| | | Profitability: Regulatory Return on Equity | | | | | | | | | | | |
| | | Achieved | 13.12 | 10.93 | 10.02 | 9.03 | 11.08 | | | | | | |

Figure 1 – Evolved Electricity Transmitter Scorecard & Targets – Hydro One Networks Inc.⁴

Exhibit B-1-1 TSP Section 1.5 Attachment 1 Page 12

Appendix D - Team Scorecard - Example

| Corporate Goal | Definition | Measure | 2017 Performance Levels | | | | % Weight | Achievement | % STIP |
|-------------------------|--|--|-------------------------|---------------------------|---------------------------|------------------|----------|-------------|--------|
| | | | Actual | Threshold | Budget | Maximum | | | |
| Health and Safety (10%) | Recordable Incidents | Incidents per 200,000 hours | 1.2 | 1.6 | 1.1 | 1.0 | 10.0% | | |
| Work Program (25%) | Reliability – Tx (SAIDI) average length of unplanned interruptions to multi-circuit supplied delivery points | Minutes per Delivery Point | 5.4 | 10.0 | 9.6 | 1.2 | 6.3% | | |
| | Reliability - Dx (SAIDI) average length of outages in hours that a customer experiences | Hours per Customer | 7.9 | 7 | 7.5 | 7.2 | 6.3% | | |
| | Tx In Service Additions Delivery Accuracy | Variance (%) to approved budget of \$931M (Tx Application) | 8% | +/- 5% (978-978; 866-884) | +/- 5% (950-978; 884-912) | +/- 2% (912-950) | 6.3% | | |
| | Dx In Service Additions Delivery Accuracy | Variance (%) to approved budget of \$66 | 6% | +/- 6% (690-703; 623-636) | +/- 4% (676-690; 636-650) | +/- 2% (650-676) | 6.3% | | |
| Net Income (30%) | Net Income to Common Shareholders | \$M | 694*** | 615 | 665 | 715 | 30.0% | | |
| Productivity (10%) | Productivity Savings (Capital and OM&A) - Tier 1 savings only | Savings \$M | 89.5 | 64.3 | 70.6 | 77.7 | 10.0% | | |
| Customer (25%) | Dx Satisfaction - Improve overall Small and Residential Dx customer satisfaction | Customer Satisfaction | 71.1% | 70.0% | 72.0% | 75.0% | 12.5% | | |
| | Tx Satisfaction - Improve overall Large Tx customer satisfaction | Customer Satisfaction | 88.3% | 80.0% | 82.0% | 85.0% | 12.5% | | |

Appendix 5-A Metrics

Exhibit B-1-1
TSP Section 1.5
Attachment 2
Page 1 of 1

| Metric Category | Metric | Measures | |
|-----------------|--|-----------|----------------|
| | | 1 Year | 5 Year Average |
| Cost | Total Cost per Deliver Points ¹ | 2,075,508 | 1,946,674 |
| | Total Cost per km of Line ² | 50,388 | 46,908 |
| | Total Cost per MW ³ | 59,657 | 56,374 |
| CAPEX | Total CAPEX per Delivery Points | 1,448,004 | 1,337,183 |
| | Total CAPEX per km of Line | 35,154 | 32,231 |
| O&M | Total O&M per Delivery Points | 627,504 | 609,491 |
| | Total O&M per km of Line | 15,234 | 14,677 |
| | | | |
| | | | |
| | | | |
| | | | |

Notes to the Table:

- 1 The Total Cost per Customer is the sum of a distributor's capital and O&M costs divided by the total number of Deliver Points that the distributor
- 2 The Total Cost per km of Line is the sum of a distributor's capital and O&M costs divided by the total number of kilometers of line that the distributor
- 3 The Total Cost per MW is the sum of the distributor's capital and O&M costs divided by the total peak MW that the distributor serves.

Energy Probe Workbook Tab 1 Hydro One 2013-2024 System Reliability Metrics

| Energy Probe Exhibit K XXX Based on TC Undertaking JT-1.38-01.xls | | | | EB-2019-0082 | | Hydro One 2020-2024 CIR Plan System Reliability Metrics | | | | | | | | | |
|---|--|--|--|--------------|-------|---|-------|-------|------------------|-------|-------|-------|-------|-------|-------|
| Reference | | | | Actuals | | | | | Forecast/Targets | | | | | | |
| HONI Historical and Forecast | | | | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| T-SAIFI(S) Sustained Interruptions /DP | | | | 0.57 | 0.60 | 0.59 | 0.46 | 0.65 | 0.83 | 0.55 | 0.54 | 0.53 | 0.52 | 0.51 | 0.50 |
| T-SAIFI(M) #Momentary Interruptions /DP | | | | 0.69 | 0.48 | 0.50 | 0.33 | 0.47 | 0.50 | 0.49 | 0.48 | 0.48 | 0.47 | 0.46 | 0.45 |
| | | | | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| T-SAIDI Avg min/DP | | | | 64.9 | 36.7 | 43.9 | 80.8 | 42.8 | 70.0 | 35.4 | 34.7 | 34.0 | 33.3 | 32.6 | 32.0 |
| System Unavailability % | | | | 0.37 | 0.48 | 0.63 | 0.70 | 0.69 | 0.83 | 0.48 | 0.47 | 0.47 | 0.46 | 0.45 | 0.44 |
| Unsupplied Energy Minutes | | | | 20.9 | 12.2 | 11.8 | 11.4 | 13.2 | 19.5 | 9.8 | 9.6 | 9.4 | 9.2 | 9.0 | 8.8 |
| | | | | | | | | | | | | | | | |
| Ex A-3-1 ETRS | | | | | | | | | | | | | | | |
| T-MAIFI(S) Sustained Interruptions /DP | | | | | | | | 0.65 | 0.58 | 0.57 | 0.56 | 0.55 | 0.54 | 0.53 | - |
| T-MAIFI(M) #Momentary Interruptions /DP | | | | | | | | 0.47 | 0.53 | 0.52 | 0.51 | 0.50 | 0.49 | 0.48 | - |
| T-SAIDI Avg min/DP | | | | | | | | 42.80 | 46.50 | 45.60 | 44.90 | 43.80 | 42.90 | 42.10 | - |
| System Unavailability % | | | | | | | | 0.69 | 0.42 | 0.41 | 0.40 | 0.39 | 0.38 | 0.38 | - |
| Unsupplied Energy Minutes | | | | | | | | 13.20 | 12.60 | 12.36 | 12.11 | 11.87 | 11.63 | 11.40 | - |
| | | | | | | | | | | | | | | | |
| Ex B-1-1 TSP Section 1.1 Pg 26 | | | | | | | | | | | | | | | |
| TSAIDI Excl FIM Events Targets minutes | | | | | | | | 3.00 | 14.60 | 8.10 | 7.90 | 7.80 | 7.60 | 7.50 | 7.30 |
| | | | | | | | | | | | | | | | |
| EX I-2-Energy Probe -5 Page 11/12 (DEC 2018) | | | | | | | | | | | | | | | |
| T-MAIFI(M) #Momentary Interruptions /DP | | | | | | | | 0.47 | 0.50 | 0.49 | 0.48 | 0.48 | 0.47 | 0.46 | 0.45 |
| T-MAIFI(S) Sustained Interruptions /DP | | | | | | | | 0.65 | 0.83 | 0.55 | 0.54 | 0.53 | 0.52 | 0.51 | 0.50 |
| T-SAIDI Avg min/DP | | | | | | | | 42.76 | 69.95 | 35.36 | 34.66 | 33.96 | 33.38 | 32.62 | 31.97 |
| Unsupplied Energy Minutes | | | | | | | | 13.16 | 12.60 | 9.78 | 9.59 | 9.40 | 9.21 | 9.02 | 8.84 |
| System Unavailability % | | | | | | | | 0.69 | 0.67 | 0.48 | 0.47 | 0.47 | 0.46 | 0.45 | 0.44 |
| | | | | | | | | | | | | | | | |
| Exhibit I Tab 02 Schedule 10 | | | | | | | | | | | | | | | |
| TSAIFI (S) Excluded | | | | | | | | 0.65 | 0.83 | 0.55 | 0.54 | 0.53 | 0.52 | 0.51 | 0.50 |
| T-MAIFI(S) Sustained Interruptions /DP | | | | | | | | 0.47 | 0.50 | 0.49 | 0.48 | 0.48 | 0.47 | 0.46 | 0.45 |
| T-SAIDI Avg min/DP | | | | | | | | 42.76 | 69.95 | 35.36 | 34.66 | 33.96 | 33.38 | 32.62 | 31.97 |
| Unsupplied Energy Minutes | | | | | | | | 13.16 | 19.50 | 9.78 | 9.59 | 9.40 | 9.21 | 9.02 | 8.84 |
| System Unavailability % | | | | | | | | 0.69 | 0.67 | 0.48 | 0.47 | 0.47 | 0.46 | 0.45 | 0.44 |
| | | | | | | | | | | | | | | | |
| Exhibit B-1-1 TSP Section 1.5 and Figures 6-10 | | | | | | | | | | | | | | | |
| T-SAIDI (Ave minutes of interruptions per Delivery Point) | | | | 0.66 | 0.56 | 0.46 | 0.61 | 0.83 | 0.53 | 0.55 | 0.54 | 0.53 | 0.51 | 0.50 | |
| T-SAIFI-M (Ave. # of Momentary interruptions per Delivery Point) | | | | 0.47 | 0.50 | 0.33 | 0.47 | 0.46 | 0.49 | 0.48 | 0.48 | 0.47 | 0.46 | 0.45 | |
| T-SAIDI (Ave minutes of interruptions per Delivery Point) | | | | 31.40 | 37.40 | 77.20 | 33.60 | 47.10 | 35.40 | 34.66 | 33.96 | 33.28 | 32.62 | 31.97 | |
| System Unavailability (%) | | | | 0.48 | 0.63 | 0.71 | 0.69 | 0.83 | 0.48 | 0.47 | 0.47 | 0.46 | 0.45 | 0.44 | |
| Unsupplied Energy (minutes) | | | | 9.00 | 10.60 | 8.50 | 13.20 | 15.70 | 9.80 | 9.59 | 9.40 | 9.21 | 9.02 | 8.84 | |

