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SUMMARY OF OM&A

1. SUMMARY OF OM&A EXPENDITURES

The test year OM&A expenses result from the business planning and work prioritization processes described in Section 2.1 of the Distribution System Plan found at Exhibit B1, Tab 1, Schedule 1. This process reflects a risk-based decision making approach to ensure appropriate and cost-effective investments that demonstrate Hydro One’s commitment to aligning customer needs and preferences, responsible stewardship of the Company’s distribution assets and rate impacts.

Hydro One Distribution’s OM&A budget is grouped into the following investment categories: Sustainment, Development, Operations, Customer Care, Common Corporate and Property Taxes and Rights Payments.

Table 1 provides a summary of Hydro One Distribution’s OM&A expenditures for the historical, bridge and test years.

1

Table 1: Summary of Recoverable OM&A Expenses (\$ Millions)

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Sustainment	325.7	304.6	316.5	326.6	361.4	334.5	367.1	346.7
Development	11.0	10.9	15.4	12.1	17.8	13.2	17.0	11.0
Operations	29.5	27.6	35.8	29.5	39.4	33.4	37.5	36.7
Customer Care	209.3	155.4	111.7	129.3	110.9	132.6	111.6	131.6
Common Corporate Costs and Other	94.4	69.1	59.0	81.5	54.8	62.0	54.7	61.0
Property Taxes & Rights Payments	4.6	4.8	4.7	4.6	4.9	4.7	5.0	4.9
Total	674.5	572.5	543.1	583.6	589.1	580.5	593.0	591.9
<i>% Change (year-over-year)</i>		<i>-15.1%</i>	<i>-19.5%</i>	<i>1.9%</i>	<i>8.5%</i>	<i>-0.5%</i>	<i>0.7%</i>	<i>2.0%</i>
<i>% Change (Test vs. 2016 Actual)</i>								<i>1.4%</i>

2 “Approved” figures reflect OEB-directed reductions to Sustainment OM&A and Common Corporate Costs
 3 and Other OM&A line items (specifically, budgets for vegetation management, LEAP funding, and
 4 compensation).

5

6 **1.1 SUSTAINING**

7

8 Sustaining OM&A represents expenditures required to maintain existing components of
 9 the distribution system to ensure they continue to function as designed. Hydro One
 10 manages its Sustaining OM&A by dividing the expenditures into the following four
 11 investment categories: (a) stations; (b) lines; (c) meters, telecom, and control; and (d)
 12 vegetation management.

13

14 These Sustaining OM&A investments fund both planned work and unplanned demand
 15 work and are intended to ensure operational effectiveness by maintaining an acceptable
 16 level of reliability, deliver on commitments to customers, and be responsive to public
 17 policy by complying with all legislative, regulatory, safety and environmental
 18 requirements. Planned OM&A work involves the inspection, verification, and planned
 19 maintenance or repair of existing assets. Unplanned demand OM&A work requires an

Witness: Joel Jodoin

1 immediate or timely response to address customer, safety and system needs. Sustaining
2 OM&A details are provided in Exhibit C1, Tab 1, Schedule 2.

3
4 **1.2 DEVELOPMENT**

5
6 Development OM&A expenditures are required to perform technical studies and develop
7 construction standards for the connection of load and generation customers to the
8 distribution system. These expenditures also support research into new technologies and
9 the development of power quality solutions. These investments ensure that the existing
10 and forecast customer load and generation demands are met, system reliability is
11 maintained, regulatory requirements are satisfied, and the impact of distributed generation
12 connected to the system is effectively monitored.

13
14 Development OM&A investments are categorized as follows: (a) engineering and
15 technical studies; (b) distributed generation connections; (c) distribution standards
16 programs; (d) research development and demonstration; and (e) customer power quality
17 programs. Development OM&A activities are described in detail in Exhibit C1, Tab 1,
18 Schedule 3.

19
20 **1.3 OPERATIONS**

21
22 Operations OM&A investment funds the Operating function which coordinates and
23 dispatches crews as required, plans for and reacts to system contingencies, schedules and
24 coordinates planned outages, provides customer notifications, and monitors and reports
25 on the performance of the distribution system. Operators at the Ontario Grid Control
26 Centre (“OGCC”) monitor the distribution system. Operations OM&A spending also
27 supports Hydro One’s environment, health and safety activities and the Smart Grid.
28 Details of the expenditures are provided in Exhibit C1, Tab 1, Schedule 4.

Witness: Joel Jodoin

1 **1.4 CUSTOMER CARE OM&A**

2
3 Hydro One’s Customer Care OM&A funds are used to provide services to residential,
4 small business, commercial, and industrial customers. The key functions of Customer
5 Care are: (a) responding to customer inquiries when they contact the call center; (b)
6 obtaining meter readings; (c) issuing timely and accurate bills; (d) processing customer
7 payments; (e) collections program management, and (f) providing financial assistance to
8 low-income customers through the OEB’s Low-Income Energy Assistance Program
9 (“LEAP”). Details of the expenditures under this program are provided in Exhibit C1,
10 Tab 1, Schedule 5.

11
12 **1.5 COMMON CORPORATE COSTS AND OTHER OM&A**

13
14 The Common Corporate and other OM&A expenditures include costs associated with:
15 common corporate functions and services (“CCFS”), planning, information technology,
16 and cost of external revenues.

17
18 CCFS includes the following functions and services: corporate management, finance,
19 people and culture, corporate relations, general counsel and corporate secretariat,
20 regulatory affairs, security management, internal audit, and real estate and facilities.
21 Other OM&A expenses include an environmental provision, indirect depreciation and
22 other costs. Planning services include system investment and asset stewardship
23 functions. IT activities include providing and managing computer systems (for example,
24 hardware and software) and IT infrastructure.

25
26 Details of Common Corporate expenditures are provided in Exhibit C1, Tab 1, Schedules
27 6 to 10.

Witness: Joel Jodoin

1 **1.6 PROPERTY TAXES AND RIGHTS PAYMENTS**

2
3 Hydro One is subject to property taxes in accordance with the *Electricity Act 1998*, the
4 *Municipal Act 2001*, and the *Assessment Act 1990*. Hydro One also pays annual fees for
5 the right to cross and/or occupy properties owned by third parties, such as railway
6 companies and/or governmental bodies. Details of the expenditures under this program
7 are filed at Exhibit C1, Tab 7, Schedule 4.

8
9 **1.7 ONE-TIME COSTS - CHARITABLE AND POLITICAL DONATIONS**

10
11 Hydro One is not seeking recovery of any one-time costs as described in section 2.4.3.4
12 of the Filing Requirements. Moreover and further to section 2.4.3.7 of the Filing
13 Requirements, Hydro One confirms that neither charitable donations nor political
14 donations have been included in this Application for recovery. Any charitable donations
15 made by Hydro One are allocated to its non-regulated accounting segment, not Hydro
16 One Distribution.

17
18 **2. VARIANCE EXPLANATION**

19
20 **2.1 SUSTAINING**

21
22 The proposed Sustaining OM&A spending for the 2018 test year is trending upward
23 relative to the historic actual and forecast expenditures. However, the 2018 proposed
24 level of spending remains below the previous OEB-approved levels.

25
26 The 2018 test year spend is about a 3% annual increase relative to the forecast
27 expenditures over the 2016 and 2017 period. This increase over the two-year period is
28 largely attributed to:

Witness: Joel Jodoin

- 1 • An increase of approximately \$12 million in the vegetation management program to
2 address the backlog in vegetation maintenance, increase responsiveness to site-
3 specific customer concerns, and more effectively mitigate emergent safety and
4 reliability concerns; and
- 5 • An increase of approximately \$8 million in the lines demand work program to
6 address trouble calls and customer requests for underground cable locates.

7
8 The 2016 forecast actual expenditure is in line with historic actual expenditures. The
9 exception was in 2015 when the actual expenditure was strategically reduced below the
10 approved amount to redirect funding to address increased costs associated with the
11 implementation of Hydro One's customer information system ("CIS"), as documented in
12 Exhibit C1, Tab 1, Schedule 5.

13
14 Both the 2016 and 2017 forecast expenditures are below the OEB-approved amounts
15 primarily due to improvements in the vegetation management program. The forecast for
16 the 2018 test year remains below the 2016 and 2017 OEB-approved amounts due to
17 productivity improvements.

18 19 **2.2 DEVELOPMENT**

20
21 The proposed Development OM&A spending for the 2018 test year is a decrease of \$2.2
22 million relative to the 2017 bridge year forecast, largely due to a decline in the
23 engineering and technical service program caused by the planned modernization of the
24 distribution system.

25
26 The 2017 bridge year expenditures forecast is \$1.1 million higher than the 2016 forecast
27 actual expenditures, largely due to the forecast increase in the number of distributed
28 generation connection requests and the ongoing cost of monitoring these distributed

Witness: Joel Jodoin

1 generators for power quality. The 2016 historic year expenditure forecast is an increase
2 of about \$1.1 million relative to the actual expenditures in 2014 and 2015 due to
3 increases in three of the Development OM&A programs. However, spending over this
4 period is below the OEB-approved levels by an average of \$4.7 million per year due to a
5 reallocation of ESA fees to the Sustaining OM&A budget; changes in standards
6 development; a wider selection of vendors which enabled pricing and service quality
7 improvements; and a redirection in research focus.

8 9 **2.3 OPERATIONS**

10
11 Actual and forecast Operations expenditures are below OEB-approved amounts in 2015,
12 2016 and 2017 primarily due to the delayed upgrade of the Distribution Management
13 System. Contributing factors also included program re-assessments and reductions to
14 program expenditures.

15 16 **2.4 CUSTOMER CARE**

17
18 Customer Care OM&A expenditures in 2014 and 2015 were higher than OEB-approved
19 levels due to: (a) the increased costs associated with the implementation of the CIS in
20 May 2013; (b) the higher net bad debt levels that resulted from suspending Hydro One's
21 collection program; (c) the market price of a new outsourcing contract, higher than
22 expected transition costs associated with the new outsourcing contract; and (d) higher
23 than forecast LEAP contributions. Spending levels in 2016 are higher than OEB-
24 approved levels as a result of a higher net bad debt forecast and improved customer
25 service call centre targets, new service level guarantees, and extended hours of operation.

26
27 Spending in 2017 and 2018 is forecast to be higher than OEB-approved historical levels
28 as a result of Distribution System Code amendments relating to interval meters and

Witness: Joel Jodoin

1 monthly billing (EB-2013-0311, EB-2014-0198); initiatives to improve bill accuracy
2 targets; a higher net bad debt forecast; and the aforementioned improved customer
3 service targets, hours of operation and service level guarantees.

4 5 **2.5 COMMON CORPORATE AND OTHER OM&A**

6
7 Overall Common Corporate costs are lower since 2014. Planning costs have decreased
8 mainly due to succession planning. Common corporate functions and services costs have
9 increased, primarily due to higher costs for corporate management, people and culture
10 and internal audit. IT OM&A expenditures are trending lower on an annual basis
11 primarily due to savings from several productivity initiatives. In 2016, increases in
12 spending were required to support an increased capital portfolio. The cost of external
13 revenue has been relatively flat.

14
15 Other OM&A has a larger negative value since 2014, which is favourable as it reduces
16 total OM&A. Capitalized overheads and indirect depreciation increase with an
17 increasing capital work programs. The environmental provision offsets work program
18 costs as these costs have already been set aside and are drawn down as work progresses.

19 20 **2.6 PROPERTY TAXES AND RIGHTS PAYMENTS**

21
22 Actual and forecast property taxes and rights payments are materially in line with
23 approved levels.

SUSTAINING OM&A

1. SUMMARY OF SUSTAINING OM&A

Sustaining OM&A represents expenditures required to maintain existing components of the distribution system to ensure they will continue to function as originally designed. Hydro One manages its Sustaining OM&A by dividing the expenditures into the following four investment categories:

- Stations – Expenditures that fund the work required to inspect, repair or maintain distribution stations or individual station components, as well as assess and carry out remedial work to reduce environmental contamination at distribution stations;
- Lines – Expenditures that fund the work required to inspect, repair or maintain distribution line sections or individual line components;
- Meters, Telecom, and Control – Expenditures that fund the work required to inspect, repair and maintain metering and control equipment, perform meter verification, and fund the cost of leasing telecommunication circuits; and
- Vegetation Management – Expenditures that fund the work required to keep assets clear of unwanted vegetation.

These sustaining OM&A investments fund both planned work and unplanned demand work and are intended to ensure operational effectiveness by maintaining an acceptable level of reliability, deliver on customer commitments, and address public policy responsiveness by complying with all legislative, regulatory, safety and environmental requirements.

Witness: Lyla Garzouzi

1 The planned OM&A work involves the inspection, verification, and planned maintenance
2 or repair of existing distribution system assets. Asset inspections are crucial in locating
3 substandard or hazardous conditions in the distribution system and are required by the
4 Distribution System Code in accordance with Section 4.4 “System Inspection
5 Requirements and Maintenance”.

6
7 Verification of metering equipment allows for compliance with the Federal
8 Measurements Canada requirements on metering device accuracy and seal expiry
9 management. Accurate metering devices are necessary to provide customers with
10 accurate and timely bills. Planned maintenance optimizes the life span and performance
11 of assets, and protects the system from the effects of premature failure. Repairing assets
12 enables the ongoing safe and reliable operation of the system. However, an economic
13 evaluation may determine that it is more cost-effective to replace an asset rather than to
14 continue to repair or maintain it. These capital replacement activities are described in
15 Exhibit B1, Tab 1, Schedule 1 the Distribution System Plan, Section 3.8.

16
17 The unplanned demand OM&A work requires an immediate or timely response to
18 customer, safety and system needs. This work includes responding to service
19 interruptions, resolving public safety hazards, replacing or repairing failed equipment,
20 responding to customer requests, and providing underground cable locating services.
21 More than one third of the Sustaining OM&A expenditures are related to these demand
22 work activities.

23
24 The selection of sustaining OM&A investments is guided by the investment planning
25 process described in Exhibit B1, Tab 1, Schedule 1 the Distribution System Plan, Section
26 2.1. This process has been completed for all planned and unplanned demand Sustaining
27 OM&A investments to ensure that assets are managed prudently so as to meet customer,
28 operational and regulatory requirements. Hydro One has been able to minimize the

Witness: Lyla Garzouzi

1 OM&A requirement for 2018 through increased work efficiency resulting from a number
 2 of productivity initiatives outlined in Exhibit B1, Tab 1, Schedule 1 the Distribution
 3 System Plan, Section 1.5. Hydro One anticipates that potential reductions applied to the
 4 test year spending are likely to have a compounding effect on cost pressures in the future.
 5 A summary of the historic, bridge and test year expenditures including Board-approved
 6 levels are provided in Table 1.

7
 8 **Table 1: Summary of Sustaining OM&A (\$ Millions)**

Description	Historic					Bridge		Test
	2014	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Stations	25.7	25.3	27.6	24.0	28.4	24.9	28.9	24.8
Lines	145.2	144.7	141.3	146.2	149.7	149.4	152.4	153.8
Meters, Telecom and Control	14.2	16.6	18.5	18.6	18.7	17.3	18.5	18.6
Vegetation Management	140.6	118.0	129.0	137.9	164.6	142.9	167.3	149.6
Total	325.7	304.6	316.5	326.6	361.4	334.5	367.1	346.7

9
 10
 11 **2. VARIANCE EXPLANATION FOR SUSTAINING OM&A**

12
 13 The proposed Sustaining OM&A spending for the 2018 test year is trending upward
 14 relative to the historic actual and forecast expenditures; however 2018 proposed level of
 15 spending remains below the previous Board-approved levels.

16
 17 The 2018 test year spend is about a 3% annual increase relative to the forecast
 18 expenditures over the 2016 and 2017 period. This increase relative to forecast is largely
 19 attributed to:

- 20
 21 • An increase of approximately \$12 million in the vegetation management program
 22 over the two-year period to address the backlog in vegetation maintenance,

Witness: Lyla Garzouzi

1 increase responsiveness to site specific customer concerns, and more effectively
2 mitigate emergent safety and reliability concerns; and

- 3 • An increase of approximately \$8 million in the lines demand work program over
4 the two-year period to address trouble calls and customer requests for
5 underground cable locates to ensure customers maintain a level of service that is
6 consistent with customer expectations and allows Hydro One to comply with the
7 requirements set out in Section 4 of the Distribution System Code.

8

9 The 2016 forecast expenditure is in line with the historic actual expenditures. The
10 exception is 2015 when the actual expenditure was strategically reduced below the
11 approved amount in order to redirect funding to address increased costs associated with
12 the implementation of Hydro One's customer information system, as documented in
13 Exhibit C1, Tab 1, Schedule 5.

14

15 Both the 2016 and 2017 forecast expenditures are below the Board-approved amounts
16 primarily due to changes in the vegetation management program to improve work
17 efficiencies while increasing responsiveness to customer needs and reducing impact on
18 customer properties. The changes to the vegetation management program are documented
19 in detail in Section 3.4 below.

20

21 The forecast for the 2018 test year is also below the 2016 and 2017 Board-approved
22 amounts due to incorporation of customer preferences and productivity initiatives.
23 During the Customer Engagement process, Hydro One's customers consistently ranked
24 cost as a top priority and expressed a desire to see Hydro One demonstrate greater fiscal
25 management and operational efficiency before considering rate increases. The second
26 priority was to maintain reliable electricity service. These customer preferences have
27 guided the development of the proposed Sustaining OM&A investments in 2018. Hence
28 the proposed Sustaining OM&A investment plan is designed to keep rate impacts low,

Witness: Lyla Garzouzi

1 while providing reliability consistent with customer expectations, by leveraging
2 productivity initiatives as outlined in Exhibit B1, Tab 1, Schedule 1 the Distribution
3 System Plan, Section 1.5.

4 5 **3. TEST YEAR FORECAST**

6
7 A summary of Hydro One's test year Sustaining OM&A investments are described herein
8 for each of the four investment categories.

9 10 **3.1 STATIONS**

11
12 Hydro One owns, operates, and maintains 1,005 distribution and regulating stations.
13 Distribution Stations step down voltage from transmission or sub-transmission levels to
14 primary distribution voltage for distribution to commercial, industrial, farm, year-round
15 residential and seasonal residential customers. Regulating Stations are a special type of
16 station that maintains voltage within the prescribed limits in response to load variations
17 that can cause voltage increases or decreases. Distribution Station facilities typically
18 contain the following components: station transformers and regulators, reclosers,
19 breakers, switches, fuses, station structures, fences, grounding systems, station service
20 transformers, insulators, bus, and spill containment systems. Hydro One also owns,
21 operates and maintains a fleet of 30 mobile unit substations ("MUSs") that are used to
22 provide emergency power restoration in the event of a transformer or other station
23 component failure, carrying the station load during maintenance and capital activities,
24 and load relief for distribution stations as required.

25
26 Stations Sustaining OM&A funding covers investments required to maintain assets
27 located within these distribution and regulating stations, as well as to maintain the mobile

Witness: Lyla Garzouzi

1 unit substations. The Stations Sustaining OM&A investments are divided into three
 2 programs:

- 4 1. Stations Demand and Planned Corrective Maintenance, which funds the OM&A
 5 investments to respond to emergency failures and to address equipment deficiencies
 6 at distribution and regulating stations;
- 7 2. Planned Preventive Station Maintenance, which funds the OM&A investments to
 8 reduce the risk of equipment failure at distribution and regulating stations; and
- 9 3. Land Assessment and Remediation, which funds the OM&A investments to test and
 10 carry out remedial work to manage contaminated soil at distribution and regulating
 11 stations.

12
 13 Required funding for the 2018 test year, along with the spending levels for the bridge and
 14 historical years are provided in Table 2 for each program.

16 **Table 2: Stations Sustaining OM&A (\$ Millions)**

Description	Historic					Bridge		Test
	2014	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Stations Demand and Planned Corrective Maintenance	8.2	10.3	9.4	9.1	10.0	9.6	10.2	9.8
Planned Preventive Station Maintenance	8.7	9.1	12.5	10.2	12.2	10.5	12.4	10.8
Land Assessment and Remediation	8.8	6.0	5.7	4.8	6.2	4.7	6.3	4.1
Total	25.7	25.3	27.6	24.0	28.4	24.9	28.9	24.8

17
 18 The overall Stations Sustaining OM&A expenditures for the 2018 test year is in line with
 19 the 2017 bridge year forecast and the average spend over the historic years 2014 to 2016.

Witness: Lyla Garzouzi

1 **3.1.1 Stations Demand and Planned Corrective Maintenance**

2
3 The stations demand and planned corrective maintenance programs address both (i) the
4 emergent repair of station equipment identified through trouble calls from a customer in
5 relation to a service interruption or through station inspections of equipment that will
6 potentially result in service interruptions if not addressed when identified, and (ii) the
7 planned repair of deficiencies that are identified through station inspections and
8 preventive maintenance, though are not emergent in nature.

9
10 A station interruption can impact up to 10,000 customers per occurrence. Hydro One
11 must address these station interruptions to maintain reliable service in accordance with
12 good utility practice in order to comply with legal and regulatory requirements. Hydro
13 One's performance in responding to interruptions is reflected by service quality
14 indicators specified in the Distribution System Code, Section 7, and in the Electricity
15 Distribution Rate Handbook.

16
17 The outcomes this stations demand and planned corrective maintenance program will
18 achieve are as follows:

- 19
20
 - 21 • Respond to component failures (i.e. transformers, regulators, reclosers, switches
22 and fuses) at distribution and regulating stations to ensure timely power
 restoration;
 - 23 • Correct situations where equipment failure is imminent that would cause a power
24 interruption if not addressed when identified, allowing for system reliability to be
25 maintained;
 - 26 • Correct situations which present a safety hazard to customers or Hydro One
27 personnel;

Witness: Lyla Garzouzi

- 1 • Correct deficiencies discovered during station inspections and planned preventive
2 maintenance activities (i.e. high dissolved gas analysis results, thermovision
3 overheating results) that cannot be deferred until the next maintenance cycle;
- 4 • Address corrective actions required to the stations site (i.e. damage to breaker
5 buildings, and MUS access roads leading into stations) that pose reliability issues
6 to the distribution system; and
- 7 • Correct deficiencies to mobile unit substations and the strategic spare transformer
8 inventory to ensure the equipment is in operable condition for deployment in case
9 of a failure to ensure timely restoration of customer power.

10

11 When the resolution of this work involves the repair of a component, such work is
12 charged to this OM&A program. If the resolution involves the replacement of damaged
13 or defective equipment, this replacement is charged to the Distribution Station Demand
14 Capital Program as outlined in Exhibit B1, Tab 1, Schedule 1 the Distribution System
15 Plan, Section 3.8, ISD Reference # SR-01.

16

17 Due to the variable nature of demand work, Hydro One develops forecast investment
18 levels for the stations demand and planned corrective maintenance program based on
19 historical averages. The proposed spending for the 2018 test year is an increase of \$0.2
20 million which is largely in line with the 2017 bridge year forecast expenditures after
21 factoring in inflation.

22

23 **3.1.2 Planned Preventive Station Maintenance**

24

25 The planned preventative station maintenance program addresses the inspection, testing
26 and preventative maintenance of station equipment in line with regulatory requirements
27 and industry-standard practices. This maintenance program includes:

Witness: Lyla Garzouzi

1 Inspection:

- 2 • Visual inspection of station assets, as required by Appendix C – Minimum Inspection
3 Requirements of the Distribution System Code, to identify reliability issues,
4 environmental issues, structural problems, safety hazards, equipment defects and
5 signs of vandalism. Hydro One’s rural stations are inspected twice per year and
6 urban stations are inspected monthly;
- 7 • Thermography inspection of all station power equipment to identify hot spots in any
8 of the electrical equipment. Hydro One’s distribution station electrical equipment is
9 inspected annually; and
- 10 • Inspections of transformer spill containment systems as outlined in the Environmental
11 Compliance Approvals issued by the Ministry of the Environment and Climate
12 Change (“MOECC”). These inspections are to identify cracks, damage, or any
13 deterioration that would reduce its effectiveness to contain oil spilled from the
14 transformer. Hydro One inspects its spill containment systems in line with the
15 frequencies outlined by the MOECC for each specific site.

16
17 Testing:

- 18 • Oil testing and analysis of all station transformers to identify their internal condition.
19 The oil samples taken from transformer main tanks and tap-changer compartments
20 are sent to a third-party lab to obtain industry-standard diagnostic test results
21 including Dissolved Gas Analysis, Moisture Content and Furan Analysis. If there is
22 an unsatisfactory oil sample result, further diagnostic testing and internal inspection is
23 undertaken. Hydro One performs oil testing and analysis on transformers annually;
- 24 • Power factor testing of all 115 kV distribution station transformers to verify the
25 integrity of the transformer insulation material and to ensure they are functioning
26 correctly. Hydro One performs power factor testing when the transformers are
27 removed from service for maintenance. Situations when transformers are removed

1 from service for maintenance are outlined in Exhibit B1, Tab 1, Schedule 1 the
2 Distribution System Plan, Section 2.3.1.1; and

- 3 • PCB testing of oil-filled power equipment at stations to determine level of
4 Polychlorinated Biphenyl (“PCB”) contaminated oil, in accordance with Environment
5 Canada regulations requiring the removal of all insulating oil with PCB
6 contamination levels equal to and above 50 ppm by year end 2025. Depending on the
7 level of PCB contamination, Hydro One will either retro-fill or replace the
8 contaminated equipment. Hydro One will perform on average 620 PCB tests
9 annually.

10

11 Preventative Maintenance:

- 12 • Planned maintenance of station power equipment in order to mitigate the risk of
13 failures by ensuring the safe and reliable operation of the equipment. The preventive
14 maintenance of the station equipment is bundled where possible to minimize the
15 number of planned outages. Further details on each station asset’s preventative
16 maintenance activities are outlined in Exhibit B1, Tab 1, Schedule 1 the Distribution
17 System Plan, Section 2.3.1;

- 18 • Planned maintenance of mobile unit substations in order to ensure a reliable,
19 deployable and safe fleet. Hydro One inspects and maintains each MUS’s electrical
20 equipment annually. The MUS trailers are also inspected annually as required under
21 the *Ontario Highway Traffic Act*;

- 22 • Planned maintenance of strategic spares includes inspection and maintenance of spare
23 distribution transformers in order to ensure reliable, deployable spare units. The
24 strategic spares are critical to support the transformer replacements required under
25 demand circumstances. Hydro One performs this maintenance typically every two
26 years; and

- 27 • Planned maintenance of the grounds and site including: inspection of fences, access
28 roads, foundations and drainage systems during station inspections, weed control

Witness: Lyla Garzouzi

1 performed two to three times per year based on growth rate, and grass cutting
2 performed up to twice per month based on growth rate and surrounding population
3 density.

4

5 This maintenance of station equipment ensures the continued operation of the distribution
6 system which plays an important role in maintaining the level of reliability to customers.

7 The outcomes this program will achieve are as follows:

8

- 9 • Reduce the risk of equipment failure, which can impact service reliability to
10 customers;
- 11 • Minimize life cycle costs by limiting the amount of corrective maintenance and
12 capital replacement in future years; and
- 13 • Operate in an environmentally responsible manner that minimizes the risk to
14 human health and the environment and remain in compliance with Environment
15 Canada regulations with respect to PCB contamination.

16

17 Hydro One develops forecast investment levels for the planned preventative station
18 maintenance program based on a combination of time-based inspections and testing
19 frequencies, and an estimation of condition-based maintenance utilizing historical
20 quantities. The proposed spending for the 2018 test year is an increase of \$0.3 million
21 relative to the 2017 bridge year forecast expenditures. This increase accounts for inflation
22 and maintenance of assets which have been deferred.

23

24 **3.1.3 Land Assessment and Remediation**

25

26 The primary focus of the land assessment and remediation program is to reduce the
27 human and ecological risks from distribution station soil contamination. There are a
28 number of distribution stations where the level of on-site soil contamination exceeds the

Witness: Lyla Garzouzi

1 applicable Ministry of Environment land-use criterion. This soil contamination has
2 occurred over time as a result of application of certain long lasting chemicals; such as
3 wood preservatives, arsenic-based herbicides, mineral insulating oil containing PCBs,
4 and miscellaneous other materials. The historical usage of these chemicals met all
5 applicable environment regulations and guidelines at the time they were first used;
6 however, environmental regulations have changed.

7
8 These contaminated distribution stations have the potential to cause adverse effects on
9 human health and the environment, therefore Hydro One is assessing its stations and
10 implementing either remedial measures to treat, remove or otherwise manage the
11 contamination found off-site, or on-site management controls to mitigate future off-
12 property impacts where environmental risks are significant.

13
14 The land assessment and remediation program consists of sample testing to determine
15 contamination levels, installation of monitoring wells, capping sites in order to prevent
16 off-site contamination, and remediation of off-sites determined to be contaminated
17 through testing.

18
19 The outcome this program will achieve is to ensure that Hydro One operates in an
20 environmentally responsible manner that minimizes the risk to human health and the
21 environment and remains in compliance with applicable Ministry of Environment
22 regulations.

23
24 Hydro One develops forecast investment levels for the land assessment and remediation
25 program based on the number of remaining high risk sites to be assessed for
26 contamination levels, and an estimation informed by historic experience on the
27 percentage of high risk sites that will require remediation upon testing. The proposed
28 spending for the 2018 test year is about a \$0.6 million decrease relative to the 2017

Witness: Lyla Garzouzi

1 bridge year forecast expenditures. At this forecast investment level, this program is
2 estimated to be completed by 2025.

3
4 **3.2 LINES**

5
6 Hydro One owns, operates and maintains approximately 122,000 circuit kilometers of
7 distribution lines province-wide to deliver power to Hydro One customers. Distribution
8 lines consisting of: poles, conductor, insulators, transformers, switches, fuses, surge
9 arresters, voltage regulators, reclosers, capacitors, and grounding devices; are constructed
10 on road allowances where possible, or on rights-of-way that Hydro One can legally
11 access and occupy.

12
13 Lines Sustaining OM&A funding covers investments required to maintain assets located
14 on the distribution lines. The Lines Sustaining OM&A investments are divided into four
15 programs:

- 16
17 1. Demand Work, which funds the OM&A investments to respond to (i) Trouble Calls
18 to restore system outages, (ii) Locate Underground Cables, and (iii) Disconnect and
19 Reconnect customers on request;
- 20 2. Line Maintenance, which funds the OM&A investments to maintain the integrity of
21 the lines equipment and patrol the distribution system;
- 22 3. PCB Equipment and Waste Management, which funds the OM&A investments to
23 inspect and test equipment for PCB contamination and to manage both PCB and non-
24 PCB waste in compliance with environmental regulations; and
- 25 4. Other Services, which funds the OM&A investments to respond to customer
26 inquiries, rent idle transmission lines, track service quality indicators, fund specific
27 community events, and complete joint use audits.

Witness: Lyla Garzouzi

1 Required funding for the 2018 test year, along with the spending levels for the bridge and
 2 historical years are provided in Table 3.

3
 4

Table 3: Lines Sustaining OM&A (\$Millions)

Description	Historic					Bridge		Test
	2014	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Trouble Calls	77.1	72.9	64.8	71.1	65.9	76.5	67.7	77.9
Underground Cable Locates	23.8	20.9	17.9	12.6	17.4	13.6	16.9	14.6
Disconnects/Reconnects	11.9	12.5	9.7	12.7	9.9	12.2	10.1	12.5
Line Maintenance	12.3	14.9	23.5	20.2	23.9	16.3	24.4	17.5
PCB Equipment and Waste Storage	5.1	7.7	11.3	12.7	18.3	15.2	18.7	15.4
Other Services	15.0	15.8	14.1	16.8	14.3	15.5	14.7	15.8
Total	145.2	144.7	141.3	146.2	149.7	149.4	152.4	153.8

5
 6
 7
 8
 9

The overall Lines Sustainment OM&A expenditures for the 2018 test year is an increase of 3% relative to the 2017 bridge year forecast primarily due to anticipated increase in customer requests for underground cable locates, and inflation.

10 **3.2.1 Trouble Calls**

11
 12
 13
 14
 15
 16
 17
 18
 19

The trouble call program addresses the restoration of service to customers impacted by an unplanned power interruption. Such unplanned power interruptions on the distribution system are largely due to line component failures or contact with right-of-way vegetation caused by severe weather conditions. Depending on the specific circumstances, these interruptions can vary in size, from impacting single customers for brief periods of time to impacting thousands of customers for several hours. Trouble calls may also be used to respond to customer complaints or to correct defects on the distribution system that present a safety concern or could result in an imminent service interruption.

1 Hydro One must address these trouble calls in order to comply with legal and regulatory
2 requirements, to correct known hazards and to maintain reliable service in accordance
3 with good utility practice. Hydro One's performance in responding to trouble calls is
4 reflected by service quality indicators specified in the Distribution System Code, Section
5 7 as discussed in Exhibit A, Tab 5, Schedule 3.

6
7 When the resolution of a trouble call involves the repair of an affected component or the
8 clearing of fallen vegetation, such work is charged to this program. If the resolution
9 involves the replacement of damaged or defective equipment, this replacement is charged
10 to the Trouble Calls and Storm Damage capital program discussed in Exhibit B1, Tab 1,
11 Schedule 1 the Distribution System Plan, Section 3.8, ISD Reference # SR-07.

12
13 The trouble call program is reactive in nature and as such its volume of work varies based
14 on a number of external factors. These factors include weather, equipment failure, and
15 the volume of customer power quality complaints. Due to the variable nature of demand
16 work, Hydro One develops investment levels based on forecast volumes and costs using
17 observed historical averages. The proposed spending for the test year is based on an
18 expected volume of 42,645 calls per year. The proposed spending for the 2018 test year is
19 an increase of \$1.4 million relative to the 2017 bridge year forecast expenditures due to
20 inflation.

21 22 **3.2.2 Underground Cable Locates**

23
24 The underground cable locates program provides the service of locating and marking
25 Hydro One underground plant for customers and contractors who request this
26 information. Responding to these requests is in everyone's best interest as anyone
27 excavating near a cable may cause damage to these costly assets and cause harm to
28 members of the public. This service is provided in accordance with the Electrical Safety

Witness: Lyla Garzouzi

1 Authority's "Guidelines for Excavating in the Vicinity of Distribution Lines" and in order
2 to comply with legal requirements set out in Ontario Regulation 22/04.

3
4 This program is intended to minimize utility equipment damage while providing worker
5 safety to those excavating in proximity to buried utility plant. In order to encourage the
6 use of this service, the program costs are not recovered through end user charges. This
7 approach is consistent with the practice followed by other regulated utilities, including
8 cable TV, telephone service and natural gas utilities.

9
10 Due to the variable nature of demand work, Hydro One develops investment levels based
11 on forecast volumes and costs using observed historical averages with adjustments to this
12 forecast based on projected impact of any changes to the distribution system or to the
13 planned investment programs. The proposed spending for the test year is based on an
14 expected volume of 200,000 cable locate requests per year. The proposed spending for
15 the 2018 test year represents an increase of \$1.0 million relative to the 2017 bridge year
16 forecast expenditures. However this level is still below the 2017 Board approved level
17 due to the changes Hydro One initiated to the "call before you dig" program in
18 September 2015 to outsource a majority of the cable locates to an external service
19 provider resulting in lower unit costs. Further details on this outsourcing initiative are
20 outlined in Exhibit B1, Tab 1, Schedule 1 the Distribution System Plan, Section 1.5.1.2.

21 22 **3.2.3 Disconnects/Reconnects**

23
24 The service disconnects and reconnects program addresses customer requests for
25 isolation of customer owned assets from the distribution system. This isolation may be
26 requested by the customer to allow for safe conditions to facilitate working on customer
27 owned equipment. Responding to these requests is in everyone's best interest as anyone
28 working without isolation may cause harm to themselves or members of the public.

Witness: Lyla Garzouzi

1 This program is intended to provide customers safe electrical isolation of their service in
2 order for them to conduct work. This service is provided to each customer once per year
3 at no cost, as specified in Hydro One's Conditions of Service, in order to encourage
4 customers to maintain their facilities and to work safely.

5
6 Hydro One must address these customer requests in order to comply with legal
7 requirements set out in Hydro One's Conditions of Service which is required in
8 accordance with the Distribution System Code. Hydro One's performance in responding
9 to service disconnects and reconnects is reflected by service quality indicators specified
10 in the Distribution System Code, Section 7 as discussed in Exhibit A, Tab 5, Schedule 3.

11
12 Due to the variable nature of demand work, Hydro One develops investment levels based
13 on forecast volumes and costs using observed historical averages. The number of service
14 disconnection and reconnection requests has increased over the past several years. The
15 proposed spending for the test year is based on an expected volume of 14,250 disconnect
16 and reconnect requests per year. The proposed spending for the 2018 test year is an
17 increase of \$0.2 million which is relatively in line with the 2017 bridge year forecast
18 expenditures when factoring in inflation.

19 20 **3.2.4 Line Maintenance**

21
22 The line maintenance program addresses the inspection, testing, and ongoing preventive
23 and corrective maintenance on line equipment in line with regulatory requirements and
24 industry-standard practices. This maintenance program includes:

25 26 Inspection:

- 27 • Line patrol of distribution lines as required by Appendix C – Minimum Inspection
28 Requirements of the Distribution System Code, to identify public safety hazards,

Witness: Lyla Garzouzi

1 damaged equipment, or any other defects that may impact the safe and reliable
2 operation of the distribution system. The data collected during the line patrol is a key
3 component in the assessment of condition of line equipment. Hydro One patrols one-
4 sixth of all rural feeders and one-third of all urban feeders each year to identify
5 defects for corrective action.

6

7 Testing:

- 8 • Sounding (hammer) tests of distribution poles to ensure the integrity of the pole.
9 Hydro One performs this testing in conjunction with the distribution line patrols.
10 Other techniques, including boring tests for poles and time domain reflectometry tests
11 for submarine cables, are also employed when necessary.

12

13 Maintenance:

- 14 • Preventive maintenance of line equipment (including line reclosers, regulators,
15 insulators, and three-phase air break and load break switches) in order to mitigate the
16 risk of failures by ensuring the safe and reliable operation of equipment. Hydro One
17 performs this maintenance on a planned basis; some of the maintenance activities are
18 time-based and others are based on number of operations or condition of equipment.
19 The proposed spending for the test year is based on an expected volume of 290 assets
20 maintained per year;
- 21 • Corrective maintenance of line equipment focusing on the repair and replacement of
22 minor defective components such as: broken guy wires, damaged insulators, and
23 faulty lightning arresters. All defects are identified and logged during line patrols.
24 The defects are categorized based on the requirements of the Distribution System
25 Code and corrected in an appropriate time frame. Where possible, defect corrections
26 are combined with other work to improve operational efficiency. The proposed
27 spending for the test year is based on an expected volume of 9,210 defect corrections
28 per year; and

Witness: Lyla Garzouzi

- 1 • Sentinel light program to maintain the existing outdoor lighting for rural customers
2 that has been in existence over 20 years. Hydro One has a contractual obligation to
3 honour commitments made by the former Ontario Hydro for existing installations, but
4 no longer accepts requests for new sentinel light installations. The proposed spending
5 for the test year is based on an expected volume of 2,000 maintenance responses per
6 year.

7
8 The maintenance of these line assets ensures the continued operation of the distribution
9 system which plays an important role in maintaining the level of reliability to customers.
10 The outcomes this program will achieve are as follows:

- 11
12 • Reduce the risk of equipment failure, which can impact service reliability to
13 customers; and
14 • Operate in a responsible manner that minimizes the potential of safety risks that
15 the failure of the equipment poses to the public and Hydro One employees.

16
17 Hydro One develops investment levels based on forecast volumes and costs using
18 observed historical averages with adjustments to this forecast based on projected impact
19 of any changes to the distribution system or to the planned investment programs. The
20 proposed spending for the 2018 test year is an increase of \$1.2 million relative to the
21 2017 bridge year forecast expenditures. This increase accounts for inflation and
22 anticipated increase in defect corrections.

23
24 **3.2.5 PCB Equipment and Waste Storage**

25
26 The PCB equipment and waste management program includes the inspection and testing
27 of distribution line equipment potentially contaminated with PCBs, along with the

1 management of waste generated during the course of operating and maintaining
2 distribution assets. This program includes:

- 3
- 4 • Inspection and testing of oil-filled distribution line equipment to determine their
5 PCB contamination level in accordance with Environment Canada PCB
6 regulations requiring the removal of all PCB's in oil-filled equipment greater
7 than 50 ppm by year end 2025. Any equipment with PCB content greater than 50
8 ppm threshold is replaced under the Lines PCB Equipment Replacements capital
9 program, described in Exhibit B1, Tab 1, Schedule 1 the Distribution System
10 Plan, Section 3.8, ISD Reference # SR-08; and
- 11 • Waste management of all contaminated and non-contaminated waste streams
12 (such as PCB and non- PCB oil, hydraulic oil, lead, cadmium, mercury, etc.)
13 associated with distribution lines day-to-day operations and maintenance. This
14 includes cleanup, notification, documentation, restoration, transportation, storage,
15 containment, security, inventory, inspection and reporting of these wastes. As
16 well as the disposal of the waste (i.e., preparation, loading, shipping and
17 destruction) once economical quantities of a particular waste class are gathered.
- 18

19 The outcomes this program will achieve are as follows:

- 20
- 21 • Ensure that Hydro One operates in an environmentally responsible manner that
22 minimizes the risk to human health and the environment; and
- 23 • Ensure that Hydro One remains in compliance with applicable regulations.
- 24

25 Hydro One develops investment levels based on a targeted completion year of 2025 to
26 meet regulations. The proposed spending for the test year is based on a forecast of
27 approximately 27,595 PCB inspections and testing per year. The proposed spending for

Witness: Lyla Garzouzi

1 the 2018 test year is an increase of \$0.2 million relative to the 2017 bridge year forecast
2 expenditures.

3
4 **3.2.6 Other Services**
5

6 The Other Services program addresses miscellaneous services not funded within other
7 distribution OM&A investments. The specific investments funded are:

8
9 Customer Inquiries - This is a customer focused program that includes the work required
10 to respond to inquiries concerning customer services, bills, location of Hydro One assets
11 on customer properties, planned and unplanned outages, power quality complaints, and
12 clarifications on policies. The number of inquiries can vary from one year to the next.

13
14 Investigations and Data Collection - This program includes the work required to respond
15 to requests for detailed information on distribution station and line assets. It addresses
16 information requirements related to requests for the condition of selected assets, public
17 and employee safety hazards, unacceptable system performance, audits of joint use
18 facilities and data required to support responses to customer reliability concerns.

19
20 Miscellaneous Services - This program includes a number of activities; pole rental
21 payments to Local Distribution Companies (“LDCs”) where Hydro One wires are
22 supported by these poles, LDC switching requests, collecting and reporting service
23 quality indicators to the Ontario Energy Board on an annual basis, payments to the
24 Electrical Safety Authority for regulatory oversight costs, and miscellaneous engineering
25 and environmental support.

1 Transmission Idle Lines Rental - This expenditure is for the annual rental payments to
2 Hydro One Transmission for Hydro One Distribution's use of transmission facilities to
3 supply power to customers at distribution voltages.

4
5 Hydro One develops forecast investment levels for the Other Service programs based on
6 historic demand for each investment and the risk of not meeting the forecast demand. The
7 proposed spending for the 2018 test year is an increase of \$0.3 million relative to the
8 2017 bridge year forecast expenditures. This increase is driven by an increase in customer
9 inquiries related to line relocations.

10 11 **3.3 METERS, TELECOM AND CONTROL**

12
13 Hydro One currently owns, operates and maintains revenue meters of two main types: (i)
14 Retail Revenue Meters; and (ii) Wholesale Revenue Meters. The retail revenue meters
15 are used to measure energy consumption for retail customers. Whereas the wholesale
16 revenue meters are used to settle the purchase of energy where the point of supply is
17 directly connected to the IESO-controlled grid.

18
19 Metering Sustaining OM&A funding covers investments required to operate and maintain
20 the existing metering assets. The Metering Sustaining OM&A investments are divided
21 into three programs:

- 22
- 23 1. Retail Revenue Meters, which funds the OM&A investments to perform routine and
24 corrective maintenance;
 - 25 2. Wholesale Revenue Meters, which funds the OM&A investments to perform routine
26 and corrective maintenance, and to support IESO registration or inspection processes;
27 and

Witness: Lyla Garzouzi

1 3. Telecom, Monitoring & Control, which funds the OM&A investments to enable
 2 collection of energy consumption data, and to control and operate sectionalizing
 3 switches and electronic reclosers installed on distribution system.

4
 5 Required funding for the 2018 test year, along with spending levels for the bridge and
 6 historic years are provided in Table 4 for each category.

7
 8 **Table 4: Meters, Telecom and Control Sustaining OM&A (\$ Millions)**

Description	Historic					Bridge		Test
	2014	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Retail Revenue Meters	8.4	10.9	12.6	12.4	12.7	8.3	12.3	9.1
Wholesale Revenue Meters	2.2	2.1	2.4	2.4	2.4	2.8	2.5	3.1
Telecom, Monitoring and Control	3.5	3.6	3.5	3.9	3.6	6.2	3.7	6.4
Total	14.2	16.6	18.5	18.6	18.7	17.3	18.5	18.6

9
 10 The overall Metering Sustaining OM&A expenditures for the 2018 test year is an
 11 increase of \$1.2 million relative to the 2017 bridge year forecast; however the 2018
 12 proposed spending remains in line with the 2017 Board-approved level. The changes in
 13 the Metering Sustaining OM&A expenditures are a result of increasing telecom,
 14 monitoring, and control program costs for leased circuits and smart meter telecom
 15 management fees; offset by a reduction in the retail revenue meters as a result of a
 16 portion of the meter replacements qualifying to be capitalized under GAAP accounting
 17 rules.

18
 19 **3.3.1 Retail Revenue Meters**

20
 21 Retail revenue meters are required to be operated, maintained and verified in accordance
 22 with requirements of the *Electricity and Gas Inspection Act*, Measurement Canada, and
 23 the market rules. There are three types of retail revenue meters utilized on the Hydro One

Witness: Lyla Garzouzi

1 distribution system based on retail customers' average monthly demand. The types
2 include:

- 3
- 4 • Approximately 1.2 million smart meters measuring energy consumption for
5 residential and other customers whose average monthly demand is 50 kW or less
6 under the Time of Use ("TOU") pricing scheme;
- 7 • About 7,100 electronic demand meters for small business customers with an
8 average monthly electricity demand greater than 50 kW; and
- 9 • About 3,800 interval meters for existing business customers whose demand
10 exceeds 1,000 kW, recently connected customers whose demand exceeds 50 kW
11 and customers below the threshold who have requested interval meters.
- 12

13 The retail revenue meter program addresses the inspection, testing and maintenance of
14 retail revenue meters in accordance with regulatory requirements. Meter sampling entails
15 the verification of the accuracy by an accredited meter verifier every six or ten years
16 depending on meter classification. Typical meter verifications involve the testing of a
17 statistically derived sample group of meters, according to a sampling program monitored
18 and regulated by Measurement Canada. If the sample passes, then all meters in that
19 sample group are deemed verified; however, if the sample fails, then all meters in that
20 sample group are required to be replaced. For meters that do not qualify to be sampled,
21 such as commercial or industrial meters, then each meter seal must be individually
22 verified.

23

24 This program also manages inventory for the advanced metering infrastructure (i.e.,
25 meters, collectors, repeaters, current transformers, potential transformers and metering
26 accessories) by maintaining adequate stock of metering equipment to meet the needs for
27 annual meter re-verification program, service upgrades, emergencies and replacement of
28 failed or defective/damaged meters and instrument transformers.

Witness: Lyla Garzouzi

1 The outcome of this program enables Hydro One to meet its regulatory commitments for
2 meter re-verification and meter sampling programs; as well as to adequately manage the
3 advanced metering infrastructure device inventory.

4
5 Hydro One develops investment levels based on Measurement Canada guidelines for
6 meter statistical sampling and historical failure rates for managing the advanced metering
7 infrastructure device inventory. The proposed spending for the 2018 test year is an
8 increase of \$0.8 million relative to the 2017 bridge year forecast expenditures; however,
9 it is a decrease relative to historic years as a result of a portion of the meter replacements
10 qualifying to be capitalized under GAAP accounting rules.

11 12 **3.3.2 Wholesale Revenue Meters**

13
14 Wholesale revenue meters are required to be operated, maintained and verified in
15 accordance with the IESO wholesale market rules. As of the end of 2016, Hydro One
16 continues to assume the accountability for 405 legacy wholesale revenue meters
17 (“WRMs”) used to settle Hydro One energy purchases from the IESO-administered
18 market, in accordance with market rules.

19
20 The wholesale revenue meter program is required to provide preventative and corrective
21 maintenance, meter re-sealing and verification, trouble call response, IESO registration,
22 and routine maintenance as required by the IESO market rules. Wholesale revenue meters
23 are also subject to IESO inspections to verify compliance of metering installations with
24 technical specifications contained in the market rules. Any identified deficiencies must
25 be corrected within the prescribed time limits. In general, wholesale meters are re-
26 verified or re-sealed every six years.

27
28 The outcomes this program will achieve are to provide servicing for all WRMs to ensure

Witness: Lyla Garzouzi

1 accurate wholesale billing by the IESO, and to comply with the market rules and
2 Measurement Canada regulations.

3
4 Hydro One develops investment levels based on IESO wholesale metering requirements,
5 the number of wholesale metering points and Hydro One historical maintenance levels
6 for corrective maintenance. The proposed spending for the 2018 test year is an increase
7 of \$0.3 million relative to the 2017 bridge year forecast expenditures. This trend is a
8 result of new stations built with new wholesale metering points and LDC boundary
9 changes resulting in Hydro One inheriting additional wholesale metering points.

11 **3.3.3 Telecom, Monitoring and Control**

12
13 A telecommunication link to retail smart meters is required for the remote interrogation
14 of the meters in order to obtain energy consumption data for billing processes. Hydro
15 One also has telecommunication requirements associated with some sectionalizing
16 switches which remotely control feeders, and provide monitoring and control of some
17 distribution stations from the Distribution Management System.

18
19 The telecom, monitoring and control program is required to:

- 20
- 21 • Maintain and troubleshoot the telecommunication infrastructure which collects
22 energy consumption data from the retail smart meters; and
 - 23 • Maintain telecommunication infrastructure in order to facilitate the upgrade of
24 demand metered customers with electronic demand meters. Hydro One is looking
25 to leverage its existing network for these meters to minimize third-party telecom
26 charges. However, where this option is not available, telecom leased circuits will
27 be used to provide remote interrogation.

1 The outcomes this program will achieve are to ensure the continued operation of the
2 distribution system which plays an important role in maintaining the level of reliability to
3 customers and to ensure collection of energy consumption data required for customer
4 billing.

5
6 As Hydro One continues to modernize its distribution network, there will be a need for
7 further telecommunication capability to control the new intelligent devices (such as
8 sectionalizing switches, electronic reclosers, etc.) to provide sufficient network coverage.

9
10 Hydro One develops investment levels based on the communication requirements for
11 wholesale metering, retail metering and monitoring/control requirements. These are
12 typically leased telecom circuits by third-party telecom providers. The proposed spending
13 for the 2018 test year is an increase of only \$0.2 million relative to the 2017 bridge year
14 forecast expenditures; but represents a significant increase relative to historic years. This
15 trend is a result of the increase in telecommunication requirements resulting from smart
16 meters, metering leased circuits, the allocation of smart meter telecom support costs and
17 the modernization of the distribution network.

18 19 **3.4 VEGETATION MANAGEMENT**

20
21 Hydro One has approximately 112,000 km of distribution rights-of-way which traverse
22 three forest regions in the Province of Ontario. The predominant region, the Great Lakes -
23 St. Lawrence forest region, consists of mixed conifer and deciduous forests stretching
24 from the edges of the Great Lakes and the St. Lawrence River west to the Manitoba
25 boarder. The other two regions include the deciduous forests of southwestern Ontario and
26 the boreal forests of northern Ontario.

Witness: Lyla Garzouzi

1 The vegetation management program maintains clearances to the distribution network
2 within these rights-of-ways to provide an acceptable and sustainable level of reliability,
3 manage vegetation safety hazards, provide improved access to assets for maintenance and
4 restoration of power, and minimize environmental, ecological and social impacts of
5 clearing activities.

6
7 Since the last rate filing the vegetation management program has undergone a significant
8 reorganization to improve upon the areas of opportunity identified by the Auditor General
9 of Ontario, the Ontario Energy Board and peer benchmarking. This reorganization
10 consists of three changes that have been implemented to improve the efficiency and
11 impact of the vegetation management programs.

12
13 The first significant change is the amalgamation of the landowner notification, brush
14 control and line clearing programs into a single vegetation management treatment. The
15 programs were amalgamated to drive work efficiency by synchronizing right-of-way
16 management, reducing the number of trips required to complete a unit of work and
17 reducing the impact the work has on customer's properties.

18
19 The second significant change is the classification of Hydro One's right-of-ways into two
20 categories. The first category is high impact right-of-ways in which Hydro One's strategy
21 will be to focus on performing vegetation management on an optimum cycle to better
22 mitigate large outages, improve asset condition and realize the cost benefits of executing
23 work on-cycle. The second category is focused on the lower impact right-of-way
24 inventory in which Hydro One will manage within the tactical maintenance program
25 using a flexible, risk-based approach that targets vegetation management on the worst
26 performing and oldest assets in the inventory. The flexibility of this tactical maintenance
27 program will allow Hydro One to more effectively address emerging reliability and
28 condition concerns raised internally and by Hydro One's customers.

Witness: Lyla Garzouzi

1 The third significant change is an increased focus on the hazard tree removal and demand
 2 vegetation management programs. This additional funding will allow for Hydro One to
 3 ensure high quality and reliable service to customers by being more responsive to site
 4 specific customer concerns and to more effectively mitigate emergent safety and
 5 reliability concerns.

6
 7 Through these changes Hydro One is building the foundation of a long-term strategy to
 8 regain control of backlogged maintenance and shorten the average maintenance cycle.
 9 The required funding for the 2018 test year, along with the spending levels for the bridge
 10 and historical years are provided in Table 5.

11
 12 **Table 5: Vegetation Management Sustaining OM&A (\$ Millions)**

Description	Historic					Bridge		Test
	2014	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Landowner Notification *	9.2	6.6	7.3	7.2	10.1	0.0	10.0	0.0
Line Clearing *	97.9	93.7	82.4	90.4	104.6	0.0	107.3	0.0
Brush Control *	23.9	7.7	31.6	30.5	42.8	0.0	42.8	0.0
Cycle Clearing	0.0	0.0	0.0	0.0	0.0	80.3	0.0	79.9
Tactical Maintenance	0.0	0.0	0.0	0.0	0.0	48.5	0.0	57.4
Demand Vegetation Management	9.5	9.9	7.4	9.7	6.8	10.0	6.9	10.2
Hazard Tree Removal	0.2	0.0	0.3	0.1	0.3	4.0	0.3	2.1
Total	140.6	118.0	129.0	137.9	164.6	142.9	167.3	149.6

13 * In 2017, Hydro One has reorganized the structure of the vegetation management program such that the
 14 Landowner Notification, Line Clearing, Brush Control programs are now integrated under the new Cycle
 15 Clearing and Tactical Maintenance programs.

16
 17 The vegetation management forecasts for the bridge and test year reflect the changes in
 18 program structure noted above. The overall vegetation management OM&A expenditure
 19 for the 2018 test year is an increase of 4.7% relative to the 2017 bridge year forecast.
 20 This increase represents the pacing of the vegetation management work programs in line
 21 with the long-term strategy to regain control of backlogged maintenance and reduce

Witness: Lyla Garzouzi

1 average maintenance cycles. However, compared to the last rate application (EB-2013-
2 0416), the current proposed 2018 forecast expenditure has been reduced, as a result of
3 efficiency improvements, while maintaining the same volume of work as the previous
4 2018 plan.

5 6 **3.4.1 Cycle Clearing**

7
8 The cycle clearing program is a planned maintenance program focused on the right-of-
9 way inventory that has the largest impact on Hydro One customers. Assets managed
10 within this program will be cleared at their optimal cycle length which is between four
11 and eight years depending on the feeder's location and the feeder specific management
12 objectives. These cycle lengths are in line with the vegetation management benchmarking
13 study outlined in Exhibit B1, Tab 1, Schedule 1 the Distribution System Plan, Section
14 1.6, which recommends Hydro One bring its distribution system to four to eight year
15 flexible maintenance cycle. Managing the cycle clearing program on-cycle allows for
16 cost effective vegetation management, mitigates sharp increases in tree outages, limits the
17 environmental and social impacts of operations and reduces employee and public safety
18 risks posed by overgrown power lines.

19
20 The Cycle Clearing program includes:

- 21
- 22 • Landowner notification and job planning which is required to produce site
23 specific work packages that comply with internal and external regulations and
24 guidelines;
 - 25 • Trimming and removing vegetation along the right-of-way edge to prevent trees
26 from falling into the power lines and to re-establish clearances to energized
27 equipment; and

Witness: Lyla Garzouzi

- 1 • Managing vegetation on the right-of-way floor to provide access to power line
2 assets for maintenance and emergency repair and also to prevent smaller
3 vegetation from growing and conflicting with power lines in the future.

4

5 The outcomes this program will achieve are as follows:

6

- 7 • Mitigate tree related outages, which impact service reliability to customers,
8 • Improve asset condition by preventing tree and wire contacts and by reducing the
9 amount of biomass interfering with the right-of-way, and
10 • Improved unit prices and life cycle costs on the most impactful assets within the
11 distribution system.

12

13 Hydro One develops investment levels for the cycle clearing program based on a forecast
14 of level of work to manage the high impact rights-of-way on their optimum cycle,
15 factoring in regional fluctuations in unit prices, the costs savings of executing work on
16 cycle discussed in Exhibit B1, Tab 2, Schedule 1, and the productivity initiatives
17 discussed in Exhibit B1, Tab 1, Schedule 1 the Distribution System Plan, Section 1.5. To
18 manage this inventory on-cycle, the proposed spending for the test year is based on a
19 forecast of 8,500 km of right-of-way being managed each year. The proposed spending
20 for the 2018 test year is in line with the 2017 bridge year forecast expenditures. The
21 slight decrease in budget is reflective of the ongoing reduction of backlog within the
22 cycle clearing inventory.

23

24 **3.4.2 Tactical Maintenance**

25

26 The tactical maintenance program is a flexible planned program that provides targeted
27 vegetation management on feeder sections not managed within the cycle clearing
28 program. The tactical maintenance program performs the same activities as noted above

Witness: Lyla Garzouzi

1 on lower impact rights-of-way using a risk-based prioritization that considers reliability,
2 asset condition and age, as well as feedback from Hydro One customers.

3
4 The outcomes the program will achieve are improved asset condition, localized reliability
5 improvements and localized improvement in customer satisfaction.

6
7 Hydro One develops investment levels for the tactical maintenance program based on a
8 forecast level of work to manage overgrown vegetation, factoring in regional fluctuations
9 in unit prices, and the productivity initiatives discussed in Exhibit B1, Tab 1, Schedule 1
10 the Distribution System Plan, Section 1.5. The proposed spending for the 2018 test year
11 is an increase of approximately \$9 million relative to the 2017 bridge year forecast
12 expenditures. This increase is primarily to allow another 750 kilometers of right-of-way
13 (to a total of 4,250 kilometers) to be cleared in 2018 in order to further reduce asset age,
14 improve reliability and improve asset condition in line with Hydro One's long-term
15 strategy to reduce its average maintenance cycle as recommended in benchmarking study
16 discussed in Exhibit B1, Tab 1, Schedule 1 the Distribution System Plan, Section 1.6.

17 18 **3.4.3 Demand Vegetation Management**

19
20 The demand vegetation management program addresses emergent work identified by a
21 breadth of sources that can be categorized into: (i) customer generated (i.e. customers,
22 property owners, municipalities, and government ministries); and (ii) internally generated
23 (i.e. deficiencies found during scheduled patrols or through normal operations). This
24 program includes restoring clearances to energized equipment and removing hazardous
25 trees that pose an immediate danger to the safe and reliable distribution of power. The
26 objective of the demand vegetation program is to provide prompt corrective action that
27 reduces risk while improving customer satisfaction.

Witness: Lyla Garzouzi

1 This program is driven by external demand for vegetation management. Due to the
2 variable nature of demand work, Hydro One develops investment levels for the demand
3 vegetation management program based on historical demand and corrective action is
4 planned as the demand arises. The proposed spending for the 2018 test year is in-line
5 with the 2017 bridge year forecast expenditures; however this level is significantly
6 increased compared to the 2017 Board approved level to reflect the increasing trends in
7 demand work and the commitment to be more responsive to customer needs.

8 9 **3.4.4 Hazard Tree Removal**

10
11 The hazard tree removal program consists of two parts: (i) the planned program that
12 provides mid-cycle inspection of high impact assets; and (ii) correcting defects found
13 during the inspection. This program involves the trimming or removal of vegetation in
14 contact with the power lines or that pose a high risk of falling and causing a power
15 interruption.

16
17 Due to the criticality of the circuits and the downstream impacts of a tree-caused outage
18 on those circuits, the hazard tree removal pilot program proved to be a cost-effective
19 planned approach to corrective vegetation maintenance mid-cycle. Therefore Hydro One
20 developed the investment level for the hazard tree removal program based on expanding
21 the program to include a greater proportion of the asset inventory each year.

22
23 The proposed spending for the 2018 test year reflects this increased focus and expansion
24 of the hazard tree removal program beyond the pilot program funding of \$0.3 million
25 annually. This additional funding of \$1.8 million in 2018 relative to 2016 will allow
26 Hydro One to be more responsive to site specific customer concerns and to more
27 effectively mitigate emergent safety and reliability concerns.

Witness: Lyla Garzouzi

1 **DEVELOPMENT OM&A**

2
3 **1. SUMMARY OF DEVELOPMENT OM&A**

4
5 Development OM&A represents expenditures required to perform technical studies and
6 develop construction standards for the connection of load and generation customers to the
7 distribution system. These expenditures also support research into new technologies and
8 the development of power quality solutions. These expenditures are for the benefit of
9 Hydro One's customers and are critical to the safe, reliable and efficient operation of the
10 distribution system.

11
12 Hydro One manages its Development OM&A investments by dividing the expenditures
13 into the following five categories:

- 14
15 1. Engineering and Technical Studies;
16 2. Distributed Generation Connections;
17 3. Distribution Standards Program;
18 4. Research Development and Demonstration; and
19 5. Customer Power Quality Program.

20
21 Development OM&A investments will ensure that the existing and forecast customer
22 load and generation demands are met, distribution system reliability is maintained, legal
23 and regulatory requirements are satisfied, and the impact of distributed generation
24 connected to the distribution system is effectively monitored. These investments will also
25 support research and implementation of new technology that will help improve the
26 efficiency of the distribution system and address power quality concerns experienced by
27 Hydro One's distribution customers.

Witness: Lyla Garzouzi

1 The selection of Development OM&A investments is guided by the planning process
 2 described in Exhibit B1, Tab 1, Schedule 1 the Distribution System Plan, Section 2.1 to
 3 ensure that investments are managed to meet customer, operational and regulatory
 4 requirements. A summary of the historic, bridge and test year expenditures including
 5 Board-approved levels are provided in Table 1.

6
 7

Table 1: Summary of Development OM&A (\$ Millions)

Description	Historic					Bridge		Test
	2014	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Engineering and Technical Studies	4.0	3.8	4.7	4.3	4.7	3.9	4.7	1.7
Distributed Generation Connections	2.6	2.5	2.2	2.4	2.0	3.2	2.0	2.9
Distribution Standards Program	3.9	3.4	5.6	4.2	5.8	4.4	6.0	4.5
Research Development and Demonstration*	0.4	1.2	2.9	1.2	5.2	1.6	4.3	1.6
Customer Power Quality Program	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Total	11.0	10.9	15.4	12.1	17.8	13.2	17.0	11.0

8 * In 2016, investments in smart grid related studies were integrated under the new Research Development
 9 and Demonstration (“RD&D”) program; as such costs associated with these studies prior to 2016 have
 10 been included under RD&D in the above table.

11

12 **2. VARIANCE EXPLANATION FOR DEVELOPMENT OM&A**

13

14 The proposed Development OM&A spending for the 2018 test year is a decrease of \$2.2
 15 million relative to the 2017 bridge year forecast expenditures. This decrease is largely
 16 attributed to a decline in the engineering and technical service program corresponding to
 17 the planned modernization of the distribution system. This planned modernization with
 18 real time monitoring capability will reduce the funding requirement for the collection of
 19 feeder loading data over time.

Witness: Lyla Garzouzi

1 The 2017 bridge year forecast expenditures is an increase of \$1.1 million relative to the
2 2016 historic year forecast expenditures. This increase is largely attributed to the forecast
3 increase in requests for connection of distributed generation projects to Hydro One's
4 distribution system and the ongoing cost of monitoring these distributed generators for
5 power quality.

6
7 The 2016 historic year forecast expenditure is an increase of about \$1.1 million relative
8 to the actual expenditures in 2014 and 2015 due to increases across three of the programs:
9 (i) Engineering and Technical Studies; (ii) Distribution Standards; and (iii) Research
10 Development and Demonstration. However, spending over this period is below the
11 Board-approved levels by an average of \$4.7 million per year. This trend is largely
12 attributed to:

- 13
- 14 • The re-allocation of the annual fee that Hydro One pays to the Electrical Safety
15 Authority from the Development OM&A Distribution Standards budget to the
16 Sustaining Other Services OM&A budget.
 - 17 • The change in the standard development approach to include the development of a
18 new standard as part of the capital project that requires the standard. This change
19 reduces the Distribution Standards scope to only the work that is required to make
20 the general design.
 - 21 • The change in focus of the Research Development and Demonstration program
22 from renewable generation research to emerging technologies research and
23 productivity improving technologies. As well as negotiation of external contracts
24 for research services to allow for a broader choice of vendors with the expectation
25 to realize improvements in pricing, service quality and timeliness.
- 26

27 The forecast for 2018 test year is also below the previous year's Board-approved
28 amounts. During the customer engagement process, Hydro One's customers consistently

Witness: Lyla Garzouzi

1 prioritized low cost and wanted Hydro One to do its best to limit increases in rates while
2 maintaining reliability. These customer preferences have guided the development of the
3 proposed Development OM&A investments in 2018. The proposed Development OM&A
4 investment plan is designed to keep rate impacts low, while providing reliability
5 consistent with customer expectations.

6 7 **3. TEST YEAR FORECAST**

8
9 A summary of Hydro One's test year Sustaining OM&A investments are described herein
10 for each of the five categories.

11 12 **3.1 ENGINEERING AND TECHNICAL STUDIES**

13
14 The Engineering and Technical Studies program involves the gathering and analysis of
15 system data to identify capability and reinforcement needs. This program also sustains
16 and supports the customized tools that are used to perform various technical studies.

17
18 Distribution system data must be routinely collected to ensure that up-to-date and
19 accurate information on the operating characteristics of the distribution system is
20 available. The data collected is used to create models and conduct various studies to
21 assess the adequacy of the distribution system to meet system requirements and customer
22 demand to ensure the reliable operation of the electrical system. Load flow analyses and
23 over-current protection studies are conducted on a six-year cycle to ensure that the Hydro
24 One Distribution system is compliant with the Distribution System Code and associated
25 supply standards (e.g., voltages maintained within acceptable limits). These studies are
26 also needed to minimize line losses and mitigate safety risks on the system. Minor
27 impact studies on components of the system, system impact studies and short circuit

1 studies to facilitate customer connections or upgrades are also performed on an as-needed
2 basis.

3
4 These studies are critical to effective management of the distribution system and are
5 required to support capital investment decisions – both planned (i.e., system
6 modifications, protection coordination) and unplanned (i.e., new connections, power
7 quality complaints) as documented in Exhibit B1, Tab 1, Schedule 1 the Distribution
8 System Plan, Section 3.8. These studies also ensure Hydro One can effectively analyze
9 the needs of the system to meet customer’s reliability and service quality requirements
10 and ensure continued performance of the distribution system by mitigating the risks of:
11 electrically overloading system assets that can result in equipment damage or lead to
12 higher line losses, voltage degradation, increased frequency of outages, and increased
13 outage duration.

14
15 Hydro One develops investment levels based on forecast volumes and costs using
16 historical volumes, unit costs, and future anticipated needs. The Engineering and
17 Technical Studies proposed spending for the 2018 test year is about a 55% decrease
18 relative to this program’s 2017 bridge year forecast expenditures. This decrease
19 corresponds to the planned modernization of the distribution system with real time
20 monitoring capability, which will decrease the funding requirement for the collection of
21 feeder loading data over time. The real time monitoring capability will promote planning
22 efficiency by allowing the system information to be available at any time.

23
24 **3.2 DISTRIBUTED GENERATION CONNECTIONS**

25
26 The Distributed Generation Connections program addresses the study, coordination,
27 project estimating, and power quality monitoring required for the connection of
28 distributed generation customers. Hydro One’s investment plans are based on Ministry

Witness: Lyla Garzouzi

1 of Energy directives on distributed generation facilities and the Independent Electricity
2 System Operator feed-in-tariff and renewable energy procurement programs. The
3 distributed generation connection forecast for 2018 is 701 projects, as outlined in Exhibit
4 B1, Tab 1, Schedule 1 the Distribution System Plan, Section 3.5.2.

5
6 This program will ensure the reliable connection of these distribution generators through
7 the:

- 8
- 9 • Development of preliminary cost estimates with an itemized estimate for the
10 overall connection;
 - 11 • Investigation of power quality through data collection and analysis at the point of
12 connection and along the Hydro One distribution system surrounding the
13 distributed generator, on a demand basis;
 - 14 • Ability to monitor power quality for all distributed generators larger than 250 kW,
15 on an ongoing basis. The collection and storage of this data is required to
16 proactively monitor system performance to aid in identifying potential issues and
17 problems early on in order to maintain power quality on the Hydro One
18 distribution system;
 - 19 • Development of connection impact assessment reports that identify upgrades, if
20 any, required to the system to enable distributed generation connections;
 - 21 • Execution of system impact assessment applications that analyze the impact on
22 the system to connect the generator, as well as the needs of the system to meet
23 generator requirements; and
 - 24 • Co-ordination of the connection to the distribution system.
- 25

26 This work is required in order to comply with Hydro One's distribution license
27 requirements to connect generators meeting the criteria identified in the Distribution
28 System Code.

Witness: Lyla Garzouzi

1 Hydro One develops investment levels based on forecast volumes and costs using
2 historical volumes, unit costs, and future anticipated needs. The Distributed Generation
3 Connections proposed spending for the 2018 test year is about an 8% decrease relative to
4 this program's 2017 bridge year forecast expenditures due to lower forecast generation
5 connection requests.

6 7 **3.3 DISTRIBUTION STANDARDS PROGRAM**

8
9 The Distribution Standards Program supports the planning, design, installation,
10 operations, and maintenance of Hydro One's distribution system by maintaining and
11 developing new distribution technical standards for power system assets such as stations,
12 transformers, lines, and other distribution equipment.

13
14 Hydro One's distribution technical standards define suitable equipment and provide
15 consistent design approaches. This ensures clear direction is in place for field employees
16 to conduct work procedures in order to safe-guard electric utility employees and the
17 public where electrical supplies are installed, operated and maintained. The use of
18 repeatable and consistent designs provide alternatives for resourcing work internally or
19 externally, standardize maintenance plan and maintenance approach to avoid any
20 additional cost incurred due to different variations of designs, and cost savings from bulk
21 purchasing using standardized technical specifications.

22
23 Standards also incorporate Company policies and requirements to ensure compliance
24 with regulations such as the Electrical Distribution Safety (O.Reg. 22/04) and the
25 Electrical Safety Code (O.Reg. 164/99). Hydro One Distribution monitors and influences
26 emerging industry standards and requirements for new standards mainly through
27 participation in Canadian Standards Association working groups.

Witness: Lyla Garzouzi

1 Hydro One develops investment levels based on forecast volumes and costs using
2 historical volumes, unit costs, and future anticipated needs. The Distribution Standards
3 program proposed spending for the 2018 test year is in line with the 2017 bridge year
4 forecast expenditure.

6 **3.4 RESEARCH DEVELOPMENT AND DEMONSTRATION**

7
8 The corporate Research, Development and Demonstration (“RD&D”) program is a
9 critical component of Hydro One’s ability to meet its strategic objectives and prepare for
10 the incorporation of new and emerging technologies. The work of RD&D falls into two
11 broad categories:

13 **1) Disruptive technologies**

14 Assessing and investigating the benefits and risks of future-oriented “disruptive”
15 technologies which are new to the industry and present material growth opportunities
16 and/or risks. The main areas of “disruptive” technologies that are a focus of current
17 RD&D efforts are:

- 19 • Energy Storage: The adoption of energy storage is expected to be one the most
20 impactful disruptive technologies affecting utilities over the coming decade due to
21 rapidly declining cost and mass production. Energy storage has potential benefits
22 to utilities in terms of peak load shifting (thereby having a positive effect on
23 deferring asset replacement), frequency regulation (improving power quality for
24 customers), reserve capacity (providing better reliability), and improved voltage
25 support.
- 27 • Microgrids: A microgrid is a group of interconnected loads, generation and
28 storage which can operate as “standalone/isolated” grids or can be utility

1 connected. Microgrids represent a technological challenge, a threat (in terms of
2 loss of customers from the traditional grid space), an opportunity to improve
3 customer reliability and a potential business opportunity. They also offer a
4 potential solution for customer service in hard-to-reach areas such as islands,
5 avoiding costs of long distribution or submarine cable connections.

6

7 • Electric Transportation: A key contributor to energy demand growth in Ontario
8 will be the electrification of transportation. The provincial and federal
9 governments have begun offering funding to promote electric car adoption.
10 Hydro One is actively monitoring developments related to electric vehicles, and
11 participating in a variety of discussion groups and research projects. In addition
12 to electric vehicles (cars), it is expected that other forms of electric transportation
13 will emerge quickly, such as electric buses. If transit authorities in the province
14 decide to deploy a large number of electric buses, significant demands on lines
15 and station assets will result. There is currently an electric bus trial demonstration
16 taking place in Ontario through the Canadian Urban Transportation Research and
17 Innovation Consortium (“CUTRIC”), and Hydro One has been participating.

18

19 **2) Innovative technologies**

20 Investigating better ways of doing current work, with the potential to improve efficiency,
21 health, and safety for ongoing work and maintain the reliability of the distribution
22 system. The main areas of “innovative” technologies that are a focus of current RD&D
23 efforts are:

24

25 • Enhancing Distributed Generation Connectivity: This project will review how to
26 enhance distributed generation connectivity with existing technologies, and
27 emerging smart inverters and energy storage technologies. It will also review
28 modeling and system studies for evaluating current and increased connections.

- 1 • Protection of Meters from Overvoltage: The overall objective of this study is to
2 assess the ability of existing smart meters to withstand temporary overvoltages
3 and provide information on potential failure scenarios. The project will review
4 the type of surge protection devices used to withstand overvoltages; define the
5 type of specific overvoltage testing that should be done by the manufacturer to
6 satisfy overvoltage tolerance requirements, and determine what additional
7 protection circuitry/methodology options might be required to protect smart
8 meters from overvoltages.
9
- 10 • Asset Management Practices: The scope of this study is to determine, through the
11 use of a survey, the current asset management practices used by utilities including
12 how assets are prioritized for replacement, how they define functional
13 requirements for replacements, how they determine asset condition, and
14 maintenance policies and practices in order to determine common practices and
15 areas for improvement or further study.
16
- 17 • Reliability and Resiliency Practices: This project identifies and illustrates
18 noteworthy practices and guidelines used by utilities to achieve service reliability
19 and resiliency goals, and will identify, document and share leading practices for
20 maintaining and improving distribution system reliability as well as system
21 resiliency during major weather events.
22

23 Hydro One conducts much of this RD&D work through partnerships with various
24 industry, academic and government partners such as the Electric Power Research Institute
25 (“EPRI”), the Centre for Energy Advancement through Technological Innovation
26 (“CEATI”), the University of Toronto, and the University of Western Ontario.

1 These RD&D efforts are in full alignment with new and developing governmental
2 initiatives (for example: the Ontario government’s new Climate Change Strategy and the
3 federal government’s support of the Paris Climate Accord). Hydro One develops the
4 investment levels based on prospective project requests. The RD&D program proposed
5 spending for the 2018 test year is in line with the 2017 bridge year forecast expenditure.

6
7 **3.5 CUSTOMER POWER QUALITY PROGRAM**

8
9 Feedback obtained from customer consultations indicated that the majority of power
10 quality (“PQ”) events were voltage sags causing the interruption of customer equipment.
11 It was also evident that there is a need to help customers understand power quality
12 characteristics and the resiliency of their equipment. The customer power quality
13 program is designed to address the quality of delivered power, which can materially
14 impact customer operation and satisfaction. The program includes: expanding the power
15 quality monitoring capability for distribution customers, and providing third-party audits
16 to assist customers to identify ways to improve their equipment’s resiliency to power
17 quality events.

18
19 The PQ monitoring capability expansion is achieved by leveraging customer’s existing
20 retail revenue meter functionality to provide power quality data into Hydro One’s power
21 quality monitoring network. The benefits of this monitoring at customer’s site include:
22 shorten power quality event investigation durations; identification of customer’s load
23 interruption during an event; and identification of the level of customer’s equipment
24 power quality resiliency.

25
26 Third-party audit consists of an onsite inspection of customer’s equipment to identify the
27 power quality resiliency weak links, analysis of available power quality data, and
28 recommendations for mitigating measures to improve equipment’s resiliency to such

Witness: Lyla Garzouzi

1 events. Improving power equipment resiliency reduces the frequency of equipment
2 tripping and any associated production losses for companies.

3

4 Historically, PQ monitoring and investigations were conducted on an ‘after-the-fact’
5 basis and the scope of an investigation was limited to Hydro One equipment only. In
6 2017, Hydro One created a formal PQ program to manage customers’ PQ issues
7 proactively by providing customers with information about PQ events and
8 recommendations to mitigate equipment tripping and production losses. Hydro One
9 develops investment levels based on forecast volumes of customers that will enrol in the
10 PQ monitoring program and customers that require a third-party PQ audit. The proposed
11 spending for the 2018 test year is in line with the 2017 bridge year forecast expenditure.

1 ensure alignment with existing infrastructure and optimize the impact on distribution
2 operations.

3

4 Operations OM&A programs are divided into four categories: Operations; Operations
5 Support; Environment, Health and Safety; and Smart Grid.

6

7 • Operations account for the staff required for real-time and planned distribution
8 operating functions and back office support activities.

9

10 • Operations Support ensures that the various systems, tools and facilities are kept
11 current and functional. This includes the accounting and support of processes,
12 activities and functions.

13

14 • Environment, Health and Safety funds initiatives required to support environmental,
15 health and safety activities and corporate health and safety objectives.

16

17 • The Smart Grid Program will fund the maintenance and support of the smart grid,
18 associated computer tools, as well as additional staff to leverage the new smart grid
19 business capabilities and opportunities.

20

21 Details regarding the programs underpinning each of the four categories can be found in
22 the Sections 3 and 4 below. Funding levels for each of the programs are illustrated in
23 Table 1.

1

Table 1: Summary of Operations OM&A (\$ Millions)

Description	Historic					Bridge		Test
	2014	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Operations	17.7	18.1	16.9	18.1	17.1	18.4	17.1	18.5
Operations Support	4.6	4.4	5.4	5.1	5.4	4.9	5.5	4.9
Environment, Health and Safety	1.4	1.5	2.7	1.7	2.8	2.0	2.6	1.8
Smart Grid*	5.9	3.5	11.0	4.6	14.1	8.2	12.4	11.5
Total*	29.5	27.6	35.8	29.5	39.4	33.4	37.5	36.7

2 *Rounding Errors account for up to \$0.1M in variance

3

4 **2. VARIANCE EXPLANATION**

5

6 • The increase in Operations expenditure in 2015 to \$18.1M, over the OEB-approved
 7 amount of \$16.9M, was due to the inclusion of a shift premium for control room staff,
 8 collective agreement obligations, and the transfer of three employees from Power
 9 System IT to Network Operating. The changes in 2015 were maintained in 2016, and
 10 now form the new baseline. This pattern will also be maintained through the bridge
 11 and test years. Operations costs from the bridge year to the end of the test period are
 12 expected to grow at a compound annual rate of 1.0%.

13

14 • Actual and forecast Operations Support expenditures are below OEB-approved
 15 amounts in 2015 and 2016. Hydro One considers these reductions sustainable and has
 16 planned for expenditures during the test years below the historic OEB-approved
 17 levels. This trend is due to program re-assessments and subsequent reductions to
 18 program expenditures. These reductions were directly related to the use of data based
 19 on historical trends, the current advantages and efficiency of the geographical
 20 information system, and distribution operating maps and diagrams.

Witness: Tom Irvine

1 • Environment, Health and Safety increases from historic to bridge and test years were
2 due to ongoing audit requirements to maintain OHSAS 18001 (Occupational Health
3 & Safety Management System) certification (new audit contract anticipated in 2019),
4 conducting the Safety System Evaluation every two years (as part of Hydro One’s
5 Journey to Zero), Hazard Hamlet public safety program (visits to schools, fall fairs
6 and community events), increased requirements for eLearning packages, and updates
7 to the Protection and Control Training Laboratory.

8
9 • Smart Grid expenditures for 2015 to 2017 are trending below OEB-approved values
10 as the rollout of the Distribution Management System upgrade was delayed in favour
11 of the next version of the application. This delayed the requirement for sustainment
12 activities of the Distribution Management System and reduced the funding
13 requirements. The Distribution Management System Upgrade Project is currently in
14 flight and is expected to be completed in 2018.

15
16 **3. DISCUSSION**

17
18 Operations on the Distribution System are carried out at the OGCC. The OGCC is a
19 shared facility for the operation of the distribution and transmission systems. Back-up
20 operating facilities are located at a separate site to mitigate contingencies in the event the
21 OGCC or its computer systems become unavailable. The Distribution Operations
22 Management Centre (“DOMC”) was integrated into the OGCC in 2003. It was
23 consolidated with Hydro One Transmission’s real-time operations in 2004.

24
25 The cost assigned to Hydro One Distribution for Operations and Operations Support at
26 the OGCC, and Environment, Health and Safety are based on the approach summarized
27 in Exhibit C1, Tab 4, Schedule 1.

1 Operations OM&A require and are facilitated by Information Technology (IT) tools,
 2 systems and infrastructure such as those set out in Table 2.

3
 4

Table 2: Information Technology Tools

System:	Description:
Outage Response Management System (ORMS)	A Distribution Outage Management Centre tool used to automatically analyze trouble calls from the Customer Call Centre. This aids in prediction of the problem location and estimates the number of customers affected by that problem, including outages and other emergencies. This information is then used to facilitate optimal dispatch of field crews.
Integrated Voice Communication and Telephony (IVCT)	Provides voice communication management between the control centres, the IESO, Hydro One field staff, connected customers, and emergency services and includes the Interactive Voice Response (IVR) outage communication tool used to manage incoming customer calls for status of outages.
Provincial Mobile Radio System	Used by operators at the OGCC and the Field Operations Centres to maintain continuous contact with field crews.
Wireless Telecom System	Used to send and receive Supervisory, Control and Data Acquisition (SCADA) signals with smart grid devices.
Distribution Management System (DMS)	This system monitors and controls Distribution System assets by employing advanced applications, such as fault location, and channels that information back to the control room. Operators are then able to make informed operating decisions. This provides a platform for Hydro One to manage its smart grid devices.
Network Outage Management System (NOMS)	The outage management tool that is used for planning, scheduling, assessing and executing equipment outages.
Utility Work Protection Code (UWPC)	This program contains the necessary information and tools to support the development of the application, processing, and logging of Work Protection.
Electronic Logging	System of record for control room activities.
OGCC Weather System	This tool provides real-time weather information regarding storm systems, icing conditions and lightning activity to anticipate probable unplanned interruptions.

Witness: Tom Irvine

System:	Description:
Control Room Wallboards and Displays	Display real-time information provided by OGCC systems and tools in the control room.
Media Notifications	To provide local media and civic authorities with electronic notifications regarding unplanned outage events and restoration efforts. This ability is especially critical during storms and other weather-related events.

1

2 **4. TEST YEAR FORECAST**

3

4 **4.1 OPERATIONS**

5

6 Specific Operations functions include managing planned and unplanned outages,
7 coordinating emergency response and monitoring system performance. These activities
8 are described in greater detail below:

9

10 **Management and Implementation of Planned Outages:**

11 Planned outages on the Distribution System are managed from the control room. These
12 outages would typically account for 5% to 15% of the duration of all Hydro One
13 Distribution customer outages. Applications for planned outages are coordinated to
14 capture efficiencies and mitigate impacts on customers. This involves:

15

- 16 • Assessing all connected electrical equipment and devices that would be included in
17 outage planning to determine appropriate limits and control actions;
- 18 • Identifying and notifying customers of upcoming outages through means such as the
19 auto-dialer, phone, fax, newspapers, flyers, radio, door-to-door visits, and providing
20 network outage updates to customers via Hydro One's mobile applications;

Witness: Tom Irvine

- 1 • For planned outages, Hydro One considers and addresses customer concerns
2 regarding outage times and dates. Where possible, planned outages are rescheduled.
3 In other instances, the work scope is modified to restrict the outage to realize better
4 arrangements ; and
- 5 • Ensuring that all established safety procedures and guidelines are followed during
6 outage work activities to ensure the safety of Hydro One staff, customers and the
7 public.

8
9 To maintain performance, Hydro One will continue bundling planned equipment outages.
10 This initiative will be further advanced by improving equipment bundling functionality
11 within the Network Outage Management System (“NOMS”). This will enable better
12 identification of items of equipment that may be bundled. In 2016, Hydro One
13 implemented an operational effectiveness exercise to better manage planned outages by
14 focusing on an improved health measure. This will improve System Average Interruption
15 Duration Index (“SAIDI”) as a result of the expected reduction in unplanned outages.
16 Bundling outages has resulted in an ability to measure total number of planned outages
17 when matched to staff available to perform the work. Hydro One measures bundled
18 outages as a percentage of the total number of planned outages to better manage and
19 monitor planned outages and to improve productivity and customer satisfaction.

20
21 **Response and Management of Unplanned Outages:**

22 Equipment failures, tree and vegetation contact, road accidents, severe weather and
23 lightning result in service interruptions to the Distribution System that cause unplanned
24 outages. Unplanned outages typically account for 85% to 95% of Hydro One total
25 customer outage durations on the Distribution System. Restoration efforts depend on field
26 crews locating the fault condition and performing the associated repairs. Affected
27 customers are also kept advised of the status of interruption through the IVR system. This
28 way, customers are provided with updates on job status from crews that are actively

Witness: Tom Irvine

1 engaged in work. An estimated time for restoration of supply is also provided. Customers
2 are actively encouraged to register online through the Hydro One My Account Login to
3 receive outage notification information, outage updates and expected restoration times
4 through text messages and emails. Different suites and options are available so customers
5 can choose from the array of information that they prefer.

6
7 In addition, Hydro One has provided and made available a free, downloadable mobile
8 outage tracking application that is compatible with Android, BlackBerry and iPhone,
9 smartphone and tablet devices. This allows customers to identify a specific power outage
10 and the affected areas to determine whether these were planned or emergencies. The crew
11 status, estimated time of power restoration, cause (if known) and the number of
12 customers affected anywhere within Hydro One service area are available through this
13 program. As of September 2016, Hydro One's mobile outage application was
14 downloaded more than 340,000 times.

15
16 Hydro One learned that 95% of customers surveyed, who had also downloaded the
17 application, described it as "somewhat" or "very easy to use". Use of the application
18 among surveyed customers grew from 7% to 19% for the period August 2015 to March
19 2016. Customers surveyed during this period indicated that it was their main information
20 source for major event outages. There was a concurrent reduction from 44% to 33% in
21 direct telephone calls from customers to report outages over the same time period.

22
23 The Hydro One Distribution Storm Surveys program began in 2015 and includes
24 customer outage application questions. Over the 2018 to 2022 test years, customer
25 specific feedback will be instrumental in improving Hydro One's understanding of
26 customer expectations. This will include implementing the necessary changes to improve
27 customer communication channels and information related to outages (i.e., restoration

1 times, affected areas, cause of interruption and notifications for unplanned outages),
2 processes, and tools, as determined by customer needs and preferences.

3
4 Hydro One has implemented a robust call-screening process at the Distribution Outage
5 Management Centre (“DOMC”) to assist in incident response and determine if reported
6 outages are from customer-owned equipment failures or Hydro One’s system. This
7 identification is made prior to dispatching crews. When a customer reports a problem
8 that is caused by the failure of their own equipment, Hydro One can realize operational
9 savings by not dispatching field crews to the site of this reported outage. In these
10 circumstances, the customer is informed that the problem was not on the Hydro One
11 system and advised to engage their local electrician to resolve the problem. This has, on
12 many occasions, been done only after crews have responded to such calls and determined
13 that there were no issues on the Hydro One system.

14
15 Hydro One continues to review technologies, processes, and best practices to more
16 effectively serve customers to align customer needs and preference, the condition of the
17 system’s assets and rate impacts. Improving real-time communication with customers and
18 increasing distribution automation, automatic fault locates and isolation help minimize
19 restoration times, outage duration, and operating costs, which are distribution system
20 outcomes that customers value.

21
22 **Emergency Response Coordination:**

23 The Hydro One Distribution Emergency Response System is activated for widespread
24 interruptions due to weather impacts. This response varies according to the effect of the
25 weather event, the locations where problems occur, and number of customers affected
26 together with the expected time to restore service. During the event, DOMC Operators
27 dispatch crews based on volume and severity of power-off calls until the command
28 system is switched to Field Operations Centre Dispatch mode. At the Field Operations

Witness: Tom Irvine

1 Centres, supervisors dispatch crews at a local level and manage emergency response with
2 firsthand knowledge of the actual problems and more efficient allocation of resources.
3 For larger emergency conditions, which may be more widespread, Incident Command
4 Centres (“ICCs”) and Forward Command Posts (“FCPs”) are activated to manage Hydro
5 One’s response with the local area command arrangements. The DOMC Operators would
6 assist with media notifications to inform and update customers, municipalities and other
7 agencies of outage progress and other Hydro One response updates.

8
9 **System Performance Monitoring and Reporting:**

10 Information on System Reliability is used to identify issues and challenges. This is then
11 reviewed and appropriate action to support sustainment and subsequent developmental
12 decisions are addressed. A report on system performance is also made to the OEB. Data
13 required to calculate the Hydro One accepted standard reliability indices, such as System
14 Average Interruption Duration Index (SAIDI), System Average Interruption Frequency
15 Index (SAIFI) and Customer Average Interruption Duration Index (CAIDI), is collected
16 at the OGCC.

17
18 Outage inquiries from customers are reviewed and the data extracted from the various
19 applications and systems to trend emerging performance issues and to establish additional
20 plans that may be required. Data gathering and monitoring continue to identify
21 opportunities to further improve system performance, while maintaining focus on
22 reliability and reducing customer and system interruptions. Network Operating,
23 specifically, the Customer Operating Support group has increased Hydro One’s focus on
24 communication with customers, providing system statistics that will allow customers to
25 make more informed decisions on investments, outage planning and operations.

1 **Operations Summary:**

2 Continued funding of these investments will allow Hydro One Operations to deliver its
3 core functions of managing the real time Distribution System, which includes scheduling
4 and overseeing planned outages, reacting to unplanned outages, coordinating emergency
5 response, monitoring system performance, and communicating with stakeholders.
6 Through these, Hydro One can continue to deliver cost-effective service to customers.
7 Over the five-year test period, the annual expenditure for Operations costs are forecast to
8 increase by \$0.9 million dollars representing a compound annual growth rate of 1.0%.
9 Cost variability from year-to-year can be affected by factors such as storm activity,
10 volume of planned outage requests, and unplanned interruptions.

11
12 **4.2 OPERATIONS SUPPORT**

13
14 As highlighted under the Discussion Section of this Exhibit, Hydro One Operations relies
15 on a number of systems and associated technical competencies, tools, and equipment to
16 manage and operate the Distribution System and a fully online and real-time capable
17 Backup Control Centre (“BUCC”). Operations Support funding for these systems and
18 tools include expenditures for ongoing software updates and hardware upgrades to
19 provide additional monitoring and control (“DMS”), support costs for ORMS, updates to
20 the Distribution Operating maps and station diagrams, emergency preparedness, and the
21 allocated portion of the maintenance of operating facilities at the OGCC and the BUCC.

22
23 Distributed Generation connections are connected to the Distribution System and will
24 continue to significantly influence system operation and requirements for ongoing
25 support (e.g. changes to station and operating diagrams, data collection activities and
26 updates to the DMS network model). Operations Support investment programs are
27 described in detail below.

Witness: Tom Irvine

1 **Operating Power System IT Support (PSIT):**

2 This investment provides funding to maintain support for operating computer tools and
3 systems related to the operation of Hydro One Distribution assets. Investment categories
4 include system applications, data services, architecture and infrastructure management,
5 voice communication systems, IT building facilities, system control support, and program
6 management. PSIT ensures continuity and availability of systems through required
7 support, maintaining the viability of systems for operational response, dispatch,
8 communication, and outage planning. Proper lifecycle sustainment practices will mitigate
9 costly extended support, break-fix emergency repairs, and impactful outages.

10
11 **Integrated Voice Communication Telephony (IVCT) Support:**

12 This investment funds the maintenance program for the Control Room's voice
13 communication system and provides for essential expert telecommunications support.
14 The integrated voice system is the OGCC's method of communicating with customers
15 and field crews involved in the coordination and operation of the Distribution System.
16 Customers surveyed on Hydro One's Interactive Voice Response ("IVR") Outage line
17 indicated that they were satisfied with improvements to the IVR's ease of use of the
18 automated menu, amount of information provided, accuracy of information and the
19 system providing information correctly the first time. The IVR provides integrated access
20 and intelligent call routing to provide efficient management of hundreds of control room
21 calls each day. Hydro One collects customer feedback regarding the IVCT and will
22 endeavor to accommodate changes and provide needed functionality to suit customer
23 preferences.

24
25 **OGCC Data Collection & Information Updates:**

26 This investment funds the demand category work required to update the Distribution
27 System Connectivity Information and to gather accurate field information describing
28 equipment additions and changes on the Distribution System. Accurate and timely data

Witness: Tom Irvine

1 collection is required to ensure safe and reliable operation and management. Field data
2 updates ensure that the ORMS and DMS accurately represent the Distribution System.
3 Accurate information is also required to communicate the most up to date information to
4 customers. This program was re-baselined to meet historical and seasonal demand and
5 has since been reduced going forward by 50% of the 2015 budget.

6
7 **Operating Emergency Preparedness – Lines:**

8 This investment funds the annual work required of Provincial Lines to perform
9 emergency generator testing, emergency communications testing, annual reviews of
10 emergency preparedness procedures and the execution of emergency drills. Emergency
11 preparedness is the means by which regulatory requirements are maintained for business
12 and operational continuity and to minimize customer impact in the event of a failure or
13 incident.

14
15 **Field Verification of Distribution Station (DS) Operating Diagrams:**

16 Funds for this investment verify the accuracy of DS operating diagrams. An annual work
17 program is required to verify the continued accuracy of the operating diagrams and to
18 create diagrams for any newly installed Distribution Station or system element. These
19 diagrams are used by the Control Room and field staff to create UWPC Work Protections
20 and Supporting Guarantees for both internal and external staff to establish and maintain
21 safe working conditions. In 2016, this program was reduced by 50% as this program was
22 re-baselined to meet seasonal and historical demand.

23
24 **Distribution Operating Maps (DOM) Maintenance & DS Operating Diagrams:**

25 This investment funds the demand category work required to maintain, update and print
26 Distribution Operating Diagrams and Maps. In order to improve operational process,
27 Hydro One has moved from a CADD based map system to a Geographic Information
28 System (“GIS”), reducing the amount of effort required to record updates in response to

Witness: Tom Irvine

1 changes on the Distribution System. This has resulted in savings to the customer as
2 funding for the program has been reduced annually by \$0.6M, whilst maintaining data
3 accuracy. In addition, Hydro One is reviewing its ability to print maps locally, which may
4 further reduce spending over the test years.

5
6 **Distribution Storm Management Customer Satisfaction Surveys:**

7 This investment is required for the DOMC satisfaction surveys program, which is critical
8 for obtaining Hydro One customer feedback on measuring planned, unplanned and storm
9 event outage management performance. This data has been assessed and has shown a
10 positive increase in customer satisfaction with the IVR, Hydro One outage application
11 and communication for planned and unplanned outages. The storm surveys program will
12 continue to leverage customer specific feedback to further improve Hydro One services,
13 visibility and communication.

14
15 **Operations Support Summary:**

16 This funding will ensure the required maintenance and support of the Distribution
17 Operations systems and tools required to execute core functions. Over the five-year test
18 period, the annual expenditure for Operations Support will be at or below the 2017 OEB-
19 approved expenditure. This forecast shows Hydro One's commitment to finding
20 efficiencies and increasing productivity before asking customers to pay more.

21
22 **4.3 ENVIRONMENT, HEALTH AND SAFETY**

23
24 The Environment, Health and Safety programs funded through "Greener Choices" and
25 "Environment, Health and Safety" span both Transmission and Distribution.

26
27 These drivers support environment, health and safety programs that are required to meet
28 legal obligations and ensure a level of due diligence commensurate with the size and

Witness: Tom Irvine

1 scale of Hydro One. In addition, these programs fund activities to meet the corporate
2 Environment and Safety performance targets.

3
4 **Greener Choices** programs support the Corporate Environment Policy by: (i) promoting
5 employee awareness on how environmental impacts can be reduced; (ii) creating a
6 culture of conservation within Hydro One; (iii) helping to make its facilities more energy
7 efficient and waste conscious; and (iv) reducing emissions from the company's fleet. In
8 2015, Hydro One received the Canadian Electricity Association Sustainable Electricity
9 Company designation for its effort in this area.

10
11 **Environment, Health and Safety** activities (which support the Corporate Health and
12 Safety Policy and Public Safety Policy) funded by this investment include:

- 13
- 14 • Occupational and non-occupational injury/illness support for medical assessments
15 of workplace injuries and illnesses (occupational); audiometric testing for noise
16 exposed employees (testing is the primary method to measure hearing loss, the
17 effectiveness of engineering/administrative controls and the proper use of hearing
18 protection devices). Hearing tests are vital as they identify the beginning of
19 noise-induced hearing loss long before an employee will notice it; the Care
20 Management Program which provides the right care at the right time for Hydro
21 One employees who suffer a major medical absence of five days or more (non-
22 occupational); and pandemic planning (occupational and non-occupational);
 - 23
 - 24 • Hazardous Materials Management which identifies hazardous materials and
25 establishes a protocol for on-going management of these materials in the
26 workplace as per the Occupational Health and Safety Act (i.e. designated
27 substances such as asbestos, lead and mercury). Formal programs have been

Witness: Tom Irvine

1 established for managing asbestos and lead-containing materials in Hydro One
2 workplaces;

3

4 • Public safety which includes school presentations by Hydro One Lines employees
5 using Hazard Hamlet models, participation in community events, fall fairs, media
6 campaigns and the development and production of educational materials to inform
7 and educate members of the public about the hazards associated with Hydro One
8 assets;

9

10 • Proactive forums to assist the health and safety of employees by raising awareness
11 and providing education about health, wellness and lifestyle issues, as well as
12 employee health screening clinics and flu shot clinics;

13

14 • E-learning modules continue to be developed and refreshed to enable employees
15 to be trained remotely allowing for timely and immediate delivery of required
16 training. E-learning contributes to employee competence and reduces delivery
17 costs;

18

19 • Development and casting implementation of new training media to improve the
20 effectiveness of trades training. Approaches include: web, video streaming,
21 mobile learning, simulation, and knowledge-transfer technologies. This is used in
22 trades and technical training and will contribute to ensuring future skilled labour
23 for the maintenance and operation of Hydro One assets;

24

25 • The Hydro One Journey to Zero initiative supports the corporate goal of reaching
26 world class safety performance by 2019. This initiative began in 2010 and has
27 instilled a culture of continuous improvement in Hydro One's health and safety
28 performance with the ultimate objective of achieving an injury-free workplace.

1 Part of the program’s success can be attributed to the formation of cross-
2 functional teams to identify specific functional areas impacting safety
3 performance and the selection of a remedial or educational course of action for
4 implementation that includes establishing corporate goals to measure success;

5

6 • Maintenance of Hydro One OHSAS 18001 Registration includes ongoing system
7 and field audits to ensure Hydro One’s Health & Safety Management System
8 (“HSEMS”) is meeting the OHSAS standard and closing any identified gaps. The
9 HSEMS was first registered in 2013 and external audits of the system have shown
10 steady reduction in the number of audit findings. The HSEMS demonstrates how
11 Hydro One implements the Corporate Health and Safety, Environment and Public
12 Safety Policies;

13

14 • Ice and Water rescue training for staff who work on and around water and ice so
15 that they are prepared for the hazards in these environments; and

16

17 • The Species at Risk program ensures compliance with revised federal and
18 provincial regulations that requires protection of migratory birds, endangered
19 species, and protection of their habitat. Hydro One ensures that it meets the
20 regulations by developing and maintaining special treatment requirements for
21 areas containing migratory birds and endangered species and developing and
22 implementing a system to effectively relay these requirements to staff responsible
23 for developing work programs.

24

25 **Environmental Health & Safety Summary:**

26 Environment, health and safety costs remain stable from historic to bridge and test years.

Witness: Tom Irvine

1 **4.4 SMART GRID**

2
3 Hydro One has been making investments in Smart Grid since the Green Energy Plan filed
4 in EB-2009-0096 was approved by the OEB. Hydro One continues the process of
5 modernizing its Distribution System, primarily, through the growth of its set of smart grid
6 assets. These smart grid devices and systems will serve customers by improving
7 reliability and enabling management of an evolving Distribution System. This funding
8 will be for operating, maintaining and supporting these assets as part of its normal utility
9 operations.

10
11 **Operations for Smart Grid:**

12 This funding provides for staff to operate the smart grid assets to support proactive
13 distribution operations. As the Distribution System is modernized through the
14 deployment of new smart grid assets in the control room and in the field, distribution
15 operations can become more proactive. Hydro One will be able to remotely monitor and
16 control parts of the Distribution System and respond to operational issues immediately, as
17 they arise, without having to wait for customers to call in an outage.

18
19 **Operations Support for Smart Grid:**

20 This funding provides for the maintenance and support of smart grid systems. Hydro One
21 has already installed a base of new smart grid assets including a Distribution
22 Management System, an analytics system, and a tool to leverage smart meters in
23 operations. These systems will also require support and maintenance. The investment will
24 provide:

- 25
26
 - staff to support the computer infrastructure and software systems;
 - 27 • staff to maintain the Distribution Network Model;
 - 28 • software maintenance;

Witness: Tom Irvine

- 1 • licensing fees and other costs; and
- 2 • staff to maintain installed smart grid field devices.

3

4 **Telecommunications Support:**

5 This funding provides for the third-party telecommunication costs required to maintain
6 communication with smart grid assets deployed on the Distribution System. This funding
7 will enable Supervisory Control and Data Acquisition (“SCADA”) for Operations to
8 control and monitor smart grid assets.

9

10 **Smart Grid Summary**

11 As per the Board’s direction in the Renewed Regulatory Framework (October 2012),
12 Hydro One has integrated its smart grid investment into its normal investment plans.
13 Hydro One will continue funding Operations OM&A for Smart Grid to operate and
14 sustain its growing set of smart grid investments. There will also be an increase in
15 funding over the period for additional telecommunication systems and maintenance of a
16 growing fleet of smart grid assets.

1 **CUSTOMER CARE OM&A**

2
3 **1. SUMMARY OF CUSTOMER CARE OM&A**

4
5 Hydro One's distribution system is among the largest in North America, providing
6 approximately 1.3 million customers in many of Ontario's most hard to reach locales
7 with a safe, reliable connection to the electricity they need to live their lives. At Hydro
8 One, connection is about more than just wires and poles – it is about understanding
9 customer needs and providing solutions that meet those needs. Hydro One's Customer
10 Care OM&A funds customer-facing activities that serve the needs of its customers, which
11 include residential, small business, commercial, and industrial customers.

12
13 Table 1 details the funding that allows Hydro One to: (a) respond to customer inquiries
14 when they contact the call center; (b) obtain meter readings; (c) issue timely and accurate
15 bills; (d) process customer payments; (e) manage a collections program to recover
16 revenue; and (f) provide financial assistance to low-income customers through the
17 Ontario Energy Board's Low-Income Energy Assistance Program (LEAP).

18
19 Through its interactions with customers, Hydro One aims to educate customers about
20 their bill, explain electricity prices and smart meters, provide energy usage analytics, and
21 offer social service assistance to low-income customers. Successful execution of these
22 primary activities leads to meaningful improvements in customer satisfaction and
23 customer perception. Hydro One will monitor several key measures, as outlined in Table
24 10, in order to continually shape its vision of an enhanced customer experience.

1 Table 1 consolidates information previously provided in Hydro One’s last distribution
2 rate application (EB-2013-0416) in Tables 1 to 3 of Exhibit C1, Tab 2, Schedule 5, as
3 described in the notes to Table 1.

4

5 **Table 1: Summary of Customer Care OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Call Center Operations ⁽¹⁾	79.5	56.4	38.5	41.9	38.8	43.8	39.9	44.5
Meter Reading	23.5	18.7	14.9	18.5	14.3	19.4	14.0	19.2
Third Party Support ⁽²⁾	13.6	13.2	12.2	13.8	12.5	14.0	12.9	14.6
Field Support	4.9	12.0	7.1	15.7	7.3	10.0	7.5	8.1
Regulatory Compliance (LEAP)	2.2	4.2	2.1	4.1	2.2	4.3	2.3	4.3
Net Bad Debt	66.8	29.5	15.5	16.0	15.4	21.1	14.4	21.1
Customer Care Staffing ⁽³⁾	18.9	21.5	21.3	19.3	20.4	20.1	20.6	19.8
Total Customer Care OM&A ⁽⁴⁾	209.3	155.4	111.6	129.3	110.9	132.6	111.6	131.6

6

7 ⁽¹⁾ Previously referred to as “Customer Service Operations”, “Customer Operations” and “Settlements”.

8

8 ⁽²⁾ Previously referred to as “Service Support” and “Service Enhancements”.

9

9 ⁽³⁾ Previously referred to “Customer Service Management”, “Customer Business Relations”, “Customer Care Management”, “Customer Experience”, and “Conservation and Demand Management”.

10

11 ⁽⁴⁾ Costs associated with the Smart Grid Pilot are now included in the Exhibit C1, Tab 1, Schedule 4
12 (Operations OM&A) Exhibit.

1 **2. VARIANCE EXPLANATION**

2
 3 **2.1 CALL CENTER OPERATIONS**

4
 5 **Table 2: Call Centre Operations OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Call Center Operations	79.5	56.4	38.5	41.9	38.8	43.8	39.9	44.5

6
 7 Call Centre Operations reflect Hydro One’s costs under its outsourcing agreement with
 8 Inergi LP to deliver customer-facing services, including: call center services, billing,
 9 collections, settlements, and distributed generation services to Hydro One customers.
 10 Customers contact Hydro One in several ways, including telephone, interactive voice
 11 recognition (IVR), letters, fax, email, and through the company's website. In 2016, the
 12 call center handled over 2.7 million calls from customers and responded to over 63,000
 13 emails.

14
 15 In 2014 and 2015, actual expenditures were higher than OEB-approved levels due to the
 16 increased costs associated with the implementation of Hydro One’s Customer
 17 Information System (“CIS”) in May 2013 and the following support period.

18
 19 Hydro One also initiated a competitive Request for Proposal in 2014 in preparation for
 20 the expiration of the outsourcing agreement. As a result, actual expenditure was higher
 21 than OEB-approved levels in 2015 due to the market price of the new outsourcing
 22 contract, higher than expected transition costs associated with the new outsourcing
 23 contract, and the elimination of a sub-contractor.

Witness: Imran Merali

1 In 2016, spending levels were 8% higher than OEB-approved levels as a result of
 2 improved customer service targets within the call center, new service level guarantees,
 3 and extended hours of operation for certain parts of the call center. As a result,
 4 expenditure will also be higher than OEB-approved levels in 2017 and beyond.
 5 Furthermore, annual expenditure is expected to increase year-over-year due to an
 6 inflation provision in the contract.

7

8 Additional information relating to the Inergi outsourcing arrangement is set out in Exhibit
 9 C1, Tab 5, Schedule 1, including information on the service quality assurances and
 10 governance structure applicable to the arrangement.

11

12 **2.2 METER READING**

13

14 **Table 3: Meter Reading OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Meter Reading	23.5	18.7	14.9	18.5	14.3	19.4	14.0	19.2

15

16 Hydro One has approximately 1.3 million smart meters deployed across the province.
 17 However, approximately 150,000 meters require a manual meter read due to the limited
 18 geographical reach of the Smart Meter Network infrastructure. As a result, this program
 19 supports automated reading of smart meters through the Smart Meter Network
 20 infrastructure and manual meter readings for hard-to-reach customers.

21

22 Meter Reading costs were higher than OEB-approved levels in 2014 and 2015 due to the
 23 implementation of the CIS and the following support period. Forecasted expenditures in
 24 2016 and 2017 are also higher than OEB-approved levels as a result of improved bill
 25 accuracy targets, whereby 98% of bills are issued on actual meter readings.

Witness: Imran Merali

1 Spending in 2017 and 2018 is forecast to be higher than OEB-approved levels as a result
 2 of amendments to the Distribution System Code (“DSC”) (EB-2013-0311), requiring
 3 distributors to install an interval meter on any installation that is forecast to have a
 4 monthly average peak demand during a calendar year of over 50 kW. Expenditures will
 5 decline in 2018 versus 2017 as a result of system enhancements in the field and
 6 improvements to the smart meter network infrastructure.

7
 8 **2.3 THIRD PARTY SUPPORT**

9
 10 **Table 4: Third Party Support OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Third Party Support	13.6	13.2	12.2	13.8	12.5	14.0	12.9	14.6

11
 12 This funding is required for third party services, including: postage services, e-billing
 13 services using Canada Post’s ePost solution, toll-free phone numbers for the call center,
 14 payment processing services, the collection of customer feedback and surveys, and
 15 collection agency costs for outstanding final-billed accounts. The majority of these costs
 16 are dictated by market prices and/or competitive procurement processes.

17
 18 Third Party Support costs were higher than OEB-approved levels in 2015 and 2016 due
 19 to unexpected increases in postage rates and lower than expected uptake in ePost. In
 20 order to mitigate increasing postage costs in 2017 and over the Custom IR term, Hydro
 21 One launched a new e-billing solution at the end of 2016. This new solution also offers
 22 customers more choice and a variety of self-service functionality.

Witness: Imran Merali

2018 test year expenditure is 17% higher than OEB-approved levels in 2016 as a result of increasing postage rates and an amendment to section 2.6.1A of the DSC (EB-2014-0198), which requires that distributors issue bills to non-seasonal residential customers and general service under 50 kW customers on a monthly basis.

2.4 FIELD SUPPORT

Table 5: Field Support OM&A Allocated to Distribution (\$ Millions)

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Field Support	4.9	12.0	7.1	15.7	7.3	10.0	7.5	8.1

Field Support costs fund Customer Care field activities, including disconnection of electricity due to non-payment, reconnection when payment is received, investigation of high bill inquiries, and other services that require an on-site field visit.

In 2014, spending was lower than the approved level since field collections were suspended from May 2013 (when Hydro One implemented its new CIS) to early 2015.

Spending levels in 2015 and 2016 were higher than OEB-approved levels as Hydro One gradually resumed on-site field visits and disconnections. In addition, Hydro One examined all customer-facing policies and practices. Hydro One introduced new customer friendly policies. For example, one such policy mandated that Hydro One deliver a door-hanger to a sub-set of vacant properties prior to disconnection. In addition, as an extension to its annual pause on disconnections, Hydro One launched a Winter Relief Program in 2016. This new initiative helps customers who are experiencing extreme hardship get their electricity service reconnected for the winter. This program is

1 about doing the right thing for Hydro One customers to help get them back on track for
 2 the future.

3
 4 2018 test year expenditure is 49% lower than 2016 expenditure, as it is expected that field
 5 collection volumes will return to normal. In addition, the introduction of remote
 6 disconnect technology in mid-2016 will result in a reduction in field collection
 7 expenditures in 2017 and beyond.

8
 9 **2.5 REGULATORY COMPLIANCE (LEAP)**

10
 11 **Table 6: Regulatory Compliance (LEAP) OM&A Allocated to Distribution**
 12 **(\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Regulatory Compliance (LEAP)	2.2	4.2	2.1	4.1	2.2	4.3	2.3	4.3

13
 14 Hydro One administers and funds approximately \$1.7 million annually to the Low-
 15 Income Energy Assistance Program (LEAP), which provides emergency relief to eligible
 16 low-income customers. This amount represents 0.12% of Hydro One Distribution's
 17 revenue requirement, as mandated by the Ontario Energy Board (EB-2008-0150). The
 18 United Way of Greater Simcoe manages this fund as Hydro One's lead agency.

19
 20 In recent years, the number of low-income customers has increased as customers are
 21 struggling with increasing energy bills. Demand for the program from Hydro One
 22 customers exceeds the OEB's mandate. In 2015 and 2016, Hydro One's contribution to
 23 LEAP was approximately \$2 million more than the OEB's 0.12% revenue requirement.

Witness: Imran Merali

1 In 2017 and beyond, Hydro One anticipates that demand for LEAP funding will continue
2 to increase. As a result, test year expenditure is approximately twice as high as the OEB-
3 approved level. Hydro One plans to contribute additional funding in 2017 and beyond.
4

5 **2.6 NET BAD DEBT**

6

7 **Table 7: Summary of Net Bad Debt OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Net Bad Debt	66.8	29.5	15.5	16.0	15.4	21.1	14.4	21.1

8
9 Hydro One is focused on helping customers stay current with their bills and providing a
10 variety of payment options in order to keep arrears at a minimum. This cost category
11 reflects bad debt expenses, net of recoveries.
12

13 In 2014 and 2015, Net Bad Debt expenses were higher than OEB-approved levels due to
14 the suspension of Hydro One's collections program from May 2013 to early 2016 related
15 to the implementation of CIS.
16

17 Increasing revenues over the term of the Custom IR will result in increased expenditures
18 from 2017 to 2022. Despite increasing revenues, Hydro One is committed to reducing
19 Net Bad Debt as a percentage of revenue from 2017 to 2022. In 2017 and 2018, Net Bad
20 Debt will return closer to historical norms (meaning before Hydro One's recent CIS
21 implementation), adjusted for increased revenue. As a result, 2018 test year expenditure
22 will be higher than OEB-approved levels in 2016.

1 **2.7 CUSTOMER CARE STAFFING**

2
 3 **Table 8: Customer Care Staffing OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Customer Care Staffing	18.9	21.5	21.3	19.3	20.4	20.1	20.6	19.8

4
 5 This expenditure includes labour costs to oversee the Customer Care programs, including
 6 the call center, billing, meter reading, collections, settlements, distributed generation
 7 services, and project delivery and implementation. Since a large portion of services
 8 within the Customer Care department are either outsourced or provided by external
 9 vendors, Customer Care staff also provides strategic direction and oversight of Hydro
 10 One's partners and implements changes. A number of customer care services are also
 11 delivered directly by Hydro One employees, including escalated customer inquiries.

12
 13 Customer Care staffing expenditure increased from 2014 to 2015 as Hydro One focused
 14 on a renewed level of service for customers. Bridge and test year expenditure is lower
 15 than 2016 OEB-approved levels due to efficiencies achieved from headcount reductions
 16 through attrition. Costs are expected to remain relatively constant over the planning
 17 period.

Witness: Imran Merali

1 **3. TEST YEAR FORECAST**

2
3 As outlined in Section 1.3 of the Distribution System Plan provided as Exhibit B1, Tab 1,
4 Schedule 1 (the “DSP”), the top priority of Hydro One Distribution customers is keeping
5 their bills as low as possible. Hydro One is committed to reducing Customer Care
6 OM&A expenditure per customer in the test year and over the term of the Custom IR.
7 Hydro One’s performance against this metric from 2014 to 2018 is set out in Table 9
8 below. Hydro One is striving to strike a balance between increased customer service
9 while maintaining or reducing operational expenditure. In addition to monitoring its unit
10 costs, Hydro One intends to achieve the outcomes described in Section 3.1, Table 10.

11
12 **Table 9: Customer Care OM&A Allocated to Distribution Cost per Customer**

Customer Service	Historic			Bridge	Test
	2014 Actual	2015 Actual	2016 Forecast	2017 Forecast	2018 Forecast
Total OM&A (Million)	\$209.3	\$155.4	\$129.3	\$132.6	\$131.6
Number of Customers (Million)	1.27	1.27	1.28	1.29	1.30
Customer Care OM&A Cost per Customer	\$165	\$122	\$101	\$103	\$101

13
14 **3.1 CUSTOMER FOCUS OUTCOMES**

15
16 As outlined in Exhibit A, Tab 4, Schedule 1, Hydro One is on the cusp of a customer
17 service transformation guided by three strategic pillars – “Easy to Do Business With”,
18 “Always There for Our Customers”, and “Always Connected”. These pillars will have a
19 positive impact on how Hydro One serves its customers.

20
21 Customer Care OM&A funding will allow Hydro One to provide timely and accurate
22 bills consistently across its entire customer base, respond to customer inquiries in a

Witness: Imran Merali

1 timely manner, resolve customer inquiries the first time they contact Hydro One, and
2 improve customer satisfaction at every interaction. During every interaction, Hydro One
3 aims to educate customers about their bills, explain electricity prices and smart meters,
4 provide energy usage analytics, and provide social service assistance for low-income
5 customers.

6
7 Hydro One also provides conservation and demand management programs, which are
8 aimed at reducing customers' individual consumption, providing opportunities to
9 potentially lower a customer's bill, and reducing the overall consumption on the
10 electricity grid. These programs are available for all customers, including residential,
11 commercial, and industrial customers. Since funding for these Independent Electricity
12 System Operator ("IESO") programs is recovered through the Global Adjustment
13 Mechanism, these costs are not included in this Application.

14
15 In 2016, Hydro One also began offering a new customer service model. Customer Care
16 representatives visited communities around the province and with customers face-to-face.
17 The local outreach and presence in the community provides a valuable service in
18 educating customers about their electricity usage and providing them with opportunities
19 to enrol in financial and electricity conservation programs.

20
21 The model allows the Hydro One team to enrol customers in conservation programs,
22 collaborate with community service organizations to help low-income customers, and
23 ensure qualified customers are taking advantage of the Province of Ontario's Ontario
24 Electricity Support Program. Hydro One plans to extend this customer service model
25 more broadly across the province over time.

26
27 Hydro One will monitor the measures outlined in Table 10 and use the results to enhance
28 its vision of the ideal customer experience. In all cases, the 2017 and 2018 targets are

Witness: Imran Merali

1 higher than 2016 results with year-over-year improvements. Additional performance
 2 metrics are discussed in Section 1.4 of the DSP (Performance Measurement).

3
 4

Table 10: Customer Focus Measures

Customer Focus Outcome	Measure	2014	2015	2016 YTD	2017 Target	2018 Target
Timely and Accurate Bills	Billing Accuracy	95%	99%	99%	99%	99%
Easy to Do Business With	Telephone Calls Answered in 30 Seconds	70%	76%	76%	80%	80%
	First Call Resolution	79%	82%	82%	85%	86%
Being There for Customers When They Need Us	Overall Customer Satisfaction	85%	85%	85%	86%	87%
	Handling of Unplanned Outages	75%	76%	75%	76%	77%
Educate and Assist Customers	My Account Customer Satisfaction	75%	78%	79%	81%	83%

5

6 **3.2 OPERATIONAL EFFECTIVENESS OUTCOMES**

7

8 Hydro One is committed to listening to customers, understanding their needs and
 9 preferences, modifying work activities accordingly, and enhancing the customer
 10 experience, as discussed in Exhibit A, Tab 4, Schedule 1. Hydro One is implementing a
 11 number of capital investment initiatives to improve customer satisfaction and address
 12 changing customer needs and expectations. These initiatives are described in more detail
 13 in Section 3.8 of the DSP, specifically Investment Summary Documents GP16 and GP28
 14 to GP33. Several of these capital initiatives are expected to yield Customer Care
 15 benefits, as outlined in Table 11.

1

Table 11: Operational Effectiveness Outcomes

Productivity Initiative	Benefit	Expected Benefits
My Account Self-Service	Hydro One’s enhanced “My Account” self-service website, scheduled to go-live mid-2017, is expected to improve My Account satisfaction, provide a more convenient solution for customers, and increase the number of self-service transactions completed online.	300,000 self-service transactions are expected to be completed online by 2018, up from 90,000 in 2016. In addition, My Account customer satisfaction is expected to increase to 83% over the same time horizon (as outlined in Table 10).
eBilling	Hydro One’s new ebilling solution and high usage alerts, launched December 2016, is expected to increase ebilling penetration, ultimately reducing postage costs.	545,000 customers are expected to sign up for ebilling by 2022, resulting in \$17 million of OM&A savings from 2017 to 2022 due to reduced postage costs.
Bill Redesign	An updated bill format, expected to launch mid-2017, will make it easier for customers to understand their bill and increase their understanding of their electricity consumption.	Customer understanding of how their bill is calculated is expected to increase. This will contribute to Hydro One's overall customer satisfaction target of 87% by 2018 (as outlined in Table 10).
Remote Disconnect	Remote disconnect technology, launched mid-2016, will reduce the number of truck rolls required in the field in order to disconnect customers in arrears and will reconnect customers in a more timely fashion.	Field Support OM&A expenditure is expected to decline by \$3 million annually since less truck rolls will be required.

2

1 **SUMMARY OF COMMON CORPORATE OM&A**

2
3 **1. SUMMARY OF COMMON CORPORATE OM&A**

4
5 Hydro One allocates Common Corporate OM&A costs to its distribution and
6 transmission businesses and to each unregulated accounting segment based on clearly
7 articulated shared functions and services and an established cost allocation approach
8 based on cost causality principles. Table 1 summarizes Hydro One's total Common
9 Corporate OM&A costs over the historic, bridge and test years.

10
11 **Table 1: Summary of Total Common Corporate OM&A Costs (\$ Millions)**

Description	Historic			Bridge	Test
	2014 IRM	2015	2016	2017	2018
Planning	47.6	47.4	43.7	47.7	47.5
Common Corporate Functions & Services	173.9	187.5	187.9	200.0	201.3
Information Technology	166.0	142.5	148.7	145.7	137.9
Cost of External Revenue	15.6	14.2	8.4	9.4	8.9
Other OM&A	(266.1)	(235.8)	(230.5)	(274.0)	(270.4)
Total	137.1	155.8	158.2	128.7	125.3

12
13 Table 2 summarizes Hydro One Distribution's portion of the Common Corporate OM&A
14 costs over the historic, bridge and test years.

Witness: Joel Jodoin

1 **Table 2: Summary of Common Corporate OM&A Costs Allocated to Distribution**
 2 **(\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Planning	15.0	16.4	18.4	12.5	17.8	13.3	17.6	13.3
Common Corporate Functions & Services	76.8	80.5	77.3	82.7	76.8	87.2	76.7	88.0
Information Technology	109.3	85.8	85.7	89.2	86.4	85.6	86.1	80.4
Cost of External Revenue	4.5	5.4	2.1	4.3	2.1	4.5	2.1	4.6
Other OM&A*	(111.3)	(119.0)	(124.4)	(107.2)	(128.3)	(128.4)	(127.8)	(125.2)
Total	94.4	69.1	59.0	81.5	54.8	62.0	54.7	61.0

3 *OEB-directed reductions for compensation are reflected in this line item.

4

5 Hydro One Common Corporate OM&A costs are comprised of: Common Corporate
 6 Functions and Services (“CCFS”) as detailed in Exhibit C1, Tab 1, Schedule 7; Planning
 7 as detailed in Exhibit C1, Tab 1, Schedule 8; Information Technology (“IT”) as detailed
 8 in Exhibit C1, Tab 1, Schedule 9; Cost of External Revenue as detailed in Exhibit C1,
 9 Tab 1, Schedule 10; and Other OM&A as detailed in Exhibit C1, Tab 1, Schedule 7.

10

11 Hydro One uses a centralized shared services model to deliver its common services to its
 12 transmission and distribution businesses and to its affiliated companies as described in
 13 Attachment 1 to Exhibit C1, Tab 4, Schedule 1. Many organizations have adopted a
 14 common corporate cost model as an effective method of delivering common services to
 15 multiple subsidiaries and/or multiple business units.

Witness: Joel Jodoin

1 Since 2009, Hydro One has applied a cost allocation methodology developed by Black
2 and Veatch Corporation that utilizes a breakdown of activities and drivers. In 2016,
3 Hydro One commissioned Black and Veatch Corporation to update the methodology to
4 allocate common costs among the business entities using the common services, as
5 discussed in Exhibit C1, Tab 4, Schedule 1.

6
7 **2. VARIANCE EXPLANATION**

8
9 Planning costs increased from 2014 to 2015 due to the establishment of a program
10 management office. Costs in 2016 and beyond are forecast to be lower than OEB-
11 approved amounts due to a June 2016 pension revaluation that reduced pension
12 contribution operating expenses as detailed in Exhibit C1, Tab 2, Schedule 2.

13
14 CCFS costs have increased since 2014, primarily due to higher costs for Corporate
15 Management, People and Culture and Internal Audit. The reasons for this increase are
16 detailed in Exhibit C1, Tab 1, Schedule 7.

17
18 IT OM&A expenditures in 2017 and 2018 are trending lower on an annual basis
19 primarily due to savings from several productivity initiatives as identified in the
20 Distribution System Plan provided as Exhibit B1, Tab 1, Schedule 1 (the “DSP”), Section
21 1.5. Historical spending levels were materially in line with OEB-approved forecasts.
22 However, in 2016, an increase in spending was required to support a larger capital
23 portfolio.

24
25 The Cost of External Revenue has been relatively flat since 2014. The actuals are higher
26 than OEB-approved amounts, mainly due to higher volumes of contestable emergency
27 restoration work, Hydro One Remotes vegetation management assistance, and emergency
28 services.

Witness: Joel Jodoin

1 Other OM&A has been decreasing since 2014, which is more favourable as it reduces the
2 OM&A portion of revenue requirement. Capitalized overheads and indirect depreciation
3 increase with increasing capital work programs. The environmental provision offsets
4 work program costs as these costs have already been set aside and are drawn down as
5 work progresses. Other OM&A is less favourable than OEB-approved amounts in 2015
6 and 2016 due to the reduced environmental provision matching the reduced PCB work
7 program.

1 **COMMON CORPORATE FUNCTIONS AND SERVICES**

2
3 **1. INTRODUCTION**

4
5 Hydro One has identified certain functions that provide common services to all business
6 units: corporate management, finance, people and culture, corporate relations, general
7 counsel and corporate secretariat, regulatory affairs, security management, internal audit,
8 and real estate and facilities. It was determined that these functions could be shared
9 effectively by all business units, avoiding costly and unnecessary duplication. These
10 functions are referred to as “common corporate functions and services” (“CCFS”).

11
12 The allocation of CCFS costs between Hydro One Distribution, Hydro One
13 Transmission, its shareholder and other affiliates is determined by the common cost
14 allocation methodology described in Exhibit C1, Tab 4, Schedule 1. The allocation of
15 these costs between Hydro One and its affiliates is governed by affiliate service level
16 agreements described in Attachment 1.

17
18 This Exhibit discusses CCFS costs and other OM&A expenses, which are comprised of
19 credits associated with capitalized overhead, environmental provisions, indirect
20 depreciation and other costs.

21
22 **2. VARIANCE EXPLANATION**

23
24 Table 1 presents the total CCFS costs for Hydro One between 2014 and 2016, the bridge
25 year and the first test year 2018.

Witness: Joel Jodoin

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

Description	Historic			Bridge	Test
	2014 IRM	2015	2016	2017	2018
	Actual	Actual	Forecast	Forecast	Forecast
Corporate Management	9.2	16.4	20.1	23.4	23.3
Finance	40.0	39.1	38.8	41.8	40.4
People and Culture	12.8	13.6	14.5	16.4	16.2
Corporate Relations	19.5	17.3	14.2	15.8	17.5
General Counsel and Secretariat	8.7	8.6	9.6	10.0	10.1
Regulatory Affairs	23.0	24.1	23.4	22.6	22.9
Security Management	3.5	4.2	4.3	4.4	4.5
Internal Audit	3.6	4.2	4.5	6.8	6.9
Real Estate and Facilities	53.6	60.0	58.6	58.7	59.5
Total CCF&S Costs	173.9	187.5	187.9	200.0	201.3

3
 4 Total CCFS costs increase from 2015 to 2018 primarily due to the following factors:

- 5
- 6 • higher Corporate Management costs from 2015 to 2017 due to increases in
 7 compensation resulting from the recruitment of senior managers with proven track-
 8 records of delivering on targeted commercial objectives (under this new leadership,
 9 incremental productivity savings are expected to significantly offset these increased
 10 costs as identified in the Distribution System Plan in Exhibit B1, Tab 1, Schedule 1
 11 (the “DSP”), Section 1.5);
 - 12 • higher Internal Audit costs mainly from 2015 to 2017 resulting from an increased
 13 staffing requirement to address an expanding work program to support construction
 14 and capital project audit capabilities. Increased staffing to support these capabilities
 15 will ensure the team can adequately support the work program;
 - 16 • higher People and Culture costs from 2014 to 2017, primarily due to increased
 17 training costs for: (a) a larger new graduate population; and (b) existing employees,
 18 specifically on the topic of the “craft of management”, with a focus on managers and

Witness: Joel Jodoin

1 supervisors requiring additional resources and skills to meet new requirements.
 2 Examples include: (a) building and sustaining new compensation structures; (b) a
 3 renewed focus on performance management; and (c) a renewed focus on change
 4 management intended to maximize the value of corporate change initiatives; and
 5 • higher Corporate Relations costs starting in 2018 are anticipated costs associated with
 6 retendering Hydro One’s largest outsourcing arrangement.

7

8 Table 2 shows the amounts that have been allocated to Hydro One Distribution during the
 9 same time period.

10

11 **Table 2: Summary of Common Corporate Functions and Services OM&A**

12

Allocated to Distribution (\$ Millions)

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Corporate Management	2.4	2.4	2.4	3.8	2.4	5.6	2.4	5.7
Finance	16.4	16.2	18.0	16.5	17.6	16.9	17.3	16.3
People and Culture	5.8	6.8	5.7	6.6	5.4	7.8	5.4	7.7
Corporate Relations	10.5	9.6	6.6	7.1	6.6	7.6	6.6	8.3
General Counsel and Secretariat	3.8	3.6	4.1	4.0	4.1	4.2	4.2	4.3
Regulatory Affairs	13.0	13.6	12.0	13.5	12.4	12.8	12.1	13.0
Security Management	1.9	2.2	2.5	2.2	2.4	2.3	2.4	2.4
Internal Audit	1.2	1.6	1.1	2.0	1.1	3.1	1.1	3.1
Real Estate and Facilities	21.8	24.5	24.8	26.9	24.7	26.9	25.2	27.3
Total CCF&S Costs	76.8	80.5	77.3	82.7	76.8	87.2	76.7	88.0

13

14 The increases in the Hydro One Distribution portion of CCFS costs are due to the same
 15 factors noted above for increases in total CCFS costs.

16

17 Table 3 shows the detailed breakdown between labour, non-labour and where
 18 appropriate, other costs included in the CCFS costs.

Witness: Joel Jodoin

1 **Table 3: Summary of Corporate Common Costs (\$ Millions)**

Description	Cost Type	Total Costs		Distribution Portion	
		2017	2018	2017	2018
		Forecast	Forecast	Forecast	Forecast
Corporate Management	Labour	16.0	16.3	4.1	4.2
Corporate Management	Non-Labour	7.4	7.0	1.5	1.4
Corporate Management	Total	23.4	23.3	5.6	5.7
Finance	Labour	23.9	22.7	9.6	9.1
Finance	Non-Labour	6.6	6.0	2.6	2.4
Finance	Inergi	11.4	11.6	4.6	4.7
Finance	Total	41.8	40.4	16.9	16.3
People and Culture	Labour	13.1	13.4	6.2	6.4
People and Culture	Non-Labour	3.3	2.8	1.6	1.3
People and Culture	Total	16.4	16.2	7.8	7.7
Corporate Relations	Labour	10.5	10.6	5.1	5.1
Corporate Relations	Non-Labour	5.4	6.9	2.6	3.3
Corporate Relations	Total	15.8	17.5	7.6	8.3
General Counsel and Secretariat	Labour	5.7	5.8	2.4	2.5
General Counsel and Secretariat	Non-Labour	4.3	4.3	1.8	1.8
General Counsel and Secretariat	Total	10.0	10.1	4.2	4.3
Regulatory Affairs	Labour	8.9	9.0	4.2	4.2
Regulatory Affairs	Non-Labour	2.0	1.6	0.9	0.7
Regulatory Affairs	OEB / Other Costs	11.7	12.3	7.7	8.0
Regulatory Affairs	Total	22.6	22.9	12.8	13.0
Security Management	Labour	4.1	4.2	2.1	2.2
Security Management	Non-Labour	0.4	0.4	0.2	0.2
Security Management	Total	4.4	4.5	2.3	2.4
Internal Audit	Labour	5.7	5.8	2.6	2.6
Internal Audit	Non-Labour	1.0	1.0	0.5	0.5
Internal Audit	Total	6.8	6.9	3.1	3.1
Real Estate and Facilities	Labour	7.0	7.1	1.7	1.7
Real Estate and Facilities	Non-Labour	2.4	2.3	0.6	0.6
Real Estate and Facilities	Facility ¹	49.3	50.1	24.6	25.0
Real Estate and Facilities	Total	58.7	59.5	26.9	27.3
Total Corporate Common	Total CCC	200.0	201.3	87.2	88.0

2 ¹The Facility line in Table 3 relates to work program costs that make up part of the CCFS costs as
 3 opposed to labour or non-labour costs.

Witness: Joel Jodoin

1 **2.1 CORPORATE MANAGEMENT**

2
 3 Corporate Management represents those functions responsible for providing overall
 4 strategic direction to Hydro One. Corporate Management costs relate to the Board of
 5 Directors, the Chief Executive Officer, the Treasurer, the Chief Financial Officer
 6 (“CFO”), the Ombudsman and the General Counsel and Corporate Secretariat as advisors
 7 to the Board of Directors and corporate officers on overall strategic matters. Table 4
 8 presents the details of the total Corporate Management costs.

9
 10 **Table 4: Summary of Total Corporate Management OM&A (\$ Millions)**

Description	Historic			Bridge	Test
	2014	2015	2016	2017	2018
	Actual	Actual	Forecast	Forecast	Forecast
President/CEO Office	2.3	5.8	5.1	2.4	2.4
Chair Office	0.3	0.3	0.6	0.3	0.3
Corporate Common LTD	-	-	-	1.1	1.2
Ombudsman Office	-	0.1	1.5	1.6	1.6
CFO Office	0.7	1.1	2.3	1.3	1.3
Investor Relations	-	0.6	0.9	1.0	1.0
EVP Strategy Office	-	-	0.4	6.1	6.2
Treasurer's Office	-	-	-	0.0	0.0
Board	1.6	3.7	3.6	3.5	3.5
Corp. Secretariat	0.3	0.3	0.4	0.4	0.4
General Counsel – VP	0.4	0.5	0.7	0.8	0.8
Donations	0.6	0.9	0.9	1.1	1.1
Value Growth	3.0	3.0	3.7	3.8	3.5
Total Corporate Management	9.2	16.4	20.1	23.4	23.3

11
 12 The General Counsel and Corporate Secretariat costs included in the Corporate
 13 Management costs in Table 4 are specifically for the Chief Legal Officer and Corporate
 14 Secretary. These costs are separate from the specific line item for General Counsel and
 15 Secretariat costs in Table 1, which cover the rest of the department costs.

Witness: Joel Jodoin

1 Total CCFS costs reflected in Table 1 increase partly as a result of higher Corporate
 2 Management costs. A large part of this increase is due to the inclusion of \$6.3 million of
 3 costs that are not recoverable from transmission or distribution customers. These are
 4 costs associated with: (a) the “value growth” team engaged in acquisitions; (b) corporate
 5 donations; and (c) investor relations. The balance of the increase is largely due to
 6 increased salaries in this group. As Hydro One has been evolving, the Company has
 7 hired several new senior executives at market rates, with the expectation that further
 8 incremental productivity savings will more than offset these increased costs, as identified
 9 in the DSP, Section 1.5. Table 5 shows the distribution portion of the Corporate
 10 Management costs.

11

12 **Table 5: Summary of Corporate Management OM&A Allocated to Distribution**
 13 **(\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Corporate Management	2.4	2.4	2.4	3.8	2.4	5.6	2.4	5.7

14

15 Details of the Hydro One Distribution portion of the Corporate Management costs are
 16 listed in Table 6.

1 **Table 6: Summary of Corporate Management OM&A Allocated to Distribution**
 2 **(\$ Millions)**

Description	Historic			Bridge	Test
	2014	2015	2016	2017	2018
	Actual	Actual	Forecast	Forecast	Forecast
President/CEO Office	0.6	1.0	1.5	0.9	0.9
Chair Office	0.2	0.1	0.1	0.1	0.1
Corporate Common LTD	-	-	-	0.6	0.6
Ombudsman Office	-	0.0	0.2	1.3	1.3
CFO Office	0.4	0.2	0.9	0.5	0.6
Investor Relations	-	-	-	-	-
EVP Strategy Office	-	-	-	-	-
Treasurer's Office	-	-	-	-	-
Board	0.8	0.7	0.9	1.6	1.6
Corp. Secretariat	0.3	0.1	0.1	0.2	0.2
General Counsel – VP	-	0.2	0.1	0.3	0.3
Donations	-	-	-	-	-
Value Growth	-	-	-	-	-
Total Corporate Management	2.4	2.4	3.8	5.6	5.7

3
 4 The increase in Corporate Management costs from 2015 to 2018 forecast for Hydro One
 5 Distribution stem from changes in executive compensation.

6

7 **2.2 FINANCE**

8

9 Hydro One’s Finance division provides strategic advice and services related to planning,
 10 processing, recording, reporting and monitoring all financial transactions taking place
 11 within the company. The Finance division performs the following functions: corporate
 12 controller services, corporate tax services, treasury services, and business planning and
 13 financial support. Table 7 provides an overview of the Hydro One Distribution portion of
 14 finance costs.

Witness: Joel Jodoin

1 **Table 7: Summary of Finance Costs Allocated to Distribution (\$ Millions)**

Description	Historic				Bridge		Test	
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Finance	16.4	16.2	18.0	16.5	17.6	16.9	17.3	16.3

2

3 In 2015, business performance support services moved from the corporate controller
 4 function to the company's Regulatory Affairs division, reducing costs partially in 2015
 5 with the balance in 2016. In 2016 the business performance organization was moved to
 6 Asset Management in order to achieve synergies with system reliability reporting. These
 7 services support the development of business strategies by conducting studies on
 8 corporate performance in areas such as reliability, work program performance,
 9 productivity and cost savings management. Table 8 shows a full breakout of
 10 organizational change.

11

12 **Table 8: Performance Management Cost (\$ Millions)**

Group	2014	2015	2016	2017
	Actual	Actual	Forecast	Forecast
Corporate Controller	2.2	1.0	-	-
Regulatory Affairs	-	1.2	2.3	-
Operations Planning	-	-	-	2.3

13

14 This removal of Performance Management costs from Finance and some savings relating
 15 to administrative savings identified in the DSP, Section 1.5, are offset by increased labour
 16 costs required mainly in the Corporate Tax, Controller and Business Planning and
 17 Decision Support groups and with the development of a separate Chief Risk Officer
 18 group.

19

20 The Finance organization performs multiple functions, which are described below.

Witness: Joel Jodoin

1 **2.2.1 CORPORATE CONTROLLER**

2
3 The Corporate Controller function provides leadership and direction regarding financial
4 reporting, corporate and regulatory accounting, accounting and internal control policies,
5 and procedures to ensure statutory and regulatory compliance and consistency with
6 generally accepted accounting principles. The group is also accountable for the pay and
7 expense management functions; ensuring payroll runs are on time and accurate and
8 ensuring that the automated expense reporting tool is working as designed.

9
10 This function oversees the development of actual financial information and manages
11 reporting processes for appropriate audiences or stakeholders. This function is also
12 responsible for managing and providing direction to the company on internal control
13 matters, employing measures such as “organization authority registers” and financial
14 policies and procedures. It also provides leadership on compliance with Ontario
15 securities laws, including Bill 198, and the Multi-Jurisdictional Disclosure System rules
16 for a foreign-issuer registered with the U.S. Securities Exchange Commission.

17
18 Many routine financial services are outsourced to Inergi LP, such as accounts payable,
19 accounts receivable, fixed asset accounting, general accounting, planning budgeting and
20 reporting and pension support, human resources pay services, and a number of
21 administrative services. The costs of these outsourced services comprise a major portion
22 of the corporate controller costs and are detailed in Exhibit C1, Tab 5, Schedule 1.

23
24 The Corporate Controller’s function manages increasingly complex statutory and
25 regulatory filing requirements (external reporting, regulatory reporting, reporting related
26 to debt and equity offerings). These requirements are continually evolving and require
27 timely and accurate compliance. Timely compliance helps to maintain the Company’s
28 positive standing with capital markets, which helps to keep financing costs down.

Witness: Joel Jodoin

1 The Corporate Controller group is also responsible for adherence to regulatory and
2 accounting principles, which ensures the accuracy of financial reporting. Accuracy of
3 reported numbers is critical to the organization as it maintains Hydro One's credibility
4 with its economic regulator as well as with the OSC/SEC and the capital markets. This
5 confidence in Hydro One's externally filed information is key in maintaining the
6 company's favourable standing with lenders, thereby maintaining (or reducing)
7 borrowing costs.

8

9 Also included in Corporate Controller costs are costs associated with the Chief Risk
10 Officer's department and the Company's business planning and decision support
11 function. The Chief Risk Officer's department provides an enterprise wide approach to
12 managing risk and embeds risk management into the strategy of the organization.
13 Corporate Risk provides uniform processes to assist decision makers in the understanding
14 of uncertainty and how it can be measured, mitigated and exploited, leading to informed
15 choices, prioritized actions, and resources allocation in line with Hydro One's risk
16 appetite and tolerances.

17

18 The Corporate Controller group is also responsible for business planning and financial
19 support. Some of these functions include:

20

- 21 • establishing and leading the annual business planning and budgeting processes;
- 22 • performing business case reviews, business valuations, transaction support;
- 23 • developing and maintaining financial models;
- 24 • providing analytical support for a variety of financial planning and reporting
25 processes; and
- 26 • compiling forecast information for the appropriate audiences or stakeholders.

Witness: Joel Jodoin

1 **2.2.2 CORPORATE TAX**

2
3 Corporate Tax services manage the tax affairs (namely, compliance, audits and planning)
4 for each legal entity, partnership and trust within the Hydro One group of companies.
5 This includes matters related to corporate income taxes, harmonized sales tax, debt
6 retirement charge, land transfer tax, payroll and non-resident withholding tax, and the
7 employer health tax. Corporate Tax services ensure that internal and external tax
8 compliance requirements are met. Moreover, tax consulting services are provided to
9 other departments with respect to payroll tax, taxable benefits, agreements, financing, and
10 all transactions and information about tax costs for regulatory purposes.

11
12 **2.2.3 TREASURY**

13
14 Treasury costs are associated with the following activities:

- 15
16
 - 17 • executing on borrowing plans and issuing commercial paper and long-term debt;
 - 18 • ensuring compliance with securities regulations, banks and debt covenants;
 - 19 • managing the company's daily liquidity position, control cash and manage the
20 company's bank accounts;
 - 21 • settling all transactions and managing relationships with creditors; and
 - 22 • communicating with debt investors, banks and credit rating agencies.

23 A portion of the treasury budget is recovered through the cost of long-term debt, as stated
24 in Exhibit D1, Tab 2, Schedule 2.

25
26 Included in treasury costs are expenses for the negotiation and purchase of insurance
27 policies, and claims management and settlement. These expenses cover premiums paid
28 for corporate shared services insurance coverage and the cost to self-insure against

Witness: Joel Jodoin

1 liability exposures that are either not covered by insurance policies or fall below the
 2 specified deductibles.

3

4 Table 9 shows the premiums for all of Hydro One Inc.'s insurance policies and the cost
 5 of self-insurance for the 2014-2018 period. Premiums paid for Corporate Functions and
 6 Services Insurance Policies are liability policies that cannot be readily assigned to a
 7 specific line of business. Self-insurance costs for the 2017 and 2018 period reflect the
 8 company's risk exposures, its long-term history of claims, the deductible on the liability
 9 policies, and liability payments to third parties. The main contributor to self-insurance
 10 costs are third-party claims, which can fluctuate from year to year.

11

12

Table 9: Hydro One Inc. Insurance Costs (\$ Millions) – Distribution Portion

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Premiums paid for Corporate Functions and Services Insurance Policies *	0.6	0.7	0.6	0.8	0.7	0.8	0.8	0.8
Self-insurance Cost	1.2	0.5	0.7	0.8	0.6	0.7	0.7	0.7
Total	1.8	1.2	1.3	1.6	1.3	1.5	1.5	1.5

13 *The cost of other insurance coverage that applies to only certain lines of business is captured and reported
 14 by the lines of business where coverage is applicable

15

16 **2.3 PEOPLE AND CULTURE**

17

18 The People and Culture organization ensures that Hydro One has the policies, systems
 19 and programs to attract, manage, engage and retain a high performing workforce to
 20 execute business strategy. The organization provides human resources consulting,
 21 leadership development and recruiting, diversity and resourcing programs, compensation
 22 and benefits services, and labour relations services.

Witness: Joel Jodoin

1 Table 10 provides an overview of the Hydro One Distribution portion of People and
 2 Culture costs.

3

4 **Table 10: Summary of People and Culture Costs Allocated to Distribution**

5 (\$ Millions)

Description	Historic				Bridge		Test	
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
People and Culture	5.8	6.8	5.7	6.6	5.4	7.8	5.4	7.7

6

7 Cost increases from 2014 through to 2017, are primarily due to increased training costs
 8 for: (a) a larger new graduate population; and (b) existing employees, specifically on the
 9 topic of the “craft of management”, with a focus on managers and supervisors requiring
 10 additional resources and skills to meet new requirements. Examples include: (a) building
 11 and sustaining new compensation structures; (b) a renewed focus on performance
 12 management; and (c) a renewed focus on change management intended to maximize the
 13 value of corporate change initiatives.

14

15 The People and Culture organization performs multiple functions, which are described
 16 below.

17

18 **2.3.1 HUMAN RESOURCES OPERATIONS**

19

20 Hydro One’s human resources function provides advice and guidance to managers,
 21 supervisors and employees on a myriad of issues related to human resources policies and
 22 procedures, collective agreement administration, staffing and other large initiatives that
 23 impact staff.

Witness: Joel Jodoin

1 **2.3.2 TALENT MANAGEMENT**

2

3 The Talent Management function recommends and administers policy in areas related to
4 external hiring and leadership development. This function manages all of Hydro One's
5 management/leadership development activities, including the assessment of high-
6 potential succession candidates and miscellaneous specialized one-off hiring initiatives,
7 as required. The Talent Management function also manages Hydro One's principal
8 cyclical hiring and on-boarding processes, Hydro One's new graduate training and
9 development program, and the Company's diversity plan.

10

11 **2.3.3 COMPENSATION AND BENEFITS**

12

13 The compensation and benefits function manages compensation, benefits, reporting and
14 master data for all Hydro One's employees and pensioners by ensuring the accurate
15 application, record-keeping and security of such information. This function provides
16 regular, strategic reports to senior management on topics such as retirement
17 demographics, headcount, overtime, and data for OEB submissions. This function
18 facilitates the Company's participation in industry-wide compensation, benefit and
19 pension surveys. It also administers Hydro One's pension plan for approximately 7,100
20 pensioners and the benefits program for all employee groups.

21

22 **2.3.4 LABOUR RELATIONS**

23

24 The Labour Relations function provides advice, guidance and training to managers
25 regarding collective agreements and labour legislation and manages the grievance and
26 arbitration process. The company is a party to 24 collective agreements and a number of
27 mid-term agreements and letters of understanding. The Labour Relations function
28 negotiates and administers all such agreements and letters of understanding.

Witness: Joel Jodoin

1 **2.4 CORPORATE RELATIONS**

2

3 Table 11 provides an overview of the Hydro One Distribution portion of Corporate
 4 Relations costs.

5

6 **Table 11: Summary of Corporate Relations Costs Allocated to Distribution**
 7 **(\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Corporate Relations	10.5	9.6	6.6	7.1	6.6	7.6	6.6	8.3

8

9 Hydro One's Corporate Relations costs includes labour and non-labour expenses
 10 associated with First Nations and Métis Relations, Corporate Affairs and Government
 11 Relations, and Outsourcing Services, as outlined in Table 12.

12

13 **Table 12: Corporate Relations Distribution Portion Cost Details (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
First Nations and Métis Relations	1.6	0.9	1.2	1.0	1.2	1.3	1.2	1.3
Corporate Affairs and Government Relations	5.8	7.5	4.2	5.0	4.2	5.0	4.2	5.0
Outsourcing Services	2.6	1.2	1.2	1.1	1.3	1.4	1.3	2.1
Executive Office	0.4							
Total Corporate Relations	10.5	9.6	6.6	7.1	6.6	7.6	6.6	8.3

14

15 In the Corporate Affairs and Government Relations departments, costs in 2014 and 2015
 16 were higher than in 2016 due to the successful expansion of the Electricity Discovery
 17 Centre, which was launched in 2013. Hydro One's mobile education trailer features

Witness: Joel Jodoin

1 approximately 1,000 square feet of interactive exhibits to explain Ontario's power system,
2 help customers better manage their energy consumption and costs, and educate children
3 about electrical safety. The Electricity Discovery Centre and its team will continue to tour
4 Ontario, meeting customers face-to-face, in their communities, to gain a better
5 understanding of their needs and preferences and leave them with a better perspective of
6 the role Hydro One plays in the electricity system. Forecast costs for 2017 and 2018 are
7 flat relative to 2016 costs but somewhat higher than the 2017 OEB-approved amounts.
8 This is due to an enhanced focus on customer communication and self-service
9 transactions, including the company's corporate website, self-service My Account portal,
10 and outage app as detailed in the DSP, Section 1.5,

11
12 For Outsourcing Services, 2014 costs were higher than in 2015 due to costs associated
13 with the completion of the last retendering of Hydro One's largest outsourcing
14 arrangement. The increase beginning in 2018 includes anticipated costs associated with
15 retendering this same outsourcing arrangement again.

16
17 The Corporate Relations organization performs multiple functions, which are described
18 below.

19
20 **2.4.1 FIRST NATIONS AND MÉTIS**

21
22 Hydro One owns and maintains assets situated on reserve land and within traditional
23 territories of First Nations and Métis peoples. The team's main objective is to develop
24 and maintain mutually beneficial long-term relationships with First Nations and Métis
25 communities that are serviced by Hydro One. The team's core mandate includes, where
26 appropriate, undertake together with the Crown, consultation with First Nations & Métis
27 peoples and communities in the early stages of, and throughout, projects or other
28 activities that may impact their Aboriginal rights and/or treaty rights; continue to build

Witness: Joel Jodoin

1 positive, mutually beneficial relationships with First Nations and Métis communities;
2 help Hydro One employees understand the unique legal, historical and cultural
3 significance of First Nations and Métis peoples, for the purpose of promoting effective
4 relationships with First Nations and Métis customers and communities; promote business
5 and workforce development for First Nations & Métis peoples.

6
7 The team provides ongoing advice and support on matters related to First Nations and
8 Métis communities and these include promoting opportunities and undertaking outreach
9 activities with: (a) People and Culture for Workforce Development, Employment and
10 Training opportunities; (b) Supply Chain for Business Development opportunities; (c)
11 Customer Care for customer service matters; (d) Real Estate for permitting matters on
12 reserve; (e) Provincial Lines/Forestry for various contract opportunities; (f)
13 Environmental Engineering & Project Support for consultation and project impact
14 mitigation opportunities; and (g) Planning for Transmission and Distribution Assets
15 Management and Network Connections and Development matters such as First Nation
16 Net Metering Projects.

17
18 Hydro One has implemented new customer service offerings for First Nations customers
19 and communities across Ontario. Since 2016, representatives from Hydro One have
20 visited First Nations communities around the province to meet with Chiefs and Councils,
21 conducted community information sessions, and engaged in one-on-one sessions with
22 individual customers to address their unique needs. The local outreach and presence in
23 the community helps educate customers about their electricity usage and enrolls
24 customers in various financial and electricity conservation programs. Furthermore,
25 additional effort has been required for communication and engagement with First Nations
26 and Métis communities regarding various initiatives and projects. This involves more
27 regular interaction and resource intensive travel to the communities served by Hydro
28 One.

Witness: Joel Jodoin

1 **2.4.2 CORPORATE AFFAIRS AND GOVERNMENT RELATIONS**

2
3 The Corporate Affairs and Government Relations function develops customer
4 communication material to ensure customers are aware of the Company's programs,
5 services, power outages, rate changes, etc. The team is also accountable for customer
6 education and safety programs, corporate reputation, media relations, community
7 investment, employee communications, and web communications for Hydro One's
8 corporate website.

9
10 The Corporate Relations function also manages the company's relationship with key
11 external stakeholders, such as the government, Ministry of Environment, energy
12 regulators, elected officials, municipal associations, industry associations, and energy
13 sector stakeholders, in order to address customer needs. The team is responsible for
14 providing various lines of business with public affairs and community relations advice
15 during the environmental, legal and regulatory approvals phases of a project to ensure
16 requirements are met and public consultations are conducted. The team leads public
17 consultation, environmental assessments, and community engagement functions in
18 support of new development projects, maintenance and forestry programs.

19
20 **2.4.3 OUTSOURCING SERVICES**

21
22 Outsourcing Services is accountable for governing the Inergi LP (Inergi) outsourcing
23 Agreement by ensuring that contracted services are delivered and that Hydro One
24 maintain a collaborative working relationship with the supplier. It is also responsible for
25 managing the design, development, and implementation of new service delivery
26 agreements with Hydro One's outsourcing suppliers (e.g., retendering or potential new
27 outsourcing). The services outsourced currently include: infrastructure management,

Witness: Joel Jodoin

1 application development and maintenance, customer service operations, settlements,
 2 payroll, finance and accounting, and source to pay.

3
 4 **2.5 GENERAL COUNSEL AND CORPORATE SECRETARIAT**

5
 6 Table 13 provides an overview of the distribution portion of General Counsel and
 7 Corporate Secretariat costs.

8
 9 **Table 13: Summary of General Counsel and Secretariat Costs Allocated to**
 10 **Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
General Counsel and Secretariat	3.8	3.6	4.1	4.0	4.1	4.2	4.2	4.3

11
 12 Historical actuals are materially in line with OEB-approved forecasts.

13
 14 The General Counsel and Corporate Secretariat group provides legal advice and direction
 15 to Hydro One and its affiliates, as well as overall guidance in the areas of corporate
 16 structure, governance, business ethics and the business code of conduct. It performs the
 17 following primary functions:

- 18
 19 • ensuring compliance with law and providing legal services relating to all of Hydro
 20 One’s activities, including the Company’s major borrowing and financing initiatives,
 21 regulatory matters, mergers and acquisitions, litigation, transmission and distribution
 22 operations, employer-related activities, corporate governance-related matters, and
 23 health, safety and environment activities;

Witness: Joel Jodoin

- 1 • providing corporate secretariat services, which includes supporting the Chair of the
2 Board of Directors, the Board of Directors, and its committees and advising on a
3 variety of board-related matters, such as best practices and emerging trends and issues
4 in the area of corporate governance; and
5 • providing advice and direction with regard to Hydro One's Code of Conduct,
6 ensuring appropriate actions are taken to resolve known or suspected violations.

7

8 The level of required legal and corporate secretarial services is driven by capital and
9 OM&A activities and increasing regulatory and legislative oversight. Most of the legal
10 work is performed in-house. External legal services are retained when in-house expertise
11 is not available or when the workload exceeds the capacity of the internal legal group.

12

13 **2.6 REGULATORY AFFAIRS**

14

15 Hydro One's Regulatory Affairs division manages the company's relationships with
16 regulatory bodies such as the OEB, the IESO, and the National Energy Board. It is
17 responsible for developing regulatory strategy and coordinating submissions to these
18 organizations and participating in regulatory initiatives.

19

20 Table 14 provides an overview of the Distribution portion of Regulatory Affairs costs.

Table 14: Summary of Regulatory Affairs Costs Allocated to Distribution
 (\$ Millions)

Description	Historic				Bridge		Test	
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Regulatory Affairs	6.6	7.1	4.0	5.4	4.0	5.1	3.9	4.9
OEB/ Other Costs	6.4	6.5	7.9	8.1	8.4	7.7	8.3	8.0
Total	13.0	13.6	12.0	13.5	12.4	12.8	12.1	13.0

The increase in Regulatory Affairs’ costs in 2015 and 2016 is primarily attributable to the inclusion of the business performance management costs previously included in Finance costs. This transition is discussed in Section 2.2 of this Exhibit. The Regulatory Affairs’ cost will decrease in 2017 and 2018 as a significant portion of this group moved to Planning to benefit from system reliability reporting synergies. Table 8 shows a breakout of the organizational change. This decrease is offset by increased staffing needs related to an aggressive regulatory agenda.

The Regulatory Affairs division performs compliance, applications, pricing and load forecasting, and regulatory reporting. These functions are described in this section.

2.6.1 COMPLIANCE

The regulatory Compliance function ensures Hydro One’s compliance with the regulations and policies of the OEB, the IESO, and the National Energy Board (“NEB”) as they apply to Hydro One’s distribution and transmission businesses.

Witness: Joel Jodoin

1 **2.6.2 APPLICATIONS**

2

3 The Applications function coordinates, prepares and processes regulatory applications
4 and provides support to witnesses in regulatory proceedings and business support staff.
5 These services are provided for a wide range of regulatory applications, including
6 distribution and transmission revenue requirement applications, transmission leave-to-
7 construct applications, and applications related to mergers, acquisitions, amalgamations,
8 divestitures and area and system supply planning.

9

10 **2.6.3 PRICING AND LOAD FORECASTING**

11

12 This function provides pricing and cost allocation analysis and support for rate
13 applications. This work entails developing rates for transmission and distribution tariffs
14 and supporting the preparation and defense of rate proposals. The function also assists
15 with the implementation of approved transmission and distribution rates.

16

17 The load forecasting and load data management functions are included within the
18 Regulatory Affairs group. Load forecasts are developed to enable system planning and
19 financial planning which underlie Hydro One's financial forecasts. The load forecast
20 function provides load forecast data including the capture of conservation and demand
21 management impacts. Load forecast staff supports the company's business units and the
22 IESO with forecasting analysis and evaluation, covering matters such as time of use,
23 bypass and embedded generation. This function also provides analytical support for
24 conservation and demand management projects and provides load research analysis.

1 **2.6.4 PERFORMANCE MANAGEMENT**

2
3 In May 2015, the Business Performance management function moved to the Regulatory
4 Affairs division from the Finance division. Except for the individuals responsible for
5 OEB Reporting, the group was moved to Planning in late 2016.

6
7 **2.6.5 ONTARIO ENERGY BOARD (OEB) / OTHER COSTS**

8
9 The OEB/Other costs also include the external costs associated with applications filed
10 with regulatory bodies. Specifically, these costs stem from the provision of notice,
11 stakeholder and consultation activities, provision of expert studies and witnesses,
12 hearing-related expenses, intervenor cost awards, and miscellaneous items like printing
13 and shipping. Over the test period, Hydro One anticipates filing two major revenue
14 requirement applications, several facility applications, as well as filings related to real
15 estate and regional planning efforts.

16
17 The OEB/Other costs also include Hydro One's share of the OEB's costs, including
18 expenses related to the OEB's quarterly assessments, proceedings and intervenor cost
19 awards, and regulatory license assessments.

20
21 Under the *Ontario Energy Board Act, 1998*, the OEB is required to recover all of its
22 annual operating costs. Almost all of its costs are recovered from gas and electricity
23 distributors and electricity transmitters. A small fraction of OEB costs are recovered
24 from the IESO and Ontario Power Generation and from licensing fees and penalties.
25 OEB costs that are subject to recovery include expenses related to staff, office space,
26 administration and overheads. These costs are allocated to one of five categories:
27 electricity distribution, electricity transmission, gas distribution, IESO, and Ontario

Witness: Joel Jodoin

1 Power Generation. Hydro One's share of OEB costs is derived from the allocations to
 2 electricity distribution and transmission.

3

4 **2.7 SECURITY MANAGEMENT**

5

6 Table 15 provides an overview of the distribution portion of Security Management costs.

7

8 **Table 15: Summary of Security Management Costs Allocated to Distribution**

9

(\$ Millions)

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Security Management	1.9	2.2	2.5	2.2	2.4	2.3	2.4	2.4

10

11 Historical actuals are materially in line with OEB-approved expenditures.

12

13 The Security Management function exists to enable Hydro One's success primarily in the
 14 protection of assets (including people, property and information), development and
 15 maintenance of business continuity and emergency preparedness and response plans, and
 16 to assist in the reliable delivery of electricity. Security Management adds value by
 17 establishing security standards for the enterprise and working with all lines of business to
 18 provide advice, coordination and solutions to achieve the standard. This supports the
 19 reliable delivery of electricity, the protection of Hydro One's assets, and the resumption
 20 of business in the event of an all-hazards (i.e. natural, technological or human-caused)
 21 incident. Effective asset protection and recovery can be the primary differentiating factor
 22 between success and failure for Hydro One's business objectives.

1 The Security Program at Hydro One is continually being enhanced with new capabilities
 2 that are driven by the following factors:

3

- 4 • Requirement to remain appropriately positioned against an evolving threat landscape
 5 that is increasing in complexity and sophistication. This requires Hydro One to
 6 augment and deploy new protective technologies and processes to safeguard assets;
- 7 • Requirement to meet increasing regulatory and legislation requirements, which in
 8 turn, drives the need for additional security capabilities and compliance requirements;
 9 and
- 10 • Increasing expectations of customers and stakeholders that entrust Hydro One to
 11 safeguard their sensitive information.

12

13 **2.8 INTERNAL AUDIT**

14

15 Table 16 provides an overview of the distribution portion of Internal Audit costs.

16

17 **Table 16: Summary of Internal Audit Costs Allocated to Distribution (\$ Millions)**

Description	Historic				Bridge		Test	
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Internal Audit	1.2	1.6	1.1	2.0	1.1	3.1	1.1	3.1

18

19 The increase in the bridge and test year costs is the result of an increased need for
 20 improved Internal Audit capability and capacity due to more stringent governance needs.
 21 This has led to the Internal Audit group recruiting additional staff to help manage the
 22 increased workload.

Witness: Joel Jodoin

1 The Internal Audit group reports on a functional basis to the Audit Committee of the
 2 Board of Directors and administratively to the CFO. It provides independent and
 3 objective assurance and consulting services designed to add value and improve Hydro
 4 One’s operations. The group’s mandate is to provide independent assurance to
 5 management of the company and to the Board of Directors that internal controls are
 6 designed and operating effectively in areas of material business risk, both financial and
 7 non-financial, and to follow-up and report on timeliness and effectiveness of management
 8 actions to address findings from past audits.

9

10 The Internal Audit group helps Hydro One accomplish its objectives by bringing a
 11 systematic and disciplined approach to evaluating and improving the effectiveness of risk
 12 management, internal control and governance processes.

13

14 **2.9 REAL ESTATE AND FACILITIES**

15

16 Table 17 provides an overview of the Hydro One Distribution portion of Real Estate and
 17 Facilities costs.

18

19 **Table 17: Real Estate and Facilities Costs Allocated to Distribution (\$ Millions)**

Description	Historic				Bridge		Test	
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Real Estate	1.7	1.7	1.9	2.2	1.9	2.3	1.9	2.3
Facilities	20.1	22.8	22.9	24.7	22.8	24.6	23.3	25.0
Total	21.8	24.5	24.8	26.9	24.7	26.9	25.2	27.3

20

21 Real Estate and Facilities OM&A funding for the test year is required for the facilities
 22 work program that responds to current and future anticipated work space accommodation
 23 needs. This includes new facilities in the field. The facilities work program accounts for

Witness: Joel Jodoin

1 approximately 93% of total Real Estate and Facilities OM&A funding in 2017 and 2018.
2 The funding requirements in these years mainly reflect facilities' fixed operating costs.

3
4 Table 17 includes historic performance, where notably the ongoing net cost increase from
5 2014 is contributed mainly by Facilities costs. The change in Facilities costs during this
6 time period have been effected by the following factors: higher costs attributable to an
7 increased volume of projects and maintenance in the field spread over 150 sites; contract
8 costs to Brookfield and the transitional cost of retaining impacted Hydro One staff,
9 pending retirements and job transfers; and increased fixed operating costs i.e., the cost of
10 space including utilities.

11 12 **2.9.1 REAL ESTATE SERVICES**

13
14 The Real Estate Services function manages Hydro One's land rights portfolio across the
15 Province. This involves maintaining rights across over 200,000 acres of owned corridor,
16 easement and "statutory right" properties and acquiring any new rights needed to ensure
17 the safe and reliable operation of the transmission and distribution system. In addition,
18 this function oversees the management of Hydro One's rights associated with distribution
19 and transmission lands, stations and other property.

20
21 The Real Estate Services key work activities include:

- 22
- 23 • managing the acquisition of new real estate rights, which supports the Company's
24 distribution and transmission development and reinforcement project initiatives
25 across the province including those designed to accommodate renewable power
26 sources on the grid, which aligns with the RRFE outcomes Operational Effectiveness
27 and Public Policy Responsiveness;

Witness: Joel Jodoin

- 1 • managing the provincial secondary land use program on behalf of the Ministry of
2 Infrastructure/Infrastructure Ontario (leasing transmission corridor lands to external
3 parties);
- 4 • managing easement, other rights agreements on public/private sector, railway and
5 other lands;
- 6 • managing First Nations land use permit settlements on reserve lands;
- 7 • managing about 500,000 unregistered, low-voltage, real estate rights agreements;
- 8 • providing specialized real estate service activities including managing property tax
9 payments to municipalities, appealing property tax assessments, and providing
10 employee relocation services; and
- 11 • maintaining geographic information system – property record database.

12

13 More specific support is provided on a selected project basis. This includes provision of
14 land ownership information, damage claim settlement, road access and other rights
15 acquisitions. Specialized real estate services are provided as necessary. This includes
16 assessment appeals, payment of property taxes on lands/buildings, and employee
17 relocation services as appropriate.

18

19 **2.9.2 FACILITIES**

20

21 The Facilities work program addresses all aspects of company work space requirements.
22 This involves managing company-owned facilities and a portfolio of leased facilities as
23 well as overseeing the construction of new facilities. The work program focuses on
24 providing and maintaining in compliance with laws and applicable codes: (a) storage and
25 garage facilities that meet business requirements, and (b) employee workspace at sites
26 across the province including head office, administrative and service centres, the OGCC,
27 and other work locations (for example, the London Call Centre).

1 The Facilities function is accountable for:

- 2
- 3 • the management of 50 contract lease agreements for workspace rented from other
 - 4 parties, including renewals and contractual obligations undertaken regarding
 - 5 payment of rent, operating expenses and taxes;
 - 6 • the coordination of activities related to the ongoing management, operation,
 - 7 maintenance and inspection of 90 administrative/service centres, OGCC;
 - 8 • managing support services for head office space, such as the provision of office
 - 9 supplies, coordinating office moves and providing tenant services; and
 - 10 • developing accommodation strategies and acquiring new employee/trades
 - 11 workspace in line with operational requirements.
- 12

13 Facilities expenses include, but are not limited to, leasing costs, contract management

14 costs for head office, as well as costs for administrative facilities, service centres, and

15 other work locations (for example, the London Call Centre). A significant portion of the

16 facilities' workload needs are met using outsourcing partners, such as Brookfield Global

17 Integrated Solutions, as described in Exhibit C1, Tab 5, Schedule 1. Facilities costs are

18 largely driven by space needs which are determined by Hydro One's work programs,

19 business and regulatory requirements, and fixed cost contractual obligations.

20

21 The majority of the Facilities work program costs are fixed. The Facilities work program

22 is driven by fixed-cost contractual obligations, which arise primarily through lease

23 agreements. For example, rent, operating and tax costs are fixed by lease agreements.

24 Other costs are set by Hydro One's contracts with service providers for facility

25 maintenance and other services. It is expected that fixed facility cost components (such

26 as utilities, property taxes, operational costs) will continue to rise.

Witness: Joel Jodoin

1 **3. TEST YEAR FORECAST**

2
3 **3.1 CUSTOMER FOCUS OUTCOMES**

4
5 As outlined in Section 1.3 of the DSP, the top priority of Hydro One Distribution
6 customers is keeping their bills as low as possible. While CCFS costs have increased, the
7 extra expenditures should lead to improved productivity through better overall
8 management. This is the goal of the new management team now in place and several
9 productivity examples are detailed in the DSP, Section 1.5. Increased audit services will
10 contribute to this improved performance as well.

11
12 Funding allocated to Corporate Relations will support a Customer Focus outcome to
13 improve customer satisfaction. With every interaction at the Electricity Discovery
14 Centre, Hydro One aims to educate customers about their bill, help customers better
15 manage their energy consumption and costs, and educate children about electrical safety.
16 Furthermore, relationships with First Nations and Métis communities, key external
17 stakeholders, and local communities will continue to evolve, which will result in
18 improved engagement during all stages of Hydro One development projects. Expenditure
19 is expected to remain constant over the planning period.

20
21 **3.2 OPERATIONAL EFFECTIVENESS OUTCOMES**

22
23 Productivity and employee engagement are areas of focus for the new management team.
24 With ongoing improvements in engagement, workforce performance improvements are
25 anticipated.

3.3 PUBLIC POLICY RESPONSIVENESS OUTCOMES

The Audit function at Hydro One ensures internal processes are performing as expected and ensures compliance with related codes, standards and regulations.

3.4 FINANCIAL PERFORMANCE OUTCOMES

The CCFS groups, specifically the Corporate Management group, manage the Company as a whole to perform as well as possible. Hydro One has hired new managers with track records of results at executive compensation levels consistent with the market. Most of it is variable to ensure that the executives are incented to deliver on the stated RRFE-compliant outcomes described in the DSP Section 1.4 and 1.5.

4. OTHER OM&A

Other OM&A expenses are comprised of credits associated with capitalized overhead, environmental provisions, indirect depreciation and other costs as listed in Table 18.

Table 18: Distribution Other OM&A (\$ Millions)

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Capitalized Overhead	(79.0)	(88.1)	(85.9)	(84.8)	(81.4)	(83.9)	(80.2)	(83.0)
Environmental Provision	(11.1)	(10.5)	(14.2)	(13.7)	(22.0)	(17.8)	(22.4)	(17.3)
Indirect Depreciation	(12.4)	(13.2)	(13.2)	(13.6)	(13.7)	(14.0)	(14.0)	(14.4)
Other	(8.8)	(7.1)	(11.2)	5.0	(11.2)	(12.7)	(11.2)	(10.5)
Total	(111.3)	(119.0)	(124.4)	(107.2)	(128.3)	(128.4)	(127.8)	(125.2)

1 **4.1 CAPITALIZED OVERHEAD CREDIT**

2
3 Capitalized overheads represent the portion of allocated Common Corporate and/or
4 business unit functions and services that support capital work. These costs are included
5 in Common Corporate services and the budgets of other lines of business. OM&A
6 expenses are thus reduced by the capitalized amounts.

7
8 Capitalized OM&A costs are charged to capital work based on a capital overhead rate
9 derived from the allocation and capitalization studies performed by Black & Veatch, as
10 described in Exhibit D1, Tab 3, Schedule 1.

11
12 **4.2 ENVIRONMENTAL PROVISION**

13
14 In 2001, Hydro One first recognized a liability on its balance sheet for the present value
15 of the future estimated environmental expenditures needed to manage the risks associated
16 with two legacy environmental issues inherited from Ontario Hydro. These risks
17 pertained to polychlorinated biphenyls and two chemically contaminated lands. Future
18 expenditures are required to inspect, test and remediate the contamination.
19 Environmental work is initially recognized in the Sustaining OM&A work program and
20 is detailed in Exhibit C1, Tab 1, Schedule 2. The amount is then removed from OM&A
21 as the costs are charged to the balance sheet provision. The offsetting environmental
22 regulatory asset is amortized based on the pattern of expenditure. The resultant impact
23 on revenue requirement of this environmental work is nil, since the amortization expense
24 is grouped with “Depreciation and Amortization” on the operating statement.

25
26 As identified in Exhibit C1, Tab 1, Schedule 2, Section 3.1.3, the work program is being
27 re-paced to end by 2025. Lower program expenditures leads to a reduced offsetting
28 provision.

Witness: Joel Jodoin

1 **4.3 INDIRECT DEPRECIATION**

2
3 Transportation and Work Equipment (“TWE”) charges in the OM&A work programs
4 include depreciation expense associated with the asset being used. For accounting
5 classification purposes, it is necessary to remove this depreciation amount from OM&A
6 work programs and appropriately charge it as a depreciation expense. The credit
7 increases in the test years due to the expanded use of TWE in the larger Sustainment,
8 Development and Operations work programs.

9
10 **4.4 OTHER COSTS**

11
12 These costs represent material unexpected or non-recurring expenses. For example, they
13 include items such as adjustments to provisions, vacation reserves, Gregorian or fiscal
14 adjustments and inventory adjustments. For this Application, also included in these costs
15 is the OM&A component of the Employee Share Ownership Program, the Long Term
16 Incentive Program and the union share grants described in Exhibit C1, Tab 2, Schedule 1.

COMMON CORPORATE OM&A - PLANNING

1. SUMMARY OF PLANNING OM&A

As described in the Distribution System Plan provided as Exhibit B1, Tab 1, Schedule 1 (the “DSP”), Hydro One plans its transmission and distribution businesses using an asset management model. These plans are designed to maintain or replace, as necessary, transmission and distribution assets in a cost-effective manner, so that they continue to function as originally designed.

The total costs associated with the planning function for the historical, bridge and test years are shown in Table 1.

Table 1: Summary of Total Common Corporate OM&A – Planning (\$ Millions)

Description	Historic			Bridge	Test
	2014 IRM	2015	2016	2017	2018
	Actual	Actual	Forecast	Forecast	Forecast
Planning	47.6	47.4	43.7	47.7	47.5

Of these total costs, Table 2 shows the amounts that have been allocated to Hydro One Distribution during the same time period.

Table 2: Summary of Common Corporate OM&A – Planning Allocated to Distribution (\$ Millions)

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Planning	15.0	16.4	18.4	12.5	17.8	13.3	17.6	13.3

Witness: Darlene Bradley

1 Planning plays a critical role specifying investments in Hydro One's distribution and
2 transmission businesses. Despite planning a growing transmission and distribution work
3 program, ongoing efforts have allowed Planning to control costs, as a percentage of the
4 work planned and awarded for execution as shown in Table 3.

5
6

Table 3: Total Planning Costs to Work Release/Award

Description	Historic		Forecast	Bridge	Test
	2014	2015	2016	2017	2018
Planning Costs, excluding Insurance (\$M)	42	41	37	41	41
Transmission/Distribution Work Planned/Awarded (\$B Net)	1.8	1.9	2	2	2.2
Planning Costs to Work Planned Ratio	2.3%	2.2%	1.9%	2.1%	1.9%

7
8
9

2. OVERVIEW

10 The Planning organization develops the corporation's investment plan (including its
11 transmission and distribution system plans), manages Hydro One's Research,
12 Development and Demonstration investments, scopes network expansions and new or
13 modified customer connections, and undertakes the asset management of distribution and
14 transmission assets. Planning's accountabilities promote the Renewed Regulatory
15 Framework outcomes of operational effectiveness, customer focus and public policy
16 responsiveness by: addressing distribution customers' needs for new or modified
17 connections and reliability requirements, initiating investments that enable public policy,
18 maintaining asset/reliability performance and responding to changing industry and
19 regulatory standards and broader policy initiatives.

20

Witness: Darlene Bradley

1 Planning's activities include:

2

- 3 • identifying potential asset and system needs by monitoring equipment condition and
4 reliability performance;
- 5 • scoping and developing candidate investments to address asset and customer needs
6 and business requirements;
- 7 • coordinating planning with customers, including responding to customer requests for
8 new or expanded connections and addressing customer concerns regarding reliability
9 or power quality;
- 10 • leading coordinated infrastructure planning through the bulk and regional planning
11 process described in the DSP, Section 1.2;
- 12 • conducting the investment planning process described in the DSP, Section 2.1;
- 13 • developing functional standards to optimize the life-cycle costs of transmission and
14 distribution assets while maintaining system safety and reliability as assets age and
15 deteriorate;
- 16 • managing the investment development and investment release processes, engaging
17 with service delivery units to enable the effective execution of specific investments;
- 18 • as of the fourth quarter of 2016, performing reliability analytics, producing reports
19 and conducting special studies in such areas as reliability performance, which are
20 tasks previously performed by the company's Regulatory Affairs division;
- 21 • obtaining customer feedback regarding potential investments;
- 22 • supporting the redirection of funds and re-prioritizing investments in response to
23 unforeseen events and work execution opportunities, integrating changes into future
24 investment plans;
- 25 • interfacing and collaborating with neighbouring utilities, regulatory and planning
26 authorities on matters of planning direction, requirements, policy and guidance;

Witness: Darlene Bradley

- 1 • providing expertise on various national and international industry entities, forums and
2 standard-setting bodies including the International Council on Large Electric
3 Systems, the Canadian Electricity Association, NERC, the Northeast Power
4 Coordinating Council, the IESO, the International Electrotechnical Commission, the
5 Institute of Electrical and Electronics Engineers, the National Institute of Standards
6 and Technology and the North American Transmission Forum;
- 7 • overseeing the development, implementation and maintenance of research,
8 development and demonstration initiatives that address operational and strategic
9 challenges in conjunction with industry and research organizations such as the
10 Electric Power Research Institute and the Centre for Energy Advancement through
11 Technological Innovation; and
- 12 • providing technical support to conduct investigations and specialized studies for, and
13 developing technical solutions for Hydro One stakeholders, such as those
14 investigating power system disturbances, short circuit studies, power quality and
15 harmonic assessments, delivery point and system reliability analysis, stray voltage
16 investigations, geomagnetic disturbance research, and reliability performance
17 assessments.

18

19 In addition to these activities, Planning staff actively participate in reliability standards
20 development processes in order to monitor and track the status of all proposed new and
21 revised reliability standards. Planning staff also serve as the transmitter representative on
22 the IESO Technical Panel, which reviews and recommends amendments to the Ontario
23 wholesale electricity market rules and advises the IESO board of directors on specific
24 technical issues related to the operation of the Ontario electricity market.

25

26 Included in Common Corporate OM&A, Hydro One Distribution has allocated its share
27 of Planning amounts for property, boiler and machinery insurance. The costs are provided
28 in Table 4:

Witness: Darlene Bradley

Table 4: Property, Boiler and Machinery Insurance (\$ Millions)
(Total and Allocated to Distribution)

Description	Historic		Forecast	Bridge	Test
	2014	2015	2016	2017	2018
Total Property, Boiler and Machinery Insurance	5.9	6.1	6.3	6.3	6.3
Distribution Allocated Property, Boiler and Machinery Insurance	2.3	2.3	2.9	2.9	2.9

3. VARIANCE EXPLANATION

Amounts that have been allocated to Hydro One Distribution, previously shown in Table 2 have been presented again, below.

Table 5: Summary of Common Corporate OM&A – Planning Allocated to Distribution (\$ Millions)

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Planning	15.0	16.4	18.4	12.5	17.8	13.3	17.6	13.3

1 Actual expenditures in 2015 were approximately 11% less than the 2015 budget proposed
2 in Hydro One's last distribution rate filing (EB-2013-0416), as shown in Table 5, due to
3 the effects of its succession planning strategy and productivity initiatives. As documented
4 in previous filings, as a succession planning strategy, the Planning function experienced
5 steady growth over the 2007 to 2011 period and a gradual decrease over the 2012 to 2014
6 period.

7

8 Actual costs in 2015 were approximately 9% higher than 2014 actuals. Contributing to
9 this increase was the establishment of a program management office to provide
10 governance and promote the integration of cross-organizational initiatives

11

12 Costs for 2016 are forecast to decline by about 24% from 2015 levels, as a result of an
13 updated actuarial pension valuation, which reduced operating expenses across Hydro
14 One. This decrease was partially offset by a forecast 26% increase to insurance expenses
15 as shown in Table 4. Further background on this pension adjustment is provided in
16 Exhibit C1, Tab 2, Schedule 2.

17

18 Bridge year forecast costs are anticipated to marginally increase over the 2016 forecast,
19 to respond to regulatory and asset renewal requirements, changing customer expectations,
20 new industry standards and codes and the transfer of the performance management
21 function from Regulatory Affairs in late 2016.

22

23 The test year forecast is expected to be in line with the bridge year forecast, and reflects
24 an ongoing effort to control costs, which is consistent with the feedback received through
25 the customer engagement process, during which customers consistently indicated that
26 lower electricity bills was their top priority.

27

1 **4. TEST YEAR FORECAST**

2
3 **4.1 CUSTOMER FOCUS OUTCOMES**

4
5 The Planning organization recognizes the importance of providing service that responds
6 to customers' needs and preferences and strives to address these needs in meaningful
7 ways, including:

- 8
- 9 • participating in formal customer engagement workshops with local distribution
10 companies ("LDCs"), large distribution accounts ("LDAs") and commercial and
11 industrial customers, where these needs and preferences were identified;
 - 12 • evaluating alternative investment strategies to minimize rate increases, an indicated
13 preference of end-use customers, where potential asset, safety and reliability impacts
14 can be reasonably managed; and
 - 15 • developing investments to respond to specific customer needs and preferences,
16 including power quality monitoring and improvement investments, performance
17 improvement investments to address reliability outliers and targeted large distribution
18 account and mid-size industrial customer reliability enhancements, a priority for large
19 customers. Further information on these investments is included in the DSP, Section
20 3.8, Investment Summary Documents SS-03 and SS-06.
- 21

22 **4.2 OPERATIONAL EFFECTIVENESS OUTCOMES**

23
24 The complexity of the planning environment continues to evolve to address stringent
25 compliance and legal requirements, including the removal of PCB contaminated oil
26 above 50 ppm from Hydro One's system by 2025, regulatory and performance
27 expectations including enhanced customer engagement requirements, the regional
28 planning process, and industry standards and codes.

Witness: Darlene Bradley

1 The workload within the Planning organization has increased over the last five years and
2 is anticipated to increase further through to the test year and forecast period as discussed
3 in the DSP, Section 1.1 and the Exhibit C1, Tab 1, Schedule 2. Despite inflation and
4 continued cost pressures associated with planning a growing work program, Hydro One
5 intends to control its planning function costs through ongoing process improvements
6 including:

- 7
- 8 • enhanced collaborative planning to provide greater upfront visibility to investments
9 under development;
 - 10 • staff training and development; and
 - 11 • an integrated approach to data, systems, and processes, leading to improved asset
12 management practices.
- 13

14 **4.3 PUBLIC POLICY RESPONSIVENESS**

15

16 The Planning organization continues to support the achievement of public policy
17 objectives through the identification and development of investments that deliver on
18 obligations mandated by government and regulatory bodies, including participation in the
19 regional planning process endorsed by the OEB. These include:

20

- 21 • investments to address load growth as identified in IESO needs and screening
22 assessments and regional infrastructure plans. Examples include the development of
23 feeders from the new Leamington and Enfield transformer stations, as identified in
24 the Windsor-Essex and GTA East Regional Infrastructure Plans, respectively.
25 Additional information on these investments is included in DSP, Section 3.8,
26 Investment Summary Document SS 02. These investments are also consistent with
27 Section 3.3 of the Distribution System Code, as they improve system operating
28 characteristics and relieve system capacity constraints; and

Witness: Darlene Bradley

- 1 • planned expansion of advanced metering infrastructure, which will improve Hydro
2 One's billing accuracy by increasing the number of customer meters that have the
3 capability to provide billing settlement data electronically. This investment will
4 enable a further migration of customers to time of use pricing and is consistent with
5 Section 7.11 of the Distribution System Code to provide accurate and timely billing.
6 Additional information on these investments is included in DSP, Section 3.8,
7 Investment Summary Document SA 03.

1 **Table 1: Summary of Total IT OM&A for Hydro One (\$ Millions)**

Description	Historic			Bridge	Test
	2014 IRM	2015	2016	2017	2018
	Actual	Actual	Forecast	Forecast	Forecast
IT Sustainment	84.1	87.2	84.8 ¹	82.6 ¹	78.8 ¹
IT Development	44.8	18.0	25.8 ²	23.0	20.4
IT Security	-	-	-	2.6	2.4
Business Telecom	17.8	17.3	18.4 ¹	18.4 ¹	18.4 ¹
IT Management & Project Control	18.6	20.0	19.7	19.1	17.9
Cornerstone	0.7	-	-	-	-
Total	166.0	142.5	148.7	145.7	137.9

2 ¹ Hydro One's 2017-2018 transmission cost of service application (EB-2016-0160) included costs allocated to Hydro One's
 3 transmission and distribution accounting segments and excluded costs allocated to its unregulated accounting segment.

4 ² The 2016 figure reflects the increase in spending required to support an increased capital portfolio.
 5

6 Table 2 is a summary of IT OM&A expenditures allocated to Hydro One Distribution for
 7 the period 2014 to 2018.
 8

9 **Table 2: Summary of IT OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
IT Sustainment	51.4	55.4	54.4	52.5	53.8	51.2	52.6	48.8
IT Development	41.4	12.6	12.4	19.2 ¹	13.8	15.5	14.9	13.4
IT Security	-	-	-	-	-	1.6	-	1.5
Business Telecom	8.0	8.6	8.1	8.3	8.3	8.3	8.3	8.3
IT Management & Project Control	8.2	9.2	10.8	9.2	10.6	9.0	10.3	8.4
Cornerstone	0.3	-	-	-	-	-	-	-
Total	109.3	85.8	85.7	89.2	86.5	85.6	86.1	80.4

10 ¹ The 2016 figure reflects the increase in spending required to support an increased capital portfolio.
 11

1 **2. VARIANCE EXPLANATION**

3 **2.1 IT SUSTAINMENT**

4
 5 Sustainment costs support Hydro One IT applications and infrastructure. Some of these
 6 costs are paid to Inergi LP (“Inergi”) pursuant to the current outsourcing contract that was
 7 negotiated in 2015 following a competitive procurement process. The remaining costs are
 8 for third-party software or hardware license and maintenance fees.

9
 10 Table 3 shows the specific expenditures for IT sustainment.

11
 12 **Table 3: IT Sustainment OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Base IT Sustainment Services	40.2	43.1	40.9	39.1	39.8	36.5	38.9	34.3
Third Party Contracts	11.2	12.3	13.5	13.4	14.0	14.7	13.7	14.5
Total	51.4	55.4	54.4	52.5	53.8	51.2	52.6	48.8

13
 14 Historical actuals are largely in line with OEB-approved expenditures. The 2016 and
 15 2017 forecasts, and 2018 test year expenditures are trending lower on an annual basis due
 16 to savings from productivity and procurement initiatives. The 2015 actual expenditure
 17 was 7.8% larger than 2014 actual expenditures due to the transition to the current Inergi
 18 contract for Base IT Sustainment Services.