Red Values reflect Update

Chart 1

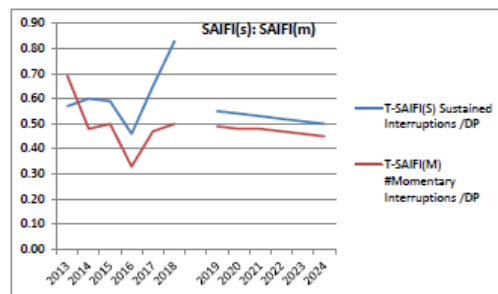
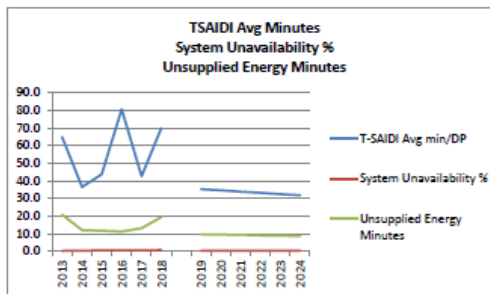


Chart 2



Energy Probe Workbook Tab 2- Industry and Hydro Quebec System Reliability Comparisons

PA Consulting & First Quartile Historic System Reliability Data for US Peer Group; Hydro Quebec Transenergie and Hydro One TX

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|-------------------------------|--------|--------|--------|--------|--------|--------|------|
| TSAIDI/Delivery Point Peer | 274.70 | 166.20 | 153.30 | 129.20 | 115.90 | 134.20 | |
| TSAIDI/Delivery Point HQT | 49.30 | 107.40 | 55.10 | 30.10 | 53.90 | 53.70 | |
| TSAIDI/Delivery Point HOT | - | 64.90 | 0.48 | 43.90 | 80.80 | 42.8 | 70.0 |
| | | | | | | | |
| TSAIFI(s)/Delivery Point Peer | 1.91 | 0.83 | 0.83 | 0.74 | 0.75 | 0.77 | |
| TSAIFI(s)/Delivery Point HQT | 0.86 | 0.85 | 0.61 | 0.43 | 0.54 | 0.50 | |
| TSAIFI(s)/Delivery Point HOT | - | 0.57 | 0.60 | 0.59 | 0.46 | 0.65 | 0.83 |
| | | | | | | | |
| TSAIFI(m)/Delivery Point Peer | 0.59 | 0.86 | 0.72 | 0.85 | 0.70 | 0.55 | |
| TSAIFI(m)/Delivery Point HQT | 0.27 | 0.24 | 0.23 | 0.21 | 0.19 | 0.27 | |
| TSAIFI(m)/Delivery Point HOT | - | 0.69 | 0.48 | 0.50 | 0.33 | 0.47 | 0.50 |

References

R-4058-2018 HQT Doc 3 pages 20-23

R-4096-2019 HQT-2, Doc 1 Pages 16-17

Chart 2

Chart 1

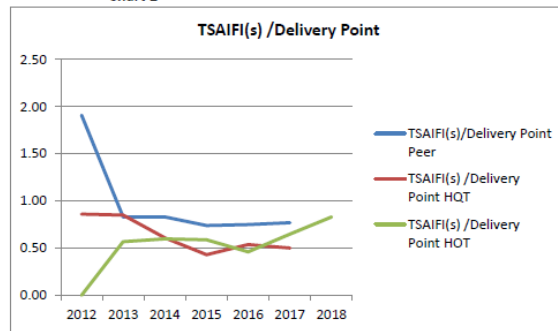
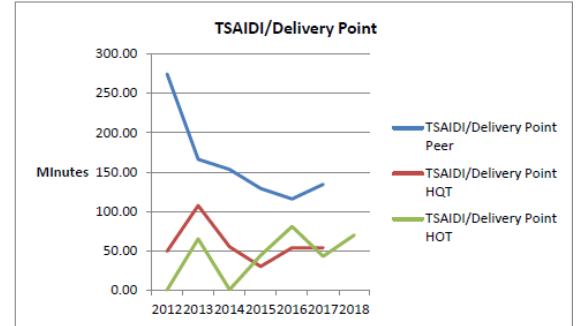
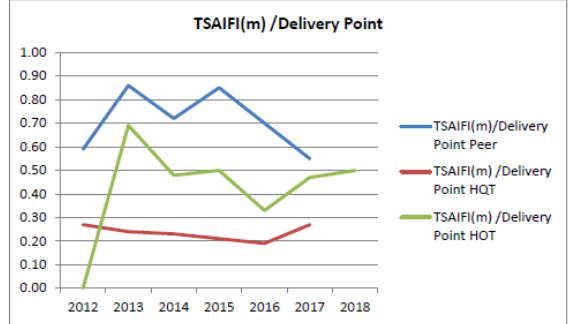


Chart 3



Hydro One Tx Customer Delivery Point Outliers

Updated: 2019-00-19
EB-2019-0082
Exhibit B-1-1
TSP Section 1.5
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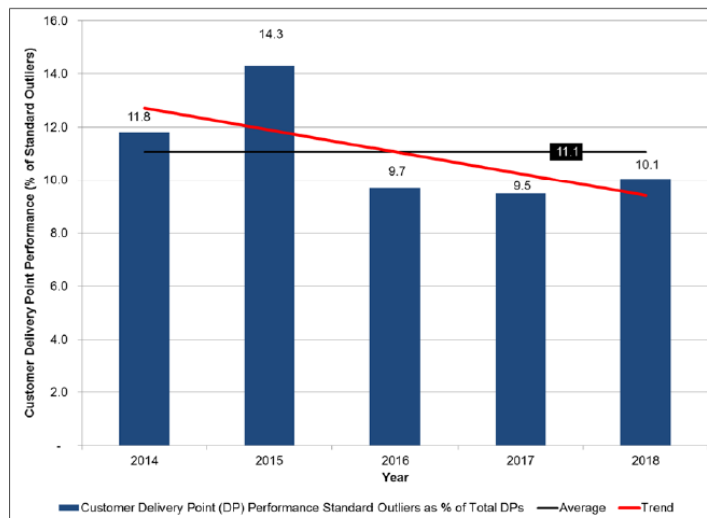


Figure 4 - Customer Delivery Point (DP) Performance, Standard Outliers as % of Total Delivery Points

PEER GROUP COMPARISONS

UNDERTAKING - JT 1.14

Reference:

I-07-SEC-046

Undertaking:

To provide the 2018 NATF transmission reliability report.

Response:

The 2018 NATF transmission reliability report was made available on October 10, 2019. Below please find a summary of the data.

The 2018 NATF Report replaced the IPII with TRIND (Transmission Index) due to the retirement of the IPII metric. TRIND, similar to IPII, is an index that aggregates key indicators to provide an overall score enabling the comparison of performance over time. Unlike IPII which was a single year score, TRIND provides a score reflecting a 5-year period.

There are nineteen peers in the 2018 data set.¹ Hydro One's ranking is shown below. Hydro One is investigating the factors contributing to the downward performance trend; one possible reason is the inclusion of 115 kV circuit data beginning in 2016. Prior to 2016 only 230 kV and 500 kV data was considered.

| TRIND Total 5-year Period | Score* |
|---------------------------|--------|
| 2014-2018 | 19/19 |
| 2013-2017 | 17/21 |
| 2012-2016 | 13/21 |

**Lower score indicates better relative ranking*

The 2018 NATF Report included traditional metrics rankings for both 2018 on a stand-alone basis and for the 2014-2018 5-year period. These metrics are comparable to the traditional metrics in I-7-SEC-46.



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Partner
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November 23, 2016

VIA RESS AND COURIER

Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 27th Floor
Toronto, Ontario M4P 1E4

Dear Ms. Walli:

**RE: EB-2016-0160 Hydro One Networks Inc. ("Hydro One") Transmission Rates
Application – NATF Reliability Report Rankings**

In accordance with the Board's Procedural Order No. 5 issued November 22, 2016, enclosed for filing is the NATF Reliability Report Rankings showing Hydro One's rank order among its peer group.

Yours truly,

McCarthy Tétrault LLP
Per:

Gordon M. Nettleton
GMN

NATF Transmission Reliability Reports

The first NATF Reliability Report that included Hydro One's information was generated in 2013 and took into account Hydro One's outage data from 2008 to 2012. Given this, only NATF Reliability Reports between 2012 and 2015 include Hydro One information.

The NATF Reliability Report is organized into two groups. The first is Integrated Performance Indicator Index ("IPII"). The IPII is a numeric (0-100 points) representing member performance based on an aggregated set of weighted inputs.

Hydro One's ranking (1 = best, 21 = worst) among its peer group on Total IPIII Score and individual parameters are shown below.

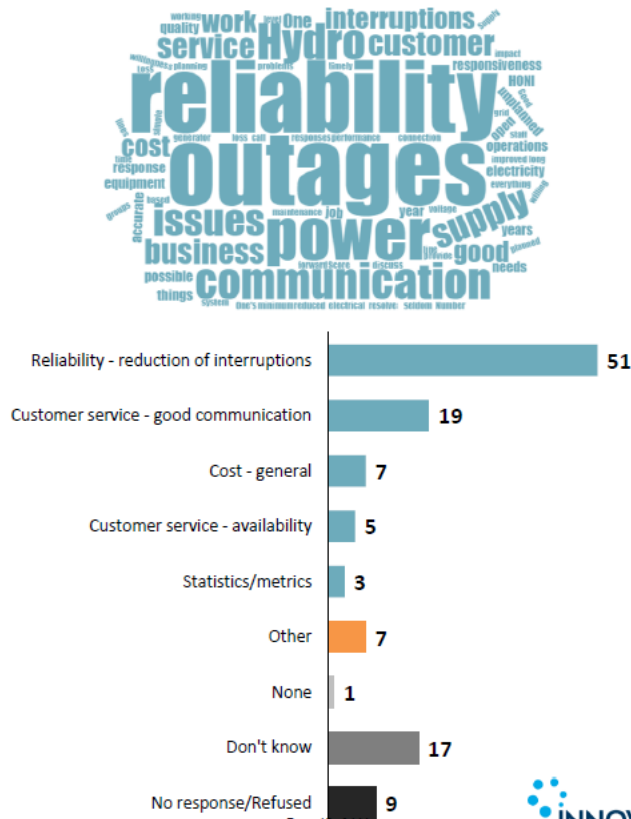
| | 2012 | 2013 | 2014 | 2015 |
|---|------|------|------|------|
| Number of Participants (including Hydro One) | 21 | 21 | 21 | 21 |
| IPII Total Score | 15 | 13 | 8 | 13 |
| IPII Score Failed AC Circuit Equipment per Hundred Miles | 12 | 11 | 11 | 16 |
| IPII Score Failed AC Substation Equipment per Element | 8 | 2 | 1 | 7 |
| IPII Score Failed Protection System per Element | 16 | 15 | 15 | 1 |
| IPII Score Human Error per Element | 11 | 9 | 1 | 1 |
| IPII Score AC Circuit Unavailability per Element per Year | 15 | 15 | 9 | 16 |
| IPII Score AC Transformers Unavailability per Element per | 10 | 10 | 12 | 14 |
| IPII Score Unknowns per Hundred Miles | 9 | 10 | 10 | 8 |
| IPII Score Lightning per Hundred Miles | 19 | 13 | 15 | 12 |
| IPII Score Weather Excluding Lightning per Hundred Miles | 6 | 10 | 8 | 7 |
| IPII Score Aggregate Residual Causes per Hundred Miles | 19 | 14 | 15 | 14 |