19
 20 “Base IT Sustainment Services” refers to the IT services outsourced to Inergi. Base IT
 21 services can be broken down into four categories:

Witness: Lincoln Frost-Hunt

- 1 (1) Application maintenance - Work to maintain, address and fix matters associated
2 with approximately 800 business software applications used by the various
3 business units across the province;
- 4 (2) Data centre services - The operations, maintenance, and management of hardware
5 (servers, mainframe, storage area network and data storage devices), operating
6 systems, associated applications and infrastructure located at the data centre
7 (production and backup) facilities;
- 8 (3) Distributed server sustainment – Support services to maintain and operate the
9 application and file servers used to run business applications and administration
10 systems such as file sharing, e-mail exchange, web hosting and security
11 monitoring systems; and
- 12 (4) Help desk and desk-side support - Daily management and maintenance services
13 delivered to employees across the province by telephone, remotely, or through
14 field technicians.

15

16 The small spending increase in Base IT Sustainment Services in 2015 was due to the
17 transition to the current Inergi contract. Cost declines starting in 2016 through to the 2018
18 test year are attributable to several productivity initiatives described in Section 1.5 of the
19 DSP.

20

21 Third Party Contract costs are comprised of fees related to hardware maintenance and
22 software license and maintenance fees paid to third-party vendors of IT applications and
23 infrastructure. Hydro One's usage and payment of fees is typically subject to annual
24 audits by third-party vendors.

25

26 Third Party Contract fees in 2015 were higher relative to 2014 due to higher Microsoft
27 Enterprise software license fees and higher usage volumes. In 2016, costs increased
28 further to purchase support from Oracle for items that were previously unsupported.

1 Costs are expected to increase in 2017 and 2018 due to licensing costs for expanded
2 functions of the enterprise systems, such as the SAP platform and corporate customer
3 initiatives such as Opower.

4 5 **2.2 IT DEVELOPMENT**

6
7 The development budget covers application upgrades, enhancements, and the OM&A
8 portions of capital projects. The funds are required to maintain applications at vendor-
9 supported levels and to support enhancements to those applications. These funds are
10 divided into three categories:

- 11
- 12 (1) Enhancements - include changes to SAP and Non-SAP systems to meet
13 legal/regulatory requirements, to deliver business functionality that meets the
14 objectives of the business, and to further Hydro One's application rationalization
15 strategy;
 - 16 (2) Upgrades - Necessary software releases, periodic version upgrades, and
17 application replacements that do not meet the total capital threshold of \$2 million;
18 and
 - 19 (3) Impact of Capital Projects - Business process re-engineering costs, such as
20 training and change management costs, that are required when new or revised IT
21 applications are introduced but are not capitalized as per Hydro One's accounting
22 practices.

1 **Table 4: IT Development OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Enhancements	38.9 ¹	6.0	6.6	5.9	7.3	5.8	7.9	5.1
Upgrades	2.5	4.8	4.7	5.2	5.5	5.4	5.8	4.8
Impact of Capital Projects	0.0	1.8	1.1	8.1 ²	1.0	4.3	1.2	3.5
Total	41.4	12.6	12.4	19.2	13.8	15.5	14.9	13.4

2 ¹The 2014 spending level reflects CIS remediation and stabilization costs.

3 ²The 2016 figure reflects the increase in spending required to support an increased capital portfolio.

4

5 The proposed IT Development OM&A expenditure for the 2018 test year is 30.2% lower
 6 than the 2016 forecast expenditure. This decrease is largely attributed to lower
 7 expenditures to support the capital portfolio and savings from productivity initiatives.
 8 The 2016 forecast expenditure is about 53.6% lower than 2014 actual expenditure and
 9 about 52.4% higher than the 2015 actual expenditure. The 2016 and 2017 forecast is
 10 39.1% and 4.0% higher, respectively, than OEB-approved amounts primarily due to an
 11 increase in spending that was required to support an increased capital portfolio. The
 12 forecast for the 2018 test year is also below the 2016 and 2017 OEB-approved amounts
 13 primarily due to lower expenditures to support the capital portfolio and savings from
 14 productivity initiatives.

15

16 Enhancements costs for 2014 reflect post-CIS system stabilization work and the
 17 implementation of system changes deferred from 2012. The decrease in enhancement
 18 forecast costs for 2016 through 2018 is due to savings from productivity initiatives.

19

20 Starting in 2015 through to the 2017 bridge year, costs of upgrades increased due to the
 21 software refresh program and minor upgrades to keep other applications and
 22 infrastructure in a vendor-supported state. Hydro One has offset the increase with

1 productivity and procurement initiatives that have kept 2016, 2017 and 2018 forecast
 2 costs of upgrades below OEB-approved amounts.

3

4 The higher 2016 and 2017 forecasts for capital project-related spending is attributable to
 5 higher IT capital project spending in 2016, which is reflected in the DSP, Section 3.2.

6

7 **2.3 IT SECURITY**

8

9 As threats of cyber attacks and other crimes launched on IT systems increase, Hydro One
 10 is committed to the security of its computer and data systems. Table 5 reflects new IT
 11 Security costs to remediate and improve security capabilities in accordance with an
 12 increased threat landscape, audit reviews, and industry practices. Funding will drive:
 13 continuous improvement in the security awareness program; security threat intelligence
 14 and analysis through improved machine-to-machine threat information exchange with
 15 providers like the Canadian Cyber Threat Exchange and Electricity Information Sharing
 16 and Analysis Center; increase vulnerability testing by vendors to validate the security
 17 controls implemented to protect Hydro One’s assets and identify potential risks for
 18 remediation; and application security remediation.

19

20 **Table 5: IT Security OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
IT Security	-	-	-	-	-	1.6	0.0	1.5

21

22 IT security funding will improve the overall security posture, efficiency and productivity
 23 under a consolidated 7x24x365 security event management team that provides proactive
 24 monitoring, security incident management and situational awareness of IT threats. It will
 25 also improve data security by monitoring, protecting and providing data security

Witness: Lincoln Frost-Hunt

1 awareness. Vulnerabilities will be identified and remediated. This funding will also
 2 implement governance and compliance protocols, reflecting legal requirements (such as
 3 Bill 198 and NERC CIP) and corporate standards, to prevent unauthorized access to data
 4 and IT systems.

5

6 **2.4 BUSINESS TELECOM**

7

8 Business telecom costs cover data and voice telecommunications services and associated
 9 operation and maintenance of Hydro One's telecom network, which is comprised of a
 10 mixture of company-owned and leased facilities and equipment. Changes in costs vary
 11 with the addition of data and voice telecom capacity at sites throughout the province and
 12 security-related services for the expanding telecom network. These costs are primarily
 13 costs for third-party services. They are reflected in Table 6.

14

15 **Table 6: Business Telecom OM&A Allocated to Distribution (\$ Millions)**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Operations and Carrier Management	3.3	3.7	3.4	3.5	3.6	3.6	3.6	3.7
Field Services	1.1	1.0	0.8	0.8	0.8	0.8	0.8	0.8
Voice and Data Network Services	3.6	3.9	3.9	3.6	3.9	3.7	3.9	3.6
Mobility Services ¹	-	-	-	0.4	0.0	0.2	0.0	0.2
Total	8.0	8.6	8.1	8.3	8.3	8.3	8.3	8.3

16 ¹Mobility Services costs moved to IT from each business division's non-labour costs starting in 2016.

17

18 The proposed Business Telecom OM&A expenditure for the 2018 test year is the same as
 19 the 2016 year forecast expenditure. The 2015 actual expenditure was higher than the
 20 OEB-approved amount due to a change in the allocation of cost to Hydro One
 21 Distribution. The 2016 and 2017 forecast expenditures are below the OEB-approved

1 amounts due to savings from IT productivity and procurement initiatives. In spite of
2 adding mobility services expenditures, Business Telecom expenditures remain stable
3 from 2016 through to the 2018 test year and in line with the 2016 and 2017 OEB-
4 approved amounts primarily due to savings from productivity and procurement
5 initiatives.

6
7 Business Telecom costs are divided into four categories:

- 8
- 9 (1) Operations and Carrier Management – Telecommunications management services
10 provided by Hydro One Telecom Inc. (“Hydro One Telecom”) to provide
11 telecommunications monitoring and network operations for Hydro One’s power
12 system and business operations;
 - 13 (2) Field Services - Maintenance and repair of voice and data telecom equipment.
14 Field services also include the handling of connection changes for moves,
15 additions, changes, and deletions (“MACDs”);
 - 16 (3) Voice and Data Network Services - Use of third-party voice and data circuits and
17 equipment; and
 - 18 (4) Mobility Services – Mobile phone services.
- 19

20 Operations and Carrier Management costs are stable from 2016 through 2018. Hydro
21 One Telecom will play a critical role in security event monitoring for Hydro One’s
22 critical networks and information systems.

23
24 In 2011, an independent industry review was conducted which concluded that:

1 [T]he [Hydro One Telecom] Network Operation Center is performing networking
2 monitoring functions at a more efficient level than comparable Canadian utilities'
3 24x7 telecommunication operation.

4

5 The report confirmed that an electricity utility has unique requirements pertaining to its
6 telecommunication system that are not easily met by a third-party non-electricity utility
7 carrier. It also confirmed the cost and operational benefits of this arrangement:

8

9 Cost of services increases to [Hydro One] since 2002 have been less than
10 if the network monitoring function had remained within [Hydro One].
11 [Hydro One Telecom] continues to achieve efficiency gains relative to its
12 peer group of utilities, and has now achieved the status of most efficient in
13 performing the network monitoring function. The differentiating factor
14 for the [Hydro One] operations as compared to the benchmarked utilities
15 is that they have found a way to interject a commercial telecommunication
16 approach with a solid power system telecommunication operation to bring
17 a successful and cost effective solution to both businesses.

18

19 There is no year-over-year cost increase for Field Services from 2016 through to the 2018
20 test year.

21

22 The costs for Voice and Data Network Services decrease in 2018 due to a new contract
23 negotiated with carriers in 2016.

24

25 Starting in 2016, Mobility Services costs are included in the IT OM&A budget.
26 Previously, they were embedded in each business unit's costs. A centralized mobility
27 services operation results in costs savings, service simplification and improved

governance. In 2018, there is no increase in this line item. The proposed costs for 2017 and 2018 reflect savings from a negotiated mobility contract rate reduction.

2.5 IT MANAGEMENT & PROJECT CONTROL

The IT Management and Project Control function develops and implements IT strategies, policies and processes, IT architectural standards for application interoperability, infrastructure capacity, network security, regulatory compliance, and IT governance. IT Management and Project Control responsibilities include hardware procurement, training, detailing vendor responsibilities, architecture development, and research services. Table 7 reflects the historical and projected spending for this function over the bridge and test years.

Table 7: IT Management & Project Control OM&A Allocated to Distribution
 (\$ Millions)

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
IT Management	7.4*	8.0	9.5	8.1	9.3	7.7	9.0	7.3
Project Support and Control	0.8	1.2	1.3	1.1	1.3	1.3	1.3	1.1
Total	8.2	9.2	10.8	9.2	10.6	9.0	10.3	8.4

*Cost restrictions and costs charged back to projects.

The proposed IT Management and Project Control expenditure for the 2018 test year is about 8.7% lower than the 2016 forecast expenditure. The 2015 actual expenditure, the 2016 forecast expenditure, and 2017 forecast expenditure are all below their respective OEB-approved amounts. Hydro One attributes these decreases to an updated actuarial pension valuation, which reduced operating expenses across the company, lower

Witness: Lincoln Frost-Hunt

1 headcount, and higher capitalization of OM&A costs due to increased IT capital projects
2 portfolio expenses, as reflected in the DSP, Section 3.2.

3
4 These expenses are divided into two categories:

- 5
- 6 (1) IT Management – Costs of planning, coordination and management of Hydro
7 One’s IT infrastructure, outsourced services and IT projects; and
 - 8 (2) Project Support and Control – Costs pertaining to standard project management
9 services for the delivery of all projects impacting information systems, which are
10 closely related to IT development work.

11
12 Ongoing efforts to control costs have allowed Hydro One to forecast lower 2018 IT
13 Management costs than 2015 actual or 2016 and 2017 forecasts. The Project Support and
14 Control cost forecast for the 2018 test year is below the 2016 and 2017 OEB-approved
15 amounts primarily due to savings from aforementioned productivity initiatives.

16
17 **3. TEST YEAR FORECAST**

18
19 As outlined in Section 1.3 of the DSP, Hydro One customers have indicated that keeping
20 costs as low as possible is their top priority. Before asking customers to pay more, Hydro
21 One is reducing costs and increasing its productivity. The result is an investment plan
22 that aligns customer preferences, asset needs and rate impact. As discussed throughout
23 this Exhibit, Hydro One IT has been a source of a number of productivity initiatives that
24 offer customers value for money.

1 **3.1 CUSTOMER FOCUS OUTCOMES**

2
3 The proposed IT OM&A expenditures reduce the risk of prolonged IT system outages
4 and reduce the costs of unplanned investments. IT OM&A expenditures ensure key
5 systems and generated data are available to support customer service programs and work
6 management programs. For example:

- 7
- 8 • Customer information systems enable the effective delivery of call center, meter
9 reading, billing, collections and settlement services to Hydro One customers through
10 reliable, secure and cost-effective information systems. It enables the achievement of
11 Hydro One customer satisfaction Performance Metric outlined in the DSP, Section
12 1.4, Table 8; and
 - 13 • Work management systems enable timely connection of customers, outage
14 management and demand-related activities. It enables the achievement of Operation
15 Effective outcomes outlined in the DSP, Section 1.4, Table 8.
- 16

17 **3.2 OPERATIONAL EFFECTIVENESS OUTCOMES**

18
19 Operational effectiveness includes reliability and cost of service. Application and
20 infrastructure reliability requirements are determined by business criticality. These
21 systems are engineered to deliver reliability at a determined support level.

22
23 Reliability of service is defined in terms of a support level (“SL”) designation assigned to
24 an application after it is placed into service. The SL contains a set of characteristics and
25 expectations that determine the standards to which these systems will be subsequently
26 maintained. Hydro One IT ensures that all systems are designed and operated such that
27 their target service level is met in the most cost-effective manner possible.

1 “Cost of service” is defined as IT spending as a percentage of total company operating
2 expenses. For the purposes of this metric, “IT spending” includes both OM&A and
3 capital expenditures. “Operating Expenses” includes OM&A, cost of power and
4 depreciation. Background on this metric is available in Section 1.6 of the DSP.

5
6 IT spending as a percentage of operating expenses is an indicator of the size of a
7 company’s IT budget. Higher IT spending could indicate inefficiencies, such as
8 unmanaged demand and inefficient contract management. Alternatively, it could indicate
9 a company’s strategy to use IT investments to enable broader operational productivity
10 (possibly reducing other business operating expenses) and/or other business objectives.
11 IT touches most business processes. The percentage of IT spending as a percentage of
12 total company Operating Expenses is a useful metric that ensures Hydro One builds and
13 sustains the IT capabilities it needs while keeping costs down.

14
15 **Table 8: IT Spend As Percentage of Operating Expense**

Description	Historic		Bridge	Test
	2015 Actual	2016 Forecast	2017 Forecast	2018 Forecast
IT spend as % of operating expense	3.6%	4.6%	4.2%	3.6%

16 The 2016 and 2017 figure reflects the increase in IT capital spend required to support an increase capital portfolio in comparison to
17 2015.

18 19 **3.3 PRODUCTIVITY INITIATIVES**

20
21 Hydro One has made significant investments in enterprise class technology to improve its
22 operational effectiveness. Among the most notable investments are SAP, Microsoft and a
23 Geographic Information System (“GIS”). These systems provide direct connections
24 between customers and Hydro One’s call centre, ensure that bills are timely and accurate
25 and enable several other functions that serve customers on a 24-7 basis. The enterprise
26 systems also provide the backbone of business operations within finance, human

Witness: Lincoln Frost-Hunt

1 resources, supply chain, as well as asset management and work management. The
2 reliability of these systems is critical in keeping Hydro One running effectively and
3 improving customer satisfaction levels.

4

5 The list of productivity initiatives driving the OM&A savings in IT are described in
6 Section 1.5 of the DSP.

**COMMON CORPORATE OM&A - COST OF EXTERNAL
 REVENUE**

1. SUMMARY OF OM&A COSTS OF EXTERNAL REVENUE

This Exhibit details Hydro One Distribution’s costs for regulated and unregulated external revenues that are not included in other OM&A programs. Regulated Revenues are based on OEB-approved specific service charges, which are detailed in Exhibit H1, Tab 2, Schedule 3, whereas Unregulated Revenues are based on charges determined by Hydro One Exhibit E1, Tab 1, Schedule 2 which describes the associated external revenues over the 2014 to 2022 period.

In this Exhibit, the cost of Regulated Revenue consists of: new connections primarily of subdivision and rural residential facilities, service upgrades to increase supply capacity, street light maintenance, and forestry work. The cost of Unregulated Revenue includes costs associated with Hydro One Remotes transport work equipment used for emergency services and Municipal Electric Association Reciprocal Insurance Exchange (“MEARIE”) training and development.

Table 1: Summary of OM&A Costs of External Revenue (\$ Millions)

Description	Historic					Bridge		Test
	2014	2015		2016		2017		2018
	Actual	Actual	Approved	Forecast	Approved	Forecast	Approved	Forecast
Cost of Regulated Revenue	1.7	2.1	1.0	1.3	1.0	1.6	1.1	1.6
Cost of Unregulated Revenue	2.8	3.3	1.0	3.0	1.1	2.9	1.1	3.0
Total	4.5	5.4	2.1	4.3	2.1	4.5	2.1	4.6

Witness: Joel Jodoin

1 **2. VARIANCE EXPLANATION**

2
3 **2.1 COST OF REGULATED REVENUE**

4
5 The cost of Regulated Revenue consists of miscellaneous services such as: customer new
6 connects and service upgrades, street light maintenance and forestry work. The cost
7 variance year-over-year from 2014 to 2018 is minimal due to the services remaining
8 constant. The cost variance between the actual or forecast figures for the period 2015 to
9 2017 and the OEB-approved amounts is due to higher contestable emergency work,
10 customer connections and joint use services, which consists of construction activities and
11 vegetation management.

12
13 **2.2 COST OF UNREGULATED REVENUE**

14
15 The cost of Unregulated Revenue is comprised of costs associated with Hydro One
16 Remotes transport work equipment usage on emergency services and MEARIE training
17 and development. The costs for the period 2014 to 2018 are constant at \$3 million. The
18 variance between actual or forecast figures and the OEB-approved levels for those years
19 is due to higher than forecast revenue from MEARIE for the training and development of
20 Metering Technicians, Lineman, Forestry, Protection Engineers and Technicians and for
21 assistance with Hydro One Remotes vegetation management and emergency services.
22 These revenues are discussed in Exhibit E1, Tab 1, Schedule 2.

1 **STAFFING AND EMPLOYEE COMPENSATION**

2

3 **1. INTRODUCTION**

4

5 This Exhibit outlines Hydro One Network Inc.’s (“Hydro One”) total compensation and
6 corporate staffing strategies. Hydro One acknowledges the concerns of its customers
7 regarding the need to keep costs as low as possible, and also feedback from the Ontario
8 Energy Board and other external stakeholders regarding compensation and employee
9 headcount. In response, and guided by a company-wide commitment to aligning
10 customer needs and preferences, responsible stewardship of the Distribution system, and
11 rate impact, Hydro One has made gains in either reducing or limiting compensation costs
12 and actively managing the efficiency and size of its work force, taking into account the
13 size of its work programs. At the same time, in order to accomplish the work program
14 reflected in this Application and deliver on the outcomes that it is committing to, it is
15 necessary for Hydro One to attract, motivate, engage and retain a highly skilled and high
16 performing workforce with appropriate compensation systems.

17

18 **2. THE PEOPLE STRATEGY**

19

20 The People Strategy is a critical component in driving high performance and achieving
21 corporate objectives. The three key objectives of the People Strategy are: (i) aligning the
22 workforce in support of the corporate strategy and goals; (ii) building human capital
23 capacity; and (iii) driving employee performance. The framework to achieve these
24 objectives is the overall talent management process as shown in Figure 1.

The People Strategy is the framework that guides the Talent Management process. The focus is to ensure Hydro One has the right people in the right jobs at the right time to deliver expected results.

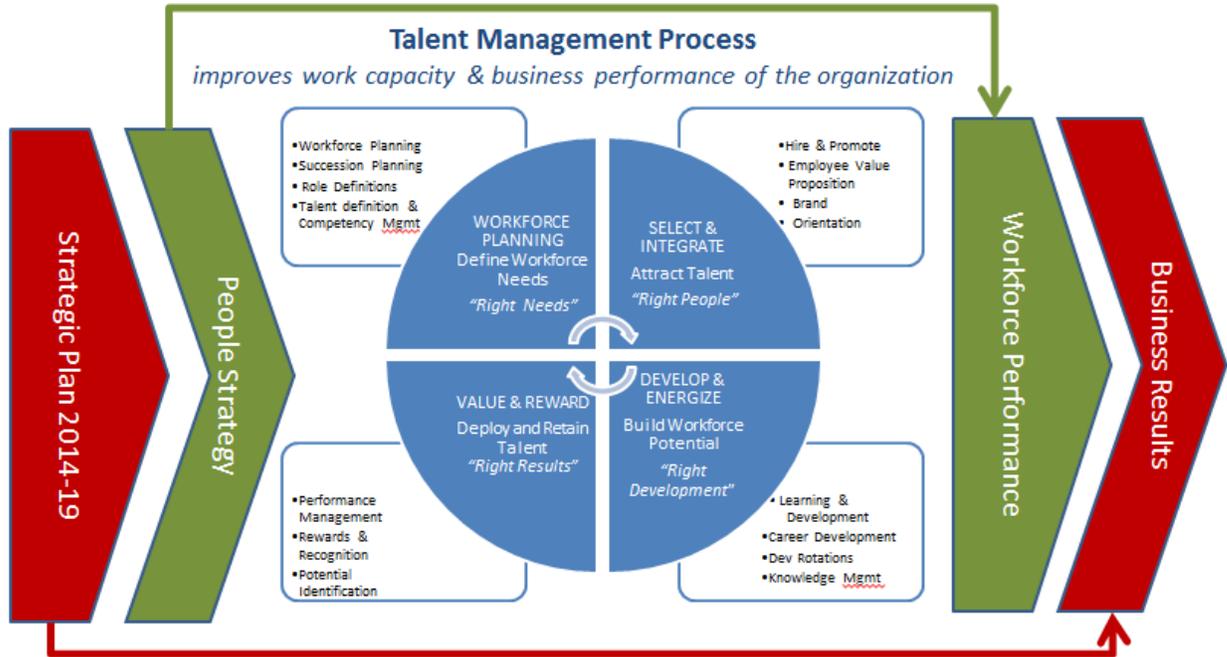


Figure 1: The People Strategy

3. EMPLOYEE CLASSIFICATIONS

3.1 REGULAR EMPLOYEES

Regular Employees of Hydro One can be placed in three categories:

Management staff (MCP): MCP employees are excluded from union representation because they carry out managerial duties or work on confidential labour relations matters or legal matters. MCP employees represent approximately 10% of Hydro One regular employees.

Witness: Keith McDonell

1 **PWU represented staff (PWU):** The PWU is an industrial union that represents the
2 trades, operators, technicians and clerical workers. They perform line work, forestry,
3 electrical, mechanical, protection and control, meter reading, stock keeping, system
4 operation, technical and clerical/administrative work. The PWU also administers a hiring
5 hall of contingent workers to meet fluctuating work demands, (e.g., work peaks and
6 special projects), performing primarily supplemental construction and maintenance work.
7 The PWU represents over 65% of Hydro One employees.

8
9 **Society represented staff:** The Society of Energy Professionals (“The Society”) is a
10 professional union that represents engineers, technical, administrative and supervisory
11 staff. They perform engineering, high level technical and administrative work as well as
12 supervisory functions. The Society represents approximately 25% of Hydro One regular
13 employees.

14 15 **3.2 TEMPORARY EMPLOYEES**

16
17 Temporary employees are employees in any of the three categories set out above,
18 engaged in work that is not of a continuing nature.

19 20 **3.3 CASUAL WORKERS**

21
22 Although the PWU does perform some construction work, the majority is performed by
23 the Building Trades Unions (“BTU”), under agreements with the Electrical Power

1 Systems Construction Association¹ (“EPSCA”), the Labourers, and members of the
2 Canadian Union of Skilled Workers (“CUSW”).

3

4 Seventeen construction BTU’s supply a contingent workforce through their hiring halls,
5 negotiating their collective agreements with EPSCA. These represent the construction
6 trades employed by Hydro One, with the exception of those represented by the CUSW
7 and the Labourers.

8

9 The Labourers’ International Union of North America is a construction union that Hydro
10 One negotiates with directly as opposed to via the EPSCA.

11

12 The CUSW represents lines and electrical tradespersons who work on transmission
13 construction, including the construction of lines over 50 kV, transmission stations,
14 switchyards, substations, system control centres, and associated telecommunications
15 systems. Construction employees are contingent workers, accessed through the hiring
16 halls to perform specific work programs and then laid off. They are paid a total wage
17 package (including benefits and pension payments) for each hour worked. This
18 relationship ensures that workers with the required skill set are hired in the right location
19 for only the exact duration of the work assignment and that Hydro One has no on-going
20 obligations with respect to benefits or pension for them.

21

¹ The Electrical Power Systems Construction Association negotiates and administers collective agreements on behalf of Hydro One, Ontario Power Generation, Bruce Power and other contractors performing work in the Electrical Power System Sector under the Ontario Labour Relations Act.

1 **3.4 CONTRACT STAFF**

2

3 Contract Staff are individuals engaged as independent contractors, not on the
4 Corporation's payroll. Contract staff are retained for their particular skill sets on
5 projects, or to perform other work that is not of an ongoing nature. They are engaged at
6 Hydro One for varying amounts of time and paid varying amounts commensurate with
7 their skill sets and the market rate for that skill. Contract staff are tracked by work
8 programs or activities and not by headcount. Where applicable, the procurement of
9 contract staff is governed by the terms of the collective agreements between the
10 Corporation and its respective unions where applicable.

11

12 **4. DEMOGRAPHICS**

13

14 Hydro One continues to face challenges associated with the availability of some skilled
15 and professional staff to operate, sustain and develop its transmission and distribution
16 systems. An aging workforce and a scarcity of certain core skills in the electricity
17 industry continue to be a human resource risk.

18

19 **4.1 RETIREMENTS**

20

21 At year-end 2016, 959 employees or approximately 18% of Hydro One employees
22 (transmission and distribution) were eligible for an undiscounted retirement. By 2022, a
23 further 755 Hydro One staff will be eligible for an undiscounted retirement.
24 Cumulatively, this represents approximately 32% of the 2016 year end headcount total of
25 Hydro One employees. On average, over 185 regular employees have retired each year
26 between 2011 and 2016. This is shown in Figure 1. This trend is expected to continue
27 through the next decade and is consistent with challenges faced by other utilities in the

Witness: Keith McDonell

1 electricity sector. Although attrition can result in the loss of skilled and experienced
2 talent, it also provides an opportunity to further transform the organization.

3



4

5 **Figure 1: Retirement Eligibility and Retirements (2011 – 2016)**

6

7 **4.2 AGING WORKFORCE**

8

9 The average age of Hydro One’s regular employees is 45.3 years. The overall age
10 distribution in 2013 and 2016 is shown in Figure 2. Employees under the age of 30
11 represent 12.8% of the regular workforce, an increase from 10.5% at year-end 2013.
12 Employees aged 50 or over represent 39.3% of the workforce. This segment of the
13 workforce has many years of experience, but is poised to exit the organization through
14 retirement.

15

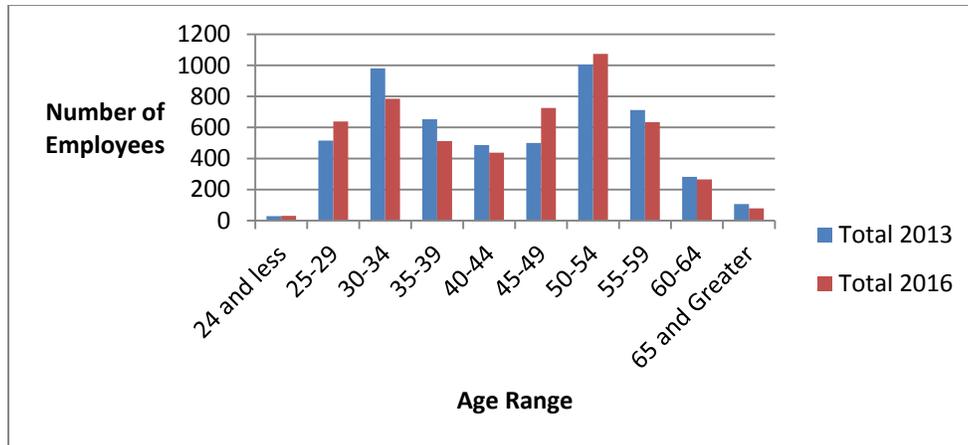


Figure 2: Age Range of Regular Employees 2013 vs 2016

To address these demographic challenges, Hydro One has been proactively implementing a number of initiatives which are discussed in the sections that follow.

5. RESOURCE FLEXIBILITY

On March 2, 2017, Hydro One announced an organizational change for its Asset Management group, establishing separate leadership accountability for Transmission and Distribution operations complemented by enhanced centralized support in Planning, Engineering, Shared Services and System Operations. This change was made to improve operational outcomes by establishing clear accountability and ownership of results. Notwithstanding this change, Hydro One maintains an integrated workforce for its transmission and distribution businesses. This allows Hydro One to take advantage of economies of scale and efficiencies that would not be available through separate transmission and distribution operations, such as an integrated asset management strategy, centralized grid control, and centralized fleet operations. Other centralized functional support is provided in the areas of Finance, Human Resources and Customer Support.

Witness: Keith McDonell

1 Hydro One utilizes a work-based approach to staffing, whereby the Company resources
2 according to work programs rather than planning the work around the number of internal
3 resources available. To address the fluctuating and seasonal nature of work programs,
4 the Company maintains as much flexibility as possible by utilizing a variety of labour
5 resources, including regular, temporary, hiring hall and contract staff.

6
7 Matching staff to dynamic work programs requires a managed approach to staff planning.
8 The Company must consider the amount of work to be done, the nature of the work and
9 the skills required. At the same time, the Company must identify the most cost-effective
10 means of acquiring needed skills, within the constraints of the collective agreements.
11 Demographic and skills analyses are conducted to ensure that Hydro One retains the
12 appropriate talent in the present and is positioned properly in the market to attract the
13 talent required in the future.

14
15 Progress has been made in maintaining the appropriate number and mix of staff required
16 to complete the Company's planned work programs. However, Hydro One's highly
17 skilled jobs require long learning curves, so it is essential that the Company hire well in
18 advance of forecast retirements.

19
20 **6. HEADCOUNT**

21
22 Hydro One recognizes the concerns expressed in previous OEB Decisions with respect to
23 rising headcount. Furthermore, the OEB has expressed a concern that Hydro One has not
24 presented its resourcing requirements on a Full Time Equivalent basis ("FTE"). In this

1 Application, Hydro One has provided reporting on FTEs². In the future, Hydro One
 2 expects to incorporate the FTE metric into its business planning and performance
 3 management processes. Table 1 illustrates the forecast FTEs for 2017 to 2022. Total
 4 Regular FTEs and total Networks FTEs in 2022 are expected to be 2.0% and 1.3% lower
 5 respectively than in 2017.

6
 7

Table 1: Full Time Equivalents (FTE) - 2017 to 2022

		2017	2018	2019	2020	2021	2022
Regular	MCP	679	675	671	669	668	668
	Society	1375	1380	1376	1370	1363	1363
	PWU	3480	3444	3423	3413	3403	3395
	Total	5534	5499	5470	5452	5434	5426
Non-Regular	MCP	29	28	28	28	27	27
	Society	51	46	41	41	41	41
	PWU	165	140	138	138	137	137
	Total	245	214	207	207	205	205
Casual	PWU HH	1374	1465	1400	1401	1407	1408
	Casual Construction	1428	1428	1428	1428	1428	1428
Total FTE's		8581	8606	8505	8488	8474	8467

8
 9

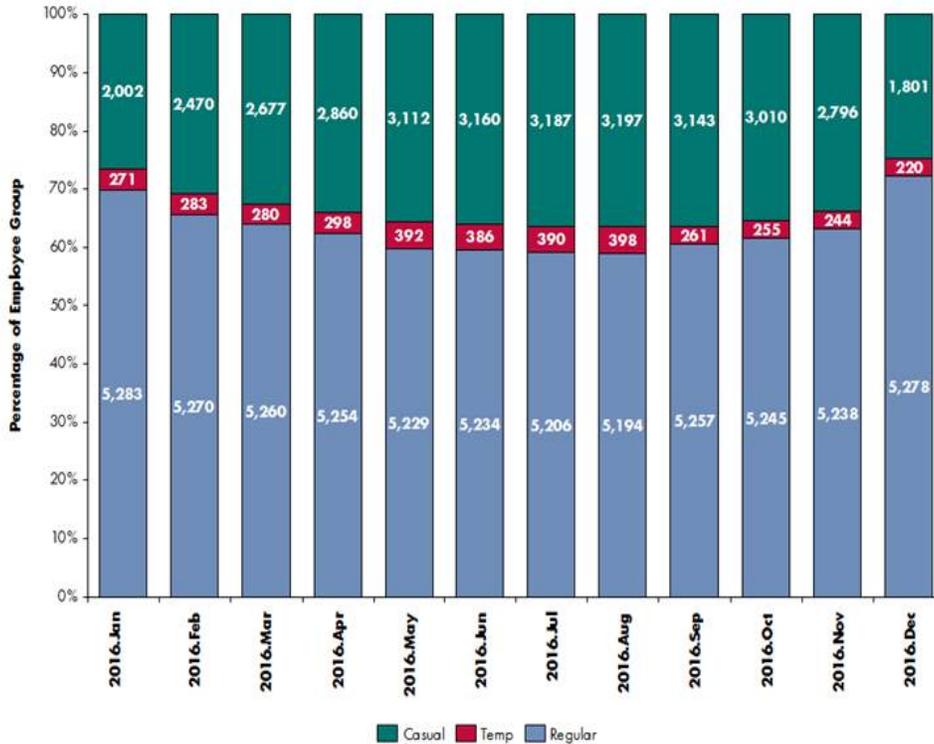
10 Figure 3 illustrates that Hydro One employs a large number of non-regular casual
 11 employees (PWU Hiring Hall and Construction Hiring Hall) and temporary employees
 12 through the year to execute on its various work programs. The use of non-regular
 13 resources reduces overall compensation costs since non-regular staff do not join pension
 14 or benefit programs, are not entitled to paid vacation days off, and can be deployed in a
 15 more flexible manner. The Company uses casual labour to appropriately supplement its

² FTE assumptions: (1) A budgeted regular position is 1 FTE; (2) For non-regular positions, unless budgeted for less than 1 year, a non-regular position is 1 FTE; and (3) For casual (Hiring Hall and Casual Construction), FTE's are determined by "person months"/12.

Witness: Keith McDonell

1 required workforce to complete its capital work program using the lowest cost labour in
 2 the context of collective agreements commitments.

3



4

5 **Figure 3: Percent Use of Employee Categories (January – December 2016)**

6

7 As discussed in this Exhibit, Hydro One’s work program is expected to grow throughout
 8 the test period while the FTE complement, shown in Table 1 remains relatively stable.
 9 Despite the increase in planned work, there are a number of initiatives currently
 10 underway to manage the FTE complement, as discussed below.

11

12 **Construction**

13 Construction Services has a highly flexible construction workforce designed to respond
 14 to the demands of its work program. Although the direct hire casual building trades
 15 workforce is scalable, there is a practical limit to its size defined by the volume of work

Witness: Keith McDonell

1 that can be safely and efficiently planned and managed by internal staff. The current
2 staffing strategy shows a flat regular staffing complement with a plan to utilize a
3 combination of internal resources, engineering subcontracts, construction contracts or
4 arrangements contracted on a fixed-price basis to execute the growth in the work
5 program. This allows Hydro One to grow safely and acquire new capabilities quickly,
6 while maintaining its flexibility to provide the best value to our customers.

7
8 **Engineering**

9 Hydro One is working to complete both an increasing volume of engineering work as
10 well as advancing engineering deliverables earlier in the project lifecycle to create an
11 intentional backlog of construction-ready projects. Despite substantially growing capital
12 work programs, Hydro One regular staff accountable for Engineering has decreased in
13 recent years and is anticipated to remain generally flat in the coming years.

14
15 Improved organizational alignment of different engineering functions has enabled more
16 integrated solutions across project definition and project execution phases, and Hydro
17 One has made a number of process and organizational improvements resulting in
18 increased output from the engineering group. Substantial work has been done to
19 standardize engineering processes and design packages, resulting in improved on-time
20 delivery rates and overall project cost effectiveness. Engineering prepares the technical
21 specifications that feed external Engineering, and acts as Owner's Engineer to ensure
22 quality and compliance.

23
24 Resources to deliver on the growing future capital work programs is planned to be
25 achieved through increased utilization of external engineering partners, coupled with
26 continuous improvement of internal processes. The portion of the engineering portfolio
27 completed externally has continued to grow over recent years, from roughly 14% in 2012
28 to roughly 25% in 2016, and is anticipated to reach approximately 30% through 2018.

Witness: Keith McDonell

1 **Lines**

2 In early 2016 Provincial Lines consolidated all Technical First Line Managers (FLMs),
3 Supervising Technicians, Meter Technicians, Area Distribution Engineering Technicians
4 and Meter Reader Data Collectors into one technical organization. The creation of this
5 new more focused group ensured that resources are optimized across all the zones and
6 that roles and responsibilities for all are clear and consistent. Provincial Lines moved all
7 distribution project crews and apprentice crews into a single newly created zone. The
8 purpose of this reorganization was to ensure consistent and optimum utilization of hiring
9 hall project crews. It also allowed for more focus on apprentice development.

10
11 Outsourcing work has also provided opportunities for resource optimization by ensuring
12 skilled internal resources are available for work programs that better align with
13 qualifications.

14
15 Additionally, two key initiatives planned over the test period are expected to positively
16 impact performance: Move to Mobile and the Pole Replacement Program.

17
18 The use of innovative technology, being implemented through the Move to Mobile
19 (M2M) project, will enable real time completion and verification of data, reducing
20 administrative office effort and increase field productivity through geographic based
21 auto-scheduling.

22
23 The Pole Replacement program focuses on two aspects of planning. The first is to
24 strategically select poles to be replaced based on priority and selection criteria and align
25 this with Forestry's annual trimming cycle. The second is to bundle poles that are
26 nearing end of life or showing premature signs of decay on the same feeder.

27

1 **Forestry**

2 While the Forestry work program increases significantly throughout the planning period,
3 the core philosophy is to perform more work for the dollars spent. This will be
4 accomplished by maximizing the current Forestry efficiency initiatives (e.g., the
5 Muskoka Project) as well as looking at further opportunities to utilize mechanical crews
6 and resource mix to continue to perform more work for the same dollars.

7
8 **Stations Maintenance**

9 The overall Stations Work Program is increasing over 2016 levels. The increases are
10 primarily the result of the need to ramp up the PCB testing and retro-fill programs. These
11 programs must be completed by 2025. Maintenance programs outside of the PCB
12 program are essentially flat in Distribution. Stations is managing this by increasing its
13 temporary workforce over the planning period while at the same time reducing its regular
14 workforce to recognize the fact that when the PCB program is completed the overall
15 program will be smaller in size than it is today and efficiency improvements will occur in
16 planning, scheduling and execution.

17
18 Stations is planning to introduce a new scheduling tool in 2017 which will allow it to
19 more effectively plan and schedule its work with greater efficiency than currently exists.

20
21 **7. RECRUITMENT**

22
23 Hydro One continues to hire, albeit at a lesser level than previous years, into its
24 Apprentice and Graduate Training Programs to help address the significant wave of
25 retirements in its critical trades, technical and engineering groups.

26
27 Since January 1, 2004, 473 graduate trainees have been hired through the Company's on-
28 campus recruitment program. Not only do new graduates bring much needed skills but

Witness: Keith McDonell

1 also new perspectives and fresh energy. The New Graduate program is a two-year
2 training program for recent university graduates. The program is designed to provide new
3 graduates with the skills, knowledge and experience needed to become successful and
4 productive employees. The New Graduate program consists of three main components:
5 (i) corporate training; (ii) technical training; and (iii) rotations.

6
7 Hydro One also continues to recruit into trades apprenticeship and technical training
8 programs and has partnered with a number of universities and colleges. Hydro One has
9 taken a leadership role in support for power system engineering programs, assisting in the
10 development on-line power system engineering programs and providing scholarships to
11 encourage enrolment in key areas where the Company faces labour shortages.

12
13 Hydro One will also continue its support of the University and College Co-Op Education
14 Program, hiring approximately 300 co-op students a year. This is a mutually beneficial
15 process. Hydro One gains bright, skilled workers trained in the latest theories and
16 practices for four-month or eight-month work-terms, while the students gain practical and
17 relevant work experience that can be used to develop their future careers. Hydro One has
18 also found that the co-op programs have proven to be a rich source of talented candidates
19 for graduate trainee positions by offering the Company an opportunity to assess the
20 student's "fit" and long-term potential with the Company. Once hired, Hydro One's
21 experience shows that these former co-op students have a shorter learning curve than
22 other new hires with no previous Hydro One experience.

23
24 Hydro One believes a sustainable and longer-term strategy is to invest in programs where
25 knowledge transfer is the key objective. Programs such as New Graduate and Apprentice
26 Hiring, and knowledge documentation all contribute to ensuring knowledge is transferred
27 to more junior staff.

Witness: Keith McDonell

1 **7.1 APPRENTICE HIRING**

2
3 Through structured in-house apprenticeship programs, Hydro One has and continues to
4 revitalize its trades employee base in order to ensure a ready supply of trades talent.
5 Hydro One’s main apprenticeship programs are Powerline Technician, Utility Arborist,
6 Electrician and Truck and Coach Mechanics. Table 2 illustrates the number of
7 apprentices hired from 2010 to 2016. Based on the anticipated number of retirements
8 expected in trades classifications and the increases in labour demand as a result of
9 additional work requirements, Hydro One expects to continue investing in apprentices as
10 a viable source of talent for skilled trades. Apprenticeships are part of the PWU Hiring
11 Hall and therefore not eligible to join the Hydro One pension or benefit programs.

12
13 **Table 2: Apprentice Hiring**

Year	Lines	Forestry	Stations	Fleet
2010	100	24	36	4
2011	32	16	15	4
2012	48	36	4	3
2013	64	32	22	6
2014	80	40	20	7
2015	80	24	12	5
2016	80	24	18	4

14
15 **8. LEADERSHIP AND SENIOR MANAGEMENT DEVELOPMENT**

16
17 The primary objective of this program is to ensure that Hydro One has a systematic
18 management development framework. This helps ensure the Company retains a
19 competitive advantage by developing, maintaining, and enhancing those management
20 competencies deemed to be essential. In 2015, a new mandatory curriculum was
21 introduced for managers and supervisors. The goal of this program is to ensure that all
22 managers and supervisors have a common knowledge and skill set to lead their teams.

Witness: Keith McDonell

1 Through proper development and training of managers and supervisors, they will have
2 the tools to be effective managers

3 4 **8.1 SUCCESSION PLANNING**

5
6 A Succession Planning Process has been developed for all senior management staff
7 within the Company. The program's goal is to ensure that for each of the senior
8 management positions, at least two successor candidates have been identified, and that a
9 developmental plan for each of the candidates is developed and implemented. In order to
10 transition to a new commercially focused organization, new external senior managers
11 with the requisite skill set and experience have also been recruited into the organization.

12 13 **8.2 PERFORMANCE MANAGEMENT**

14
15 Hydro One continues to develop a performance management strategy aligned with our
16 pay-for-performance philosophy. The year-over-year enhancements to the process and
17 system better emphasize goal-setting, ongoing coaching and feedback, performance
18 reviews, calibrations and employee incentives aligned with corporate and individual
19 success at all managerial levels of the organization. The outcome-based approach
20 improves performance by having managers set clear expectations about what employee
21 success looks like and collaboratively work with their MCP employees to:

- 22
- 23 • Document three to four clearly defined goals with key success measures;
 - 24 • Align personal goals with the overall corporate strategy and business objectives;
 - 25 • Provide clarity around the Hydro One core values, behaviours and competencies
26 used to achieve goals;
 - 27 • Offer coaching, feedback and development required to support employee goal
28 achievement, growth and high performance; and

Witness: Keith McDonell

- 1 • Improve transparency and communication about how differentiated rewards and
2 recognition are determined and achieved.

3
4 **8.3 ENGAGEMENT**

5
6 Hydro One continues to focus on employee engagement throughout the workforce.
7 Engaged employees bring their best effort to work every day and are a competitive
8 advantage. Engaged employees have a demonstrated positive impact on business
9 outcomes: improving profitability, productivity, customer satisfaction and shareholder
10 value and decreasing safety incidents and absenteeism. Engagement survey results allow
11 the Company to focus its continuous improvement processes at the local level, while
12 comparing performance outcomes to best-in-class external benchmarks. By measuring
13 the key drivers of employee engagement and following through on what employees are
14 indicating, Hydro One is able to identify and remove barriers, and recognize and reward
15 great performance.

16
17 **8.4 TRAINING**

18
19 Non-technical training supports our employees in their skill and competency
20 development and is focused on developing our employees in their current roles. The
21 majority of our training encompasses supervisory and leadership development. We
22 recognize that few people understand intuitively every aspect of the role of a
23 manager/supervisor, but provided they positively value the role and the process of
24 managing people, it is possible to teach them the accountabilities, skills and practices that
25 make up their role. Hydro One's success, in a large part, depends on having a talented
26 and engaged workforce led by excellent managers and supervisors. We have a core
27 mandatory curriculum for managers and supervisors which is designed to provide a

Witness: Keith McDonell

1 consistent knowledge and skill base. We consider training to be the foundation for
2 development and expect that mastery comes from practice and coaching post-classroom.

3 4 **9. COMPENSATION**

5 6 **9.1 MANAGEMENT COMPENSATION PLAN (MCP)**

7
8 The Ontario Government decided to broaden the ownership of Hydro One pursuant to an
9 initial public offering ("IPO") of Hydro One's common shares in order to strengthen the
10 long-term performance of Hydro One and generate value for Ontarians. In conjunction
11 with this sale, the Province further agreed that it would act as an investor, and not as a
12 manager of Hydro One. To facilitate this change, the Province appointed an Independent
13 Board of Directors.

14
15 The Hydro One Board of Directors determined that in order to improve the performance
16 of the Company, it was necessary to increase the commercial orientation of the
17 organization; that is, increase the Company's focus on customers, create greater corporate
18 accountability for performance outcomes, and drive company-wide increases in
19 efficiency and productivity.

20
21 In order to achieve its commercial objectives, the Independent Board of Directors
22 determined that senior managers with proven track-records of delivering the targeted
23 commercial objectives were needed. The individuals with these skills have been added to
24 Hydro One's senior leadership team and have been empowered by the Board of Directors
25 to achieve these commercial objectives. It became critical that the Company design a
26 compensation structure to attract, motivate, and retain high-performing talent to execute
27 on the corporate strategy.

28
Witness: Keith McDonell

1 To assist with this work, Hydro One engaged Willis Towers Watson to undertake
2 competitive market assessments and sought advice from and Hugessen Consulting³ to
3 determine the basis for the components of a new management compensation program.
4 Willis Towers Watson completed two compensation benchmarking studies. The studies
5 for MCP bands 2-4 and MCP bands 5-10 can be found in Attachments 1 and 2 to this
6 Exhibit, respectively. Please refer to Attachment 3 for the Hugessen Consulting
7 executive compensation benchmarking study.

8
9 The MCP compensation strategy is driving a cultural shift to commercial company
10 norms, with new shareholder expectations and an increased focus on customers,
11 productivity, efficiency and accountability.

12 Hydro One offers MCP employees a total cash package that consists of a fixed
13 component (base salary) and a variable, at risk pay component (Short Term Incentive
14 Plan or “STIP”). A small number of key leadership employees also have a long-term
15 variable pay component (“LTIP”) as part of their compensation. Each of these
16 compensation components is critical to Hydro One’s ability to acquire talent and retain a
17 high-performing workforce. Hydro One’s compensation philosophy is to align target
18 total rewards at or below market median, as reflected in the Willis Towers Watson design
19 elements. In addition, the compensation plan is intended to provide a balance of fixed
20 and variable or “at risk” compensation with a much greater emphasis on variable
21 compensation for more senior management that is tied to achieving specific outcome
22 measures.

23

³ Hugessen Consulting Inc. is an independent consulting firm that specializes in providing objective compensation advice to Boards of Directors. Willis Tower Watson was engaged to provide objective compensation consulting services to Hydro One Management. Both organizations provide world-class compensation design, governance, research and advice.

Witness: Keith McDonell

1 **9.2 COMPETITIVE MARKET ASSESSMENTS**

2

3 The Hydro One Board of Directors engaged Hugessen Consulting to provide objective
4 counsel regarding an appropriate compensation framework for a new Chief Executive
5 Officer (“CEO”) and Chief Financial Officer (“CFO”) and more broadly, on a new
6 compensation structure to be established in 2016. A primary reference group was
7 identified that consisted of the four largest utilities listed on the TSX plus four other TSX
8 listed companies in the broader energy sector of comparable scope and complexity to
9 Hydro One. For additional compensation market data, 30 additional companies on the
10 S&P/TSX 60 index were reviewed. The target total direct pay for the CEO is positioned
11 close to the average of the four other larger utilities and is in the bottom quartile of the 30
12 companies on the S&P/TSX 60 index. Similarly, the target total direct pay for the CFO is
13 in the bottom quartile of the S&P/TSX 60 index.

14

15 The 2016 compensation framework includes a number of best practices for management
16 compensation programs, including:

17

- 18 • Target pay is balanced between fixed and variable pay and between short and
19 long-term incentives;
- 20 • Align target awards with market median (P50);
- 21 • Leveraging a segmented role approach (Core vs. Support roles);
- 22 • Capped payout opportunities within the STIP and LTIP programs;
- 23 • LTIP awards are granted annually and have overlapping performance periods
24 thereby requiring substantially higher levels of performance to achieve results;
- 25 • Share ownership guidelines and post-employment equity hold periods for
26 executives; and
- 27 • Clawback and anti-hedging policies.

28

Witness: Keith McDonell

1 Willis Towers Watson conducted market assessments for MCP Bands 2-10 (EVP to
2 Administrative roles). Executive level (Bands 2-4) compensation was assessed against a
3 peer group consisting of twenty-one companies that included utilities and other Canadian
4 publicly-traded companies. The results show that Hydro One is positioned around the
5 25th percentile in terms of salary and target total cash. On a total rewards basis, the
6 absence of a long-term incentive program positions Hydro One below the 25th percentile.
7 With the introduction of a new MCP compensation structure in 2016, the compensation
8 for executives is targeted at P50 (market median) of the external peer group.

9
10 Non-executive level (Bands 5-10) compensation was assessed by segmenting these roles
11 into Core Operations and Support Services. Core Operations roles were assessed against
12 28 Canadian utilities. Core Operational roles require specific education, skills and
13 knowledge in a professional area that is directly related to the Transmission, Distribution
14 or regulation of power. Support Services positions require education, skills and/or
15 knowledge not necessarily specific to the utility business. On a total rewards basis, Core
16 Operation roles are positioned at market median or slightly below market median
17 depending on whether the assessment included the current Defined Benefit Pension or the
18 new Defined Contribution Pension Plan. Support Services roles were assessed against
19 76 companies. On an aggregate basis, Hydro One's position relative to market for non-
20 executive total rewards is aligned at or slightly above market median.

21
22 In situations where current incumbents are below market median as determined by these
23 market assessments, future compensation increases will be managed and approved based
24 on demonstrated successful performance.
25

Witness: Keith McDonell

1 **9.3 MCP BASE SALARIES**

2

3 MCP base salaries are adjusted through a merit program that recognizes individual
4 performance, behaviours, potential, internal relativities and external benchmarking. To
5 better reflect and respond to the realities of the external labour market and internal
6 compensation issues, non-represented roles have been reorganized into either Executive
7 (Bands 1-4), Core Operations and Support Services positions. External Peer groups have
8 been established for each segment and future base pay adjustments will be based upon
9 external benchmarking against peer roles, performance and positioning within the salary
10 band range. This targeted approach will restrict the base salary adjustments for
11 employees already above market median.

12

13 **9.4 INCENTIVE-BASED COMPENSATION**

14

15 Incentive-based or variable/at risk compensation is a common feature of compensation
16 strategies in publicly-traded companies. Incentive-based compensation rewards
17 performance and allows the Company to attract, motivate and retain qualified employees
18 in a competitive labour market. A shift away from variable pay in favour of increased
19 base salaries would increase Hydro One's fixed costs and reduce the company's ability to
20 align employee performance with business objectives.

21

22 **9.4.1 SHORT TERM INCENTIVE PLAN ("STIP")**

23

24 MCP employees are eligible for annual incentive-based pay as a component of their total
25 cash compensation. A new STIP has been introduced in 2016 that supports the MCP
26 compensation strategy. This Plan is designed to:

27

- 1 • reward participants for the achievement of annual team (corporate) and individual
- 2 performance goals;
- 3 • align corporate goals and objectives with individual goals;
- 4 • focus on short-term goals and immediate priorities; and
- 5 • reward and retain top performers.

6

7 STIP rewards are based on Company performance, measured against a balanced Team

8 scorecard, and individual performance, measured against three to four goals that are

9 aligned with the Company's objectives. The balanced Team scorecard is based on

10 financial and non-financial objectives such as customer satisfaction, operational results

11 and safety. Focusing on these metrics and meeting the corporate targets will ultimately

12 benefit Hydro One's customers. The 2016 Team Scorecard is provided as Attachment 4

13 to this Exhibit.

14

15 **9.4.2 INDIVIDUAL GOALS FOR EXECUTIVES**

16

17 Individual goals for executives are complementary to the Team Scorecard and are

18 expected to reflect goals directly related to the executives' scope of accountability. The

19 Team Scorecard represents 80% of the Short Term Incentive targets for Executives, with

20 the remaining 20% represented by individual goals. Consistent with the Team Scorecard

21 for 2017, the Individual Scorecard is made up of weighted measures (with a minimum of

22 10% given to any one measure). Performance is assessed on each goal.

23

24 **9.4.3 LONG TERM INCENTIVE PROGRAM ("LTIP")**

25

26 An LTIP was introduced in 2016 for select senior leaders and is designed to:

27

Witness: Keith McDonell

- 1 • reward executives for longer-term value creation and foster alignment with
2 shareholder interests;
- 3 • support line-of-sight and achievement of near-term objectives that lead to long-
4 term value creation;
- 5 • attract and retain top talent ; and
- 6 • align compensation with current market practices.

7

8 LTIP is a common element of executive compensation plans in the labour markets where
9 Hydro One competes for top executive talent. LTIP plans are a key component of
10 executive compensation that enables Hydro one to source and retain experienced
11 executives from the broader labour market; in particular individuals who have the skills
12 and experience necessary to execute on Hydro One's goals to become a more customer
13 focused, efficient utility. Without an LTIP, Hydro One would not have been competitive
14 and therefore unable to attract recent senior level appointments tasked with delivering on
15 the \$383 million in productivity savings initiatives and customer service improvements
16 outlined in this Application.

17

18 Individually and collectively, the executive leadership team is leading Hydro One's
19 transformation to a commercially focused organization. In addition to the Chief
20 Executive Officer, executive recruitment has been focused on experienced business
21 leaders with a broad range of industry experience, since 2015. Examples include:

22

- 23 • Chief Operating Officer: Over 30 years' experience in Transmission and
24 Distribution with executive experience in large publicly traded organizations such
25 as Pacific Gas & Electric and ComEd.
- 26 • Executive Vice President – Customer Service: Experienced executive who has
27 worked in several industries and most recently in the airline industry as the

Witness: Keith McDonell

- 1 president of West Jet Encore, a company renowned for world class customer
2 service;
- 3 • Chief Financial Officer: Considerable executive level experience in public
4 company governance, debt and equity capital raising, mergers and acquisitions
5 and information technology;
 - 6 • Executive Vice President – Strategy & Corporate Development: Significant
7 experience in strategy, business development and financial expertise in the
8 electric power, natural gas, and water utility sectors; and
 - 9 • Chief Legal Officer: Significant years of experience, most recently as a senior
10 partner at a leading law firm in Canada, including leadership of the Capital
11 Capital Markets Group, Mining Group and International Business Development
12 strategy.

13
14 This leadership team is accountable to the Hydro One Board to deliver on the
15 transformation of the company. As outlined in the Distribution System Plan (DSP),
16 Section 1.5, Hydro One has commenced a number of initiatives to reduce costs while
17 maintaining service quality and work outputs. These productivity initiatives are
18 summarized and quantified in Section 1.5 of the DSP, and total approximately \$383
19 million over the 2018 to 2022 test period.

20
21 To ensure that Hydro One is achieving its Productivity and cost efficiency goals, it has
22 aligned its planning, execution and reporting functions around performance outcomes.
23 These outcomes are based upon the Renewed Regulatory Framework (RRF) that the
24 Ontario Energy Board (OEB) has implemented for use in both Transmission and
25 Distribution regulatory proceedings. Productivity Performance Metrics are included in
26 both the regulatory and Team scorecard, and are reviewed quarterly by the Executive
27 Leadership Team.

Witness: Keith McDonell

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Approximately 45 executive and senior management employees participate in the 2016 LTIP Program. Participation in the LTIP is determined by the Hydro One Board annually and is restricted to key talent. The intent of this plan is to provide a balance between short-term performance and long-term success. Long-term Incentive Plans are also an effective retention tool to incent talented senior leaders to remain with the organization. LTIP plans enable senior leadership participants to be rewarded for creating long-term value and commitment to an organization and benefits the shareholders and customers. LTIP has been recognized and approved for recovery in the rates of other rate regulated entities subject to the Board’s oversight; notably Union Gas Limited and Enbridge Gas Distribution Inc.

9.4.4 EMPLOYEE SHARE OWNERSHIP PLAN (“ESOP”)

MCP employees are eligible to participate in an ESOP. MCP employees can contribute up to 6% of their base salary and Hydro One will provide a 50% match on contributions to a maximum of 3% of base salary. The introduction of the ESOP is an important element of the total compensation program as it will: (i) promote an ownership mentality amongst employees; (ii) facilitate the attraction and retention of talent; (iii) and enhance employee engagement and productivity through company ownership.

9.5 THE LABOUR RELATIONS ENVIROMENT

Approximately 90% of employees at Hydro One are represented by a trade union. Hydro One is legally required to negotiate collective agreements with the employees’ bargaining representatives. These collective agreements establish the terms and conditions of the employment relationship for a fixed period of time. Hydro One inherited collective agreements from Ontario Hydro, which established terms of employment. These legacy

Witness: Keith McDonell

1 collective agreements have established a ‘floor’ upon which future negotiations are
2 based. While legacy collective agreements continue to strongly influence current Hydro
3 One collective agreements, Hydro One has done much to change the status quo. Hydro
4 One has been successful in incrementally reducing costs and/or increasing productivity
5 through collective bargaining.

6
7 In labour agreements, more so than commercial contracts, parties must also consider their
8 longer term relationship. Hydro One’s Human Resources strategy is to negotiate fair and
9 reasonable collective agreements to foster and promote healthy union–management
10 relationships.

11
12 Hydro One has been able to achieve reasonable settlements with moderate incremental
13 cost reductions and increased flexibility in a variety of areas in every round of collective
14 bargaining since 2001. Examples include:

- 15
- 16 • elimination of costly incentive pay plans;
- 17 • economic increases that are in line or below industry norms;
- 18 • reductions and cost containment in benefit improvements;
- 19 • introduction of new salary schedules with lower starting rates and lower
20 maximum rates;
- 21 • introduction of a less costly pension plan;
- 22 • increased employee pension contributions;
- 23 • increased flexibility to contract out work;
- 24 • reduction in the hourly rate for a variety of jobs;
- 25 • increased flexibility to move staff;
- 26 • increased utilization of contingent workers;
- 27 • introduction of less costly classifications;

Witness: Keith McDonell

- 1 • greater shift scheduling flexibility; and
2 • reduction in temporary work headquarter costs.

3

4 **9.5.1 UNIONIZED EMPLOYEES - COMPENSATION AND RECENT**
5 **COLLECTIVE BARGAINING OUTCOMES**

6

7 When the Province decided to proceed with an IPO of Hydro One, the Government
8 directed Hydro One to commence collective bargaining with its unions. The Government
9 also decided to coordinate the negotiations at Ontario Power Generation (“OPG”) and its
10 unions with the Hydro One negotiations. This resulted in ‘sector’ negotiations at a central
11 table where the mandate and focus was to settle all monetary items. Local non-monetary
12 issues were negotiated by the respective employer and unions.

13

14 The parties successfully negotiated collective agreements that marked a significant
15 paradigm shift in three key areas that will benefit Hydro One, employees and ratepayers:

16

- 17 1) Instead of traditional base wage adjustments, the parties agreed to lower base
18 adjustments⁴ with lump sum payments. Compensation cost escalation is further
19 restrained in perpetuity as other “wage sensitive” compensation items, such as
20 overtime premiums, allowances and pension benefits, are not impacted as much
21 as would be the case if higher base wages were negotiated. The agreed to
22 increases for PWU and Society staff are shown in Table 5.

23

⁴ Historically, Hydro One’s represented employees received in the range of 2% to 3.5% base wage adjustments through collective bargaining. The average base rate increase in 2016 of 23 Ontario-based Local Distribution Companies was 2.45%.

Table 5: Negotiated PWU and Society Base Rate and Lump Sum Increases

Year	PWU	Society
2015	1% Base rate 1% Lump Sum	2.25 % base rate
2016	1% Base Rate 2% Lump Sum	.5% Base rate 1% lump sum
2017	1% Base Rate	.5% Base rate 2% lump sum
2018	-	.5% Base Rate

2) As part of the collective bargaining settlements with the PWU and Society, represented employees will be eligible to receive shares of Hydro One Limited. The philosophical shift to a compensation model that provides for below average base wage increases, combined with lump sum payments and share grants reduces the overall cash portion of compensation. Awarding share grants also instills a sense of ownership in employees. Aligning company interests with employee interests has produced consequential ratepayer benefits.

The first share grant day for eligible PWU represented employees is April 1, 2017. Additional shares will be granted in each of the following eleven years. The first grant date for eligible Society represented employees is April 1, 2018, with additional shares granted for the following eleven years. In order to be eligible for share grants, employees must remain employed with Hydro One.

3) Pension costs were reduced by increasing employee pension contributions and reducing future pension benefits. In addition to advancing the progression to a 50-50 cost-sharing for pension benefits, it is also significant in that the increase in pension contributions more than offsets the costs of the share grant program for both unions.

Other notable negotiated outcomes include:

Witness: Keith McDonell

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- 1) Increased resourcing flexibility was achieved by negotiating enhancements to utilize temporary employees longer and to contract out more work. Hydro One annually performs approximately 200,000 cable locates and by contracting out this work, unit costs have dropped from \$107.00 to \$56.00; and
- 2) Favourable future pension service benefit accrual impacts for active employees and new hires pensions including:
 - increased early retirement eligibility rule of 85 (up from 82) commencing in 2025; and
 - adjustment to number of years for final average earnings from 3 to 5 years commencing in 2025.

9.6 CASUAL CONSTRUCTION EMPLOYEES

The construction workforce has a favourable compensation cost structure, in that this workforce:

- is paid an industry standard wage (for building trades governed by EPSCA Collective Agreements) or wages that are either competitive and in some cases less than other rates in the industry;
- does not join the Hydro One pension plan;
- does not join the Hydro One group benefit plan;
- does not have entitlement to sick leave benefits;
- does not have paid scheduled vacation time off;
- is more easily deployed to work throughout the province;
- is more easily dismissed when work load fluctuates; and
- is accessed through the union hiring halls to perform specific work programs and laid off when it is no longer required.

Witness: Keith McDonell

1 Hydro One negotiates directly with CUSW and through the EPSCA, Hydro One is bound
2 to collective agreements negotiated for the other 17 Building Trade Unions. In 2015,
3 Hydro One negotiated a three-year collective agreement with CUSW (May 1, 2014 to
4 April 30, 2017). Negotiated wage increases include a 1% base wage adjustment in each
5 year. CUSW wage rates are generally lower than those paid to similar classifications
6 represented by the International Brotherhood of Electrical Workers (IBEW) as shown in
7 Table 6. Hydro One also negotiated increased flexibility to contract out some
8 construction work.

9
10 **Table 6: CUSW Rates versus IBEW Rates – 2015 (\$)**

Union	Base Wage (\$)	Total Base Package (\$) ⁵
CUSW (Hydro One)	40.98	54.33
IBEW Windsor	37.84	59.99
IBEW Port Hope	42.78	59.81
IBEW Ottawa	42.99	59.94
IBEW Sudbury	42.99	59.94
IBEW Thunder Bay	44.29	59.22
IBEW South	42.85	61.28
IBEW Hamilton	41.16	60.61
IBEW Sarnia	46.10	60.80

11
12 Wages paid to the remaining Building Trade Unions are the industry wage paid by all
13 employers in the electrical power systems sector when performing work on Ontario
14 Power Generation, Bruce Power and Hydro One property in Ontario.

15

⁵ Total Wage package includes Base Pay, Vacation & Statutory Pay, Welfare, Pension and Union Fund

Witness: Keith McDonell

1 **10. COMPENSATION COSTS**

2
3 In previous cost of service applications, including the last Transmission application EB-
4 2016-0160, a payroll table was filed that included both Transmission and Distribution
5 compensation reflecting only compensation for employees on payroll at year end. To
6 respond to concerns raised by the Board and intervenors, Hydro One filed an undertaking
7 during the oral phase of the Transmission Application to provide Transmission-related
8 compensation and to expand the compensation data in order to provide a more
9 comprehensive overview of transmission compensation. Hydro One committed on best
10 efforts basis to present compensation data in a similar format for future cost of service
11 applications. The compensation allocated to the Distribution business is shown in
12 Appendix B.

13
14 Given a large number of employees for Hydro One Networks contribute to both
15 Transmission and Distribution activities, the Hydro One payroll system does not allow
16 compensation to be specifically allocated to Transmission or Distribution and,
17 conversely, design decisions in the financial system limit the ability to identify specific
18 components of total wages within the costing of the work programs.

19
20 Certain allocating assumptions were made in order to provide the compensation data in
21 Appendix B:

- 22
23 • In order to estimate total labour spending embedded in the bridge and test years,
24 the same methodology used in the Black & Veatch “Review of Overhead
25 Capitalization Rates” as outlined in Exhibit D1, Tab 3, Schedule 1, Attachment 1
26 was applied. More specifically, this study uses the Labour Content Method to
27 identify the estimated percentage of labour spending within both Distribution and
28 OM&A and Capital spending;

Witness: Keith McDonell

- 1 • Employees often work on both Transmission and Distribution work activities (i.e.
2 Fleet Services, centralized Grid Control Center). In order to estimate the
3 employee headcount supporting the distribution business activities only, a ratio of
4 total distribution compensation to total compensation was forecast based on the
5 total Networks FTE complement; and
- 6 • Hydro One has assumed base salary increases of 2% for MCP staff over the
7 Custom IR period. Annual base salary increases of 1% have been assumed for
8 PWU staff and casual construction staff from 2018 onwards. Increases of 0.5 %
9 have been assumed for Society staff from 2019 onwards.

10

11 Appendix B provides actual total compensation cost for Hydro One Distribution for 2014
12 to 2016 and forecast total compensation cost for bridge year 2017 and test years 2018 to
13 2022. Over the test period, total compensation for the Distribution business increases by
14 2.5%. In light of the increasing Distribution work program, Hydro One believes that this
15 modest increase in compensation cost is reasonable and reflective of improving
16 productivity.

17

18 Figure 4 compares the compensation for the Distribution business to the total Distribution
19 work program over the period 2014 to 2022. Hydro One's Distribution related total
20 compensation increases by 2.5% whereas the Distribution work program is expected to
21 increase by 19%. The declining trend in compensation spending as a percentage of total
22 work program spend is indicated by the solid line in Figure 4.

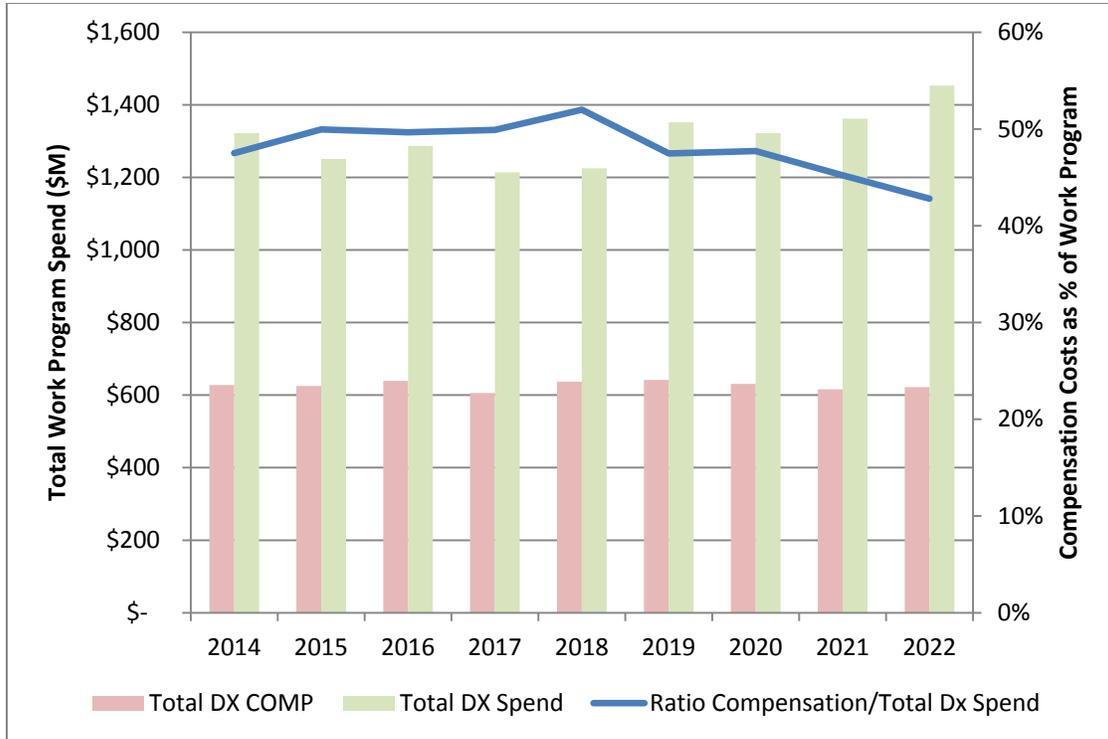


Figure 4: Hydro One Distribution Compensation vs. Total Work Program (OM&A and CapEx)

10.1 EXECUTIVE COMPENSATION ALLOCATION

Table 7 shows the percentage of compensation recovered through this Application for the Hydro One Chair, Board members and members of the Executive Leadership Team.

Table 7: Compensation Allocation for Executive Compensation

Position	Rate Recovery	% Recovered in DX Application
Chairperson	Yes	44.77%
Board Members	Yes	45.84%
President and CEO	Yes	38.44%

Witness: Keith McDonell

Position	Rate Recovery	% Recovered in DX Application
Chief Financial Officer	Yes	42.49%
COO	Yes	41.18%
EVP and Chief Human Resources Officer	Yes	47.53%
Chief Legal Officer	Yes	42.36%
EVP, Customer Care & Corp. Relations	Yes	85.47%
EVP, Strategy and Corp. Development	No	0.00%

1

2 The costs and allocation for the Corporate Management group is described in more detail
 3 in Exhibit C1, Tab 1, Schedule 7. The increase in Corporate Management costs from
 4 2015 to 2018 f for Hydro One Distribution arise from changes in compensation, however
 5 a higher percentage of the cost is allocated to the Shareholder, therefore there is a reduced
 6 impact to the regulated businesses, including Distribution ratepayers.

7

8 Table 8 compares the percentage of compensation borne by the Shareholder for key roles
 9 in the Corporate Management costs between this current Application and the Distribution
 10 Application for 2015-2017.

11

12 **Table 8: Allocation of Corporate Management Costs Borne by Shareholder**
 13 **(Current vs. Prior Application)**

Position	% of Compensation Costs Borne by Shareholder (2018-2022 Distribution Application)	% of Compensation Costs Borne by Shareholder (2015 – 2017 Distribution Application)
Chairperson	5%	.93%
Board Members	5%	0%
President and CEO	20%	2.3%
CFO	10%	1.56%

14

15

Witness: Keith McDonell

1 **10.2 TOTAL COMPENSATION STUDIES**

2

3 In a series of Board Decisions (EB-2006-0501, EB-2010-0002 and EB-2013-0416) the
4 Board expressed concerns with increasing compensation levels at Hydro One. The Board
5 directed Hydro One to conduct total compensation studies that would provide useful and
6 reliable information concerning Hydro One’s compensation costs, and how they compare
7 to those of other regulated transmission and/or distribution utilities in North America.

8

9 In the Ontario Energy Board’s Decision in the Hydro One Distribution Rate Application,
10 proceeding EB-2013-0416, Hydro One was directed to undertake:

11

12 *“A compensation study similar to the study filed as part of this application to allow*
13 *benchmarking to comparable companies.”*

14

15 As a result, four total compensation studies (2008, 2011, 2013, and 2016) have been
16 conducted by Mercer Canada. The 2016 Total Compensation Study is provided in
17 Attachment 5 to this Exhibit.

18

19 Hydro One understands the need to restrain compensation cost; however the Company
20 must also attract and engage highly skilled employees, in the face of an aging workforce
21 and competition for similar skills in a unionised environment. Despite these challenges,
22 Hydro One has been successful in balancing the competing pressures of reducing
23 compensation costs and attracting and maintaining an engaged workforce. Ratepayers
24 benefit from the skills, quality and expertise of Hydro One employees. Table 9 compares
25 the results of all four studies, and compares Hydro One compensation to the Market
26 Median.

**Table 9: 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	Total Change from 2008 to 2016
Management	(1)%	(17)%*	(1)%	2%	3%
Society	5%	5%	9%	11%	6%
PWU	21%	18%	12%	16%	(5)%
Overall	17%	13%	10%	14%	(3)%

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

The 2016 study findings show that on an overall weighted average, Hydro One was positioned approximately 14% above market median. While the 2016 results have slightly reversed the otherwise positive trend in noted in the previous studies, there are a number of factors that provide context to these results:

1. Above median roles such as the Field Services Coordinator (1.19 of P50), Business Analyst A (1.39 of P50) and Engineer B (1.30 of P50) have resulted due to a wage compression issue at Hydro One. These roles tend to have feeder pools from both higher level and higher paid unionized Society of Energy Professionals (“the Society”) or Power Workers’ Union (“PWU”) positions. On promotion, employees in these positions are placed higher on the wage schedule than staff recruited externally. The compression issue is not as relevant for more senior roles and the positioning relative to P50 improves, for roles such as Engineer D (1.04 of P50), Engineer E (.92 of P50), and Area Superintendent (.86 of P50). For example, the typical career path for an Engineer B would be Engineer D and then Engineer E. The outcome of compensation in excess of Market Median is largely attributable to these roles.

Witness: Keith McDonell

1 2. As the structural compression issue cannot be solved in the short term, Hydro One
2 has been successful in reducing costs by employing fewer employees in some of
3 these roles that are above market median as shown in Table 10. Cumulatively,
4 this represents a \$21.9M savings per year.

5

6 **Table 10: Mercer Compensation Benchmarking Study Results – Number of**
7 **Employees in Above Market Median Positions (2016 vs. 2013)**

Position	2016 Study		2013 Study
	Multiple of P50	# of Hydro One Incumbents	# of Hydro One Incumbents
Drafter II	1.11	21	33
Area Distribution Technician	1.33	151	180
Engineer B	1.30	176	271

8

9 3. In 2015, Hydro One negotiated three-year collective agreements with lower than
10 average base wage adjustments, lump sums and increased employee pension
11 contributions with the PWU and the Society of Energy Professionals. Since the
12 data for the Mercer Study was collected as of September 1, 2016, the full impact
13 of these savings is not reflected in the Study. Lower base wage adjustments have
14 ongoing savings in that other wage sensitive items such as overtime rates and
15 allowances are not as impacted. It is expected that Hydro One’s positioning to
16 market median will improve in each of 2017 and 2018 as a result of these
17 negotiations.

18

19 4. The Mercer Benchmarking Study compares total compensation
20 “entitlements” (i.e., base salary, STIP, LTIP, pension and benefits) against the
21 comparator peer groups. For pension and benefits, the study uses a standard
22 approach and methodology based on industry norms and then compares Hydro

1 One and the peer groups expected value of pension and benefits using this
2 approach instead of the specific demographics and assumptions for Hydro One
3 and each of the organizations in the peer group. The study does not account for
4 the impact of Hydro One's negotiated cost-saving initiatives such as future
5 pension benefit reductions or the updated pension valuation filed with the OEB.

6
7 5. Many of the peer companies have Defined Contribution Pension Plans. This has a
8 negative impact on Hydro One's positioning relative to P50. Hydro One has
9 closed the Defined Benefit Plan for non-represented employees and has
10 implemented a Defined Contribution Plan ("DC Plan"). As the DC Plan was only
11 recently introduced, benefits are not realized in the Mercer Study results.

12

13 **11. COMPARISON OF COLLECTIVE AGREEMENTS**

14

15 When assessing the effectiveness of Hydro One's collective agreements, the Company
16 compares compensation wage scales for similar PWU-represented and Society-
17 represented classifications in other Ontario Hydro successor companies. Hydro One
18 competes for staff with these companies and is vulnerable to losing staff to these
19 organizations. All these wage scales have the same starting point, which is the
20 establishment of the successor companies in 1999.

21

22 Table 11 summarizes the base rate percentage change for each of the Ontario Hydro
23 successor companies over from 1999 through 2017 for similar classifications. Appendix
24 C provides details for each classification.

25

1 **Table 11: Average Base Rate Percentage Change for Selected Classifications (1999-2017)**

Organization	PWU	Society
Hydro One	62%	36%
Ontario Power Generation	87%	37%
Organization	PWU	Society
Bruce Power	110%	43%
Independent Electricity System Operator	NA	40%

2

3 Compared to these four other companies, Hydro One has been successful in controlling
4 costs in collective bargaining since demerger to the benefit of all ratepayers.

5

6 **11.1 POWER LINE TECHNICIAN RATE COMPARISON**

7

8 Within Ontario, the largest LDCs are Hydro One Networks Inc., Toronto Hydro Electric
9 System Limited, Alectra, Hydro Ottawa Limited, and London Hydro Inc... Each of the
10 LDCs employs Power Line Maintainers (“PLMs”). Table 12 compares the PLM rate at
11 various LDCs to the PLM rate at Hydro One Networks. The PLM classification was
12 chosen since it represents a highly skilled and highly populated classification that is core
13 to the Hydro One Distribution business and to the other LDCs within Ontario.

14

1 **Table 12: Power Line Maintained Wage Comparison Across Utilities**

Company	Number of Employees	Wage – 2016 (\$/Hr.)	% Difference
Toronto Hydro	800	43.58	4.90%
Enersource (Alectra)	249	42.55	2.40%
Horizon (Alectra)	285	41.89	0.80%
Oakville Hydro	63	41.87	0.80%
Cambridge	36	41.84	0.70%
Hydro One	5400	41.54	-
Milton Hydro	33	41.42	-0.30%
Brant Power	12	40.97	-1.40%
Algoma Power	33	40.86	-1.60%
Guelph Power	68	40.72	-2.00%
Kitchener-Wilmot	73	40.36	-2.80%

2 **NOTE: DATA SORTED BY WAGE**

3

4 *Hydro One uses a multi-skilled position called a Regional Maintainer–Lines
 5 classification (“RLM”) (\$44.86/hr – 2016). The Hydro One rate of \$41.54/hr in Table 12
 6 reflects the Power Line Technician rate on the current Hydro One wage schedules. The
 7 RLM uses the PLM as the base job with additional duties such as lead hand, contract
 8 monitor, establishment and holding of work protection as well as additional technical,
 9 trade and customer relations skills beyond the Power Line Maintainer classification.

10

11 Table 12 illustrates that the PLM rate at Hydro One ranges from being slightly below to
 12 slightly above other LDCs in Ontario. Despite the rates being very close, the type of work
 13 and skills required at Hydro One are often more complex. Hydro One employees often
 14 work in a more rural setting than their counterparts in other LDCs. As a consequence,
 15 Hydro One employees can work in conditions and with equipment not normally required
 16 at other LDCs. Trades employees working on lines maintenance often work on both
 17 Distribution and Transmission assets and are required to be knowledgeable and proficient
 18 with overhead, underground and submarine cable. Again, this is not typical of the PLM
 19 role at other Ontario LDCs.

Witness: Keith McDonell

1 **12. PENSIONS**

2
3 In EB-2010-0002, the Board stated that: “Hydro One must demonstrate measurable
4 progress towards having its pension contributions reflect those prevailing in the public
5 sector generally. The evidence suggests that an employee contribution level of 50% is the
6 norm”. Hydro One has strived to increase employee contributions and reduce benefits
7 with all employee groups. Hydro One has demonstrated this commitment to reducing
8 pension costs by:

- 9
- 10 • Introducing lower cost defined benefit plans for MCP employees (2004) and
11 Society employees (2005);
 - 12 • Increasing employee pension plan contributions annually since 2013 for all
13 employee groups (see Figure 5 for PWU represented employee pension
14 contributions and Appendix A for employee contributions for other employee
15 groups);
 - 16 • Closing the Defined Benefit Pension Plan for new externally hired MCP
17 employees as of September 30, 2015, and introducing a new Defined Contribution
18 Pension Plan; and
 - 19 • Reducing future service benefits for all current PWU and future PWU employees
20 as well as Society legacy pension plan members by adjusting the number of years
21 for determining the final average earnings from three years to five years and
22 increasing the early undiscounted pension eligibility from Rule of 82 to Rule of
23 85 (both effective March 31, 2025).
- 24

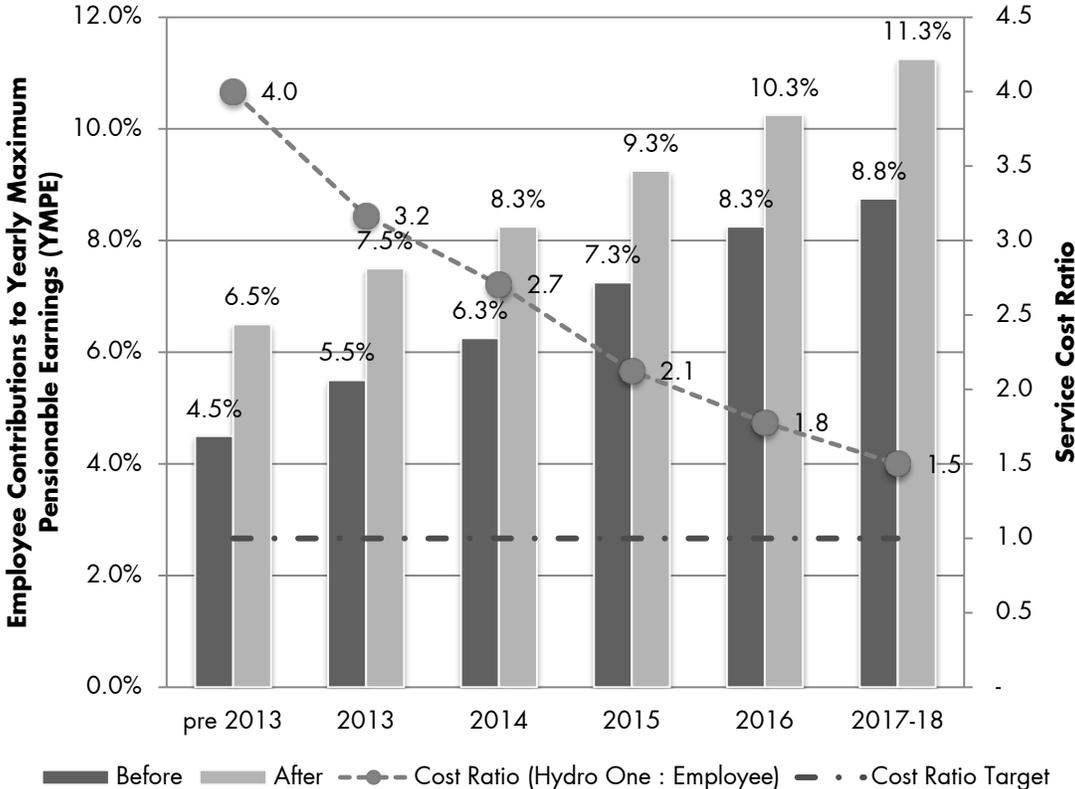


Figure 5: PWU employee pension contribution increases 2013-2018

Table 13 shows annual savings as a result of the increased employee contributions.

Table 13: Annual Savings from Increased Employee Pension Contributions (DX)

Year	\$M
2018	\$10.9
2019	\$12.0
2020	\$11.9
2021	\$11.5
2022	\$11.7

1 In summary, Hydro One has been successful in reducing pension costs by:

2

- 3 • making incremental increases every year since 2013 in employee pension
- 4 contributions for all employee groups; and
- 5 • Improving the ratio of employer and employee cost sharing by moving towards
- 6 the 50%-50% cost sharing ratio.

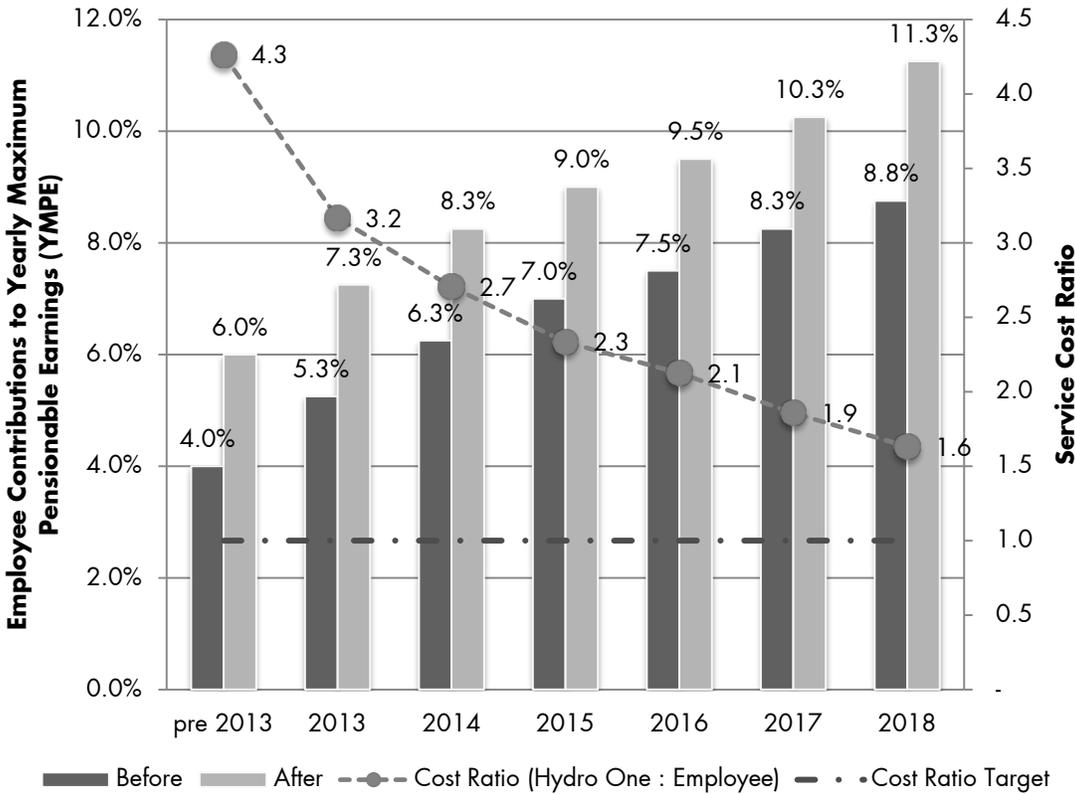
7

8 As described in Exhibit C1, Tab 2, Schedule 2, the employee contribution rate to the
9 pension plan has increased. Hydro One engaged Willis Towers Watson to provide an
10 estimate of the savings to the Company. These estimated savings are reflected in the cash
11 pension costs provided in Table 13, as well as the pension expense that is included in
12 Hydro One's operating and capital expenses provided in this application for the test years
13 2018 through 2022.

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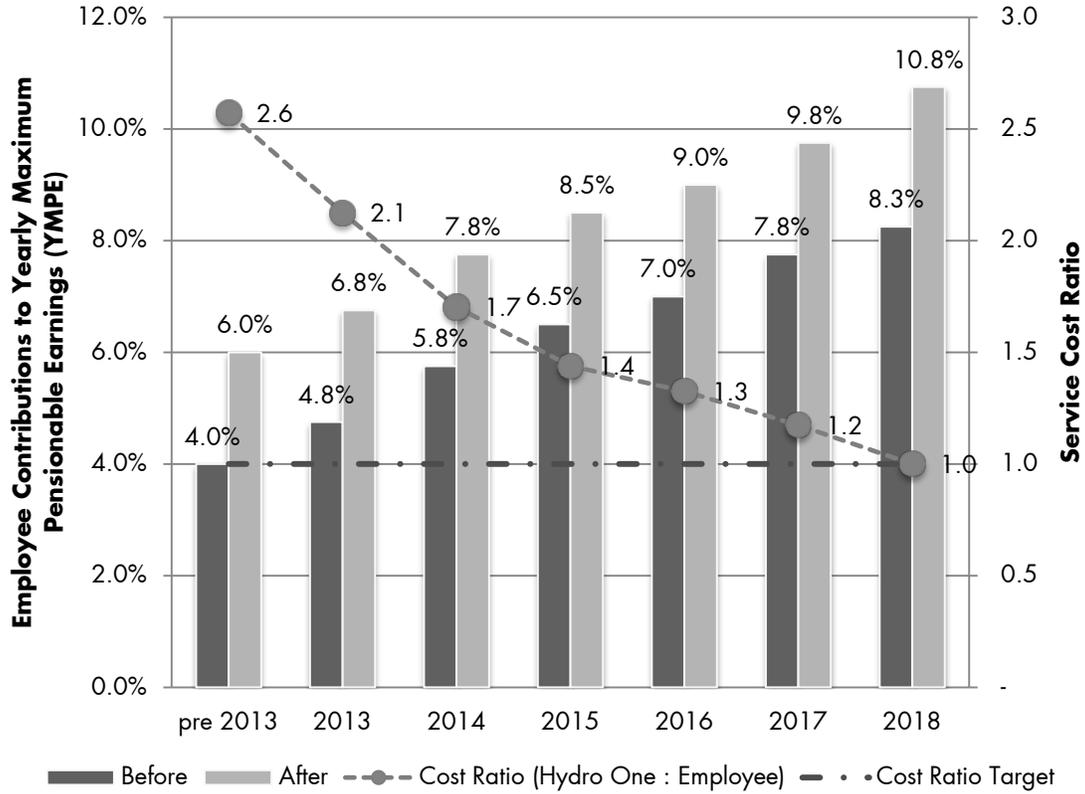
APPENDIX A:
Employee Pension Contributions for Other Employee Groups

The following figures illustrate the increasing employee pension plan contributions annually since 2013 for Society-represented employees (Legacy and post November 2005 members) and Management Compensated staff.



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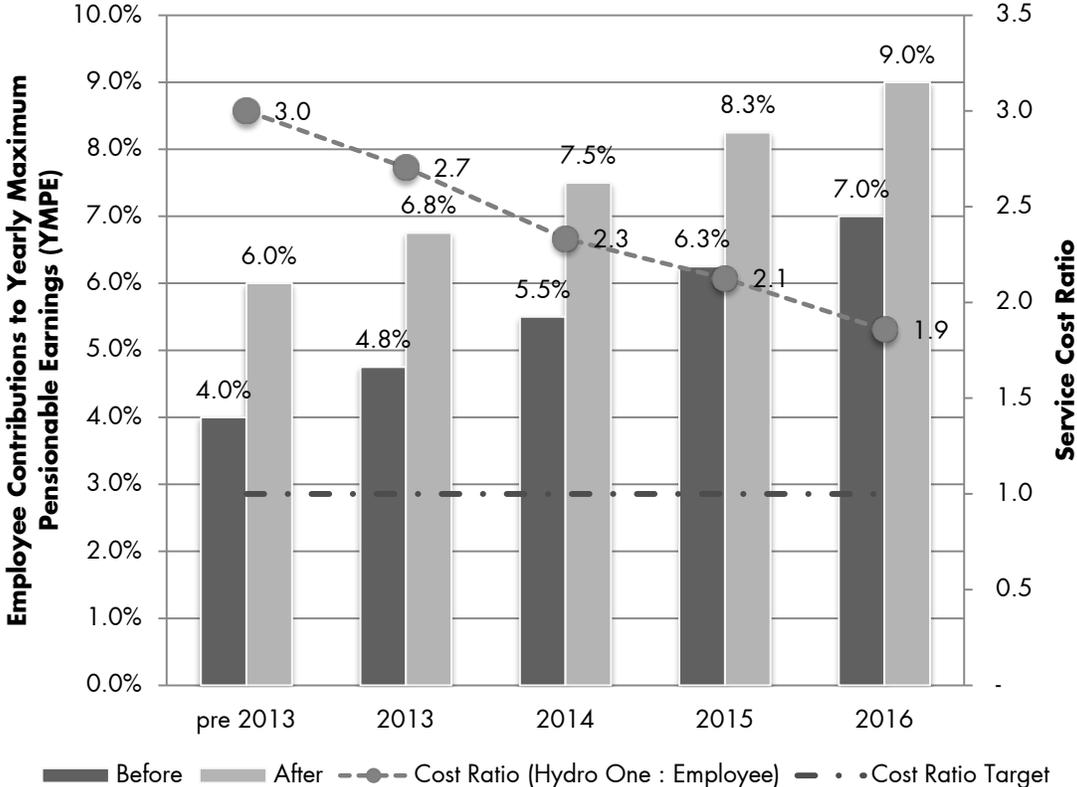
Figure 1: Society Pension Changes - Legacy Pension Plan



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Figure 2: Society Pension Changes - Post November 2005 Members



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Figure 3: MCP Pension Changes

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 3

APPENDIX B:

Hydro One Distribution-Allocated Compensation Costs (2014-2022)

MCP	2014	2015	2016	2017	2018	2019	2020	2021	2022
Base Pay	38,364,187	40,563,964	44,021,905	46,690,212	49,074,770	49,579,097	48,886,318	47,873,177	48,830,640
Burdens	25,773,061	27,562,357	23,117,573	24,741,693	26,300,050	26,570,328	26,199,056	25,656,095	26,169,217
Other Allowances	3,965,808	2,783,396	4,313,744	4,048,628	4,279,923	4,348,970	4,300,665	4,217,666	4,302,019
STI	4,769,024	5,280,942	6,280,535	5,974,927	6,316,270	6,418,168	6,346,880	6,224,391	6,348,879
LTI			926,143	3,893,438	5,824,760	5,625,313	5,464,256	5,300,842	5,441,212
ESOP			799,197	902,159	911,181	920,293	929,496	938,791	948,178
Dx Total	72,872,080	76,190,658	79,459,097	86,251,056	92,706,954	93,462,169	92,126,670	90,210,961	92,040,145

Society	2014	2015	2016	2017	2018	2019	2020	2021	2022
Base Pay	75,689,891	77,185,295	79,896,923	80,327,794	85,406,940	85,271,924	82,738,905	79,558,999	79,956,794
Overtime	4,029,156	3,788,344	5,240,140	3,010,299	3,036,352	3,042,689	3,044,569	3,044,157	3,059,378
Lump Sums			757,623	1,385,814	-	-	-	-	-
Burdens	50,848,469	52,445,778	41,956,906	42,566,643	45,771,113	45,698,755	44,341,265	42,637,096	42,850,282
Share Grants					1,489,275	1,474,306	1,410,069	1,300,342	1,228,666
Dx Total	130,567,516	133,419,417	127,851,592	127,290,550	135,703,681	135,487,675	131,534,808	126,540,595	127,095,120

PWU	2014	2015	2016	2017	2018	2019	2020	2021	2022
Base Pay	166,554,177	168,767,821	178,400,835	171,624,220	177,985,805	181,793,217	177,529,193	171,927,760	173,268,590
Overtime	39,001,377	32,831,201	45,703,166	25,592,126	25,589,719	26,267,680	26,452,850	26,639,098	26,842,237
Lump Sums		1,551,922	3,233,471	-	-	-	-	-	-
Burdens	111,891,096	114,674,170	93,685,049	90,945,694	95,385,789	97,426,249	95,141,082	92,139,174	92,857,749
Share Grants				3,991,098	4,050,829	4,010,113	3,835,388	3,536,931	3,341,972
Dx Total	317,446,650	317,825,115	321,022,520	292,153,138	303,012,142	309,497,259	302,958,514	294,242,963	296,310,548

Temps	2014	2015	2016	2017	2018	2019	2020	2021	2022
Casual Trades	72,600,869	70,901,026	78,244,679	79,448,861	84,499,557	82,600,879	83,157,282	83,816,562	84,689,539
MCP	1,165,082	1,226,207	1,752,571	1,311,379	1,340,578	1,362,206	1,347,075	1,276,025	1,301,545
Society	2,453,938	2,421,692	2,232,127	1,999,422	1,865,953	1,651,304	1,608,948	1,554,693	1,562,466
PWU	11,017,691	6,617,444	7,533,423	4,405,702	3,999,795	3,993,690	3,910,613	3,768,268	3,805,951
Overtime	14,126,632	10,757,207	14,214,548	7,744,112	8,063,695	7,959,683	8,042,002	8,139,071	8,223,240
Other Allowances	-	-	-	-	-	-	-	-	-
Burdens	6,436,628	5,938,744	6,694,070	6,144,266	6,586,151	6,515,853	6,589,437	6,699,604	6,980,664
Dx Total	107,800,840	97,862,320	110,671,417	101,053,740	106,355,729	104,083,616	104,655,358	105,254,223	106,563,405

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Dx Compensation	628,687,087	625,297,510	639,004,626	606,748,484	637,778,506	642,530,718	631,275,350	616,248,742	622,009,219

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Note: Other allowances include items such as meal, boot, standby and shift allowances, vacation payout and MCP general benefits payout. Burdens include government obligations, pension, benefits and OPEB.

Witness: Keith McDonell

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APPENDIX C

PWU REPRESENTED POSITIONS

	1999	2013	2017	% Change
Mechanical Maintainer/Regional Maintainer - Mechanical				
Hydro One	\$28.23	\$42.48	\$45.32	61%
OPG	\$29.08	\$50.08	\$53.01	82%
Bruce Power	\$29.08	\$57.10	\$62.41	115%
Shift Control Technician/Regional Maintainer – Electrical				
Hydro One	\$28.23	\$42.48	\$45.32	61%
OPG	\$30.31	\$50.08	\$53.01	75%
Bruce Power	\$30.31	\$57.27	\$62.60	107%
Clerical – Grade 56 (based on a 35-hour work week)				
Hydro One	\$21.46	\$32.30	\$34.46	61%
Bruce Power	\$21.46	\$35.59	\$39.87	86%
Clerical – Grade 58 (based on a 35-hour work week)				
Hydro One	\$24.20	\$36.42	\$38.85	61%
OPG	\$24.20	\$38.95	\$41.23	70%
Bruce Power	\$24.20	\$40.13	\$44.96	86%

4

Witness: Keith McDonell

Regional Field Mechanic/Transport & Work Equipment Mechanic				
Hydro One	\$26.20	\$39.43	\$42.08	61%
OPG	\$26.20	\$50.08	\$53.01	102%
Bruce Power	\$26.20	\$49.71	\$54.33	107%
Stockkeeper				
Hydro One	\$23.27	\$36.75	\$39.21	69%
OPG	\$23.27	\$38.95	\$41.23	77%
Bruce Power	\$23.27	\$44.88	\$49.06	111%
Labourer				
Hydro One	\$19.03	\$28.63	\$30.54	60%
OPG	\$19.03	\$38.95	\$41.23	117%
Bruce Power	\$19.03	\$44.88	\$49.06	158%

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SOCIETY REPRESENTED POSITIONS

	1999	2013	2017	% Change
MP2				
Hydro One	\$77,954	\$100,078	\$105,661	36%
OPG	\$77,954	\$101,333	\$107,019	37%
Bruce Power	\$77,954	\$102,113	\$111,818	43%
IESO	\$77,954	\$118,068	\$109,522	41%

Witness: Keith McDonell

MP4				
Hydro One	\$88,651	\$113,801	\$120,115	35%
OPG	\$88,651	\$115,171	\$121,634	37%
Bruce Power	\$88,651	\$116,045	\$127,211	44%
IESO	\$88,651	\$134,218	\$124,498	40%
MP6				
Hydro One	\$100,756	\$129,350	\$136,603	36%
OPG	\$100,756	\$130,950	\$138,299	37%
Bruce Power	\$100,756	\$131,907	\$144,586	44%
IESO	\$100,756	\$152,617	\$141,508	40%

Hydro One

Executive Compensation Benchmarking

Draft for Discussion

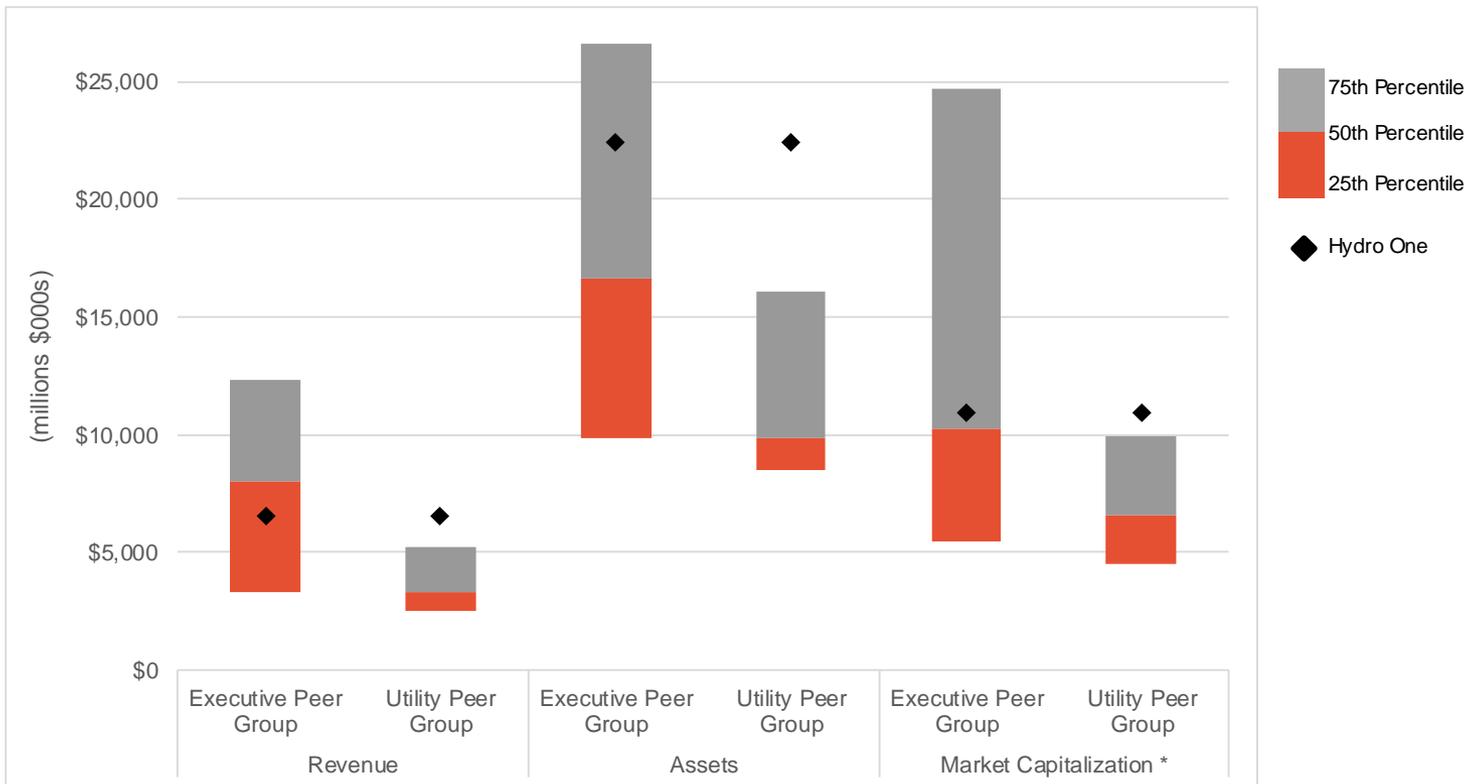
OCTOBER 16, 2015

1) Introduction

- Hydro One engaged Towers Watson to complete a competitive market assessment of its total rewards package for management compensation plan (MCP) employees. This benchmark review focuses on executive roles (Bands 1-4)
 - Our analysis is based on Hydro One's current organizational structure and role responsibilities, and will need to be refreshed as it transitions to an autonomous publicly-traded company. As such, use of this data and any program changes it informs should be paced with the evolution of the organization
- In the prospectus, Hydro One outlined the use of a primary reference group of eight utility/energy companies ("**Utility Peer Group**") along with a secondary reference group of the 30 smallest members of the S&P/TSX 60 index
- While the primary reference group likely provides sufficient market data for the CEO and CFO, a larger sample will be needed for the rest of the executive team (approximately 25 incumbents in total). This is to account for different executive roles that may exist within each company and to capture the broader labour market for Hydro One's executives
- An expanded peer group of 21 companies was developed and approved by the HR Committee at the August 24, 2015 meeting ("**Executive Peer Group**"). The criteria used to establish this "asset intensive" group of companies includes:
 - Inclusion of 8 companies in the primary reference group (Utility Peers)
 - Canadian publicly-traded (excluding mining and oil & gas)
 - Revenue between 1/3x to 3x Hydro One
 - Assets between \$10 billion and 3x Hydro One
- The chart on the following page provides further details on Hydro One's positioning relative to the two peer groups. Further scope details (including market capitalization, net income, geographic complexity, # of employees) are outlined in **Appendix I**

2) Comparing Peer Group Organization Profiles

- The companies in the Utility Peer Group tends to be smaller than the full Executive Peer Group with Hydro One positioned as one of the largest companies in the sample
- Hydro One is positioned around the 50th percentile relative to the full Executive Peer Group for all measures excluding assets, which are positioned between the 50th and 75th percentiles



* Hydro One market capitalization is based on an estimate of \$11 billion

2) Comparing against Fortis' Peer Group

- As requested and since Fortis is similar in size and profile to Hydro One, the following compares the full Executive Peer Group with Fortis' disclosed peer group. Eight Hydro One peers are in Fortis' peer group, which also includes US utilities (given their US presence) and other Canadian mining/oil & gas companies (given their BC/Alberta presence)
- In terms of assets, the size of companies in both peer groups are fairly comparable

Fortis - Comparator Group (n=36)				
AGL Resources	CMS Energy	MDU Resources Group	PPL	TransAlta
Alliant Energy	Emera	Methanex	Public Services Enterprise Group	TransCanada
Ameren	Enbridge	New Jersey Resources	SCANA	UGI
ATCO	Encana	NiSources	Sempra Energy	Wisconsin Energy
Atmos Energy	Finning International	Northeast Utilities	SNC-Lavalin	
Canadian National Railway	First Quantum Minerals	Pembina Pipeline	Talisman Energy *	
Canadian Pacific Railway	Gibson Energy	Pinnacle West Capital	Teck Resources	
CenterPoint Energy	Goldcorp	Potash Corp of Saskatchewan	TECO Energy	

		Revenue	Assets	Market Cap	Net Income
	25 th Percentile	\$3,942	\$9,886	\$5,405	\$343
	50 th Percentile	\$6,471	\$17,271	\$6,707	\$506
	75 th Percentile	\$8,499	\$27,116	\$15,340	\$1,290
Fortis Inc.	Electric Utilities	\$5,401 41P	\$26,628 75P	\$10,203 65P	\$379 29P

Hydro One Peers - Executive Peer Group (n=21)				
Agrium	Canadian Pacific Railway	Enbridge	Pembina Pipeline	TransCanada
AltaGas	Canadian Tire	Fortis	Rogers Communications	
ATCO	Capital Power	Intact Financial	SNC Lavalin	
Bombardier	CGI Group	Inter Pipeline	TELUS	
Canadian National Railway	Emera	Keyera	TransAlta	

		Revenue	Assets	Market Cap	Net Income
	25 th Percentile	\$3,298	\$9,839	\$5,419	\$282
	50 th Percentile	\$7,980	\$16,640	\$10,203	\$604
	75 th Percentile	\$12,298	\$26,575	\$24,706	\$1,373
Hydro One	Gas and Energy Utilities	\$6,548 45P	\$22,500 67P	\$11,000 52P	\$749 57P

Hydro One's peer group tends to include more eastern Canadian companies

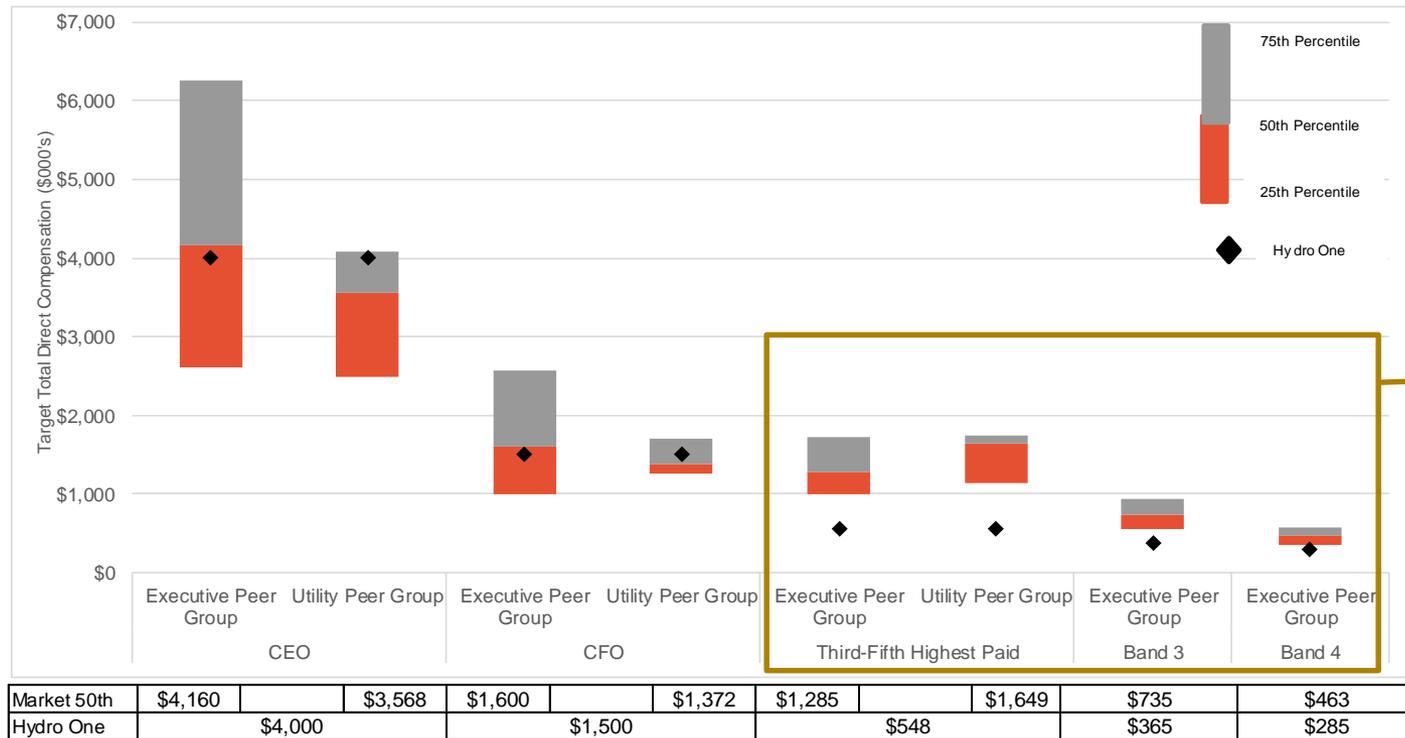
Data has been sourced from S&P's Capital IQ. Revenue, Assets and Net Income are reflective of the most recent fiscal year-end. Market capitalization reflects a 3 month average beginning July 1, 2015. All data is in millions.

* The acquisition of Talisman by Repsol was finalized on May 8, 2015

Companies in blue are U.S. Utility organizations. Bolded Companies are used by both Hydro One and Fortis

3) Comparing Peer Group Compensation Levels

- The market compensation data for the Utility Peer Group tends to be positioned lower than the Executive Peer Group (i.e., the 75th percentile of the Utility Peer Group is aligned with the 50th percentile of the Current Peer Group), except for the 3rd-5th highest paid executives where the 50th percentile for the Utility Peer Group is higher
 - The difference for the CEO/CFO appears to be correlated with the smaller size of the Utility Peer Group relative to the Executive Peer Group



The below market positioning (<25th percentile) of the roles below CEO/CFO is primarily due to the absence of long-term incentives

3) Market Compensation Data – Bands 3 and 4

- On average, Hydro One is positioned around the 25th percentile in terms of salary and target total cash (TTC = salary + short-term incentives). The absence of long-term incentives reduces Hydro One's positioning to below the 25th percentile on a TDC basis (TDC = TTC + long-term incentives)

(\$000's)

Band	# Hydro One Incs	Base Salary				Target Total Compensation				Total Direct Compensation (TDC)			
		Avg. Hydro One	Avg. P25	Avg. P50	% +/- P50	Avg. Hydro One	Avg. P25	Avg. P50	% +/- P50	Avg. Hydro One	Avg. P25	Avg. P50	% +/- P50
Band 3 (SVP)	6	\$252	\$272	\$311	-19%	\$365	\$392	\$464	-21%	\$365	\$561	\$735	-50%
Band 4 (VP)	14	\$219	\$209	\$246	-11%	\$285	\$269	\$334	-15%	\$285	\$358	\$463	-38%
Weighted Average	20	\$229	\$227	\$266	-12%	\$309	\$313	\$374	-15%	\$309	\$429	\$545	-39%

- On average, Hydro One's incentives are positioned at the 25th percentile of the market
 - Target bonuses are positioned between the 25th and 50th percentiles for Band 3 but below the 25th percentile for Band 4, and Hydro One does not currently have a long-term incentive plan

(as a % of salary)

Band	# Hydro One Incs	Target Bonus			Long-term Incentives		
		Avg. Hydro One *	Avg. P25	Avg. P50	Avg. Hydro One	Avg. P25	Avg. P50
Band 3 (SVP)	6	45%	43%	49%	-	57%	86%
Band 4 (VP)	14	30%	33%	36%	-	46%	62%
Weighted Average	20	38%	38%	42%	-	51%	74%

* Represents 75% of maximum

4) Interpretation / Next Steps

- In reviewing the market data, we offer the following comments:
 - **Disclosure** - the current prospectus outlines the use of a primary and secondary reference. While the primary reference has not changed (i.e., the Utility Peer Group), depending on the named executive officers (NEOs) in next year's proxy circular, the use of the revised secondary reference may need to be disclosed (i.e., a custom group of 21 companies – the Executive Peer Group - rather than the 30 smallest companies of the S&P/TSX 60)
 - **Pay positioning** – Hydro One's compensation tends to be positioned at the high end of the Utility Peer Group and – for the CEO/CFO - at the 50th percentile of the Executive Peer Group, commensurate with Hydro One's size relative to the peers
 - This can also be addressed / highlighted within next year's proxy circular
 - **Transition / implementation** – the Executive Peer Group can be considered somewhat aspirational, representing the future growth of the organization and its requisite talent needs. Compensation levels for current incumbents do not immediately need to be aligned with the market 50th percentile and can be transitioned over time (e.g., 1 to 3 years) depending on the incumbent and the pace of organizational change. Experienced new hires may need to be positioned closer to the market 50th percentile upon hire
 - **Peer group review process** – the selection criteria, underlying peer companies, and the use of the Utility Peer Group (for select NEOs as the primary reference group) will need to be reviewed regularly for appropriateness on a go-forward basis
 - Potential future additions: some balance of US companies, PotashCorp, Bunge, Mosiac
 - Potential future deletions (due to size and/or financial challenges): CN Rail, Capital Power, AltaGas, Keyera, TransAlta, Bombardier

Appendices

Peer Group Summary

Utility and Executive Peer Groups

Company	Scope Information (millions \$000s)							
	Industry	Revenue	Assets	Market Cap	Net Income	Total # of Employees	Geographic Scope	# of Business Units
Utility Peer Group								
AltaGas	Energy Services & Utilities	\$2,401	\$8,413	\$4,765	\$130	1,700	North America	3
ATCO Group	Energy Services & Utilities	\$4,554	\$17,689	\$4,449	\$420	9,170	International	4
Emera Inc.	Energy Services & Utilities	\$2,972	\$9,844	\$6,234	\$433	3,530	Canada, U.S. Carribean	6
Fortis Inc.	Energy Services & Utilities	\$5,401	\$26,628	\$10,203	\$379	10,000	Canada, U.S. Carribean	8
Inter Pipeline Ltd.	Energy Services & Utilities	\$1,556	\$8,647	\$9,041	\$335	875	Canada, Europe	4
Keyera Corp.	Energy Services & Utilities	\$3,624	\$3,851	\$6,868	\$230	900	Canada & U.S.	2
Pembina Pipeline Corporation	Energy Services & Utilities	\$6,069	\$11,262	\$12,505	\$383	1,111	Canada	4
TransAlta Corporation	Energy Services & Utilities	\$2,623	\$9,833	\$2,080	\$182	2,786	Canada, U.S., Australia	2
Other Asset Intensive Companies								
Agrium Inc.	Fertilizers and Agricultural Chemicals	\$16,042	\$17,108	\$18,919	\$714	15,500	International	2
Bombardier Inc.	Aerospace and Defense	\$20,111	\$27,614	\$3,630	-\$1,260	65,050	International	4
Canadian National Railway	Railroads	\$12,134	\$31,792	\$60,843	\$3,167	25,530	North America	1
Canadian Pacific Railway Ltd.	Railroads	\$6,620	\$16,640	\$31,861	\$1,476	14,698	Canada & U.S.	4
Canadian Tire Corporation	General Merchandise Stores	\$12,463	\$14,553	\$9,978	\$604	19,754	Canada	3
Capital Power Corporation	Energy Services & Utilities	\$1,228	\$5,420	\$2,080	\$46	730	Canada & U.S.	1
CGI Group Inc.	IT Consulting and Other Services	\$10,500	\$11,234	\$15,238	\$859	68,000	International	12
Enbridge Inc.	Energy Services & Utilities	\$37,641	\$72,857	\$46,884	\$1,405	11,000	Canada & U.S.	3
Intact Financial Corporation	Property and Casualty Insurance	\$7,980	\$20,580	\$12,064	\$782	11,326	Canada	1
Rogers Communications Inc.	Wireless Telecommunication Services	\$12,850	\$26,522	\$23,213	\$1,341	27,000	Canada	3
SNC Lavalin Group Inc.	Construction and Engineering	\$8,239	\$10,011	\$6,072	\$1,333	42,003	International	4
TELUS Corporation	Integrated Telecommunication Services	\$11,927	\$23,217	\$26,199	\$1,425	42,700	Canada	2
TransCanada Corporation	Energy Services & Utilities	\$10,185	\$58,947	\$33,253	\$1,840	6,059	North America	3

Utility Peer Group Percentile Statistics (n=8)

25th Percentile	\$2,457	\$8,472	\$4,528	\$194	953	-	2
50th Percentile	\$3,298	\$9,839	\$6,551	\$357	2,243	-	4
75th Percentile	\$5,189	\$16,082	\$9,913	\$411	7,760	-	6

Hydro One	Gas and Energy Utilities	\$6,548 Highest	\$22,500 84P	\$11,000 82P	\$749 Highest	7,856 75P	Canada	3 33P
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Executive Peer Group Percentile Statistics (n=21)

25th Percentile	\$3,298	\$9,839	\$5,419	\$282	2,243	-	2
50th Percentile	\$7,980	\$16,640	\$10,203	\$604	11,000	-	3
75th Percentile	\$12,298	\$26,575	\$24,706	\$1,373	26,265	-	4

Hydro One	Gas and Energy Utilities	\$6,548 45P	\$22,500 67P	\$11,000 52P	\$749 57P	7,856 39P	Canada	3 50P
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Data has been sourced from S&P's Capital IQ. Revenue, Assets and Net Income are reflective of the most recent fiscal year-end. Market capitalization reflects a 3 month average beginning July 1, 2015

Hydro One

Competitive Compensation Review

Management Compensation Plan
Non-Executive Bands
October 16, 2015

Draft for Discussion

Executive Summary

- Hydro One engaged Towers Watson to complete a competitive market assessment of its total rewards package for management compensation plan (MCP) employees (588 incumbents)
- Our analysis is based on Hydro One’s current organizational structure and role responsibilities, and will need to be refreshed as it transitions to an autonomous publicly-traded company. As such, use of this data and any program changes it informs should be paced with the evolution of the organization
- This benchmark review focuses on non-executive roles (Bands 5-10). A review of executive roles is underway and will be provided separately. The market research was conducted on a segmented basis (refer to **Appendix II** for the peer groups used in the analysis). Consistent with Hydro One’s compensation philosophy, roles are benchmarked against comparator organizations best representing the underlying skill sets required. The two segments identified for benchmarking purposes include: Core Operational and Support segments, each representing 50% of the Band 5 – 10 population
- Seventy seven percent of Hydro One’s incumbents are in roles covered by this benchmark review. In our experience, this is a strong representative sample
- On an aggregate basis, Hydro One’s position to market is aligned “at” or slightly above market median; with above market variances more attributable to the support segment***

Band	# Hydro One Benchmarked Incumbents	Base Salary			Total Target Cash (TTC)			Total Direct Compensation (TDC)		
		Avg. Hydro One	Avg. P50	% +/- P50 Base Salary	Avg. Hydro One	Avg. P50	% +/- P50 TTC	Avg. Hydro One	Avg. P50	% +/- P50 TDC
Band 5 (Director)	49	\$167	\$150	11%	\$204	\$183	12%	\$204	\$191	7%
Band 6 (Mgr/Prof)	118	\$135	\$129	5%	\$155	\$142	9%	\$155	\$142	9%
Band 7 (Mgr/Prof)	229	\$117	\$107	10%	\$130	\$116	12%	\$130	\$116	12%
Band 8 (Admin)	19	\$74	\$68	9%	\$80	\$73	9%	\$80	\$73	9%
Band 9 (Admin)	35	\$64	\$61	6%	\$69	\$65	7%	\$69	\$65	7%
Band 10 (Admin)	3	\$55	\$50	10%	\$57	\$52	8%	\$57	\$52	8%
Weighted Average	453	\$121	\$112	8%	\$137	\$124	11%	\$137	\$125	10%

Results by Hydro One Band by Segment – Core Operational

Core Operational Roles - Definition

Requires specific education, skills and knowledge in a professional area that is directly related to concepts and methods associated with the transmission, distribution and regulation of power. Examples include: Operations, Engineering, Skilled Trades

Core Operational

Band	# Hydro One Benchmarked Incumbents	Base Salary					Total Target Cash (TTC)					Total Direct Compensation (TDC)				
		Avg. Hydro One	Avg. P25	Avg. P50	Avg. P75	% +/- P50	Avg. Hydro One	Avg. P25	Avg. P50	Avg. P75	% +/- P50	Avg. Hydro One	Avg. P25	Avg. P50	Avg. P75	% +/- P50
Band 5 (Director)	14	\$169	\$153	\$173	\$184	-2%	\$207	\$174	\$207	\$231	0%	\$207	\$174	\$222	\$267	-7%
Band 6 (Mgr/Prof)	64	\$137	\$128	\$145	\$159	-6%	\$158	\$136	\$164	\$183	-4%	\$158	\$136	\$164	\$200	-4%
Band 7 (Mgr/Prof)	125	\$122	\$108	\$120	\$131	2%	\$136	\$117	\$131	\$148	4%	\$136	\$117	\$131	\$151	4%
Weighted Average	203	\$130	\$118	\$132	\$144	-1%	\$148	\$127	\$146	\$165	1%	\$148	\$127	\$147	\$174	0%

- In aggregate, the core operational segment of Hydro One is aligned with the market median of Base Salary and Target Total Cash (TTC)
- Market positioning is also aligned with market median on a Total Direct Compensation (TDC) basis, although relative positioning drops somewhat at Band 5 due to some market comparators providing long-term incentives at this level (Director).
- *Implications – development of a segmented salary structure aligned with market 50th percentile, that is also aligned with current pay levels, will minimize compression concerns relative to bargaining unit “feeder roles”. Any adjustment to target bonuses needed would be limited although consideration for implementation of long-term incentive eligibility at Band 5 may be warranted as these plans are finalized*

Results by Hydro One Band by Segment – Support

Support Roles - Definition

Roles that require education, skills and knowledge that are not specific to the transmission, distribution and regulation of power. Examples of such functions include Finance, Human Resources and Information Technology.

Band	# Hydro One Benchmarked Incumbents	Base Salary					Total Target Cash (TTC)					Total Direct Compensation (TDC)				
		Avg. Hydro One	Avg. P25	Avg. P50	Avg. P75	% +- P50	Avg. Hydro One	Avg. P25	Avg. P50	Avg. P75	% +- P50	Avg. Hydro One	Avg. P25	Avg. P50	Avg. P75	% +- P50
Band 5 (Director)	35	\$166	\$129	\$141	\$160	18%	\$203	\$156	\$173	\$197	17%	\$203	\$156	\$179	\$213	14%
Band 6 (Mgr/Professional)	54	\$132	\$100	\$109	\$121	22%	\$152	\$107	\$116	\$132	31%	\$152	\$107	\$116	\$136	31%
Band 7 (Mgr/Professional)	104	\$111	\$82	\$91	\$102	22%	\$124	\$89	\$100	\$115	24%	\$124	\$89	\$100	\$115	24%
Band 8 (Admin)	19	\$74	\$61	\$68	\$76	9%	\$80	\$65	\$73	\$85	9%	\$80	\$65	\$73	\$85	9%
Band 9 (Admin)	35	\$64	\$56	\$61	\$67	6%	\$69	\$59	\$65	\$70	7%	\$69	\$59	\$65	\$70	7%
Band 10 (Admin)	3	\$55	\$44	\$50	\$54	10%	\$57	\$46	\$52	\$56	8%	\$57	\$46	\$52	\$56	8%
Weighted Average	250	\$113	\$87	\$95	\$107	19%	\$129	\$96	\$106	\$121	22%	\$129	\$96	\$107	\$124	21%

- In aggregate, the support segment of Hydro One is at or above the market 75th percentile of Base Salary and TTC for management level roles and closer to the 50th percentile for administrative levels
- Similar findings with respect to TDC as per the core operational segment
- *Implications – development of a segmented salary structure that is lower than the core operational structure, but slightly higher than the market 50th percentile to address compression with bargaining unit “feeder roles”, particularly in Bands 6/7. This would enable management of actual salaries against lower range midpoints over time. Any adjustment to target bonuses needed would be limited although consideration for implementation of long-term incentive eligibility at Band 5 may be warranted as these plans are finalized*

Role of Pension & Benefits in Total Reward Positioning



Hydro One and market comparators reflect pension and benefit plans available to new hires, the impact of grandfathered or legacy benefits are not reflected

Next Steps Based on Benchmarking Results

- Develop recommendations (including transition planning considerations):
 - Before the end of 2015:
 - Salary structures and related administrative guidelines
 - 2016 merit increase budget and implementation guidelines
 - STI / LTI target recommendations for 2016
 - Integration with executive benchmarking and resulting STI & LTI design recommendations to ensure appropriate cascade
 - Q1 2016:
 - Actual 2016 LTI awards (if applicable)
 - Any identified benefit considerations

Appendices

Compensation Benchmark Methodology

- The following outlines the various data elements summarized in this report:

Element	Hydro One	Market	Peer Group
Salary	Average salary for all incumbents in specific benchmark job codes (as of April 2015)	2015 actual salaries	Segmented peer groups: <ul style="list-style-type: none"> • Core Operational • Support
Target bonus <i>(as a % of salary)</i>	Target bonus by band (target bonus is adjusted to 75% of potential bonus)	Short-term incentive target	
Target total cash (TTC)	Salary + target bonus	Salary + target bonus	
Long-term incentives <i>(as a % of salary)</i>	Target long-term incentive by band	Expected value of long-term incentives	
Total direct compensation (TDC)	TTC + long-term incentives	TTC + long-term incentives	

Peer Group

Core Operational

Company n=28							
Core Utility Peers			Other Utility Peers				
1	ATCO Group	8	Alberta Electric System Operator	15	GDF SUEZ	22	Northland Power Inc.
2	Capital Power Corporation	9	AltaLink	16	Horizon Utilities Corporation*	23	Nova Scotia Power Inc.
3	Emera Inc*	10	BC Hydro Power & Authority	17	Hydro Ottawa Limited*	24	Ontario Power Generation
4	Enbridge Inc.	11	Bruce Power LP	18	Hydro-Quebec	25	Powerstream Inc.*
5	Fortis Inc.*	12	Enersource Hydro Mississauga Inc.*	19	Independent Electricity System Operator	26	SaskEnergy Incorporation*
6	TransAlta Corporation	13	ENMAX Corporation	20	NB Power Holding Corporation*	27	SaskPower
7	TransCanada Corporation	14	EPCOR Utilities Inc.	21	Newfoundland and Labrador Hydro Electric Corporation	28	Toronto Hydro Electric

*Not currently included in 2015 analysis database

Peer Group

Support

Company n=76

1	AGCS North America	20	Compass Group Canada	39	Loblaws Companies Limited	58	Samuel, Son & Co., Ltd
2	AIG Insurance Company of Canada	21	CPP Investment Board	40	Magna International Inc.	59	Scotia Bank
3	Allstate Insurance Company of Canada	22	Deloitte	41	Manulife Financial Corporation	60	Shoppers Drug Mart
4	Amex Canada, Inc.	23	Delta Hotels and Resorts	42	Maple Leaf Foods Inc.	61	Siemens Canada Limited
5	Bank of America (BANA)	24	Economical Mutual Insurance Company	43	McCain Foods Limited	62	Sun Life Financial
6	Bank of Montreal	25	Export Development Canada	44	Molson Coors Canada	63	Tech Data Canada
7	Barrick Gold Corporation	26	Ford Motor Company of Canada, Limited	45	NAV CANADA	64	The Coca-Cola Company - Canada
8	Bruce Power	27	GDF SUEZ	46	Nissan Canada, Inc	65	The Co-operators General
9	Cadillac Fairview Corporation Limited	28	GE Energy	47	Northbridge Financial Corporation	66	The Law Society of Upper Canada
10	Canada Post	29	General Dynamics Land Systems - Canada	48	Northland Power Inc.	67	TMX Group Limited
11	Canadian Broadcasting Corporation/Radio Canada	30	General Electric Canada	49	Ontario Power Generation	68	Toronto Hydro Electric
12	Canadian Imperial Bank of Commerce	31	Gerdau Long Steel North America	50	OPSEU Pension Trust	69	Toronto-Dominion Bank
13	Canadian Nuclear Safety Commission	32	Healthcare of Ontario Pension Plan	51	Parmalat Canada	70	Toyota Motor Manufacturing Canada
14	Capital One Canada	33	Honda of Canada Manufacturing	52	Procter & Gamble Inc.	71	Treasury Board of Canada Secretariat
15	Celestica Inc.	34	Hospital for Sick Children	53	Purolator Inc.	72	Unilever Canada
16	Chartwell Retirement Residences	35	Hyundai Auto Canada Corp.	54	RBC Financial	73	United States Steel Canada
17	Chrysler Canada Inc.	36	Independent Electricity System Operator	55	Revera Inc	74	University Health Network
18	Cineplex Entertainment	37	Intact Financial Corporation	56	Rogers Communications Inc.	75	Whirlpool Canada LP.
19	Coca-Cola Refreshments	38	Kinross Gold Corporation	57	Royal & SunAlliance Canada	76	Ontario Workplace Safety & Insurance Board

Peer Group

Pension & Benefits

Company n=21

1	ATCO Group	12	EPCOR Utilities
2	Bombardier Inc.	13	Fortis Inc.
3	British Columbia Hydro and Power Authority	14	Hydro Quebec
4	Bruce Power	15	Intact Financial Corporation
5	Canadian National Railway Company	16	Ontario Power Generation
6	Canadian Tire Corporation, Limited	17	Rogers Communications Inc.
7	Capital Power Corporation	18	SNC Lavalin Inc.
8	CGI Group Inc.	19	Toronto Hydro-Electric System Limited
9	Emera Inc.	20	TransAlta Corporation
10	Enbridge Gas Distribution Inc.	21	TransCanada Pipelines Limited
11	ENMAX Corporation.		



Hydro One

Updated Discussion Notes - Preliminary CEO/CFO Pay Benchmarking

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Introduction & Context

Hydro One is pursuing an IPO in Fall 2015, privatizing its transmission and distribution business lines

- Anticipate that the new entity will be ~\$13-16B in Market Cap, and ~\$21-24B in total enterprise value (source: Goldman Sachs' Jan 2015 estimates) – by far the largest player in the industry in Canada, and unique in that it is a “pure play” transmission and distribution company (i.e. no generation)

Our Understanding of the “New” Hydro One:

- Large challenge will be to make the business more efficient, especially the distribution unit
- Expects to be a consolidator in the industry (starting by acquiring relatively smaller players, but eventually moving to more sizable targets)
- Anticipates being a yield play, with some growth as well
- Fully independent professional board
- Will be 100% regulated by the OEB initially, but no other government regulation
- Will not be under legislative compensation constraints

Introduction & Context (cont'd)

Talent Requirement:

- Will require professional managers with proven public company leadership experience
- Significant experience with unions
- Strong focus on financial performance and capital market activities
- Expected to be paid in line with market
- Board will be exposed to public scrutiny

The following slides outline:

- Our initial thoughts on the pay benchmarking peer groups for the “New” Hydro One
- Key findings from our preliminary market pay review of the CEO / CFO roles
- Straw model illustrations of alternative CEO / CFO Total Direct Compensation* (“TDC”) packages for discussion purposes only
- Illustrative sample of key terms and conditions

**salary + target short term incentive + target long term incentive = TDC*

Compensation Philosophy

Philosophy in respect of market reference and target positioning:

- Primary reference is a group of comparably-sized TSX utility issuers and other companies that have business models of a similar complexity (i.e. pipeline and storage business)
- Given the limitation of direct industry peers, and for broader context only, considered TSX60 pay levels as additional market reference – Hydro One is expected to be just below the mid-point of TSX60 as measured by estimated market capitalization (i.e. pro forma ranking 34th among TSX60 issuers, based on the market capitalization as of April 27, 2015)
- Compensation programs will be designed to be competitive in order to attract, retain, and motivate the high-calibre talent required to ensure the future success of Hydro One, without targeting a specific market positioning against the primary reference group (e.g. P50)

See following pages detailing the primary pay benchmarking peer group and other market reference points

Primary Peer Group and Other Reference Groups

Preliminary Peer Groups

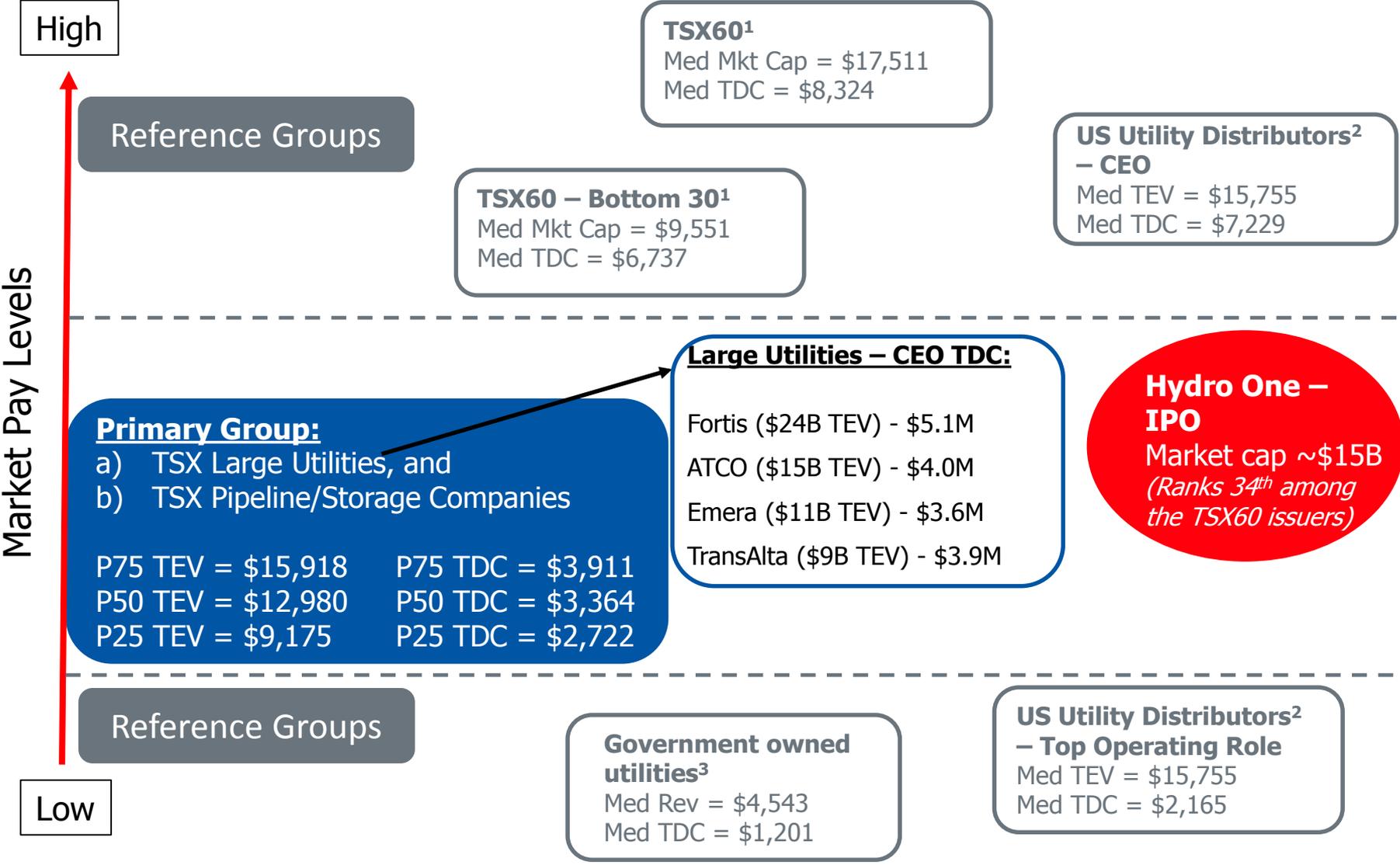
In our view, Hydro One will be a relatively unique entity in the Canadian capital markets:

- It will be a large issuer by most common sizing standards (i.e. revenue, assets, enterprise value), and we anticipate it will be just below the mid-point of TSX60 as measured by estimated market capitalization
 - This poses inherent challenge in identifying peers of similar size within the same industry
 - Hydro One's presence on TSX60 will lead to increased visibility of its pay practices (in addition to its high profile in Ontario politics)
- It will also be different from many of its industry peers in that initially virtually 100% of its activities will be regulated

Our approach to deal with these inherent challenges is the use of a number of market reference points as a "**triangulation exercise**" in order to set overall context for executive pay for these two top roles

We have identified a combined "primary reference" group, including the four largest TSX utilities, against which to benchmark CEOs and CFOs of the "New" Hydro One, and other groups intended for use as additional market context. Please refer to the next two pages for a summary of these groups

Preliminary Peer Groups (cont'd)



Source: S&P Capital IQ; All financial figures are in CAD \$M; all pay figures are in CAD \$000s

- 2013 Target TDC as per Hugessen TSX60 proxy analysis
- Approximated target values using most recent actuals - converted to CAD
- Latest proxy data and Annual Information reports

Preliminary Peer Groups (cont'd)

Market Reference Points		Reasons for relevance	Points of differentiation (Ref. Groups vs. Hydro One)	
Primary Peer Group (a & b combined)	a) TSX Utilities Companies	<ul style="list-style-type: none"> • Similar business, at least in part (distribution and transmission) • Larger players – similar scale 	<ul style="list-style-type: none"> • More complex (including integrated utilities with generating capacities) • Relatively less regulated • Includes some smaller players as well 	
	b) TSX Pipeline / Storage Companies	<ul style="list-style-type: none"> • Similar size • Similar complexity • Some regulations apply 	<ul style="list-style-type: none"> • Different business models • Mostly Western Canada 	
Other Reference Groups	Of Interest	TSX60 Constituents a) TSX60 b) Bottom 30	<ul style="list-style-type: none"> • Hydro One will likely become a TSX60 constituent • We estimate that Hydro One will fall just under the median of constituents (on a market cap basis) 	
	Other Context	US Utility Distributors (CEO / CFO roles)	<ul style="list-style-type: none"> • Similar size • Similar business model (selected “pure play” distribution companies) 	<ul style="list-style-type: none"> • US pay practices (i.e. high “water mark”) • Including US comparators in peer group could lead to public scrutiny
		US Utility Distributors – Top Ops / Business Division Heads (for the CEO role only)	<ul style="list-style-type: none"> • Similar size • Similar business model (selected “pure play” distribution companies) • Possible talent pool 	<ul style="list-style-type: none"> • Including US comparators in peer group could lead to public scrutiny • The particular roles studied may not be directly applicable
		Government-owned utilities	<ul style="list-style-type: none"> • Similar business model • Similar regulatory environment 	<ul style="list-style-type: none"> • Compensation constraints by ongoing legislation (Ontario) • Limited / unusual compensation practices and disclosure • Different talent pool

See next page for details of the primary peer group

Primary Peer Group

- Given the uniqueness of Hydro One, there are limited comparably sized direct industry peers (i.e. 4 large utilities) and other companies that have a similar complexity of business (i.e. 4 pipeline/storage companies) – see below a summary of the primary pay benchmarking peer group (n = 8)

Company	Industry Sector	Primary Industry	TEV	Market Cap	Revenues	Assets	EBITDA
Fortis Inc.	Utilities	Electric Utilities	\$24,461	\$10,863	\$5,401	\$26,628	\$1,711
ATCO Ltd.	Utilities	Multi-Utilities	\$15,229	\$5,323	\$4,554	\$17,689	\$1,664
Emera Incorporated	Utilities	Electric Utilities	\$10,759	\$5,950	\$2,972	\$9,844	\$987
TransAlta Corp.	Utilities	Independent Power Producers and Energy Traders	\$8,859	\$3,310	\$2,441	\$10,050	\$969
Pembina Pipeline Corporation	Energy	Oil and Gas Storage and Transportation	\$17,988	\$14,292	\$6,069	\$11,262	\$932
Keyera Corp.	Energy	Oil and Gas Refining and Marketing	\$8,858	\$7,576	\$3,624	\$3,851	\$599
AltaGas Ltd.	Energy	Oil and Gas Storage and Transportation	\$9,281	\$5,544	\$2,401	\$8,413	\$502
Inter Pipeline Ltd.	Energy	Oil and Gas Storage and Transportation	\$15,201	\$10,364	\$1,556	\$8,647	\$698

Summary Statistics

75th Percentile	\$15,918	\$10,489	\$4,766	\$12,869	\$1,156
Median	\$12,980	\$6,763	\$3,298	\$9,947	\$951
25th Percentile	\$9,175	\$5,489	\$2,431	\$8,589	\$673

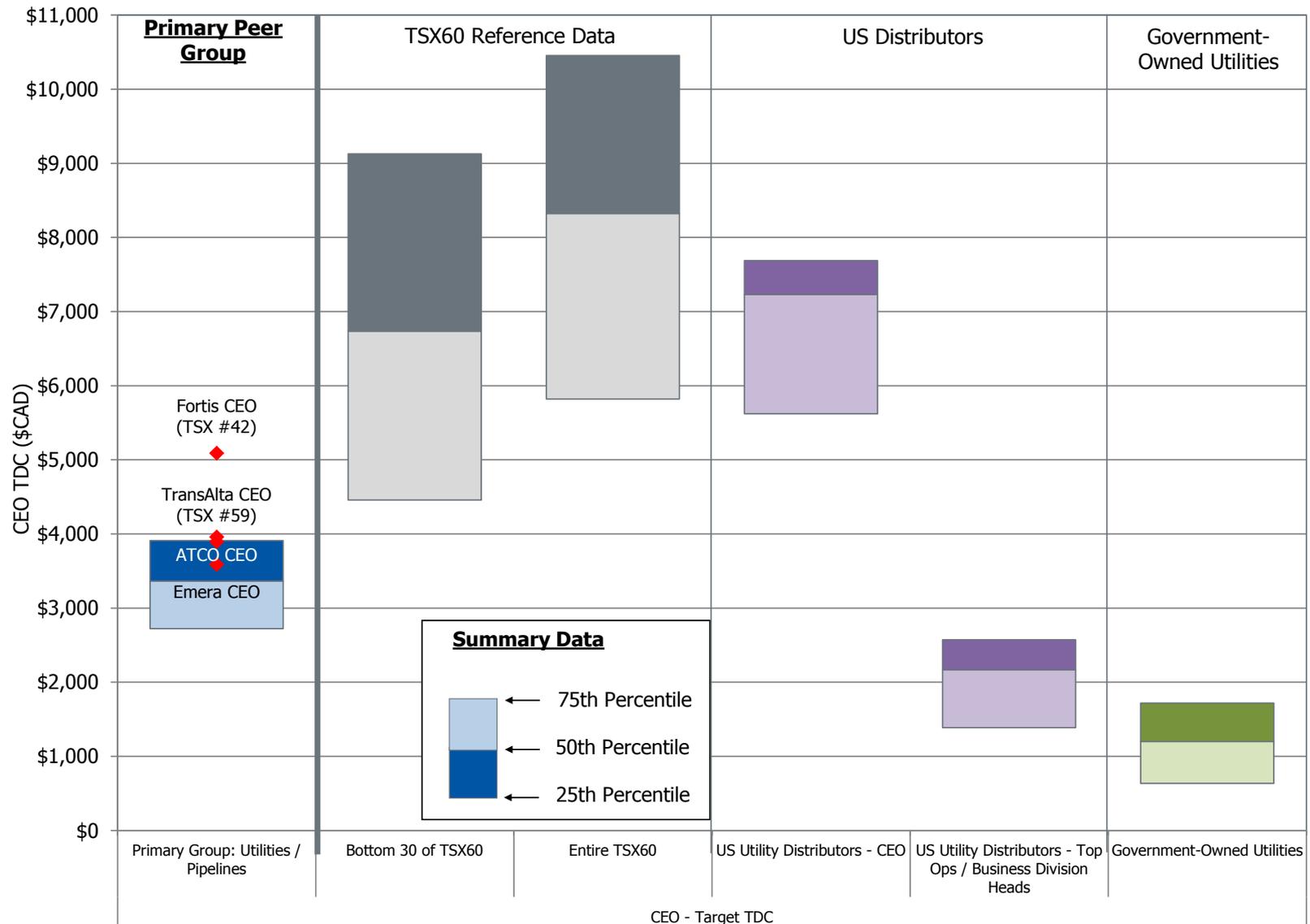
Hydro One Inc.	Utilities	Electric Utilities	\$22,000	\$15,000	\$6,548	\$22,550	\$1,833
			<i>95%</i>	<i>MAX</i>	<i>MAX</i>	<i>93%</i>	<i>MAX</i>

Source: S&P CapIQ; Goldman, Sachs & Co: Discussion Materials Regarding Hydro One

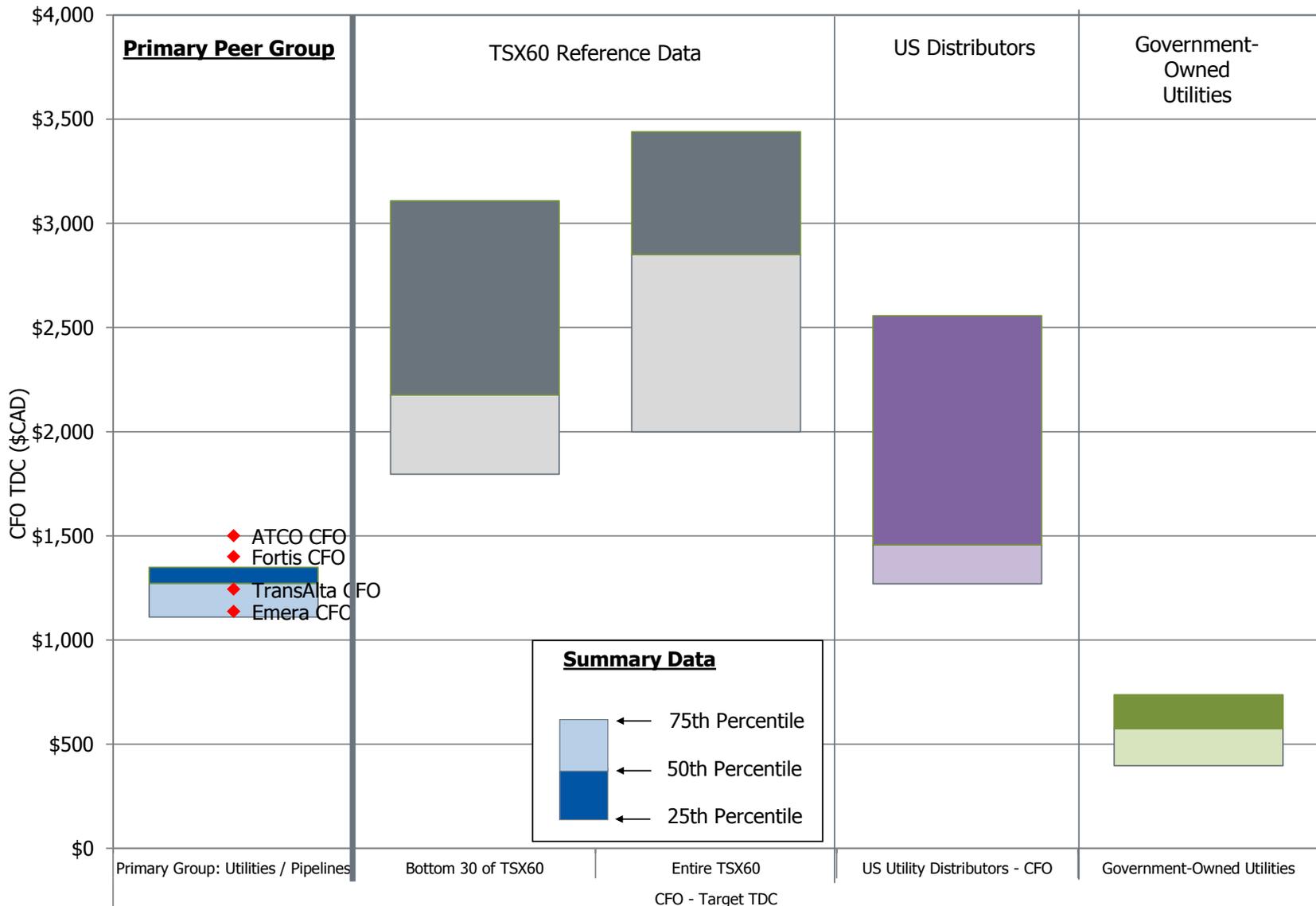
Note that Hydro One scoping numbers are TBC – we have used our best estimates from S&P CapIQ and Goldman Sachs, but have not taken into account any further restructuring that may take place
All data in CAD \$MM as of April 15, 2015

Benchmarking Results

CEO Benchmarking Results



CFO Benchmarking Results



Straw Model CEO and CFO Target Total Direct Pay

- Our focus is on “total” pay at this point (i.e. more focus on pay mix in future iterations)
- Having said this, total cash is relatively light, favouring larger LTIP

Straw Model CEO & CFO Alternatives

We outline in the following pages preliminary alternatives for CEO and CFO target pay –these are developed with reference to:

1. About P50 Target TDC of the primary peer group,
2. Pay levels of the large utilities, and
3. Low end (i.e. P25) of the bottom half of TSX60

In developing the **mid-case** alternative (i.e. “desired” positioning), we have considered the following:

- The positioning is “in the zone”, albeit near or below the top end of the large utilities (ATCO, Fortis, etc.)
- Reflects what may be initial positioning for a fully qualified and experienced candidate
- Leaves room for potential growth in TDC as performance is proven out
- Ideally less of a “lightning rod” at the time of IPO (i.e. ideal CEO candidate should have some sensitivity to his / her own positioning)

Straw Model CEO & CFO Alternatives (cont'd)

Having said this, we recognize that the current search will be a true test of attracting the right “talent”, and the price point may have to be higher (e.g. closer to the **high-case** alternative)

Some of these considerations may include:

- “Risk premium” to the candidate for taking on the CEO role at an organization that will be in the public spotlight, with likely persistent attention from a wide range of critical stakeholders
- The degree of significant operational and institutionalized challenges that need to be addressed (i.e. scarcity of senior talent able and willing to take on such a big task)
- Aside from the “typical” qualifications expected, the desirable candidate should also be well recognized and respected in the market place (i.e. “visibility”)

See the following page for straw model of illustrative alternatives

Straw Model CEO & CFO Alternatives (cont'd)

Straw Model CEO Alternatives

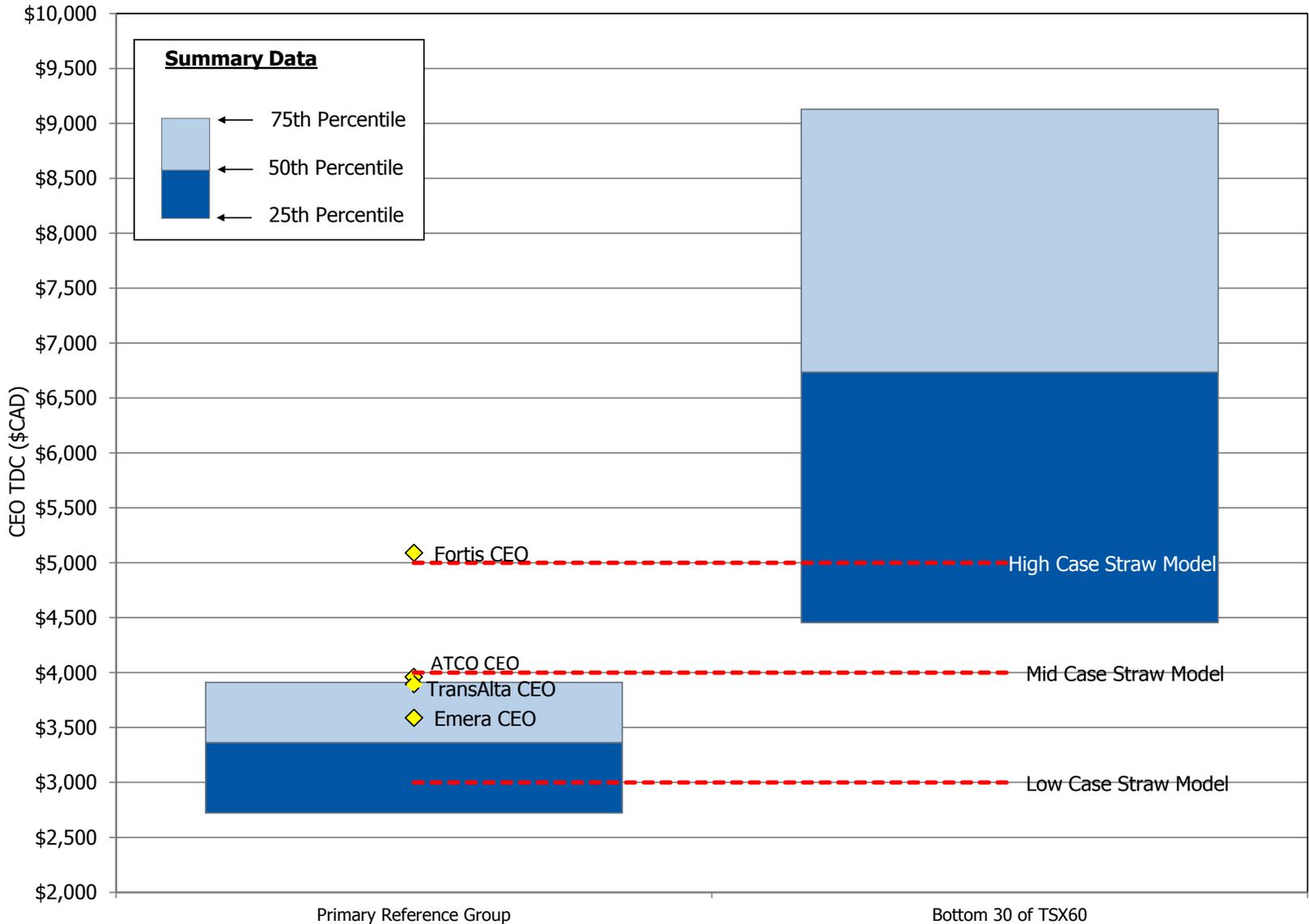
Target Pay	Low Case	Mid Case	High Case
Positioning	Between P25 and P50 of peer group, below large utilities	P75 of peer group, close to median of large utilities	High end of large utilities (i.e. Fortis CEO is ~\$5M), low end of Bottom Half TSX60
Salary	\$800,000	\$850,000	\$850,000
STIP (% of Salary)	\$720,000 <u>90%</u>	\$765,000 <u>90%</u>	\$765,000 <u>90%</u>
LTIP (% of Salary)	\$1,480,000 <u>185%</u>	\$2,385,000 <u>281%</u>	\$3,385,000 <u>398%</u>
TDC	\$3,000,000	\$4,000,000	\$5,000,000
Pension	DC SERP	DC SERP	DC SERP

Straw Model CEO & CFO Alternatives (cont'd)

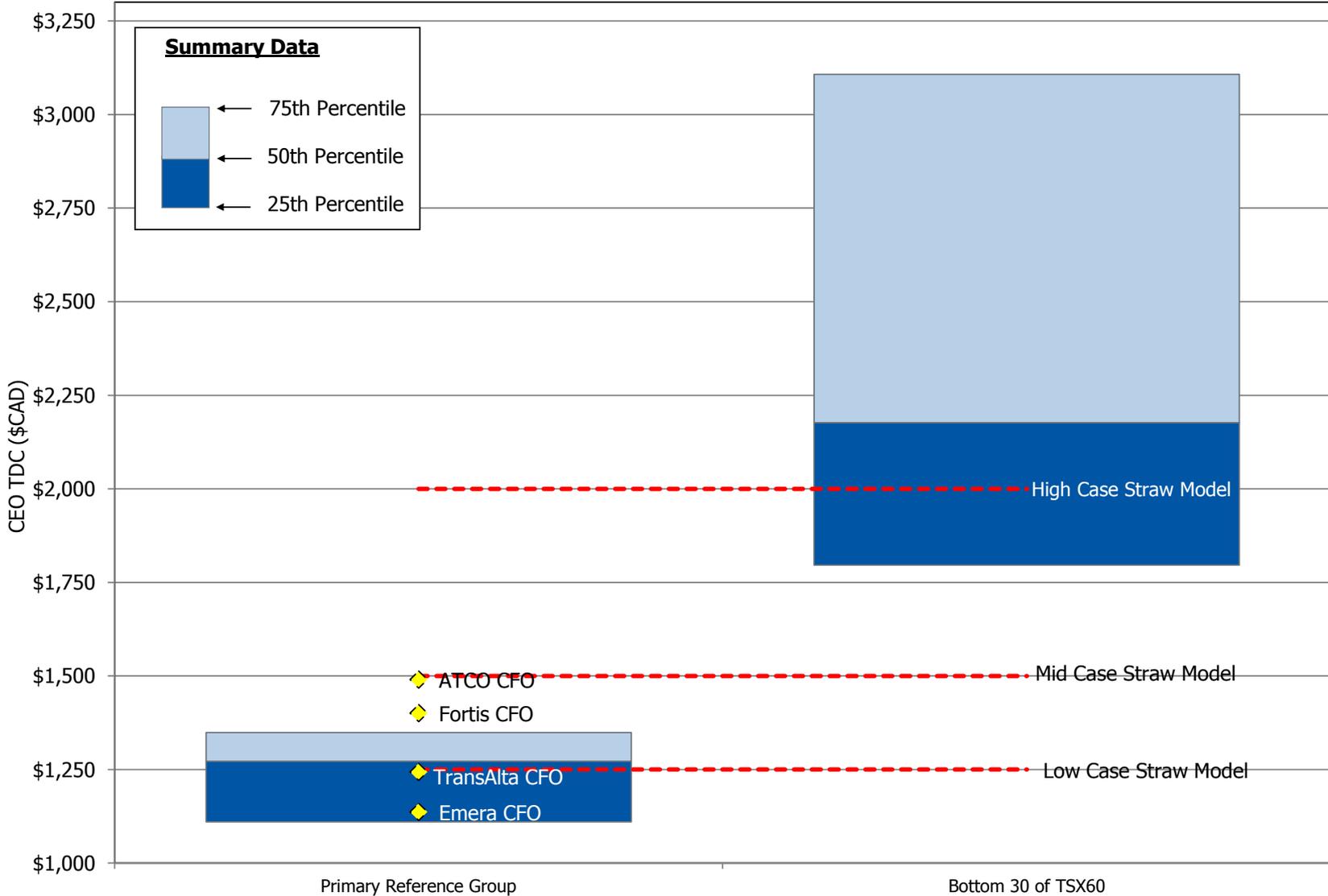
Straw Model CFO Alternatives

Target Pay	Low Case	Mid Case	High Case
Positioning	P50 of peer group, low end of large utilities	Above P75 of peer group, high end of large utilities (i.e. ATCO CFO ~\$1.5M)	Above P75 of peer group and large utilities, but low end of bottom half TSX60; this could be warranted if size of role is beyond that of a "typical" CFO
Salary	\$400,000	\$500,000	\$550,000
STIP (% of Salary)	\$240,000 <u>60%</u>	\$300,000 <u>60%</u>	\$330,000 <u>60%</u>
LTIP (% of Salary)	\$610,000 <u>153%</u>	\$700,000 <u>140%</u>	\$1,120,000 <u>204%</u>
TDC	\$1,250,000	\$1,500,000	\$2,000,000
Pension	DC SERP	DC SERP	DC SERP

Straw Model CEO Alternatives vs. Market Context



Straw Model CFO Alternatives vs. Market Context



Illustrative Term Sheet

- Sample of Key Terms and Conditions

Sample Term Sheet: Illustrative Terms & Conditions

Element	Illustrative Terms and Conditions
Term	Indefinite term
Make whole (if any)	TBD
Transition pay (e.g. stub 2015)	TBD
Exit Provisions	<p>Termination with Cause / Resignation: No entitlement to annual incentive bonus; unvested LTIP awards will expire and terminate simultaneously</p> <p>Termination without Cause: Severance equal to [2x] annual salary and bonus; also may be eligible for pro-rated STIP; LTIP [may / may not] vest on a pro-rated basis</p> <p>Retirement: full vesting of existing LTIP – e.g. see “good leaver” provision below</p> <p>Disability: awards are pro-rated for the portion of the performance period worked; continue to vest and are paid out per original schedule</p> <p>Death: pro rata [TBC] LTIP immediately vest and are settled with the estate as soon as possible</p> <p>Change of Control: there will be no automatic acceleration of vesting of existing LTIP upon a Change of Control</p> <p>Termination without Cause following Change of Control: Same as termination without cause. May include “Good Reason” clause (constructive dismissal), and be “double triggered”</p> <p>May wish to include a “good leaver” provision (including for retirement) that determines the treatment of unvested LTIP on the participant’s exit from the company, based on the assessment of the Board (i.e. the idea here is to avoid both severance and generous treatment of LTIP):</p> <ul style="list-style-type: none"> • It is expected that the executive facilitate their exit per an agreement between the executive and the Board (actions include, but not limited to: giving reasonable notice, carrying out their transition responsibilities, adhering to restrictive covenants, etc.) • If executive is considered a “good leaver” the Board may assess that all or a portion of unvested LTIP continue to vest per the established schedule • If the executive is not considered a “good leaver” unvested LTIP will be cancelled

Sample Term Sheet: Illustrative Terms & Conditions

Element	Illustrative Terms and Conditions
Share Ownership Guidelines ("SOG")	<ul style="list-style-type: none"> • Typically [3 – 5x] salary for the CEO to be achieved in [5] years • May consider a [1] year post-retirement hold
Clawback Policy	<p>All incentive payments (annual incentive bonus and LTIP) will be subject to clawback in the following circumstances – for example (TBD):</p> <ul style="list-style-type: none"> • The amount of the incentive compensation was calculated based upon, or contingent on, the achievement of certain financial results that were subsequently the subject of or affected by a restatement of all or a portion of the Company's financial statements ; and • The incentive compensation payment received would have been lower had the financial results been properly reported
Non-Compete Restrictions	The CEO shall not engage in any practice or business in competition with the Company in Canada, for a period of [1 year] following termination
Non-Solicit Restrictions (employees, clients)	For a period of one year following termination, for any reason including resignation or termination without cause
Non-Disparagement	Applies indefinitely
Anti-Hedging Policy	No hedging of company shares

Appendix I: Additional Reference Group Constituents

Reference Group: US Utility Distributors

Reference Group: US Utility Distributors

Company	Industry Sector	Primary Industry	TEV	Market Cap	Revenues	Assets	EBITDA
Consolidated Edison, Inc.	Utilities	Multi-Utilities	\$37,285	\$22,046	\$14,961	\$51,312	\$3,746
Eversource Energy	Utilities	Electric Utilities	\$32,051	\$19,755	\$8,966	\$34,485	\$2,620
Pepco Holdings, Inc.	Utilities	Electric Utilities	\$15,755	\$8,378	\$5,649	\$18,143	\$1,458
ITC Holdings Corp.	Utilities	Electric Utilities	\$11,882	\$6,833	\$1,185	\$8,076	\$828
UIL Holdings Corporation	Utilities	Electric Utilities	\$5,654	\$3,559	\$1,890	\$5,920	\$447
Hydro One Inc.	Utilities	Electric Utilities	\$22,000	\$15,000	\$6,548	\$22,550	\$1,833
			60%	65%	57%	57%	58%

Source: S&P CapIQ; Goldman, Sachs & Co: Discussion Materials Regarding Hydro One
 Note that Hydro One scoping numbers are TBC – we have used our best estimates from S&P CapIQ and Goldman Sachs, but have not taken into account any further restructuring that may take place
 All data in CAD \$MM, converted from USD

Reference Group: Government-Owned Utilities

Government-Owned Utilities

Company	Industry Sector	Primary Industry	TEV	Market Cap	Revenues	Assets	EBITDA
Hydro-Quebec	Utilities	Renewable Electricity	N/A	N/A	\$13,638	\$74,890	\$8,323
Ontario Power Generation Inc.	Utilities	Electric Utilities	N/A	N/A	\$4,963	\$41,653	\$1,385
British Columbia Hydro and Power Authority	Utilities	Electric Utilities	N/A	N/A	\$5,737	\$26,799	\$1,766
ENMAX Corp.	Utilities	Electric Utilities	N/A	N/A	\$3,348	\$4,842	\$414
Toronto Hydro Corp.	Utilities	Electric Utilities	N/A	N/A	\$3,316	\$4,276	\$341
EPCOR Utilities, Inc.	Utilities	Electric Utilities	N/A	N/A	\$1,904	\$5,738	\$400
Hydro One Inc.	Utilities	Electric Utilities	\$22,000	\$15,000	\$6,548	\$22,550	\$1,833
			-	-	82%	56%	80%

Source: S&P CapIQ; Goldman, Sachs & Co: Discussion Materials Regarding Hydro One
 Note that Hydro One scoping numbers are TBC – we have used our best estimates from S&P CapIQ and Goldman Sachs, but have not taken into account any further restructuring that may take place
 All data in CAD \$MM

Appendix II: Detailed CEO Benchmarking Results

CEO Benchmarking – Primary Group

Company	Annual Base Salary	STIP		Total Cash Compensation	LTIP		Total Direct Compensation	Multiple of CFO Target Total Direct Compensation
		Target*			Target*			
		\$	%	Target	\$	%	Target	
Fortis Inc.	\$1,200	\$1,020	85%	\$2,220	\$2,870	239%	\$5,090	3.63x
ATCO Ltd.	\$1,000	\$1,000	100%	\$2,000	\$1,960	196%	\$3,960	2.64x
Emera Incorporated	\$875	\$788	90%	\$1,663	\$1,925	220%	\$3,588	3.15x
TransAlta Corp.	\$950	\$855	90%	\$1,805	\$2,090	220%	\$3,895	3.13x
Pembina Pipeline Corporation	\$570	\$485	85%	\$1,055	\$1,568	275%	\$2,622	1.97x
Keyera Corp.	\$572	\$400	70%	\$972	\$1,144	200%	\$2,116	2.05x
AltaGas Ltd.	\$806	\$605	75%	\$1,411	\$1,344	167%	\$2,755	3.25x
Inter Pipeline Ltd.	\$550	\$550	100%	\$1,100	\$2,040	371%	\$3,140	2.41x
75th Percentile	\$963	\$891	93%	\$1,854	\$2,053	248%	\$3,911	3.18x
Median	\$841	\$696	88%	\$1,537	\$1,943	220%	\$3,364	2.89x
25th Percentile	\$572	\$534	83%	\$1,089	\$1,512	199%	\$2,722	2.32x
Hydro One: Pro-forma (mid case)	\$850	\$765	90%	\$1,615	\$2,385	281%	\$4,000	2.67x
<i>Percent Rank</i>	<i>52%</i>	<i>55%</i>	<i>57%</i>	<i>54%</i>	<i>91%</i>	<i>87%</i>	<i>86%</i>	<i>44%</i>

Sources: latest company proxy data & insider filings

All pay data in \$000s CDN

* Target values if disclosed; if not disclosed, have shown 3-yr actual average

CEO Benchmarking – Government-Owned Utilities

Company	Annual Base Salary	STIP		Total Cash Compensation	LTIP		Total Direct Compensation
		Target*			Target*		
		\$	%	Target	\$	%	Target
Hydro-Quebec	\$469	\$108	23%	\$577	\$0	0%	\$577
Ontario Power Generation Inc.	\$800	\$800	100%	\$1,600	\$0	0%	\$1,600
British Columbia Hydro and Power Authority	\$359	\$77	21%	\$436	\$0	0%	\$436
ENMAX Corp.	\$639	\$479	75%	\$1,118	\$639	100%	\$1,756
Toronto Hydro Corp.	\$485	\$316	65%	\$801	\$0	0%	\$801
EPCOR Utilities, Inc.	\$650	\$488	75%	\$1,138	\$650	100%	\$1,788
2014 Summary Statistics							
75th Percentile	\$647	\$485	75%	\$1,133	\$479	75%	\$1,717
Median	\$562	\$397	70%	\$959	\$0	0%	\$1,201
25th Percentile	\$473	\$160	33%	\$633	\$0	0%	\$633

Sources: latest company proxy data & insider filings; if fiscal 2014 results have not yet been released, figures have been aged by 3% (ENMAX)

All pay data in \$000s CDN

** Target values if disclosed; if not disclosed, have shown 3-yr actual average*

CEO Benchmarking – US Group – Top Ops

Company	Title	Annual Base Salary	STIP Target*		Total Cash Compensation Target	LTIP Target*		Total Direct Compensation Target
			\$	%		\$	%	
Consolidated Edison, Inc.	President of Shared Services - Consolidated Edison Company of New York	\$584	\$714	122%	\$1,299	\$1,057	181%	\$2,356
Consolidated Edison, Inc.	President of Consolidated Edison Company of New York Inc	\$826	\$895	108%	\$1,721	\$1,740	211%	\$3,461
Eversource Energy	COO and EVP	\$595	\$663	111%	\$1,258	\$907	152%	\$2,165
Eversource Energy	EVP of Enterprise Energy Strategy & Business Development	\$682	\$887	130%	\$1,568	\$1,122	165%	\$2,690
Pepco Holdings, Inc.	CEO of Pepco Energy Services Inc and President of Pepco Energy Services Inc	\$406	\$315	77%	\$721	\$550	135%	\$1,271
Pepco Holdings, Inc.	EVP - Power Delivery	\$550	\$310	56%	\$860	\$642	117%	\$1,502
ITC Holdings Corp.	EVP, Chief Business Unit Officer and President of ITC Michigan	\$693	\$866	125%	\$1,559	\$1,142	165%	\$2,701
ITC Holdings Corp.	COO and EVP	\$571	\$868	152%	\$1,439	\$1,016	178%	\$2,455
ITC Holdings Corp.	EVP of US Regulated Grid Development	\$475	\$742	156%	\$1,217	\$780	164%	\$1,997
UIL Holdings Corporation	SVP of Electric Operations	\$350	\$267	76%	\$617	\$330	94%	\$947
UIL Holdings Corporation	SVP of Customer and Business Services	\$326	\$159	49%	\$485	\$189	58%	\$675
75th Percentile		\$638	\$867	128%	\$1,499	\$1,089	171%	\$2,573
Median		\$571	\$714	111%	\$1,258	\$907	164%	\$2,165
25th Percentile		\$441	\$313	77%	\$790	\$596	126%	\$1,387

Source: S&P Capital IQ; if fiscal 2014 results have not yet been released, figures have been aged by 3% (Pepco)

All pay data in \$000s CDN; converted at 1.1045 for 2014 data, 1.03 for 2013 data, 0.999 for 2012 data, and 0.9891 for 2011 data (i.e. the average US:CAD Bank of Canada Rate for the given year)

* We have approximated target values by using the average STIP and LTIP values of the 3 most recently disclosed fiscal years

CEO Benchmarking – US Group - CEOs

Company	Annual Base Salary	STIP		Total Cash Compensation	LTIP		Total Direct Compensation
		Target*			Target*		
		\$	%	Target	\$	%	Target
Consolidated Edison, Inc.	\$1,259	\$1,730	137%	\$2,989	\$4,240	337%	\$7,229
Eversource Energy	\$1,321	\$2,456	186%	\$3,778	\$4,898	371%	\$8,676
Pepco Holdings, Inc.	\$1,077	\$856	80%	\$1,933	\$3,688	343%	\$5,621
ITC Holdings Corp.	\$1,118	\$3,604	322%	\$4,722	\$2,966	265%	\$7,688
UIL Holdings Corporation	\$867	\$975	112%	\$1,841	\$1,719	198%	\$3,560

75th Percentile	\$1,259	\$2,456	186%	\$3,778	\$4,240	343%	\$7,688
Median	\$1,118	\$1,730	137%	\$2,989	\$3,688	337%	\$7,229
25th Percentile	\$1,077	\$975	112%	\$1,933	\$2,966	265%	\$5,621

Source: S&P Capital IQ

All pay data in \$000s CDN; converted at 1.1045 for 2014 data, 1.03 for 2013 data, 0.999 for 2012 data, and 0.9891 for 2011 data (i.e. the average US:CAD Bank of Canada Rate for the given year)

** We have approximated target values by using the average STIP and LTIP values of the 3 most recently disclosed fiscal years*

Appendix III: Detailed CFO Benchmarking Results

CFO Benchmarking – Primary Group

Company	Annual Base Salary	STIP		Total Cash Compensation	LTIP		Total Direct Compensation
		Target*			Target*		
		\$	%	Target	\$	%	Target
Fortis Inc.	\$550	\$385	70%	\$935	\$466	85%	\$1,401
ATCO Ltd.	\$563	\$536	95%	\$1,099	\$402	72%	\$1,501
Emera Incorporated	\$474	\$284	60%	\$758	\$379	80%	\$1,137
TransAlta Corp.	\$452	\$226	50%	\$678	\$565	125%	\$1,244
Pembina Pipeline Corporation	\$375	\$206	55%	\$581	\$750	200%	\$1,331
Keyera Corp.	\$338	\$186	55%	\$523	\$507	150%	\$1,030
AltaGas Ltd.	\$339	\$170	50%	\$509	\$339	100%	\$848
Inter Pipeline Ltd.	\$350	\$280	80%	\$630	\$671	192%	\$1,301
75th Percentile	\$493	\$309	73%	\$802	\$592	160%	\$1,349
Median	\$414	\$253	58%	\$654	\$486	113%	\$1,272
25th Percentile	\$347	\$201	54%	\$567	\$396	84%	\$1,110
Hydro One: Pro-forma (mid case)	\$500	\$300	60%	\$800	\$700	140%	\$1,500
<i>Percent Rank</i>	<i>76%</i>	<i>74%</i>	<i>57%</i>	<i>75%</i>	<i>91%</i>	<i>66%</i>	<i>99.8%</i>

Sources: latest company proxy data & insider filings

All pay data in \$000s CDN

** Target values if disclosed; if not disclosed, have shown 3-yr actual average*

CFO Benchmarking – Government Owned Utilities

Company	Title	Annual Base Salary	STIP		Total Cash Compensation	LTIP		Total Direct Compensation
			Target*			Target*		
			\$	%	Target	\$	%	Target
Hydro-Quebec	---	---	---	---	---	---	---	---
Ontario Power Generation Inc.	SVP & CFO	\$397	\$179	45%	\$575	\$0	0%	\$575
British Columbia Hydro and Power Authority	EVP, Finance & CFO	\$269	\$55	20%	\$324	\$0	0%	\$324
ENMAX Corp.	EVP, Finance & CFO	\$414	\$186	45%	\$600	\$315	76%	\$915
Toronto Hydro Corp.	EVP and CFO	\$283	\$113	40%	\$397	\$0	0%	\$397
EPCOR Utilities, Inc.	SVP & CFO	\$335	\$151	45%	\$486	\$250	75%	\$736
2014 Summary Statistics								
75th Percentile		\$397	\$179	45%	\$575	\$250	75%	\$736
Median		\$335	\$151	45%	\$486	\$0	0%	\$575
25th Percentile		\$283	\$113	40%	\$397	\$0	0%	\$397

Sources: latest company proxy data & insider filings; if fiscal 2014 results have not yet been released, figures have been aged by 3% (ENMAX)

All pay data in \$000s CDN

* Target values if disclosed; if not disclosed, have shown 3-yr actual average

Note that Hydro-Quebec does not have a CFO

CFO Benchmarking – US Distributors

Company	Annual Base Salary	STIP		Total Cash Compensation	LTIP		Total Direct Compensation
		Target*			Target*		
		\$	%	Target	\$	%	Target
Consolidated Edison, Inc.	\$751	\$511	68%	\$1,262	\$1,340	178%	\$2,602
Eversource Energy	\$649	\$748	115%	\$1,398	\$1,159	178%	\$2,556
Pepco Holdings, Inc.	\$499	\$294	59%	\$793	\$663	133%	\$1,456
ITC Holdings Corp.	\$319	\$319	100%	\$639	\$208	65%	\$846
UIL Holdings Corporation	\$470	\$296	63%	\$766	\$504	107%	\$1,270

75th Percentile	\$649	\$511	100%	\$1,262	\$1,159	178%	\$2,556
Median	\$499	\$319	68%	\$793	\$663	133%	\$1,456
25th Percentile	\$470	\$296	63%	\$766	\$504	107%	\$1,270

Source: S&P Capital IQ; if fiscal 2014 results have not yet been released, figures have been aged by 3% (Pepco)

All pay data in \$000s CDN; converted at 1.1045 for 2014 data, 1.03 for 2013 data, 0.999 for 2012 data, and 0.9891 for 2011 data (i.e. the average US:CAD Bank of Canada Rate for the given year)

** We have approximated target values by using the average STIP and LTIP values of the 3 most recently disclosed fiscal years*

Appendix IV: Segmentation Data

Segmentation Data: Primary Peer Group

	Location	% of Revenue Regulated (best estimate from disclosure)	% of Revenue from Generation (best estimate from disclosure)
Primary Peer Group			
Fortis Inc.	Arizona, New York State, BC, Alberta, Newfoundland, PEI, Ontario, Grand Cayman, Turks and Caicos, and Belize	93%	4%
ATCO Ltd.	Alberta, Yukon, Northwest territories, Mexico and Australia	~49%	n/d
Emera Incorporated	Maine, Nova Scotia, New Brunswick, and Barbados	67%	45%
TransAlta Corp.	Canada, US and Western Australia	n/d	96%
Pembina Pipeline Corporation	Alberta, BC, North Dakota and saskatchewan	n/d	n/d
Keyera Corp.	Canada and US	n/d	n/d
AltaGas Ltd.	Alberta, BC, California, Colorado, Michigan, and North Carolina	45%	n/d
Inter Pipeline Ltd.	Western Canada, UK, Denmark, Germany, and Ireland	n/d	35%

Appendix V: Pensions

Pension Practices – Peer Group

The following illustration reflects peer companies who have a Supplemental Employee Retire Program (SERP) for the CEO and how they are determined:

Company	SERP	Type of SERP (DB / DC)	Formula
Fortis	Yes	DC	13% x (Salary + STIP)
ATCO Ltd.	Yes	DB	% of avg. cash compensation (Salary + STIP) of highest 5 years during last 10 years of employment. Percentage depends on age (58 = 76%, 59=78%, 60 and older = 80%)
Emera Incorporated	Yes	DB	2% x (Salary + 50% STIP) x years of credited service
TransAlta Corp	Yes	DB	2% x final avg. of (Salary + STIP)
Pembina Pipeline	Yes	DB	1.4% x highest 3 yr. avg. base salary in final 120 months x DB pensionable service
Keyera	Yes	DC	6%-10% (based on credited service) x base earnings
AltaGas	Yes	DB	2% x highest 3 year avg. earnings x years of pensionable service
Inter Pipeline	No	N/A	N/A

Hydro One Incumbent CEO	Yes	DB	2% x average (Salary + 50% STI) x years of credited service
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Execution and Performance

June 2016 Hydro One Team Scorecard

Strategic Objectives	Definition	Measure	Year-to-Date			Full Year	
			Actual	Budget	Last Year	Budget	Target
Safety (10%)	Recordable Incidents	Incidents per 200,000 hours	1.3	1.6	1.8	1.6	1.5
Customer (25%)	Tx Satisfaction Note 1	% satisfied of total surveyed	n/a	n/a	n/a	80%	82%
	Dx Satisfaction	% satisfied of total surveyed	68%	73%	70%	73%	79%
	Tx Customer Commitments	% of commitments kept made to Tx Customers	90%	74%	n/a	74%	81%
	Dx Customer IT Enablement	Provide Customers tools and technology (3 projects initiated)	Note 2	Note 2	n/a	2	3
Net Income (40%)	Net Income to Common Shareholders	\$M	360	381	359	Note 3	Note 3
Work Program (25%)	Dx Pole Replacement	# of Poles	8,273	6,404	7,334	12,000	12,600
	Dx Line Clearing	KM Controlled	5,952	5,207	5,669	11,000	12,100
	Tx In Service Capital	\$M	230	266	225	+3% or -5%	910
	Dx In Service Capital	\$M	294	313	288	+3% or -3%	622

Note 1: The Tx Satisfaction survey results will be received in Q3

Note 2: We are on track to deliver three projects this year to benefit communication and interaction with customers

Note 3: As we are a public company, we cannot communicate full year net income budgets widely

COMPENSATION COST BENCHMARKING STUDY

HYDRO ONE NETWORKS INC.

13 DECEMBER 2016

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Executive Summary

Hydro One Networks Inc. (“Hydro One”) has retained Mercer to prepare an independent, testable and repeatable market-based assessment of the reasonableness of Hydro One’s total compensation levels including salary, short-term incentives, long-term incentives, pension and employer paid health and group benefits relative to a select peer group. This study was conducted in 2008, 2011, 2013 and repeated, following a similar methodology, in 2016. Study-over-study trend analysis is provided.

The final results of our analysis were presented at the November 30, 2016 stakeholder session in Toronto. This document represents the results of our analysis.

Compensation Benchmarking

The compensation benchmarking study compared Hydro One’s total compensation to a peer group of Transmission, Distribution and Generation organizations, supplemented with participants from the similar Regulatory Environment group. The peer group was similar to the 2013 study.

The study reflected exactly 2,991 Hydro One employees in 31 benchmark positions representing 57% of Hydro One’s employee population (excluding non-full time employees). In total, our analysis reflected approximately 15,000 incumbents employed in the Canadian energy and/or adjacent sectors.

On an overall weighted average basis, for the positions we reviewed in 2016, Hydro One is positioned approximately 14% above the market 50th percentile (“P50” or “median”). In comparison to the 2013 study, Hydro One’s overall weighted average positioning has increased from 10% above the market total compensation 50th percentile.

The shift in Hydro One’s competitive position relative to the median is driven by a number of factors. It should be noted that the peer group, like Hydro One, has worked to reduce labour costs as a response to both the substantial economic downturn beginning in 2008 and expectations of key stakeholders over the entire period between the 2008 and 2016 during the compensation cost benchmarking studies.

The overall Hydro One positioning is driven by a combination of the introduction of long-term incentives for certain roles in the Non-Represented group, reduction in the headcount of Professional entry level role through promotion/attrition and not backfilling the lower paid roles, highly competitive base wages, especially for the most highly skilled Power Workers’ Union (“PWU”) positions, and the relatively high value of legacy collective agreement wages, pension and benefits programs (the legacy non-represented pension and benefit and Society pension plans are now closed to new members).

The table below summarizes the results of the 2016 Compensation Cost Benchmarking Study compared to the results of the 2013, 2011 and 2008 study.

Table 1

Legend				
	2016 Hydro One Position Relative to Market			
	2013 Hydro One Position Relative to Market			
	2011 Hydro One Position Relative to Market			
	2008 Hydro One Position Relative to Market			

		Total Remuneration (Current)										
		Multiple of P50				Hydro One P50 Relative to Market P50						
Hydro One Group		# of Hydro One Incumbents	2016	2013	2011	2008	0.50	0.75	P50 = 1	1.25	1.50	
Weighted Average	Non-Represented	167	1.02	0.99	0.83	0.99			×			
	Professionals	612	1.11	1.09	1.05	1.05						
	Power Workers	2,212	1.16	1.12	1.18	1.21						
	Overall	2,991	1.14	1.10	1.13	1.17						
							Below P50 Compensation			Above P50 Compensation		

2

Introduction

Hydro One Networks Inc. (“Hydro One”) has retained Mercer to prepare an independent, testable and repeatable market-based assessment of the reasonableness of Hydro One’s total compensation levels including salary, short-term incentives, long-term incentives, pension and employer paid health and group benefits relative to a select peer group. This study was conducted in 2008, 2011, 2013 and repeated, following a similar methodology, in 2016. Year-over-year trend analysis is provided.

This report is intended to help Hydro One in preparing a multi-year CIR Application for Transmission rates (2019-TBD) and a 5 year CIR Application for Distribution (2018-2022). The results of the Compensation Cost Benchmarking study will be filed as evidence for both rate setting applications.

To provide independent and reliable information on Hydro One’s relative compensation costs, Mercer has undertaken a customized survey of total compensation in the market (“Compensation Benchmarking”).