Performance Criteria:

15

Reduction in outages and interruptions, power supply, and customer service in terms of communication are top mentions for performance metrics

Q How do you know if Hydro One is doing a good job for your business?
[asked of all respondents, n=103]

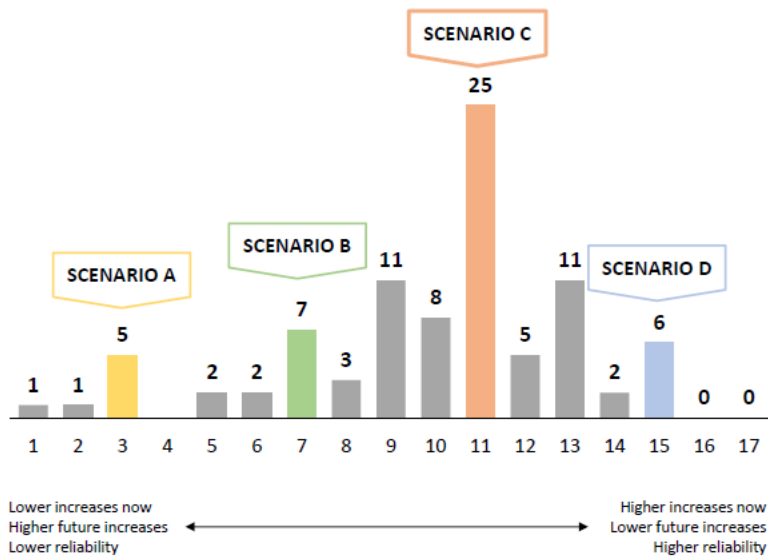


NOTE: Total is greater than 103 due to responses being coded into multiple categories

Illustrative Scenarios:

Maintaining current level of investment ("Scenario C") is the most popular scenario

- Q** Thinking of all the considerations outlined, please choose a point along the line below that you believe strikes the right balance between rates and outcomes. (Remember that you can choose a point between scenarios or directly aligned with one of them).
[asked of all respondents, n=103]



NOTE: "Don't know" (n=7), No response (n=7) not shown.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|-----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|
| LDC | | 1 | 1 | | 1 | 1 | | | 5 | 6 | 6 | 1 | 3 | | | | |
| End-User | | | 2 | | 1 | | 5 | 1 | 3 | 2 | 11 | 2 | 4 | | | | |
| Generator | 1 | | 2 | | | 1 | | | 3 | | 8 | 2 | 4 | 2 | 6 | | |

Overview: 2019-2024 Tx Investment Plan

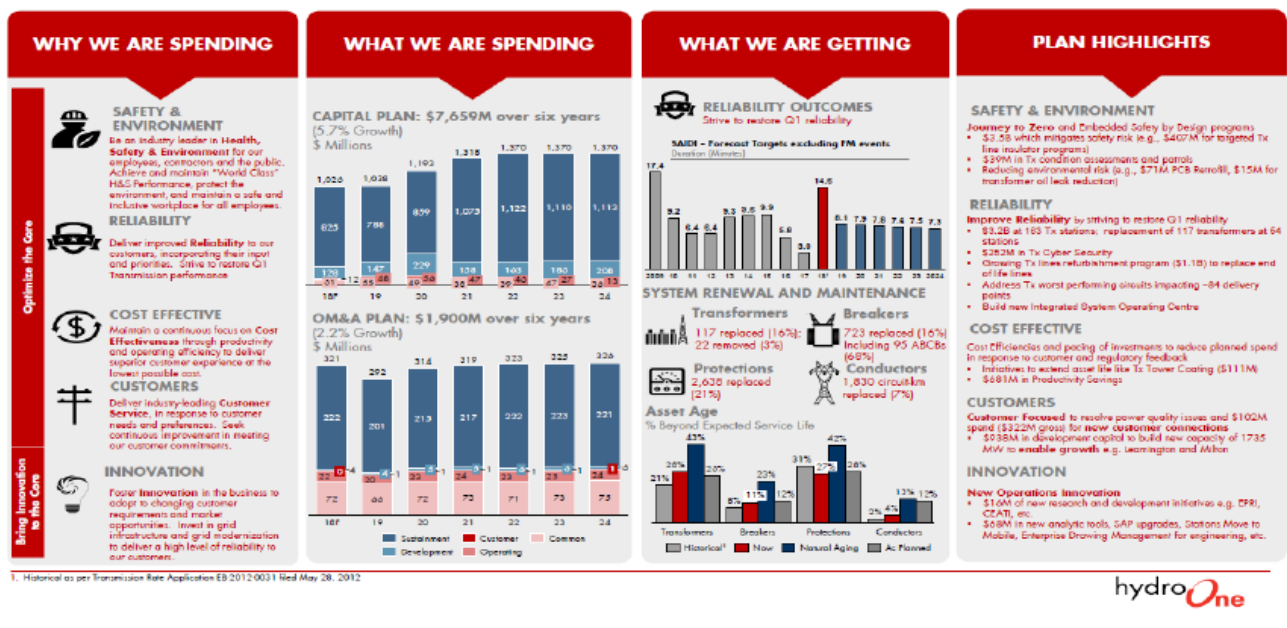


Figure 6 - Alignment Between Strategic Priorities and Planned Transmission Investments

Appendix 2-AA
Capital Projects Table (\$M)

| Projects | 2015 | 2016 | 2017 | 2018 | 2019 Bridge | 2020 Test |
|--|--------------|--------------|--------------|--------------|----------------|----------------|
| Reporting Basis | USGAAP | USGAAP | USGAAP | USGAAP | USGAAP | USGAAP |
| System Access | | | | | | |
| Overhead Lines Refurbishment Projects, Component Replacement Programs and | -0.5 | 1.8 | -0.9 | 4.4 | 2.9 | 0.9 |
| Generator Customer Connection | -1.7 | 0.2 | 0.4 | 0.3 | 1.1 | 2.3 |
| Load Customer Connection | 7.7 | 13.6 | 42.3 | 28.5 | 41.1 | 21.6 |
| P&C Enablement for Generation Connections | 2.1 | 1.3 | 0.8 | 0.5 | 0.0 | 0.0 |
| Sub-Total | 7.6 | 17.0 | 42.7 | 33.7 | 45.1 | 24.8 |
| System Renewal | | | | | | |
| Circuit Breakers | 7.1 | 4.1 | 0.4 | 0.1 | 0.0 | 4.1 |
| Overhead Lines Refurbishment Projects, Component Replacement Programs and | 125.4 | 164.0 | 197.2 | 221.2 | 291.9 | 323.9 |
| Integrated Station Investment | 374.2 | 469.1 | 481.0 | 410.7 | 336.9 | 405.1 |
| Underground Lines Cable Refurbishment & Replacement | 3.5 | 1.7 | 10.7 | 16.5 | 15.0 | 7.1 |
| Power Transformers | 43.5 | 13.0 | 0.0 | -0.7 | 0.1 | 0.0 |
| Other Power Equipment | 12.5 | 5.3 | 0.0 | 0.3 | 0.0 | 0.0 |
| Protection and Automation | 60.2 | 40.5 | 20.9 | 44.4 | 72.8 | 77.7 |
| Ancillary Systems | 17.1 | 7.6 | 1.1 | 0.7 | 0.0 | 0.0 |
| Site Facilities and Infrastructure | 14.5 | 2.2 | 2.2 | 0.3 | 0.0 | 0.0 |
| Stations Environment | 3.8 | 1.9 | 0.4 | 0.0 | 0.0 | 0.0 |
| Tx Transformers Demand and Spares | 27.2 | 24.6 | 26.8 | 82.6 | 56.6 | 47.4 |
| Sub-Total | 688.9 | 733.9 | 740.7 | 776.2 | 773.3 | 865.2 |
| System Service | | | | | | |
| Inter Area Network Transfer Capability | 86.3 | 80.8 | 36.0 | 48.9 | 54.9 | 121.0 |
| Local Area Supply Adequacy | 64.9 | 54.3 | 45.1 | 20.7 | 39.0 | 73.9 |
| Smart Grid | 3.5 | 3.3 | 0.7 | 0.2 | 0.0 | 0.0 |
| TS Upgrades to Facilities Distribution Generation | -1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Performance Enhancement | 1.3 | 0.4 | 0.0 | 0.0 | 0.3 | 0.3 |
| Risk Mitigation | 3.1 | 1.8 | 9.5 | 2.6 | 5.4 | 4.7 |
| Power Quality | 0.0 | 0.2 | 2.3 | 1.4 | 4.1 | 4.2 |
| Sub-Total | 157.9 | 140.9 | 93.5 | 73.9 | 103.8 | 204.1 |
| General Plant | | | | | | |
| Facilities & Real Estate | 22.7 | 13.9 | 6.7 | 7.0 | 7.2 | 8.1 |
| Grid Operating and Control Facilities | 14.2 | 7.6 | 6.0 | 3.8 | 37.4 | 35.3 |
| Information Technology (Including Cornerstone) | 21.6 | 35.9 | 32.8 | 42.0 | 33.7 | 25.7 |
| Operating Infrastructure | 1.4 | 4.6 | 4.8 | 5.8 | 10.2 | 21.1 |
| Other (Including CDM) | 0.7 | 0.3 | -1.1 | -0.7 | 0.0 | 0.0 |
| Site Facilities and Infrastructure | 5.9 | 8.1 | 10.8 | 16.4 | 12.0 | 9.4 |
| Transport and Work & Service Equipment | 22.1 | 24.6 | 16.9 | 9.3 | 15.9 | 15.8 |
| Sub-Total | 88.6 | 94.8 | 76.9 | 83.6 | 116.3 | 115.4 |
| Progressive productivity Placeholder | | | | | | -17.0 |
| Directive Adjustment | | | | | -0.3 | -0.3 |
| Total | 943.0 | 986.7 | 953.9 | 967.3 | 1,038.2 | 1,192.2 |
| Less Renewable Generation Facility Assets and Other Non-Rate-Regulated Utility Assets (input as negative) | | | | | | |
| Total | 943.0 | 986.7 | 953.9 | 967.3 | 1,038.2 | 1,192.2 |

Notes:

* The Directive Adjustment reflects the impact of the directive issued by Ontario's Management Board of Cabinet on February 21, 2019 and the associated compensation framework they approved on March 7, 2019. Refer to Exhibit F, Tab 4, Schedule 1 for further details.

- 1 Please provide a breakdown of the major components of each capital project undertaken in each year. Please ensure that all projects below the
- 2 The applicant should group projects appropriately and avoid presentations that result in classification of significant components of the capital

JT 1.15 Page 2 Reliability Risk

Table 1: Historical Interruption Duration

| | % of Interruption Duration (2011-15) |
|--------------|--------------------------------------|
| Lines | 69% |
| Transformers | 6% |
| Breakers | 9% |
| Other | 16% |

Table 2: Supporting Data – Fleet Risk

| | Supporting Data – Fleet Risk | | | | |
|--------------|------------------------------|------------|------------|------------|------------|
| | Jan 1, 2019 | Scenario A | Scenario B | Scenario C | Scenario D |
| Lines | 1.11% | 1.42% | 1.22% | 0.96% | 0.92% |
| Transformers | 2.66% | 3.86% | 3.19% | 2.77% | 2.77% |
| Breakers | 1.62% | 1.92% | 1.68% | 1.32% | 1.32% |

Table 3: Calculation of Asset Reliability Risk

| | Calculation – Asset Reliability Risk [Fleet Risk x % of Interruption Duration] | | | | | | | | | |
|--------------|---|-------|------------------------------|-------|------------------------------|-------|------------------------------|-------|------------------------------|-------|
| | Jan 1, 2019 | | Scenario A | | Scenario B | | Scenario C | | Scenario D | |
| Lines | $1.11\% \times 69\% =$ | 0.77% | $1.42\% \times 69\% =$ | 0.98% | $1.22\% \times 69\% =$ | 0.84% | $0.96\% \times 69\% =$ | 0.66% | $0.92\% \times 69\% =$ | 0.63% |
| Transformers | $2.66\% \times 6\% =$ | 0.16% | $3.86\% \times 6\% =$ | 0.23% | $3.19\% \times 6\% =$ | 0.19% | $2.77\% \times 6\% =$ | 0.17% | $2.77\% \times 6\% =$ | 0.16% |
| Breakers | $1.62\% \times 9\% =$ | 0.15% | $1.92\% \times 9\% =$ | 0.17% | $1.62\% \times 9\% =$ | 0.15% | $1.32\% \times 9\% =$ | 0.12% | $1.32\% \times 9\% =$ | 0.11% |
| Total | $0.77\% + 0.16\% + 0.15\% =$ | 1.07% | $0.98\% + 0.23\% + 0.17\% =$ | 1.39% | $0.84\% + 0.19\% + 0.15\% =$ | 1.19% | $0.66\% + 0.17\% + 0.12\% =$ | 0.95% | $0.63\% + 0.16\% + 0.11\% =$ | 0.91% |

Table 4: Change in Asset Reliability Risk

| | Calculation – Change in Asset Reliability Risk | | | | | | | |
|-------------------------------------|--|-----|-----------------------|-----|-----------------------|------|-----------------------|------|
| | Scenario A | | Scenario B | | Scenario C | | Scenario D | |
| Change Relative to Jan 1, 2019 | $(1.39 / 1.07) - 1 =$ | 30% | $(1.19 / 1.07) - 1 =$ | 11% | $(0.95 / 1.07) - 1 =$ | -11% | $(0.91 / 1.07) - 1 =$ | -15% |
| As presented in Customer Engagement | Increase in risk ~30% | | Increase in risk ~10% | | Decrease in risk ~10% | | Decrease in risk ~15% | |

Exhibit 19: Summary of Hydro One's scoring system and risk criteria

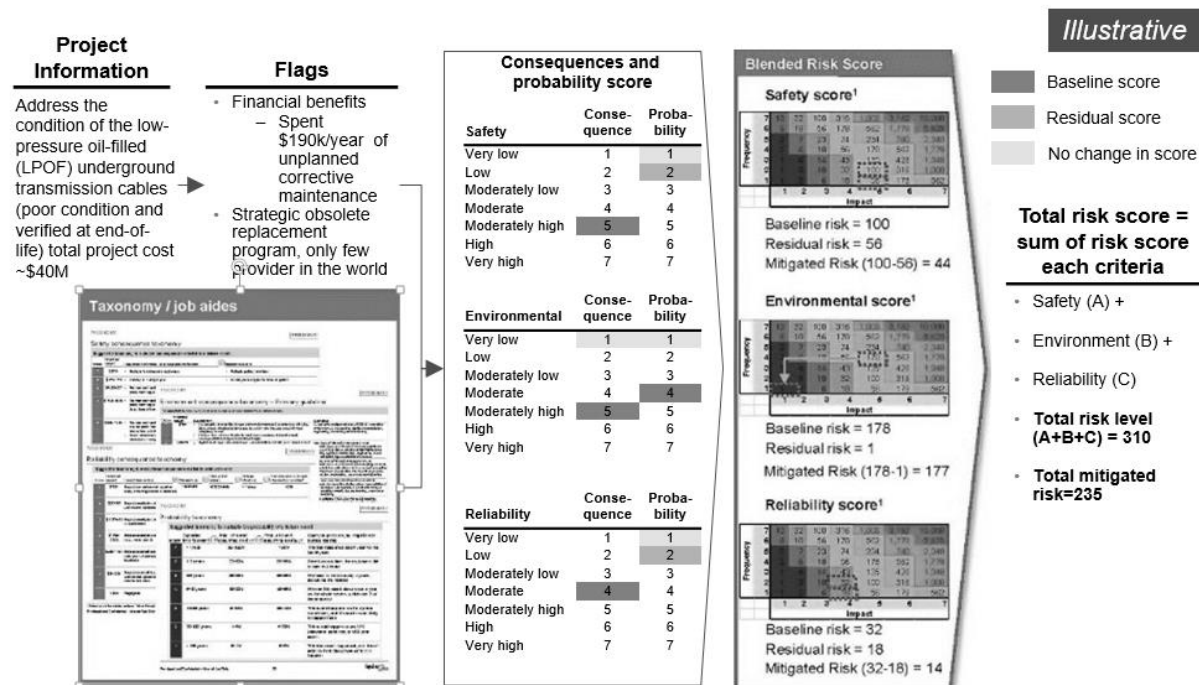


Exhibit B-1-1TSP Section 1.4 Attachment 15 Page 3

Outcomes Tracking

Guided by the BCG recommendations outlined in the Investment Planning Process Review, Hydro One implemented a new process step in 2018, which included an upfront identification of corporate strategic direction, the establishment of interim targeted outcomes and more granular, strategic budget allocations based on operational, financial, regulatory and customer considerations at the beginning of the investment planning process.

Hydro One conducted a strategic budget (capital/OM&A) allocation at the beginning of the process, whereby the plan was divided into smaller, discrete budgets based on business unit, and then investments were subsequently prioritized within those budgets. The basis for this upfront allocation was the expenditure levels included in the previous plan, adjusted for efficiency gains and new strategic directions, as illustrated in Figure 1 below. This was done by business unit, resulting in nine allocations.

Line of Business Allocation, (\$M Net)

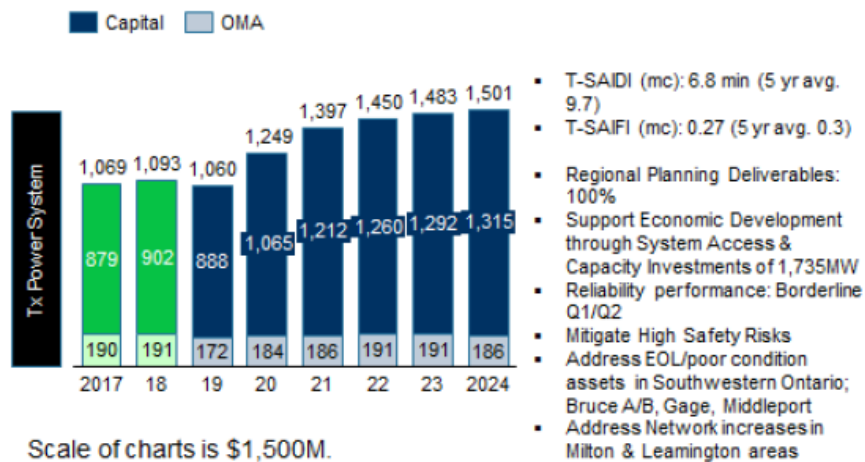


Figure 2 - Transmission Power System Outcomes

Table 1 - 1-year Transmission Outcome Metrics

| LOB | Initial 1-year Metrics |
|--------------------------------|--|
| Transmission Power Systems | <ul style="list-style-type: none"> Tx SAIDI (MC) - 8.7 minutes Regional Infrastructure Planning Process Deliverables Met – 100% |
| System Operations | <ul style="list-style-type: none"> Reliability of Service - 99.95% of key systems |
| Facilities | <ul style="list-style-type: none"> Productivity Savings - \$1M |
| Fleet | <ul style="list-style-type: none"> Fleet Size – 7,200 asset count Annual Utilization – 6.0M hours |
| Information Solutions | <ul style="list-style-type: none"> Cost of Service - 4.5% of operating expenses Reliability of Service – 99.53% critical system availability |
| Security | <ul style="list-style-type: none"> Security Posture – Medium NERC Compliance – 100% |
| Health, Safety and Environment | <ul style="list-style-type: none"> Recordable rate - <1.0 incident per 200,000 hours |