The total compensation (i.e., base salary, short-term incentives, long-term incentives, pension and benefits) benchmarking analyses focused on assessing Hydro One’s overall competitiveness in the marketplace.

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Guiding Principles

Based on our typical benchmarking approach and the benchmarking principles that guided the compensation benchmarking, as well as how Mercer applied them, these include:

1. Principle objective – to revisit the 2013, 2011 and 2008 Mercer Study to reasonably compare Hydro One compensation costs to those of regulated utilities in Canada.
 - The 2013, 2011 and 2008 Mercer Studies were revisited following the same general overall methodology to provide appropriate study-over-study comparisons.
2. Keep it simple to entice survey participants.
 - The data collection process was reviewed and streamlined, where possible, to encourage survey participants to share data. Additional follow-up was provided by Mercer to support comparator participation in the study.
3. Be independent, testable, repeatable and market-based.
 - The study was conducted in a manner that meets each of the criteria listed.
4. Provide participants with the assurance that their information could not be attributable to them.
 - All participants were assured that data would be held confidentially by Mercer and only be shared in aggregate form.
5. Be based on the groups surveyed in the 2013 Mercer Study and expanded as deemed appropriate by the consultant.
 - The 2016 study targeted the same benchmark jobs and organizations as the 2013 study. Two (2) organizations that participated in the 2013 study declined to participate in 2016. Four (4) organizations that declined to participate in previous years' studies agreed to participate in 2016. This resulted in an increase of two (2) organizations over the number of 2013 participants.
6. Mirror the scoping in the 2013, 2011 and 2008 Mercer Studies for peer selection, job classes, etc. and changes as deemed appropriate by the consultant.
 - The same methodology used in 2013, 2011 and 2008 was followed in the 2016 Mercer Study for both peer company selection and job classes for inclusion. Similar to the 2013 study, the selected benchmark job classes represented 57% of Hydro One's employee population (excluding non-full time employees).
7. Enable reasonable comparison to the last Mercer study and provide trending analysis for Hydro One.
 - By including approximately 87% of peers and 94% of jobs from the 2013 Mercer Study, reasonable comparisons have been made and trending has been assessed.

8. Compare to market median rather than market average (“mean”)
 - The 2016 Mercer Study is based on a comparison of Hydro One median compensation against market median compensation. Comparison of medians is standard compensation practice; medians are representative of the middle data point in a sample and are less sensitive to outliers than the mean.
 - The 2008, 2011 and 2013 studies also compared Hydro One to the median.
 - Appendix A provides a comparison of Hydro One’s total compensation median against market average. On an overall weighted average basis, there is a noticeable difference in Hydro One’s median positioning relative to market median and market arithmetic mean.
9. No adjustments to reflect regional costs of living amongst the study participants.
10. Request data about pension as a percentage of total benefits, and benefits as a percentage of compensation.
 - It is standard benchmarking practice to assess benefits and pension costs as part of the total compensation value provided to employees; therefore, we have not provided the details of this analysis showing benefit and pension separately.
11. Rely on the expertise of the selected consultant to recommend appropriate changes in methodology and assumptions.
 - Hydro One relied on Mercer’s expertise in conducting the study.

4

Compensation Benchmarking

Peer Groups

Mercer selects peer organizations, for compensation benchmarking purposes, based on a stable metric that reflects the size and operating complexity of the organization (typically, this is revenue and/or total assets). Where there is a relatively small sample of relevant comparator organizations, Mercer establishes limits of 33% to 300% of the scope criteria for the organization we are analyzing. Some organizations were included in the analysis despite falling below the 33% of revenue threshold value. These organizations were primarily Ontario based local distribution companies that are seen as important benchmarks by stakeholders.

As a result, to develop a single peer group for Hydro One, we considered all organizations, with 2014 or 2015 annual revenues between 33% and 300% of Hydro One's 2015 annual revenue, from the following areas:

1. Electric utilities, multi-utilities, generators, and gas utilities industries in Canada as classified by their Global Industry Classification Standard ("GICS")
2. 73 Local Distribution Companies ("LDCs") in Ontario
3. Other comparable regulated businesses (i.e., integrated telecommunication services, railroads, etc.)

Overall, 22 organizations were invited to participate in the study:

- All 15 organizations included in the 2013 study were invited
 - Of these organizations, 2 declined – Enersource Corporation and Horizon Utilities Corporation (these organizations are in the process of merging)
- 4 organizations that declined to participate in 2013 agreed to participate in 2016 – AltaLink, Bell Canada, TransCanada Corporation and Veridian

Organizations that did not participate in the compensation benchmarking indicated that they were unable to participate due to either resource constraints or an insufficient number of relevant benchmark positions.

Following standard industry practice, comparisons were made between Hydro One's incumbents, at the 50th percentile, to the market peer group 50th percentile on base salary, total cash compensation and total compensation.

To ensure that no one organization biased the results, we have weighted our analysis by organization for each job class and not by number of incumbents to determine Hydro One's position relative to the market (i.e., the analysis is "Org Weighted"). To preserve the confidentiality of compensation data at both Hydro One and participating organizations, we have aggregated our results.

Market Sample

Summarized below are the participating organizations in the compensation benchmarking.

Table 2

Company Name	Revenue ¹	# of Employees ^{1,2}
Bell Canada*	\$21,514.0	31,394
Hydro-Québec	\$13,754.0	19,250
TransCanada Corporation*	\$11,300.0	6,795
BC Hydro Power & Authority	\$5,657.0	5,641
Ontario Power Generation Inc.	\$5,476.0	9,247
Enbridge Gas Distribution Inc.	\$3,609.0	2,491
Toronto Hydro Electric System Ltd.	\$3,539.9	1,471
Bruce Power L.P.	\$3,126.8	4,151
ENMAX Corporation	\$3,065.7	1,765
SaskPower	\$2,296.0	3,238
TransAlta Corporation	\$2,267.0	1,653
EPCOR Utilities, Inc.	\$2,193.0	2,316
Manitoba Hydro	\$1,800.0	6,300
New Brunswick Power	\$1,791.0	2,403
PowerStream Inc.	\$1,213.5	559
AltaLink*	\$829.0	825
Veridian*	\$339.3	230
75th %ile	\$5,476.0	6,300
50th %ile	\$3,065.7	2,491
25th %ile	\$1,800.0	1,653
Average	\$4,927.7	5,866
Hydro One	\$6,538.0	5,256

¹ Data as reported by survey participants in CAD (\$MM)

² Representative of full-time employees and equivalents only

* New participants in 2016

Benchmark Positions

The compensation survey was designed to benchmark compensation levels from a cross-section of Hydro One's population. To determine the roles to be included in our benchmark analysis, we reviewed positions that represented all of Hydro One's major business units and at least 50% of Hydro One's employee population.

To assist with study over study comparisons, it was determined that Hydro One should collect incumbent data using 32 of the 33 benchmark roles surveyed in the 2013 study. Due to limited data in the market from previous years, the following role was not surveyed in 2016:

- Regional Maintainer – Forestry

In total, 32 benchmark positions were included in the compensation benchmarking study and we were able to report data on all 32 jobs. Due to a vacancy in the role at Hydro One, a market comparison has not been provided for the following role:

- General Labourer/Roustabout

As a result, ***the 2016 Compensation Cost Benchmarking Study directly reflected exactly 2,991 Hydro One employees in 31 benchmark positions representing 57% of Hydro One's employee population (excluding non-full time employees).***

In the market, we collected approximately 15,000 individual incumbent observations across the benchmark positions (excluding the 2,991 Hydro One incumbents) ***employed in the Canadian energy and/or adjacent sectors.***

Summarized below are the benchmark positions organized by major employee group. The results in this report are summarized by the following employee groups. Specifically:

Table 3

Hydro One Group	Job #	Benchmark Survey Title
Non-Represented	1	Financial Director
	2	Top Rates and Regulatory Affairs Executive
	3	Senior Legal Counsel
	4	Engineer F
	5	Area Superintendent
	6	Human Resource Manager / Consultant
	7	Field Service Coordinator
	8	Administrative Assistant
Professionals	9	Engineer E
	10	Business Analyst C
	11	Engineer D
	12	Engineer C
	13	Engineer B
	14	Business Analyst A
	15	Engineer A
Power Workers	16	System Operator (Controller)
	17	Regional Maintainer - Lines (Supervisory)
	18	Protection and Control Technician
	19	Area Distribution Engineering Technician
	20	Regional Maintainer - Lines
	21	Regional Maintainer - Electrical
	22	Fleet Mechanic
	23	Lineman - Journeyman
	24	Service Dispatcher
	25	Drafter II
	26	Stock Keeper
	27	Data Entry Clerk
	28	Production Field Administrator III
	29	Electrical Apprentice
	30	Lines Apprentice
	31	Meter Reader
	32	General Labourer/Roustabout*

*Vacant Hydro One position.

“Professionals” refers to Hydro One positions represented by the Society of Energy Professionals (i.e., “Society”) and “Power Workers” refers to Hydro One positions represented by the Power Workers’ Union (i.e., “PWU”).

See Appendix B for a summary of position descriptions.

Methodology

As outlined in Appendix B, summarized below is the methodology used to determine compensation levels. Specifically:

Base Salary/Wage – Annual base salary at September 1, 2016. If an hourly rate was reported, we annualized the value by multiplying the standard number of work hours per week by 52 weeks per year. If a weekly rate was reported, we annualized the value by multiplying by 52 weeks per year.

Total Cash Compensation - Base salary *plus* most recent short-term incentive or bonus paid where applicable.

- Hydro One does not provide short-term incentive or bonus programs to Professional or Power Worker positions.

Benefits and Pensions – To value benefit and pension programs, we applied a relative value process to a set of standard employer paid cost factors, plus actuarial and demographic assumptions to measure all financially significant features of benefit and pension programs based on open and closed plans.

Total Compensation – Total cash compensation *plus* estimated annual value of the most recent long-term incentive grant (i.e., expected value of stock options or share awards) and pensions and benefits.

- Hydro One only provides long-term incentive to the Financial Director position.

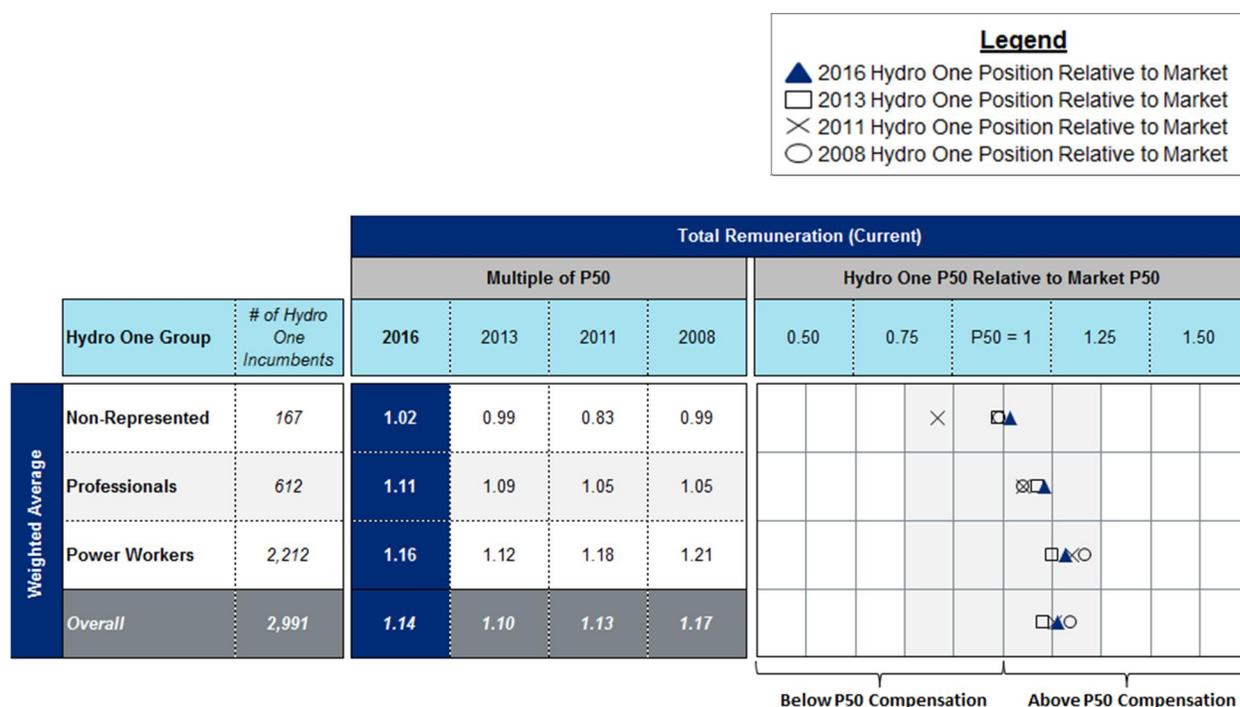
Findings

Summarized below are the results of our compensation benchmarking analysis.

Overall, **on a weighted average basis, Hydro One’s total compensation cost is 14% above market median.** Hydro One is consistently positioned above the market 50th percentile for all employee groups, ranging from a low of 2% for the Non-Represented group and a high of 16% above the market P50 for the PWU group.

In the 2013 study, Hydro One’s overall weighted average was 10% above the market total compensation P50 – a 4% shift from the market median since 2013.

Table 4



The results are driven by a combination of factors the most significant of which are the following:

- The introduction of long-term incentives for certain roles in the Non-Represented group to align with market practices among publicly-traded companies
- Reduction in the headcount of Professional entry level role through promotion/attrition and not backfilling the lower paid roles
- Highly competitive base wages, especially for the most highly skilled Power Workers’ Union (“PWU”) positions
- The relatively high value of legacy collective agreement wages, pension and benefits programs (the legacy non-represented pension and benefit and Society pension plans are now closed to new members)

We understand that these legacy plans relate to collective agreements negotiated prior to the formation of Hydro One. All PWU employees continue to be covered by the legacy plans. Even if all Non-Represented and Professional employees were covered by the new plans, the difference in overall cost on a weighted average basis would not be substantial as the high population Power Worker positions continue to be covered by the legacy plans; however, the use of the “hiring hall” for several of the PWU benchmarks does reduce compensation costs relative to other PWU positions and our market data.

For new employees hired into Non-Represented and Professional job classifications, the value of pensions and/or benefits, where applicable, have decreased due to recent amendments to these plans (see “Future” & “Go Forward” columns on the following pages).

We note that, when measured on revenue, Hydro One is the fourth largest organization in the sample. Although size has a limited impact on middle management and unionized roles, size may have an impact on compensation for executive roles, as these roles tend to be larger and more complex in larger organizations.

As requested by stakeholders in 2011, in addition to comparing Hydro One P50 to market P50, a comparison was also made of Hydro One median to market average (“mean”). On a weighted average basis, Hydro One’s total compensation cost is 8% above market average. Hydro One’s position relative to market varies by employee group from 2% below market average for the Non-Represented group to a high of 10% above the market average for the PWU group. There is a noticeable difference between the market median and market average. This is driven, to a certain extent, by outliers in the data set and the sample size used. See Appendix A for detailed results.

Non-Represented

Summarized below are our results for the Non-Represented roles that we benchmarked at Hydro One relative to the market peer group.

In comparison to 2013, the 2016 Total Compensation (Current) results have increased from 1% below market median to 2% above market median.

Table 5

		Hydro One P50 Relative to Market P50 ¹					
		Base Salary	Total Cash ²	Total Compensation ³			
Hydro One Group	# of Hydro One Incumbents			Current ⁴	Future ⁵	Go Forward ⁶	
Non-Represented	Financial Director	3	7%	15%	31%	31%	16%
	Top Rates and Regulatory Affairs Executive	2	-25%	-24%	-23%	-24%	-34%
	Senior Legal Counsel	7	2%	-1%	7%	7%	-6%
	Engineer F	53	-11%	-15%	-16%	-18%	-28%
	Area Superintendent	15	-10%	-11%	-14%	-14%	-25%
	Human Resource Manager / Consultant	7	-22%	-25%	-20%	-20%	-29%
	Field Service Coordinator	77	10%	9%	19%	14%	1%
	Administrative Assistant	3	-4%	-5%	-2%	-2%	-11%
2016 Weighted Average Non-Represented		167	-1%	-3%	2%	-1%	-12%
2013 Weighted Average Non-Represented		206	-2%	-4%	-1%	-6%	-
2011 Weighted Average Non-Represented		137	-17%	-20%	-17%	-18%	-
2008 Weighted Average Non-Represented		151	-2%	-4%	-1%	-5%	-

¹ Market results weighted by organization (i.e., for each participating organization, Mercer determined one average value per position.)

² Base salary plus short-term incentives granted (i.e., bonus), where applicable.

³ Total cash compensation plus estimated long-term incentives, benefits and pension values.

⁴ Based on Hydro One's employee population, assuming current pension and benefits program eligibility.

⁵ Based on Hydro One's employee population, assuming all incumbents in the new DB pension and benefits programs.

⁶ Based on Hydro One's employee population, assuming all incumbents in the new DC pension and benefits programs.

Professionals (“Society”)

Summarized below are our results for the Professional roles that we benchmarked at Hydro One relative to the market peer group.

In comparison to 2013, the 2016 Total Compensation (Current) results have increased from 9% above market median to 11% above market median.

Table 6

		Hydro One P50 Relative to Market P50 ¹				
		Base Salary	Total Cash ²	Total Compensation ³		
Hydro One Group	# of Hydro One Incumbents			Current ⁴	Future ⁵	
Professionals	Engineer E	-6%	-9%	-8%	-11%	
	Business Analyst C	28%	14%	30%	30%	
	Engineer D	0%	-4%	4%	4%	
	Engineer C	12%	0%	20%	16%	
	Engineer B	18%	15%	30%	30%	
	Business Analyst A	10	41%	28%	39%	39%
	Engineer A	12	8%	1%	17%	17%
2016 Weighted Average Professionals		612	5%	1%	11%	10%
2013 Weighted Average Professionals		746	7%	3%	9%	7%
2011 Weighted Average Professionals		779	6%	-3%	5%	4%
2008 Weighted Average Professionals		578	8%	-2%	5%	3%

¹ Market results weighted by organization (i.e., for each participating organization, Mercer determined one average value per position.)

² Base salary plus short-term incentives granted (i.e., bonus), where applicable.

³ Total cash compensation plus estimated long-term incentives, benefits and pension values.

⁴ Based on Hydro One’s employee population, assuming current pension and benefits program eligibility.

⁵ Based on Hydro One’s employee population, assuming all incumbents in the new pension and benefits programs.

Power Workers

Summarized below are our results for the Power Worker roles that we benchmarked at Hydro One relative to the market peer group.

In comparison to 2013, the 2016 Total Compensation results have increased from 12% above market median to 16% above market median.

Table 7

		Hydro One P50 Relative to Market P50 ¹			
		Base Salary	Total Cash ²	Total Compensation ³	
Hydro One Group	# of Hydro One Incumbents			Current ⁴	
Power Workers	System Operator (Controller)	103	16%	14%	31%
	Regional Maintainer - Lines (Supervisory)	66	4%	-10%	5%
	Protection and Control Technician	90	30%	24%	36%
	Area Distribution Engineering Technician	151	15%	15%	33%
	Regional Maintainer - Lines	769	4%	4%	25%
	Regional Maintainer - Electrical	249	0%	0%	16%
	Fleet Mechanic	71	17%	10%	25%
	Lineman - Journeyman	123	10%	10%	-1%
	Service Dispatcher	24	40%	37%	47%
	Drafter II	21	-3%	-4%	11%
	Stock Keeper	55	19%	19%	39%
	Data Entry Clerk	75	17%	8%	22%
	Production Field Administrator III	1	-6%	-6%	7%
	Electrical Apprentice*	62	-22%	-25%	-31%
	Lines Apprentice	348	-6%	-6%	-16%
	Meter Reader	4	14%	10%	1%
	2016 Weighted Average Power Workers	2,212	5%	4%	16%
2013 Weighted Average Power Workers	2,100	8%	6%	12%	
2011 Weighted Average Power Workers	2,411	10%	9%	18%	
2008 Weighted Average Power Workers	1,966	20%	16%	21%	

¹ Market results weighted by organization (i.e., for each participating organization, Mercer determined one average value per position.)

² Base salary plus short-term incentives granted (i.e., bonus), where applicable.

³ Total cash compensation plus estimated long-term incentives, benefits and pension values.

⁴ Based on Hydro One's employee population, assuming current pension and benefits program eligibility.

* Average market data reported as median for comparison purposes.

APPENDIX A

Hydro One vs. Market Average

As requested by stakeholders, summarized below are the results of our compensation benchmarking analysis comparing Hydro One median to market average.

Overall, **on a weighted average basis, Hydro One’s total compensation cost is 8% above the market average (mean)**. Hydro One’s position relative to market varies by employee group from a low of 2% below the market average for the Non-Represented group to a high of 10% above the market average for the PWU group.

Table 8

Legend

- ▲ 2016 Hydro One Position Relative to Market
- 2013 Hydro One Position Relative to Market
- × 2011 Hydro One Position Relative to Market
- 2008 Hydro One Position Relative to Market

Hydro One Group		# of Hydro One Incumbents		Total Remuneration (Current)													
				Multiple of Average				Hydro One P50 Relative to Market Average									
				2016	2013	2011	2008	0.50	0.75	Average = 1	1.25	1.50					
Weighted Average	Non-Represented	167	0.98	0.97	0.84	0.99				×	▲						
	Professionals	612	1.06	1.09	1.06	1.05					□						
	Power Workers	2,212	1.10	1.13	1.15	1.21					▲	×	○				
	Overall	2,991	1.08	1.10	1.12	1.17					▲	×	○				

Below Average Compensation
Above Average Compensation

Non-Represented

Summarized below are our results for the Non-Represented roles that we benchmarked at Hydro One relative to the market peer group.

Table 9

Hydro One Group		# of Hydro One Incumbents	Hydro One P50 Relative to Market Average ¹				
			Base Salary	Total Cash ²	Total Compensation ³		
					Current ⁴	Future ⁵	Go Forward ⁶
Non-Represented	Financial Director	3	1%	10%	24%	24%	9%
	Top Rates and Regulatory Affairs Executive	2	-19%	-19%	-39%	-41%	-48%
	Senior Legal Counsel	7	-2%	-4%	-2%	-2%	-15%
	Engineer F	53	-15%	-20%	-18%	-20%	-29%
	Area Superintendent	15	-11%	-16%	-17%	-17%	-27%
	Human Resource Manager / Consultant	7	-22%	-25%	-24%	-24%	-33%
	Field Service Coordinator	77	10%	10%	14%	9%	-3%
	Administrative Assistant	3	-8%	-9%	-7%	-7%	-16%
2016 Weighted Average Non-Represented		167	-2%	-5%	-2%	-5%	-16%
2013 Weighted Average Non-Represented		206	-4%	-6%	-3%	-8%	-
2011 Weighted Average Non-Represented		137	-15%	-17%	-16%	-17%	-

¹ Market results weighted by organization (i.e., for each participating organization, Mercer determined one average value per position.)

² Base salary plus short-term incentives granted (i.e., bonus), where applicable.

³ Total cash compensation plus estimated long-term incentives, benefits and pension values.

⁴ Based on Hydro One's employee population, assuming current pension and benefits program eligibility.

⁵ Based on Hydro One's employee population, assuming all incumbents in the new DB pension and benefits programs.

⁶ Based on Hydro One's employee population, assuming all incumbents in the new DC pension and benefits programs.

Professionals (“Society”)

Summarized below are our results for the Professional roles that we benchmarked at Hydro One relative to the market peer group.

Table 10

		Hydro One P50 Relative to Market Average ¹				
		Base Salary	Total Cash ²	Total Compensation ³		
Hydro One Group	# of Hydro One Incumbents			Current ⁴	Future ⁵	
Professionals	Engineer E	121	-6%	-15%	-7%	-10%
	Business Analyst C	2	25%	18%	29%	29%
	Engineer D	274	2%	-6%	0%	0%
	Engineer C	17	11%	4%	17%	12%
	Engineer B	176	22%	15%	21%	21%
	Business Analyst A	10	27%	22%	27%	27%
	Engineer A	12	8%	2%	11%	11%
2016 Weighted Average Professionals		612	7%	-1%	6%	5%
2013 Weighted Average Professionals		746	8%	1%	9%	7%
2011 Weighted Average Professionals		779	6%	-1%	6%	4%

¹ Market results weighted by organization (i.e., for each participating organization, Mercer determined one average value per position.)

² Base salary plus short-term incentives granted (i.e., bonus), where applicable.

³ Total cash compensation plus estimated long-term incentives, benefits and pension values.

⁴ Based on Hydro One's employee population, assuming current pension and benefits program eligibility.

⁵ Based on Hydro One's employee population, assuming all incumbents in the new pension and benefits programs.

Power Workers

Summarized below are our results for the Power Worker roles that we benchmarked at Hydro One relative to the market peer group.

Table 11

Hydro One Group		# of Hydro One Incumbents	Hydro One P50 Relative to Market Average ¹		
			Base Salary	Total Cash ²	Total Compensation ³ Current ⁴
Power Workers	System Operator (Controller)	103	12%	9%	24%
	Regional Maintainer - Lines (Supervisory)	66	2%	-5%	11%
	Protection and Control Technician	90	19%	16%	36%
	Area Distribution Engineering Technician	151	15%	15%	31%
	Regional Maintainer - Lines	769	-1%	-5%	12%
	Regional Maintainer - Electrical	249	-1%	-3%	11%
	Fleet Mechanic	71	12%	10%	23%
	Lineman - Journeyman	123	10%	7%	-5%
	Service Dispatcher	24	32%	29%	45%
	Drafter II	21	4%	2%	15%
	Stock Keeper	55	17%	15%	31%
	Data Entry Clerk	75	0%	-2%	12%
	Production Field Administrator III	1	-13%	-14%	-4%
	Electrical Apprentice*	62	-22%	-25%	-31%
	Lines Apprentice	348	-7%	-9%	-15%
	Meter Reader	4	13%	11%	2%
	2016 Weighted Average Power Workers		2,212	2%	-1%
2013 Weighted Average Power Workers		2,100	9%	7%	13%
2011 Weighted Average Power Workers		2,411	10%	8%	15%

¹ Market results weighted by organization (i.e., for each participating organization, Mercer determined one average value per position).

² Base salary plus short-term incentives granted (i.e., bonus), where applicable.

³ Total cash compensation plus estimated long-term incentives, benefits and pension values.

⁴ Based on Hydro One's employee population, assuming current pension and benefits program eligibility.

* Average market data reported as median for comparison purposes.

APPENDIX B

Position Descriptions

Benchmark Position	Survey Code	Generic Description
Administrative Assistant	220.108.430	Requires a general knowledge of departmental procedures, practices and office routine. Possesses good office and computer skills including word processing, spreadsheets, graphics software, dictaphone transcription, and filing. May provide assistance to a more senior Administrative Assistant in a large department.
Area Distribution Engineering Technician	999.999.001	Perform Technical support work for the Distribution Section of the area: such as monitoring the performance of the distribution system by performing various technical studies, identifying and recommending solutions to the supervisor, providing field data and preliminary analysis for engineering studies. Negotiate property settlements on distribution lines and perform joint use activities. Provide administrative support related to preparation of estimates and work orders (WO) work schedules, line layouts, joint use, provision of underground cable and fault location service. Perform staking activities and prepare design packages for new connections, service upgrades, extensions, betterments and relocations.
Area Superintendent	700.792.211	Responsible for providing construction management and supervision within the construction group. Administers construction contracts. Is accountable for construction costs, schedules, safety, product quality and environment performance. Provides input into Project Execution Plans and the associated schedules and estimates. Usual qualifications include 10 to 12 years of experience including supervisory experience. Requires experience in construction management and supervision of various trades.
Business Analyst A	320.392.360	Assists with analyzing internal metrics. Performs responsible and varied business analytical or administrative functions. Assists with preparation documents, forecast summaries, status reports, budget reports, etc. Duties may include interpreting and processing company contracts, AFEs, and government agreements. Assignments are given in terms of objectives and relative priorities. Problems may be solved by adapting standard methods or by practical applications of knowledge. Usual qualifications include a university degree.
Business Analyst C	320.392.340	Analyzes internal metrics. Performs responsible and varied business analytical or administrative functions. Prepares documents, forecast summaries, status reports, budget reports, etc. Duties may include interpreting and processing company contracts, AFEs, and government agreements. Assignments are given in terms of objectives and relative priorities. Problems may be solved by adapting standard methods or by practical applications of knowledge. Usual qualifications include a university degree with a minimum of 4 years' related experience; technical diploma with a minimum of 6 years' related experience.
Data Entry Clerk	999.999.002	Perform data processing services including inputting, updating, to various computerized databases and applications of external service providers. Perform clerical/administrative duties in support of system processes. Work with various internal and external contacts and customers in the setup, maintenance, reporting and follow up of non-electricity accounts, customer service orders, materials, corporate charge cards, time reporting, management reporting, damage claims, accounts receivable, etc. Perform administrative services for provincial client group and special projects.
Drafter II	510.656.420	Incumbent works on standard drafting assignments. Methods are detailed and standard but judgment is required in planning tasks and choice of methods. Accountable for accuracy and adequacy of work performed. May provide technical guidance to less experienced Drafters. Usual qualifications include a technical school diploma or equivalent, with a minimum of 5 years' related experience.
Electrical Apprentice	999.999.112	A five year apprenticeship leading to a Construction and Maintenance Electrician

Benchmark Position	Survey Code	Generic Description
Engineer A	510.780.360	Incumbent receives "on-the-job" training in various phases of office, plant or field engineering through assignments or, in some cases, classroom instruction. Tasks assigned are simple and routine in nature. Assists more senior engineers in the preparation of plans, calculations, reports, etc. Few technical decisions are made and these are routine, with clearly defined procedures and guidelines. Works under close supervision and work is reviewed for accuracy, adequacy and conformance with prescribed procedures. Usual qualifications include a university degree in engineering with minimal experience.
Engineer B	510.780.350	Uses a variety of standard problem solving techniques. May assist more senior engineers in carrying out technical tasks requiring computation methods. Duties are assigned with detailed oral and occasionally written instructions. Work is reviewed in detail with guidance given. May give limited technical guidance to junior professionals or technicians working on a common project. Usual qualifications include a university degree in engineering with a minimum of 2 years' related experience.
Engineer C	510.780.340	Incumbent is responsible for varied engineering assignments requiring a broad knowledge of an engineering specialty and the effect the work has upon other fields. Solves problems using a combination of standard or modified procedures. Participates in planning objectives. Performs independent studies, and analyzes, interprets and draws own conclusions; more complex work projects are referred to more senior authorities. Not supervised in detail except on more difficult assignments. May give periodic technical guidance to less experienced professionals or technicians assigned to work on a common project. Usual qualifications include a university degree in engineering with a minimum of 4 years' related experience.
Engineer D	510.780.330	This is the first level of full engineering specialization and is considered the senior level position. Alternatively may be the level at which an individual acts as group leader or work task force leader of a small group of technical personnel. Requires application of well-developed technical knowledge in planning, conducting and coordinating difficult assignments. The position requires the modification of established guidelines and initiation of new approaches. Makes independent decisions in planning, organizing and completing technical assignments. Work is reviewed for soundness of judgment but accepted technically as accurate and feasible. Work is assigned in terms of objectives and priorities but informed guidance is available. Advises on technical problems and supervision, and may plan, schedule and review work of professional engineers and technicians. May make recommendations concerning selection, training, discipline and remuneration of staff.
Engineer E	510.780.320	May have responsibility for coordinating engineering work assignments and making recommendations on technical applications developed by other professional personnel or consultants. May involve the direct supervision of a group of professionals. Provides guidance and training to less experienced staff. Checks work for accuracy and completeness. As a specialist, conducts special, complex and advanced level studies. Work is generally reviewed for results only. Makes independent decisions within broad guidelines and policies. May make recommendations concerning selection, training, discipline and remuneration of staff. May also responsible for construction.
Engineer F	510.780.310	Incumbent is considered an authority in an engineering field of specialization and acts as a technical consultant to the organization. This level is a dual-stream first level managerial position. Incumbents may be responsible for directing a staff of professional and support employees or act as a technical specialist. Responsible for planning and directing large engineering programs/projects; sets priorities and allocates resources; makes necessary decisions on all day-to-day operating matters within constraints of company policy. Receives work in terms of broad objectives.
Field Service Coordinator	700.793.240	Manage and supervise trade, technical and clerical staff. Develop work programs, organize schedules, provide instructions, guidance and checks, monitor work to ensure work quality and accuracy and in conformity to governing regulations. Ensure the administration of procedures, applicable legislation and collective agreements are met. Administer and control contract work. Review work methods, ensure appropriate training. Develops, maintains and enhance customer relationships through direct contact both internally and externally. This position is non-represented.
Financial Director	210.100.130	Responsible for providing overall direction for tax, insurance, budget, credit and treasury functions for the organization. Provide short to medium term direction for all corporate financial functions so that financial transactions, policies, and procedures meet the organization's short and medium-term business objectives and are conducted in accordance with regulations, and standards. Activities may include: credit control; cash flow; investment management; tax; insurance; treasury; internal audit; budgeting and forecasting; and foreign exchange. Lead, direct, evaluate, and develop a team of senior managers to ensure that the organization's financial strategy is implemented effectively, consistently and according to established guidelines.

Benchmark Position	Survey Code	Generic Description
Fleet Mechanic	999.999.011	Be responsible for the inspection, repair and maintenance, as well emergency repair of vehicles (e.g. bucket truck, all-terrain vehicles, go track, digger truck, ladder truck forklift, backhoe, manlift, vans/pickup trucks and the hydraulic equipment of the vehicles e.g. booms, buckets. Maintain inspection schedules and coordinate scheduling repairs to be contracted out. Work is performed in a garage or on site.
Human Resource Manager / Consultant	120.100.220	This position plans, designs, develops, implements and administers policies and programs through functional supervision in all or some of the following areas: employee relations, executive compensation, wage and salary administration, job evaluation, performance management, recruitment and selection and employment equity/ human rights.
Lineman - Journeyman	920.788.410	Responsible for the installation, maintenance, removal, and inspection of transmission/distribution power lines. Typically requires 4 years of experience and certification as a Power Line Technician (or equivalent).
Lines Apprentice	999.999.113	A four year apprenticeship leading to a Power Line Technician position.
Meter Reader	920.680.430	Responsible for reading electric, gas, or water meters and keeping track of their average use by recording information. Other duties would include inspecting meters for damages and defects. Entry level position which typically requires a high school education.
Production Field Administrator III	220.778.413	Works independently. Works closely with field operations. Assists in all areas of production and general accounting duties, clerical and office administration functions. Provides analysis and input of operational accounting information and codes and inputs all payables and production volumes. May assist in preparing special production reports. Requires broad knowledge of department procedures. Orders all stationery/supplies and runs office. Monitors, troubleshoots and co-ordinates with head office maintenance of existing computer systems. May check work of junior staff and provide guidance. Working with a Supervisor, assists in preparing field accruals and analyzes actual performance versus budget. Possesses a solid understanding of basic accounting principles. Requires advanced PC and database management knowledge. An accounting background or diploma with 8 years' office experience is typically required.
Protection and Control Technician	999.999.004	Perform initial inspections, conduct trouble-shooting and preventative maintenance, carry out modifications and repairs as required, on all types of protection, telecommunications, metering and control equipment which comes under Protection and Control (P&C) jurisdiction. Discuss and review results with supervisor, if the equipment is highly critical from the standpoint of system operation, before putting the equipment into service.
Regional Maintainer - Electrical	999.999.007	Responsible for the general maintenance and repair work on electrical systems and equipment at various geographical locations. Requires overhauling, maintaining and inspecting equipment such as conductors & insulators i.e. batteries, station bus, cable, compressed air systems, fire protection equipment switchgear i.e. circuit breakers, load interrupters metalclad switchgear, oil circuit breakers, SF6 breakers, air blast breakers, transformers, rotating machines, distribution stations & equipment. Has the necessary knowledge of the trade theory, operating principles, charts, tables, testing equipment and other reference works, to test, dismantle, repair, clean and assemble station electrical equipment within the required specifications. Requires certification as a construction and maintenance electrician. Also performs mechanical and protection and control work.

Benchmark Position	Survey Code	Generic Description
Regional Maintainer - Lines	999.999.006	Construct and maintain transmission and distribution lines and associated apparatus. Maintain power service to electrical customers. Understands and is able to operate the tools of his/her trade, and is familiar with the various instruments, i.e. voltmeters, ammeters and ohmmeters. Must be familiar with hydraulically-operated articulated or telescopic aerial devices. Must provide at own expense any tools listed for the classification if required in his/her work in accordance with the attached tool list. This classification also includes the requirement to hold a Power Line Technician certification (or equivalent).
Regional Maintainer - Lines (Supervisory)	999.999.008	This position is responsible for the safety, quality and quantity of the work performed by his/her crew. They plan work including staffing requirements, assigning work, coordinate work with other work groups, ensure proper work practices are followed, report on work performed and engage in good public relations. He/she performs the following physical work activities. Construct and maintain transmission and distribution lines and associated apparatus. Maintain power service to electrical customers. Also responsible for contract monitoring and lead hand responsibilities.
Senior Legal Counsel	115.100.340	Responsible for providing management and employees with advice on a broad range of moderately complex conflicting legal principles. The applicable laws and regulations are numerous and varied, and present difficult problems of interpretation. Applies independent judgment in recommending a course of action for a client department, providing input as to the ramifications of a course of action, a legal decision, or a new piece of legislation. Usual qualifications include a law degree, membership in a law society/bar association and/or other relevant jurisdiction with a minimum of 8 year's related experience.
Service Dispatcher	430.612.340	Responsible for handling incoming consumer calls to schedule and dispatch service technicians to problem areas (including high voltage switching). Maintains documentation of crew activities for continuous knowledge of line and substation work. Key coordinator during power failures provides notification to internal and external customers regarding restoration of power services.
Stock Keeper	999.999.009	Receives, receipts, stores, issues and ships materiel used in operations. Manages materiel, in accordance with established practices and regulations. Is responsible for materiel under his/her control. Performs maintenance, not requiring formal trades qualifications, and assists in tasks where unskilled or semi-skilled ability is required.
System Operator (Controller)	999.999.010	Monitor and operate the transmission/distribution system assets on a 24-hour basis. Determine condition and recommend on availability of equipment. Carry out Manual Block and Rotational Load Shedding Schedules procedures. Monitor, approve and report LV - load transfers. Direct / monitor personnel on a 24 hour basis (i.e. - switching agents, field crews) in the operation of the Transmission / Distribution network system assets. Troubleshoot & sectionalize for low voltage feeder faults.
Top Rates and Regulatory Affairs Executive	110.200.130	Executive with primary responsibility for preparing, managing, and leading company's testimony in utilities rate cases before local, regional or federal agencies. Responsibilities include development of all research associated with regulatory activities including activity across other regulatory entities and maintaining relationship with all regulators. Develops cost factors in association with utilities rate cases, may or may not, be involved in delivery of testimony. Typically reports to a Top Legal Executive, Chief Operations Officer or a Top Utilities Executive.

APPENDIX C

Detailed Compensation Benchmarking Methodology

Summarized in this appendix is supporting descriptions of how we determined values for each of the major components of compensation. Specifically:

Base Salary – Annual base salary at September 1, 2016. If an hourly rate was reported, we annualized the value by multiplying the standard number of hours per week by 52 weeks per year. If a weekly rate was reported, we annualized the value by multiplying by 52 weeks per year.

Total Cash Compensation - Base salary *plus* most recent short-term incentive or bonus paid.

Benefits and Pensions – To value benefit and pension programs, we applied a relative value process to a set of standard employer paid cost factors, plus actuarial and demographic assumptions to measure all financially significant features of benefit and pension programs based on open and closed plans. See detailed methodology below.

Total Compensation - Total cash compensation *plus* estimated annual value of the most recent long-term incentive grant (i.e., expected value of stock options or share awards) and pensions and benefits.

Detailed Benefits and Pension Methodology – Total remuneration includes the following values for benefits and pensions:

- Mercer's relative value process applies a broad set of standard cost factors, plus actuarial and demographic assumptions to measure all of the financially significant features of benefit programs on a benefit line basis.
- Effectively, this process isolates the plan design and removes variable factors such as historical experience, demographics, and utilization trends specific to each participant in the study. For example, if two survey participants have an identical benefit offering, the values will be equal regardless of the actual plan costs to each of the employers.

Aligning Values with Hydro One's Actual Costs

Participation & Anti-Selection:

Active Flex Benefits:

- Participation: We use a standardized set of participation assumptions for all participants that vary only by the number of options that are offered under the plan. Therefore, two identical flex programs will produce similar relative Total Values.
- Anti-Selection: A unique feature of flex plans is that employees who choose richer options are likely to be higher claimers than those choosing poorer options. This is reflected within our methodology by increasing the value of the richer options and reducing the value of the poorer options. The final relative values of the flex plan are a weighted average of the values of each of the options.
- Optional plans that are fully employee-paid (such as optional life) are excluded from the review.
- Low value core plans / catastrophic core plans and spousal top-up plans are excluded from the valuation.

Projection Methodology for Pension Plans

Defined Benefit Plans

- For defined benefit plans, annual service costs were estimated for each company's plan design at various earnings levels using a common sample employee demographic (age and years of service). The annual service costs were converted into company provided values by deducting any required employee contributions under each plan. The resulting company provided values were expressed as a percentage of earnings to be applied to the earnings associated with each benchmark position.

Defined Contribution Plans

- For defined contribution benefit plans, the company provided value was set equal to the company contributions.
- Where employees are entitled to choose the level of their contributions, employees were assumed to contribute at the level that would maximize company contributions.

Projection Methodology for Post-Retirement Non-Pension (PRNP)

Employee-specific factors including earnings and service are projected to each of the assumed retirement ages at which point the benefit payable is determined, actuarially valued and discounted with interest to the current age of the employee. The resulting values are split pro-rata on service into the benefit in respect of past service and the benefit in respect of future service, and the future service benefit value is converted to a level percentage of future pensionable earnings.

- The results are weighted by the assumed retirement rates and combined to produce a single value of future benefit accruals, as a percentage of future earnings, per member.
- Benefits are projected both before and after retirement based on benefit-specific (e.g. medical, dental) inflation assumptions.
- Benefits are coordinated with provincial medical and drug plans.
- Lifetime maximums are reflected where applicable.

Flex Premium Cost Sharing & Credit Allocation:

- Cost sharing is determined using each participant's actual price tag and credit formula.
- Assumptions are made as to where credits would commonly be used, unless they are allocated to specific benefits. These assumptions coordinate with the standardized participation assumptions outlined earlier.

Standard Demographic Assumptions:

- A common population reflecting the general demographics of a Canadian workforce group and adjusted to more closely mirror Hydro One's workforce is used in the analysis.
 - This population reflects a group of employees with an average age of 41 and average service of 12 years.
- For Pension and Post Retirement Non-Pension benefits, the above population is assumed to retiree approximately as follows:
 - 25% of the group retire at age 55
 - 60% of the group retire at age 60
 - 15% of the group retire at age 65
 - 70% of the active members are assumed to be married over their career while 90% of members are assumed to be married at the time of their retirement

Other Actuarial Assumptions:

- The following assumptions were used in the review:
 - Discount rate: 4.00% per annum
 - Inflation: 2.00% per annum
 - Salary Increase: 4.00% per annum
 - Post Retirement mortality: 100% of CPM 2014 Public Sector Mortality projected with CPM-B Scale
 - Termination rates of 2% each year prior to age 55 (for pension values)
 - Medical and Dental inflation/utilization increases



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1 **PENSION COSTS**

2
3 **1. PENSION COSTS**

4
5 Hydro One Networks is a participant in the Hydro One Pension Plan (“the Plan”). The
6 Plan is a contributory, defined-benefit pension plan whose members comprise
7 represented employees of the Power Workers Union (“PWU”), the Society of Energy
8 Professionals (“Society”), non-represented Management (“MCP”) employees, pensioners
9 who were employees, and pensioners who are beneficiaries of employees or pensioners.

10
11 The Plan covers Hydro One and its subsidiaries, except Hydro One Sault St. Marie
12 Transmission. The Plan does not segregate assets in a separate account for individual
13 subsidiaries, nor is the accrual cost of the benefit plans allocated to, or funded separately
14 by, entities within the consolidated group. Accordingly, for Hydro One Networks, the
15 Plan is accounted for as a defined contribution plan and no deferred pension asset or
16 liability is recorded on Hydro One Network’s financial statements.

17
18 Hydro One recovers its pension expense on a cash basis. Hydro One believes this method
19 is more beneficial to its customers than the accrual method because it results in a lower
20 costs are recovered through rates. The cash method is also more predictable, allowing
21 Hydro One to forecast the effect on rates for up to a three-year period.

22
23 The Board has previously allowed cash payments related to pension obligations to be
24 recorded in rates (RP-1998-0001). As well, in April 2006, the OEB, in its Decision with
25 Reasons, approved full recovery of Distribution pension costs included in OM&A (RP
26 2005-0020/EB-2005-0378). Pension costs were similarly approved for Transmission
27 pension costs (EB-2006-0501, EB-2008-0272, EB-2010-0002, EB-2012-0031 and EB-

Witness: Samir Chhelavda

1 2014-0140). This treatment was continued in Hydro One Distribution's last cost of
2 service application as well (EB-2013-0416).

3
4 The Hydro One pension cost allocated to Hydro One Networks is based on the ratio of
5 base pensionable earnings for Hydro One Networks' staff, as compared to the total base
6 pensionable earnings for all of Hydro One employees. The method of allocation of the
7 pension cost is consistent among all shared services costs, for operating and capital costs,
8 and is consistent with the methodology reviewed during RP-2005-0020/EB-2005-0378,
9 EB-2006-0501, EB-2007-0681 and EB-2008-0272, EB-2009-0096, EB-2010-0002, EB-
10 2012-0031 and 2014-0140.

11
12 For the Distribution business, the charge to be recovered through rates in 2018 is
13 provided in Table 1 below.

14
15 **Table 1: 2018 Forecast Pension Costs (\$ Millions)**

2018 - Forecast					
Corporate Pension Costs		Transmission	Distribution	Other	Total
OM&A	\$M	16	24	4	44
Capital	\$M	30	28		58
	\$M	46	52	4	102

16
17
18
19 **2. ACTUARIAL CALCULATION**

20
21 The most recent actuarial valuation for the Plan was as at December 31, 2015. In June
22 2016, Hydro One filed this actuarial valuation with the Financial Services Commission of
23 Ontario ("FSCO"). The valuation showed that the Plan had a deficit of \$38 million, on a
24 going-concern basis. Starting in 2016, the required contribution for the Hydro One
25 companies was set at \$110 million, variable based on the level of base pensionable

Witness: Samir Chhelavda

1 earnings. Of this amount, about \$85 million represented annual current service costs, and
2 the remaining portion represented special payments required over fifteen years toward the
3 going-concern deficiency and over five years toward the solvency deficiency.

4
5 In accordance with applicable regulations, Hydro One makes all required contributions
6 on a monthly basis.

7
8 Hydro One's next actuarial valuation is required by December 31, 2018. The valuation
9 will depend on investment returns, changes in benefits, and actuarial assumptions.

10
11 During 2014, 2015 and 2016, actual contributions were \$174 million, \$177 million, and
12 \$110 million, respectively. Actual contribution requirements in 2018 may differ
13 depending on the level of base pension earnings used to compute the monthly
14 contribution. The difference between the forecast and actual pension costs will be
15 tracked in a variance account (see Exhibit F1, Tab 1, Schedule 1).

16
17 **3. PENSION PLAN GOVERNANCE AND PERFORMANCE**

18
19 Hydro One is the Plan sponsor and administers the pension assets and obligations of the
20 Plan. As of December 31, 2016, the Plan had a reported net asset value of \$6,870 million
21 and about 13,087 members. Approximately 42% of the Plan's members are active. The
22 remaining Plan members are inactive, either retired, beneficiaries of retirees, former
23 employees eligible for a deferred pension, or members on long-term disability.

24
25 The Fund has consistently outperformed the benchmark made up of passive market
26 indices. In the period from June 29, 2001 (the Fund's inception) to December 31, 2016,
27 the Fund returned 7.04% annualized while the Fund's target benchmark is 6.80%, thus
28 outperforming its target benchmark return by 0.24%. The fund's investments are divided

Witness: Samir Chhelavda

1 into asset classes and each asset class has a corresponding market index (i.e. Canadian
2 Equities market index is the S&P/TSX). The actual performance of each asset class is
3 then measured against this market index (policy benchmark). The Fund's policy
4 benchmark is a calculated weighted average benchmark based on the Fund's strategic
5 asset mix.

6

7 **4. DEFINED CONTRIBUTION PENSION PLAN**

8

9 Effective January 1, 2016, Hydro One introduced a Defined Contribution Pension Plan
10 ("the DC Plan"). The DC Plan allows eligible employees to contribute up to 6% of their
11 pensionable earnings with a 100% match of contributions by Hydro One. The DC Plan is
12 open to all new MCP employees, who are no longer eligible to participate in the Plan.

13

14 **5. OPEB COSTS**

15

16 Hydro One utilizes the accrual method for accounting of Other Post-Employment Benefit
17 ("OPEBs") costs. The accrual method is appropriate because it reflects the costs incurred
18 during the time period and, as such, more accurately attributes those costs to the
19 appropriate ratepayers. Table 2 summarizes historical and forecast OPEB costs included
20 in rates.

1

Table 2: OPEB Costs Included in Rates (\$ Millions)

OPEBs	2013	2014	2015	2016	2017	2018	Total
Amounts Included in Rates							
OM&A	29	29	28	26	23	24	159
Capital (Note 1)	32	31	34	30	26	27	180
Total	61	60	62	56	49	51	339
Paid Benefit Amounts	24	26	20	23	24	26	143
Net Excess - amount included in rates vs. amount actually paid	37	34	42	33	25	25	196

2

3 Note 1 – The Capital component of OPEB costs is recovered over the useful life of the
 4 assets to which it is capitalized and not in the years noted. Therefore, the Net Excess as
 5 noted does not represent the excess recovery in each year.

COSTING OF WORK

1. OVERVIEW

Hydro One Distribution's work program is bundled into packages of work identified as programs or projects. Programs are recurring investments while projects are typically one-time investments. Program and project costs are comprised primarily of activities associated with labour, equipment and material acquisition. This Exhibit details each of these three cost activities, and how the costs are allocated across programs and projects. This costing approach is consistent with the requirements of US Generally Accepted Accounting Principles ("USGAAP").

Hydro One categorizes its costs into two major classifications: common and direct. Common costs, both OM&A and capital expenditures, are allocated to Hydro One Distribution and Hydro One's other accounting segments, as described in Exhibit C1, Tab 4, Schedule 1. For clarity, this Exhibit only describes the allocation of direct costs.

Direct costs charged to work orders include labour (comprising of salaries, benefits and pension costs), material, fleet and supply chain. Labour costs are calculated as a product of actual time multiplied by the standard labour rate. Material costs are charged directly to the work program or project. Fleet costs are charged using a fleet rate. Supply chain costs are charged via a material surcharge. The labour rate, fleet rate and material surcharge are described in detail in the Attachments to this Exhibit.

2. OTHER PROGRAM AND PROJECT COSTS

Depending on the nature of the work, Hydro One Distribution's program or project costs also include additional costs beyond the major contributors identified above. These

Witness: Joel Jodoin

1 additional costs may include the costs of external contractors and/or miscellaneous job
2 specific consumables such as travel expenses or the purchase of low value material.

3
4 In terms of estimating and costing of capital work, there may be circumstances when
5 removal costs or customer contributions need to be separately identified. In these cases,
6 the cost of removal work is accounted for as depreciation, and customer contributions are
7 netted against gross capital costs.

8
9 Capital work also receives a monthly charge for its share of corporate interest and
10 overhead costs. The composition of these two cost categories and the annual calculation
11 are explained in Exhibit D1, Tab 1, Schedule 5 and Exhibit D1, Tab 3, Schedule 1.

12 13 **2.1 STANDARD RATES**

14
15 When using standard rates, residual costs naturally arise when actual costs incurred differ
16 from the standards. These variances are accounted for on a monthly basis and assigned to
17 both capital and maintenance programs based on the program and project cost activities
18 responsible for generating the variances.

1 **COSTING OF WORK: LABOUR RATE**

2
3 **1. LABOUR RATE**

4
5 Labour costs for Hydro One’s work execution functions are distributed directly to
6 benefiting programs and projects by using timesheets, consistent with common industry
7 practice. Standard hourly labour rates are used to allocate costs to Hydro One’s work
8 programs and projects. This Attachment outlines Hydro One’s methodology in deriving
9 the labour rate and provides an example of a typical rate and its components.

10
11 The labour rate is “fully loaded” to ensure that all associated support costs required to
12 deploy resources and equipment are accurately and cost-effectively distributed. Included
13 in the “fully loaded” costs are elements associated with compensation. Hydro One’s
14 workforce planning and employee compensation strategies are discussed in Exhibit C1,
15 Tab 2, Schedule 1 which outlines the total costs of compensation reflected in the Hydro
16 One Distribution business plan, including, but not limited to, the components of payroll
17 obligations such as base pay, overtime, burdens, pension and OPEB and other costs like
18 short-term incentive payments for management staff.

19
20 On an annual basis, the standard labour rates are derived based on information gathered
21 through the annual budgeting process. Total payroll and expense costs along with an
22 assignment of support activity costs, divided by the forecast billable hours, create the
23 standard labour rate. Table 1 shows an example of the composition of a standard labour
24 rate for one category, the Regional Maintainer Electrical Stations – Regular Staff, over
25 the period 2014 to 2022.

Witness: Joel Jodoin

**Table 1: Standard Hourly Labour Rate Composition
 Regional Maintainer Electrical (Stations) – Regular Staff**

	Historic			Bridge	Test				
	2014	2015	2016	2017	2018	2019	2020	2021	2022
Payroll Obligations	79.04	79.63	78.61	79.23	79.86	80.46	81.07	81.69	82.30
Contractual time away from work	9.42	9.49	9.03	9.09	9.16	9.23	9.30	9.37	9.44
Time not directly benefiting a specific Program or Project	8.59	8.66	7.57	7.63	7.69	7.75	7.81	7.87	7.93
Field Supervision and Technical Support	17.88	18.01	15.39	15.51	15.63	15.75	15.87	15.99	16.11
Support Activities	18.07	18.21	17.40	17.54	17.66	17.81	17.95	18.08	18.22
Hourly Rate	133.00	134.00	128.00*	129.00	130.00	131.00	132.00	133.00	134.00

*Decrease attributable to reduction in operating costs resulting from an updated pension valuation report.

The cost elements embedded in the standard labour rate as illustrated in Table 1 are explained in this Exhibit, using the position of Regional Maintainer Electrical – Regular Staff and its 2017 cost composition, as an example.

1.1 PAYROLL OBLIGATIONS (\$79.23)

A brief description of the cost elements included in this position category is provided below. Hydro One’s compensation, wages and benefits costs are more fully explained in Exhibit C1, Tab 2, Schedule 1.

(a) Base Labour and Payroll Allowances (60.6% of Payroll Obligations)

Base pay is contractually negotiated and reflected in wage schedules. Payroll allowances are also contractually negotiated and stated in collective agreements. Regular staff (e.g.,

Witness: Joel Jodoin

1 PWU) is entitled to travel, footwear, and on-call allowances. Casual trades are entitled to
2 board and travel allowances where circumstances require it.

3
4 (b) Company Benefits (34.3% of Payroll Obligations)

5
6 For regular staff, this is comprised of pension and current and post-employment benefits
7 and health, dental, etc. For non-regular staff (for example, casual trades), this is
8 comprised of pension and welfare contributions made on behalf of the non-regular
9 employee. These contributions are significantly lower than those made on behalf of
10 regular employees.

11
12 (c) Government Obligations (5.1% of Payroll Obligations)

13
14 This consists of Canada Pension Plan, Employment Insurance, Employee Health Tax and
15 Workplace Safety and Insurance Board contributions.

16
17 **1.1.1 CONTRACTUAL TIME AWAY FROM WORK (\$9.09)**

18
19 This category consists primarily of employee vacation and statutory holidays, and all are
20 established and identified in the relevant collective agreements. Sickness and accident
21 costs are also included and are based on historical trends.

1 these services as agreed to by the work methods and training function and service
2 recipient.

3

4 (c) Health, Safety and Environmental Support (13.4% of Support Activities)

5 These are costs to design, develop, update, maintain and deliver health, safety and
6 environmental practices primarily for staff working in field locations. Costs are assigned
7 based on the forecast consumption of these services as agreed to by the health, safety and
8 environment function and the service recipient.

COSTING OF WORK: FLEET RATE

1. OVERVIEW: FLEET RATE

Hydro One controls and manages approximately 8,000 vehicles and other fleet equipment to support its work programs and staffing requirements. Fleet assets are used for both distribution and transmission work and are strategically spread out across Hydro One’s vast service territory. The number of vehicles and other equipment in use has grown by 200 since 2015, reflecting an increase in the work programs that need to be executed.

Fleet assets are categorized into 63 classes of equipment. A standard equipment rate, or “Hourly Fleet Rate”, is calculated for each class of equipment. Each rate is calculated by dividing the annual forecast cost to maintain each class of equipment by the annual forecast hours that the class of equipment is required to work (utilization hours). Utilization hours are defined as the hours the equipment is being used “on the job”. Utilization hours are derived from a review of historical trends and an annual review of the upcoming work program. To illustrate, Table 1 shows the composition of the hourly fleet rate for a line maintenance truck, one of the common classes of equipment used by Hydro One.

Table 1: Hourly Fleet Rate - Line Maintenance Truck

Description	Historic			Bridge	Test				
	2014	2015	2016		2017	2018	2019	2020	2021
Operations & Repairs	35.7	36.0	38.0	38.0	38.0	38.7	38.7	39.3	39.3
Fuel Costs	8.9	8.9	6.9	6.9	6.9	7.0	7.0	7.1	7.1
Depreciation	19.9	20.1	12.1	12.1	12.1	12.3	12.3	12.6	12.6
Hourly Rate	64.5	65.0	57.0	57.0	57.0	58.0	58.0	59.0	59.0

Witness: Rob Berardi

1 In 2017, it is forecast that operations and repair costs will make up 67% of the fleet rate,
2 while fuel costs and depreciation costs will comprise 12% and 21%, respectively.

3

4 Table 2 provides total expenditures of the components comprising the fleet rate for
5 historic, bridge and test years. Each of the 63 classes of equipment shares in these
6 expenditures.

7

8

Table 2: Fleet Management Services Budget Expenditures (\$ Millions)

Description	Historic			Bridge	Test
	2014	2015	2016	2017	2018
	Actual	Actual	Forecast	Forecast	Forecast
Operations & Repairs	60.5	69.7	71.5	74.8	76.2
Fuel Costs	37.3	37.8	21.3	23.9	25.1
Depreciation	30.3	25.0	39.4	40.4	41.4
Subtotal	128.1	132.5	132.2	139.0	142.7
External Fleet Rentals	2.0	0.6	2.0	2.0	2.0
Total	130.1	133.1	134.2	141.0	144.7

9

10 2. FLEET RATE COMPONENTS

11

12 2.1 OPERATIONS AND REPAIRS

13

14 This cost category primarily consists of repair costs (external and internal labour and
15 parts). The budget is based on a forecast of the annual maintenance schedules for each
16 piece of equipment with consideration given to age and performance history. Throughout
17 the year, all repair costs are charged directly to each piece of equipment. Operations
18 costs include administration staff and their allocated share of central service support
19 costs. The increase in forecast for the bridge year is attributable to additional costs
20 related to the telematics system described in Section 3.2.2 of this Exhibit.

21

Witness: Rob Berardi

1 **2.2 DEPRECIATION**

2
3 The depreciation for each class within the fleet is calculated based on the current
4 depreciation policies of Hydro One, the current composition of the fleet, and annual
5 forecast additions and deletions. Depreciation costs are expected to be higher beginning
6 in the bridge year due to an increase in fleet size to support work programs.

7
8 **2.3 FUEL COST**

9
10 Fuel cost per class of equipment is calculated based on past history, current market
11 projections, and the current composition of the class. Throughout the year, fuel costs are
12 charged directly to the piece of equipment consuming the fuel.

13
14 **2.4 EXTERNAL FLEET RENTALS**

15
16 Due to the seasonal and fluctuating nature of its work program, Hydro One uses
17 externally-owned equipment to meet the peaks in its programs. Using a process similar
18 to that used to cost Hydro One’s own fleet, standard rates are calculated and costs are
19 distributed to programs and projects.

20
21 **3. FLEET MANAGEMENT SERVICES**

22
23 The Fleet Management Services function (“Fleet Management Services”) provides
24 centralized and turnkey services that include maintenance, administration, vehicle
25 replacement and disposal. Vehicles are maintained to an optimum level to ensure public
26 and employee safety, and compliance with laws and Ministry regulations, including, but
27 not limited to CSA 225, the *Highway Traffic Act* and the Commercial Vehicle Operator’s
28 Registration. Fleet Management Services also ensures that environmental impacts are

Witness: Rob Berardi

1 minimized and line-of-business productivity is optimized by minimizing downtime and
2 travel time, and by optimizing technology and continuous improvement opportunities.

3
4 Fleet Management Services has adapted to the changing needs of its business by:

- 5
- 6 • converting the Company's fixed zone model for responding to internal requests to a
7 mobile model, with maintenance garages strategically placed throughout the province
8 to facilitate a more rapid turnaround for vehicle servicing;
 - 9 • optimizing the number of geographical locations served through implementation of
10 garage hubs;
 - 11 • reducing equipment downtime and improving equipment utilization;
 - 12 • providing more competitive and cost-efficient fleet support, enhanced through the
13 procurement of modern maintenance facilities;
 - 14 • adopting a flexible service delivery model that matches the nomadic and variable
15 work program needs of Hydro One's lines of business with service delivery options
16 that mirror private sector practices (e.g., shift work, extended hours of service and
17 mobile service delivery);
 - 18 • developing more timely, strategic and cost-efficient processes for equipment
19 procurement and disposal;
 - 20 • developing a long-range capital replacement program; and
 - 21 • adopting data collection and information management systems that match the
22 nomadic requirements of the company's business units.
- 23

1 **3.1 MAINTENANCE MODEL**

2
3 Fleet Management Services has developed a balanced maintenance model for mobile
4 service delivery and centralized facilities. This model provides for 41 provincial
5 locations and balances geographical customer requirements, travel time, third-party
6 vendor support, and response time. Mobile/satellite repair units minimize costs
7 organizationally by providing timely on-site field support for various nomadic work
8 programs, such as vegetation control, new construction and off-road tower maintenance.
9 Services provided to the lines of business meet the rigorous requirements of Fleet
10 Management Services' agreements and are structured as a mobile model to meet work
11 requirements. The inspections and maintenance program is detailed in Section 2.3.3.3 of
12 the Distribution System Plan, which is provided at Exhibit B1, Tab 1, Schedule 1 (the
13 "DSP").

14
15 **3.2 MANAGED SYSTEMS**

16
17 **3.2.1 FLEET MANAGEMENT SYSTEM**

18
19 The strategic alliance to implement a Fleet Management System ("FMS"), developed
20 with Automotive Resources International in 2003, has been extended to 2020. The FMS
21 uses an automated web-based system that uses a single credit card for each vehicle to
22 capture all operating costs including fuel, parts and repairs. The FMS also incorporates
23 programs to manage contracts, such as tender agreements, and the system prescribes
24 spending guidelines and negotiated discounts. The system measures a variety of targets
25 that reconcile approved purchase orders, estimates versus actuals, and vendor-related
26 expenditures, discounts and complaints.

27
Witness: Rob Berardi

1 The benefits of the FMS include:

2

- 3 • improved scheduling of preventative maintenance, reduced repair times, reduced
4 travel time and reduced equipment downtime;
- 5 • increased access to a number of vendors for fuel, repairs, and parts, thus minimizing
6 cost and downtime;
- 7 • improved cost and efficiency, through carefully-considered procurement strategies
8 and economies of scale, including improved volume discounts for fuel, parts and
9 service;
- 10 • a toll-free number for repairs, roadside assistance and towing, and improved reporting
11 and data collection; and
- 12 • exposure to best practices for fleet management by similar sector organizations.

13

14 The FMS uses a variety of linked programs to manage the data and information for all
15 facets of the business, including internal and external repairs. This takes advantage of
16 both internal and external intelligence and technology.

17

18 The maintenance program minimizes avoidable and expensive repairs and minimizes
19 equipment downtime, which results in improved equipment utilization. Both internal and
20 external service providers have access to the appropriate information through state-of-
21 the-art automated management systems, allowing for quality decision-making at all levels
22 of the maintenance program. Examples of the information provided include:

23

- 24 • real-time vehicle history;
- 25 • warranty criteria and warranty recovery;
- 26 • work and resources scheduling tool;
- 27 • pending and overdue work information alert system;

Witness: Rob Berardi

- 1 • product information, including vendor-specific information;
- 2 • repair and safe practices manuals;
- 3 • process and policy information;
- 4 • invoice and cost-management details;
- 5 • monthly and ad-hoc reports; and
- 6 • work order management.

7

8 **3.2.2 TELEMATICS**

9

10 Fleet Management Services has implemented a fleet telematics system for 4,700 fleet
11 vehicles that provides significant enhancements to operator safety, workplace efficiency
12 and reduction of environmental impacts. This project was completed at the end of 2016.

13

14 In 2017, Fleet Services will leverage the telematics data to institute a framework to define
15 the baseline metrics with respect to equipment utilization and productivity. Analysis of
16 the telematics data will allow Hydro One to realize sustainable efficiencies throughout
17 the 2018 to 2022 planning period, preventing the need to purchase additional resources
18 and reducing costs without compromising service quality. Such efficiencies allow Hydro
19 One to maintain service levels without asking customers to pay more. The expected
20 savings and benefits are detailed in Section 1.5.1 and 2.3.3.3 of the DSP using 2017 as
21 the base year.

22

23 **3.3 FLEET COMPLEMENT AND UTILIZATION**

24

25 Inventory levels are controlled and set by the Hydro One lines of business and Fleet
26 Management Services within the guidelines set for staffing versus fleet ratio, type and
27 volume of work programs, geographic locations, and utilization targets. The increase in

Witness: Rob Berardi

1 the fleet complement, therefore, is directly related to the increase in the company's work
2 on system infrastructure and corresponding staffing levels. Fleet Management Services'
3 41 facilities support 46 forestry operational centers, over 1,000 distribution stations, 290
4 transmission stations, and 66 provincial lines operational centers. The fleet complement
5 is detailed in Section 2.3.3.3 of the DSP.

6

7 As capital and OM&A investments have been increasing, the options to meet increased
8 equipment demand include the purchase of new equipment, rental of additional
9 equipment or increased utilization of existing equipment. The best option is to increase
10 utilization, which minimizes capital investment compared to the option of additional
11 purchases. Simultaneously, it avoids the additional cost of external rentals, which is
12 approximately 30% higher than owned equipment rates based on an internal assessment.

13

14 The benefits of improving utilization include:

15

- 16 • decreased long-term capital requirements;
- 17 • improved ability to respond to fluctuations in work programs; and
- 18 • reduced rental costs, with a correspondingly lower impact on the OM&A budget.

19

20 Equipment utilization averages have increased from approximately 65% in 2001 to
21 approximately 80% in 2016. The 2017 average equipment rate is \$21.69 per hour. This is
22 calculated by dividing total annual fleet equipment costs by total annual fleet utilization
23 hours.

24

1 **3.4 FLEET MANAGEMENT SERVICES BUDGET**

2

3 Fleet Management Services' annual budget is developed and managed based on the all-in
4 costs of operating the fleet and the following criteria:

5

- 6 • historical and forecast fixed and variable costs including fuel, depreciation,
7 maintenance and repair, labour/staffing, and external rentals;
- 8 • historical cost and mechanical fitness evaluations;
- 9 • work program forecasts provided by the lines of business;
- 10 • estimates provided by internal and external providers;
- 11 • requirements of the capital/vehicle replacement program; and
- 12 • projected escalators.

1 **COSTING OF WORK: MATERIALS SURCHARGE**

2
3 **1. OVERVIEW: MATERIAL SURCHARGE RATE**

4
5 Hydro One applies a standard material surcharge rate, which captures applicable supply
6 chain procurement costs, to material costs. Material costs charged to a project or
7 program are based on the issue cost, which is either the “moving average price” or the
8 direct-shipped purchase order price. On a monthly basis, total monthly material charges
9 are surcharged with a fixed percentage cost to recover costs associated with purchasing,
10 transportation and inventory management. The percentages range from 8% to 19%,
11 depending on work program service requirements. The percentages are derived by
12 dividing the costs assigned to each work program or project for these activities (based on
13 an annual assessment of the program’s consumption of these services) divided by the
14 annual forecast of purchased material.

15
16 The costs recovered in the surcharge are as follows:

- 17
- 18 • Hydro One Costs - management, demand planning, warehousing and transportation of
 - 19 material, and investment recovery (comprising approximately 60% of the total costs);
 - 20 and
 - 21 • Inergi LP (“Inergi”) Contract Costs - procurement (comprising approximately 40% of
 - 22 the total costs).

23
24 **2. SUPPLY CHAIN SERVICES**

25
26 This section describes the budgeted cost levels and components of supply chain services.

Witness: Rob Berardi

Table 1: Supply Chain Services (\$ Million)

	Historic			Bridge	Test				
	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total	38.0	38.5	35.4	38.2	37.9	35.5	33.7	30.7	30.7

As Table 1 shows, the forecast 2017 costs for supply chain services are expected to be \$38.2 million and remain fairly flat through 2018. These services include strategic sourcing (purchase) of materials and services, storage and distribution of materials, demand planning, inspection services, transportation, inventory management, and investment recovery of disposed assets. The components of supply chain services performed by Inergi include sourcing (i.e., purchasing) of materials and services, inspection services, execution of transportation contracts, and contract management.

Supply chain costs are forecast to decline over the 2017 to 2022 period, notwithstanding Hydro One's increasing work program. Declining supply chain costs are expected to be achieved through continuous improvements related to the streamlining of business processes and the implementation of enabling technology. The efficiencies Supply Chain Services has realized reflect Hydro One's commitment, company-wide, to operational effectiveness as it develops an investment plan that aligns customer needs, asset needs and rate impact.

2.1 SUPPLY CHAIN POLICIES AND PROCEDURES

Hydro One acquires materials and services through a process that drives value for money, transparency to its internal customers, and builds mutually valuable relationships with key suppliers. Proposal responses are evaluated based on predefined evaluation criteria by cross-functional teams as required. The outcome of the evaluation is the foundation

1 for awarding procurement contracts. Details on Hydro One's procurement policy are
2 provided in Exhibit C1, Tab 5, Schedule 1.

3 4 **2.2 SOURCING OF MATERIALS AND SERVICES**

5
6 The sourcing of materials and services includes the following:

- 7
- 8 • Demand Management and Procurement – market intelligence with respect to
9 commodities, processing purchase transactions, and inspecting and expediting
10 services to ensure delivery of contract commitments; and
 - 11 • Sourcing and Vendor Management – services to support sourcing all commodities
12 and services which include managing the size and composition of the vendor base and
13 resolving issues.
- 14

15 Hydro One manages its procurement and supply base by using strategic sourcing in the
16 acquisition of goods and services. Strategic sourcing is a disciplined business process for
17 purchasing goods and services on a company-wide basis using cross-functional teams to
18 manage the supply base as a valued resource. The methodology's process includes
19 spending analysis, market analysis, development of a sourcing strategy, negotiation,
20 award, and contract management.

21 22 **2.3 INSPECTION SERVICES**

23
24 Inergi is engaged to provide timely inspection services to assure that products are
25 manufactured in accordance to specifications established by Hydro One, and tracks costs
26 and schedules on a product and project basis. Inspectors perform vendor plant audits,
27 including emergency and ad-hoc inspections to ensure conformance to contract

Witness: Rob Berardi

1 specifications, as well as coordinate and monitor non-conformance resolutions and
2 performance issues with vendors' plants and operations.

3

4 **2.4 STORAGE AND DISTRIBUTION OF MATERIALS - WAREHOUSING**

5

6 Hydro One's central warehouse operation in Barrie is responsible for the storage and
7 distribution of materials for the service centres and station locations. This warehouse
8 services the operations and maintenance organization that is further serviced through 81
9 field service centres, 29 station locations and eight construction sites. The field staff is
10 responsible for receiving shipments and for storing and ordering material. Deliveries to
11 the service centres are contracted to a third-party transportation carrier.

12

13 The intent of a consolidated warehouse operation is to realize efficiencies through
14 focusing on activities such as:

15

- 16 • minimizing and/or consolidating order quantities to leverage discounts with vendors;
- 17 • consolidating freight to each location to minimize the frequency and cost of
18 deliveries;
- 19 • managing and coordinating the delivery of materials on the scheduled delivery date to
20 service centres to ensure that field operations receives the right materials at the right
21 time; and
- 22 • improving receipting efficiency by integrating with the contracted transportation
23 company to provide visibility into the supply chain and scheduling the inbound
24 shipment.

25

1 **2.5 TRANSPORTATION**

2
3 Hydro One manages its inbound and outbound transportation of materials through
4 contracts with third parties. In 2013, Hydro One entered into a new transportation
5 contract for material delivery in and out of the central warehouse. In some instances,
6 material is shipped directly from the supplier to the job site. In these instances, internal
7 labour and fleet must be used pursuant to collective agreements.

8
9 **2.6 INVESTMENT RECOVERY**

10
11 The final step of the supply chain is the disposal and investment recovery of end-of-life
12 assets. This recovery is typically in the range of \$3.1 million to \$3.8 million per year,
13 and primarily involves vehicle sales and scrap metal. Hydro One continues to focus on
14 extracting the maximum value possible from the sale of these assets. Table 2 summarizes
15 the sale of assets through the Investment Recovery Program.

16
17 **Table 2: Sales of Assets through Investment Recovery**
18 **Program (\$ Millions)**

Type of Sale	Recovery 2014	Recovery 2015	Recovery 2016
Vehicle Sales	1.4	2.7	1.9
Scrap Metal	1.7	1.1	1.1
Total	3.1	3.8	3.0

1 **2.7 COST SAVINGS FROM STRATEGIC SOURCING**

2
3 Strategic sourcing is a major focus for Hydro One, as the company emphasizes cost
4 control and security of supply, while markets remain volatile and demand in the global
5 utility sector increases. Savings are realized in the purchase of major equipment
6 commodities and services, for example, power transformers, distribution transformers
7 and circuit breakers.

8
9 Strategic sourcing results vary between commodities and are largely a result of increased
10 leverage and reduction of total life-cycle cost for materials and services.

11
12 The main benefits of sourcing strategies are listed below:

- 13
- 14 • Active involvement of internal stakeholders to communicate their business needs for
15 the products and services;
 - 16 • Cost reduction by increased leverage of company-wide expenditures – Purchases are
17 consolidated by commodity and/or service to ensure that the business receives
18 maximum value. An added benefit is that this approach eliminates the need to tender
19 and purchase as requirements surface;
 - 20 • Reduced total life-cycle cost for materials and services – When purchasing
21 equipment, all aspects are identified to ensure that Hydro One acquires maximum
22 value for the life-cycle of the equipment. For example, specifications, maintenance
23 requirements, installation services and warranty services are defined and reviewed to
24 ensure that business needs will be met, and order and invoice processes, lead time and
25 inventory requirements, etc. are evaluated to determine where greater efficiencies
26 may be realized;

- 1 • Improved security of supply through longer-term agreements – To maximize value,
2 longer-term agreements are established with fixed prices, or formula pricing is
3 considered to ensure that Hydro One achieves best value; and
- 4 • Improved and/or consistent quality of material and services.

5
6 Following the 2015 Initial Public Offering (“IPO”) of Hydro One Limited shares, Hydro
7 One identified opportunities for cost savings and productivity improvements. As
8 described in Exhibit C1, Tab 5, Schedule 1, Hydro One’s Supply Chain division is
9 refining its current approaches and introducing new approaches to increase both savings
10 potential and productivity efficiencies for Hydro One. Its planned enhancements to
11 sourcing approaches are detailed in Section 1.5.1.3 of the Distribution System Plan (the
12 “DSP”) provided as Exhibit B1, Tab 1, Schedule 1. Table 20 (Procurement Productivity
13 – Category Overview) in Section 1.5.1.3 of the DSP lists spending categories and their
14 associated potential productivity savings over the test years.

15 16 **2.8 RECENT IMPROVEMENTS IN SUPPLY CHAIN SERVICES**

17
18 Hydro One continues to advance its procurement practices. This section lists some
19 works-in-progress intended to improve effectiveness and efficiency. Improvement
20 initiatives include:

- 21
22 • Taulia (e-invoice) Systems – Implementation of this system allows for early pay
23 discount capture rate or payment of an invoice before the due date in an exchange for
24 a discount;
- 25 • Supplier Management Program – The recent implementation of new technology will
26 provide an enhanced framework for Hydro One to holistically manage the supply

Witness: Rob Berardi

- 1 chain base through a single central repository where all supplier information is
2 consolidated allowing for tighter objective supplier management;
- 3 • Volume Discount – Discount achieved through the purchase of goods with multiple
4 units or in large quantities once the agreed thresholds are reached. The discount
5 captured is identified as a percentage of the yearly spend; and
 - 6 • Spend Analytics – A spending analysis tool was implemented to provide granular
7 visibility into Hydro One’s spending by material or service category, to identify
8 sourcing savings opportunities, and to provide visibility into contract compliance.

1 **SHARED SERVICES AND CORPORATE COST ALLOCATION**

2
3 Hydro One allocates Common Corporate Costs to its Distribution and Transmission
4 businesses and to each Hydro One affiliate based on clearly articulated shared functions
5 and services and an established cost allocation approach based on cost causality
6 principles.

7
8 The Common Corporate Costs OM&A includes the provision of Corporate Common
9 Functions and Services (CCF&S), Customer Service Exhibit C1, Tab 1, Schedule 5,
10 Asset Management Planning Exhibit C1, Tab 1, Schedule 8, Information Technology
11 Exhibit C1, Tab 1, Schedule 9, and Operating Programs Exhibit C1, Tab 1, Schedule 4.
12 CCF&S are described fully in Exhibit C1, Tab 1, Schedule 7 and include Corporate
13 Management, Finance, People and Culture, Corporate Relations, General Counsel &
14 Secretariat, Regulatory Affairs, Security Management, Internal Audit and Real Estate &
15 Facilities.

16
17 **1. ALLOCATION METHODOLOGY**

18
19 Since 2004, in connection with each cost of service application, Hydro One has
20 commissioned a study by Black and Veatch (B&V) to recommend a best practice
21 methodology to allocate common corporate costs among the business entities using the
22 common services. The adopted methodology represents the industry's best practices,
23 identifying appropriate cost drivers to reflect cost causality and benefits received. The
24 2016 report on this study is provided as Attachment 1 to this Exhibit.

25
26 As part of the 2016 study, the cost drivers used to allocate the common corporate costs in
27 EB-2013-0416 were updated to incorporate current information.

Witness: Joel Jodoin

1 Hydro One’s Planning, Operating and Customer Service groups conducted a time study
 2 that is detailed in Section V of the Black & Veatch report. The time study for these
 3 groups spanned a four-week period, as described in Attachment 1 to this Exhibit.

4

5 Hydro One accepts the results of the 2016 B&V study as a reasonable and equitable
 6 approach to the assignment of common corporate costs among the business entities using
 7 the common services. This methodology is based on the R. J. Rudden Associates
 8 (Rudden) Study that the Board accepted in the Distribution rate decision RP-2005-
 9 0020/EB-2005-0378.

10

11 **2. 2017-2018 ALLOCATED AMOUNTS**

12

13 The following Tables 1 and Table 2 provide the annual allocation of 2017-2018 CCF&S
 14 costs, respectively to all business units.

15

16 **Table 1: Allocation of 2017 CCF&S Costs (\$ Millions)**

Description	Total	Transmission	Distribution	Hydro One Telecom	Hydro One Remotes	Hydro One Inc.	Bruce to Milton	Hydro One Sault Ste. Marie
Corporate Management	23.4	4.6	5.6	0.1	0.1	12.9	0.0	0.1
Finance	41.9	23.6	16.9	0.8	0.3	0.1	0.1	0.1
People and Culture	16.4	8.2	7.8	0.3	0.1	0.0	0.0	0.0
Corporate Relations	15.8	7.8	7.6	0.0	0.1	0.0	0.1	0.2
General Counsel and Secretariat	10.0	5.1	4.2	0.1	0.3	0.1	0.1	0.1
Regulatory Affairs	22.6	8.9	12.8	0.0	0.1	0.8	0.0	0.0
Security Management	4.4	2.1	2.3	0.0	0.0	0.0	0.0	0.0
Internal Audit	6.8	3.6	3.1	0.1	0.0	0.0	0.0	0.0
Real Estate and Facilities	58.7	31.8	26.9	0.0	0.0	0.0	0.0	0.0
Total CCF&S Costs	200.0	95.8	87.2	1.4	1.0	13.9	0.3	0.4

17

1

Table 2: Allocation of 2018 CCF&S Costs (\$ Millions)

Description	Total	Transmission	Distribution	Hydro One Telecom	Hydro One Remotes	Hydro One Inc.	Bruce to Milton	Hydro One Sault Ste. Marie
Corporate Management	23.3	4.6	5.7	0.1	0.1	12.7	0.0	0.1
Finance	40.4	22.7	16.3	0.8	0.3	0.1	0.1	0.1
People and Culture	16.2	8.1	7.7	0.3	0.1	0.0	0.0	0.0
Corporate Relations	17.5	8.8	8.3	0.0	0.1	0.0	0.1	0.2
General Counsel and Secretariat	10.2	5.2	4.3	0.1	0.3	0.1	0.1	0.1
Regulatory Affairs	22.9	9.0	13.0	0.0	0.1	0.8	0.0	0.0
Security Management	4.5	2.1	2.4	0.0	0.0	0.0	0.0	0.0
Internal Audit	6.8	3.6	3.1	0.1	0.0	0.0	0.0	0.0
Real Estate and Facilities	59.5	32.2	27.3	0.0	0.0	0.0	0.0	0.0
Total CCF&S Costs	201.3	96.4	88.0	1.4	1.0	13.7	0.3	0.4

2

3 The funds allocated to the holding company (Hydro One Inc.) are non-regulated and
 4 therefore are not recoverable from customers. The percentage has increased significantly
 5 from less than 1% on average in the last Distribution rate filing EB-2013-0416 to about
 6 7% on average for the current filing.

Witness: Joel Jodoin

REVIEW OF ALLOCATION OF COMMON CORPORATE COSTS (DISTRIBUTION) – 2016

BLACK & VEATCH PROJECT NO. 188588

PREPARED FOR

Hydro One Networks Inc.

December 21, 2016

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I. Summary

A. BACKGROUND

Black & Veatch Canada Company (“Black & Veatch”) is pleased to submit to Hydro One Networks Inc. (“Hydro One”) this Report which describes our Review of Allocation of Common Corporate Costs (Distribution)- 2016 (“2016 Review”).

In 2004, Black & Veatch was engaged by Hydro One to recommend a best practice methodology to distribute Common Corporate Costs to Hydro One and its subsidiaries and partnership (identified in Table 2). Common Corporate Costs are the costs to provide certain functions and services (identified in Table 3), including those performed by Inergi LP, to Hydro One and its subsidiaries and partnership. Black & Veatch recommended, Hydro One adopted, and the Ontario Energy Board (“OEB”) accepted, a methodology to distribute those costs, as described in our *Report on Common Corporate Costs Methodology Review* dated May 20, 2005 (“2005 Common Costs Report”).

The OEB-accepted methodology has been applied to Hydro One’s Business Plans, and reviewed by Black & Veatch with subsequent reports issued, as follows:

Table 1 - History of Black & Veatch’s Cost Allocation Reviews for Hydro One

BLACK & VEATCH REVIEW	BUSINESS PLAN	BLACK & VEATCH REPORT
2006 Review	BP 2007-2011	<i>Report on Implementation of Common Corporate Costs Methodology</i> dated May 31, 2006
2008 Review	BP 2009-2013	<i>Report on Implementation of Common Corporate Costs Methodology</i> dated September 10, 2008
2009 Review	BP 2010-2014	<i>Report on Shared Services Costs Methodology</i> dated June 29, 2009
2010 Review	Updated BP 2010-2014	<i>Report on Shared Services Costs Methodology – 2011</i> dated February 26, 2010
2012 Review	BP 2012-2016	<i>Review of Shared Services Cost Allocation (Transmission) – 2012</i> dated February 1, 2012
2013 Review	BP 2014-2019	<i>Review of Allocation of Common Corporate Costs (Distribution) – 2013</i> dated September 19, 2013
2014 Review	BP 2014-2019	<i>Review of Allocation of Common Corporate Costs (Transmission) – 2014</i> dated March 17, 2014
2015 Review	BP-2017-2018	<i>Review of Allocation of Common Corporate Costs (Transmission) – 2015</i> dated May 4, 2016

The OEB-accepted methodology to distribute the Common Corporate Costs has been applied by Hydro One to its Business Plan for 2018-2022 (“BP 2018-2022”) data. This Report describes the “2016 Review” that Black & Veatch performed, at Hydro One’s request, of Hydro One’s application of the methodology to its BP 2018-2022 in connection with its 2018-2022 Distribution rates application, and presents Black & Veatch’s conclusions. The methodology remains the same

between the Transmission case filed in May 2016 with this Distribution case; albeit the results vary slightly due to the regular updating of inputs and costs drivers that incorporate current information.

B. HYDRO ONE ORGANIZATION

Hydro One Inc. operates through the wholly-owned subsidiaries and partnership listed in Table 2. The OEB regulates, separately, the business units identified as such in Table 2. Each regulated business is required to account separately for its assets, revenues and costs, for both regulatory and financial accounting purposes.

Table 2 – Hydro One Business Units

SUBSIDIARY	BUSINESS UNIT	REGULATED	DESCRIPTION
Hydro One Networks Inc.	Distribution	Yes	Owens and operates a distribution system which spans approximately 75% of Ontario and serves approximately 1.3 million customers.
	Transmission	Yes	Owens and operates substantially all of Ontario's electricity transmission system.
Hydro One Remote Communities Inc	Remotes	Yes	Owens, operates, maintains and constructs generation and distribution assets used to supply of electricity to remote communities in northern Ontario.
Hydro One Telecom Inc.	Telecom	No	Sells high bandwidth telecommunication services to carriers, Internet service providers, and large public and private sector organizations.
Hydro One Inc.	Holding	Yes	Subsidiary of Hydro One Ltd. Acts as the holding company of Hydro One's rate regulated businesses.
Hydro One Ltd.	Holding	No	Public company that owns Hydro One Inc. for the transmission and distribution rate regulated businesses and Hydro One Telecom Inc. for non-regulated business activity. Hydro One Ltd. is owned by public shareholders as well as the Province of Ontario.
B2M Limited Partnership	B2M Transmission Line	Yes	Continuous transmission line between the Bruce Nuclear Power Development and Hydro One's Milton Switching station.

C. FUNCTIONS AND SERVICES IN COMMON CORPORATE COSTS

Hydro One provides the functions and services identified in Table 3, to the businesses identified in Table 2. Exhibit A further describes the functions and services provided. The BP 2018-2022 includes 2018 Common Corporate Costs totaling approximately \$312 million incurred to perform the relevant functions and services; and the annual total Common Corporate Costs are presented in Table 4.

Approximately 3.72% of the Common Corporate Costs are incurred under an outsourcing arrangement with Inergi LP (“Inergi”). Common Corporate Costs includes the cost included in BP 2018-2022 for sustainment activities outsourced to Inergi services pertaining to finance, accounts payable, and human resources, and pay services.

Table 3 - Functions and Services in Common Corporate Costs

Hydro One Inc. Corporate Office <ul style="list-style-type: none"> ■ President/CEO Office ■ Chair ■ CFO’s Office ■ Treasurer’s Office ■ Board of Directors ■ Corporate Secretary - General Counsel ■ Pension Cost ■ Donations ■ Ombudsman Office ■ Investor Relations ■ EVP Strategy Office 	Shared Services and Finance <ul style="list-style-type: none"> ■ Real Estate ■ Value Growth ■ Treasury ■ Corporate Controller ■ Taxation ■ Regulatory Affairs ■ Business Planning & Decision Support ■ Outsourcing Services
Operations <ul style="list-style-type: none"> ■ Distribution Asset Management (Note 1) ■ Planning and Optimization (Note 1) ■ Reliability, Strategies, and Compliance (Note 1) ■ System Planning (Note 1) ■ Network Connections and Development (Note 1) ■ Network Operations (Note 1) ■ Transmission Asset Management (Note 1) ■ VP Planning (Note 1) ■ EVP Office – Operations (Note 1) ■ Strategic Services ■ Key Account Management (Note 1) 	Customer and Corporate Relations <ul style="list-style-type: none"> ■ Customer Care Services (Note 1) ■ Customer Strategy and Conservation (Note 1) ■ Customer Program Delivery (Note 1) ■ VP Customer Service (Note 1) ■ Meter to Bill (Note 1) ■ Corporate Affairs ■ First Nations and Métis Relations ■ Bad Debt and Goodwill ■ SVP Customer and Corporate Relations
Information Services <ul style="list-style-type: none"> ■ Corporate Projects ■ Information Technology ■ Security Operations 	Inergi LP (outsourced services) <ul style="list-style-type: none"> ■ Finance ■ Human Resources - Pay Services ■ Accounts Payable
People and Culture	General Counsel & Secretariat
Audit	VP Chief Risk Officer
<i>Note 1- Department participated in 2015 Time Study; see Section V.</i>	

D. BLACK & VEATCH’S ASSIGNMENT

For the 2016 Review, our assignment was to:

- a. Evaluate whether the existing Common Corporate Cost Allocation Methodology continues to be appropriate for Hydro One, and identify changes that are necessary or desirable.

- b. Review Hydro One's application of the OEB-accepted Common Corporate Cost Allocation Methodology to the BP 2018-2022, in connection with its 2018-2022 Distribution rates application.

The organization presented in Table 3 reflects the creation of new departments, realignment of departments among groups, and realignment of functions among departments, that Hydro One believes will allow it to serve its customers most effectively and efficiently, based on the current business and regulatory environment.

The Common Corporate Costs Model for BP 2018-2022 reflects these organizational changes. Black & Veatch reviewed the cost driver for each activity to determine its continued applicability, and where necessary, the development of the cost driver was updated to reflect the organizational changes.

Concurrently with this 2016 Review, Black & Veatch reviewed and issued reports on Hydro One's Overhead Capitalization Rate methodology, Common Assets allocation and Allocation of Common Corporate Costs to the Bruce-to-Milton (B2M) Limited Partnership.

E. OVERVIEW OF METHODOLOGY

The Black & Veatch methodology for allocating the costs of Hydro One's Common Corporate Costs was designed to address the following considerations:

- Compliance with OEB precedent including Docket RP-2002-0133 (*In The Matter Of The Ontario Energy Board Act, 1998*)
- Compliance with relevant provisions of the Affiliate Relationships Code for Electricity Distributors and Transmitters ("Code")
- Cost incurrence- Are the costs needed to perform services required by the business units?
- Cost allocation- Are costs appropriately allocated among business units, based on the application of cost drivers /allocation factors supported by principles of causality?
- Cost/benefit- Do benefits received equal or exceed the cost?

An overview of the Black & Veatch cost allocation methodology is described below:

- Identify the functions and services included in Common Corporate Costs.
- Identify activities that are performed to provide those functions and services.
- Based on time and/or cost studies, distribute the annual departmental costs in the BP 2018-2022 among the activities performed by that department in providing the functions and services.
- Distribute the cost of each activity among the business units based on direct assignment when possible, and based on cost drivers when direct assignment is not possible.

- The guiding principle used by the Black & Veatch methodology to assign cost drivers is cost causation.

A cost driver is a formula for sharing the cost of an activity among those who cause the cost to be incurred. Cost drivers are discussed in Section D. The different types of cost drivers are described in Exhibit B.

F. SCOPE OF WORK

Consistent with Black & Veatch's standard practice for consulting assignments, we relied on the genuineness and completeness of all documents presented to us by Hydro One, and we accepted factual statements made to us by Hydro One (e.g., headcount, budgeted amounts) subject only to their overall reasonableness and factual accuracy, but without our independent confirmation. All dollar amounts in this Report are stated in Canadian dollars.

G. CONCLUSIONS AND RESULTS

Black & Veatch believes that Hydro One's current cost allocation methodology continues to be appropriate for Hydro One because it achieves the purposes for which it was designed (to distribute costs in a manner that is consistent with OEB precedent and regulatory practice) and promotes transparency and efficiency.

Based on our review, Black & Veatch concludes that the results of Hydro One's application of the Black & Veatch Common Corporate Cost Allocation Methodology to its BP 2018-2022 data reflects a cost causation-based distribution of the Common Corporate Costs and conforms to the OEB-accepted methodology. The annual results for years 2018-2022 are shown in Table 4.

Black & Veatch also notes that Hydro One management believes that the existing methodology is appropriate for the company, the cost allocation process receives strong support from Hydro One management and is well integrated into the budgeting process and the Common Corporate Costs Model is updated periodically to reflect current information.

Table 4 presents the results of Hydro One's distribution of the Common Corporate Costs in BP 2018-2022, annually for 2018-2022, among its Distribution, Transmission and Other businesses.

Table 4 - Distribution of Annual Common Corporate Costs

Business	2018	2019	2020	2021	2022
(\$ Millions)	\$	\$	\$	\$	\$
Transmission	\$ 153	\$ 153	\$ 153	\$ 155	\$ 158
Distribution	\$ 143	\$ 141	\$ 142	\$ 143	\$ 145
Other	\$ 16	\$ 16	\$ 16	\$ 17	\$ 17
Total	\$ 312	\$ 310	\$ 312	\$ 315	\$ 320
(% of Total)	%	%	%	%	%
Transmission	49%	49%	49%	49%	49%
Distribution	46%	46%	46%	45%	45%
Other	5%	5%	5%	5%	5%
Total	100%	100%	100%	100%	100%

II. Statement of Approach

This section presents the approaches used by Black & Veatch to evaluate whether the existing Common Corporate Cost Allocation Methodology continues to be appropriate for Hydro One, and to review Hydro One's application of the methodology to the BP 2018-2022 costs of providing the functions and services included in Common Corporate Costs.