Exhibit B-1-1 TSP Section 3.3 Page 15/16

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Table 6 - System Renewal - Material Capital Investments Proposed

| ISD | Investment Name | 2020 | 2021 | 2022 | 2023 | 2024 |
|--|--|--------------|----------------|----------------|----------------|----------------|
| SR-01 | Air Blast Circuit Breaker Replacement Projects | 107.5 | 128.4 | 133.5 | 129.2 | 98.7 |
| SR-02 | Station Reinvestment Projects | 107.0 | 125.4 | 120.6 | 87.9 | 53.9 |
| SR-03 | Bulk Station Transformer Replacement Projects | 33.2 | 51.8 | 72.5 | 131.5 | 113.8 |
| SR-04 | Bulk Station Switchgear and Ancillary Equipment Replacement Projects | 17.5 | 32.4 | 41.4 | 34.6 | 49.3 |
| SR-05 | Load Station Transformer Replacement Projects | 91.2 | 132.3 | 129.4 | 178.5 | 200.0 |
| SR-06 | Load Station Switchgear and Ancillary Equipment Replacement Projects | 19.2 | 30.8 | 47.5 | 58.4 | 77.0 |
| SR-07 | Protection and Automation Replacement Projects | 6.7 | 8.6 | 12.7 | 12.2 | 21.7 |
| SR-08 | John Transformer Station Reinvestment Project | 3.5 | 17.9 | 25.6 | 24.0 | 20.9 |
| SR-09 | Transmission Station Demand and Spares and Targeted Assets | 44.2 | 36.4 | 37.0 | 37.7 | 38.3 |
| SR-10 | Transformer Protection Replacement | 3.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| SR-11 | Legacy SONET System Replacement | 4.1 | 26.0 | 27.6 | 28.1 | 28.1 |
| SR-12 | Telecom Performance Improvements | 0.0 | 0.9 | 5.5 | 3.7 | 0.0 |
| SR-13 | ADSS Fibre Optic Cable Replacements | 7.0 | 7.1 | 1.0 | 0.0 | 0.0 |
| SR-14 | Mobile Radio System Replacement | 2.9 | 6.2 | 6.1 | 4.0 | 0.0 |
| SR-15 | Telecom Fibre IRU Agreement Renewals | 0.0 | 2.8 | 8.5 | 2.6 | 1.5 |
| SR-16 | NERC CIP-014 Physical Security Implementation | 18.0 | 18.0 | 18.0 | 0.0 | 0.0 |
| SR-17 | NERC CIP Transient Cyber Asset Project | 3.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| SR-18 | PSIT Cyber Equipment Replacement | 1.0 | 5.0 | 7.7 | 7.0 | 3.4 |
| SR-19 | Transmission Line Refurbishment - End of Life ACSR, Copper Conductors & Structures | 81.8 | 122.1 | 94.5 | 51.0 | 75.9 |
| SR-20 | Transmission Line Refurbishment - Near End of Life ACSR Conductor | 62.2 | 63.4 | 111.7 | 117.8 | 137.7 |
| SR-21 | Wood Pole Structure Replacements | 51.0 | 52.0 | 53.0 | 54.1 | 55.2 |
| SR-22 | Steel Structure Coating Program | 11.4 | 21.8 | 22.3 | 22.7 | 23.2 |
| SR-23 | Tower Foundation Assess/Clean/Coat Program | 11.8 | 22.3 | 22.8 | 23.3 | 23.7 |
| SR-24 | Transmission Line Shieldwire Replacement | 12.3 | 12.6 | 12.8 | 13.1 | 13.4 |
| SR-25 | Transmission Line Insulator Replacement | 68.3 | 69.7 | 66.3 | 67.6 | 68.9 |
| SR-26 | Transmission Line Emergency Restoration | 9.6 | 9.8 | 10.0 | 10.2 | 10.4 |
| SR-27 | C5E/C7E Underground Cable Replacement | 2.1 | 29.8 | 30.9 | 32.2 | 29.2 |
| SR-28 | OPGW Infrastructure Projects | 5.3 | 7.5 | 2.2 | 6.2 | 9.7 |
| SR-29 | Physical Security ISL Application Replacement | 5.0 | 1.1 | 0.0 | 0.0 | 0.0 |
| System Renewal Projects & Programs Less Than \$3M | | 77.8 | 67.3 | 60.1 | 44.1 | 41.1 |
| Total Gross System Renewal Capital (\$M) | | 869.1 | 1,109.2 | 1,181.1 | 1,181.5 | 1,194.9 |
| <i>Less Capital Contributions (\$M)</i> | | <i>(3.8)</i> | <i>(6.1)</i> | <i>(8.3)</i> | <i>(4.1)</i> | <i>(1.1)</i> |

END COMPENDIUM 1 Hydro One TX PANEL 1

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Table 9: Summary of Transmission OM&A Expenditures (\$ Million)

| | Historical | | | | | | | | Bridge | Test |
|---|------------|-------|--------|-------|--------|-------|--------|-------|----------|----------|
| | 2015 | | 2016 | | 2017 | | 2018 | | 2019 | 2020 |
| | Actual | Plan | Actual | Plan | Actual | Plan | Actual | Plan | Forecast | Forecast |
| Category Level | | | | | | | | | | |
| Sustainment | 233.6 | 238.7 | 215.1 | 241.1 | 218.1 | 241.2 | 229.4 | 238.5 | 200.6 | 214.2 |
| Development | 6.1 | 12.9 | 4.6 | 13.4 | 5.1 | 4.8 | 5.2 | 5.0 | 6.0 | 6.9 |
| Operations | 59.0 | 58.5 | 62.5 | 59.1 | 61.1 | 61.3 | 53.4 | 62.1 | 46.1 | 48.9 |
| Customer Care | 5.1 | 5.5 | 4.5 | 5.5 | 8.5 | 4.0 | 11.0 | 3.9 | 7.3 | 7.5 |
| Common Corporate Costs and Other Costs ¹ | 73.9 | 70.2 | 60.1 | 71.3 | 41.5 | 49.9 | 54.9 | 47.5 | 29.4 | 30.3 |
| Property Taxes & Rights Payments | 63.9 | 66.3 | 61.3 | 67.0 | 50.7 | 63.6 | 65.3 | 64.3 | 67.2 | 68.1 |
| Adjustments | | | | | | | | | | |
| EB-2014-0140 Settlement Reduction | | -20.0 | | -20.0 | | | | | | |
| EB-2016-0160 Decision Reduction | | | | | | -15.0 | | -15.0 | | |
| Removal of B2M Expense | | -0.9 | | -0.7 | | -0.8 | | -2.1 | | |
| Pension Adjustment | | | | | | -11.4 | | -9.9 | | |
| Directive ² | | | | | | | | | -0.1 | -0.1 |
| Envelope Level | | | | | | | | | | |
| Total Transmission OM&A | 441.6 | 431.2 | 408.1 | 436.8 | 385.0 | 397.7 | 419.2 | 394.3 | 356.5 | 375.8 |
| % Change Year over Year | | | -7.6% | | -5.6% | | 8.9% | | -9.6% | 5.4% |
| Variance to Plan | 10.4 | | -28.7 | | -12.7 | | 24.9 | | | |

¹ Exhibit Reference: F-1-1, Table 1.² *Directive refers to the Government Directive as detailed and defined in Exhibit F, Tab 4, Schedule 1.**Table 10: Summary of Total Transmission-Allocated Compensation Costs (\$)**

| | 2019 | 2020 | Change |
|---------------------------------|-------------|-------------|------------|
| Total Capital Transmission Comp | 456,985,537 | 505,243,466 | 48,257,929 |
| Total OM&A Transmission Comp | 176,094,700 | 178,968,609 | 2,873,909 |
| Total Transmission Compensation | 633,080,237 | 684,212,075 | 51,131,837 |