A. EVALUATE COST ALLOCATION METHODOLOGY

The Common Corporate Cost Allocation Methodology was first applied to Hydro One's Business Plan 2018-2022. Hydro One requested that Black & Veatch evaluate whether the methodology is still appropriate, and what changes, if any, could be considered. Black & Veatch's approach is discussed in detail in Section III.

B. REVIEW APPLICATION OF COST ALLOCATION METHODOLOGY

In preparing the 2016 Review, Black & Veatch performed the following tasks:

- Task 1. Reviewed Hydro One's current organizational structure and identified departments that perform the functions and services included in Common Corporate Costs.
- Task 2. Identified the activities performed by each department in order to provide the functions and services identified in Task 1.
- Task 3. Determined the Common Corporate Costs in BP 2018-2022 to perform the functions and services in Task 1.
- Task 4. Identified the business units that use the functions and services included in Common Corporate Costs.
- Task 5. Distributed Common Corporate Costs (time for labour resources and cost for non-labour and Inergi resources) reflected in BP 2018-2022 for departments identified in Task 1, among the activities identified in Task 2.
- Task 6. Directly assigned activity costs to business units where a direct relationship exists.
- Task 7. For activities where less than all of the BP 2018-2022 costs were directly assigned to business units in Task 6, assigned a cost driver that reflects cost causation.
- Task 8. Populated the cost drivers.
- Task 9. Reviewed the 2015 Time Study.
- Task 10. Computed total Common Corporate Costs allocated to each business unit.
- Task 11. Performed analytical review of results.
- Task 12. Reviewed the Common Corporate Costs used to perform the computations.

C. PRINCIPLES OF COST ALLOCATION

There are two methods to allocate or distribute shared costs among a utility's business units – Direct Assignment and Allocation. *Direct Assignment* is used when it can be reasonably determined that all or a portion of an activity is performed for a particular business unit. Direct Assignment is completed through the use of time studies or time surveys; where participants either fill out a daily time sheet or provide an indication of how their time is spent throughout the year. Approximately 70% of Common Corporate Cost in the BP 2018-2022 was assigned directly to one or more of Hydro One's business units.

Allocation is used when more than one business unit uses an activity, but the portions of the activity that each uses cannot be directly established through a time study or time survey. In this case, a cost driver must be assigned to distribute the costs of the activity. A cost driver is a formula for sharing the cost of an activity among those entities that cause the cost to be incurred. The principles used by Black & Veatch to assign cost drivers are discussed in Section II.D below.

D. COST DRIVERS

As stated above, a cost driver is a formula for sharing the cost of an activity among those entities that cause the cost to be incurred. The guiding principle that Black & Veatch uses in assigning cost drivers is cost causation. Cost causation means that there is a causal relationship between the cost driver and the costs incurred in performing the activity. In some cases, cost causation cannot be easily implemented or established, in which case selecting cost drivers based on benefits received is a fair alternative treatment.

Other factors considered in assigning cost drivers include:

- Practicality – The cost driver should be understandable, obtainable at reasonable cost, and objectively verifiable in the initial year as well as in subsequent years.
- Stability – Cost driver values should be reasonably stable from year to year. When estimates are used, the cost driver should be able to be estimated with reasonable accuracy, and estimates should be unbiased.
- Materiality – When choosing between cost drivers, small differences can often be ignored in favor of Practicality and Stability (see above).

E. TYPES OF COST DRIVERS

Cost drivers can be classified as External or Internal. *External* drivers are based on data that are external to the cost allocation process, such as physical units or financial amounts.

Internal drivers are based on values computed as an integral part of the cost allocation process. For example, the cost of a supervisor's salary might be allocated in the same proportion as the salaries of the people being supervised, and the cost of general departmental expenses might be allocated in the same proportion as the specifically assigned departmental activities. Exhibit B further describes the different types of cost drivers.

III. Evaluate Cost Allocation Methodology

The Common Corporate Cost Allocation Methodology was first applied to Hydro One's BP 2006-10. Black & Veatch has also reviewed the application of the methodology to subsequent business plans, as listed in Section I.A. The purpose of this portion of the 2016 Review was to evaluate if the methodology is still appropriate, including reviewing changes that were recommended in the past.

Based on our discussions with Hydro One personnel and review of the Common Corporate Costs Model, Black & Veatch determined that the cost allocation methodology continues to be appropriate for Hydro One because:

- It meets best practices since it distributes costs based on cost causation, including the use of direct assignment when possible, and then through the use of cost drivers.
- It has been accepted by the OEB.
- It has the support of Hydro One management, and is understood and accepted by the Hydro One business units.
- It allows the business units to determine precisely what amounts they are charged by department and by activity within the department; this transparency provides a basis for understanding the nature of the charges and value of the services received.
- It is well-integrated with Hydro One's annual Business Planning process and produces reasonably stable results over time.
- It accommodates changes in Hydro One's organization, and the Common Corporate Costs Model can be adapted easily to reflect those changes.

Black & Veatch believes that the current cost allocation methodology continues to be appropriate for Hydro One, because it achieves the purposes for which it was designed (to distribute costs in a manner that is consistent with OEB precedent and regulatory practice), and promotes transparency and efficiency.

IV. Review Application of Methodology to BP 2018-2022

In this Section we will discuss each of the Tasks performed in the Scope of Work, as stated in Section B. This includes the purpose of the Task, the steps performed, the source of the information, and the results.

Task 1. Reviewed Hydro One's current organizational structure and identified departments that perform the functions and services included in Common Corporate Costs.

The purpose of this Review was to evaluate the allocation of the Common Corporate Costs among the businesses that use the functions and services.

The organization of Hydro One Inc. is described in Section I.B. The functions and services support the Distribution business and the Transmission business, and the other businesses listed in Table 2. The departments that perform the functions and services in Common Corporate Costs are listed in Table 3. Exhibit A further describes the functions and services. This information was provided by Hydro One in discussions and documents.

Task 2. Identified the activities performed by each department in order to provide the functions and services identified in Task 1.

The purpose of this task was to identify the activities that are performed in order to provide each of the functions and services.

Functions and services (identified in Task 1) are performed for the benefit of the business units. Activities (discussed in this Task 2) are the tasks performed in order to provide the functions and services. Activities are measured in the amount of resources used.

To distribute the resources required to provide the functions and services included in Common Corporate Costs among the business units on the basis of cost causation, the activities performed were identified and described by Hydro One to Black and Veatch.

Task 3. Determined the Common Corporate Costs in BP 2018-2022 to perform the functions and services in Task 1.

In this task, we obtained the BP 2018-2022 costs for the departments that provide the functions and services included in Common Corporate Costs. Hydro One provided to Black & Veatch the labour and non-labour portions of the BP 2018-2022 for each of these departments, as well as descriptions of major non-labour cost items.

Task 4. Identified the business units that use the functions and services included in Common Corporate Costs.

The business units that use the functions and services included in Common Corporate Costs are listed in Table 2. The information was provided by Hydro One and confirmed by the service recipients.

Task 5. Distributed Common Corporate Costs (time for labour resources and cost for non-labour and Inergi resources) reflected in BP 2018-2022 for departments identified in Task 1, among the activities identified in Task 2.

The purpose of this task was to distribute the resources (time for labour and costs for non-labour and Inergi) required for each of the functions and services identified in Task 1, among the activities identified in Task 2. In subsequent tasks, the cost of each activity was either directly assigned to one or more business units or allocated using cost drivers.

Labour costs

To distribute budgeted labour costs, Hydro One department managers determined the portion of annual time spent by the personnel under their supervision on each of the activities identified in Task 2. Some managers based their estimates on concurrent time records that they maintain, some conducted interviews with their personnel, and some used their informed judgment. Some of the holding company's labour cost was allocated consistent with previous rate filings. The information provided by the managers was reviewed by Hydro One and Black & Veatch and was found to be reasonable and consistent with prior distributions of resources.

Non-labour costs

Budgeted non-labour costs items were examined and distributed based on direct assignment or allocation; this amount includes non-labour costs of departments in the 2015 Time Study. This included OEB invoices, communications programs, insurance costs and claims, human resources programs, labour relations programs, actuarial consultants and audit fee. The balance of non-labour costs includes items such as training and development, non-specific expenses and general expenses.

Inergi costs

The Common Corporate Costs representing functions and services provided by Inergi were distributed among the activities, based on information provided by Hydro One, assignments and allocations by Hydro One and Black & Veatch, and the application of judgment by Hydro One and Black & Veatch. The approach for each of the functions and services provided by Inergi is described below. Exhibit A describes these services in greater detail.

- **Finance** – Costs were assigned among activities based on estimated portion of total amount paid to Inergi to perform the function. Activities were allocated among the business units based on chosen cost drivers that relate to each activity (e.g., Fixed Asset Accounting activity was allocated on Gross Utility Plant).
- **Human Resources** – Costs were assigned among activities based on estimated effort by Inergi. All activities were allocated among the business units based on headcount.

Task 6. Directly assigned activity costs to business units

The purpose of this task was to assign, among the business units listed in Task 4, the resources (time for labour resources and costs for non-labour and Inergi resources) for each activity listed in Task 2. This task was performed concurrently with Task 5 – Distributed Common Corporate Costs (time for labour resources and cost for non-labour and Inergi resources) reflected in BP 2018-2022 for departments identified in Task 1, among the activities identified in Task 2.

For the activities listed in Task 2, Hydro One's departmental managers distributed the resource costs among one or more business units, based on the business units that caused the costs to be incurred. When possible, all or a portion of costs were assigned to a specific business unit.

Task 7. Any portion of an activity that was not assigned to a specific business unit due to its generalized nature was allocated among business units using cost drivers, as described in Task 7. Assigned cost drivers

As discussed above, the costs of activities were directly assigned to business units when possible. The purpose of this task was to select cost drivers for the portion of costs which were not directly assigned in Task 6.

The principles that Black & Veatch used to assign cost drivers are discussed in Section II.D- Cost Drivers. Black & Veatch selected cost drivers based on applying the principles discussed above, its experience in performing cost allocation studies, consultations with Hydro One as to the nature of each activity, and industry practices and regulatory requirements.

Section II.E Types of Cost Drivers describes the types of cost drivers.

Table 5 summarizes the direct assignments and types of costs drivers used to distribute the Common Corporate Costs among the business units. Amounts include the Inergi charges.

Table 5 - Direct Assignments and Cost Drivers for Common Corporate Costs

TYPE	2018	2019	2020	2021	2022
(% of Total)	%	%	%	%	%
Direct Assignment	58.56%	57.79%	57.76%	57.63%	58.54%
Physical	13.03%	13.27%	13.52%	13.57%	13.75%
Financial	20.76%	21.10%	21.39%	21.52%	21.83%
Internal	7.65%	7.84%	7.33%	7.29%	7.33%
Total	100.00%	100.00%	100.00%	100.00%	101.44%

Task 8. Populated cost drivers

The purpose of this task was to determine the values of each cost driver that are attributable to each business unit in order to distribute the costs of each activity among the business units. The supporting information was provided by Hydro One.

Task 9. Reviewed 2015 Time Study

This Task is discussed in Section V.

Task 10. Computed total common corporate costs for each business unit

The purpose of this task was to distribute the total cost of each activity among the business units. The amount distributed was the sum of the amounts directly assigned in Task 6, and allocations based on the cost drivers identified in Task 7.

For allocations based on the cost drivers, the amount allocated to each business unit was computed by multiplying the activity cost to be allocated by the cost driver value for the business unit.

Task 11. Performed analytical review

The purpose of this task was to compare the results of the distribution of the BP 2018-2022 Common Corporate Costs among the business units to the results in the previous 2014 Review, and to understand the differences.

The proportions of the total cost distributed to each business unit have been reasonably similar over time and differences are explained by additions and removal of departments from the Common Corporate Costs (i.e., the 2016 Review included Bad Debt and Goodwill which is 100% Distribution, for the first time), changes in allocations of time, changes in allocator values and changes in departmental functions and activities.

Task 12. Reviewed Common Corporate Costs Model

The purpose of this task was to review the Common Corporate Costs Model that Hydro One has developed for allocating the Common Corporate Costs, to determine if it properly reflects and models the OEB-approved cost allocation methodology for those costs included in the BP 2018-2022.

Black & Veatch first reviewed Common Corporate Costs Model in connection with our 2008 Review, and has reviewed the model for each of the subsequent reviews performed, including this 2016 Review. The model is updated periodically to reflect organizational changes; Business Plan costs; additions to and deletions of departmental activities; time and cost distributions among activities; assignments of allocators; and cost driver values.

The Common Corporate Costs distributes departmental costs among activities (Task 6) and then distributes the cost of each activity based on direct assignments or cost drivers (Task 10).

Based on Black & Veatch's review, the Common Corporate Costs properly implements the OEB-accepted methodology for distributing the costs of corporate functions and services in the BP 2018-2022, and continues to produce a cause-based allocation of costs.

V. 2015 Time Study

Hydro One employees representing approximately \$105 million of annual labour costs participated in a time study for the four-week period ending June 12, 2015 (“2015 Time Study”).

The departments that participated in the 2015 Time Study are identified in Table 3 (designated by Note 1 next to the department name). The responsibilities of these departments are included in Exhibit A.

The personnel in these departments are able to determine with reasonable accuracy, on a current basis, the time they spend on Distribution Operations and Maintenance, Distribution Capital Projects, Transmission Operations and Maintenance and Transmission Capital Projects because the programs and projects on which they work are clearly defined.

A properly performed time study measures cost causation and is widely accepted as a basis for assigning costs. Hydro One personnel administered the 2015 Time Study using the same design and communication material designed by Black & Veatch and utilized in the time study that occurred in 2013. Black & Veatch’s responsibilities included reviewing time study results and the consolidation of the results, and confirming the completeness of the time study and its consistency with the study design. The methodology was the same as used in prior time studies conducted by Black & Veatch for Hydro One.

It was not practical to perform a full-year study, but we believe the results for a four-week period are representative of the full-year. To support this judgment, Black & Veatch reviewed the previous Hydro One time studies, which were completed at different times during the year, and found that the results were reasonably similar to the 2015 Time Study results.

Black & Veatch found that the 2015 Time Study was appropriately designed and completed, the results were correctly compiled, and the methodology was the same as for prior Hydro One time studies performed in connection with Black & Veatch’s previous cost allocation reviews. Therefore, Black & Veatch concluded that the 2015 Time Study results were a proper basis for assigning the costs of the departments included in the study between Hydro One’s Distribution and Transmission business units.

Exhibit A: Functions and Services in Common Corporate Costs

FUNCTIONS AND SERVICES	DESCRIPTION
Hydro One Inc. Corporate Office (HOI)	
President / CEO Office	Leadership of the staff of the Corporation to ensure that their culture and behaviours lead to achievement of its strategic objectives. Develop and update strategy and establishes performance targets to assess progress towards the goals and objectives defined by the strategy.
Chair	Strategic direction, implementation and results for Hydro One Inc. and for each subsidiary.
CFO's Office	Provide Hydro One and subsidiaries with strategic review and approval for all financial and investment decisions. Review policies and procedures, treasury operations and tax planning, financial control and reporting.
Treasurer's Office	Debt and equity issuance, capital structure management and oversight of Finance- Treasury function.
Board of Directors	Strategic direction, implementation and results for Hydro One Inc. and for each subsidiary.
Corporate Secretary	Provide direction and analysis in areas of: Board and Committee(s); Office of Chair and Board members; Code of Business Conduct; Community Citizenship; Freedom of Information and Privacy, Corporate Archives, Corporate Records, Corporate Secretariat.
General Counsel	Oversee and support Law, Regulatory and Corporate Secretariat General Counsel functions.
Pension Cost	Pension fund contributions.
Donations	Includes donations to support injury prevention, corporate donations (e.g. Salvation Army), energy education, United Way and local community causes. Costs are directly assigned to Shareholder only.
Ombudsman Office	The Ombudsman Office commenced activity following the Initial Public Offering, in order to address complaints escalated from the Customer Service . Prior to that, the Province of Ontario's Ombudsman had authority to investigate issues related to Hydro One customers.
Investor Relations	Investor Relations commenced activity following the Initial Public Offering, in order to communicate with Shareholders and potential investors and address their concerns.
EVP Strategy	Supports the executive team by identifying strategic opportunities and developing related initiatives, including mergers and acquisitions and non-regulated strategy work.
Shared Services and Finance	
Real Estate	Manage and acquire rights of way and easements; manage property taxes; manage SLU revenue programs; manage Employee Relocation Program.

FUNCTIONS AND SERVICES	DESCRIPTION
Value Growth	Seeks ways to leverage Hydro One's core competencies to increase overall value and drive down average cost to serve. Costs are directly assigned to Shareholder only.
Treasury	Risk management including insurance purchasing; insurance claims settlement; financial risk management; cash & banking operations; debt management-prospectus, debt issuance, borrowing, maintain relationship with shareholders; funds management; investor relations-shareholders, creditors, equity analysts & rating agencies; support business activities; project management.
Corporate Controller	Corporate Accounting & Reporting; Revenue Management; Financial Modeling & Analysis; Accounting Policy; Internal Control; IFRS / US GAAP; Inergi Finance; Bill 198; Corporate Compliance.
Taxation	Meet internal and external tax compliance requirements and reduce overall corporate tax liability through tax planning for current and new businesses, acquisitions and dispositions, special projects, tax compliance (including income tax, HST, and DRC returns for all entities), tax accounting, lobbying for legislative tax changes and government tax audits.
Regulatory Affairs	Coordinate applications with OEB; compliance with OEB orders; design and implement regulatory policy; manage relationship with OEB. Tasks include: cost allocation and rate design for regulated Tx and Dx, especially rate structures and rates for Tx and Dx tariffs; implement approved rates; support transmitters' representative on IESO Technical Panel; manage MV Star to support settlement. Includes: Direct billed OEB costs for Tx and Dx; Direct billed NEB costs for Tx; Costs of Rate Hearings before the OEB for Tx and Dx.
Business Planning and Decision Support	Financial modeling & analysis; corporate planning & reporting; regulatory finance; decision support to the lines of business
Outsourcing Services	Manage overall business relationship between Hydro One and Inergi LP.
Operations	
Distribution Asset Management	Create prioritized, defensible distribution system investment strategies and plans to meet Hydro One's Corporate Strategic Objectives including promoting innovation and automation of our grids consistent with maximum customer value. This includes the Distribution Technology roadmap and smart meter deployment including communications infrastructure.
Planning and Optimization	Coordinate the investment planning and investment approvals processes for projects and programs issued to the lines of business from the Planning Business Unit. The investment plan is developed and maintained through the use of various tools, reports and LoB interaction.

FUNCTIONS AND SERVICES	DESCRIPTION
Reliability, Strategies, and Compliance	Promote and facilitate Hydro One's engagement and participation in the development of reliability standards and related IESO Market Rules; Develop, communicate and assist with the implementation of policies, directives, procedures, and processes to ensure an enduring compliance posture with reliability standards.
System Planning	Develop and commit prioritized, defensible transmission development plans, consistent with corporate strategy, to meet government policy, OPA plans, customer needs, regulatory requirements and industry standards. Conduct Regional Infrastructure Planning to meet OEB requirements and to develop regional plans to meet regional supply needs.
Network Connections and Development	Facilitate the connection of new load and generation customers to Hydro One's transmission network, supporting customers' objectives while respecting Hydro One's strategic objectives and resource requirements.
Network Operations	Operates the largest electricity delivery system in Ontario and one of the largest in North America for the needs of the Province of Ontario. Hydro One has a highly skilled and experienced workforce using first-class operating systems located in a state-of-the-art Control Centre. Hydro One is a team working together and safely to ensure Ontario has a safe, reliable supply of electricity.
Transmission Asset Management	Provide asset strategies, investment plans and work definition for the sustainment of the transmission grid to enable safe, reliable, efficient and cost effective delivery in a customer-focused commercial culture that increases enterprise value for our shareholder that provides increased value to our customers.
VP- Planning	Oversees Distribution Asset Management, Transmission Asset Management, Planning and Optimization, Network Connections and Development, System Planning, and Reliability, Strategies, and Compliance.
EVP Office- Operations	Oversight of Operations group.
Strategic Services	Supports the executive team by advancing key strategic initiatives and interfacing with Lines of Business to assist in the implementation of these initiatives, coordinating the development of processes to ensure alignment within the Company and a focus on our key priorities, and providing support to the President and CEO and the Leadership Team.
Information Services	
Corporate Projects	Deliver the projects necessary to maintain and enhance the core services Hydro One provides to its customers across the province. Project delivery is completed by leveraging both internal and external expertise to design and construct using standard and repeatable methods that lead to safe, reliable and cost effective operations of those assets.

FUNCTIONS AND SERVICES	DESCRIPTION
Information Technology	Information technology security; Enterprise IT architecture; Service delivery; Technology services; Governance of IT architecture, Business analysis and information management, Project management; Inergi & Telecom services management. Applications; Compliance security; Data services; Information services; IT operations; System architecture.
Security Operations	Incident reporting and security awareness; Threat intelligence gathering; Physical security and asset threat and risk assessments; Investigations; Theft of electricity consultation and detection; Workplace violence prevention and response; Contract security procurement assistance; Overall security and asset protection advice; Security infrastructure Capital and OM&A investment planning and project management.
Customer & Corporate Relations	
Customer Care Services	Service the approximately 1.1 million distribution customers. Improve customer satisfaction through strategic system and process enhancements, effective services contracting, proactive communications and quality programs. Service programs include meter reading, billing, settlements, customer contact handling and collections. Project work includes regulatory compliance initiatives and service enhancements.
Customer Strategy and Conservation	Design and deliver energy conservation and demand management incentive based programs; Leverage Smart Grid investments to provide customer enablement of new technologies for energy management; Co-ordinate Greener Choices program; Provide input to Corporate Strategic Plan and develop recommendations on emerging strategic opportunities.
Customer Program Delivery	Supports Customer Service and Corporate Relations with five year business plans and the associated three year Dx Rate Filings with the OEB. Includes the Credit & Collections team is focused on reducing arrears and bad debt for both active and final-billed accounts, while working with customers on a variety of payment options to increase customer choice and provide more payment flexibility. Also included is the new Conservation and Demand Management team that delivers province-wide programs in order to meet multi-year targets aimed at reducing energy peaks and the overall consumption on the electricity grid.
Key Account Management	Manage relationships with Hydro One's large customers including over 90 Transmission-connected Industrials, 79 LDCs and 33 Transmission-connected Generators, representing almost 70% of Hydro One's revenues. Includes Operating Support; Account Executives; Contract Management; and Customer Programs.
VP Customer Service	Oversees Customer Service group, which has overall accountability for relationship, affordability and value proposition for products and services provided to customers. Includes bill management, major accounts and value-added services (e.g. conservation). Customer Service also

FUNCTIONS AND SERVICES	DESCRIPTION
	responsible for Advanced Distribution System Project and Smart Meters.
Meter To Bill	Focused on providing clear, accurate, and timely bills to customers. This includes validation of meter reading data, bill calculations, exception handling, retailer transactions, bill creation, bill insertion, and bill issuance.
Corporate Affairs	<p>Support all external and internal communications initiatives. Interact with most other Hydro One departments; special focus on Customer Service. Support major projects including: development of partnership activities; coordinate with external energy agencies (e.g. OPA, IESO), Ministries in Ontario Public Service and internal Hydro One resources. Participate in pre-public consultations with municipalities and First Nations. Support customer strategy, rate strategy, distribution generation strategy; develop working relationships with customers, regulators, shareholder, lenders; labour relations; corporate culture.</p> <p>Includes SVP Customer & Corporate Relations - Oversees the entire Customer Service organization as well as the old Corporate Relations group, including Corporate Affairs, First Nations and Metis Relations and Key Account Management.</p>
First Nations and Métis Relations	Provide First Nations and Métis consultation advice and support; Advise re First Nations and Métis HR strategies; Provide strategic advice to Remotes with respect to First Nations and Métis issues.
Bad Debt and Goodwill	Bad Debt related to Distribution service. Allocated 100% to Distribution.
SVP Customer and Corporate Relations	Oversees VP Customer Service, Key Account Management, Corporate Affairs and First Nations and Métis Relations.
Inergi LP (outsourced services)	
Finance and Accounting Services	Accounts Payable; Accounts Receivable (non-energy); Fixed asset and project cost accounting; general accounting and planning, budgeting and reporting
Human Resources- Pay services	Payroll and related services
Accounts Payable	Invoice processing and payment
People and Culture	
People and Culture	<p>Primarily employee-related services, including administer compensation & benefits programs; decision support for business units; talent management (hiring, succession, development, coaching; high potential employee assessments); recruitment and diversity (diversity programs, grad program, student/co-op, line of business resourcing); data administration; consulting support to LOBs and corporate functions; VP Human Resources.</p> <p>Provide full-scale service pertaining to bargaining, Ontario Labour Relations Board hearings, grievance and arbitration hearings, advice and</p>

FUNCTIONS AND SERVICES	DESCRIPTION
	guidance, plus training to all levels of Hydro One management. Involves interaction with 21 unions and 24 collective agreements.
Audit	
Audit	Provides assurance that internal controls continue to operate effectively, identification and recommendations for areas where controls can break down or need improvement to meet corporate objectives. This includes the VP Chief Risk Officer.
General Counsel & Secretariat	
General Counsel & Secretariat	Provides legal advice to all business units, acting as an internal “law firm” for the Corporation on most aspects of law affecting it, and is also well acquainted with day- to-day requirements of the Corporation.
Telecom Services	
Telecom Services	Provides telecommunications infrastructure across the Province, including both voice and data. Links staff and business applications at Trinity, Richview TS, Markham and London Call Centers, Mill Creek data centre, 125 field offices (400 total sites including stations) and customers via Call Centres and Web sites.
VP Chief Risk Officer	
VP Chief Risk Officer	The VP Chief Risk Office group creates an enterprise-wide comprehensive and uniform approach to anticipate, identify, prioritize, measure, treat and report on key business risks impacting our organization. It puts in place the policies, common processes, competencies, accountabilities, reporting and enabling technology to execute that approach successfully.

Exhibit B: Types of Cost Drivers

TYPE	DESCRIPTION	EXAMPLES
External Cost Drivers		
Physical	Physical units; usually objectively determinate but often require estimates	Headcount (of employees), number of workstations, invoices to vendors
Financial	Financial information from accounting or management reports, budgets or projections	Capital expenditures, Net utility plant, Program Project Costs, Total capital, Total revenue
Blended	Weighted combinations of other drivers, used when one or more drives are applicable and none is clearly preferable; weights determined by judgment	Non-energy Rev_Assets Blend = 50% weight for Non-Energy Revenue and 50% weight for Assets
Driver xBusiness Unit	Any driver may be modified by excluding one or more business units to which the activity does not apply	Cost driver for Business Process Improvements is Operating Maintenance Capital, but Telecom and Remotes business units do not use the shared service, therefore activity cost driver is called Oper Maint Cap xTxR (i.e., Gross Utility Plant excluding Telecom and Remotes)
Internal Cost Drivers		
All Internal Cost Drivers	Use the result of previous allocations as the basis for further allocations	Cost of general departmental expenses might be allocated in the same proportion as the specifically assigned departmental activities

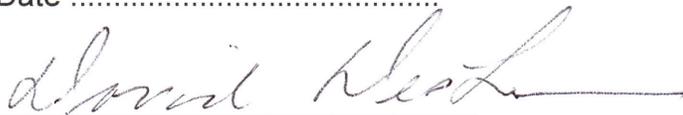
FORM A

Proceeding: EB-2017-0049

ACKNOWLEDGMENT OF EXPERT'S DUTY

1. My name is David DesLauriers (name). I live at Westboro (city), in the State (province/state) of Massachusetts.
2. I have been engaged by or on behalf of Hydro One Networks, Inc. (name of party/parties) to provide evidence in relation to the above-noted proceeding before the Ontario Energy Board.
3. I acknowledge that it is my duty to provide evidence in relation to this proceeding as follows:
 - (a) to provide opinion evidence that is fair, objective and non-partisan;
 - (b) to provide opinion evidence that is related only to matters that are within my area of expertise; and
 - (c) to provide such additional assistance as the Board may reasonably require, to determine a matter in issue.
4. I acknowledge that the duty referred to above prevails over any obligation which I may owe to any party by whom or on whose behalf I am engaged.

Date February 27, 2017


Signature

Expert Evidence Statement from Black & Veatch Canada Company

This Statement is provided in compliance with Ontario Energy Board (“Board”) Rule 13A, regarding the reports listed below (“Reports”) dated December 21, 2016, prepared by Black & Veatch Canada Company (“Black & Veatch”).

Reports:

- Review of Allocation of Common Corporate Costs (Distribution) – 2016
- Review of Shared Assets Allocation (Distribution) – 2016
- Review of Overhead Capitalization Rates (Distribution) – 2018-2022

Consultant:

Black & Veatch Canada Company
11401 Lamar Avenue
Overland Park, KS 66211

Black & Veatch, and its affiliate Black and Veatch Management Consulting LLC, provide strategic, economic and management consulting specializing in energy matters, in areas such as utility cost allocation and ratemaking, economic analysis, strategy development, operational assessment, industry restructuring support, litigation and regulatory support, and technical analysis.

Qualifications:

The lead experts on this project were:

David DesLauriers

Mr. DesLauriers is a highly experienced Director in Black & Veatch’s Rates & Regulatory Services group and specializes in regulated interstate transmission pricing and wholesale electric market policy matters. He delivers a unique blend of regulatory policy acumen and practical rate setting experience to provide highly effective and supportable ratemaking and regulatory solutions to his clients. Mr. DesLauriers has advised numerous midstream energy utilities on rates and regulatory policy for the past 24 years. His areas of expertise include: electric transmission cost of service and rate design, wholesale electric market design policy and operational topics, Federal Energy Regulatory Commission (FERC) policy matters, regulatory due diligence (M&A) and compliance with FERC regulation. His clients include Regional Transmission

Expert Evidence Statement from Black & Veatch Canada Company

Organizations and Independent System Operators, transmission owning energy companies (regulated and non-regulated) and industry stakeholder groups involved in FERC regulatory policy. Mr. DesLauriers led the common cost allocation study conducted for Kinder Morgan Inc. in 2009-2010 timeframe and testified before FERC on common cost allocation (IS09-437).

Russell Feingold

Mr. Feingold leads Black & Veatch's Rates & Regulatory Services group and has over 40 years of experience in the utility industry, the past 37 years of which have been in the field of utility management and economic consulting. Specializing in the utility industry, he has advised and assisted utility management, and industry trade and research organizations in matters pertaining to costing and pricing, competitive market analysis, regulatory planning and policy development, gas supply planning issues, strategic business planning, merger and acquisition analysis, corporate restructuring, new product and service development, load research studies and market planning. He has prepared and presented expert testimony before numerous utility regulatory bodies, including the Ontario Energy Board, and has spoken widely on issues and activities dealing with the costing, pricing, and marketing of utility services. Mr. Feingold has led cost allocation review projects for Hydro One Networks Inc. related to the allocation of common corporate service costs, for Union Gas Limited and Enbridge Gas Distribution related to their regulated and unregulated underground storage operations, and for Union Gas Limited related to its Dawn to Trafalgar gas transmission system, and its corporate shared services functions.

John Taylor

During his 12 year career as a consultant to utilities Mr. Taylor has supported projects involving financial analysis, regulatory support and strategy, market assessment, litigation support, and organizational and operations reviews. Mr. Taylor's work often involves providing support for regulatory proceedings by conducting various studies and analyses related to revenue requirements, affiliate transactions, class cost of service, and cash working capital studies. He also has experience in asset and corporate valuation, the application of real options analysis, and various risk management techniques. Mr.

Expert Evidence Statement from Black & Veatch Canada Company

Taylor has also been involved in the sale of generating assets, supporting due diligence efforts and regulatory approval processes. He has filed testimony as an expert witness on class cost of service studies and on the appropriate use of statistical analysis during audit testing.

Instructions Provided:

The instructions provided to Black & Veatch in preparing the Report were:

- Recommend a best practice methodology to distribute Hydro One Inc.'s Common Corporate costs among the business units that use the functions and services. This recommendation could include the continuation of the existing methodology, the continuation of the existing methodology with modifications or the proposal of a new methodology.
- Prepare a Report of the recommended Common Corporate Costs Methodology to be used in future rate applications. This report will include a conclusion, definitions, a summary of every factor used in the methodology and the proposed methodology.
- Identify the functions and services included in the Common Corporate costs.
- Identify activities that are performed in order to provide the functions and services included in the Common Corporate costs.
- Determine which Common Corporate functions can distribute cost directly, which units can have cost distributed using time studies and which units require allocations using drivers and why.
- Propose and analyze all drivers used for allocation.
- Propose, analyze and perform all time studies required.
- Distribute the annual budgeted costs for years 2017-2021 to perform each function and service among the activities required to perform it, based on time and/or cost studies.
- Distribute the cost of each activity among the business units based on direct assignment when possible, and based on cost drivers when not.
- Prepare responses to Interrogatories from Interveners during a rate application relating to the proposed Cost Allocation methodology.
- Be available to testify to the proposed methodology during a future rate application.
- Prepare final reports for Common Corporate Costs allocation reflecting the current Business Plan and including both the Distribution and Transmission businesses, to be submitted in Cost of Service applications.
- In support of the successful Proponent's work, Hydro One's management will respond to all requests for basic information and/or supporting documentation.

Expert Evidence Statement from Black & Veatch Canada Company

Basis of Evidence:

The basis for the evidence is set forth in the Reports themselves.

Context of Evidence:

This evidence is not provided in response to another expert's evidence. In 2004, Black & Veatch (formerly R.J. Rudden Associates) was engaged by Hydro One to recommend a best practice methodology to distribute the costs of providing Shared Services, between its Transmission and Distribution businesses and other businesses. Black & Veatch recommended the methodology, which was adopted by Hydro One and accepted by the Board in its EB- 2006-0501 Decision with Reasons, dated August 16, 2007. The accepted methodology has been reviewed and updated by Black & Veatch and accepted by the Board as part of subsequent Transmission and Distribution rate filings EB-2007-0681, EB-2008-0272, EB-2009-0096, EB-2010-0002, EB-2012-0031, EB-2013-0416, and EB-2014-0140. To remain consistent with the Board's approved methodology, a similar review and update process has been done as part of this filing.

Confirmation:

The expert has been made aware of and agrees to accept the responsibilities that are or may be imposed on the expert as set out in Rule 13A.

Signature:

Name of Expert: Black & Veatch Canada Company

By David DesLauriers, Director, Black & Veatch Management Consulting LLC

Date: February 27, 2017

A handwritten signature in cursive script that reads "David DesLauriers". The signature is written in black ink and is positioned below the typed name and title.

1 **PURCHASE OF NON-AFFILIATE SERVICES (OUTSOURCING)**

2
3 **1. INTRODUCTION**

4
5 This Exhibit describes how Hydro One purchases goods and services from third parties
6 other than its affiliates. Specifically, it describes arrangements with two of Hydro One's
7 key outsourcing partners.

8
9 **2. THE PROCUREMENT OF GOODS AND SERVICES FROM NON-**
10 **AFFILIATES**

11
12 In compliance with the Supply Chain Policy set out as Attachment 1 to this Exhibit,
13 Hydro One acquires materials and services from non-affiliates through a process that
14 drives value for money, provides transparency to its internal customers, and builds
15 mutually valuable relationships with key suppliers. This process and the resulting
16 agreements with non-affiliates show how Hydro One values performance management
17 and continuous improvement as instruments of productivity that mitigate the impact of
18 rates on its customers.

19
20 The Inventory Policy is incorporated by reference in the Supply Chain Policy and is
21 provided as Attachment 2 to this Exhibit.

22
23 Purchases are made by using one or more of the following processes that are described in
24 Attachment 3 to this Exhibit: request for information, request for proposals, request for
25 quotes, request for pre-qualification, contract harmonization, direct negotiation (single
26 sourcing) and sole sourcing process. Details on Hydro One's supply chain activities and
27 their associated costs are provided in Attachment 3 to Exhibit C1, Tab 3, Schedule 1.

28
Witness: Rob Berardi

1 Purchases are authorized by the appropriate position identified in Hydro One's
2 Expenditure Authority Register (EAR), which is a key element of Hydro One's internal
3 control framework. The EAR delegates authorities from its Board of Directors to senior
4 management and management at the subsidiaries and business units.

5
6 Hydro One relies on two main outsourcing arrangements in the operation of its
7 businesses, one with Inergi LP ("Inergi") and another with Brookfield Asset
8 Management. These arrangements are described in Sections 3 and 4 of this Exhibit.

9 10 **3. INERGI LP**

11 12 **3.1 BACKGROUND**

13
14 On March 1, 2015, Hydro One began a new services arrangement with Inergi ("Inergi
15 Agreement"), a limited partnership wholly-owned by Capgemini Canada, which is held
16 by Capgemini SA. Under the agreement, Inergi provides Hydro One with back-office
17 services and call centre services. The agreement for back-office services expires on
18 December 31, 2019. The agreement for call centre services expires on February 28, 2018.
19 Hydro One has an option to renew the agreement for two additional terms of
20 approximately one year each. Financial and performance guarantees have been provided
21 by Inergi's affiliates.

22 23 **3.2 SCOPE OF WORK**

24
25 The scope of work under the Inergi Agreement is comprised of services ("Base
26 Services") and project services performed over a finite period to produce a project
27 deliverable, solution or result ("Project Services"). Base Services are divided into the
28 following areas (individually, a "Statement of Work" or a "SOW"), each of which relates

Witness: Rob Berardi

1 to a line of business within Hydro One: (1) information technology services; (2)
2 settlements; (3) supply chain services; (4) payroll; (5) finance and accounting services;
3 and (6) customer service operations. Supply chain services, excluding accounts payable,
4 are recovered through the material surcharge, which is discussed in detail in Attachment
5 3 to Exhibit C1, Tab 3, Schedule 1.

6
7 **3.3 FEE STRUCTURE**

8
9 Appendix A to this Exhibit sets out the outsourcing fees spent in the historical period of
10 2014-2016. Table 1 and Table 2 reflect dollars which are embedded in the cost forecasts
11 contained in Exhibit C1, Tab 1, Schedules 5, 7 and 9.

12
13 Under the Inergi Agreement, Inergi provides Base Services based on a declining fee
14 structure. Fees for Base Services will decline over time as long as transaction volumes
15 remain within normal volume ranges, as defined in the Inergi Agreement, while meeting
16 or exceeding prevailing service levels. Additional charges apply if there are higher
17 transaction volumes than the prescribed volumes. Conversely, Hydro One is entitled to
18 fee credits if transaction volumes are lower than prescribed volumes.

19
20 Fees are subject to an Economic Cost Adjustment (“ECA”) using a government published
21 index that reflects movements in a broad-based consumer-focused price index. The
22 current index being used is “CPI - Ontario excluding Energy”. The ECA is also adjusted
23 for inflation sensitivity.

24
25 The Inergi Agreement provides for optional benchmarking reviews of fees by an
26 independent third party. The costs of the benchmarking review are borne equally by
27 Hydro One and Inergi. The third party analyst is selected from a predetermined list
28 included in the Inergi Agreement. Hydro One is not restricted on when benchmarking can

Witness: Rob Berardi

1 take place. Further, benchmarking can be undertaken at a SOW-level, rather than at a
2 global level. The benchmarking exercises will use a group of peers who operate in a
3 unionized, Ontario-only environment. If the benchmarking review determines that Inergi
4 fees are above the benchmark, Inergi must adjust its fees to the benchmark price. To
5 date, Hydro One has not exercised its option to benchmark. Hydro One's current
6 decision to not benchmark is largely attributable to the status of customer service
7 operations and IT SOWs, which financially make up the majority of the contract at
8 approximately 88%. At this time, it is not practical to benchmark customer service
9 operations as this SOW is near end-of-term. Hydro One is currently assessing whether to
10 extend the current agreement or pursue other sourcing options. For IT, as described in
11 Exhibit C1, Tab 1, Schedule 9, Hydro One is monitoring its IT cost performance using a
12 metric it considers to be a good indicator of IT operational effectiveness.

13 14 **3.4 SERVICE QUALITY ASSURANCES**

15
16 The Inergi Agreement sets out a methodology to measure Inergi's performance in terms
17 of timeliness, quality, accuracy and client satisfaction of services, among others. Service
18 measurement ensures that Hydro One receives an acceptable level of service to achieve
19 business outcomes. Service quality is measured using defined service levels or
20 Performance Indicators ("PIs") and client satisfaction surveys. Inergi's services are
21 measured regularly (daily, monthly, quarterly, and yearly) for achievement of PIs. The
22 PIs vary based on the nature of the service in question and set both minimum and targeted
23 service levels. When Inergi fails to meet certain PIs, Hydro One is entitled to: (a) a
24 service credit(s) calculated in accordance with predetermined formulae; (b) remediation
25 action, at Inergi's cost, based on a remediation plan that Hydro One has approved; or (c)

1 both, depending on the level of criticality and frequency of such failures.¹ The PIs are
 2 adjusted upwards annually, where applicable, to drive continuous improvement. In the
 3 contract year ending December 2016, Inergi met or exceeded 92% of total PIs across all
 4 SOWs. More details are available in Table 1 below.

5
 6

Table 1: Inergi 2016 Performance

Statement of Work	Performance Indicators Measured for 2016	Performance MET	Target Performance NOT MET	Minimum Performance NOT MET	% Met
Information Technology Services	573	537	24	12	94%
Finance and Accounting Services	208	195	12	1	94%
Payroll Services	156	129	19	8	83%
Supply Chain Services	350	349	0	1	100%
Settlement Services	140	138	2	0	99%
Customer Service Operations	603	510	38	55	85%
Total	2030	1858	95	77	92%

7
 8

9 Inergi's services are also measured through client satisfaction surveys conducted by
 10 Inergi of Hydro One's relevant business managers and internal users. Inergi must address
 11 dissatisfaction revealed by the surveys. Together, Hydro One and Inergi are to identify
 12 opportunities and strategies for responding to any issues the surveys reveal. The most
 13 recent surveys showed scores of 3.17 out of 5 for Base Services and 4.33 out of 5 for
 14 Project Services and service desk support.

15

¹ Termination of individual statements of work or any part thereof is allowed under defined circumstances without payment of any penalties or termination charges.

Witness: Rob Berardi

1 **3.5 CONTINUOUS IMPROVEMENT AND INNOVATION**

2
3 The Inergi Agreement includes a commitment to continuous improvement, including a
4 process to proactively and continuously introduce global best practices. The contract was
5 negotiated such that the benefits of these improvements are guaranteed to be passed on to
6 Hydro One through the declining fee structure and annual adjustment of PIs. In addition,
7 the Inergi Agreement includes an annual requirement in the information technology
8 services SOW to submit innovation proposals for commercially reasonable projects
9 offering demonstrable savings to Hydro One.
10

11 **3.6 GOVERNANCE**

12
13 The Inergi Agreement sets out a governing structure to manage the outsourcing
14 relationship. It operates to ensure strategic alignment between the parties, oversee
15 relationship, review Inergi's global business strategies, review operational and project
16 performance, change management, continuous improvement, and identify and resolve
17 any risks and issues. A cadence of committee meetings is held at various levels of
18 leadership to achieve the desired governance and business objectives. In addition, the
19 governing structure includes processes that have been tailored to monitor and derive
20 value in areas such as finance, compliance and performance. These processes have been
21 enhanced to provide greater integration with Hydro One's lines of business.
22

23 **4. BROOKFIELD ASSET MANAGEMENT**

24
25 **4.1 BACKGROUND**

26
27 In accordance with terms of a purchased services agreement with the Power Worker's
28 Union, on January 1, 2015, Hydro One began a new services arrangement (the "BGIS

Witness: Rob Berardi

1 Agreement”) with Brookfield Johnson Controls Canada (“BJCC”), a joint venture
2 between Johnson Controls and Brookfield Asset Management. Effective February 19,
3 2015, Brookfield Asset Management subsequently acquired the interest of Johnson
4 Controls in BJCC and re-branded the entity as Brookfield Global Integrated Solutions
5 (“BGIS”). BGIS is a wholly-owned subsidiary of Brookfield Asset Management.

6
7 The BGIS Agreement has a 10-year term, which can be extended at Hydro One’s option
8 for an additional three years. In its procurement process, Hydro One retained an
9 outsourcing advisory firm, Information Services Group, to assist in the design of the
10 overall sourcing strategy and procurement process. Information Services Group also
11 supported the firm selection and final negotiation processes.

12 13 **4.2 SCOPE OF WORK**

14
15 The scope of work under the BGIS Agreement is comprised of ongoing daily facilities
16 management, accommodation activities and related maintenance and repair work at its
17 operations centres, transmission stations facilities, distribution stations, administration
18 facilities and rights-of-way locations. The BGIS Agreement also includes capital project
19 management services related to new facilities as defined by Hydro One.

20 21 **4.3 FEES**

22
23 BGIS receives an annual management and administrative fee which includes overhead
24 and profit. This fee is adjusted annually for inflation in accordance with the consumer
25 price index and, as necessary, in the event of material changes in the scope of the
26 work. Cost savings incentives for BGIS are built into the fee structure.

27
Witness: Rob Berardi

1 Work and services that are self-performed by BGIS, and supplies and services
2 provided by third parties through BGIS, are billed to Hydro One at full cost, as a pass
3 through expense with no mark up.

4
5 Fees are subject to an economic cost adjustment using a government-published index that
6 reflects movements in a broad-based consumer-focused price index.

7
8 Hydro One may request third-party benchmarking after three years and every two years
9 thereafter, with a "benchmark fee adjustment", if the aggregate fees are above five
10 percent of the target results.

11 12 **4.4 SERVICE QUALITY ASSURANCES**

13
14 The BGIS Agreement provides for Critical Service Levels (CSLs), Key Performance
15 Indicators (KPIs) and critical deliverables. BGIS's services are measured and reviewed
16 regularly (monthly, quarterly and annually) to validate achievement of KPIs.

17
18 The CSLs and KPIs are based on the nature of the services provided by BGIS and
19 establish expected and minimally accepted service levels. If BGIS fails to meet specific
20 criteria, there are adverse financial consequences for BGIS.

21
22 BGIS performs client satisfaction surveys of Hydro One's relevant internal user. Results
23 are measured with expected thresholds and reviewed regularly with Hydro One. Table 2
24 below summarizes CSL and KPI performance of BGIS for 2016.

1

Table 2: BGIS 2016 Performance

Key Measures: KPIs and CSLs	Number of Key Measures Jan to Dec 2016	Performance Met	Partially Met	Not Met
Finance	4	4		
H&SE	7	7		
Work Program Accomplishment	7	6	1	
Customer Satisfaction	4	2		2

2

3

4

4.5 CONTINUOUS IMPROVEMENT AND GOVERNANCE

5

6

The BGIS Agreement includes shared savings incentives which are directly attributable to process or service improvements made by BGIS.

8

9

As one of the world's leading commercial property owners, BGIS is able to leverage its capabilities and global reach of their broader organization to offer innovation and create value for clients.

12

13

The BGIS Agreement sets out a governing structure to manage the relationship between Hydro One and BGIS. The structure includes an executive steering committee, contract oversight committee and the line of business facility management committee. These committees meet regularly, at different intervals, to ensure strategic alignment between BGIS and Hydro One, oversee the relationship, review operational and project performance, change management, continuous improvement, and address any risks and issues. The processes have also been enhanced to provide greater integration with Hydro One's lines of business.

20

Witness: Rob Berardi

APPENDIX A: PURCHASE OF NON-AFFILIATE SERVICES (OUTSOURCING)

INERGI FEES

Table 1 - Summary of Fees

Description	Historic					Bridge		Test				
	2014 IRM Actual	2015 Actual Approved		2016 Actual Approved		2017 Forecast Approved		2018 Forecast	2019 Forecast	2020 Forecast	2021 Forecast	2022 Forecast
Fees for Base Services	\$119,869,783	\$127,436,383	\$116,549,822	\$125,968,009	\$112,862,722	\$129,937,874	\$109,166,622	\$123,762,724	\$113,887,003	\$114,141,567	\$114,141,567	\$114,141,567
Volume, Scope & Other	\$14,018,401	\$19,897,518	\$5,117,000	\$4,274,422	\$4,456,850	(\$843,292)	\$4,520,700	(\$4,402,472)	(\$6,259,553)	(\$6,876,783)	(\$9,282,077)	(\$9,250,736)
ECA	\$9,550,484	\$1,828,520	\$12,343,633	\$2,370,948	\$14,348,473	\$4,569,335	\$17,022,186	\$6,516,119	\$7,968,960	\$9,919,070	\$12,655,448	\$14,735,301
Subtotal Fees for Base Services	\$143,438,668	\$149,162,421	\$134,010,455	\$132,613,379	\$131,668,045	\$133,663,917	\$130,709,508	\$125,876,371	\$115,596,410	\$117,183,854	\$117,514,938	\$119,626,132
Project Spend (all LOB's)	\$84,464,566	\$57,600,986	\$30,150,000	\$41,424,987	\$30,150,000	\$26,304,000	\$30,150,000	\$22,834,000	\$22,834,000	\$21,134,000	\$19,134,000	\$19,934,000
Total Payments	\$227,903,234	\$206,763,407	\$164,160,455	\$174,038,366	\$161,818,045	\$159,967,917	\$160,859,508	\$148,710,371	\$138,430,410	\$138,317,854	\$136,648,938	\$139,560,132

Table 2 - Allocation of Fees to Distribution

	2018	2019	2020	2021	2022
Finance and Accounting	\$ 2,393,852	\$ 2,446,429	\$ 2,601,840	\$ 2,647,616	\$ 2,688,235
Payroll	\$ 1,845,017	\$ 1,897,355	\$ 2,014,227	\$ 1,998,772	\$ 2,030,597
Information Technology Services	\$ 30,434,013	\$ 29,802,239	\$ 29,849,969	\$ 29,897,701	\$ 29,897,700
Accounts Payable	\$ 462,872	\$ 473,710	\$ 476,190	\$ 476,190	\$ 476,190
Settlements	\$ 4,040,026	\$ 4,149,644	\$ 4,550,412	\$ 4,624,935	\$ 4,624,935
Customer Service Operations	\$ 39,839,905	\$ 40,337,388	\$ 40,676,313	\$ 41,306,833	\$ 41,306,833
Subtotal Fees for Base Services	\$ 79,015,685	\$ 79,106,765	\$ 80,168,951	\$ 80,952,047	\$ 81,024,490
Project Spend (all LOB's)	\$ 15,706,000	\$ 15,546,000	\$ 15,606,000	\$ 14,146,000	\$ 14,946,000
Total Payments	\$ 94,721,685	\$ 94,652,765	\$ 95,774,951	\$ 95,098,047	\$ 95,970,490

APPENDIX B: PURCHASE OF NON-AFFILIATE SERVICES (OUTSOURCING)

BGIS FEES

Table 1 – BGIS Fees (\$ Millions)

Description	Historic					Bridge		Test				
	2014 IRM	2015		2016		2017		2018	2019	2020	2021	2022
	Actual	Actual	Approved	Actual**	Approved	Forecast	Approved	Forecast	Forecast	Forecast	Forecast	Forecast
Management Fee and Admin	N/A	3.9	N/A	3.6	N/A	3.6	N/A	3.6	3.6	3.6	3.6	3.6
Reimbursable charges	N/A	20.7	N/A	25.6	N/A	25.2	N/A	24.7	24.3	23.9	23.5	23.1
Total	N/A	24.6	N/A	29.3	N/A	28.8	N/A	28.4	27.9	27.5	27.1	26.7

Table 2 - Allocation to Distribution (\$ Millions)

	2018	2019	2020	2021	2022
Management Fee and Admin	1.2	1.2	1.2	1.2	1.2
Reimbursable Charges:	8.4	8.3	8.1	8.0	7.9
Total Cost	9.6	9.5	9.4	9.2	9.1

Witness: Rob Berardi

SP 1231 R2

Supply Chain Policy

Purpose and Scope

The primary purpose of the Supply Chain Policy is to communicate and reinforce desired values and expectations of the supply chain activities of Hydro One Limited, its subsidiaries and the affiliates it controls (referred to in this document as 'Hydro One' or the 'Corporation').

This policy applies to Hydro One and its outsourcing partner.

Revision Statement

Guiding principles have been updated to reflect a more commercial mindset regarding linkage of procurement to outcomes. Reference to the Requisitioner's and the Purchasing Procedures have been replaced with the Requisitioner's and Buyer's Guide respectively. References to the Consultants and Professional Services Policy ([SP0707](#)) have been removed.

Principles

Supply Chain will:

- Acquire materials and services through a process that drives value for money, transparency to its internal customers, and builds mutually valuable relationships with key suppliers.
- Ensure the right materials and services are delivered to the right place at the right time in a cost effective manner.
- Source materials and services with consideration to health, safety and the environment and corporate social responsibility.
- Promote business and workforce development for Aboriginal Businesses.
- Achieve operational excellence through continuous improvement in collaboration with Supply Chain's Customers and Suppliers.
- Manage its outsourcing partner to align with these principles.

1.0 Requirements

The key requirements of each Supply Chain function are as follows:

Strategy and Oversight:

- Provide a strategic, cost effective, data driven and analytical planning approach to Supply Chain processes.
- Direct continuous improvement initiatives to achieve operational excellence and cost effectiveness.
- Ensure an effective governance process is in place to manage change.

Sourcing:

- Develop and execute a strategic procurement plan to identify materials and services needed to meet business requirements at the best value for money.
- Employ a mix of procurement processes, including sole source, direct negotiation, and bidding processes that provide the best business outcome.

SP 1231 R2

- Identify and attract qualified suppliers that provide quality products and services.
- Provide opportunity for increased Aboriginal Business participation in the provision of products and services.

Purchasing:

- Process Purchase Requisitions on a timely basis to ensure that customer's needs are met.
- Promote improved requisitioning through effectively documented processes and education.

Inventory Management:

- Align to the Inventory Policy ([SP0732](#)).
- Manage inventory at optimal levels and locations to satisfy operations.
- Monitor and control the accuracy of inventory data.
- Re-deploy, return or dispose of material to maximize cost savings considering environmental impact.

Logistics:

- Determine the most efficient and economical method to store and distribute materials from Suppliers to Customers.
- Facilitate the movement of returnable containers to Suppliers.

Accounts Payable:

- Remit authorized and timely payments to suppliers in accordance with the terms and conditions of the respective contracts.
- Capture payments accurately and completely in Hydro One systems, and ensure accurate account distributions.

Customer Service:

- Provide centralized support to customers and suppliers so interactions with Supply Chain are seamless.
- #### Data Management
- Utilize business applications, information management methods, and data management tools to implement procedures and an infrastructure to support the integration and shared use of accurate, timely, consistent and complete Supply Chain Master Data.

2.0 Definitions

None

3.0 References

[Expenditure Authority Register](#)

[SP0829](#) - Code of Business Conduct

[SP0849](#) - Corporate Disclosure Policy

[SP0732](#) – Inventory Policy

[SP0733](#) - Inventory Procedure

[SP1374](#) - Aboriginal Procurement Procedure

[SP0327](#) - Health, Safety and Environmental Policies

[SP0826](#) - Sourcing Procedure

[SP1254](#) - Buyer's Guide (formerly Purchasing Procedure)

[SP1233](#) - Requisitioner's Guide (formerly Requisitioner's Procedure)

4.0 Document Management

Owner/Functional Responsibility	Director, Supply Chain
Approver	Vice President, Shared Services
Approval Date	July 28, 2016
Effective Date	July 29, 2016
Last Reviewed Date	July 22, 2016
Next Review Date	July 22, 2018

5.0 Appendices

None

Inventory Policy

Purpose and Scope

The Inventory Policy provides the framework for inventory management, valuation, verification and accounting in order to preserve the integrity of our financial statements.

This policy applies to Hydro One Limited and its affiliates (collectively "Hydro One") that are involved in the valuation, verification, management and accounting for inventory. Inventory as referred to in this policy includes both Hydro One owned assets classified as "materials and supplies" and "future use fixed assets" on the corporate balance sheet. It also includes consumable inventory; strategic parts/component inventory and other inventory (i.e. Telecom).

This policy does not apply to: free issues (items that are expensed immediately); operating spares that are classified as in-service major fixed assets; minor fixed assets; or Hydro One Remote Communities' fuel inventories.

Revision Statement

This document was revised to provide clarity, consistency and simplicity, and to align to the new template as part of the Corporate Policy Project.

Principles

- Hydro One inventory is managed, verified and valued in a manner consistent with sound business practices and accounting principles. To ensure the completeness, existence and the appropriate valuation of inventory, inventories are physically verified on a periodic basis. Accounting for inventories is consistent as appropriate to the context of a rate regulated industry.
- All inventories, including future use fixed assets, will be properly controlled and costed to ensure the accuracy of records for materials, work in progress, finished or partly finished new or used goods.
- All inventories will be managed, verified and valued for accuracy with the COSO assertions of ownership, valuation, existence and completeness.

1.0 Corporate Requirements

- a. Physical inventory counts will be conducted on a periodic basis to verify the physical existence and completeness of Hydro One inventory.
- b. Inventory classified as "materials and supplies" is to be valued at the lower of average cost and net realizable value (NRV). New items are recorded in the inventory system at cost automatically as a result of transaction steps in the supply process. There are times when due to a timing issue, the average cost is deemed incorrect and a correction has to be made through the inventory sub-ledger.
- c. Inventory that has a NRV that is less than carrying value will be written down to the net realizable amount. If the NRV subsequently recovers, the write-down should be reversed. Corporate Finance advice should be sought before writing assets down for declines in NRV and for any subsequent reversals.
- d. All inventories must be managed in accordance with good business practices balancing the need to maintain an adequate supply of materials with appropriate cost considerations.
- e. All inventories must be stored in a secure location where access is limited to personnel authorized by Hydro One.

Specific Circumstances

- a. Hydro One will re-deploy or dispose of surplus material in a manner to maximize the return with emphasis on reuse and environmental protection consistent with the principles of the Hydro One Health, Safety and Environmental Management System.
- b. Investment Recovery (IR) is the authority to sell items that have been declared surplus in accordance with Retirement/Surplus Reporting Procedures. (Refer to [SP0855](#) Procedure for Disposal of Surplus Materials).
- c. When exercising Local Sale of Surplus and disposing goods locally, responsibility for adhering to [SP0855](#) Procedure for Disposal of Surplus Materials rests with the line of business (LOB).

2.0 Definitions

Term	Definition
Average Cost	For inventory items that are not interchangeable, specific costs are attributed to the specific individual items of inventory. For items that are interchangeable, Hydro One has adopted weighted average cost method to determine average cost of inventory.
Consumable Inventories	Inventories used primarily in the distribution or transmission business. These goods are kept in stock to support customer requirements. Items include: transformers, wire and cable, connectors, poles/line hardware, circuit breaker parts, insulators, surge arresters, fasteners, switches, supplies (i.e. safety, metering, construction, cleaning) and equipment (i.e. lighting, survey, hoisting).
Net Realizable Value (NRV)	Based on the regulatory principle of cost recovery, net realizable value is generally equal to carrying value for inventory used in Hydro One's regulated businesses. For inventory items available for sale, net realizable value is defined as the estimated selling price in the ordinary course of business less the estimated costs necessary to complete the sale.
Periodic basis	The frequency of inventory counts and the coverage of the each count will vary depending on the type of inventory and the risk of misstatement. An assessment should

	occur at least once per fiscal period.
Strategic Parts Inventories	Inventories used primarily in the transmission or distribution business. These goods are kept in stock to support the sustainment of major fixed assets. The parts are deemed to be critical to the functionality of Hydro One transmission and/or distribution assets. Items include: high voltage instrument transformers (HVITs), switches, insulators, bushings, tap changers, towers, relays, suspension clamps and dampers, and transmission towers for storm recovery. The asset must be maintained in a ready to deploy state.

3.0 References

1. [SP0733](#) Inventory Procedure
2. [SP0855](#) Procedure for Disposal of Surplus Materials

4.0 Document Management

Owner/Functional Responsibility	Director, Corporate Accounting & Reporting
Approver	VP, Corporate Controller
Approval Date	July 2016
Effective Date	July 2016
Last Reviewed Date	July 2016
Next Review Date	June 2018

5.0 Appendices

None

1 **ATTACHMENT 3: DESCRIPTION OF PROCUREMENT PROCESSES**

2
3 Hydro One's sourcing procedure provides a framework for sourcing activities to drive
4 increased productivity, buying power, value added services, innovation, and valued
5 relationships. This will be achieved by:

6
7 **A. Financial Stewardship**

- 8 • Utilizing a value-for-money approach to source materials and services.
9 • Ensuring that the sourcing plan is in line with the overall supply chain strategy and
10 corporate goals.
11 • Following negotiation strategies to obtain lowest possible price from qualified
12 suppliers while not jeopardizing quality, and drive maximum value to Hydro One.
13 • Ensuring savings, rebates and volume discounts are captured.

14
15 **B. Supplier Relationships**

- 16 • Ensuring that materials and services are acquired from qualified suppliers and
17 establishing consistent expectations for working with suppliers that enhance
18 relationships and the value-for-money proposition.

19
20 **C. Health, Safety & Environmental and Corporate Social Responsibility**

- 21 • Considering responsible ways for sourcing from businesses that conduct operations in
22 a socially responsible manner in accordance with good environmental, health, safety
23 and corporate social responsibility practices.

24
25 **D. Aboriginal Procurement**

- 26 • Developing and maintaining relationships with First Nations and Métis peoples that
27 demonstrate mutual respect for one another.

Witness: Rob Berardi

- 1 • Encouraging the development and viability of qualified First Nations and Métis
2 businesses, identifying contracting opportunities, conducting workshops, and
3 promoting business networking within First Nations and Métis communities.

4
5 Supply Chain creates a sourcing plan that segments materials and services by spend, use,
6 market factors and suppliers. A category strategy is developed and executed for each
7 segment of spend which considers factors including:

- 8
9 • Identification and engagement of relevant internal stakeholders;
10 • Defining business requirements;
11 • Developing spend baseline;
12 • Analysis of current supply market conditions and trends;
13 • Analysis of current suppliers' prices, offerings and performance;
14 • Considerations of category specific circumstances, active contracts, user requirements
15 and specifications, stakeholder analysis, commercial considerations, collaborative
16 planning input, supplier relationship level, key leverage points, bid list, disputes
17 with suppliers, business risks, benefits estimates, qualification requirements,
18 consideration of total value, and market research;
19 • Selection of an appropriate sourcing method, including open competition,
20 competition directed to a subset of suppliers, or direct negotiation; and
21 • Encourage opportunities for Aboriginal inclusion in the category strategy.

22
23 The following are detailed sourcing methods which may be employed:

24
25 **1. RFI – Requests for Information**

26 RFI is a process that uses a market research tool sent to a broad base of potential
27 suppliers for a number of purposes, including gathering information, building a supplier
28 database to determine availability of products and services, scoping business
29 requirements, and/or estimating project costs. Responses to RFI questions normally

Witness: Rob Berardi

1 contribute to the content of the eventual RFP, RFPQ, or RFQ document being created,
2 but must not be used to pre-qualify a potential supplier and impact the respondent's
3 chances of being the successful proponent on any subsequent opportunities. An RFI is
4 not a substitute for a competitive process and cannot result in the award of a contract to a
5 supplier who has responded.

6 7 **2. RFP - Requests for Proposal**

8 An RFP is a process that uses a document prepared to solicit proposals for the supply of
9 materials or services for which bidders must develop and propose a business application
10 or solution. This competitive bid process is used when one or more of the following
11 criteria are met:

- 12
- 13 • There is a requirement for custom made/specialized materials or services for which
14 bidders must develop and propose a business application or solution;
 - 15 • There is a need for engineered equipment and/or construction services, and more than
16 one option exists to address the requirement;
 - 17 • There are off-the-shelf materials where value added services are required in addition
18 to the materials;
 - 19 • An alternative solution is sought; and/or
 - 20 • Consulting and professional services.
- 21

22 An RFP may result in a Vendor of Record (VOR) list with pre-established rate cards.
23 These arrangements require a second-stage competitive process, or an award strategy
24 identifying the methodology for determining the award of work.

25 26 **3. RFPQ – Request for Pre-Qualification**

27 An RFPQ is a competitive bid process used to solicit supplier capabilities and
28 qualifications, with the intention of establishing a list of pre-qualified suppliers, usually
29 based on financial and/or other technical criteria.

Witness: Rob Berardi

1

2 It is used when the following criteria are met:

3

- 4 • There are opportunities to reduce costs for certain categories of materials and services
5 by establishing strategic relationships with a small group of suppliers; and
6 • There are generally understood technical criteria to pre-qualify the suppliers but
7 specific scopes of work are defined as required.

8

9 These arrangements require a second-stage competitive process (mini-RFP or RFQ using
10 the same commercial terms as the contract established from the original RFPQ process)
11 directed to the pre-qualified suppliers, or an award strategy identifying the methodology
12 for determining the award of work.

13

14 **4. RFQ - Requests for Quotation**

15 This competitive bid process is used where a description of exactly what needs to be
16 procured is provided and the evaluation of bidders is made predominantly on price and
17 delivery requirements.

18

19 **5. Direct Negotiation (Single Sourcing)**

20 Examples of circumstances when negotiation with a single supplier may be most
21 appropriate include:

22

- 23 • Building key strategic supplier relationships where it is believed that a
24 competitive process may not lead to the best solution or drive the most value for
25 Hydro One;
26 • A purchase that is of a confidential or privileged nature;
27 • An unforeseen situation of urgency exists created by circumstances or actions of
28 persons external to Hydro One;

- 1 • There is only one supplier who can perform the work without causing Hydro One
2 to suffer an unacceptable delay or incur unreasonable costs due to another
3 supplier's learning curve; or
4 • Invitational procurement opportunities to a single qualified Aboriginal business or
5 community in accordance with the Aboriginal Procurement Procedure.

6

7 **6. Sole Sourcing**

8 The following are examples of circumstances when sole sourcing may be appropriate:

9

- 10 • There is only one supplier capable of meeting the requirements;
- 11 • To ensure compatibility with existing products, to recognize exclusive rights, such
12 as exclusive licences, copyright and patent rights, or to maintain specialized
13 products that must be maintained by the manufacturer or its representatives;
- 14 • Where there is an absence of competition for technical reasons and the materials
15 or services can only be supplied by a particular supplier and no alternative or
16 substitute exists, e.g. original equipment manufacturer , or where the warranty is
17 tied to a particular material and it would be negated by the use of a different
18 supplier's part;
- 19 • The supplier has a statutory monopoly;
- 20 • Work is to be performed on or about a leased building or portions, thereof, may
21 be performed only by the lessor; or
- 22 • For the procurement of a prototype, or a first good or service, to be developed in
23 the course of, and for, a particular contract for research, experiment, study, or
24 original development, but not for any subsequent purchases.

REGULATORY COSTS

For this Application, Hydro One's regulatory costs will be recovered in the year in which they are incurred. The regulatory costs are not amortized and are included in the forecasted budget in the approved business plan in the years in which they are incurred.

A large portion of regulatory costs includes ongoing OEB cost assessments. These are quarterly expenses which are assumed in the forecasted budget. In 2016, the OEB changed the cost assessment model in which Hydro One's portion was reduced compared to the previous model. The OEB assessments and total costs for Regulatory Affairs can be found in Exhibit C1, Tab 1, Schedule 7.

The following table provides an estimate of the costs related to this Application.

Table 1: Estimated Costs for Current Application (\$ Millions)

Description	Historical Year(s)	2017 Bridge Year	2018 Test Year
Consultant/Expert Witness Costs	1.5	0.4	-
Legal Costs	-	1.6	-
Intervenor and Stakeholder Costs	0.4	0.7	-
Total	1.9	2.7	-

For this Application, Hydro One engaged consultants/expert witnesses to complete a number of benchmarking studies and reports, most of which were directed in the OEB's previous Decision in EB-2013-0416. Reports that were completed include:

- A total factor productivity study of Hydro One's own productivity, including data from 2002 and onwards;

Witness: Oded Hubert

- 1 • A total cost benchmarking study comparing Hydro One Distribution to an
- 2 industry peer group;
- 3 • A comprehensive trend analysis of the vegetation management program showing
- 4 year-over-year comparisons in unit costs;
- 5 • A best practices study for vegetation management similar to the CN Utility study
- 6 filed in EB-2009-0096;
- 7 • An external benchmarking study on the unit cost of the pole replacement
- 8 program;
- 9 • An internal trend analysis to show the variability of the unit costs of the pole
- 10 replacement program year-over-year;
- 11 • An external benchmarking study on the unit cost of the station refurbishment
- 12 program;
- 13 • An internal trend analysis to show the variability of the unit costs of the station
- 14 refurbishment program year-over-year;
- 15 • A compensation study similar to the study filed as part of the application
- 16 considered in EB-2013-0416 to allow benchmarking to comparable companies;
- 17 • A study assessing whether miscellaneous service charges reflect Hydro One's
- 18 underlying costs;
- 19 • A review and report on Hydro One's Distribution System Plan;
- 20 • A depreciation study;
- 21 • A lead-lag study; and
- 22 • A common cost allocation study.

23

24 The estimated consultant/expert witness costs include the cost of the various studies and
25 reports, as well as the cost for the expert who wrote each study to testify in the Hydro
26 One proceeding.

Witness: Oded Hubert

1 Legal costs for this Application will include time spent for preparation of evidence, a
2 technical conference, the oral hearings and arguments.

3

4 Intervenor and stakeholder costs for this Application include the stakeholder sessions
5 held in preparing the Application and in preparing for and participating in the oral
6 hearing.

1 **DEPRECIATION, AMORTIZATION AND DEPLETION**

2
3 **1. INTRODUCTION**

4
5 The purpose of this evidence is to summarize the method and amount of Hydro One
6 Distribution’s depreciation and amortization expense for the 2018 to 2022 test years.

7
8 In RP-2005-0020/EB-2005-0378 Hydro One’s depreciation rates were approved based on
9 an independent depreciation study completed by Foster Associates Inc. (“Foster
10 Associates”) dated June 2005. Costs flowing from the depreciation study were accepted
11 for the purpose of establishing Hydro One Distribution’s rates revenue requirement in
12 2006. In 2013, Foster Associates conducted an additional depreciation study which
13 recommended continuation of the historical depreciation rates for purposes of the rates
14 revenue requirements for the years 2015 to 2017. The Board accepted this approach in its
15 EB-2013-0417 decision.

16
17 In 2016, Hydro One requested Foster Associates prepare a new depreciation study
18 covering Hydro One Networks’ distribution and common assets for the 2018 – 2022 test
19 years. The Foster Associates’ study is Attachment 1 to this Exhibit.

20
21 Using Hydro One’s historically approved depreciation rates, total depreciation and
22 amortization expense for the 2018 test year is \$394.4 million as provided in Table 1
23 below. If the depreciation rates found in the 2016 Foster Associates study were adopted,
24 the depreciation and amortization expense for the test year 2018 would increase by \$27.3
25 million to \$421.7 million. This increase would result in a rate impact of approximately
26 2%.

Witness: Samir Chhelavda

1 This Application reflects the continued use of the 2013 depreciation study to calculate
2 depreciation costs in the test years.

3

4 The Foster Associates study is based on the expected remaining life of an existing pool of
5 assets at a point in time. Future capital spending will result in additions to existing pools
6 of assets. These additions are reasonably expected to change the average expected
7 remaining life of some or all of these pools of assets, and the applicable depreciation
8 rates. These changes can result in volatility in depreciation expense.

9

10 The 2016 Foster Associates study would create, if implemented, increased depreciation
11 rates and expense over the 2018 to 2022 rate setting period. Planned capital expenditures
12 over the five year term of the Application however may result in an increase in the
13 average remaining life of these asset pools, requiring a future decrease in depreciation
14 rates and expense.

15

16 Hydro One has decided to maintain its existing depreciation rates instead of adopting the
17 rates proposed in the 2016 Foster Associate study to avoid these potential fluctuations in
18 depreciation rates and the expenses recovered through rates. Hydro One's decision is
19 supported by Foster Associates as indicated in the Letter of Transmittal attached to the
20 study. Additionally, Hydro One has discussed this approach with its external auditor who
21 also accepts this position.

1 **Table 1: Total Distribution Depreciation and Amortization Expense (\$ Million)**

Description	Historic			Forecast	Bridge	Test				
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Depreciation Expenses	313.0	336.2	349.0	364.6	365.7	381.2	402.5	414.4	434.1	452.2
Total Amortization Expenses	8.5	11.1	10.5	15.3	17.8	17.3	16.2	18.8	18.6	17.4
Exclude Other Regulatory Amortization	0.0	0.0	0.0	3.2	3.8	4.1	4.3	4.6	4.7	4.9
Total	321.5	347.3	359.5	376.6	379.8	394.4	414.4	428.7	448.1	464.7

2

3 **2. DEPRECIATION EXPENSE**

4

5 Based on the existing depreciation, the depreciation expense amounts for each of the five
6 test years can be found in the detailed depreciation schedules filed at Exhibit C1, Tab 6,
7 Schedule 2.

8

Table 2: Distribution Depreciation Expense (\$ Million)

Description	Historic			Forecast	Bridge	Test				
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Depreciation On Fixed Assets	277.7	301.0	308.0	325.2	328.1	341.8	353.1	365.2	385.7	403.0
Less Capitalized Depreciation	(15.9)	(17.5)	(17.0)	(17.9)	(18.3)	(19.3)	(20.1)	(20.8)	(20.8)	(20.8)
Asset Removal Costs	51.0	52.6	59.0	57.2	55.9	58.7	69.5	70.1	69.2	70.1
Losses/(Gains) On Asset Disposition	0.1	0.0	(1.0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	313.0	336.2	349.0	364.6	365.7	381.2	402.5	414.4	434.1	452.2

Witness: Samir Chhelavda

1 Depreciation rates on Common Assets are updated to Hydro One's financial systems to
2 reflect most recent rate studies, once OEB approval is received. Given that 2018 is a
3 common test year for Distribution and Transmission rate applications, the above table
4 will be updated upon approval of EB-2016-0160 to include depreciation and amortization
5 rates on Common Assets approved as part of that rate decision. If Hydro One's
6 Transmission rates revenue requirement is approved, depreciation expense on Common
7 Assets will increase by approximately \$5.0 million.

8
9 Capitalized depreciation refers to depreciation on transport and work equipment and
10 other minor fixed assets (e.g., tools) that is charged to capital work projects. For
11 purposes of calculating the revenue requirement, capitalized depreciation is treated as a
12 capital expenditure and is deducted from annual depreciation expense.

13
14 Fixed asset removal costs are presented as part of depreciation expense for financial
15 reporting purposes and are recorded on an "as incurred" basis unless an asset retirement
16 obligation has been recorded.

17
18 Losses/gains on asset disposition may result from the sale of assets. Losses/gains on asset
19 disposition are based on historic actual experience and trends and are not separately
20 forecast for the bridge or test years.

21
22 **3. AMORTIZATION EXPENSE**

23
24 Amortization expense pertains to certain regulatory amounts the Board has allowed
25 Hydro One Distribution to defer for recovery at a future date. The Board has, in past
26 decisions, approved the deferred balance and prescribed the method and time period over
27 which the balance in each regulatory deferral or variance account may be disposed.

1 Historical, bridge and test year amortization schedules are filed at Exhibit C1, Tab 6,
 2 Schedule 2.

3

4

Table 3: Distribution Amortization Expense (\$ Millions)

Description	Historic			Forecast	Bridge	Test				
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Environmental	8.5	11.1	10.5	15.3	17.8	17.3	16.2	18.8	18.6	17.4
Other Amortization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	8.5	11.1	10.5	15.3	17.8	17.3	16.2	18.8	18.6	17.4

5

6 **3.1 ENVIRONMENTAL**

7

8 Hydro One Distribution records an obligation for the net present value of estimated future
 9 expenditures required to remediate legacy environmental contamination inherited from
 10 Ontario Hydro upon its demerger in 1999. Since these expenditures are expected to be
 11 recovered in future rates, Hydro One Distribution also records these amounts as a
 12 regulatory asset for financial reporting purposes. This regulatory asset is amortized on a
 13 basis consistent with the pattern of actual expenditures incurred. The combined work
 14 program to manage polychlorinated biphenyls (PCBs) and to carry out Hydro One's Land
 15 Assessment and Remediation (LAR) program are currently estimated to continue until
 16 the year 2025. When OM&A work program costs are incurred, there is a corresponding
 17 credit to OM&A for the environmental expenditures to reflect the fact that the cost is
 18 reflected in revenue requirement as amortization expense and not as OM&A. The work
 19 programs are discussed further in Exhibit C1, Tab 1, Schedule 2.

Witness: Samir Chhelavda

2016 Depreciation Rate Review



- *Distribution Operations*
- *Common Operations*



Ronald E. White, Ph.D.
President

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December 15, 2016

Mr. Arthur McGlashan
Manager, Corporate Accounting
HYDRO ONE NETWORKS INC.
483 Bay Street, T48
Toronto, Ontario MSG 2P5

RE: 2016 Depreciation Rate Review

Dear Mr. McGlashan:

Foster Associates is pleased to submit our report of the 2016 Depreciation Rate Review for Hydro One Networks Inc. (Hydro One Networks). The attached report presents the results of our review leading to a recommendation to adopt straight-line, vintage-group, remaining-life rates and record depreciation expense for BU 220 (Distribution) and BU 300 Common) facilities.

The following table provides a comparison of current and recommended depreciation rates and annualized accruals for calendar year 2016, based upon plant investments and depreciation reserves at December 31, 2015.

Function	Accrual Rates			2016 Annualized Accrual		
	Current	Recommended	Difference	Current	Recommended	Difference
A	B	C	D=C-B	E	F	G=F-E
<u>BU 220</u>						
<i>Intangible</i>	9.16%	9.16%	0.00%	\$ 18,914,882	\$ 18,914,882	\$ -
<i>Generation</i>	-11.69%	-6.60%	5.09%	(82,565)	(46,603)	35,962
<i>Distribution</i>	2.27%	2.31%	0.04%	203,124,592	206,335,725	3,211,133
<i>General</i>	6.04%	6.22%	0.18%	23,209,879	23,894,092	684,213
<i>Total BU 220</i>	2.57%	2.61%	0.04%	\$ 245,166,788	\$ 249,098,096	\$ 3,931,308
<u>BU 300</u>						
<i>Intangible</i>	9.47%	9.47%	0.00%	\$ 38,214,409	\$ 38,214,409	\$ -
<i>General</i>	5.56%	9.29%	3.73%	24,021,413	40,131,254	16,109,841
<i>Total BU 300</i>	7.45%	9.38%	1.93%	\$ 62,235,822	\$ 78,345,663	\$ 16,109,841
Total				\$ 307,402,610	\$ 327,443,759	\$ 20,041,149

A continued application of currently approved rates for BU 220 would provide annual depreciation expense of \$245,166,788 compared with an annual expense of \$249,098,096 using the rates recommended in the study. The resulting change in depreciation rates produces an annualized 2016 expense increase of \$3,931,308. Current rates for BU 300 would provide annual depreciation expense of \$62,235,822 compared with a recommended annual expense of \$78,345,663, or an increase of \$16,109,841.

It is the opinion of Foster Associates, however, that Hydro One Networks could elect to adjust any or all of the recommended accrual rates without violating the dual objective of depreciation accounting, *i.e.*, cost allocation over economic life in proportion to the consumption of service potential. The service potential of an asset (or group of assets) is the present value of future net revenue (*i.e.*, revenue less expenses exclusive of depreciation and other non-cash expenses) or

Mr. Arthur McGlashan
Page Two
December 15, 2016

cash inflows attributable to the use of that asset alone. Depreciation *expense* is the difference between the present value of future net revenue at the beginning and end of an accounting interval.

The dual accounting objective is implicitly achieved under regulation as a consequence of the ratemaking process in which the amount of revenue a utility is authorized to collect is determined from a revenue requirement equation that includes depreciation expense as one of the elements of recoverable cost. Assuming revenue sufficient to cover cash operating expenses and a fair rate of return, the change in the present value of future net revenue will be equal to the depreciation expense allowed by regulation. It is because of regulation that the dual accounting objective will be achieved regardless of the timing of depreciation expense.

The scope of our investigation included:

- Collection of plant and reserve data;
- Reconciliation of assembled database to Company records;
- Discussions with Hydro One Networks plant accounting personnel;
- Estimation of projection lives and retirement dispersion patterns;
- Analysis and redistribution of recorded depreciation reserves; and
- Development of recommended accrual rates for each rate category.

The results of our investigation are presented in the attached report in four sections. The Executive Summary provides an overview of the review and a discussion of the principal findings. The Study Procedure section describes the steps undertaken in conducting a depreciation review and the specific procedures used in this engagement. The Statements section provides a comparative summary of current and recommended depreciation parameters, rates and accruals. The report concludes with an Analysis section that includes an example of supporting schedules prepared in conducting the review.

We wish to express our appreciation for this opportunity to be of service to Hydro One Networks and for the assistance provided to us. We would be pleased to discuss our report and review with you or others at your convenience.

Respectfully submitted,
FOSTER ASSOCIATES CONSULTANTS, LLC
by



Ronald E. White, Ph.D.
President

REW:ml

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Executive Summary

EXECUTIVE SUMMARY

INTRODUCTION

This report presents a review and update of depreciation rates and parameters for Distribution and Common plant owned and operated by Hydro One Networks Inc. (Company or Hydro One Networks). Work on this review, conducted by Foster Associates Consultants, LLC (Foster Associates), commenced in July 2016 and progressed through mid-December, at which time the project was completed.

Foster Associates is a public utility economic consulting firm headquartered in Fort Myers, Florida offering economic research and consulting services on issues and problems arising from governmental regulation of business. Areas of specialization supported by our Fort Myers office include service life and technological forecasting, depreciation estimation, and valuation of industrial property.

Foster Associates has undertaken numerous depreciation engagements for both public and privately owned business entities, including detailed statistical life studies, analyses of required net salvage rates, and the selection of depreciation systems that will most nearly achieve the goals of depreciation accounting under the constraints of either government regulation or competitive market pricing. Foster Associates is widely recognized for industry leadership in the development of depreciation systems, life analysis techniques and computer applications for conducting depreciation and valuation studies.

PLANT ACCOUNT STRUCTURE

The hierarchical structure of plant accounting records maintained by Hydro One Networks for major asset categories provides: a) Uniform System of Account (USoA) categories; b) cost of asset components (Category ID); and c) vintage identification (Asset ID).

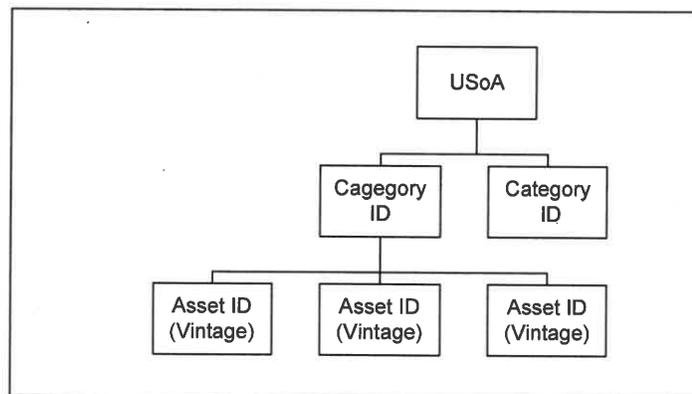


Fig. 1 Account Structure

The lowest level at which the installed cost of a property unit (*e.g.*, a single pole or transformer) can be estimated is by vintage year of placement within a Category ID. (The cost of a property unit within a vintage can be estimated by dividing the vintage cost by the recorded number of installed property units). A Category

ID is an aggregation of vintage costs sharing common physical or functional attributes. All vintages of power transformers larger than 230 kV, for example, or all vintages of underground cable are classified in unique Category IDs. It is neither practical nor feasible, however, to estimate service lives and maintain accumulated depreciation reserves for each property unit.

CURRENT DEPRECIATION RATES

Depreciation rates currently used by Hydro One Networks for Distribution and Common operations were developed in a 2013 depreciation review conducted by Foster Associates. In EB-2013-0416/EB-2014-0247 (Decision dated March 12, 2015), the Ontario Energy Board (OEB) approved depreciation expenses as filed for rate setting purposes from 2015 to 2017 and directed Hydro One to file an updated depreciation study with its next rate application.

Life tables were constructed in the 2013 review for each USoA plant account for which retirements were recorded over the period 2000-2012. Life tables constructed over this limited historical period exhibited uniformly high degrees of censoring and indeterminate measurements of service life. These results were directly attributable to insufficient retirement experience over the available band of activity years.

Absent the availability of sufficient retirement activity to conduct statistical service life studies, depreciation rates developed in the 2013 review were derived from a composite of category lives for class categories established by Hydro One Networks in 2008 in preparation for implementation of International Financial Reporting Standards (IFRS). While Hydro One Networks has received an exemption from an otherwise mandatory adoption of IFRS for rate regulated entities, the Company intends to continue maintaining category classifications for engineering operations and business planning purposes.

The review of category lives undertaken in the 2013 review included onsite meetings with Company engineers, accountants and other subject matter experts having managerial responsibilities for the assets under review. Meetings of the project team were facilitated by Foster Associates. Discussions were held with representatives from planning, operations, maintenance, information technology and facilities to assess the reasonableness of recommended category lives within their respective areas of expertise. Consideration was also given to the range of service lives recommended in the Asset Amortization Study prepared for the Ontario Energy Board by Kinectrics Inc.

Projection lives for USoA categories were derived from harmonic weighting of the constituent category lives recommended by the project team. Iowa survivor curves considered descriptive of the forces of retirement acting upon each USoA category were selected by Foster Associates based on experience and an understanding of the parametric form of the associated probability density functions.

2016 DEPRECIATION RATE REVIEW

The principal findings and recommendations of the Hydro One Networks 2016 Depreciation Rate Review are summarized in the Statements section of this report. Statement A provides a comparative summary of current and recommended annual depreciation rates for each USoA rate category. Statement B provides a comparison of current and recommended annual depreciation accruals. Statement C provides a comparison of computed, recorded and redistributed depreciation reserves for each rate category. Statement D provides a comparative summary of current and recommended parameters including projection life, projection curve, average service life, and average remaining life. Statement E provides the computation of recommended USoA projection lives derived from an analysis of component category lives. A set of statements is included in this report for both Distribution (BU 220) and Common (BU 300) Operations.

SCOPE OF REVIEW

Principal activities undertaken in the 2016 review included:

- Collection of plant and reserve data;
- Reconciliation of assembled database to Company records;
- Discussions with Hydro One Networks plant accounting personnel;
- Estimation of projection lives and retirement dispersion patterns;
- Analysis and redistribution of recorded depreciation reserves; and
- Development of recommended accrual rates for each rate category.

DEPRECIATION SYSTEM

A depreciation rate is formed by combining the elements of a depreciation system composed of a method, a procedure and a technique. A depreciation method (*e.g.*, straight-line) describes the component of the system that produces acceleration or deceleration of depreciation accruals in relation to either time or use. A depreciation procedure (*e.g.*, vintage group) identifies the level of grouping or sub-grouping of assets within a plant category. The level of grouping specifies the weighting used to obtain composite life statistics for a group plant account. A depreciation technique (*e.g.*, remaining-life) describes the life statistic used in the system.

With the exception of intangible plant and selected general support asset categories for which amortization accounting has been adopted, Hydro One Networks is currently using a depreciation system composed of the straight-line method, vintage group procedure, and remaining-life technique. Amortization accounting is used for plant categories in which the unit cost of plant items is small in relation to the number of units classified in the account. Plant is retired (*i.e.*, credited to plant and charged to the reserve) as each vintage achieves an age equal to the amortization period.

The matching and expense recognition principles of accounting provide that the cost of an asset (or group of assets) should be allocated to operations over an estimate of the economic life of the asset in proportion to the consumption of service potential. It is the opinion of Foster Associates that the objectives of depreciation accounting are being achieved using the currently approved vintage-group procedure, which distinguishes service lives among vintages, and the remaining-life technique, which provides cost apportionment over the estimated weighted-average remaining life of a rate category. It is also the opinion of Foster Associates that amortization accounting remains appropriate for the plant categories summarized in Table 1 below.

Account Number	Description	Amortization Period
A	B	C
1609	Capital Contribution - Inter-Segment	10 yrs.
1610	Computer Software	10 yrs.
1915	Office Furniture and Equipment	7 yrs.
1920	Computer Hardware - Minor	5 yrs.
1925	Computer Software - Major	6 yrs.
1935	Stores Equipment	8 yrs.
1940	Tools, Shop and Garage Equipment	6 yrs.
1945	Measuring and Testing Equipment	5 yrs.
1960	Miscellaneous Equipment	5 yrs.

Table 1. Amortization Accounts

With the exception of USoA Accounts 1610 and 1925, general plant amortization categories are only recorded in BU 300. Amortization accounting is additionally recommended in the 2016 review for BU 220 Account 1609 (Capital Contributions – Inter-Segment). Capital contributions recorded in Account 1609 are shared costs of transmission station enhancements that directly benefit distribution operations. With the exception of Account 1609, currently approved amortization periods are retained for all remaining amortization categories.

RECOMMENDED DEPRECIATION RATES

Table 2 below provides a summary of the changes in annual rates and accruals resulting from the 2016 review of Hydro One Networks’ Distribution Operations (BU 220).

Function	Accrual Rate			2016 Annualized Accrual		
	Current	Recommended	Difference	Current	Recommended	Difference
A	B	C	D=CB	E	F	G=FE
Intangible	9.16%	9.16%	0.00%	\$18,914,882	\$18,914,882	\$0
Generation	-11.69%	-6.60%	5.09%	(82,565)	(46,603)	35,962
Distribution	2.27%	2.31%	0.04%	203,124,592	206,335,725	3,211,133
General Plant	6.04%	6.22%	0.18%	23,209,879	23,894,092	684,213
Total	2.57%	2.61%	0.04%	\$245,166,788	\$249,098,096	\$3,931,308

Table 2. Distribution Operations

The composite accrual rate recommended for Distribution Operations is 2.61 percent. The current equivalent rate is 2.57 percent. The recommended change in the composite rate is an increase of 0.04 percentage points.

A continued application of current rates would provide annualized depreciation expense of \$245,166,788 compared with an annualized expense of \$249,098,096 using the recommended rates. The resulting 2016 expense increase is \$3,931,308.

Table 3 provides a summary of the changes in annual depreciation rates and accruals derived for the Company's Common Operations (*i.e.*, BU 300).

Function	Accrual Rate			2016 Annualized Accrual		
	Current	Recommended	Difference	Current	Recommended	Difference
A	B	C	D=CB	E	F	G=FE
Intangible	9.47%	9.47%	0.00%	\$38,214,409	\$38,214,409	\$0
General	5.56%	9.29%	3.73%	24,021,413	40,131,254	16,109,841
Total	7.45%	9.38%	1.93%	\$62,235,822	\$78,345,663	\$16,109,841

Table 3. Common Operations

Adjustments developed in the 2016 review produce a composite depreciation rate of 9.38 percent. Depreciation expense is currently accrued at an equivalent composite rate of 7.45 percent. The recommended change in the composite depreciation rate is, therefore, an increase of 1.93 percentage points.

A continued application of current rates would provide annualized depreciation expense of \$62,235,822 compared with an annualized expense of \$78,345,663 using the rates developed in the review. The increase for Common Operations recommended in the 2016 review is \$16,109,841.

Study Procedure

STUDY PROCEDURE

INTRODUCTION

The purpose of a depreciation study is to analyze the mortality characteristics, net salvage rates and adequacy of the depreciation accrual and recorded depreciation reserve for each rate category. The 2016 review provides the foundation and documentation for recommended changes in the depreciation accrual rates used by Hydro One Networks for Distribution and Common Operations. The recommended rates are subject to approval by the Ontario Energy Board.

SCOPE

The steps involved in conducting the 2016 depreciation review can be grouped into four major tasks:

- Data Collection;
- Life Analysis and Estimation;
- Depreciation Reserve Analysis; and
- Development of Accrual Rates.

The scope of the 2016 review included a consideration of each of these tasks as described below.

DATA COLLECTION

The minimum database required to conduct a statistical life study consists of a history of vintage year additions and unaged activity–year retirements, transfers and adjustments. These data must be appropriately adjusted for transfers, sales and other plant activity that would otherwise bias the measured service life of normal retirements. Age distributions of surviving plant for unaged data can be estimated by distributing plant in service at the beginning of the study year to prior vintages in proportion to the theoretical amount surviving from a projection or survivor curve identified in the life study. The statistical methods of life analysis used to examine unaged plant data are known as *semi-actuarial techniques*.

A far more extensive database is required to apply statistical methods of life analysis known as *actuarial techniques*. Plant data used in an actuarial life study often include age distributions of surviving plant at the beginning of a study year and the vintage year, activity year, and dollar amounts associated with normal retirements, reimbursed retirements, sales, abnormal retirements, transfers, corrections, and extraordinary adjustments over a series of prior activity years. An actuarial database may include age distributions of surviving plant at the beginning of the earliest activity year, rather than at the beginning of the study year. Plant additions, however, must be included in a database containing an opening age distribution to derive aged survivors at the beginning of the study year. All activity year transactions with vintage year identification are coded and stored in a database. These data are processed by a computer program and transaction summary reports are created in a format reconcilable to official plant records. The availabil-

ity of such detailed information is dependent upon an accounting system that supports aged property records. The Continuing Property Record (CPR) system used by Hydro One Networks provides aged transactions for all plant accounts.