Hydro One Total Compensation KT 2.1

| Compensation Costs 2014-2022 | | | | | | | | | |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|-------------|-------------|-------------|-------------|
| Transmission Unrepresented | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| Base Pay | 33,396,323 | 34,508,999 | 33,641,927 | 38,772,661 | 36,544,290 | 38,524,614 | 43,137,614 | 45,511,365 | 45,048,884 |
| Burdens | 22,435,650 | 23,448,136 | 17,666,653 | 19,961,342 | 15,690,642 | 16,363,898 | 18,603,459 | 19,927,923 | 20,043,316 |
| Other Allowances | 3,452,267 | 2,367,920 | 3,296,601 | 3,963,397 | 5,723,344 | 3,596,819 | 4,021,881 | 4,237,275 | 4,194,217 |
| STI | 4,055,590 | 4,414,248 | 4,555,907 | 7,257,372 | 6,297,493 | 4,618,185 | 5,308,380 | 5,674,271 | 5,630,422 |
| LTI | - | - | 241,898 | 2,350,267 | 3,730,541 | 632,252 | 984,137 | 1,070,633 | 847,416 |
| ESOP | - | - | 774,963 | 886,003 | 540,802 | 1,771,039 | 1,963,382 | 2,046,258 | 1,996,514 |
| Transmission Unrepresented Total | 63,339,829 | 64,739,302 | 60,177,949 | 73,211,844 | 68,526,913 | 65,506,806 | 74,018,853 | 78,467,725 | 77,762,769 |
| Headcount Total / FTE Transmission | 331 / 285 | 313 / 277 | 319 / 275 | 357 / 308 | 360 / 290 | 307 | 334 | 345 | 336 |
| Distribution Unrepresented | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| Base Pay | 37,601,338 | 39,909,527 | 41,751,062 | 42,861,848 | 46,685,158 | 53,165,528 | 50,517,625 | 50,137,653 | 52,495,756 |
| Burdens | 25,260,579 | 27,117,681 | 21,925,067 | 22,066,579 | 20,044,720 | 22,582,842 | 21,786,151 | 21,953,622 | 23,356,606 |
| Other Allowances | 3,886,951 | 2,738,490 | 4,091,222 | 4,403,509 | 7,119,612 | 4,963,755 | 4,709,947 | 4,666,000 | 4,887,548 |
| STI | 4,578,312 | 5,117,332 | 5,712,824 | 8,142,916 | 7,564,939 | 7,619,365 | 7,464,246 | 7,442,291 | 7,839,166 |
| LTI | - | - | 249,764 | 2,535,402 | 4,784,858 | 1,870,199 | 1,374,938 | 1,140,263 | 1,210,384 |
| ESOP | - | - | 708,363 | 811,624 | 677,410 | 2,290,696 | 2,128,505 | 2,075,874 | 2,153,951 |
| Distribution Unrepresented Total | 71,327,180 | 74,883,031 | 74,438,303 | 80,821,878 | 86,856,697 | 92,692,386 | 87,981,412 | 87,417,704 | 91,943,411 |
| Headcount Total / FTE Distribution | 372 / 320 | 360 / 320 | 390 / 336 | 378 / 325 | 433 / 348 | 385 | 359 | 349 | 358 |
| Shareholder Allocated Unrepresented | 3,089,801 | 2,615,254 | 9,597,169 | 9,660,409 | 13,112,786 | 23,748,837 | 24,288,558 | 24,881,971 | 25,490,502 |
| TOTAL Unrepresented Labour | 137,756,810 | 142,237,587 | 144,213,420 | 163,694,131 | 168,496,396 | 181,948,030 | 186,288,823 | 190,767,400 | 195,196,682 |
| TOTAL Unrepresented Headcount / FTE/YE | 703 / 605 / 584 | 673 / 597 / 585 | 709 / 611 / 596 | 735 / 633 / 627 | 793 / 638 / 641 | 692 | 693 | 694 | 694 |
| Transmission Society Represented | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| Base Pay | 67,393,687 | 66,909,144 | 65,179,365 | 72,517,488 | 70,250,107 | 83,210,524 | 91,575,087 | 96,245,302 | 95,123,535 |
| Overtime | 2,940,968 | 2,853,433 | 1,792,765 | 4,635,127 | 5,942,030 | 5,446,164 | 5,512,817 | 5,626,666 | 5,717,210 |
| Lump Sums | - | - | 618,063 | 1,312,146 | - | - | - | - | - |
| Burdens | 45,275,079 | 45,463,351 | 34,228,158 | 37,334,202 | 30,162,557 | 35,344,898 | 39,492,527 | 42,142,636 | 42,322,714 |
| Share Grants | - | - | - | - | 1,243,401 | 1,142,108 | 1,127,076 | 1,086,518 | 1,041,623 |
| Transmission Society Represented Total | 115,609,754 | 115,225,928 | 101,818,351 | 115,798,964 | 107,598,095 | 125,143,693 | 137,707,506 | 145,101,125 | 144,205,083 |
| Headcount Total / FTE Transmission | 660 / 608 | 636 / 595 | 624 / 569 | 685 / 627 | 678 / 607 | 699 | 755 | 778 | 754 |
| Distribution Society Represented | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| Base Pay | 75,689,891 | 77,185,295 | 79,896,923 | 76,568,835 | 84,388,775 | 104,483,618 | 90,355,141 | 97,474,771 | 101,619,468 |
| Overtime | 4,029,156 | 3,788,344 | 5,240,140 | 3,090,065 | 3,961,353 | 3,630,776 | 3,675,211 | 3,751,111 | 3,811,473 |
| Lump Sums | - | - | 757,623 | 1,365,814 | - | - | - | - | - |
| Burdens | 50,848,469 | 52,445,778 | 41,956,906 | 39,430,255 | 36,233,130 | 44,380,958 | 42,416,482 | 42,680,982 | 45,212,909 |
| Share Grants | - | - | - | - | 1,436,756 | 1,319,711 | 1,302,342 | 1,255,478 | 1,203,601 |
| Distribution Society Represented Total | 130,567,516 | 133,419,417 | 127,851,592 | 120,494,989 | 126,020,015 | 153,815,064 | 145,749,176 | 145,162,341 | 151,847,451 |
| Headcount Total / FTE Distribution | 741 / 683 | 734 / 687 | 764 / 698 | 724 / 662 | 815 / 730 | 878 | 810 | 788 | 806 |
| TOTAL Society Represented Labour | 246,177,271 | 248,645,345 | 229,669,943 | 236,293,954 | 233,618,109 | 278,958,757 | 283,456,682 | 290,263,465 | 296,052,535 |
| TOTAL Society Represented Headcount / FTE/YE | 1401 / 1291 / 1290 | 1370 / 1282 / 1285 | 1388 / 1267 / 1241 | 1409 / 1289 / 1288 | 1493 / 1337 / 1381 | 1,577 | 1,565 | 1,566 | 1,560 |
| Transmission PWU Represented | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| Base Pay | 148,296,536 | 146,298,728 | 145,538,184 | 158,933,735 | 154,996,772 | 165,116,892 | 185,433,184 | 196,453,669 | 196,258,552 |
| Overtime | 28,468,143 | 24,728,915 | 15,836,038 | 36,486,246 | 46,990,537 | 43,212,279 | 44,677,729 | 45,980,102 | 47,243,112 |

| | | | | | | | | | | | |
|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------|------------------|
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2022 versus 2018 | 2020 versus 2018 |
| Total Capital Transmission Comp | 397,892,921 | 391,130,026 | 400,633,366 | 394,177,597 | 424,531,224 | 456,985,537 | 506,498,946 | 542,636,628 | 543,823,133 | | |
| Total OM&A Transmission Comp | 207,166,269 | 200,807,004 | 151,489,987 | 223,675,680 | 185,069,058 | 176,094,700 | 179,413,328 | 171,377,284 | 169,214,468 | | |
| Total Transmission Compensation | 605,059,190 | 591,937,030 | 552,123,353 | 617,853,277 | 609,600,282 | 633,080,237 | 685,912,274 | 714,013,912 | 713,037,600 | 17.0% | 4.2% |
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | |
| Total Capital Distribution Comp | 319,056,686 | 330,163,788 | 318,482,459 | 285,834,231 | 303,991,403 | 399,601,250 | 378,225,534 | 390,700,714 | 431,538,200 | | |
| Total OM&A Distribution Comp | 308,085,500 | 293,826,096 | 315,501,373 | 293,726,326 | 315,330,439 | 296,704,045 | 292,373,150 | 288,016,313 | 279,243,254 | 12.5% | 6.3% |

| | | | | | | | | | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------|-------|-------|-------|
| Total Distribution Compensation | 627,142,186 | 623,989,883 | 633,983,832 | 579,560,557 | 619,321,842 | 696,305,295 | 670,598,684 | 678,717,027 | 710,781,454 | 14.8% | 3.7% | 8.3% | 4.1% |
| Total Capital Transmission + Distribution Comp | 716,949,607 | 721,293,813 | 719,115,826 | 680,011,828 | 728,522,627 | 856,586,788 | 884,724,480 | 933,337,343 | 975,361,333 | | | | |
| Total OM&A Transmission + Distribution Comp | 515,251,769 | 494,633,100 | 466,991,359 | 517,402,206 | 500,399,497 | 472,798,745 | 471,786,477 | 459,393,597 | 440,457,722 | | | | |
| Total Shareholder Allocated Comp | 3,009,801 | 2,615,254 | 9,597,169 | 9,660,409 | 13,112,786 | 23,748,837 | 24,288,558 | 24,861,971 | 25,490,502 | | | | |
| Total Transmission + Distribution Compensation | 1,235,291,177 | 1,218,542,167 | 1,195,704,354 | 1,207,074,444 | 1,242,034,910 | 1,353,134,369 | 1,380,799,515 | 1,417,612,911 | 1,449,309,557 | 16.7% | 4.2% | 11.2% | 5.6% |
| Headcount FTE | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | | | |
| MCP Represented Regular Employees | 605 | 597 | 611 | 633 | 638 | 692 | 693 | 694 | 694 | | | | |
| Society Represented Regular Employees | 1,291 | 1,282 | 1,267 | 1,289 | 1,337 | 1,577 | 1,565 | 1,566 | 1,560 | | | | |
| PWU Represented Regular Employees | 3,342 | 3,356 | 3,391 | 3,382 | 3,527 | 3,739 | 3,790 | 3,824 | 3,852 | | | | |
| Temporary and Casual Employees | 3,070 | 2,842 | 3,095 | 2,842 | 2,927 | 3,208 | 3,098 | 3,099 | 3,054 | | | | |
| Total | 8,308 | 8,077 | 8,364 | 8,146 | 8,429 | 9,216 | 9,146 | 9,183 | 9,160 | 8.7% | 2.2% | 8.5% | 4.3% |
| Burdens Tx include: | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | | | |
| Pension | 77,400,000 | 76,500,000 | 49,500,000 | 41,000,000 | 35,500,000 | 34,000,000 | 38,000,000 | 40,000,000 | 39,000,000 | | | | |
| OPEB | 59,600,000 | 52,400,000 | 57,500,000 | 61,200,000 | 55,000,000 | 50,000,000 | 55,000,000 | 58,000,000 | 59,000,000 | | | | |
| Total | 137,000,000 | 128,900,000 | 107,000,000 | 102,200,000 | 91,300,000 | 84,000,000 | 93,000,000 | 98,000,000 | 98,000,000 | 7.3% | 1.8% | 1.9% | 0.9% |
| Burdens Dx include: | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | | | |
| Pension | 90,100,000 | 94,700,000 | 54,100,000 | 43,400,000 | 37,000,000 | 36,000,000 | 35,000,000 | 34,000,000 | 34,000,000 | | | | |
| OPEB | 69,400,000 | 64,800,000 | 62,800,000 | 64,400,000 | 58,200,000 | 53,000,000 | 53,000,000 | 52,000,000 | 56,000,000 | | | | |
| Total | 159,500,000 | 159,500,000 | 116,900,000 | 107,800,000 | 95,200,000 | 89,000,000 | 88,000,000 | 86,000,000 | 90,000,000 | -5.5% | -1.4% | -7.6% | -3.8% |
| Total Pension & OPEB Burden Tx and Dx | 296,500,000 | 288,400,000 | 223,900,000 | 210,000,000 | 186,500,000 | 173,000,000 | 181,000,000 | 184,000,000 | 188,000,000 | | | | |
| % Burden Tx | 46.2% | 44.7% | 47.8% | 48.7% | 49.0% | 48.6% | 51.4% | 53.3% | 52.1% | | | | |
| % Burden Dx | 53.8% | 55.3% | 52.2% | 51.3% | 51.0% | 51.4% | 48.6% | 46.7% | 47.9% | | | | |
| | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | | | | |
| FTE Transmission | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | | | |
| MCP Unrepresented Regular Employees | 285 | 277 | 275 | 308 | 290 | 307 | 334 | 345 | 336 | | | | |
| Society Represented Regular Employees | 608 | 595 | 569 | 627 | 607 | 699 | 755 | 778 | 754 | | | | |
| PWU Represented Regular Employees | 1,574 | 1,558 | 1,523 | 1,645 | 1,602 | 1,658 | 1,827 | 1,900 | 1,862 | | | | |
| Temporary and Casual Employees | 1,836 | 1,711 | 1,860 | 1,724 | 1,748 | 1,811 | 1,775 | 1,715 | 1,661 | | | | |
| Total | 4,303 | 4,141 | 4,227 | 4,304 | 4,247 | 4,474 | 4,691 | 4,738 | 4,613 | 8.6% | 2.2% | 10.5% | 5.2% |
| FTE Distribution | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | | | |
| MCP Unrepresented Regular Employees | 320 | 320 | 336 | 325 | 348 | 385 | 359 | 349 | 358 | | | | |
| Society Represented Regular Employees | 683 | 687 | 698 | 662 | 730 | 878 | 810 | 788 | 806 | | | | |
| PWU Represented Regular Employees | 1,768 | 1,798 | 1,868 | 1,737 | 1,925 | 2,081 | 1,963 | 1,924 | 1,990 | | | | |
| Temporary and Casual Employees | 1,234 | 1,131 | 1,235 | 1,118 | 1,179 | 1,397 | 1,323 | 1,384 | 1,393 | | | | |
| Total | 4,005 | 3,936 | 4,137 | 3,842 | 4,182 | 4,742 | 4,455 | 4,445 | 4,547 | 8.7% | 2.2% | 6.5% | 3.3% |
| FTE Total | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | | | |
| MCP Unrepresented Regular Employees | 605 | 597 | 611 | 633 | 638 | 692 | 693 | 694 | 694 | | | | |
| Society Represented Regular Employees | 1,291 | 1,282 | 1,267 | 1,289 | 1,337 | 1,577 | 1,565 | 1,566 | 1,560 | | | | |
| PWU Represented Regular Employees | 3,342 | 3,356 | 3,391 | 3,382 | 3,527 | 3,739 | 3,790 | 3,824 | 3,852 | | | | |
| Temporary and Casual Employees | 3,070 | 2,842 | 3,095 | 2,842 | 2,927 | 3,208 | 3,098 | 3,099 | 3,054 | | | | |
| Total | 8,308 | 8,077 | 8,364 | 8,146 | 8,429 | 9,216 | 9,146 | 9,183 | 9,160 | 8.7% | 2.2% | 8.5% | 4.3% |
| Compensation Total | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | | | | |
| Total Transmission | 605,059,190 | 591,937,030 | 552,123,353 | 617,853,477 | 609,600,282 | 633,080,237 | 685,912,274 | 714,013,912 | 713,037,600 | | | | |
| Total Distribution | 627,142,186 | 623,989,883 | 633,983,832 | 579,560,557 | 619,321,842 | 696,305,295 | 670,598,684 | 678,717,027 | 710,781,454 | | | | |
| Total Shareholder Allocated | 3,009,801 | 2,615,254 | 9,597,169 | 9,660,409 | 13,112,786 | 23,748,837 | 24,288,558 | 24,861,971 | 25,490,502 | | | | |