Prior to 1998, plant accounting records were maintained by Hydro One Networks in a legacy Fixed Asset Management System (FAMS) developed by Ontario Hydro. FAMS was replaced with an SAP system in 1998. The SAP system was replaced with a PeopleSoft asset accounting system in 2000. The PeopleSoft system was configured with the asset categories maintained in the SAP system and uploaded with age distributions of surviving plant at December 31, 1999.² The PeopleSoft system was replaced in August 2009 by an updated version of the SAP system.

Plant and reserve data used in conducting the 2016 depreciation review were assembled and initially coded by Hydro One Networks personnel. Additional coding was provided by Foster Associates as needed. Plant accounting transactions recorded between January 1, 2013 and December 31, 2015 were extracted from the SAP system, coded and appended to the database used in conducting the 2013 review. An additional dataset of category plant balances at December 31, 2015 was assembled and reconciled to aggregate USoA balances. (See Statement E).

Age distributions of surviving plant (*i.e.*, plant surviving by vintage year of placement) at December 31, 2015 were derived by Foster Associates from the vintaged plant transactions and reconciled to age distributions provided by Hydro One Networks. The complexity of the process through which the database was compiled and mapped to USoA plant categories prevented Foster Associates from reconciling the database to any public reports of Hydro One Networks. The integrity of the assembled database, however, was confirmed by the Company.

LIFE ANALYSIS AND ESTIMATION

Life analysis and life estimation are terms used to describe a two-step procedure for estimating the mortality characteristics of a plant category. The first step (*i.e.*, life analysis) is largely mechanical and primarily concerned with history. Statistical techniques are used in this step to obtain a mathematical description of the forces of retirement acting upon a plant category and an estimate of the *projection life* of the account. The mathematical expressions used to describe these life characteristics are known as *survival functions* or *survivor curves*.

The second step (*i.e.*, life estimation) is concerned with predicting the expected

²In 2003, Hydro One undertook a two-phase project to a) map asset categories maintained in PeopleSoft to USoA plant classifications; and b) align quantities maintained in a Power System Data Base (PSDB) to the re-mapped USoA account classifications. The PSDB provides property unit identification and quantities associated with investments maintained in PeopleSoft. Asset categories maintained in SAP were not mapped to USoA plant account classifications. This limitation prohibited using pre-2000 plant accounting activity in the 2005 and 2013 depreciation reviews.

remaining life of property units still exposed to forces of retirement. It is a process of blending the results of a life analysis with informed judgment (including expectations about the future) to obtain an appropriate projection life and curve descriptive of the parent population from which a plant account is viewed as a random sample. The amount of weight given to a life analysis will depend upon the extent to which past retirement experience is considered predictive of the future.

The analytical methods used in a life analysis are broadly classified as actuarial and semi-actuarial techniques. Actuarial techniques can be applied to plant accounting records that reveal the age of a plant asset at the time of its retirement from service. Stated differently, each retirement unit must be identifiable by date of installation and age at retirement. Semi-actuarial techniques can be used to derive service life and dispersion estimates when age identification of retirements is not maintained or readily available.

An actuarial life analysis program designed and developed by Foster Associates was employed in this review. The first step in an actuarial analysis involves a systematic treatment of the available data for the purpose of constructing an observed life table. A complete life table contains the life history of a group of property units installed during the same accounting period and various probability relationships derived from the data. A life table is arranged by age-intervals (usually defined as one year) and shows the number of units (or dollars) entering and leaving each age-interval and probability relationships associated with this activity. A life table minimally shows the age of each survivor and the age of each retirement from a group of units installed in a given accounting year.

A life table can be constructed in any one of at least five methods. The annual-rate or retirement-rate method was used in this review. The mechanics of the annual-rate method require the calculation of a series of ratios obtained by dividing the number of units (or dollars) surviving at the beginning of an age interval into the number of units (or dollars) retired during the same interval. This so-called "retirement ratio" (or set of ratios) is an estimator of the hazard rate or conditional probability of retirement during an age interval. The cumulative proportion surviving is obtained by multiplying the retirement ratio for each age interval by the proportion of the original group surviving at the beginning of that age interval and subtracting this product from the proportion surviving at the beginning of the same interval. The annual-rate method is applied to multiple groups or vintages by combining the retirements and/or survivors of like ages for each vintage included in the analysis.

The second step in an actuarial analysis involves graduating or smoothing the observed life table and fitting the smoothed series to a family of survival functions. The functions used in this study are the Iowa-type curves which are mathematically described by the Pearson frequency curve family. The observed life table was smoothed by a weighted least-squares procedure in which first, second and

third degree orthogonal polynomials were fitted to the observed retirement ratios. The resulting function was expressed as a survivorship function which was numerically integrated to obtain an estimate of the projection life. The smoothed survivorship function was then fitted by a weighted least-squares procedure to the Iowa-curve family to obtain a mathematical description or classification of the dispersion characteristics of the data.

The set of computer programs used in this analysis provides multiple rolling-band, shrinking-band and progressive-band analyses of an account. Observation bands are defined by the dimensions of a "retirement era" that restricts the analysis to the retirement activity of all vintages represented by survivors at the beginning of a selected era. In a rolling-band analysis, a year of retirement experience is added to each successive retirement band and the earliest year from the preceding band is dropped. A shrinking-band analysis begins with the total retirement experience available and the earliest year from the preceding band is dropped for each successive band. A progressive-band analysis adds a year of retirement activity to a previous band without dropping earlier years from the analysis. Rolling, shrinking and progressive band analyses are used to detect the emergence of trends in the behavior of the dispersion and projection life.

Options available in the actuarial life analysis program designed and developed by Foster Associates include: the width and location of both placement and observation bands; the interval of years included in a selected band analysis; the estimator of the hazard rate (actuarial, conditional proportion retired, or maximum likelihood); the elements to include on the diagonal of a weight matrix (exposures, inverse of age, inverse of variance, or unweighted); and the age at which an observed life table is truncated. The program also provides tabular and graphics output as an aid in the analysis.

As noted above, the database for Hydro One Networks contains plant accounting transactions for activity years 2000–2015. While it is theoretically possible to obtain life indications from an actuarial analysis of a single activity year, retirements during the year must be widely distributed over the beginning-of-year surviving vintages of a nearly mature plant account.³ A similar limitation applies to the database of Hydro One Networks which contains minimal retirement activity during the available activity years. Retirements must be sufficiently distributed across vintages within these years in order to obtain meaningful service life indications from a statistical analysis.

Life tables were constructed for each USoA plant account for which retirements were recorded over the period 2000–2015. With the exception of Account 1860 (Meters) and Account 1985 (Sentinel Lighting Rental Units), life tables construct-

³Plant maturity is achieved when the age distribution of surviving plant resembles a complete survivor curve descriptive of the forces of retirement acting upon the plant category.

ed over this limited historical period continue to exhibit uniformly high degrees of censoring and indeterminate measurements of service life. As noted in the 2013 review, these results are attributable to an insufficient distribution of retirements over the available band of activity years. The seemingly informative analysis of Account 1860 produced highly distorted service-life indications created by an avalanche of retirements in 2009 that eliminated all pre-2008 vintages. The massive retirement of conventional, electromechanical meters in 2009 was triggered by the launch of a system-wide deployment of smart meters.

As was noted in the 2005 and 2013 reviews, limitations in conducting statistical life analyses were also imposed by vintage years “banded” by the Company in 1992 and again in 1998 when age distributions from a Fixed Asset Management System (FAMS) were uploaded to SAP. All pre-1950 vintages were assigned a vintage year of 1950. Plant installed between 1951 and 1955 was assigned a vintage year of 1955. Similarly, plant installed during the intervals 1956-1960, 1961-1965 and 1966-1970 were assigned vintage years 1960, 1965 and 1970, respectively. Although discontinued in 1971, the banding of pre-1970 vintages will continue to produce unreliable life indications until most of the earlier vintages have been retired from service.

Pending the availability of sufficient or normal retirement activity to conduct service life studies, it is the opinion of Foster Associates that a composite of the parameters estimated for the asset categories recorded in a USoA account provides the best available estimate of service life statistics for the current depreciation review.

CLASS/CATEGORY SERVICE LIVES

The review of category lives undertaken in the 2013 review included onsite meetings with Company engineers, accountants and other subject matter experts having managerial responsibilities for the assets under review. Meetings of the project team were facilitated by Foster Associates. Discussions were held with representatives from planning, operations, maintenance, information technology and facilities to assess the reasonableness of recommended category lives within their respective areas of expertise. Consideration was also given to the range of service lives recommended in the Asset Amortization Study prepared for the Ontario Energy Board by Kinectrics Inc.

Category lives were reviewed in the current study via written surveys distributed to the subject matter experts who participated in the 2013 review. Each participant was asked to revisit currently approved category lives within their respective areas of expertise and to document reasons for any suggested changes or adjustments. No adjustments were recommended by these participants. Accordingly, category lives recommended and approved in the 2013 review were retained in the 2016 review.

USoA SERVICE LIVES

Recommended projection lives for USoA categories were derived from harmonic weighting of the constituent category lives recommended by the project team. Iowa survivor curves considered descriptive of the forces of retirement acting upon each USoA category were selected by Foster Associates based on experience and an understanding of the parametric form of the associated probability density functions. Projection lives and projection curves recommended for all depreciable USoA categories are summarized in Statement E.

DEPRECIATION RESERVE ANALYSIS

The purpose of a depreciation reserve analysis is to compare the current level of recorded reserves with the level required to achieve the goals or objectives of depreciation accounting if the amount and timing of future retirements and net salvage are realized as predicted. The difference between a required (or theoretical) depreciation reserve and a recorded reserve provides a measurement of the expected excess or shortfall that will remain in the depreciation reserve if corrective action is not taken to eliminate the reserve imbalance.

Unlike a recorded reserve which represents the net amount of depreciation expense charged to previous periods of operations, a theoretical reserve is a measure of the implied reserve requirement at the beginning of a study year if the timing of future retirements and net salvage is in exact conformance with a survivor curve chosen to predict the probable life of property still exposed to the forces of retirement. Stated differently, a theoretical depreciation reserve is the difference between the recorded cost of plant currently in service and the sum of depreciation expense and net salvage that will be charged in the future if retirements are distributed over time according to a specified retirement frequency distribution.

Survivor curves used in the calculation of theoretical depreciation reserves are intended to describe forces of retirement that will be operative in the future. However, retirements caused by forces such as accidents, physical deterioration and changing technology seldom, if ever, remain stable over time. It is unlikely, therefore, that a probability or retirement frequency distribution can be identified that will accurately describe the age of plant retirements over the complete life cycle of a vintage. It is for this reason that depreciation rates should be reviewed periodically and adjusted for observed or expected changes in the parameters chosen to describe the underlying forces of mortality.

Although reserve records are commonly maintained by various account classifications, the sum of all reserves is the most important indicator of the condition of recorded reserves. If statistical life studies have not been conducted or retirement dispersion has not been considered in setting depreciation rates, it is likely that some accounts will be over-depreciated and other accounts will be under-depreciated relative to a calculated theoretical reserve. Differences between theo-

retical and recorded reserves will also arise as a normal occurrence when service lives, dispersion patterns and net salvage estimates are adjusted in the course of depreciation reviews. It is appropriate, therefore, and consistent with group depreciation theory to periodically redistribute or rebalance recorded reserves among the various primary accounts based upon the most recent estimates of retirement dispersion and net salvage rates.

It is the opinion of Foster Associates that a redistribution of recorded reserves is appropriate for Hydro One Networks at this time. Offsetting reserve imbalances (attributable to both the passage of time and parameter adjustments recommended in the current review) should be realigned among primary accounts to reduce offsetting imbalances and increase depreciation rate stability.

With the exception of amortizable categories in which theoretical or computed reserves replace recorded reserves, all remaining reserves were redistributed by multiplying the calculated reserve for each USoA primary account by the ratio of the sum of recorded reserves to the sum of calculated reserves. The sum of redistributed reserves is, therefore, equal to the sum of recorded depreciation reserves before the redistribution.

Statement C provides a comparison of recorded, computed and rebalanced reserves for Distribution Operations (BU 220) at December 31, 2015. The recorded reserve was \$3,406,408,550 or 35.7 percent of the depreciable plant investment. The corresponding computed reserve is \$3,045,587,410 or 31.9 percent of the depreciable plant investment. A proportionate amount of the measured reserve imbalance of \$360,821,140 would be amortized over the composite weighted-average remaining life of each rate category using the remaining life depreciation rates recommended in this review.

Statement C also provides a comparison of recorded, computed and rebalanced reserves for Common Operations (BU 300) at December 31, 2015. The recorded reserve was \$466,502,435, or 55.8 percent of the depreciable plant investment. The corresponding computed reserve is \$459,005,761 or 54.9 percent of the depreciable plant investment. A proportionate amount of the measured reserve imbalance of \$7,496,673 would be amortized over the composite weighted-average remaining life of each rate category using the remaining life depreciation rates recommended in this review.

DEVELOPMENT OF ACCRUAL RATES

The goal or objective of depreciation accounting is cost allocation over the economic life of an asset in proportion to the consumption of service potential. Ideally, the cost of an asset—which represents the cost of obtaining a bundle of service units—should be allocated to future periods of operation in proportion to the amount of service potential expended during an accounting interval. The service potential of an asset is the present value of future net revenue (*i.e.*, revenue less

expenses exclusive of depreciation and other non-cash expenses) or cash inflows attributable to the use of that asset alone.

Cost allocation in proportion to the consumption of service potential is often approximated by the use of depreciation methods employing time rather than net revenue as the apportionment base. Examples of time-based methods include sinking-fund, straight-line, declining balance, and sum-of-the-years' digits. The advantage of using a time-based method is that it does not require an estimate of the remaining amount of service potential an asset will provide or the change in service potential predicted during an accounting interval. Using a time-based allocation method, however, does not change the goal of depreciation accounting. If it is reasonable to predict that the net revenue pattern of an asset will either decrease or increase over time, then an accelerated or decelerated time-based method should be used to approximate the rate at which service potential is actually consumed.

The time period over which the cost of an asset will be allocated to operations is determined by the combination of a procedure and a technique. A depreciation procedure describes the level of grouping or sub-grouping of assets within a plant category. Broad group, vintage group, equal-life group, and item (or unit) are a few of the more widely used procedures. A depreciation technique describes the life statistic used in a depreciation system. Whole life and remaining life (or expectancy) are the most common techniques.

Depreciation rates recommended in the 2016 review were developed using the currently approved system composed of the straight-line method, vintage group procedure, remaining-life technique. It is the opinion of Foster Associates that this system will remain appropriate for Hydro One Networks, provided depreciation studies are conducted periodically and parameters are routinely adjusted to reflect changing operating conditions.

It is also the opinion of Foster Associates that amortization accounting currently approved for selected general support asset accounts and recommended for BU 220 is consistent with the goals and objectives of depreciation accounting derived from the matching and expense recognition principles of accounting. Amortization accounting for these rate categories relieves Hydro One Networks of the burden to maintain detailed plant records for numerous plant items in which the unit cost is small in relation to the cost of tracking the disposition of the assets.

Statements

STATEMENTS

INTRODUCTION

This section provides a comparative summary of depreciation rates, annual depreciation accruals, recorded, computed and redistributed depreciation reserves, and current and recommended service life statistics for Hydro One Networks Inc. Distribution and Common Operations. The content of these statements is briefly described below.

- Statement A provides a comparative summary of current and recommended annual depreciation rates using the vintage group procedure, remaining-life technique.
- Statement B provides a comparison of current and recommended annualized 2016 depreciation accruals derived from the depreciation rates contained in Statement A.
- Statement C provides a comparison of recorded, computed and redistributed reserves for each rate category at December 31, 2015.
- Statement D provides a comparative summary of current and recommended parameters and statistics including projection life, projection curve, average service life, and average remaining life.
- Statement E displays the computation of recommended USoA projection lives derived from recommended Category ID lives.

Current depreciation accruals shown on Statements B are the product of the plant investment (Column B) and current depreciation rates shown on Statement A. These are the effective rates used by Hydro One Networks for the mix of investments recorded at December 31, 2015. Similarly, recommended depreciation accruals shown on Statements B are the product of the plant investment and recommended depreciation rates shown on Statement A. Recommended remaining life accrual rates (Statement A) are given by:

$$\text{Accrual Rate} = \frac{1.0 - \text{Reserve Ratio}}{\text{Remaining Life}}$$

Statements A through E

HYDRO ONE NETWORKS INC. (BU 220)

Statement A

Comparison of Current and Recommended Accrual Rates

Current: VG Procedure / RL Technique

Proposed: VG Procedure / RL Technique

Account Description A	Current			Recommended				
	Rem. Life B	Net Salvage C	Accrual Rate D	Rem. Life E	Net Salvage F	Reserve Ratio G	Accrual Rate H	
INTANGIBLE PLANT								
1609 Capital Contributions - Inter-Segment			10.00%	← 10 Year Amortization →				10.00%
1610 Computer Software	7.28		9.00%	← 10 Year Amortization →				9.00%
Total Intangible Plant			9.16%	7.69		29.43%	9.16%	
GENERATION PLANT								
1620 Buildings and Fixtures	8.21		1.22%	5.95		94.04%	1.00%	
1665 Fuel Holders, Producers and Accessories	15.79		2.27%	12.81		71.30%	2.24%	
1675 Generators	1.00		-16.03%	1.00		109.32%	-9.32%	
1680 Accessory Electric Equipment	15.50		1.83%	12.50		77.32%	1.81%	
Total Generation Plant			-11.69%	3.64		101.01%	-6.60%	
DISTRIBUTION PLANT								
1805D Land - Depreciable	6.92		-0.18%	5.48		100.86%	-0.16%	
1806 Land Rights	75.16		0.94%	72.36		31.09%	0.95%	
1808 Buildings and Fixtures	33.17		1.82%	32.96		38.58%	1.86%	
1815 Transformer Station Equipment > 50 kV	26.88		2.23%	28.08		35.04%	2.31%	
1820 Distribution Station Equipment < 50 kV	17.79		2.70%	20.23		40.42%	2.95%	
1830 Poles, Towers and Fixtures	40.14		1.70%	40.53		29.90%	1.73%	
1835 Overhead Conductors and Devices	39.47		1.69%	39.50		32.23%	1.72%	
1840 Underground Conduit	27.61		1.71%	26.46		53.51%	1.76%	
1845 Underground Conductors and Devices	17.04		2.83%	16.68		51.60%	2.90%	
1850 Line Transformers	29.42		2.31%	29.05		32.07%	2.34%	
1860 Meters	17.68		4.89%	16.63		18.90%	4.88%	
1860S Meters (Sustainment)	14.50		6.63%	13.81		8.92%	6.60%	
1555 Smart Meters	11.77		6.36%	9.10		44.05%	6.15%	
Total Distribution Plant			2.27%	28.02		34.76%	2.31%	
GENERAL PLANT								
Depreciable								
1908 Buildings and Fixtures	34.00		1.84%	34.57		34.91%	1.88%	
1910 Leasehold Improvements	7.51		5.50%	5.70		66.18%	5.93%	
1922 Computer Hardware - Major	2.79		-3.82%	5.10		93.58%	1.26%	
1955 Communication Equipment	1.21		-9.99%	3.51		103.50%	-1.00%	
1980 System Supervisory Equipment	4.95		14.94%	3.24		57.34%	13.17%	
1985 Sentinel Lighting Rental Units	18.81		2.94%	17.71		47.29%	2.98%	
Total Depreciable			5.84%	7.42		51.92%	6.08%	
Amortizable								
1925 Computer Software - Major	3.34		6.58%	← 6 Year Amortization →				6.58%
Total Amortizable			6.58%	1.78		87.12%	6.58%	
Total General Plant			6.04%	4.84		61.38%	6.22%	
TOTAL DISTRIBUTION OPERATIONS			2.57%	23.38		35.72%	2.61%	

HYDRO ONE NETWORKS INC. (BU 220)

Statement B

Comparison of Current and Recommended Accruals

Current: VG Procedure / RL Technique

Proposed: VG Procedure / RL Technique

Account Description	12/31/15 Plant Investment	2016 Annualized Accrual		
		Current	Recommended	Difference
A	B	C	D	E=D-C
INTANGIBLE PLANT				
1609 Capital Contributions - Inter-Segment	\$ 33,265,788	\$ 3,326,579	\$ 3,326,579	\$ -
1610 Computer Software	173,270,555	15,588,303	15,588,303	-
Total Intangible Plant	\$ 206,536,343	\$ 18,914,882	\$ 18,914,882	\$ -
GENERATION PLANT				
1620 Buildings and Fixtures	\$ 21,724	\$ 265	\$ 217	\$ (48)
1665 Fuel Holders, Producers and Accessories	138,554	3,145	3,104	(41)
1675 Generators	537,296	(86,129)	(50,076)	36,053
1680 Accessory Electric Equipment	8,422	154	152	(2)
Total Generation Plant	\$ 705,996	\$ (82,565)	\$ (46,603)	\$ 35,962
DISTRIBUTION PLANT				
1805D Land - Depreciable	\$ 41,374,128	\$ (74,473)	\$ (66,199)	\$ 8,274
1806 Land Rights	233,032,381	2,190,504	2,213,808	23,304
1808 Buildings and Fixtures	7,966,391	144,988	148,175	3,187
1815 Transformer Station Equipment > 50 kV	189,962,718	4,236,169	4,388,139	151,970
1820 Distribution Station Equipment < 50 kV	628,058,564	16,957,581	18,527,728	1,570,147
1830 Poles, Towers and Fixtures	2,794,965,399	47,514,412	48,352,901	838,489
1835 Overhead Conductors and Devices	1,821,559,575	30,784,357	31,330,825	546,468
1840 Underground Conduit	23,902,877	408,739	420,691	11,952
1845 Underground Conductors and Devices	824,874,111	23,343,937	23,921,349	577,412
1850 Line Transformers	1,816,159,796	41,953,291	42,498,139	544,848
1860 Meters	16,582,363	810,878	809,219	(1,659)
1860S Meters (Sustainment)	46,363,345	3,073,890	3,059,981	(13,909)
1555 Smart Meters	499,690,555	31,780,319	30,730,969	(1,049,350)
Total Distribution Plant	\$ 8,944,492,203	\$ 203,124,592	\$ 206,335,725	\$ 3,211,133
GENERAL PLANT				
Depreciable				
1908 Buildings and Fixtures	\$ 123,487,778	\$ 2,272,175	\$ 2,321,570	\$ 49,395
1910 Leasehold Improvements	5,473,491	301,042	324,578	23,536
1922 Computer Hardware - Major	4,733,131	(180,806)	59,637	240,443
1955 Communication Equipment	25,322,412	(2,529,709)	(253,224)	2,276,485
1980 System Supervisory Equipment	107,983,618	16,132,753	14,221,442	(1,911,311)
1985 Sentinel Lighting Rental Units	14,163,999	416,422	422,087	5,665
Total Depreciable	\$ 281,164,429	\$ 16,411,877	\$ 17,096,090	\$ 684,213
Amortizable				
1925 Computer Software - Major	\$ 103,289,675	\$ 6,798,002	\$ 6,798,002	\$ -
Total Amortizable	\$ 103,289,675	\$ 6,798,002	\$ 6,798,002	\$ -
Total General Plant	\$ 384,454,104	\$ 23,209,879	\$ 23,894,092	\$ 684,213
TOTAL DISTRIBUTION OPERATIONS	\$ 9,536,188,646	\$ 245,166,788	\$ 249,098,096	\$ 3,931,308

HYDRO ONE NETWORKS INC. (BU 220)

Depreciation Reserve Summary
Vintage Group Procedure
December 31, 2015

Statement C

Account Description	Plant Investment		Recorded Reserve		Computed Reserve		Redistributed Reserve	
	A	B	C	D=C/B	E	F=E/B	G	H=G/B
INTANGIBLE PLANT								
1609 Capital Contributions - Inter-Segment	\$ 33,265,788	\$	4,287,809	12.89%	\$ 4,869,322	14.64%	\$ 4,869,322	14.64%
1610 Computer Software	173,270,555		31,973,333	18.45%	55,905,267	32.26%	55,905,267	32.26%
Total Intangible Plant	\$ 206,536,343	\$	\$ 36,261,142	17.56%	\$ 60,774,589	29.43%	\$ 60,774,589	29.43%
GENERATION PLANT								
1620 Buildings and Fixtures	\$ 21,724	\$	19,810	91.19%	\$ 18,165	83.62%	\$ 20,429	94.04%
1665 Fuel Holders, Producers and Accessories	138,554		95,766	69.12%	87,843	63.40%	98,792	71.30%
1675 Generators	537,296		554,213	103.15%	522,288	97.21%	587,388	109.32%
1680 Accessory Electric Equipment	8,422		6,181	73.39%	5,790	68.75%	6,512	77.32%
Total Generation Plant	\$ 705,996	\$	\$ 675,970	95.75%	\$ 634,086	89.81%	\$ 713,121	101.01%
DISTRIBUTION PLANT								
1805D Land - Depreciable	\$ 41,374,128	\$	43,222,138	104.47%	\$ 37,104,256	89.68%	\$ 41,729,063	100.86%
1806 Land Rights	233,032,381		74,958,432	32.17%	64,410,150	27.64%	72,438,462	31.09%
1808 Buildings and Fixtures	7,966,391		3,074,278	38.59%	2,732,740	34.30%	3,073,359	38.58%
1815 Transformer Station Equipment > 50 kV	189,982,718		67,305,197	35.43%	59,191,619	31.16%	66,569,475	35.04%
1820 Distribution Station Equipment < 50 kV	628,058,564		249,807,758	39.77%	225,727,191	35.94%	253,862,638	40.42%
1830 Poles, Towers and Fixtures	2,794,965,399		839,479,757	30.04%	743,164,138	26.59%	835,794,783	29.90%
1835 Overhead Conductors and Devices	1,821,559,575		613,009,017	33.65%	522,090,490	28.66%	587,165,723	32.23%
1840 Underground Conduit	23,902,877		13,319,802	55.72%	11,373,754	47.58%	12,791,420	53.51%
1845 Underground Conductors and Devices	824,874,111		444,520,330	53.89%	378,446,461	45.88%	425,617,386	51.60%
1850 Line Transformers	1,816,159,796		586,878,219	32.31%	517,945,178	28.52%	582,503,724	32.07%
1860 Meters	16,582,363		6,167,337	37.19%	2,787,231	16.81%	3,134,641	18.90%
1860S Meters (Sustainment)	46,363,345		3,686,553	7.95%	3,678,159	7.93%	4,136,618	8.92%
1555 Smart Meters	499,690,555		200,245,679	40.07%	195,734,402	39.17%	220,131,440	44.05%
Total Distribution Plant	\$ 8,944,492,203	\$	\$ 3,145,674,498	35.17%	\$ 2,764,385,769	30.91%	\$ 3,108,948,732	34.76%

HYDRO ONE NETWORKS INC. (BU 220)

Depreciation Reserve Summary
Vintage Group Procedure
December 31, 2015

Statement C

Account Description A	Plant Investment B		Recorded Reserve Amount C		Computed Reserve Amount E		Redistributed Reserve Amount G		Ratio H=G/B
	Amount	Ratio D=C/B	Amount	Ratio F=E/B	Amount	Ratio	Amount	Ratio	
GENERAL PLANT									
Depreciable									
1908 Buildings and Fixtures	\$ 123,487,778	35.56%	\$ 43,913,388	31.04%	\$ 38,329,739	31.04%	\$ 43,107,295	34.91%	
1910 Leasehold Improvements	5,473,491	66.57%	3,643,873	58.84%	3,220,863	58.84%	3,622,323	66.18%	
1922 Computer Hardware - Major	4,733,131	101.10%	4,785,389	83.21%	3,938,563	83.21%	4,429,480	93.58%	
1955 Communication Equipment	25,322,412	114.30%	28,944,593	92.03%	23,304,667	92.03%	26,209,444	103.50%	
1980 System Supervisory Equipment	107,983,618	49.89%	53,875,923	49.94%	55,053,675	50.98%	61,915,763	57.34%	
1985 Sentinel Lighting Rental Units	14,163,999	49.94%	7,073,007	46.17%	5,955,739	42.05%	6,698,084	47.29%	
Total Depreciable	\$ 281,164,429	50.59%	\$ 142,236,173	46.17%	\$ 129,803,247	46.17%	\$ 145,982,389	51.92%	
Amortizable									
1925 Computer Software - Major	\$ 103,289,675	78.96%	\$ 81,560,768	78.96%	\$ 89,989,719	87.12%	\$ 89,989,719	87.12%	
Total Amortizable	\$ 103,289,675	78.96%	\$ 81,560,768	78.96%	\$ 89,989,719	78.96%	\$ 89,989,719	87.12%	
Total General Plant	\$ 384,454,104	58.21%	\$ 223,796,941	58.21%	\$ 219,792,966	57.17%	\$ 235,972,108	61.38%	
TOTAL DISTRIBUTION OPERATIONS	\$ 9,536,188,646	35.72%	\$ 3,406,408,550	35.72%	\$ 3,045,587,410	31.94%	\$ 3,406,408,550	35.72%	

HYDRO ONE NETWORKS INC. (BU 220)
 Current and Recommended Parameters
 Vintage Group Procedure

Statement D

Account Description A	Current Parameters					Recommended Parameters						
	B P-Life/ AYFR	C Curve Shape	D VG ASL	E Rem. Life	F Avg. Sal.	G Fut. Sal.	H P-Life/ AYFR	I Curve Shape	J VG ASL	K Rem. Life	L Avg. Sal.	M Fut. Sal.
INTANGIBLE PLANT												
1609 Capital Contributions - Inter-Segment	10.00	SQ					10	SQ	10.00	8.54		
1610 Computer Software	10.00	SQ	10.00	7.28			10	SQ	10.00	7.53		
Total Intangible Plant									10.00	7.69		
GENERATION PLANT												
1620 Buildings and Fixtures	35.00	S6	35.70	8.21			35	S6	36.32	5.95		
1665 Fuel Holders, Producers and Accessories	15.00	S6	35.00	15.79			35	S6	35.00	12.81		
1675 Generators	15.00	S6	144.68	1.00			15	S6	35.80	1.00		
1680 Accessory Electric Equipment	40.00	S6	40.00	15.50			40	S6	40.00	12.50		
Total Generation Plant									35.70	3.64		
DISTRIBUTION PLANT												
1805D Land - Depreciable	50.00	S6	51.81	6.92			50.00	S6	53.10	5.48		
1806 Land Rights	#####	S6	100.00	75.16			100.00	S6	100.00	72.36		
1808 Buildings and Fixtures	50.00	S4	50.18	33.17			50.00	S4	50.17	32.96		
1815 Transformer Station Equipment > 50 kV	40.00	R2.5	40.85	26.88			40.00	R2.5	40.79	28.08		
1820 Distribution Station Equipment < 50 kV	30.00	R2.5	32.00	17.79			30.00	R2.5	31.58	20.23		
1830 Poles, Towers and Fixtures	55.00	S2	55.21	40.14			55.00	S2	55.21	40.53		
1835 Overhead Conductors and Devices	55.00	S2	55.32	39.47			55.00	S2	55.37	39.50		
1840 Underground Conduit	50.00	S2	50.32	27.61			50.00	S2	50.48	26.46		
1845 Underground Conductors and Devices	30.00	S3	30.60	17.04			30.00	S3	30.82	16.68		
1850 Line Transformers	40.00	R2	40.60	29.42			40.00	R2	40.64	29.05		
1860 Meters	20.00	R5	20.00	17.68			20.00	R5	19.99	16.63		
1860S Meters (Sustainment)	15.00	R5	15.00	14.50			15.00	R5	15.00	13.81		
1555 Smart Meters	15.00	R5	15.00	11.77			15.00	R5	14.96	9.10		
Total Distribution Plant									40.55	28.02		

HYDRO ONE NETWORKS INC. (BU 220)
 Current and Recommended Parameters
 Vintage Group Procedure

Statement D

Account Description A	Current Parameters						Recommended Parameters					
	B P-Life/ AYFR	C Curve Shape	D VG ASL	E Rem. Life	F Avg. Sal.	G Fut. Sal.	H P-Life/ AYFR	I Curve Shape	J VG ASL	K Rem. Life	L Avg. Sal.	M Fut. Sal.
GENERAL PLANT												
Depreciable												
1908 Buildings and Fixtures	50.00	S4	50.10	34.00			50.00	S4	50.13	34.57		
1910 Leasehold Improvements	10.00	S6	15.10	7.51			10.00	S6	13.85	5.70		
1922 Computer Hardware - Major	10.00	S6	52.68	2.79			10.00	S6	30.38	5.10		
1955 Communication Equipment	7.00	S6	29.74	1.21			7.00	S6	44.05	3.51		
1980 System Supervisory Equipment	6.00	L2	6.37	4.95			6.00	L2	6.61	3.24		
1985 Sentinel Lighting Rental Units	30.00	R1.5	30.46	18.81			30.00	R1.5	30.56	17.71		
Total Depreciable									13.79	7.42		
Amortizable												
1925 Computer Software - Major	6.00	SQ	6.00	3.34			6.00	SQ	6.00	1.78		
Total Amortizable									6.00	1.78		
Total General Plant									10.22	4.84		
TOTAL DISTRIBUTION OPERATIONS									34.20	23.38		

HYDRO ONE NETWORKS INC. (BU 220)

Statement E

Asset Category Summary
December 31, 2015
Harmonic Weighting

Description A	Current P-Life		Recommended P-Life		Plant	
	USoA B	Category C	USoA D	Category E	USoA F	Category G
INTANGIBLE PLANT						
1609 Capital Contributions - Inter-Segment						
2000 Cap Contribution - Inter-Segment		10		10 a)		\$ 33,265,788
Total USoA 1609	10 SQ	10	10 SQ	10	\$	33,265,788
1610 Computer Software						
1656 Genl - Adm & Serv-Lan Fib Opt		10		10 a)		\$ 173,270,555
Total USoA 1610	10 SQ	10	10 SQ	10	\$	173,270,555
GENERATION PLANT						
1620 Buildings and Fixtures						
1712 Genx - Fsl-Yd Facilities		35		35		\$ 15,914
1720 Genx - Fsl Rem-Bldg & Str		35		35		5,810
Total USoA 1620	35 S6	35	35 S6	35	\$	21,724
1665 Fuel Holders, Producers and Accessories						
1731 Genx - Fsl Rem-Fuel Handling		35		35		\$ 138,554
Total USoA 1665	35 S6	35	35 S6	35	\$	138,554
1675 Generators						
1756 Genx - Fsl-Ac Stndby Pwr		15		15		\$ 468,592
1758 Genx - Fsl Rem Alt & Aux Gen		15		15		68,704
Total USoA 1675	15 S6	15	15 S6	15	\$	537,296
1680 Accessory Electric Equipment						
1754 Genx - Fsl-Ele Aux Syst/Cab		40		40		\$ 8,422
Total USoA 1680	40 S6	40	40 S6	40	\$	8,422
DISTRIBUTION PLANT						
1805D Land - Depreciable						
1113 Site Imprv - Excl Fence, Rd,Easmt		50		50		\$ 73,835
1210 Land Purch & Acqui (Old Cap)		50		50		6,216,479
1310 Rural Lands < 1975		50		50		35,083,815
Total USoA 1805D	50 S6	50	50 S6	50	\$	41,374,128
1806 Land Rights						
1111 Rights & Easmnts <Landscaping>		100		100		\$ 1,084,197
1212 Easmnts & Rights, Purch & Acqui		100		100		6,447,629
1215 Clrng & Overbldg		100		100		45,004,178
1311 Rural Intl Clrng & Ovrbldg		100		100		177,843,246
1313 Rural Easements-Land Rights		100		100		2,639,035
1314 Rural Perm Rd & Surf Areas		25		25		14,095
Total USoA 1806	100 S6	100	100 S6	100	\$	233,032,381
1808 Buildings and Fixtures						
1112 Landscaping		50		50		\$ 1,180,517
1120 Stn Buildings Components		50		50		4,055,436
1270 Serv Structures		50		50		2,250,042
1312 Rural Landscaping		50		50		480,396
Total USoA 1808	50 S4	50	50 S4	50	\$	7,966,391
1815 Transformer Station Equipment > 50 kV						
1113 Site Imprv - Excl Fence, Rd,Easmt		50		50		\$ 10,321,872
1122 Perm Rds & Surf Area		25		25		2,059,726
1123 Cost Equip Foundations, Excav		50		50 e)		10,332,929
1127 Steel/Pipe Struc For Switch Eq		50		50		11,995,077
1128 Fences, Gates, Bldg		30		30		6,071,253
1150 Rot Elec Eq (No Wind'G)		65		65		129,369
1152 Capacitors		35		35		762,965
1155 Regulators Incl Instal Cost		40		40		2,057,639
1160 Misc Stn Eq -Trsf/Volt Trsf		40		40		12,454,467
1161 Serv Swg - Ac/Dc-Light Trsf		50		50		1,875,618
1162 Control Cable & Conduit		50		50		3,149,925
1163 Grounding Systems		50		50		6,512,354
1164 Metering Units		15		15 b)		7,409,696
1166 Switchboards		25		25 c)		1,272,995

Description A	Current P-Life		Recommended P-Life		Plant	
	USoA B	Category C	USoA D	Category E	USoA F	Category G
1167 Sup Cntrl - Prim H/Ware & Sys		20		20 d)		1,253,599
1168 Sup Cntrl - Prim Appl S/Ware		20		20 d)		365,714
1170 Service Systems		50		50		80,312
1175 Transf <=50Kv or <5Mva		50		50		6,522,300
1176 Transf <=115Kv or >5Mva		50		50		48,178,331
1177 Transf <=230Kv		50		50		7,473,863
1179 Transf Instal Cost		50		50		9,309,972
1181 Switching >=34.5Kv		40		40		7,531,538
1182 Switching >=115Kv		50		50 b)		2,610,047
1184 Sfg Switchgear		40		40		284,934
1185 Reclosers		40		40		18,568,808
1186 Misc Switching		50		50 b)		3,203,482
1187 Bus (Rigid & Strain)		50		50 e)		3,391,558
1188 Cable		40		40		3,299,994
1190 Cct Breakers >=230Kv		40		40		2,997
1191 Cct Breakers >=115Kv		40		40		706,868
1192 Cct Breakers <115Kv		40		40		540,039
1193 Cct Breakers Install		40		40		130,016
1194 Encl'd Swgr (All Compnt)		40		40		102,459
Total USoA 1815	40 R2.5	42	40 R2.5	42	\$ 189,962,718	\$ 189,962,718
1820 Distribution Station Equipment < 50 kV						
1113 Site Imprv - Excl Fence, Rd,Easmt		50		50		\$ 20,756,268
1122 Perm Rds & Surf Area		60		60		2,970,407
1123 Cost Equip Foundations, Excav		60		60		31,804,880
1127 Steel/Pipe Struc for Switch Eq		50		50 b)		30,922,150
1128 Fences, Gates, Bldg		50		50 b)		29,597,315
1150 Rot Elec Eqp (No Wind'G)		65		65		633,105
1151 Rot Elec Eqp (Wind'Gs)		65		65		260,512
1152 Capacitors		35		35		166,047
1155 Regulators Incl Instal Cost		40		40 b)		13,386,420
1159 Mobile Sub-Stations		30		30		25,450,753
1160 Misc Stn Eqp - Trsf/Volt Trsf		40		40		50,842,687
1161 Serv Swg - Ac/Dc-Light Trsf		50		50		3,964,008
1162 Control Cable & Conduit		50		50		4,473,196
1163 Grounding Systems		50		50		24,344,727
1164 Metering Units		12		12		96,261,214
1166 Switchboards		25		25 c)		1,835,397
1167 Sup Cntrl - Prim H/Ware & Sys		15		15		8,665,141
1168 Sup Cntrl - Prim Appl S/Ware		15		15		590,058
1170 Service Systems		50		50		309,678
1173 Transf <=50Kv & >5Mva		50		50		87,355,096
1175 Transf <=50Kv or <5Mva		50		50		75,931,248
1179 Transf Instal Cost		50		50		30,864,923
1181 Switching >=34.5Kv		50		50 b)		18,737,574
1184 Sfg Switchgear		35		35		2,246,941
1185 Reclosers		40		40		40,775,432
1186 Misc Switching		50		50 b)		6,472,495
1187 Bus (Rigid & Strain)		50		50 e)		5,060,735
1188 Cable		50		50		9,437,823
1192 Cct Breakers <115Kv		40		40		521,791
1193 Cct Breakers Install		40		40		117,683
1194 Encl'd Swgr (All Compnt)		40		40		3,302,860
Total USoA 1820	30 R2.5	32	30 R2.5	32	\$ 628,058,564	\$ 628,058,564
1830 Poles, Towers and Fixtures						
1230 Steel Twr, Sup & Ftng		75		75		\$ 938,887
1240 Poles Incl Xarm, Guy, Anchr		55		55		615,680,135
1245 Steel Poles		75		75		5,146,610
1249 Composite Poles		80		80 d)		9,695,316
1340 Poles, Towers and Fixtures		55		55		2,157,592,641
1349 Steel Poles Support		75		75		5,911,810
Total USoA 1830	55 S2	55	55 S2	55	\$ 2,794,965,399	\$ 2,794,965,399

Description A	Current P-Life		Recommended P-Life		Plant	
	USoA B	Category C	USoA D	Category E	USoA F	Category G
1835 Overhead Conductors and Devices						
1220 Insulators		45		45	\$	58,087,527
1232 Grounding System		45		45		1,898,907
1235 Opt Grnd Wire		50		50		2,906
1250 Overhd Conductor All		60		60 b)		347,417,491
1252 Switches & Devce		40		40		72,440,718
1320 Rural Switches/Load Interptr		40		40		229,272,158
1321 Rural Oil Sectnlzr & Reclsr Sw		40		40		30,513,593
1322 Rural Instalsectnlzr & Rclsr Sw		45		45		21,358,961
1330 Overhead Conductors and Devices		60		60 b)		1,011,570,643
1376 Rural Voltage Regulators		40		40		25,419,888
1377 Rural Instl Vltge Regulators		40		40		10,942,250
1378 Rural Capacitors		40		40		8,456,163
1379 Rural Install Capacitors		40		40		4,178,370
Total USoA 1835	55 S2	54	55 S2	54	\$ 1,821,559,575	\$ 1,821,559,575
1840 Underground Conduit						
1261 Ugrd Conduit		50		50	\$	23,902,877
Total USoA 1840	50 S2	50	50 S2	50	\$ 23,902,877	\$ 23,902,877
1845 Underground Conductors and Devices						
1231 Condctr Submarine Cbl		30		30	\$	531,480
1262 Ugrd Conductor		30		30		21,082,896
1293 Ugrd Conductor Primary		30		30		1,138,300
1331 Rural Condctr Submarine Cbl		30		30		144,370,389
1393 Rural U/Grd Conductor-Prime		30		30		172,820,067
1394 Rural U/Grd Condr Sec Serv		30		30		441,130,672
1395 Rural U/Grd Fuse Housing		30		30		43,800,307
Total USoA 1845	30 S3	30	30 S3	30	\$ 824,874,111	\$ 824,874,111
1850 Line Transformers						
1255 Dx - Subtx Transformers		40		40	\$	4,642,669
1256 Dx - Subtx Trnsfmrs Install		40		40		3,655,628
1295 U/GRD Fuse Housing		40		40		2,602,951
1341 Rural OH Trfmrs <=25 Kva		40		40		350,821,440
1342 Rural OH Trfmrs >25 & <=50 Kva		40		40		121,649,059
1343 Rural OH Trfmrs >50 & <=75 Kva		40		40		41,301,755
1344 Rural OH Trfmr >75 & <=100 Kva		40		40		34,055,479
1345 Pole Top Trfs >100 & <=200 Kva		40		40		18,258,738
1346 Pole Top Trfs >200 & <=300 Kva		40		40		9,221,596
1347 Dx - Ptop Trfmrs >300 & <=500 Kva		40		40		1,033,534
1348 Dx - Pole Top Trfmrs >500 Kva		40		40		931,265
1351 Rural Trsf Instal		40		40		725,654,443
1385 Rural U/Grd Trsf 0-50Kva		40		40		102,802,185
1386 Rural U/Grd Trsf 51-75 Kva		40		40		36,706,342
1387 Rural U/Grd Trsf 76-100 Kva		40		40		42,784,701
1388 Rural U/Grd Trsf 101-200Kva		40		40		18,926,834
1389 Rural U/Grd Trsf 201-300Kva		40		40		21,237,022
1390 Rural U/Grd Trsf 301-500Kva		40		40		35,427,816
1391 Rural U/Grd Trsf 501-750Kva		40		40		10,030,172
1392 Rural U/Grd Trsf >750Kva		40		40		10,745,396
1396 Rural U/Grd Trfmrs Instal		40		40		223,670,772
Total USoA 1850	40 R2	40	40 R2	40	\$ 1,816,159,796	\$ 1,816,159,796
1860 Meters						
1356 Meters - Watthour, Single Ph		20		20 f)	\$	3,600,566
1358 Metering Polyphase		20		20 f)		1,318,745
1361 Install - W/Hr & Dmd M S Ph		20		20 f)		10,219,211
1362 Install - Meters Polyphase		20		20 f)		1,443,841
Total USoA 1860	20 R5	20	20 R5	20	\$ 16,582,363	\$ 16,582,363
1860S Meters (Sustainment)						
1365 Smart Mtr - Incl Cost & Inst		15		15	\$	46,363,345
Total USoA 1860S	15 R5	15	15 R5	15	\$ 46,363,345	\$ 46,363,345
1555 Smart Meters						
1365 Smart Mtr - Incl Cost & Inst		15		15	\$	499,690,555
Total USoA 1555	15 R5	15	15 R5	15	\$ 499,690,555	\$ 499,690,555

Description A	Current P-Life		Recommended P-Life		Plant	
	USoA B	Category C	USoA D	Category E	USoA F	Category G
GENERAL PLANT						
Depreciable						
1908 Buildings and Fixtures						
1612 Genrl - Adm & Serv-Landscaping		50		50	\$	88,004
1621 Genrl - Adm & Serv-Bld Frame & Mtl		50		50		51,318,236
1622 Genrl - Adm & Serv-Rds & Surfaces		50		50		15,029,770
1623 Genrl - Adm & Serv-Bld Frame		50		50		39,092,360
1628 Genrl - Adm & Serv-Fence,Gate		30		30		1,857,701
1650 Genrl - Adm & Serv-Distr Sys		50		50		1,878,814
1663 Genrl - Adm & Serv-Aux Eq Bld		50		50		14,222,894
Total USoA 1908	50 S4	50	50 S4	50	\$ 123,487,778	\$ 123,487,778
1910 Leasehold Improvements						
1624 Genrl - Adm & Serv-Bldgs-Leased		10		10	\$	5,473,491
Total USoA 1910	10 S6	10	10 S6	10	\$ 5,473,491	\$ 5,473,491
1922 Computer Hardware - Major						
1653 Genrl - Adm & Serv-Lan Elect Dev		10		10	\$	2,035,010
1655 Genrl - Adm & Serv-Lan Cable		10		10		2,290,724
1656 Genrl - Adm & Serv-Lan Fib Opt		10		10		161,333
1657 Genrl - Adm & Serv-Sys Software		10		10		246,063
Total USoA 1922	10 S6	10	10 S6	10	\$ 4,733,131	\$ 4,733,131
1955 Communication Equipment						
1654 Genrl - Adm & Serv-Telcm Wire		7		7	\$	7,108,308
1656 Genrl - Adm & Serv-Lan Fib Opt		10		10		117,949
1658 Genrl - Adm & Serv-Telcm Equip		7		7		11,610,451
1659 Genrl - Adm & Serv-Telcom Sw		7		7		186,059
1850 Genrl - Comm-Radio Equipment		10		10		5,479,514
1854 Genrl - Comm-Admin Telcom Equip		7		7		596,112
1863 Genrl - Comm Optical Wire		25		25		168,288
1864 Genrl - Comm Optical Wire Termtn		25		25		52,759
1870 Genrl - Comm-Power Supply Equip		15		15		2,972
Total USoA 1955	7 S6	8	7 S6	8	\$ 25,322,412	\$ 25,322,412
1980 System Supervisory Equipment						
1840 Genrl - Comm-Pwr Line Equip		15		15	\$	138,912
1844 Genrl - Comm-Sys Cntrl Comp Eq		6		6 g)		3,642,616
1847 Genrl - Comm-Dacs Sys S/Ware		6		6 g)		104,135,726
1860 Genrl - Comm-Pole Comm Cab Bths		25		25		66,364
Total USoA 1980	6 L2	6	6 L2	6	\$ 107,983,618	\$ 107,983,618
1985 Sentinel Lighting Rental Units						
1374 Genrl - Dist Sentnal Lite Units		30		30	\$	14,163,999
Total USoA 1985	30 R1.5	30	30 R1.5	30	\$ 14,163,999	\$ 14,163,999
Amortizable						
1925 Computer Software - Major						
1657 Genrl - Adm & Serv-Sys Software		6		6 g)	\$	103,289,675
Total USoA 1925	6 SQ	6	6 SQ	6	\$ 103,289,675	\$ 103,289,675
TOTAL BU 220					\$9,536,188,646	\$9,536,188,646

- a) To align with BU 210 (Tx) and BU 300 (Common).
b) To align with Kinectrics.
c) Based on life span of newer equipment.
d) To be consistent with BU 210 (Tx).
e) To align with transformers. Cost effective to replace both.
f) Analog meters, continuing investments.
g) To align with hardware/software refresh policy.

Statements A through E

HYDRO ONE NETWORKS INC. - (BU 300)

Statement A

Comparison of Current and Recommended Accrual Rates

Current: VG Procedure / RL Technique

Proposed: VG Procedure / RL Technique

Account Description A	Current			Recommended			
	Rem. Life B	Net Salvage C	Accrual Rate D	Rem. Life E	Net Salvage F	Reserve Ratio G	Accrual Rate H
INTANGIBLE PLANT							
1610 Computer Software	5.00		9.47%	← 10 Year Amortization →			9.47%
Total Intangible Plant			9.47%	4.09		60.38%	9.47%
GENERAL PLANT							
Depreciable							
1908 Buildings and Fixtures	33.20		1.53%	34.84		34.23%	1.89%
1910 Leasehold Improvements	7.80		5.63%	7.98		35.00%	8.15%
1922 Computer Equipment - Hardware	8.15		8.23%	7.34		34.11%	8.98%
1955 Communication Equipment	1.00		-42.07%	5.89		47.51%	8.91%
1980 System Supervisory Equipment	1.00		-37.04%	5.68		63.17%	6.48%
Total Depreciable			-4.05%	12.71		37.23%	4.90%
Amortizable							
1915 Office Furniture and Equipment	← 7 Year Amortization →		13.50%	← 7 Year Amortization →			13.50%
1920 Computer Hardware - Minor	← 5 Year Amortization →		15.52%	← 5 Year Amortization →			15.52%
1925 Computer Software - Major	6.92		9.21%	← 6 Year Amortization →			9.21%
1935 Stores Equipment	← 8 Year Amortization →		7.35%	← 8 Year Amortization →			7.35%
1940 Tools, Shop and Garage Equipment	← 6 Year Amortization →		16.42%	← 6 Year Amortization →			16.42%
1945 Measurement and Testing Equipment	← 5 Year Amortization →		16.37%	← 5 Year Amortization →			16.37%
1960 Miscellaneous Equipment	← 5 Year Amortization →		15.08%	← 5 Year Amortization →			15.08%
Total Amortizable			12.43%	2.85		61.86%	12.43%
Total General Plant			5.56%	4.56		51.59%	9.29%
TOTAL COMMON OPERATIONS			7.45%	4.36		55.84%	9.38%

HYDRO ONE NETWORKS INC. - (BU 300)

Statement B

Comparison of Current and Recommended Accruals

Current: VG Procedure / RL Technique

Proposed: VG Procedure / RL Technique

Account Description A	12/31/15 Plant Investment B	2016 Annualized Accrual		
		Current C	Recommended D	Difference E=D-C
INTANGIBLE PLANT				
1610 Computer Software	\$ 403,450,559	\$ 38,214,409	\$ 38,214,409	\$ -
Total Intangible Plant	\$ 403,450,559	\$ 38,214,409	\$ 38,214,409	\$ -
GENERAL PLANT				
Depreciable				
1908 Buildings and Fixtures	\$ 95,964,858	\$ 1,468,262	\$ 1,813,736	\$ 345,474
1910 Leasehold Improvements	42,066,253	2,368,330	3,428,400	1,060,070
1922 Computer Equipment - Hardware	12,341,379	1,015,695	1,108,256	92,561
1955 Communication Equipment	22,399,965	(9,423,665)	1,995,837	11,419,502
1980 System Supervisory Equipment	7,335,098	(2,716,920)	475,314	3,192,234
Total Depreciable	\$ 180,107,553	\$ (7,288,298)	\$ 8,821,543	\$ 16,109,841
Amortizable				
1915 Office Furniture and Equipment	\$ 11,727,673	\$ 1,582,772	\$ 1,582,772	\$ -
1920 Computer Hardware - Minor	82,718,706	12,839,709	12,839,709	
1925 Computer Software - Major	120,975,593	11,140,693	11,140,693	
1935 Stores Equipment	1,744,872	128,216	128,216	
1940 Tools, Shop and Garage Equipment	12,412,077	2,037,643	2,037,643	
1945 Measurement and Testing Equipment	16,158,948	2,645,118	2,645,118	
1960 Miscellaneous Equipment	6,205,726	935,560	935,560	
Total Amortizable	\$ 251,943,595	\$ 31,309,711	\$ 31,309,711	\$ -
Total General Plant	\$ 432,051,148	\$ 24,021,413	\$ 40,131,254	\$ 16,109,841
TOTAL COMMON OPERATIONS	\$ 835,501,707	\$ 62,235,822	\$ 78,345,663	\$ 16,109,841

HYDRO ONE NETWORKS INC. - (BU 300)

Depreciation Reserve Summary
Vintage Group Procedure
December 31, 2015

Statement C

Account Description A	Plant Investment B		Recorded Reserve Amount C		Computed Reserve Amount E		Redistributed Reserve Amount G	
	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio
		D=C/B		F=E/B		H=G/B		
INTANGIBLE PLANT								
1610 Computer Software	\$ 403,450,559	56.97%	\$ 229,852,472	60.38%	\$ 243,597,315	60.38%	\$ 243,597,315	60.38%
Total Intangible Plant	\$ 403,450,559	56.97%	\$ 229,852,472	60.38%	\$ 243,597,315	60.38%	\$ 243,597,315	60.38%
GENERAL PLANT								
Depreciable								
1908 Buildings and Fixtures	\$ 95,964,858	63.63%	\$ 61,061,965	30.40%	\$ 29,176,691	34.23%	\$ 32,849,042	34.23%
1910 Leasehold Improvements	42,066,253	21.68%	9,120,418	31.09%	13,077,592	35.00%	14,723,615	35.00%
1922 Computer Equipment - Hardware	12,341,379	57.53%	7,099,984	30.29%	3,738,746	34.11%	4,209,327	34.11%
1955 Communication Equipment	22,399,965	58.34%	13,069,258	42.20%	9,452,390	47.51%	10,642,123	47.51%
1980 System Supervisory Equipment	7,335,098	-20.12%	(1,475,836)	56.11%	4,115,364	63.17%	4,633,348	63.17%
Total Depreciable	\$ 180,107,553	49.35%	\$ 88,875,790	33.07%	\$ 59,560,782	37.23%	\$ 67,057,456	37.23%
Amortizable								
1915 Office Furniture and Equipment	\$ 11,727,673	37.65%	\$ 4,415,696	38.19%	\$ 4,478,939	38.19%	\$ 4,478,939	38.19%
1920 Computer Hardware - Minor	82,718,706	63.08%	52,175,228	63.17%	52,254,737	63.17%	52,254,737	63.17%
1925 Computer Software - Major	120,975,593	59.23%	71,651,428	65.37%	79,080,264	65.37%	79,080,264	65.37%
1935 Stores Equipment	1,744,872	82.45%	1,438,683	82.42%	1,438,052	82.42%	1,438,052	82.42%
1940 Tools, Shop and Garage Equipment	12,412,077	39.79%	4,938,174	40.89%	5,075,128	40.89%	5,075,128	40.89%
1945 Measurement and Testing Equipment	16,158,948	55.54%	8,975,284	56.23%	9,085,446	56.23%	9,085,446	56.23%
1960 Miscellaneous Equipment	6,205,726	67.35%	4,179,680	71.47%	4,435,098	71.47%	4,435,098	71.47%
Total Amortizable	\$ 251,943,595	58.65%	\$ 147,774,173	61.86%	\$ 155,847,664	61.86%	\$ 155,847,664	61.86%
Total General Plant	\$ 432,051,148	54.77%	\$ 236,649,963	49.86%	\$ 215,408,446	49.86%	\$ 222,905,120	51.59%
TOTAL COMMON OPERATIONS	\$ 835,501,707	55.84%	\$ 466,502,435	54.94%	\$ 459,005,761	54.94%	\$ 466,502,435	55.84%

HYDRO ONE NETWORKS INC. - (BU 300)

Current and Recommended Parameters
Vintage Group Procedure

Account Description A	Current Parameters						Recommended Parameters					
	B	C	D	E	F	G	H	I	J	K	L	M
	P-Life/ AYFR	Curve Shape	VG ASL	Rem. Life	Avg. Sal.	Fut. Sal.	P-Life/ AYFR	Curve Shape	VG ASL	Rem. Life	Avg. Sal.	Fut. Sal.
INTANGIBLE PLANT												
1610 Computer Software	10.00	SQ	10.00	5.00			10.00	SQ	10.00	4.09		
Total Intangible Plant									10.00	4.09		
GENERAL PLANT												
Depreciable												
1908 Buildings and Fixtures	50.00	S4	50.05	33.20			50.00	S4	50.06	34.84		
1910 Leasehold Improvements	10.00	S6	12.63	7.80			10.00	S6	11.58	7.98		
1922 Computer Equipment - Hardware	10.00	S6	10.51	8.15			10.00	S6	10.53	7.34		
1955 Communication Equipment	7.00	S6	32.60	1.00			7.00	S6	10.19	5.89		
1980 System Supervisory Equipment	7.00	S6	15.39	1.00			7.00	S6	12.94	5.68		
Total Depreciable									18.99	12.71		
Amortizable												
1915 Office Furniture and Equipment	7.00	SQ	7.00	4.01			7.00	SQ	7.00	4.33		
1920 Computer Hardware - Minor	5.00	SQ	5.00	2.44			5.00	SQ	5.00	1.93		
1925 Computer Software - Major	10.00	SQ	7.00	6.92			6.00	SQ	6.00	3.55		
1935 Stores Equipment	8.00	SQ	8.00	2.86			8.00	SQ	8.00	1.81		
1940 Tools, Shop and Garage Equipment	6.00	SQ	6.00	2.80			6.00	SQ	6.00	3.55		
1945 Measurement and Testing Equipment	5.00	SQ	5.00	2.64			5.00	SQ	5.00	2.44		
1960 Miscellaneous Equipment	5.00	SQ	5.00	2.55			5.00	SQ	5.00	1.73		
Total Amortizable									5.58	2.85		
Total General Plant									7.91	4.56		
TOTAL COMMON OPERATIONS									8.80	4.36		

HYDRO ONE NETWORKS INC. - (BU 300)

Statement E

Asset Category Summary
December 31, 2015
Harmonic Weighting

Description A	Current P-Life		Recommended P-Life		Plant	
	USoA B	Category C	USoA D	Category E	USoA F	Category G
INTANGIBLE PLANT						
1610 Computer Software						
1656 Genrl - Adm & Serv-Lan Fib Opt		10		10		\$ 30,330,585
1657 Genrl - Adm & Serv-Sys Software		10		10		373,119,974
Total USoA 1610	10 SQ	10	10 SQ	10	\$ 403,450,559	\$ 403,450,559
GENERAL PLANT						
Depreciable						
1908 Buildings and Fixtures						
1621 Genrl - Adm & Serv-Bld Frame & Mtl		50		50		\$ 42,192,175
1622 Genrl - Adm & Serv-Rds & Surfaces		25		25		5,518,777
1623 Genrl - Adm & Serv-Bld Frame		50		50		26,118,611
1628 Genrl - Adm & Serv-Fence,Gate		30		30		1,340,070
1650 Genrl - Adm & Serv-Distr Sys		50		50		987,634
1663 Genrl - Adm & Serv-Aux Eq Bld		50		50		13,039,012
1812 Genrl - Comm-Road and Surface Areas		50		50		2,408
1820 Genrl - Comm-Buildings		50		50		6,766,170
Total USoA 1908	50 S4	47	50 S4	47	\$ 95,964,858	\$ 95,964,858
1910 Leasehold Improvements						
1624 Genrl - Adm & Serv-Bldgs-Leased		10		10		\$ 42,066,253
Total USoA 1910	10 S6	10	10 S6	10	\$ 42,066,253	\$ 42,066,253
1922 Computer Equipment - Hardware						
1653 Genrl - Adm & Serv-Lan Elect Dev		10		10		\$ 11,836,023
1655 Genrl - Adm & Serv-Lan Cable		10		10		505,356
Total USoA 1922	10 S6	10	10 S6	10	\$ 12,341,379	\$ 12,341,379
1955 Communication Equipment						
1654 Genrl - Adm & Serv-Telcm Wire		7		7		\$ 2,396,026
1658 Genrl - Adm & Serv-Telcm Equip		7		7		15,559,467
1850 Genrl - Comm-Radio Equipment		10		10		11,318
1854 Genrl - Comm-Admin Telcom Equip		7		7		4,433,155
Total USoA 1955	7 S6	7	7 S6	7	\$ 22,399,965	\$ 22,399,965
1980 System Supervisory Equipment						
1840 Genrl - Comm-Pwr Line Equip		15		15		\$ 389,017
1844 Genrl - Comm-Sys Cntrl Comp Eq		6		10		3,705,164
1847 Genrl - Comm-DACS SYS S/Ware		6		6 a)		3,240,918
Total USoA 1980	7 S6	6	7 S6	8	\$ 7,335,098	\$ 7,335,098
Amortizable						
1915 Office Furniture and Equipment						
S007 Mfa - 7 Yr SI		7		7		\$ 11,727,673
Total USoA 1915	7 SQ	7	7 SQ	7	\$ 11,727,673	\$ 11,727,673
1920 Computer Hardware - Minor						
S005 Mfa - 5Yr SI(Def)		5		5		\$ 82,718,706
Total USoA 1920	5 SQ	5	5 SQ	5	\$ 82,718,706	\$ 82,718,706
1925 Computer Software - Major						
1657 Genrl - Adm & Serv-Sys Software		6		6 a)		\$ 120,975,593
Total USoA 1925	10 SQ	6	6 SQ	6	\$ 120,975,593	\$ 120,975,593
1935 Stores Equipment						
S008 Mfa - 8Yr SI(Def)		8		8		\$ 1,744,872
Total USoA 1935	8 SQ	8	8 SQ	8	\$ 1,744,872	\$ 1,744,872
1940 Tools, Shop and Garage Equipment						
S006 Mfa - 6Yr SI(Def)		6		6		\$ 12,412,077
Total USoA 1940	6 SQ	6	6 SQ	6	\$ 12,412,077	\$ 12,412,077
1945 Measurement and Testing Equipment						
S005 Mfa - 5Yr SI(Def)		5		5		\$ 16,158,948
Total USoA 1945	5 SQ	5	5 SQ	5	\$ 16,158,948	\$ 16,158,948
1960 Miscellaneous Equipment						
S005 Mfa - 5Yr SI(Def)		5		5		\$ 6,205,726
Total USoA 1960	5 SQ	5	5 SQ	5	\$ 6,205,726	\$ 6,205,726
TOTAL BU 300					\$ 835,501,707	\$ 835,501,708

a) To align with hardware/software refresh policy.

Analysis

ANALYSIS

INTRODUCTION

This section provides an explanation of the supporting schedules developed in the Hydro One Networks distribution and common depreciation review to estimate appropriate projection curves, projection lives and statistics for each rate category. The form and content of the schedules developed for an account depend upon the method of analysis adopted for the category.

This section also includes an example of the supporting schedules developed for Account 1850 – Line Transformers. Documentation for all other plant accounts is contained in the review work papers. The supporting schedules developed in the Hydro One Networks review include:

- Schedule A – Generation Arrangement;
- Schedule B – Age Distribution;
- Schedule C – Plant History;
- Schedule D – Actuarial Life Analysis; and
- Schedule E – Graphics Analysis.

The format and content of these schedules are briefly described below.

SCHEDULE A – GENERATION ARRANGEMENT

The purpose of this schedule is to obtain appropriate weighted-average life statistics for a rate category. The weighted-average remaining-life is the sum of Column H divided by the sum of Column I. The weighted average life is the sum of Column C divided by the sum of Column I. The following table provides a description of each column in the generation arrangement.

Column	Title	Description
A	Vintage	Vintage or placement year of surviving plant.
B	Age	Age of surviving plant at beginning of study year.
C	Surviving Plant	Actual dollar amount of surviving plant.
D	Average Life	Estimated average life of each vintage. This statistic is the sum of the realized life and the unrealized life, which is the product of the remaining life (Column E) and the theoretical proportion surviving.
E	Remaining Life	Estimated remaining life of each vintage.
F	Net Plant Ratio	Theoretical net plant ratio of each vintage.
G	Allocation Factor	A pivotal ratio which determines the amortization period of the difference between the recorded and computed reserve.
H	Computed Net Plant	Plant in service less theoretical reserve for each vintage.
I	Accrual	Ratio of computed net plant (Column H) and remaining life (Column E).

Table 4. Generation Arrangement

SCHEDULE B – AGE DISTRIBUTION

This schedule provides the age distribution and realized life of surviving plant shown in Column C of the Generation Arrangement (Schedule A). The format of the schedule depends upon the availability of either aged or unaged data. Derived additions for vintage years older than the earliest activity year in an account for unaged data are obtained from the age distribution of surviving plant at the beginning of the earliest activity year. The amount surviving from these vintages is shown in Column D. The realized life (Column G) is derived from the dollar years of service provided by a vintage over the period of years the vintage has been in service. Plant additions for vintages older than the earliest activity year in an account are represented by the opening balances shown in Column D.

The computed proportion surviving (Column D) for unaged is derived from a computed mortality analysis. The average service life displayed in the title block is the life statistic derived for the most recent activity year, given the derived age distribution at the start of the year and the specified retirement dispersion. The realized life (Column F) is obtained by finding the slope of an SC retirement dispersion, which connects the computed survivors of a vintage (Column E) to the recorded vintage addition (Column B). The realized life is the area bounded by the SC dispersion, the computed proportion surviving and the age of the vintage.

SCHEDULE C – PLANT HISTORY

An Unadjusted Plant History schedule provides a summary of recorded plant data extracted from the continuing property records maintained by the Company. Activity year total amounts shown on this schedule for aged data are obtained from a historical arrangement of the data base in which all plant accounting transactions are identified by vintage and activity year. Activity year totals for unaged data are obtained from a transaction file without vintage identification. Information displayed in the unadjusted plant history is consistent with regulated investments reported internally by the Company.

An Adjusted Plant History schedule provides a summary of recorded plant data extracted from the continuing property records maintained by the Company with sales, transfers, and adjustments appropriately aged for depreciation study purposes. Activity year total amounts shown on this schedule for aged data are obtained from a historical arrangement of the data base in which all plant accounting transactions are identified by vintage and activity year. Ageing of adjusting transactions is achieved using transaction codes that identify an adjusting year associated with the dollar amount of a transaction. Adjusting transactions processed in the adjusted plant history are not aged in the Company's records or in the unadjusted plant history.

SCHEDULE D – ACTUARIAL LIFE ANALYSIS

These schedules provide a summary of the dispersion and life indications obtained from an actuarial life analysis for a specified placement band. The observation band (Column A) is specified to produce a rolling-band, shrinking-band, or progressive-band analysis depending upon the movement of the end points of the band. The degree of censoring (or point of truncation) of the observed life table is shown in Column B for each observation band. The estimated average service life, best fitting Iowa dispersion, and a statistical measure of the goodness of fit are shown for each degree polynomial (First, Second, and Third) fitted to the estimated hazard rates. Options available in the analysis include the width and location of both the placement and observation bands; the interval of years included in a selected rolling, shrinking, or progressive band analysis; the estimator of the hazard rate (actuarial, conditional proportion retired, or maximum likelihood); the elements to include on the diagonal of a weight matrix (exposures, inverse of age, inverse of variance, or unweighted); and the age at which an observed life table is truncated.

Estimated projection lives (Columns C, F, and I) are flagged with an asterisk if negative hazard rates are indicated by the fitted polynomial. All negative hazard rates are set equal to zero in the calculation of the graduated survivor curve. The Conformance Index (Columns E, H, and K) is the square root of the mean sum-of-squared differences between the graduated survivor curve and the best fitting Iowa curve. A Conformance Index of zero would indicate a perfect fit.

SCHEDULE E – GRAPHICS ANALYSIS

This schedule provides a graphics plot of a) the observed proportion surviving for a selected placement and observation band; b) the statistically best fitting Iowa dispersion and derived average service life; and c) the projection curve and projection life selected to describe future forces of mortality.

The graphics analysis also provides a plot of the observed hazard rates and graduated hazard function for a selected placement and observation band. The estimator of the hazard rates and weighting used in fitting orthogonal polynomials to the observed data are displayed in the title block of the displayed graph.

HYDRO ONE NETWORKS INC. - DISTRIBUTION

**Distribution Plant
Account: 1850 Line Transformers**

**Dispersion: 40 - R2
Procedure: Vintage Group**

Generation Arrangement

Vintage	December 31, 2015		Avg. Life	Rem. Life	Net Plant Ratio	Alloc. Factor	Computed Net Plant	Accrual
	Age	Surviving Plant						
A	B	C	D	E	F	G	H=C*F*G	I=H/E
2015	0.5	33,936,194	40.00	39.55	0.9887	1.0000	33,552,154	848,396
2014	1.5	121,252,388	40.00	38.65	0.9661	1.0000	117,143,360	3,031,109
2013	2.5	145,581,553	40.01	37.75	0.9437	1.0000	137,379,257	3,638,888
2012	3.5	88,719,419	40.01	36.87	0.9214	1.0000	81,747,137	2,217,440
2011	4.5	83,933,425	40.01	35.98	0.8993	1.0000	75,481,502	2,097,589
2010	5.5	90,746,077	40.01	35.11	0.8777	1.0000	79,643,761	2,268,316
2009	6.5	81,486,776	40.01	34.25	0.8559	1.0000	69,742,763	2,036,567
2008	7.5	79,040,924	39.93	33.39	0.8360	1.0000	66,080,815	1,979,256
2007	8.5	76,629,311	40.05	32.54	0.8124	1.0000	62,252,185	1,913,349
2006	9.5	81,773,231	40.02	31.69	0.7918	1.0000	64,750,727	2,043,069
2005	10.5	67,634,775	40.09	30.86	0.7697	1.0000	52,059,679	1,687,056
2004	11.5	71,825,061	40.08	30.03	0.7492	1.0000	53,814,477	1,791,896
2003	12.5	57,039,529	40.12	29.21	0.7283	1.0000	41,539,834	1,421,881
2002	13.5	54,184,822	39.98	28.41	0.7104	1.0000	38,494,034	1,355,136
2001	14.5	39,724,052	40.08	27.61	0.6887	1.0000	27,358,872	991,033
2000	15.5	36,900,337	39.92	26.82	0.6718	1.0000	24,789,962	924,438
1999	16.5	52,474,762	39.70	26.04	0.6558	1.0000	34,412,035	1,321,731
1998	17.5	30,915,260	40.04	25.26	0.6309	1.0000	19,505,512	772,048
1997	18.5	23,418,128	40.21	24.50	0.6095	1.0000	14,272,526	582,460
1996	19.5	20,803,628	40.22	23.75	0.5906	1.0000	12,285,806	517,226
1995	20.5	18,257,219	40.36	23.01	0.5702	1.0000	10,410,089	452,351
1994	21.5	16,323,797	40.50	22.28	0.5502	1.0000	8,981,793	403,062
1993	22.5	15,368,844	40.61	21.57	0.5310	1.0000	8,161,350	378,441
1992	23.5	28,449,773	40.99	20.86	0.5089	1.0000	14,478,820	694,137
1991	24.5	32,454,895	40.98	20.16	0.4921	1.0000	15,970,627	792,060
1990	25.5	45,196,820	41.21	19.48	0.4727	1.0000	21,364,860	1,096,761
1989	26.5	43,391,687	41.43	18.81	0.4540	1.0000	19,700,555	1,047,418
1988	27.5	45,386,170	41.57	18.15	0.4366	1.0000	19,817,417	1,091,881
1987	28.5	33,310,866	41.81	17.50	0.4186	1.0000	13,943,883	796,630
1986	29.5	27,812,523	42.00	16.87	0.4017	1.0000	11,172,606	662,254
1985	30.5	22,813,780	42.04	16.25	0.3866	1.0000	8,819,366	542,705
1984	31.5	14,745,453	42.43	15.64	0.3687	1.0000	5,437,042	347,541
1983	32.5	13,742,907	42.84	15.05	0.3514	1.0000	4,829,033	320,824
1982	33.5	13,115,989	42.74	14.47	0.3387	1.0000	4,441,955	306,900
1981	34.5	11,430,055	43.33	13.91	0.3210	1.0000	3,668,873	263,767
1980	35.5	8,047,880	43.26	13.36	0.3088	1.0000	2,485,524	186,042
1979	36.5	6,999,032	43.59	12.83	0.2942	1.0000	2,059,362	160,573

HYDRO ONE NETWORKS INC. - DISTRIBUTION

Distribution Plant

Account: 1850 Line Transformers

Dispersion: 40 - R2

Procedure: Vintage Group

Generation Arrangement

Vintage	December 31, 2015		Avg. Life	Rem. Life	Net Plant Ratio	Alloc. Factor	Computed Net Plant	Accrual
	Age	Surviving Plant						
A	B	C	D	E	F	G	H=C*F*G	I=H/E
1978	37.5	6,586,693	44.04	12.30	0.2794	1.0000	1,840,345	149,562
1977	38.5	7,584,574	44.67	11.80	0.2642	1.0000	2,003,585	169,799
1976	39.5	7,486,179	45.05	11.31	0.2510	1.0000	1,879,147	166,157
1975	40.5	8,995,231	45.31	10.83	0.2391	1.0000	2,150,631	198,505
1974	41.5	8,427,780	45.72	10.37	0.2269	1.0000	1,912,080	184,320
1973	42.5	5,153,725	46.54	9.93	0.2133	1.0000	1,099,350	110,734
1972	43.5	3,397,931	46.72	9.50	0.2033	1.0000	690,653	72,726
1971	44.5	3,774,010	47.37	9.08	0.1917	1.0000	723,464	79,678
1970	45.5	9,918,035	47.51	8.68	0.1827	1.0000	1,811,529	208,775
1965	50.5	3,742,589	50.69	6.85	0.1352	1.0000	505,994	73,835
1960	55.5	16,225,709	54.71	5.27	0.0964	1.0000	1,564,063	296,588
Total	13.8	\$1,816,159,796	40.64	29.05	0.7148	1.0000	\$1,298,230,393	\$44,692,906

HYDRO ONE NETWORKS INC. - DISTRIBUTION

Distribution Plant

Account: 1850 Line Transformers

Age Distribution

Vintage	Age as of 12/31/2015	Derived Additions	2000 Opening Balance	Experience to 12/31/2015		
				Amount Surviving	Proportion Surviving	Realized Life
A	B	C	D	E	F=E/(C+D)	G
2015	0.5	33,941,188		33,936,194	0.9999	0.4999
2014	1.5	121,298,480		121,252,388	0.9996	1.4997
2013	2.5	145,757,529		145,581,553	0.9988	2.4991
2012	3.5	89,067,893		88,719,419	0.9961	3.4938
2011	4.5	84,619,997		83,933,425	0.9919	4.4871
2010	5.5	92,208,660		90,746,077	0.9841	5.4643
2009	6.5	82,595,992		81,486,776	0.9866	6.4521
2008	7.5	81,259,005		79,040,924	0.9727	7.3528
2007	8.5	77,684,561		76,629,311	0.9864	8.4417
2006	9.5	83,554,230		81,773,231	0.9787	9.3857
2005	10.5	68,720,194		67,634,775	0.9842	10.4156
2004	11.5	73,453,096		71,825,061	0.9778	11.3674
2003	12.5	58,213,133		57,039,529	0.9798	12.3529
2002	13.5	56,593,875		54,184,822	0.9574	13.1693
2001	14.5	41,134,408		39,724,052	0.9657	14.2086
2000	15.5	39,426,841		36,900,337	0.9359	14.9753
1999	16.5		57,272,646	52,474,762	0.9162	15.6866
1998	17.5		32,864,083	30,915,260	0.9407	16.9465
1997	18.5		24,669,832	23,418,128	0.9493	18.0187
1996	19.5		22,119,591	20,803,628	0.9405	18.9355
1995	20.5		19,347,143	18,257,219	0.9437	19.9658
1994	21.5		17,292,257	16,323,797	0.9440	20.9855
1993	22.5		16,256,159	15,368,844	0.9454	21.9671
1992	23.5		29,320,674	28,449,773	0.9703	23.2006
1991	24.5		34,125,421	32,454,895	0.9510	24.0364
1990	25.5		47,213,084	45,196,820	0.9573	25.1039
1989	26.5		45,161,123	43,391,687	0.9608	26.1416
1988	27.5		47,646,128	45,386,170	0.9526	27.0865
1987	28.5		34,720,036	33,310,866	0.9594	28.1242
1986	29.5		29,077,246	27,812,523	0.9565	29.0802
1985	30.5		24,645,406	22,813,780	0.9257	29.8776
1984	31.5		15,625,603	14,745,453	0.9437	31.0074
1983	32.5		14,371,055	13,742,907	0.9563	32.1362
1982	33.5		14,333,262	13,115,989	0.9151	32.7378
1981	34.5		12,115,442	11,430,055	0.9434	34.0151
1980	35.5		8,928,755	8,047,880	0.9013	34.5986
1979	36.5		7,716,587	6,999,032	0.9070	35.5651
1978	37.5		7,263,646	6,586,693	0.9068	36.6310

HYDRO ONE NETWORKS INC. - DISTRIBUTION

Distribution Plant

Account: 1850 Line Transformers

Age Distribution

Vintage	Age as of 12/31/2015	Derived Additions	2000 Opening Balance	Experience to 12/31/2015		
				Amount Surviving	Proportion Surviving	Realized Life
A	B	C	D	E	F=E/(C+D)	G
1977	38.5		8,142,806	7,584,574	0.9314	37.8489
1976	39.5		8,054,793	7,486,179	0.9294	38.8012
1975	40.5		9,907,871	8,995,231	0.9079	39.6014
1974	41.5		9,331,390	8,427,780	0.9032	40.5244
1973	42.5		5,518,893	5,153,725	0.9338	41.8303
1972	43.5		3,782,786	3,397,931	0.8983	42.4723
1971	44.5		4,216,289	3,774,010	0.8951	43.5492
1970	45.5		11,495,403	9,918,035	0.8628	44.0963
1965	50.5		4,532,847	3,742,589	0.8257	48.9070
1960	55.5		19,526,173	16,225,709	0.8310	53.9325
Total	13.8	\$1,229,529,084	\$646,594,428	\$1,816,159,796	0.9680	

HYDRO ONE NETWORKS INC. - DISTRIBUTION

Distribution Plant

Account: 1850 Line Transformers

Unadjusted Plant History

Year	Beginning Balance	Additions	Retirements	Sales, Transfers & Adjustments	Ending Balance
A	B	C	D	E	F=B+C-D+E
2000	833,030,256	16,511,195	2,159,339	34,271,760	881,653,873
2001	881,653,873	8,557,059	2,686,174	96,233,636	983,758,394
2002	983,758,394	6,144,671	6,564,516	127,964,395	1,111,302,944
2003	1,111,302,944	7,982,518	4,950,154	66,204,802	1,180,540,110
2004	1,180,540,110	7,658,134	4,869,058	98,451,464	1,281,780,651
2005	1,281,780,651	4,179,746	5,002,138	95,646,532	1,376,604,791
2006	1,376,604,791	3,979,215	3,497,726	103,498,367	1,480,584,647
2007	1,480,584,647	3,477,676	2,089,879	(369,341,975)	1,112,630,469
2008	1,112,630,469	627,238	2,124,214	84,447,833	1,195,581,326
2009	1,195,581,326	84,406,753	3,686,551	(3,057,850)	1,273,243,677
2010	1,273,243,677	81,167,048	4,318,539		1,350,092,186
2011	1,350,092,186	89,916,228	4,492,069	(29,401)	1,435,486,944
2012	1,435,486,944	86,408,054	3,457,971	(69,573)	1,518,367,455
2013	1,518,367,455	99,358,446	2,349,371	(51,494)	1,615,325,035
2014	1,615,325,035	103,208,606	5,091,158	64,841	1,713,507,326
2015	1,713,507,326	105,341,367	2,624,862	(64,035)	1,816,159,796

HYDRO ONE NETWORKS INC. - DISTRIBUTION

Distribution Plant

Account: 1850 Line Transformers

Schedule C

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Adjusted Plant History

Year	Beginning Balance	Additions	Retirements	Sales, Transfers & Adjustments	Ending Balance
A	B	C	D	E	F=B+C-D+E
2000	842,014,719	42,882,092	2,159,339	1,250,760	883,988,232
2001	883,988,232	56,644,053	2,686,174	53,660,221	991,606,332
2002	991,606,332	75,155,021	6,564,516	52,728,737	1,112,925,575
2003	1,112,925,575	74,702,255	4,950,154	(36,339)	1,182,641,337
2004	1,182,641,337	100,277,260	4,869,058	(26,745)	1,278,022,794
2005	1,278,022,794	96,096,496	5,002,138	2,612,348	1,371,729,500
2006	1,371,729,500	83,718,994	3,497,726	11,790	1,451,962,558
2007	1,451,962,558	77,809,633	2,089,879	(413,803,469)	1,113,878,844
2008	1,113,878,844	81,287,042	2,124,214		1,193,041,671
2009	1,193,041,671	82,595,982	3,686,551	(267,729)	1,271,683,372
2010	1,271,683,372	92,208,650	4,318,539		1,359,573,484
2011	1,359,573,484	84,540,766	4,492,069	79,251	1,439,701,433
2012	1,439,701,433	89,099,242	3,457,971		1,525,342,704
2013	1,525,342,704	145,753,221	2,349,371	(51,494)	1,668,695,060
2014	1,668,695,060	121,238,761	5,091,158	64,841	1,784,907,505
2015	1,784,907,505	33,941,188	2,624,862	(64,035)	1,816,159,796

HYDRO ONE NETWORKS INC. - DISTRIBUTION
Distribution Plant

Account: 1850 Line Transformers

T-Cut: None

Placement Band: 1960-2012

Hazard Function: Proportion Retired

Weighting: Exposures

Rolling Band Life Analysis

Observation Band	Censoring	First Degree			Second Degree			Third Degree		
		Average Life	Disper- sion	Conf. Index	Average Life	Disper- sion	Conf. Index	Average Life	Disper- sion	Conf. Index
A	B	C	D	E	F	G	H	I	J	K
2000-2004	70.9	84.3	L0.5	2.08	55.9	R2	0.80	100.3	O3 *	0.44
2001-2005	69.2	82.8	L0.5	2.18	55.9	R2	0.74	78.0	O3 *	0.49
2002-2006	70.2	87.8	L0.5	2.20	58.5	R2	0.77	62.8	H2 *	0.67
2003-2007	73.5	93.2	L0.5	1.65	62.5	H2.5	0.37	60.1	R2	0.46
2004-2008	75.8	98.6	H1.5	1.42	66.2	H2.5	0.31	61.5	R2.5	0.42
2005-2009	78.1	109.9	S-5	1.36	70.0	H2.5	0.31	66.1	R2.5	0.34
2006-2010	79.4	120.6	S-5	1.47	72.9	R2	0.41	71.9	R2	0.42
2007-2011	78.2	117.1	S-5	1.35	73.6	H2.5	0.40	70.6	R2	0.41
2008-2012	79.1	122.9	S-5	1.19	79.5	H2.5	0.49	80.8	S1	0.49

HYDRO ONE NETWORKS INC. - DISTRIBUTION

Distribution Plant

Account: 1850 Line Transformers

Schedule D

Page 1 of 1

T-Cut: None

Placement Band: 1960-2012

Hazard Function: Proportion Retired

Weighting: Exposures

Shrinking Band Life Analysis

Observation Band	Censoring	First Degree			Second Degree			Third Degree		
		Average Life	Disper-sion	Conf. Index	Average Life	Disper-sion	Conf. Index	Average Life	Disper-sion	Conf. Index
A	B	C	D	E	F	G	H	I	J	K
2000-2012	73.6	104.8	L0.5	1.88	69.2	H2.5	0.53	101.4	O3 *	0.51
2002-2012	73.7	104.3	H1	1.75	69.4	H2.5	0.49	84.2	L0.5 *	0.48
2004-2012	76.5	110.5	S-.5	1.41	73.3	H2.5	0.37	72.7	H2.5	0.37
2006-2012	78.9	119.4	S-.5	1.28	77.0	H2.5	0.38	73.5	R2	0.38
2008-2012	79.1	122.9	S-.5	1.19	79.5	H2.5	0.49	80.8	S1	0.49
2010-2012	82.0	124.0	SC	0.43	85.4	R1.5	0.45	76.7	R2	0.39
2012-2012	87.1	122.4	S-.5	0.83	109.7	S0	0.88	90.3	R2	0.85

HYDRO ONE NETWORKS INC. - DISTRIBUTION

Distribution Plant

Account: 1850 Line Transformers

Schedule D

Page 1 of 1

T-Cut: None

Placement Band: 1960-2012

Hazard Function: Proportion Retired

Weighting: Exposures

Progressing Band Life Analysis

Observation Band	Censoring	First Degree			Second Degree			Third Degree		
		Average Life	Disper- sion	Conf. Index	Average Life	Disper- sion	Conf. Index	Average Life	Disper- sion	Conf. Index
A	B	C	D	E	F	G	H	I	J	K
2000-2001	87.7	111.0	S-.5	0.52	66.7	R2	0.94	162.6	R1 *	1.39
2000-2003	74.7	87.1	L0.5	1.21	56.0	R2	0.58	116.4	O3 *	0.63
2000-2005	70.2	85.7	L0.5	2.24	57.1	R2	0.85	86.7	O3 *	0.61
2000-2007	72.0	92.0	L0.5	1.91	60.8	R2	0.42	62.2	H2.5	0.39
2000-2009	73.3	97.8	L0.5	1.76	63.8	H2.5	0.29	72.6	L1.5 *	0.29
2000-2011	72.9	102.8	L0.5	1.97	66.9	H2.5	0.51	82.5	L0.5 *	0.49
2000-2012	73.6	104.8	L0.5	1.88	69.2	H2.5	0.53	101.4	O3 *	0.51

HYDRO ONE NETWORKS INC. - DISTRIBUTION

Distribution Plant

Account: 1850 Line Transformers

Schedule E

Page 1 of 1

T-Cut: None

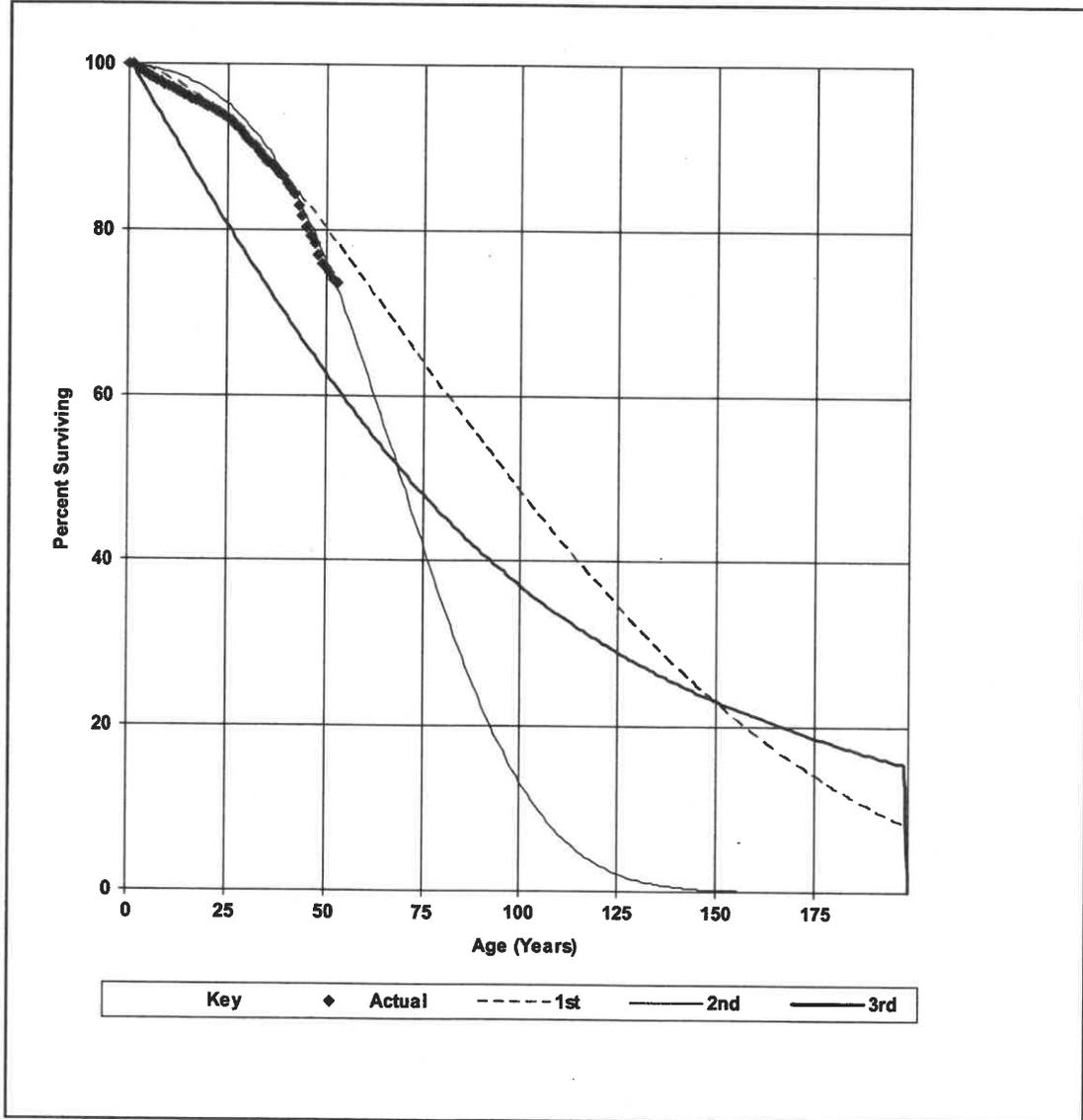
Placement Band: 1960-2012 Observation Band: 2000-2012

Hazard Function: Proportion Retired

Weighting: Exposures

1st: 104.8-L0.5 2nd: 69.2-H2.5 3rd: 101.4-O3

Graphics Analysis



HYDRO ONE NETWORKS INC. - DISTRIBUTION

Distribution Plant

Account: 1850 Line Transformers

T-Cut: None

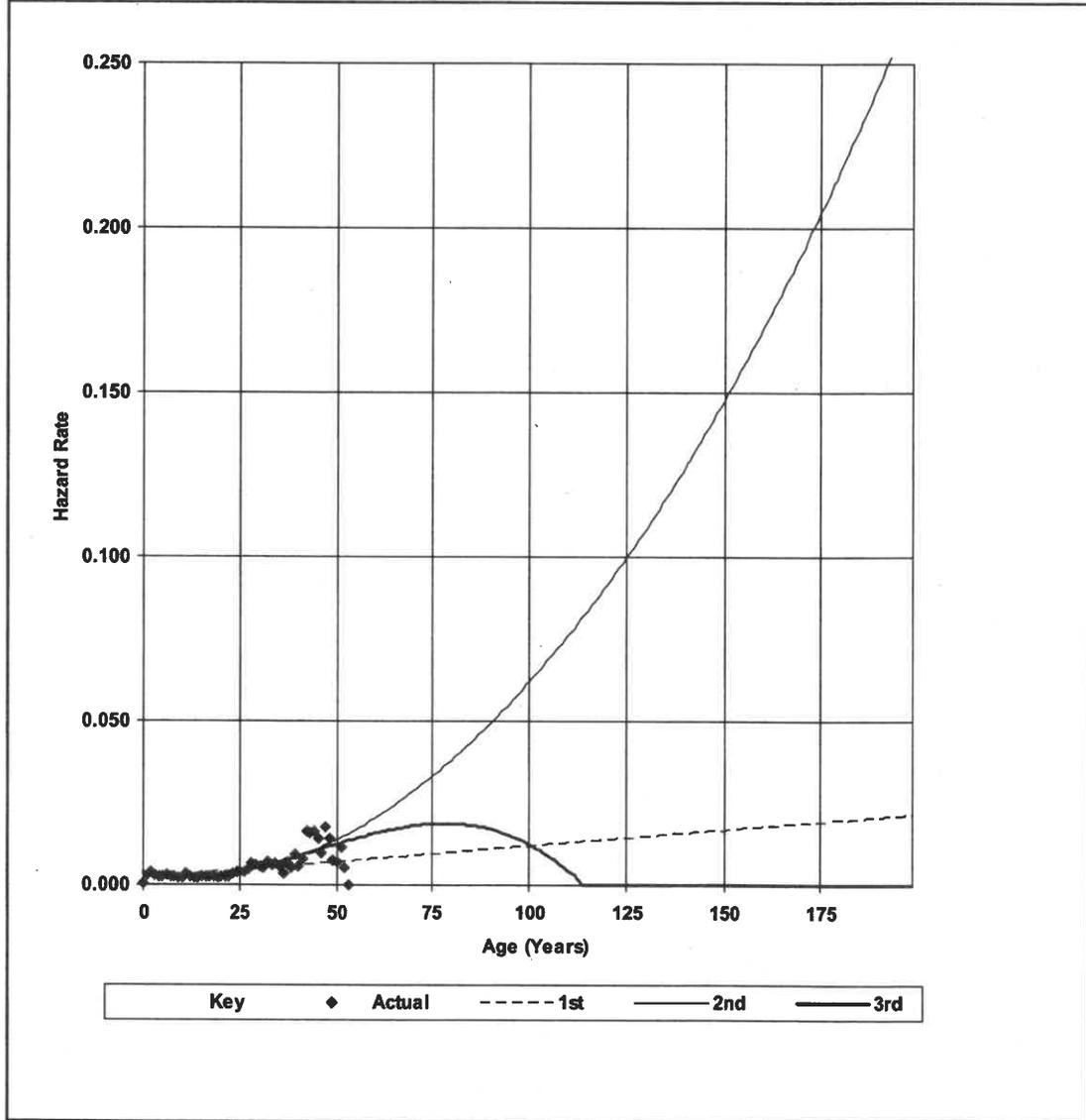
Placement Band: 1960-2012 Observation Band: 2000-2012

Hazard Function: Proportion Retired

Weighting: Exposures

Polynomial Hazard Function

1st: 104.8-L0.5 2nd: 69.2-H2.5 3rd: 101.4-O3



HYDRO ONE NETWORKS INC. - DISTRIBUTION
Distribution Plant
Account: 1850 Line Transformers

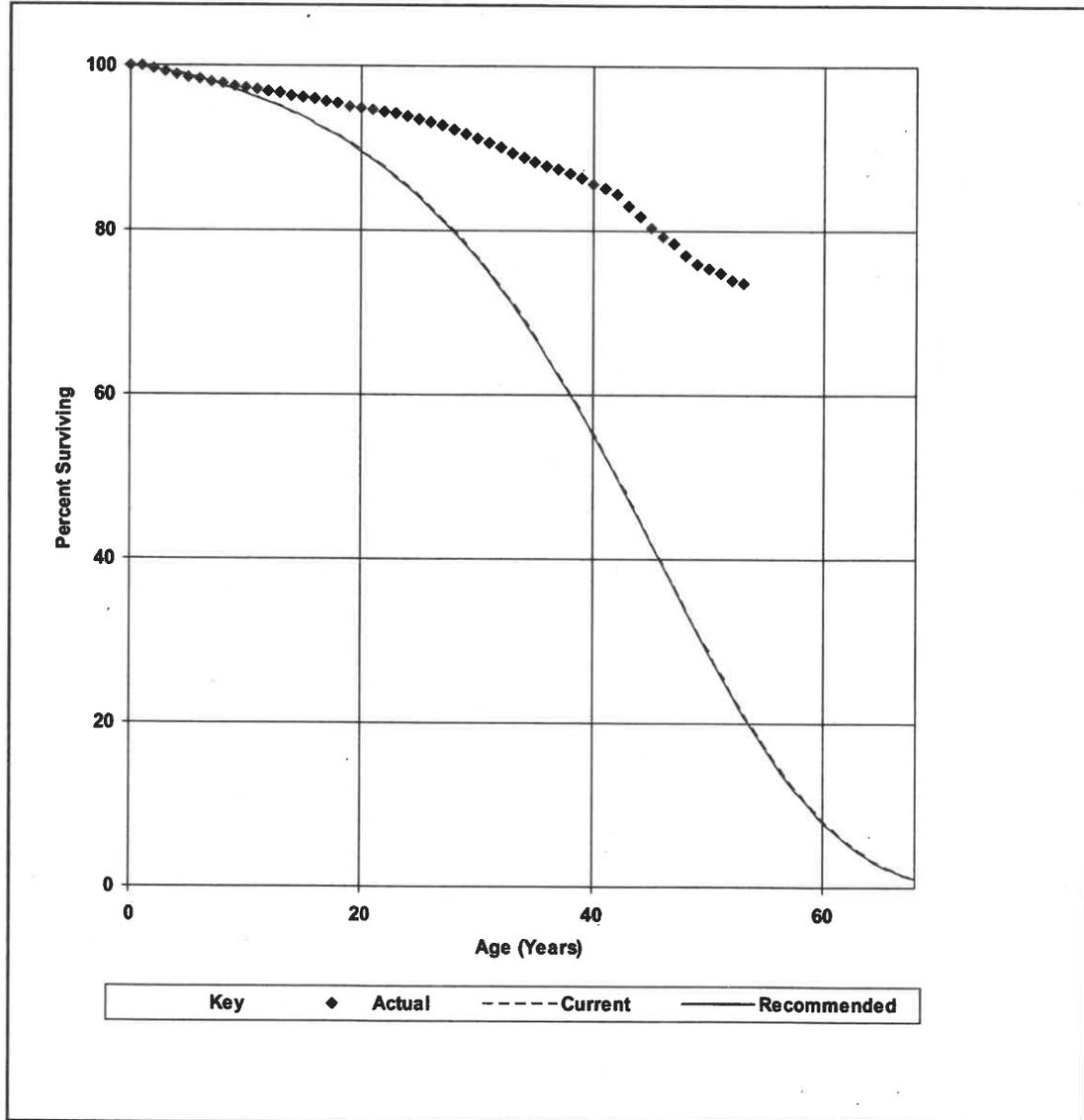
T-Cut: None

Placement Band: 1960-2012

Observation Band: 2000-2012

Current: 40.0-R2 Recommended: 40.0-R2

Current and Recommended Projection Life Curves



Expert Rule 13A

EXPERT RULE 13A

TITLE OF REPORT

2016 Depreciation Rate Review
—Distribution Operations
—Common Operations

CONSULTANT

Ronald E. White, Ph.D.
Foster Associates Consultants, LLC
17595 S. Tamiami Trail, Suite 260
Fort Myers, FL 33908

QUALIFICATIONS

See attached Professional Qualifications.

INSTRUCTIONS PROVIDED

Foster Associates was instructed to conduct a 2016 Depreciation Rate Review and provide recommended depreciation rates for USoA categories derived from service life statistics estimated for category classifications adopted by Hydro One Networks for engineering operations and planning purposes.

BASIS OF EVIDENCE

Specific information and factual assumptions upon which the 2016 Depreciation Rate Review is based are contained within the titled report.

CONFIRMATION

Dr. White has been made aware of and agrees to accept the responsibilities that are or may be imposed as set forth in Rule 13A.



Ronald E. White, Ph.D.
December 15, 2016

FORM A

Proceeding: EB-2017-0049

ACKNOWLEDGMENT OF EXPERT'S DUTY

1. My name is Ronald E. White, Ph.D.(*name*). I live at Fort Myers (*city*), in the state of Florida (*province/state*) in the United States.
2. I have been engaged by or on behalf of Hydro One Networks (*name of party/parties*) to provide evidence in relation to the above-noted proceeding before the Ontario Energy Board.
3. I acknowledge that it is my duty to provide evidence in relation to this proceeding as follows:
 - (a) to provide opinion evidence that is fair, objective and non-partisan;
 - (b) to provide opinion evidence that is related only to matters that are within my area of expertise; and
 - (c) to provide such additional assistance as the Board may reasonably require, to determine a matter in issue.
4. I acknowledge that the duty referred to above prevails over any obligation which I may owe to any party by whom or on whose behalf I am engaged.

Date 02/14/2017

A handwritten signature in black ink, appearing to read 'Ronald E. White', written over a horizontal line.

Signature

PROFESSIONAL QUALIFICATIONS

NAME AND ADDRESS

Ronald E. White, Ph.D.
Foster Associates Consultants, LLC
17595 S. Tamiami Trail, Suite 260
Fort Myers, FL 33908

EDUCATION

1961 – 1964 Valparaiso University

Major: Electrical Engineering

1965 Iowa State University

B.S., Engineering Operations

1968 Iowa State University

M.S., Engineering Valuation

Thesis: The Multivariate Normal Distribution and the Simulated Plant Record
Method of Life Analysis

1977 Iowa State University

Ph.D., Engineering Valuation

Minor: Economics

Dissertation: A Comparative Analysis of Various Estimates of the Hazard Rate
Associated With the Service Life of Industrial Property

EMPLOYMENT

2015 – Foster Associates Consultants, LLC
President

2007 – 2015 Foster Associates, Inc.
Chairman

1996 – 2007 Foster Associates, Inc.
Executive Vice President

1988 – 1996 Foster Associates, Inc.
Senior Vice President

1979 – 1988 Foster Associates, Inc.
Vice President

1978 – 1979 Northern States Power Company
Assistant Treasurer

- 1974 – 1978 Northern States Power Company
Manager, Corporate Economics
- 1972 – 1974 Northern States Power Company
Corporate Economist
- 1970 – 1972 Iowa State University
Graduate Student and Instructor
- 1968 – 1970 Northern States Power Company
Valuation Engineer
- 1965 – 1968 Iowa State University
Graduate Student and Teaching Assistant

PUBLICATIONS

A New Set of Generalized Survivor Tables, Journal of the Society of Depreciation Professionals, October, 1992.

The Theory and Practice of Depreciation Accounting Under Public Utility Regulation, Journal of the Society of Depreciation Professionals, December, 1989.

Standards for Depreciation Accounting Under Regulated Competition, paper presented at The Institute for Study of Regulation, Rate Symposium, February, 1985.

The Economics of Price-Level Depreciation, paper presented at the Iowa State University Regulatory Conference, May, 1981.

Depreciation and the Discount Rate for Capital Investment Decisions, paper presented at the National Communications Forum - National Electronics Conference, October 1979.

A Computerized Method for Generating a Life Table From the 'h-System' of Survival Functions, paper presented at the American Gas Association - Edison Electric Institute Depreciation Accounting Committee Meeting, December, 1975.

The Problem With AFDC is ..., paper presented at the Iowa State University Conference on Public Utility Valuation and the Rate Making Process, May, 1973.

The Simulated Plant-Record Method of Life Analysis, paper presented at the Missouri Public Service Commission Regulatory Information Systems Conference, May, 1971.

Simulated Plant-Record Survivor Analysis Program (User's Manual), special report published by Engineering Research Institute, Iowa State University, February, 1971.

A Test Procedure for the Simulated Plant-Record Method of Life Analysis, Journal of the American Statistical Association, September, 1970.

Modeling the Behavior of Property Records, paper presented at the Iowa State University Conference on Public Utility Valuation and the Rate Making Process, May, 1970.

A Technique for Simulating the Retirement Experience of Limited-Life Industrial Property, paper presented at the National Conference of Electric and Gas Utility Accountants, May, 1969.

How Dependable are Simulated Plant-Record Estimates?, paper presented at the Iowa State University Conference on Public Utility Valuation and the Rate Making Process, April, 1968.

TESTIFYING WITNESS

Alabama Public Service Commission, Docket No. 18488, General Telephone Company of the Southeast; testimony concerning engineering economy study techniques.

Alabama Public Service Commission, Docket No. 20208, General Telephone Company of the South; testimony concerning the equal-life group procedure and remaining-life technique.

Alberta Energy and Utilities Board, Application No. 1250392, Aquila Networks Canada; rebuttal testimony supporting proposed depreciation rates.

Alberta Energy and Utilities Board, Case No. RE95081, Edmonton Power Inc.; rebuttal evidence concerning appropriate depreciation rates.

Alberta Energy and Utilities Board, 1999/2000 General Tariff Application, Edmonton Power Inc.; direct and rebuttal evidence concerning appropriate depreciation rates.

Arizona Corporation Commission, Docket No. T-01051B-97-0689, U S West Communications, Inc.; testimony concerning appropriate depreciation rates.

Arizona Corporation Commission, Docket No. G-1032A-02-0598, Citizens Communications Company; testimony supporting proposed depreciation rates.

Arizona Corporation Commission, Docket No. E-0135A-03-0437, Arizona Public Service Company; rebuttal testimony supporting net salvage rates.

Arizona Corporation Commission, Docket No. E-01345A-05-0816, Arizona Public Service Company; testimony supporting proposed depreciation rates.

Arizona Corporation Commission, Docket No. E-01345A-08-0172, Arizona Public Service Company; testimony supporting proposed depreciation rates.

Arizona Corporation Commission, Docket No. E-01345A-11-0224, Arizona Public Service Company; testimony supporting proposed depreciation rates.

Arizona Corporation Commission, Docket No. E-01345A-16-0036, Arizona Public Service Company; testimony supporting proposed depreciation rates.

Arizona Corporation Commission, Docket No. E-01933A-12-0126, Tucson Electric Power Company; testimony supporting proposed depreciation rates.

Arizona Corporation Commission, Docket No. E-01933A-15-0322, Tucson Electric Power Company; testimony supporting proposed depreciation rates.

Arizona Corporation Commission, Docket No. G-04204A-06-0463, UNS Gas, Inc.; testimony supporting proposed depreciation rates.

Arizona Corporation Commission, Docket No. E-04204A-06-0783, UNS Electric, Inc.; testimony supporting proposed depreciation rates.

Arizona Corporation Commission, Docket No. E-04204A-09-0206, UNS Electric, Inc.; testimony supporting proposed depreciation rates.

Arizona Corporation Commission, Docket No. E-04204A-15-0142, UNS Electric, Inc.; testimony supporting proposed depreciation rates.

Arizona State Board of Equalization, Docket No. 6302-07-2, Arizona Public Service Company; testimony concerning valuation and assessment of contributions in aid of construction.

California Public Utilities Commission, Case Nos. A.92-06-040, 92-06-042, GTE California Incorporated; rebuttal testimony supporting depreciation study techniques.

California Public Utilities Commission. Docket No. GRC A.05-12-002, Pacific Gas and Electric Company; testimony regarding estimation of net salvage rates.

California Public Utilities Commission. Docket No. GRC A.06-12-009/A.06-12-010, San Diego Gas & Electric Company and Southern California Gas Company; testimony regarding estimation of net salvage rates.

California Public Utilities Commission. Application No. A.16-09-001 Southern California Edison; testimony regarding estimation of service lives and net salvage rates.

Public Utilities Commission of the State of Colorado, Application No. 36883-Reopened. U S WEST Communications; testimony concerning equal-life group procedure.

State of Connecticut Department of Public Utility Control, Docket No. 10-12-02, Yankee Gas Services Company; testimony supporting recommended depreciation rates.

State of Connecticut Department of Public Utility Control, Docket No. 09-12-05, The Connecticut Light and Power Company; testimony supporting recommended depreciation rates.

State of Connecticut Department of Public Utility Control, Docket No. 06-12PH01, Yankee Gas Services Company; testimony supporting recommended depreciation rates.

State of Connecticut Department of Public Utility Control, Docket No. 05-03-17, The Southern Connecticut Gas Company; testimony supporting recommended depreciation rates.

Delaware Public Service Commission, Docket No. 81-8, Diamond State Telephone Company; testimony concerning the amortization of inside wiring.

Delaware Public Service Commission, Docket No. 82-32, Diamond State Telephone Company; testimony concerning the equal-life group procedure and remaining-life technique.

Public Service Commission of the District of Columbia, Formal Case No. 842, District of Columbia Natural Gas; testimony concerning depreciation rates.

Public Service Commission of the District of Columbia, Formal Case No. 1016, Washington Gas Light Company - District of Columbia; testimony supporting proposed depreciation rates.

Public Service Commission of the District of Columbia, Formal Case No. 1054, Washington Gas Light Company - District of Columbia; testimony supporting proposed depreciation rates.

Public Service Commission of the District of Columbia, Formal Case No. 1093, Washington Gas Light Company - District of Columbia; testimony supporting proposed depreciation rates.

Public Service Commission of the District of Columbia, Formal Case No. 1115, Washington Gas Light Company - District of Columbia; testimony supporting proposed depreciation rates.

Public Service Commission of the District of Columbia, Formal Case No. 1137, Washington Gas Light Company - District of Columbia; testimony supporting proposed depreciation rates.

Federal Communications Commission, Prescription of Revised Depreciation Rates for AT&T Communications; statement concerning depreciation, regulation and competition.

Federal Communications Commission, Petition for Modification of FCC Depreciation Prescription Practices for AT&T; statement concerning alignment of depreciation expense used for financial reporting and regulatory purposes.

Federal Communications Commission, Docket No. 99-117, Bell Atlantic; affidavit concerning revenue requirement and capital recovery implications of omitted plant retirements.

Federal Energy Regulatory Commission, Docket No. RP14-118-000, WBI Energy Transmission, Inc.; testimony supporting proposed depreciation rates.

Federal Energy Regulatory Commission, Docket No. ER10-2110-000, ITC Midwest; testimony supporting proposed depreciation rates.

Federal Energy Regulatory Commission, Docket No. ER10-185-000, Michigan Electric Transmission Company; testimony supporting proposed depreciation rates.

Federal Energy Regulatory Commission, Docket No. ER09-1530-000, ITC Transmission; testimony supporting proposed depreciation rates.

Federal Energy Regulatory Commission, Docket No. ER95-267-000, New England Power Company; testimony supporting proposed depreciation rates.

Federal Energy Regulatory Commission, Docket No. ER11-3638-000, Arizona Public Service Company; testimony supporting proposed depreciation rates

Federal Energy Regulatory Commission, Docket No. RP89-248, Mississippi River Transmission Corporation; rebuttal testimony concerning appropriateness of net salvage component in depreciation rates.

Federal Energy Regulatory Commission, Docket No. ER91-565, New England Power Company; testimony supporting proposed depreciation rates.

Federal Energy Regulatory Commission, Docket No. ER78-291, Northern States Power Company; testimony concerning rate of return and general financial requirements.

Federal Energy Regulatory Commission, Docket Nos. RP80-97 and RP81-54, Tennessee Gas Pipeline Company; testimony concerning offshore plant depreciation rates.

Federal Power Commission, Docket No. E-8252, Northern States Power Company; testimony concerning general financial requirements and measurements of financial performance.

Federal Power Commission, Docket No. E-9148, Northern States Power Company; testimony concerning general financial requirements and measurements of financial performance.

Federal Power Commission, Docket No. ER76-818, Northern States Power Company; testimony concerning rate of return and general financial requirements.

Federal Power Commission, Docket No. RP74-80, *Northern* Natural Gas Company; testimony concerning depreciation expense.

Public Utilities Commission of the State of Hawaii, Docket No. 00-0309, The Gas Company; testimony supporting proposed depreciation rates.

Public Utilities Commission of the State of Hawaii, Docket No. 94-0298, GTE Hawaiian Telephone Company Incorporated; testimony concerning the need for shortened service lives and disclosure of asset impairment losses.

Idaho Public Utilities Commission, Case No. U-1002-59, General Telephone Company of the Northwest, Inc.; testimony concerning the remaining-life technique and the equal-life group procedure.

Illinois Commerce Commission, Case No. 04-0476, Illinois Power Company; testimony supporting proposed depreciation rates.

Illinois Commerce Commission, Docket No. 94-0481, Citizens Utilities Company of Illinois; rebuttal testimony concerning applications of the Simulated Plant-Record method of life analysis.

Iowa State Commerce Commission, Docket No. RPU 82-47, North Central Public Service Company; testimony on depreciation rates.

Iowa State Commerce Commission, Docket No. RPU 84-34, General Telephone Company of the Midwest; testimony concerning the remaining-life technique and the equal-life group procedure.

Iowa State Utilities Board, Docket No. DPU-86-2, Northwestern Bell Telephone Company; testimony concerning capital recovery in competition.

Iowa State Utilities Board, Docket No. RPU-84-7, Northwestern Bell Telephone Company; testimony concerning the deduction of a reserve deficiency from the rate base.

Iowa State Utilities Board, Docket No. DPU-88-6, U S WEST Communications; testimony concerning depreciation subject to refund.

Iowa State Utilities Board, Docket No. RPU-90-9, Central Telephone Company of Iowa; testimony concerning depreciation rates.

Iowa State Utilities Board, Docket No. RPU-93-9, U S WEST Communications; testimony concerning principles of depreciation accounting and abandonment of FASB 71.

Iowa State Utilities Board, Docket No. DPU-96-1, U S WEST Communications; testimony concerning principles of depreciation accounting and abandonment of FASB 71.

Iowa State Utilities Board, Docket No. RPU-05-2, Aquila Networks; testimony supporting recommended depreciation rates.

Kansas Corporation Commission, Docket No. 16-KGSG-491-RTS, Kansas Gas Service, a Division of ONE Gas, Inc.; testimony supporting proposed depreciation rates.

Kansas Corporation Commission, Docket No. 12-KGSG-835-RTS, Kansas Gas Service, a Division of ONEOK, Inc.; testimony supporting proposed depreciation rates.

Kansas Corporation Commission, Docket No. 12-WSEE-112-RTS, Westar Energy, Inc.; testimony supporting proposed depreciation rates.

Kansas Corporation Commission, Docket No. 10-KCPE-415-RTS; Kansas City Power and Light; cross-answering testimony addressing the recording and treatment of third-party reimbursements in estimating net salvage rates.

Kansas Corporation Commission, Docket No. 04-AQLE-1065-RTS, Aquila Networks – WPE (Kansas); testimony supporting proposed depreciation rates.

Kansas Corporation Commission, Docket No. 03-KGSG-602-RTS, Kansas Gas Service, a Division of ONEOK, Inc.; rebuttal testimony supporting net salvage rates.

Kansas Corporation Commission, Docket No. 06-KGSG-1209-RTS, Kansas Gas Service, a Division of ONEOK, Inc.; testimony supporting proposed depreciation rates.

Kentucky Public Service Commission, Case No. 97-224, Jackson Purchase Electric Cooperative Corporation; rebuttal testimony supporting proposed depreciation rates.

Maryland Public Service Commission, Case No. 9096, Baltimore Gas and Electric Company; testimony supporting proposed depreciation rates.

Maryland Public Service Commission, Case No. 8485, Baltimore Gas and Electric Company; testimony supporting proposed depreciation rates.

Maryland Public Service Commission, Case No. 9424, Delmarva Power and Light Company; testimony supporting proposed depreciation rates.

Maryland Public Service Commission, Case No. 9385, Potomac Electric Power Company; testimony supporting proposed depreciation rates.

Maryland Public Service Commission, Case No. 9103, Washington Gas Light Company; rebuttal testimony supporting proposed depreciation rates.

Maryland Public Service Commission, Case No. 8960, Washington Gas Light Company; testimony supporting proposed depreciation rates.

Maryland Public Service Commission, Case No. 7689, Washington Gas Light Company; testimony concerning life analysis and net salvage.

Commonwealth of Massachusetts Department of Public Utilities, D.P.U. 15-155, Massachusetts Electric Company/Nantucket Electric Company; testimony supporting proposed depreciation rates.

Commonwealth of Massachusetts Department of Public Utilities, D.P.U. 10-70, Western Massachusetts Electric Company; testimony supporting proposed depreciation rates.

Commonwealth of Massachusetts Department of Telecommunications and Energy, D.T.E. 06-55, Western Massachusetts Electric Company; testimony supporting proposed depreciation rates.

Massachusetts Department of Public Utilities, Case No. DPU 91-52, Massachusetts Electric Company; testimony supporting proposed depreciation rates which include a net salvage component.

Michigan Public Service Commission, Case No. U-18150, DTE Electric Company; testimony supporting proposed depreciation rates.

Michigan Public Service Commission, Case No. U-16991, The Detroit Edison Company; testimony supporting proposed depreciation rates.

Michigan Public Service Commission, Case No. U-16117, The Detroit Edison Company; testimony supporting proposed depreciation rates.

Michigan Public Service Commission, Case No. U-15699, Michigan Consolidated Gas Company; testimony supporting proposed depreciation rates.

Michigan Public Service Commission, Case No. U-13899, Michigan Consolidated Gas Company; testimony concerning service life estimates.

Michigan Public Service Commission, Case No. U-13393, Aquila Networks – MGU; testimony supporting proposed depreciation rates.

Michigan Public Service Commission, Case No. U-12395, Michigan Gas Utilities; testimony supporting proposed depreciation rates including amortization accounting and redistribution of recorded reserves.

Michigan Public Service Commission, Case No. U-6587, General Telephone Company of Michigan; testimony concerning use of a theoretical depreciation reserve with the remaining-life technique.

Michigan Public Service Commission, Case No. U-7134, General Telephone Company of Michigan; testimony concerning the equal-life group depreciation procedure.

Minnesota Public Service Commission, Docket No. E-611, Northern States Power Company; testimony concerning rate of return and general financial requirements.

Minnesota Public Service Commission, Docket No. E-1086, Northern States Power Company; testimony concerning depreciation rates.

Minnesota Public Service Commission, Docket No. G-1015, Northern States Power Company; testimony concerning rate of return and general financial requirements.

Public Service Commission of the State of Missouri, Case No. ER-2009-0090, KCP&L Greater Missouri Operations, rebuttal testimony concerning depreciation rates.

Public Service Commission of the State of Missouri, Case No. ER-2001-672, Missouri Public Service, a division of Utilicorp United Inc.; surrebuttal testimony regarding computation of income tax expense.

Public Service Commission of the State of Missouri, Case No. TO-82-3, Southwestern Bell Telephone Company; rebuttal testimony concerning the remaining-life technique and the equal-life group procedure.

Public Service Commission of the State of Missouri, Case No. GO-97-79, Laclede Gas Company; rebuttal testimony concerning adequacy of database for conducting depreciation studies.

Public Service Commission of the State of Missouri, Case No. GR-99-315, Laclede Gas Company; rebuttal testimony concerning treatment of net salvage in development of depreciation rates.

Public Service Commission of the State of Missouri, Case No. HR-2004-0024, Aquila Inc. d/b/a/ Aquila Networks-L & P; testimony supporting depreciation rates.

Public Service Commission of the State of Missouri, Case No. ER-2004-0034, Aquila Inc. d/b/a/ Aquila Networks-L & P and Aquila Networks-MPS; testimony supporting depreciation rates.

Public Service Commission of the State of Missouri, Case No. GR-2004-0072, Aquila Inc. d/b/a/ Aquila Networks-L & P and Aquila Networks-MPS; testimony supporting depreciation rates.

Public Service Commission of the State of Montana, Docket No. 88.2.5, Mountain State Telephone and Telegraph Company; rebuttal testimony concerning the equal-life group procedure and amortization of reserve imbalances.

Montana Public Service Commission, Docket No. D95.9.128, The Montana Power Company; testimony supporting proposed depreciation rates.

Nebraska Public Service Commission, Docket No. NG-0041, Aquila Networks (PNG Nebraska); testimony supporting proposed depreciation rates.

Public Service Commission of Nevada, Docket No. 92-7002, Central Telephone Company-Nevada; testimony supporting proposed depreciation rates.

Public Service Commission of Nevada, Docket No. 91-5054, Central Telephone Company-Nevada; testimony supporting proposed depreciation rates.

New Hampshire Public Utilities Commission, Docket No. DR95-169, Granite State Electric Company; testimony supporting proposed net salvage rates.

New Jersey Board of Public Utilities, Docket No. GR07110889, New Jersey Natural Gas Company; testimony supporting proposed depreciation rates.

New Jersey Board of Public Utilities, Docket No. GR 87060552, New Jersey Natural Gas Company; testimony supporting depreciation rates.

New Jersey Board of Regulatory Commissioners, Docket No. GR93040114J, New Jersey Natural Gas Company; testimony supporting depreciation rates.

New Jersey Board of Regulatory Commissioners, Docket No. GR15111304, New Jersey Natural Gas Company; testimony supporting depreciation rates.

New York Public Service Commission, Case No. 12-G-0202. Niagara Mohawk Power Corporation d/b/a National Grid; testimony supporting recommended depreciation rates.

New York Public Service Commission, Case No. 10-E-0050. Niagara Mohawk Power Corporation d/b/a National Grid; testimony supporting recommended depreciation rates.

North Carolina Utilities Commission, Docket No. E-7, SUB 487, Duke Power Company; rebuttal testimony concerning proposed depreciation rates.

North Carolina Utilities Commission, Docket No. P-19, SUB 207, General Telephone Company of the South; rebuttal testimony concerning the equal-life group depreciation procedure.

North Dakota Public Service Commission, Case No. 8860, Northern States Power Company; testimony concerning general financial requirements.

North Dakota Public Service Commission, Case No. 9634, Northern States Power Company; testimony concerning rate of return and general financial requirements.

North Dakota Public Service Commission, Case No. 9666, Northern States Power Company; testimony concerning rate of return and general financial requirements.

North Dakota Public Service Commission, Case No. 9741, Northern States Power Company; testimony concerning rate of return and general financial requirements.

Oklahoma Corporation Commission, Cause No. PUD 201500213, Oklahoma Natural Gas Company; testimony supporting revised depreciation rates.

Oklahoma Corporation Commission, Cause No. PUD 200900110, Oklahoma Natural Gas Company; testimony supporting revised depreciation rates.

Ontario Energy Board, E.B.R.O. 385, Tecumseh Gas Storage Limited; testimony concerning depreciation rates.

Ontario Energy Board, E.B.R.O. 388, Union Gas Limited; testimony concerning depreciation rates.

Ontario Energy Board, E.B.R.O. 456, Union Gas Limited; testimony concerning depreciation rates.

Ontario Energy Board, E.B.R.O. 476-03, Union Gas Limited; testimony concerning depreciation rates.

Public Utilities Commission of Ohio, Case No. 81-383-TP-AIR, General Telephone Company of Ohio; testimony in support of the remaining-life technique.

Public Utilities Commission of Ohio, Case No. 82-886-TP-AIR, General Telephone Company of Ohio; testimony concerning the remaining-life technique and the equal-life group procedure.

Public Utilities Commission of Ohio, Case No. 84-1026-TP-AIR, General Telephone Company of Ohio; testimony in support of the equal-life group procedure and the remaining-life technique.

Public Utilities Commission of Ohio, Case No. 81-1433, The Ohio Bell Telephone Company; testimony concerning the remaining-life technique and the equal-life group procedure.

Public Utilities Commission of Ohio, Case No. 83-300-TP-AIR, The Ohio Bell Telephone Company; testimony concerning straight-line age-life depreciation.

Public Utilities Commission of Ohio, Case No. 84-1435-TP-AIR, The Ohio Bell Telephone Company; testimony in support of test period depreciation expense.

Public Utilities Commission of Oregon, Docket No. UM 204, GTE of the Northwest; testimony concerning the theory and practice of depreciation accounting under public utility regulation.

Public Utilities Commission of Oregon, Docket No. UM 840, GTE Northwest Incorporated; rebuttal testimony concerning principles of capital recovery.

Pennsylvania Public Utility Commission, Docket No. R-80061235, The Bell Telephone Company of Pennsylvania; testimony concerning the proper depreciation reserve to be used with an original cost rate base.

Pennsylvania Public Utility Commission, Docket No. R-811512, General Telephone Company of Pennsylvania; testimony concerning the proper depreciation reserve to be used with an original cost rate base.

Pennsylvania Public Utility Commission, Docket No. R-811819, The Bell Telephone Company of Pennsylvania; testimony concerning the proper depreciation reserve to be used with an original cost rate base.

Pennsylvania Public Utility Commission, Docket No. R-822109, General Telephone Company of Pennsylvania; testimony in support of the remaining-life technique.

Pennsylvania Public Utility Commission, Docket No. R-850229, General Telephone Company of Pennsylvania; testimony in support of the remaining-life technique and the proper depreciation reserve to be used with an original cost rate base.

Pennsylvania Public Utility Commission, Docket No. C-860923, The Bell Telephone Company of Pennsylvania; testimony concerning capital recovery under competition.

Rhode Island Public Utilities Commission, Docket No. 2290, The Narragansett Electric Company; testimony supporting proposed net salvage rates and depreciation rates.

South Carolina Public Service Commission, Docket No. 91-216-E, Duke Power Company; testimony supporting proposed depreciation rates.

South Dakota Public Utilities Commission, Docket No. EL14-106, NorthWestern Energy; testimony supporting revised depreciation rates.

Public Utilities Commission of the State of South Dakota, Case No. F-3062, Northern States Power Company; testimony concerning general financial requirements and measurements of financial performance.

Public Utilities Commission of the State of South Dakota, Case No. F-3188, Northern States Power Company; testimony concerning rate of return and general financial requirements.

Securities and Exchange Commission, File No. 3-5749, Northern States Power Company; testimony concerning the financial and ratemaking implications of an affiliation with Lake Superior District Power Company.

Tennessee Public Service Commission, Docket No. 89-11041, United Inter-Mountain Telephone Company; testimony concerning depreciation principles and capital recovery under competition.

The Railroad Commission of Texas, GUD Docket No. 9988, Texas Gas Service, testimony supporting recommended depreciation rates.

The Railroad Commission of Texas, GUD Docket No. 10488, Texas Gas Service, testimony supporting recommended depreciation rates.

The Railroad Commission of Texas, GUD Docket No. 10506, Texas Gas Service, testimony supporting recommended depreciation rates.

The Railroad Commission of Texas, GUD Docket No. 10526, Texas Gas Service, testimony supporting recommended depreciation rates.

State of Vermont Public Service Board, Docket No. 6596, Citizens Communications Company – Vermont Electric Division; testimony supporting recommended depreciation rates.

State of Vermont Public Service Board, Docket No. 6946 and 6988, Central Vermont Public Service Corporation; testimony supporting net salvage rates.

Commonwealth of Virginia State Corporation Commission, Case No. PUE-2002-00364, Washington Gas Light Company; testimony supporting proposed depreciation rates.

Public Service Commission of Wisconsin, Docket No. 2180-DT-3, General Telephone Company of Wisconsin; testimony concerning the equal-life group depreciation procedure.

SPEAKER

Depreciation Workshop, Oklahoma Corporation Commission, Public Utility Division, March 2015.

Depreciation Workshop, ONE Gas Inc., January 2015.

Depreciation Training Seminar, Florida Public Service Commission, March 2013.

Depreciation and Obsolescence (Isness and Oughtness), Ninety-Fifth Annual Arizona Tax Conference, August 2012.

Group Depreciation Practices of Regulated Utilities (IAS 16 Property, Plant and Equipment), Hydro One Networks, Inc., November 2008.

Economics, Finance and Engineering Valuation. Florida Gulf Coast University, April 2007.

Depreciation Studies for Regulated Utilities, Hydro One Networks, Inc., April 2006.

Depreciation Studies for Cooperatives and Small Utilities. TELERGEE CFO and Controllers Conference, November, 2004.

Finding the “D” in RCNLD (Valuation Applications of Depreciation), Society of Depreciation Professionals Annual Meeting, September 2001.

Capital Asset and Depreciation Accounting, City of Edmonton Value Engineering Workshop, April 2001.

A Valuation View of Economic Depreciation, Society of Depreciation Professionals Annual Meeting, October 1999.

Capital Recovery in a Changing Regulatory Environment, Pennsylvania Electric Association Financial-Accounting Conference, May 1999.

Depreciation Theory and Practice, Southern Natural Gas Company Accounting and Regulatory Seminar, March 1999.

Depreciation Theory Applied to Special Franchise Property, New York Office of Real Property Services, March 1999.

Capital Recovery in a Changing Regulatory Environment, PowerPlan Consultants Annual Client Forum, November 1998.

Economic Depreciation, AGA Accounting Services Committee and EEI Property Accounting and Valuation Committee, May 1998.

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MODERATOR

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HONORS AND AWARDS

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HYDRO ONE NETWORKS INC.
DISTRIBUTION
Depreciation & Amortization Expenses
Historical Years (2013, 2014, 2015 and 2016)
Year Ending December 31
(\$ Millions)

Line No.	Particulars	2013		2014		2015		2016	
		Deprn Rate (a)	Provision (b)	Deprn Rate (c)	Provision (d)	Deprn Rate (e)	Provision (f)	Deprn Rate (g)	Provision (h)
<u>Depreciation Expenses</u>									
1	Major Fixed Assets	2.91%	236.2	2.97%	257.0	2.81%	261.0	2.67%	284.1
2	Minor Fixed Assets	8.40%	41.5	8.35%	44.0	8.43%	47.0	9.03%	41.1
3	Depreciation on Fixed Assets		<u>277.7</u>		<u>301.0</u>		<u>308.0</u>		<u>325.2</u>
4	Less Capitalized Depreciation		(15.9)		(17.5)		(17.0)		(17.9)
5	Asset Removal Costs		51.0		52.6		59.0		57.2
6	Losses/(Gains) on Asset Disposition		0.1		0.0		(1.0)		0.0
7	Total Depreciation Expenses		<u>313.0</u>		<u>336.2</u>		<u>349.0</u>		<u>364.6</u>
<u>Amortization Expenses</u>									
8	Environmental Costs		8.5		11.1		10.5		15.3
9	Other Regulatory Amortization		0.0		0.0		0.0		0.0
10	Other Amortization		0.0		0.0		0.0		0.0
11	Total Amortization Expenses		<u>8.5</u>		<u>11.1</u>		<u>10.5</u>		<u>15.3</u>
12	Total Depreciation & Amortization Expenses		<u>321.5</u>		<u>347.3</u>		<u>359.5</u>		<u>379.8</u>
13	Exclude Other Reg Amort		0.0		0.0		0.0		3.2
14	Depreciation & Amortization for recovery		<u>321.5</u>		<u>347.3</u>		<u>359.5</u>		<u>376.6</u>

HYDRO ONE NETWORKS INC.
DISTRIBUTION
Depreciation & Amortization Expenses
 Bridge Year (2017) and Test Years (2018 to 2022)
 Year Ending December 31
 (\$ Millions)

Line No.	Particulars	2017		2018		2019		2020		2021		2022	
		Deprn Rate (a)	Provision (\$M) (b)	Deprn Rate (c)	Provision (\$M) (d)	Deprn Rate (e)	Provision (\$M) (f)	Deprn Rate (g)	Provision (\$M) (h)	Deprn Rate (i)	Provision (\$M) (j)	Deprn Rate (k)	Provision (\$M) (l)
<u>Depreciation Expenses</u>													
1	Major Fixed Assets	2.65%	284.2	2.63%	297.1	2.60%	307.6	2.55%	318.7	2.57%	338.2	2.55%	353.8
2	Minor Fixed Assets	8.96%	43.9	8.54%	44.8	8.11%	45.5	7.75%	46.5	7.42%	47.6	7.15%	49.1
3	Depreciation on Fixed Assets		<u>328.1</u>		<u>341.8</u>		<u>353.1</u>		<u>365.2</u>		<u>385.7</u>		<u>403.0</u>
4	Less Capitalized Depreciation		(18.3)		(19.3)		(20.1)		(20.8)		(20.8)		(20.8)
5	Asset Removal Costs		55.9		58.7		69.5		70.1		69.2		70.1
6	Total Depreciation Expenses		<u>365.7</u>		<u>381.2</u>		<u>402.5</u>		<u>414.4</u>		<u>434.1</u>		<u>452.2</u>
<u>Amortization Expenses</u>													
7	Environmental Costs		17.8		17.3		16.2		18.8		18.6		17.4
8	Other Regulatory Amortization		0.0		0.0		0.0		0.0		0.0		0.0
9	Other Amortization		0.0		0.0		0.0		0.0		0.0		0.0
10	Total Amortization Expenses		<u>17.8</u>		<u>17.3</u>		<u>16.2</u>		<u>18.8</u>		<u>18.6</u>		<u>17.4</u>
11	Total Depreciation & Amortization Expenses		<u>383.5</u>		<u>398.5</u>		<u>418.8</u>		<u>433.3</u>		<u>452.8</u>		<u>469.6</u>
12	Exclude Other Reg Amort		3.8		4.1		4.3		4.6		4.7		4.9
13	Depreciation & Amortization for recovery		<u>379.8</u>		<u>394.4</u>		<u>414.4</u>		<u>428.7</u>		<u>448.1</u>		<u>464.7</u>

TAXES OR PILS

1. INTRODUCTION

This Exhibit explains how Hydro One calculates its income tax expenses for the purposes of rate recovery. Exhibit C1, Tab 7, Schedule 2 Attachments 1 through 6 contain detailed calculations for rate recovery purposes of income tax liabilities, supporting reconciliations, as needed, and an explanation of how tax credits were determined. The information provided in this Application is consistent with section 2.4.5 of the Filing Requirements. Material exceptions have been identified and explained.

2. DEPARTURE FROM PILS REGIME

Under the *Electricity Act, 1998* (Ontario), as a Crown-owned company exempted under section 149(1) of the *Income Tax Act* (Canada) and the *Taxation Act, 2007* (Ontario) (Federal Tax Regime) from paying corporate income taxes, Hydro One was obligated to make payments in lieu of corporate income taxes ("PILs") to the Ontario Electricity Financial Corporation.

Effective October 31, 2015, in connection with a public offering of its shares, Hydro One was no longer subject to this exemption and exited the PILs regime. Under the *Income Tax Act*, Hydro One was deemed to have disposed of its assets at fair market value at that time and immediately re-acquired them at the same value. Hydro One Networks Inc. was obligated to pay a one-time PILs departure tax of approximately \$2.3 billion based on an estimated gain under the *Electricity Act, 1998*.

Neither the departure tax nor the change in tax regime will have any impact on ratepayers. For regulatory purposes, income tax expenses will continue to be calculated

Witness: Selma Yam

1 according to the method prescribed by the Board's 2006 EDR Tax Model and 2006 EDR
2 Handbook, Section 7.1 "OEB 2006 Regulatory Taxes Expense Methodology".

3
4 The tax amounts included in rates relate solely to the estimated current tax liability
5 associated with the regulatory net income before tax, based on the applicable statutory tax
6 rates for the year. Deferred taxes reflect the future tax liabilities/assets associated with
7 timing differences between the tax basis of assets and liabilities and their carrying
8 amounts for accounting purposes. These are not taken into consideration. When future
9 income taxes become payable or receivable, it is expected that they will be included in
10 the rates approved by the Board and recovered from customers at that time.

11
12 **3. INCOME TAX RATE (FEDERAL AND ONTARIO)**

13
14 For the test years 2018 through 2022, Hydro One has used a combined income tax rate of
15 26.5%, which is comprised of a federal rate of 15% and an 11.5% provincial rate. Any
16 variance between actual taxes payable and forecast taxes, as a result of tax policy changes
17 and difference from changes or a new assessment or administrative policy will be
18 captured in a deferral account for tax rate changes as per section 7.1 of the EDR
19 Handbook, described further in Exhibit F1, Tab 1, Schedules 1 and Exhibit F1, Tab 3,
20 Schedules 1.

21
22 **4. RECONCILIATION BETWEEN REGULATORY NET INCOME BEFORE**
23 **TAX AND TAXABLE INCOME**

24
25 Reconciliation between the regulatory net income before tax ("NIBT") and taxable
26 income for the test years 2018 through 2022 is provided in Exhibit C1, Tab 7, Schedule
27 2, Attachments 1, 2 and 5. This Schedule contains the income tax computation. It also

1 shows how the taxable income is computed by making adjustments to the regulatory
2 NIBT for items such as depreciation and capital cost allowance (“CCA”).

3
4 Reconciliation between the accounting NIBT and taxable income for the historical years
5 2014 and 2015 is also provided in Exhibit C1, Tab 7, Schedule 2, Attachments 3, and 4.
6 The 2016 taxable income will be provided subsequently in a blue page update. In order
7 to simplify the review of these reconciliations, Hydro One has placed these adjustments
8 into the following five categories:

- 9
- 10 1) recurring items that must be added (deducted) because they have been included in
11 the OM&A expenses in arriving at the revenue requirement, or for which
12 appropriate tax adjustments are made (for example, CCA);
 - 13 2) deferral accounts not included in the revenue requirement;
 - 14 3) reversal of accounting adjustments not included in the revenue requirement;
 - 15 4) recurring items not in the revenue requirement; and
 - 16 5) items in which impact is immaterial in total, and as such, have not been included
17 in Hydro One’s investment plan.

18
19 **5. OVERVIEW OF PROCESS TO ARRIVE AT TAXABLE INCOME**

20
21 The starting point for the computation of Hydro One Distribution's taxable income for
22 regulatory purposes is the NIBT as shown on the utility's income statement for the year.
23 The NIBT is prepared using U.S. Generally Accepted Accounting Principles. Taxable
24 income is computed using the relevant tax legislation, interpretations and assessment
25 practices. Many adjustments are typically made to the NIBT to arrive at taxable income.
26 The NIBT is increased by amounts that are not deductible for tax purposes. This includes
27 items such as depreciation, contingent liabilities, accounting losses, accounting
28 provisions, (such as other post-employment benefits ("OPEB")), and revenue that has

Witness: Selma Yam

1 been received but not recognized for accounting purposes (for example, income received
2 with respect to a deferral account that has been set-up on the balance sheet rather than
3 shown as additional income on the income statement). The NIBT is reduced by amounts
4 that are deductible for tax purposes, but have not been deducted in computing NIBT.
5 This includes items such as CCA, the deductible portion of capitalized overhead,
6 capitalized interest and OPEB payments. Such reductions also include expenses incurred
7 for which a deferral account has been set up on the balance sheet, rather than shown as a
8 deduction through the income statement.

9
10 Consequently, it is imperative that the NIBT be adjusted for amounts that have been
11 included (or deducted) for accounting purposes that are not income (or deductible) for tax
12 return purposes.

13
14 **6. TAX TREATMENT OF DEFERRAL ACCOUNTS (REGULATORY ASSETS**
15 **AND LIABILITIES)**

16
17 Deferral accounts are typically recognized by utilities' balance sheets for foregone
18 revenue or for incurred expenses, for which recovery will be sought from ratepayers
19 through future rates. The Board determines disposition of the deferral accounts.

20
21 For example, as shown in Table 1, assuming that a 26.5% tax rate is used and a \$100
22 expense is incurred, the utility will be allowed to deduct the \$100 in computing taxable
23 income for the year in which the expense has been incurred. If the Board subsequently
24 approves recovery of this expense over a two-year period through a rate rider, the income
25 will be included in computing taxable income for the year in which it is billed to
26 ratepayers. The net result is that the utility has recovered the \$100 cost even though the
27 income was taxed and the expense was deducted in in different years.

Witness: Selma Yam

Table 1: Example: Income Tax Treatment of Deferral Account Disposition

	Year 1	Year 2	Year 3	CUM
Income (deduction)	(100)	50	50	Nil
Tax Refund (payable)	26.5	(13.25)	(13.25)	Nil
Cash Inflow (outflow)	(73.5)	36.75	36.75	Nil

Therefore, Hydro One has not included deferral accounts in computing tax payable for purposes of the revenue requirement since the tax benefit has or will be obtained through the tax system. This conclusion is consistent with the "2006 EDR Handbook Report of the Board" issued May 11, 2005, (page 61), that states:

A PILS or tax provision is not needed for the recovery of deferred regulatory asset costs, because the distributors have deducted, or will deduct, these costs in calculating taxable income in their returns. The Handbook will reflect this treatment.

7. CONTINGENT LIABILITIES/ACCOUNTING RESERVES

Where an accounting provision is recognized for certain contingent costs that the utility may have to incur in the future (such as obsolescence provisions, lawsuits, staff reductions), the provision will reduce the NIBT of the utility. In each subsequent year, the balance for the contingent liability/accounting reserve is reviewed by the utility for reasonableness based on all available information. The balance may be adjusted upward or downward, with NIBT either decreasing or increasing, respectively.

However, for tax purposes, a contingent liability or accounting reserve is not deductible. Rather, the amount will only be deductible (or capitalized) in computing taxable income

Witness: Selma Yam

1 for the taxation year in which the obligation has actually been settled. Therefore, to the
2 extent that the current year NIBT has been increased (or decreased) by the contingent
3 liability or accounting reserve provision, the NIBT must be adjusted to reverse the
4 increase (or decrease) in computing taxable income.

5
6 Hydro One has not adjusted the 2018 through 2022 NIBT for contingent liabilities in
7 computing taxable income since no changes were forecast in the contingent liability
8 balances for 2018 through 2022. Therefore, such amounts are not included in the tax
9 computation for purposes of the revenue requirement.

10
11 The combined (federal and provincial) enacted income tax rates are as set out in Table 2.

12
13 **Table 2: Combined Income Tax Rates**

	Historic				Bridge	Test				
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Federal Tax Rate (%)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Provincial Rate (%)	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
Total Statutory Tax Rate (%)	26.5									

14
15
16 **8. INTEGRITY CHECKS**

17
18 Hydro One has performed the integrity checks set described in 2.4.5.2 of the Filing
19 Requirements.

Witness: Selma Yam

1 **CALCULATION OF UTILITY INCOME TAXES**

2

3 Attachment 1: Calculation of Utility Income Taxes Test Years (2018 - 2022)

4 Attachment 2: Capital Cost Allowance (2017 - 2022)

5 Attachment 3: Calculation of Utility Income Taxes, Historic Years (2014, 2015)

6 Attachment 4: Capital Cost Allowance, Historic Years (2014, 2015, 2016)

7 Attachment 5: Calculation of Apprenticeship and Education Tax Credits (2018 - 2022)

8 Attachment 6: Calculation of Apprenticeship and Education Tax Credits (2014, 2015)

HYDRO ONE NETWORKS INC.
DISTRIBUTION
Calculation of Utility Income Taxes
Test Years (2018 to 2022)
Year Ending December 31
(\$ Millions)

Line No.	Particulars	2018	2019	2020	2021	2022
		(a)	(b)	(c)	(d)	(e)
<u>Determination of Taxable Income</u>						
1	Regulatory Net Income (before tax)	\$ 327.5	\$ 344.0	\$ 360.3	\$ 386.0	* \$ 400.9 *
2	Book to Tax Adjustments:					
3	Other Post Employment Benefits expense	23.9	23.5	23.2	21.9	22.7
4	Other Post Employment Benefits payments	(29.0)	(30.7)	(31.8)	(31.9)	(33.8)
5	Depreciation and amortization	394.4	414.4	428.7	448.1	* 464.7 *
7	Capital Cost Allowance and Cumulative Eligible Capital	(433.6)	(455.2)	(475.1)	(494.2)	* (520.0) *
8	Removal costs	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)
9	Environmental costs paid	(17.3)	(16.2)	(18.8)	(18.6)	(17.4)
10	Hedge loss - amortization	0.1	0.1	0.1	0.1	0.1
11	Non-deductible meals & entertainment	2.2	2.2	2.2	2.2	2.2
12	Capital amounts expensed for accounting	6.2	6.2	6.2	6.2	6.2
13	Research & Development ITC	1.0	1.0	1.0	1.0	1.0
14	Federal Tax Credits	0.3	0.3	0.3	0.3	0.3
15	Capitalized overhead costs deducted	(22.1)	(23.1)	(22.9)	(23.1)	(24.2)
16	Capitalized pension costs deducted	(28.0)	(28.6)	(30.2)	(31.7)	(33.3)
17	Debt Issuance costs - amortization	1.5	1.5	1.5	1.5	1.6
18	Debt Issuance costs - 20(1)(e) deduction	(2.2)	(2.2)	(2.4)	(2.1)	(2.2)
19	Premium/Discount - amortization	(0.4)	(0.4)	(0.5)	(0.5)	(0.3)
20	Bond discount deduction	(0.0)	0.0	(0.1)	0.0	0.0
21	Non-deductible LTIP	2.2	2.6	2.6	2.6	2.6
22	Capitalized ESOP	(0.5)	(0.6)	(0.5)	(0.6)	(0.6)
23	Non-deductible Share Grants	2.7	2.6	2.5	2.3	2.1
		\$ (103.9)	\$ (107.5)	\$ (119.0)	\$ (121.7)	\$ (133.3)
24	Regulatory Taxable Income	\$ 223.6	\$ 236.5	\$ 241.3	\$ 264.3	\$ 267.7
25	Corporate Income Tax Rate	% 26.50	% 26.50	% 26.50	% 26.50	% 26.50 %
26	Subtotal	\$ 59.3	\$ 62.7	\$ 63.9	\$ 70.0	\$ 70.9
27	Less: R&D ITC / Ontario education credits	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)
28	Regulatory Income Tax	\$ 58.0	\$ 61.3	\$ 62.6	\$ 68.7	\$ 69.6
<u>Tax Rates</u>						
29	Federal Tax	% 15.00	% 15.00	% 15.00	% 15.00	% 15.00 %
30	Provincial Tax	% 11.50	% 11.50	% 11.50	% 11.50	% 11.50 %
31	Total Tax Rate	% 26.50	% 26.50	% 26.50	% 26.50	% 26.50 %

* Figures in 2021 and 2022 have been adjusted to incorporate the acquired LDCs.

**HYDRO ONE NETWORKS INC.
DISTRIBUTION**

Calculation of Capital Cost Allowance (CCA)
2017 to 2022 Networks Allocation to Dx
Year Ending December 31
(\$ Millions)

2017 CCA Class	Opening UCC	Net Additions	UCC pre- 1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
1	1,440.8	29.5	1,470.3	14.75	1,455.6	4%	58.2	1,412.1
2	227.2	0.0	227.2	-	227.2	6%	13.6	213.6
3	10.3	0.0	10.3	-	10.3	5%	0.5	9.8
6	15.4	0.0	15.4	-	15.4	10%	1.5	13.9
8	110.8	29.5	140.4	14.76	125.6	20%	25.1	115.3
9	1.5	0.0	1.5	-	1.5	25%	0.4	1.1
10	113.5	33.3	146.8	16.64	130.2	30%	39.1	107.7
12	11.9	25.8	37.6	12.88	24.8	100%	24.8	12.8
13	16.2	6.0	22.2	3.02	19.2	N/A	3.4	18.8
14.1	-	4.8	4.8	2.41	2.4	5%	0.1	4.8
17	15.0	0.0	15.0	-	15.0	8%	1.2	13.8
42	0.2	0.0	0.2	-	0.2	12%	-	0.2
45	0.0	0.0	0.0	-	0.0	45%	-	0.0
46	2.6	0.0	2.6	-	2.6	30%	0.8	1.8
47	2,784.9	416.2	3,201.1	208.10	2,993.0	8%	239.5	2,961.6
50	22.6	22.3	44.9	11.13	33.8	55%	18.6	26.3
	<u>4,773.0</u>	<u>567.4</u>	<u>5,340.4</u>	<u>283.68</u>	<u>5,056.7</u>		<u>426.8</u>	<u>4,913.7</u>

CEC Continuity	26.1	0.0	26.1	0.0	26.1	7%	1.8	24.2
----------------	------	-----	------	-----	------	----	-----	------

Less: Non regulatory items (4.2)
Less: Tax Depreciation - Goodwill (1.9)
Total CCA for Revenue Requirement 422.5

2018 CCA Class	Opening UCC	Net Additions	UCC pre- 1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
1	1,412.1	31.0	1,443.2	15.51	1,427.6	4%	57.1	1,386.1
2	213.6	0.0	213.6	-	213.6	6%	12.8	200.8
3	9.8	0.0	9.8	-	9.8	5%	0.5	9.3
6	13.9	0.0	13.9	-	13.9	10%	1.4	12.5
8	115.3	30.2	145.4	15.08	130.3	20%	26.1	119.3
9	1.1	0.0	1.1	-	1.1	25%	0.3	0.8
10	107.7	29.1	136.8	14.54	122.3	30%	36.7	100.1
12	12.8	21.6	34.5	10.81	23.7	100%	23.7	10.8
13	18.8	7.5	26.3	3.73	22.6	N/A	3.6	22.7
14.1	4.8	5.3	10.1	2.64	7.4	5%	0.4	9.7
17	13.8	0.0	13.8	-	13.8	8%	1.1	12.7
42	0.2	0.0	0.2	-	0.2	12%	-	0.2
45	0.0	0.0	0.0	-	0.0	45%	-	0.0
46	1.8	0.0	1.8	-	1.8	30%	0.5	1.3
47	2,961.6	437.0	3,398.6	218.50	3,180.1	8%	254.5	3,144.1
50	26.3	17.5	43.8	8.75	35.1	55%	19.3	24.5
	<u>4,913.7</u>	<u>579.1</u>	<u>5,492.8</u>	<u>289.6</u>	<u>5,203.2</u>		<u>438.0</u>	<u>5,054.8</u>

CEC Continuity	24.2	0.0	24.2	0.0	24.2	7%	1.7	22.5
----------------	------	-----	------	-----	------	----	-----	------

Less: Non regulatory items (4.3)
Less: Tax Depreciation - Goodwill (1.8)
Total CCA for Revenue Requirement 433.6

2019 CCA Class	Opening UCC	Net Additions	UCC pre- 1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
1	1,386.1	36.4	1,422.4	18.19	1,404.2	4%	56.2	1,366.2
2	200.8	0.0	200.8	-	200.8	6%	12.1	188.7
3	9.3	0.0	9.3	-	9.3	5%	0.5	8.8
6	12.5	0.0	12.5	-	12.5	10%	1.3	11.2
8	119.3	25.5	144.8	12.74	132.1	20%	26.4	118.4
9	0.8	0.0	0.8	-	0.8	25%	0.2	0.6
10	100.1	33.7	133.8	16.84	116.9	30%	35.1	98.7
12	10.8	32.2	42.9	16.08	26.8	100%	26.9	16.0
13	22.7	8.9	31.6	4.44	27.1	N/A	3.8	27.8
14.1	9.7	6.4	16.1	3.19	12.9	5%	0.6	15.4
17	12.7	0.0	12.7	-	12.7	8%	1.0	11.7
42	0.2	0.0	0.2	-	0.2	12%	-	0.2
45	0.0	0.0	0.0	-	0.0	45%	-	0.0
46	1.3	0.0	1.3	-	1.3	30%	0.4	0.9
47	3,144.1	548.0	3,692.1	274.00	3,418.1	8%	273.6	3,418.5
50	24.5	29.1	53.6	14.56	39.1	55%	21.5	32.1
	<u>5,054.8</u>	<u>720.1</u>	<u>5,774.9</u>	<u>360.0</u>	<u>5,414.9</u>		<u>459.6</u>	<u>5,315.3</u>

CEC Continuity	22.5	0.0	22.5	0.0	22.5	7%	1.6	21.0
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Less: Non regulatory items (4.3)
Less: Tax Depreciation - Goodwill (1.7)
Total CCA for Revenue Requirement 455.2

2020 CCA Class	Opening UCC	Net Additions	UCC pre- 1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
1	1,366.2	45.7	1,412.0	22.87	1,389.1	4%	55.6	1,356.4
2	188.7	0.0	188.7	-	188.7	6%	11.3	177.4
3	8.8	0.0	8.8	-	8.8	5%	0.4	8.4
6	11.2	0.0	11.2	-	11.2	10%	1.1	10.1
8	118.4	66.3	184.7	33.17	151.6	20%	30.3	154.4
9	0.6	0.0	0.6	-	0.6	25%	0.2	0.4
10	98.7	34.3	133.0	17.17	115.8	30%	34.8	98.2
12	16.0	16.0	32.0	8.01	24.0	100%	24.1	7.9
13	27.8	7.6	35.3	3.79	31.6	N/A	4.2	31.1
14.1	15.4	6.0	21.5	3.01	18.4	5%	0.9	20.5
17	11.7	0.0	11.7	-	11.7	8%	0.9	10.8
42	0.2	0.0	0.2	-	0.2	12%	-	0.2
45	0.0	0.0	0.0	-	0.0	45%	-	0.0
46	0.9	0.0	0.9	-	0.9	30%	0.3	0.6
47	3,418.5	523.0	3,941.5	261.48	3,680.0	8%	294.6	3,646.9
50	32.1	11.4	43.6	5.72	37.8	55%	20.8	22.8
	<u>5,315.3</u>	<u>710.4</u>	<u>6,025.7</u>	<u>355.2</u>	<u>5,670.5</u>		<u>479.5</u>	<u>5,546.2</u>

CEC Continuity	21.0	0.0	21.0	0.0	21.0	7%	1.5	19.5
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Less: Non regulatory items (4.2)
Less: Tax Depreciation - Goodwill (1.6)
Total CCA for Revenue Requirement 475.1

2021 CCA Class	Opening UCC	Acquired LDCs	Net Additions	UCC pre- 1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
1	1,356.4	41.8	29.5	1427.7	14.7	1412.9	4%	56.5	1371.2
2	177.4	-	0.0	177.4	0.0	177.4	6%	10.6	166.8
3	8.4	1.6	0.0	10.0	0.0	10.0	5%	0.5	9.5
6	10.1	-	0.0	10.1	0.0	10.1	10%	1.0	9.1
8	154.4	1.1	20.3	175.8	10.1	165.7	20%	33.1	142.7
9	0.4	-	0.0	0.4	0.0	0.4	25%	0.1	0.3
10	98.2	0.1	35.3	133.6	17.6	116.0	30%	34.8	98.8
12	7.9	-	20.1	28.1	10.1	18.0	100%	18.0	10.1
13	31.1	-	7.4	38.5	3.7	34.8	N/A	4.8	33.7
14	-	1.4	0.0	1.4	0.0	1.4	N/A	0.1	1.3
14.1	20.5	-	6.0	26.5	3.0	23.5	5%	1.2	25.3
17	10.8	0.0	0.0	10.8	0.0	10.8	8%	0.9	9.9
42	0.2	-	0.0	0.2	0.0	0.2	12%	0.0	0.2
45	0.0	0.0	0.0	0.0	0.0	0.0	45%	0.0	0.0
46	0.6	0.0	0.0	0.6	0.0	0.6	30%	0.2	0.4
47	3,646.9	78.9	538.8	4264.6	269.4	3995.2	8%	319.7	3944.9
50	22.8	0.0	15.9	38.7	8.0	30.7	55%	16.9	21.8
	<u>5,546.2</u>	<u>125.0</u>	<u>673.3</u>	<u>6,344.5</u>	<u>336.7</u>	<u>6,007.8</u>		<u>498.4</u>	<u>5,846.0</u>
CEC Continuity	19.5	1.0	0.0	20.5	0.0	20.5	7%	1.4	19.1

Less: Non regulatory items (4.1)
Less: Tax Depreciation - Goodwill (1.5)
Total CCA for Revenue Requirement 494.2

2022 CCA Class	Opening UCC	Net Additions	UCC pre- 1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
1	1,371.2	32.2	1,403.3	16.1	1,387.2	4%	55.5	1347.8
2	166.8	-	166.8	-	166.8	6%	10.0	156.8
3	9.5	-	9.5	-	9.5	5%	0.5	9.0
6	9.1	-	9.1	-	9.1	10%	0.9	8.2
8	142.7	48.0	190.7	24.0	166.7	20%	33.3	157.4
9	0.3	-	0.3	-	0.3	25%	0.1	0.2
10	98.8	37.1	136.0	18.6	117.4	30%	35.2	100.8
12	10.1	28.0	38.0	14.0	24.1	100%	24.1	13.9
13	33.7	6.9	40.6	3.4	37.2	N/A	5.0	35.6
14	1.3	-	1.3	-	1.3	N/A	0.1	1.1
14.1	25.3	5.9	31.2	2.9	28.3	5%	1.4	29.8
17	9.9	-	9.9	-	9.9	8%	0.8	9.1
42	0.2	-	0.2	-	0.2	12%	-	0.2
45	0.0	-	0.0	-	0.0	45%	-	0.0
46	0.4	-	0.4	-	0.4	30%	0.1	0.3
47	3,944.9	567.2	4,512.1	283.6	4,228.5	8%	338.3	4173.8
50	21.8	24.6	46.4	12.3	34.1	55%	18.7	27.6
	<u>5,846.0</u>	<u>749.7</u>	<u>6,595.8</u>	<u>374.9</u>	<u>6,220.9</u>		<u>524.1</u>	<u>6,071.7</u>
CEC Continuity	19.1	0.0	19.1	0.0	19.1	7%	1.3	17.6

Less: Non regulatory items (4.1)
Less: Tax Depreciation - Goodwill (1.3)
Total CCA for Revenue Requirement 520.0

HYDRO ONE NETWORKS INC.
Distribution
Calculation of Utility Income Taxes Historical Years (2014, 2015)
Year Ending December 31
(\$ Millions)

Line No.	Particulars	2014	2015
	<u>Calculation of Federal and Ontario Taxable Income</u>		
1	Net Income Before Tax (NIBT)	\$ 189.7	\$ 306.2
2			
3	<u>Required Adjustments to accounting NIBT</u>		
4	Recurring items included in Revenue Requirement (RR):		
5	Other Post Employment Benefit expense greater than payments	4.9	4.3
6	Depreciation and amortization	347.0	359.2
7	Capital Cost Allowance	(437.6)	(370.1)
8	Cumulative Eligible Capital	(1.9)	(1.7)
9	Removal costs	(4.5)	(4.6)
10	Environmental costs paid	(11.1)	(10.5)
11	Non-deductible items (50% Meals & entertainment / interest)	2.1	2.0
12	R & D Fed ITC/ Apprenticeship (prior yr addback)	2.6	1.6
13	Capitalized overhead costs deducted	(21.7)	(24.2)
14	Capital amounts expensed for accounting	7.6	5.2
15	Net Finance costs and 20(1)(c)	1.4	(1.5)
16	Capitalized Pension cost deducted	(45.7)	(49.6)
17		<u>\$ (156.9)</u>	<u>\$ (89.9)</u>
18	Deferral accounts not part of RR:		
19	RSVA/RRRP	(42.0)	(67.1)
20	Restricted Depreciation	0.1	0.1
21	Smart meter costs deferred	(7.5)	(0.4)
22	Deferred Pension	(18.6)	(3.8)
23	Deferral a/c's etc.	(2.9)	(2.0)
24	Tax Changes deferral a/c	4.2	0.0
25	Riders 8/9/11	8.1	(4.2)
26	Station Rev. and secondary Land Use	0.0	13.0
27		<u>\$ (58.6)</u>	<u>\$ (64.4)</u>
28	Reversal of accounting adjustments not part of RR:		
29	Contingent liability movement	(0.6)	(0.3)
30	Capitalized interest deductible for tax	(13.7)	(14.5)
31	Capitalized SRED Expenditures deductible for tax	(4.7)	(3.6)
32		<u>\$ (19.0)</u>	<u>\$ (18.4)</u>
33	Recurring items not part of RR:		
34	Capital Contribution (CCRA True up)/IESO directed projects	(0.0)	(0.4)
35		<u>\$ (0.0)</u>	<u>\$ (0.4)</u>
36	Immaterial items not in business plan detail:		
16	Tenant Inducement	(1.4)	1.1
17	Other	1.3	0.9
18		<u>\$ (0.1)</u>	<u>\$ 2.0</u>
19			
20	NET Adjustments to Accounting NIBT	<u>\$ (234.6)</u>	<u>\$ (171.1)</u>
21			
22	Taxable Income	<u>\$ (44.9)</u>	<u>\$ 135.1</u>
23			
24	Corporate Income Tax Rate	26.5%	26.5%
25			
26	Subtotal	(11.9)	35.8
27	Less: Tax Credits	(6.2)	(6.2)
28	Income Tax	<u>\$ (18.1)</u>	<u>\$ 29.6</u>
29			
30	Tax Rates		
31	Federal Tax	15.0%	15.0%
32	Provincial Tax	11.5%	11.5%
33	Total Tax Rate	<u>26.5%</u>	<u>26.5%</u>

HYDRO ONE NETWORKS INC.
DISTRIBUTION

Calculation of Capital Cost allowance (CCA) & Cummulative Eligible Capital (CEC)
2014 Hydro One Networks Tax Return Allocation to Distribution
Year Ending December 31
(\$ Millions)

2014

<u>CCA Class</u>	<u>Opening UCC</u>	<u>Net Additions</u>	<u>UCC pre-1/2 yr</u>	<u>50% net additions *</u>	<u>UCC for CCA</u>	<u>CCA Rate (%)</u>	<u>CCA</u>	<u>Closing UCC</u>
1	1,597.7	2.4	1,600.1	1.2	1,598.9	4%	64.0	1,536.1
2	273.5	-	273.5	-	273.5	6%	16.4	257.1
3	11.8	-	11.8	-	11.8	5%	0.6	11.2
6	13.3	3.5	16.8	1.7	15.0	10%	1.5	15.3
7	-	-	-	-	-	15%	-	-
8	113.6	5.0	118.6	2.6	116.0	20%	23.2	95.4
9	1.2	2.3	3.5	1.2	2.4	25%	0.6	2.9
10	103.4	50.4	153.8	25.2	128.6	30%	38.6	115.2
12	85.2	12.9	98.1	6.5	91.7	100%	91.7	6.4
13	4.6	5.9	10.5	2.9	7.5	N/A	1.2	9.3
17	8.2	7.2	15.4	3.6	11.8	8%	0.9	14.5
35	-	-	-	-	-	7%	-	-
42	0.1	-	0.1	-	0.1	12%	-	0.1
45	0.2	-	0.2	-	0.2	45%	0.1	0.1
46	1.7	3.1	4.8	1.6	3.3	30%	1.0	3.8
47	2,040.0	415.0	2,455.0	205.5	2,249.5	8%	180.0	2,275.0
50	23.1	18.7	41.8	9.3	32.4	55%	17.8	24.0
Total CCA	4,277.6	526.4	4,804.0	261.3	4,542.7		437.6	4,366.4
CEC	26.7	(0.1)	26.6		26.6	7%	1.9	24.7

HYDRO ONE NETWORKS INC.
Distribution
Calculation of Apprenticeship, Co-op, and SR&ED Tax Credit
Tax Credit Test Years (2018 to 2022)
Year Ending December 31
(\$ Thousands)

Line No	Particulars	2018	2019	2020	2021	2022
1	Ontario Co-op Education Credit	\$ 740	\$ 740	\$ 740	\$ 740	\$ 740
2	Eligible Positions	247	247	247	247	247
3						
4	Ontario Apprenticeship Credit	\$ 1,430	\$ 860	\$ 810	\$ 810	\$ 810
5	Eligible Positions	346	268	268	268	268
6						
7	Ontario Business Research Credit	\$ 90	\$ 90	\$ 90	\$ 90	\$ 90
8						
9	Federal Apprenticeship Credit	\$ 320	\$ 320	\$ 320	\$ 320	\$ 320
10	Eligible Positions	169	169	169	169	169
11						
12	SR&ED	\$ 950	\$ 1,050	\$ 1,050	\$ 1,050	\$ 1,050
13						
14	TOTAL TAX CREDITS	<u>\$ 3,530</u>	<u>\$ 3,060</u>	<u>\$ 3,010</u>	<u>\$ 3,010</u>	<u>\$ 3,010</u>
15						
16	Tax Credit included in tax expense ⁽¹⁾	\$ 1,270	\$ 1,370	\$ 1,370	\$ 1,370	\$ 1,370
17	Tax Credit included in OM&A ⁽¹⁾	\$ 2,260	\$ 1,690	\$ 1,640	\$ 1,640	\$ 1,640
18		<u>\$ 3,530</u>	<u>\$ 3,060</u>	<u>\$ 3,010</u>	<u>\$ 3,010</u>	<u>\$ 3,010</u>
19						

(1) In accordance with US GAAP, refundable tax credits included are recorded in OM&A and non-refundable tax credits are recorded as a reduction to tax expense. Consequently, the tax credits relating Ontario Co-op, Ontario Apprenticeship, and Ontario Business Research are recorded in OM&A.

(2) Ontario budget changed ITC available for apprentices after April 24, 2015. Annual credit reduced from \$10,000 to \$5,000, maximum credit reduced from \$40,000 to \$15,000 and period of claim reduced from 48 months to 36 months.

HYDRO ONE NETWORKS INC.

Distribution

Calculation of Apprenticeship and Education Tax Historical Years (2014, 2015)

Year Ending December 31

(\$ Thousands)

Line No	Particulars	2014	2015
1	Ontario Co-op Education Credit	\$ 878	\$ 847
2	Eligible Positions	\$ 291	\$ 283
3			
4	Ontario Apprenticeship Credit	\$ 3,333	\$ 4,104
5	Eligible Positions	\$ 451	\$ 501
6			
7	Ontario Business Research Credit	\$ 356	\$ -
8			
9	Federal Apprenticeship Credit	\$ 525	\$ 445
10	Eligible Positions	\$ 272	\$ 238
11			
12	SR&ED	\$ 1,093	\$ 850
13			
14	TOTAL TAX CREDITS	\$ 6,185	\$ 6,246

17 (1) In accordance with US GAAP, refundable tax credits included are recorded in OM&A and non-refundable
 18 tax credits are recorded as a reduction to tax expense. Consequently, the tax credits relating Ontario Co-op,
 19 Ontario, Apprenticeship, and Ontario Business Research are recorded in OM&A.

21 (2) Ontario budget changed the ITC available for apprentices after April 24, 2015. Annual credit reduced from
 22 \$10,000 to \$5,000, maximum credit reduced from \$40,000 to \$15,000 and the period of claim reduced from 48
 23 months to 36 months.

25 (3) 2015 represents the 12 month period ranging from January 1, 2015 to December 31, 2015, which includes
 26 taxation periods under the PILs regime [Jan 1, 2015 - Oct 31, 2015] and federal tax regime [Nov 1, 2015 - Nov
 27 4, 2015 and Nov 5, 2015 - Dec 31 2015].

1
2
3
4

2016 HYDRO ONE NETWORKS INCOME TAX RETURN

The Hydro One Networks Inc. 2016 Income Tax Return will be submitted as an update to this application when complete.

PROPERTY TAXES AND RIGHTS PAYMENTS

1. SUMMARY OF PROPERTY TAXES OM&A

This Exhibit describes property taxes and real property rights payments made in respect of Hydro One Distribution. These costs are externally imposed and are summarized in Table 1.

Table 1: Summary of Property Taxes OM&A

Description	Historic					Bridge		Test
	2014	2015		2016		2017		2018
	Actual IRM	Actual	Approved	Actual	Approved	Forecast	Approved	Forecast
Property Taxes	3.8	3.9	3.9	4.3	4.1	4.4	4.2	4.6
Indemnity Payments	0.5	0.4	0.5	0.0	0.5	0.0	0.5	0.0
Rights Payments	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.3
Total	4.6	4.8	4.7	4.6	4.9	4.7	5.0	4.9

2. VARIANCE EXPLANATION

2.1 PROPERTY TAXES

Table 2: Property Taxes

Description	Historic					Bridge		Test
	2014	2015		2016		2017		2018
	Actual IRM	Actual	Approved	Actual	Approved	Forecast	Approved	Forecast
Property Taxes	3.8	3.9	3.9	4.3	4.1	4.4	4.2	4.6

Witness: Rob Berardi

1 Hydro One's property taxes are regulated under the *Electricity Act 1998*, the *Municipal*
2 *Act 2001*, and the *Assessment Act 1990*. Property taxes are paid to over 400
3 municipalities each year on land and buildings owned by Hydro One for the purpose of
4 operating its distribution system. These properties include service centre sites,
5 distribution transformer stations, and distribution line rights-of-way.

6
7 The total assessed property values are assigned by the Municipal Property Assessment
8 Corporation and updated using the same schedule as the rest of the province. Except for
9 distribution transformer stations, all distribution properties owned by Hydro One are
10 assessed using a current value assessment method, the valuation method used for other
11 property owners within the province.

12
13 Distribution transformer stations buildings are assessed at a statutory rate of \$86.11 per
14 square meter, as per the *Assessment Act R.S.O. 1990*, Chapter A31, Section 19. They are
15 subject to additional property tax payments, called property proxy taxes, payable to the
16 Minister of Finance under O. Reg. 423/11 of the *Electricity Act, 1998*. Property proxy
17 taxes are calculated for each distribution transformer station building owned by Hydro
18 One and total \$0.1 million per year. The amounts in Table 2 are the sum of property
19 proxy taxes and property taxes.

20
21 As Table 2 shows, actual property taxes paid are materially in line with approved levels.
22 The test year property tax forecast is based on most recent property tax information
23 available.

1 **3. INDEMNITY PAYMENT TO PROVINCE**

2

3 **Table 3: Indemnity Payment to Province**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Actual	Approved	Forecast	Approved	Forecast
Indemnity Payment	0.5	0.4	0.5	0.0	0.5	0.0	0.5	0.0

4

5 In consideration of certain payments, up until October 31, 2015, the Ontario Electricity
 6 Financial Corporation (“OEFC”) indemnified Hydro One as a successor company to
 7 Ontario Hydro for: (a) the failure of the transfer orders to transfer to Hydro One Inc. or
 8 those subsidiaries any asset, right, or thing, or any interest in any asset, right, or thing,
 9 related to their business (the “Hydro One Entitlements”); and (b) adverse claims or
 10 interests of third parties (including the Crown) to Hydro One Entitlements or based on
 11 any deficiency or lack of title in respect of any Hydro One Entitlement. Hydro One Inc.
 12 and its subsidiaries have not made any claim under the indemnity since it was put in place
 13 in 1999. The parties, with the consent of the Minister of Finance, agreed to terminate the
 14 indemnity effective October 31, 2015.

15

16 **4. RIGHTS PAYMENTS TO OTHER ENTITIES**

17

18 **Table 4: Rights Payments to other Entities**

Description	Historic					Bridge		Test
	2014 IRM	2015		2016		2017		2018
	Actual	Actual	Approved	Actual	Approved	Forecast	Approved	Forecast
Rights Payments	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.3

19

20 Through agreements or permits (approximately 950 in total), Hydro One Distribution
 21 lines and/or facilities cross and/or occupy properties owned by railway companies and/or
 22 governmental bodies. As per the terms of the individual agreements, Hydro One pays

Witness: Rob Berardi

Filed: 2017-03-31

EB-2017-0049

Exhibit C1

Tab 7

Schedule 4

Page 4 of 4

- 1 annual fees to railway companies and government entities for the right to cross and/or
- 2 occupy their properties.

Witness: Rob Berardi

**Appendix 2-JA
 Summary of Recoverable OM&A Expenses**

	2014 Actuals	Last Rebasng Year (2015 Board- Approved)	2015 Actuals	2016 Forecast	2017 Bridge Year	2018 Test Year
<i>Reporting Basis</i>	USGAAP	USGAAP	USGAAP	USGAAP	USGAAP	USGAAP
Sustainment	\$ 326	\$ 316	\$ 305	\$ 327	\$ 334	\$ 347
Development	\$ 11	\$ 15	\$ 11	\$ 12	\$ 13	\$ 11
Operating	\$ 30	\$ 36	\$ 28	\$ 29	\$ 33	\$ 37
Planning	\$ 15	\$ 18	\$ 16	\$ 12	\$ 13	\$ 13
SubTotal	\$ 381	\$ 386	\$ 360	\$ 381	\$ 394	\$ 408
%Change (year over year)			-5.7%	5.9%	3.6%	3.4%
%Change (Test Year vs Last Rebasng Year - Actual)						6.9%
Customer Service (Billing, Collecting, Bad Debt, Misc)	\$ 209	\$ 112	\$ 156	\$ 129	\$ 133	\$ 131
Corporate Relations	\$ 11	\$ 7	\$ 10	\$ 7	\$ 8	\$ 8
Common Functions and Services (excluding Corporate Relations)	\$ 66	\$ 71	\$ 71	\$ 76	\$ 80	\$ 80
Information Technology (including Cornerstone)	\$ 109	\$ 86	\$ 86	\$ 89	\$ 86	\$ 80
Miscellaneous (Other OM&A, Recovery)	\$ 102	\$ 118	\$ 109	\$ 98	\$ 119	\$ 116
SubTotal	\$ 293	\$ 157	\$ 213	\$ 203	\$ 186	\$ 184
%Change (year over year)			-27.4%	-4.8%	-8.2%	-1.1%
%Change (Test Year vs Last Rebasng Year - Actual)						-37.2%
Total	\$ 675	\$ 543	\$ 573	\$ 584	\$ 581	\$ 592
%Change (year over year)			-15.1%	1.9%	-0.5%	1.9%

	2014 Actuals	Last Rebasng Year (2015 Board- Approved)	2015 Actuals	2016 Forecast	2017 Bridge Year	2018 Test Year
Sustainment	\$ 326	\$ 316	\$ 305	\$ 327	\$ 334	\$ 347
Development	\$ 11	\$ 15	\$ 11	\$ 12	\$ 13	\$ 11
Operating	\$ 30	\$ 36	\$ 28	\$ 29	\$ 33	\$ 37
Planning	\$ 15	\$ 18	\$ 16	\$ 12	\$ 13	\$ 13
Customer Service (Billing, Collecting, Bad Debt, Misc)	\$ 209	\$ 112	\$ 156	\$ 129	\$ 133	\$ 131
Corporate Relations	\$ 11	\$ 7	\$ 10	\$ 7	\$ 8	\$ 8
Common Functions and Services (excluding Corporate Relations)	\$ 66	\$ 71	\$ 71	\$ 76	\$ 80	\$ 80
Information Technology (including Cornerstone)	\$ 109	\$ 86	\$ 86	\$ 89	\$ 86	\$ 80
Miscellaneous (Other OM&A, Recovery)	\$ 102	\$ 118	\$ 109	\$ 98	\$ 119	\$ 116
Total	\$ 675	\$ 543	\$ 573	\$ 584	\$ 581	\$ 592
%Change (year over year)			-15.1%	1.9%	-0.5%	1.9%

	2014 Actuals	Last Rebasng Year (2015 Board- Approved)	2015 Actuals	Variance 2015 Actuals vs 2014 Actuals	2016 Forecast	Variance 2016 Forecast vs. 2015 Actuals	2017 Bridge Year	Variance 2017 Bridge vs. 2016 Forecast	2018 Test Year	Variance 2018 Test vs. 2017 Bridge
Sustainment	\$ 326	\$ 316	\$ 305	\$ -21	\$ 327	\$ 22	\$ 334	\$ 8	\$ 347	\$ 12
Development	\$ 11	\$ 15	\$ 11	\$ -4	\$ 12	\$ 1	\$ 13	\$ 1	\$ 11	\$ -2
Operating	\$ 30	\$ 36	\$ 28	\$ -8	\$ 29	\$ -1	\$ 33	\$ 4	\$ 37	\$ 3
Planning	\$ 15	\$ 18	\$ 16	\$ -2	\$ 12	\$ -4	\$ 13	\$ 1	\$ 13	\$ 0
Customer Service (Billing, Collecting, Bad Debt, Misc)	\$ 209	\$ 112	\$ 156	\$ 47	\$ 129	\$ -27	\$ 133	\$ 4	\$ 131	\$ -2
Corporate Relations	\$ 11	\$ 7	\$ 10	\$ 3	\$ 7	\$ -4	\$ 8	\$ 1	\$ 8	\$ 0
Common Functions and Services (excluding Corporate Relations)	\$ 66	\$ 71	\$ 71	\$ 5	\$ 76	\$ 5	\$ 80	\$ 4	\$ 80	\$ 0
Information Technology (including Cornerstone)	\$ 109	\$ 86	\$ 86	\$ -23	\$ 89	\$ 3	\$ 86	\$ -3	\$ 80	\$ -6
Miscellaneous (Other OM&A, Recovery)	\$ 102	\$ 118	\$ 109	\$ -9	\$ 98	\$ -10	\$ 119	\$ 21	\$ 116	\$ -3
Total OM&A Expenses	\$ 675	\$ 543	\$ 573	\$ 28	\$ 584	\$ 11	\$ 581	\$ 3	\$ 592	\$ 17
Adjustments for Total non-recoverable items (from Appendices 2-JA and 2-JB)										
Total Recoverable OM&A Expenses	\$ 675	\$ 543	\$ 573	\$ 28	\$ 584	\$ 11	\$ 581	\$ 3	\$ 592	\$ 17
Variance from previous year			\$ -102	\$ 11	\$ 3	\$ -	\$ 3	\$ -	\$ 11	\$ -
Percent change (year over year)			-15%	2%	0%				2%	
Percent Change: Test year vs. Most Current Actual					1.43%					
Simple average of % variance for all years					-12.27%					-3%
Compound Annual Growth Rate for all years										-2.6%
Compound Growth Rate (2015 Actuals vs. 2013 Actuals)					-4.72%					

Note:

- "BA" = Board-Approved
- If it has been more than three years since the applicant last filed a cost of service application, additional years of historical actuals should be incorporated into the table, as necessary, to go back to the last cost of service application. If the applicant last filed a cost of service application less than three years ago, a minimum of three years of actual information is required.
- Recoverable OM&A that is included on these tables should be identical to the recoverable OM&A that is shown for the corresponding periods on Appendix 2-JB.

**Appendix 2-JB
 Recoverable OM&A Cost Driver Table**

OM&A	2014 Actuals	2015 Actuals	2016 Forecast	2017 Bridge Year	2018 Test Year
<i>Reporting Basis</i>	USGAAP	USGAAP	USGAAP	USGAAP	USGAAP
Opening Balance	\$ 611	\$ 675	\$ 573	\$ 584	\$ 581
Trouble Calls, UC Locates & Disconnects	-\$ 8	-\$ 7	-\$ 10	6	3
Line Maintenance	-\$ 9	\$ 3	\$ 5	-\$ 4	\$ 1
Cycle Clearing, Tactical Maint., Demand Veg. Management, Hazard Tree Removal	\$ 6	-\$ 23	\$ 20	\$ 5	\$ 7
PCB Equipment and Waste Storage	\$ 1	\$ 3	\$ 5	\$ 3	\$ 0
Engineering and Technical Services	\$ 0	-\$ 0	\$ 1	-\$ 0	-\$ 2
Pension Adjustments				-\$ 12	\$ 1
Customer Care primarily CIS Remediation	\$ 61	-\$ 54	-\$ 26	\$ 3	-\$ 1
Information Technology	\$ 9	-\$ 24	\$ 3	-\$ 4	-\$ 5
Other Programs	\$ 5	-\$ 0	\$ 13	\$ 1	\$ 8
Closing Balance	\$ 675	\$ 573	\$ 584	\$ 581	\$ 592

Notes:

- 1 For each year, a detailed explanation for each cost driver and associated amount is required in Exhibit 4.
- 2 For purposes of assessing incremental cost drivers, the closing balance for each year becomes the opening balance for the next year.
- 3 If it has been more than three years since the applicant last filed a cost of service application, additional years of historical actuals should be incorporated into the table, as necessary, to go back to the last cost of service application. If the applicant last filed a cost of service application less than three years ago, a minimum of three years of actual information is required.
- 4 Opening Balance for "Last Rebasing Year" (cell B15) should be equal to the Board-Approved amount.

Appendix 2-JC
 OM&A Programs Table

Programs	2014 Actuals	Last Rebasings Year (2015 Board-Approved)	2015 Actuals	2016 Forecast	2017 Bridge Year	2018 Test Year	Variance (Test Year vs. 2016 Actuals)	Variance (Test Year vs. Last Rebasings Year (2015 Board-Approved))
Reporting Basis	USGAAP	USGAAP	USGAAP	USGAAP	USGAAP	USGAAP	USGAAP	USGAAP
Sustainment								
Trouble Calls, UC Locates & Disconnects	112.8	92.4	106.3	96.5	102.3	105.0	9	13
Line Maintenance	12.3	23.5	14.9	20.2	16.3	17.5	-3	-6
Cycle Clearing, Tactical Maint., Demand Veg. Management, Hazard Tree Removal	140.6	129.0	118.0	137.9	142.9	149.6	12	21
Stations Demand and Planned Corrective Maint., Planned Preventive Station Maint.	16.9	21.9	19.4	19.2	20.2	20.7	1	-1
Retail Rev. Meters, Wholesale Rev. Meters	10.7	15.0	13.0	14.8	11.1	12.1	-3	-3
PCB Equipment and Waste Storage	5.1	11.3	7.7	12.7	15.2	15.4	3	4
Other Services	15.0	14.1	15.8	16.8	15.5	15.8	-1	2
Land Assessment and Remediation	8.8	5.7	6.0	4.8	4.7	4.1	-1	-2
Telecom, Monitoring and Control	3.5	3.5	3.6	3.9	6.2	6.4	3	3
Sub-Total	325.7	316.5	304.6	326.6	334.5	346.7	20	30
Development								
Engineering and Technical Services	4.0	4.7	3.8	4.3	3.9	1.7	-3	-3
Distributed Generation Connections	2.6	2.2	2.5	2.4	3.2	2.9	1	1
Distribution Standards Program	3.9	5.6	3.4	4.2	4.4	4.5	0	-1
Customer Power Quality Program					0.2	0.2	0	0
Research Development and Demonstration	0.4	2.9	1.2	1.2	1.6	1.6	0	-1
Sub-Total	11.0	15.4	10.9	12.1	13.2	11.0	-1	-4
Operating								
Operations Support	4.6	5.4	4.4	5.1	4.9	4.9	0	0
Operations	17.7	16.9	18.1	18.1	18.4	18.5	0	2
Health, Safety & Environment	1.4	2.7	1.5	1.7	2.0	1.8	0	-1
Smart Grid	5.9	11.0	3.5	4.6	8.2	11.5	7	1
Sub-Total	29.5	35.8	27.6	29.5	33.4	36.7	7	1
Customer								
Call Center Operations	79.5	38.5	56.4	41.9	43.8	44.4	3	6
Meter Reading	23.5	14.9	18.7	18.5	19.4	19.2	1	4
Third Party Support	13.6	12.2	13.2	13.8	14.0	14.6	1	2
Field Support	4.9	7.1	12.0	15.7	10.0	8.0	-8	1
Regulatory Compliance (LEAP)	2.2	2.1	4.2	4.1	4.3	4.3	0	2
Net Bad Debt	66.8	15.5	29.5	16.0	21.1	21.1	5	6
Customer Care Staffing	18.9	21.3	21.5	19.3	20.1	19.8	1	-2
Sub-Total	209.4	111.6	155.5	129.3	132.7	131.5	2	20
Common Functions and Services								
Corporate Management	2.4	2.4	2.4	3.8	5.6	5.7	2	3
Finance	16.4	18.0	16.2	16.5	16.9	16.3	0	-2
People and Culture	5.8	5.7	6.8	6.6	7.8	7.7	1	2
Corporate Relations	10.5	6.6	9.6	7.1	7.6	8.3	1	2
General Counsel and Secretariat	3.8	4.1	3.6	4.0	4.2	4.3	0	0
Regulatory Affairs	13.0	12.0	13.6	13.5	12.8	13.0	-1	1
Security Management	1.9	2.5	2.2	2.2	2.3	2.4	0	0
Internal Audit	1.2	1.1	1.6	2.0	3.1	3.1	1	2
Real Estate and Facilities	21.8	24.8	24.5	26.9	26.9	27.3	0	3
Sub-Total	76.8	77.3	80.5	82.7	87.2	88.0	5	11
Planning								
Planning	15.0	18.4	16.4	12.5	13.3	13.3	1	-5
Sub-Total	15.0	18.4	16.4	12.5	13.3	13.3	1	-5
Information Technology (including Cornerstone)								
Business Telecom	8.0	8.1	8.6	8.3	8.3	8.3	0	0
IT Sustainment	51.4	54.4	55.4	52.5	51.2	48.8	-4	-6
IT Development	41.4	12.4	12.6	19.2	15.5	13.4	-6	1
IT Security	0.0	0.0	0.0	0.0	1.6	1.5	2	2
IT Management and Project Control	8.2	10.8	9.2	9.2	9.0	8.4	-1	-2
Cornerstone	0.3	0.0	0.0	0.0	0.0	0.0	0	0
Sub-Total	109.3	85.7	85.8	89.2	85.6	80.4	-9	-5
Miscellaneous								
Cost of External Revenue	4.5	2.1	5.4	4.3	4.5	4.6	0	2
Other OM&A	-111.3	-124.4	-119.0	-107.2	-128.4	-125.2	-18	-1
Property Taxes & Rights Payments	4.6	4.7	4.8	4.6	4.7	4.9	0	0
Sub-Total	-102.1	-117.6	-108.8	-98.3	-119.2	-115.7	-17	2
Total	674.6	543.0	572.6	583.5	580.6	591.8	8.3	48.8

Notes:

- 1 Please provide a breakdown of the major components of each OM&A Program undertaken in each year. Please ensure that all Programs below the materiality threshold are included in the miscellaneous line. Add more
- 2 The applicant should group projects appropriately and avoid presentations that result in classification of significant components of the OM&A budget in the miscellaneous category

**Appendix 2-L
 Recoverable OM&A Cost per Customer and per FTE 1**

	2014- Actual	Last Rebasing Year 2015- Board Approved	2015 Actuals	2016 Forecast	2017 Bridge Year	2018 Test Year
Reporting Basis	USGAAP	USGAAP	USGAAP	USGAAP	USGAAP	USGAAP
OM&A Costs						
O&M	\$ 597,851,148	\$ 465,772,478	\$ 492,044,826	\$ 500,866,379	\$ 493,455,849	\$ 503,883,777
Admin Expenses (CCFS)	\$ 76,757,859	\$ 77,251,538	\$ 80,541,035	\$ 82,654,463	\$ 87,153,512	\$ 87,961,468
Total Recoverable OM&A from Appendix 2-JB 5	\$ 674,609,007	\$ 543,024,017	\$ 572,585,861	\$ 583,520,841	\$ 580,609,361	\$ 591,845,245
Number of Customers 2,4	1,267,171	1,288,000	1,274,369	1,283,351	1,291,963	1,300,516
Number of FTEs 3,4	N/A	N/A 6	N/A	N/A	8581	8606
Customers/FTEs					150.56	151.12
OM&A cost per customer						
O&M per customer	471.80	361.6246	386.11	390.28	381.94	387.45
Admin per customer	60.57	59.9779	63.20	64.41	67.46	67.64
Total OM&A per customer	532.37	421.6025	449.31	454.69	449.40	455.08
OM&A cost per FTE						
O&M per FTE					57,505.63	58,550.29
Admin per FTE					10,156.57	10,220.95
Total OM&A per FTE					67,662.20	68,771.23

Notes:

- 1 If it has been more than three years since the applicant last filed a cost of service application, additional years of historical actuals should be incorporated into the table, as necessary, to go back to the last cost of service application. If the applicant last filed a cost of service application less than three years ago, a minimum of three years of actual information is required.
- 2 The method of calculating the number of customers must be identified. Should correspond with data provided in Appendix 2-IB
- 3 The method of calculating the number of FTEs must be identified. See also Appendix 2-K
- 4 The number of customers and the number of FTEs should correspond to mid-year or average of January 1 and December 31 figures.
- 5 For the test year, the applicant should take into account the system O&M (line 22 of Appendix 2-AB) in developing its forecast OM&A.
- 6 No OEB-approved number