Undertaking JT 2.10

KT 2.1 b) The 4.2% increase in transmission compensation costs as referenced in line 111 of Exhibit KT2.1 includes compensation costs associated with a 2.2% FTE increase (as referenced on line 166 of KT2.1) and escalation assumptions in compensation. Based on the reasons outlined above, **overall transmission allocated compensation is increasing at a faster rate than the FTE increases.**

F-04-01 Pg. 36 Table 8 Mercer Compensation Benchmark 2017

Table 8: Mercer Compensation Benchmarking Study Results vs. Market Median
Total Compensation Above/Below Market Median

| Employee Group | 2008 Survey Results | 2011 Survey Results | 2013 Survey Results | 2016 Survey Results | 2017 Survey Results | Total Change from 2008 to 2017 |
|----------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------------------|
| Management | -1% | -17% | -1% | 2% | 1% | 2% |
| Society | 5% | 5% | 9% | 11% | 12% | 7% |
| PWU | 21% | 18% | 12% | 16% | 12% | -9% |
| Overall | 17% | 13% | 10% | 14% | 12% | -5% |

**Management employee group positioning of -17% to market median likely impacted by legislative freeze for non-represented compensation.*

I-02-021 Table 2 EP IRR 21

Table 2 - Updated Benchmark Based on Stated Assumptions: 2018 to 2022

| | 2017* | 2018 | 2019 | 2020 | 2021 | 2022 |
|----------------------|-------|-------|-------|-------|-------|-------|
| Non-Represented | | 103.5 | 105.9 | 108.0 | 110.7 | 113.5 |
| Market** | | 102.9 | 105.9 | 108.6 | 111.4 | 114.2 |
| Multiple of P50 | 1.01 | 1.01 | 1.00 | 0.99 | 0.99 | 0.99 |
| Energy Professionals | | 112.6 | 114.8 | 117.1 | 119.4 | 121.8 |
| Market | | 102.3 | 104.7 | 106.7 | 108.8 | 110.9 |
| Multiple of P50 | 1.12 | 1.10 | 1.10 | 1.10 | 1.10 | 1.10 |
| Trades and Technical | | 114.0 | 116.3 | 118.6 | 121.0 | 123.4 |
| Market | | 102.3 | 104.7 | 106.7 | 108.8 | 110.9 |
| Multiple of P50 | 1.12 | 1.11 | 1.11 | 1.11 | 1.11 | 1.11 |
| Total | | | | | | |
| Multiple of P50 | 1.12 | 1.11 | 1.10 | 1.10 | 1.10 | 1.10 |

*Table 2 Notes: * Mercer Compensation Cost Benchmark Study was effective October 1, 2017; ** Market project based on CPI + 0.6% based on Mercer Compensation Survey results.*

SEC IRR 55

Response:

- a) An estimate of the dollar difference between the weighted average total compensation for Hydro One's employees allocated to its transmission business and the market median used in the study is as follows:

| | Study Year | 2020 | 2021 | 2022 |
|--|--------------|--------------|--------------|--------------|
| Estimated Dollar Difference (Hydro One to Market Median) | \$34,485,965 | \$38,566,291 | \$40,010,087 | \$39,079,490 |

JT 2.15

Table 1: Estimated Dollar Differential – Hydro One (Dx and Tx)

| | Study Year | 2020 | 2021 | 2022 |
|--|--------------|--------------|--------------|--------------|
| Estimated Dollar Difference (Hydro One to Market Median) | \$70,915,000 | \$79,979,865 | \$80,535,602 | \$80,826,246 |

JT 2.9 Capital Allocation

| | |
|--|-------------|
| Net Mercer Median Reductions Allocated to Capital (\$M) | 2020 |
| Mercer Median - Tx Capital | 28.5 |
| Pension Reduction Capital | (3.0) |
| OPEB Increase Capital | 1.7 |
| Executive Comp. Reduction | (2.6) |
| The Directive | (0.3) |
| Total Net Mercer Capital Reductions | 24.3 |

F-04-01 Attachment Towers Watson Benchmark 2018

| Segment | Number of Incumbents Benchmarked | Hydro One Target Compensation (% above / below market median) | | |
|------------------|----------------------------------|---|-------------------------|--|
| | | Salary Range Midpoint | Total Target Cash (TTC) | Target Total Direct Compensation (TDC) |
| Executives | 25 | -4% | -9% | -8% |
| Operations* | 236 | -2% | -3% | -3% |
| Core Services* | 326 | 5% | 7% | 8% |
| Overall** | 587 | 2% | 2% | 3% |

* Operations and Core services positioning excludes executives (levels 8-10)

** Overall positioning represents incumbent-weighted average across all segment

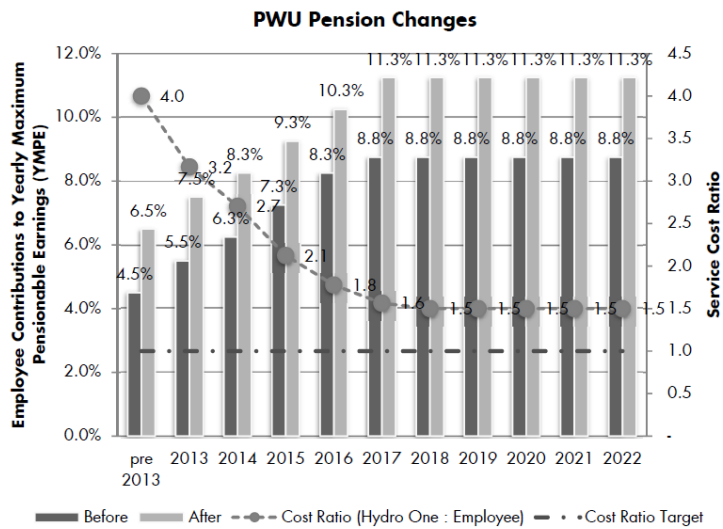


Figure 7: PWU Employee Pension Contribution Increases, 2013 to 2022

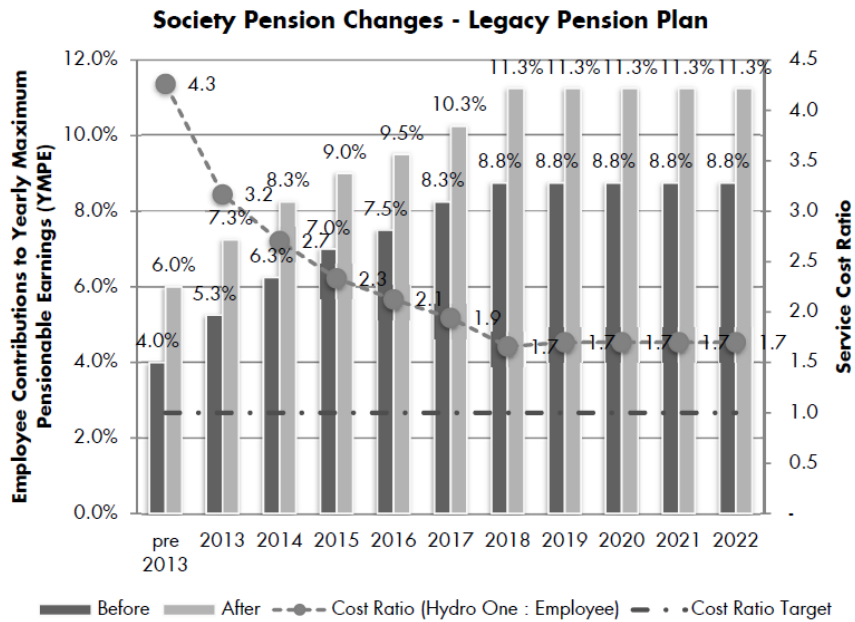


Figure A 1: Society Pension Changes - Legacy Pension Plan

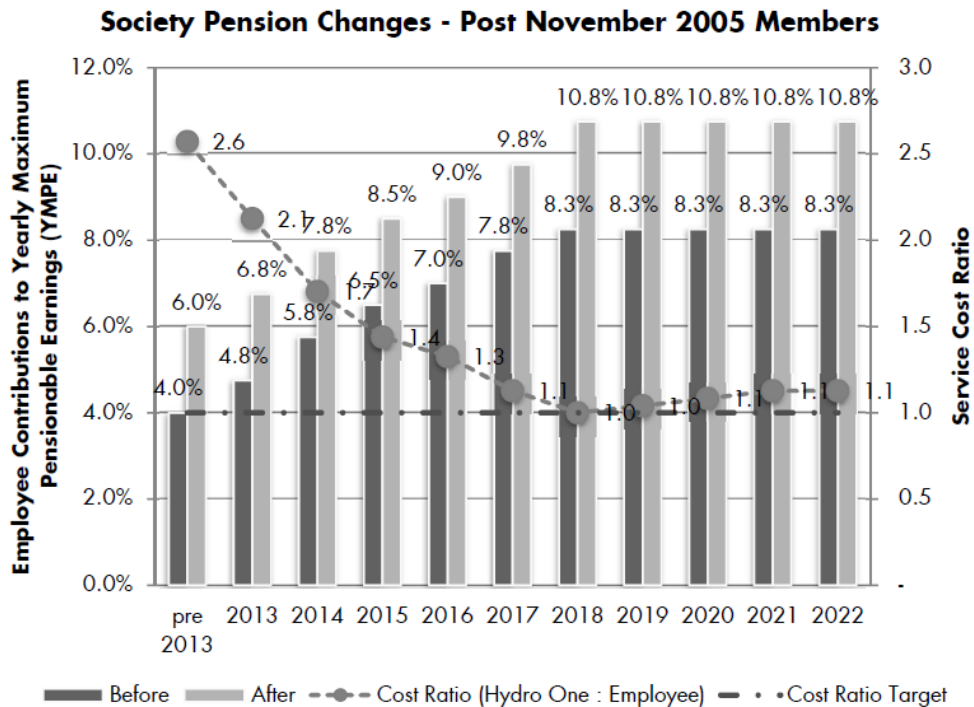


Figure A 2: Society Pension Changes - Post November 2005 Members

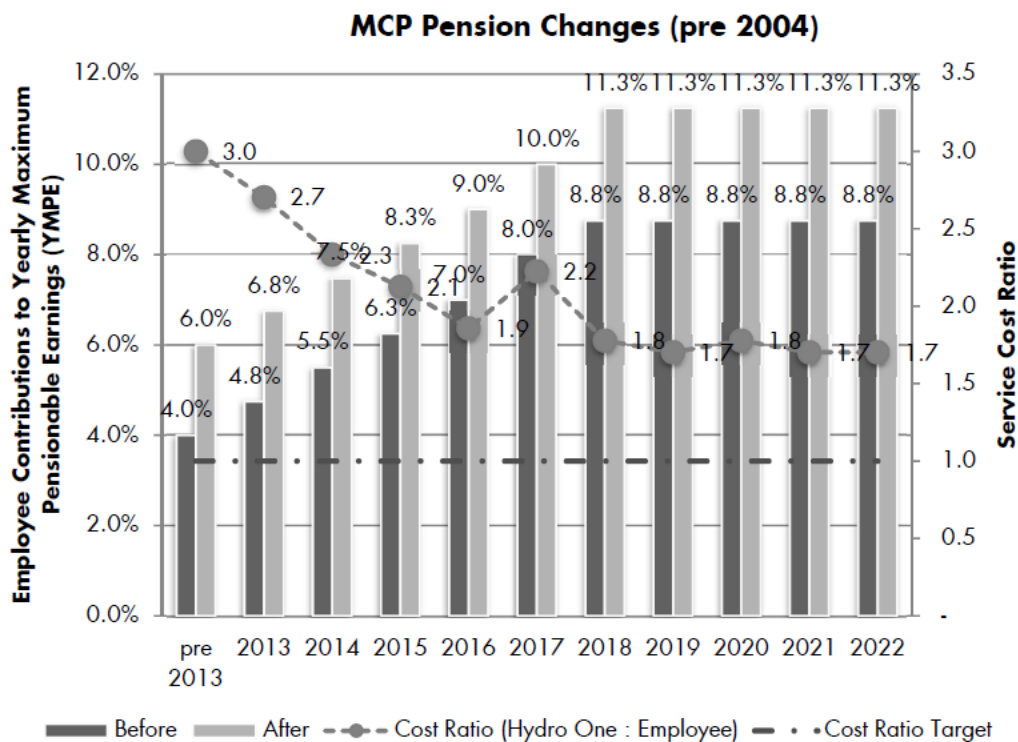


Figure A 3: MCP Pension Changes, Pre 2004

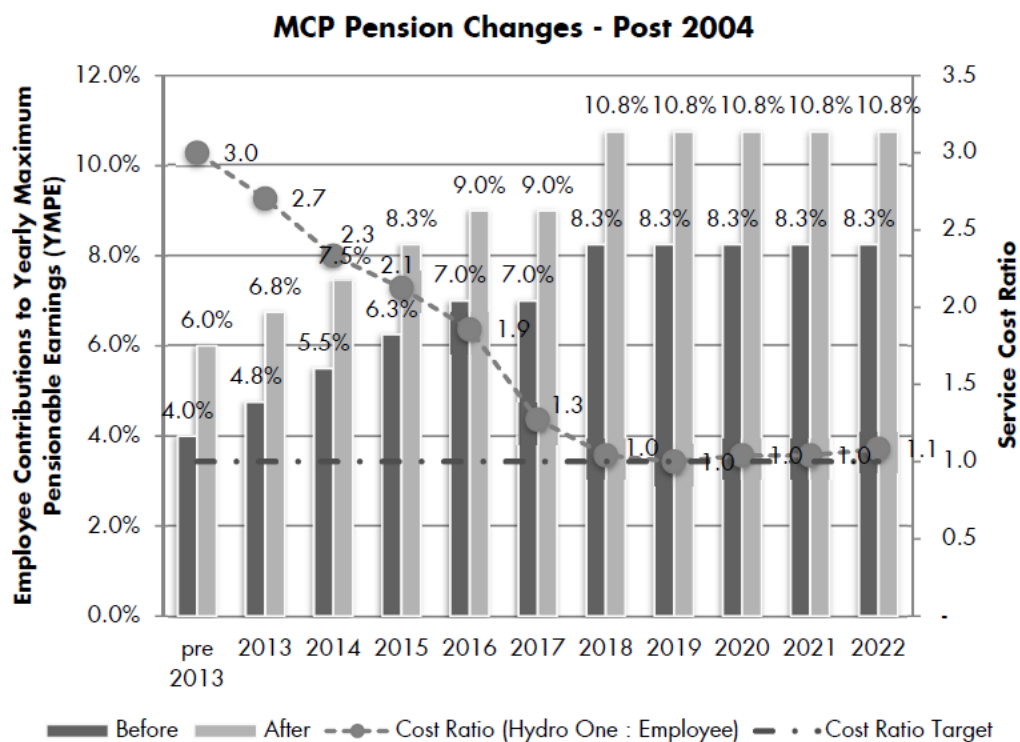


Figure A 4: MCP Pension Changes, Post 2004

F-04-01, Appendix A

To consider whether Hydro One can reasonably provide responsive information that's relevant in respect of the amount of the service cost ratio that Hydro One is contributing to the pension plan, to provide such further information, or if no such information exists, to advise.

Hydro One is considering what information can reasonably be provided in response to this request. Additional time, information and calculations are needed from our external experts relating to this request.

Hydro One's efforts to reduce pension costs are set out in Exhibit F, Tab 4, Schedule 1 pages 38 – 39.

F-02-02 Corporate Costs- Human Resources

Table 1: Summary of Total Common Corporate Functions and Services OM&A
(\$ millions)

| | Historical | | | | Bridge | Test |
|--|--------------|--------------|--------------|--------------|--------------|--------------|
| Description | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| | Actual | Actual | Actual | Actual | Forecast | Forecast |
| Corporate Management | 16.4 | 16.1 | 27.6 | 32.6 | 26.5 | 26.9 |
| Finance | 39.1 | 38.1 | 34.6 | 38.3 | 34.6 | 35.8 |
| Human Resources | 13.6 | 15.6 | 17.9 | 21.5 | 23.9 | 24.3 |
| Corporate Affairs and Outsourcing Services | 17.3 | 15.2 | 13.4 | 12.2 | 10.5 | 10.6 |
| General Counsel and Secretariat | 8.6 | 10.1 | 8.5 | 9.6 | 9.1 | 9.1 |
| Regulatory Affairs | 24.1 | 23.3 | 21.0 | 20.6 | 19.9 | 20.3 |
| Security Management | 4.2 | 4.6 | 4.4 | 5.2 | 4.0 | 4.2 |
| Internal Audit | 4.2 | 4.9 | 6.8 | 5.6 | 5.8 | 6.2 |
| Real Estate and Facilities | 60.0 | 58.6 | 56.9 | 57.9 | 55.5 | 62.5 |
| Total CCF&S Costs | 187.5 | 186.6 | 191.2 | 203.4 | 189.8 | 199.8 |
| Change Year over Year | | -0.5% | 2.5% | 6.4% | -10.4% | 5.3% |