

COST OF SERVICE SUMMARY

1.0 INTRODUCTION

This evidence presents an overview of Hydro One Distribution's Cost of Service evidence. As summarized in Exhibit C2, Tab 1, Schedule 1, the Cost of Service includes the following elements, for which the overall costs for 2015 through 2019 are shown in Table 1 below:

- Operation, Maintenance and Administrative ("OM&A") Expenses,
- Depreciation and Amortization Expense, and
- Payments in Lieu of Corporate Income Taxes.

Table 1
Costs of Service (\$ Millions)

Line no.	Description	Test Year				
		2015	2016	2017	2018	2019
1	OM&A	564.3	610.2	614.0	603.9	600.0
2	Depreciation and Amortization	355.4	374.9	390.2	402.9	413.6
3	Income Taxes	52.5	60.5	63.0	65.4	69.5
4	Total Cost of Service	972.2	1045.6	1067.2	1072.1	1083.2

2.0 KEY ELEMENTS OF THE COST OF SERVICE

Hydro One Distribution's forecast cost of service has been developed consistent with corporate strategic goals to improve customer satisfaction, provide safe and reliable service and improve overall system reliability. The Company's planning process is described in detail in Exhibit A, Tab 17, Schedule 1.

Each of these components is separately addressed within the company's evidence.
Exhibit reference numbers are provided below.

1.1 Operation, Maintenance and Administration Expenses (OM&A)

Total OM&A expense for the test years 2015 through 2019 are shown in Table 2 below.

Hydro One Distribution plans and organizes its OM&A expenses on the basis of the various work programs and functions performed by the company. These work programs primarily address improvements in infrastructure and improvements in productivity and efficiency. Exhibits in support of OM&A costs have been prepared by program area, and appear within the submitted evidence as follows:

Table 2
Summary of OM&A Expenses (\$ Millions)

Program Areas <i>(\$ millions)</i>	2015 Total Cost	2016 Total Cost	2017 Total Cost	2018 Total Cost	2019 Total Cost
Sustaining <i>Ref: Exhibit C1, Tab 2, Sch 2</i>	329.5	374.4	380.1	363.2	358.1
Development <i>Ref: Exhibit C1, Tab 2, Sch 3</i>	15.4	17.7	17.0	17.3	17.8
Operations <i>Ref: Exhibit C1, Tab 2, Sch 4</i>	30.2	34.3	34.8	42.2	41.0
Customer Care <i>Ref: Exhibit C1, Tab 2, Sch 5</i>	117.8	116.3	114.7	113.5	115.4
Corporate Common Costs and Other Costs <i>Ref: Exhibit C1, Tab 2, Sch 6</i>	66.7	62.5	62.4	62.4	62.3
Taxes Other Than Income Taxes <i>Ref: Exhibit C1, Tab 2, Sch 12</i>	4.7	4.9	5.0	5.2	5.4
Total OM&A Expenses	564.3	610.2	614.0	603.9	600.0

1.5 Depreciation and Amortization Expense

The depreciation and amortization expense accepted by the Board for Hydro One's 2010 and 2011 Electricity Distribution revenue requirement, followed the methodology originally accepted by the Board for 2006 rates. The depreciation rates in the RP-2005-0020/EB-2005-0378 proceeding were supported by an independent depreciation study completed in June 2005 by Foster Associates Inc. (Foster Associates). The Board accepted the costs flowing from this depreciation study for the purpose of supporting Hydro One Distribution's rates in 2006 and similarly accepted the methodology again in the 2007-0681 proceeding for 2008 rates. A new full depreciation study covering Hydro One Networks' distribution and common assets was initiated and carried out by Foster Associates in the summer of 2013 for purposes of determining depreciation and amortization expense for the 2015 – 2019 test years.

Hydro One is proposing to recover the depreciation and amortization expense in the following amount for each of the test years: 2015 - \$355.4 million; 2016 - \$374.9 million; 2017 - \$390.2 million; 2018 - \$402.9 million; and 2019 - \$413.6 million. Hydro One Distribution's evidence regarding the depreciation study and its impact on depreciation expense is filed at Exhibit C1, Tab 6, Schedule 1.

1.6 Payments in Lieu of Corporate Income Taxes

As a result of the *Electricity Act, 1998*, Hydro One Distribution has been required to pay proxy taxes since 1999. Hydro One is requesting recovery of Payments in Lieu of Income Taxes ("PILs") in the following amount for each of the test years: 2015 - \$52.5 million; 2016 - \$60.5 million; 2017 - \$63.0 million; 2018 - \$65.4 million; and 2019 - \$69.5 million. Evidence outlining the calculation of PILs is filed at Exhibit C1, Tab 7, Schedule 1 and Exhibit C2, Tab 5, Schedule 1.

1.7 Taxes Other Than Income Taxes

This program consists of property and proxy taxes, and indemnity payments to the Province. Details of the expenditures under this program are filed at Exhibit C1, Tab 2, Schedule 12.

SUMMARY OF OM&A EXPENSES

1.0 SUMMARY OF OM&A EXPENSES

The requested OM&A expenses result from the rigorous business planning and work prioritization processes described in detail at Exhibit A, Tab 17, Schedules 1 through 6. These processes reflect a risk-based decision making approach to ensure appropriate and cost effective investments. The development of asset maintenance programs follows good utility practice and is based on the consideration of a number of risk factors as discussed in Exhibit A, Tab 17, Schedule 7.

Hydro One Distribution's OM&A budget is grouped into different investment categories: Sustaining, Development, Operations, Customer Services, Common Corporate Costs and Other OM&A, and Property Taxes & Rights Payments. Table 1 provides a summary of Hydro One Distribution's OM&A expenditures for the historical, bridge and test years.

Table 1
Summary of Distribution OM&A Budget
(\$ Millions)

Description	Historical Years						Bridge Year	Test Years				
	2010	2010 Approved	2011	2011 Approved	2012	2013	2014	2015	2016	2017	2018	2019
Sustaining	305.9	315.2	317.1	337.5	307.9	335.7	320.4	329.5	374.4	380.1	363.2	358.1
Development	12.3	11.7	15.8	12.0	14.7	11.1	18.4	15.4	17.7	17.0	17.4	17.8
Operations	18.5	20.2	18.1	20.9	21.0	22.0	30.4	30.2	34.4	34.8	42.2	41.0
Customer Services	114.7	117.2	113.3	113.4	116.7	148.6	133.7	117.9	116.3	114.7	113.5	115.4
Common Corporate Costs and Other OM&A	94.9	50.9*	85.5	46.5*	88.6	88.8	73.8	66.7	62.5	62.4	62.4	62.3
Property Taxes & Rights Payments	4.6	4.7	4.6	4.8	4.5	4.4	4.6	4.7	4.9	5.0	5.2	5.4
TOTAL	550.9	520.0	554.4	535.0	553.4	610.6	581.3	564.3	610.2	614.0	603.9	600.0

* The envelope reduction to OM&A from the OEB Decision was not spread across the work program areas but was included in other OM&A.

1 OM&A spending in 2010 and 2011 was higher than Board Approved levels after the
2 envelope reductions in the OEB Decision, to fund the necessary work that Hydro One
3 had to complete in each year.

4
5 Total OM&A expenditures for 2015 are decreasing by \$17 million or 3% over the
6 projected 2014 bridge year expenditures. Total OM&A expenditures will increase to a
7 peak level of \$614.0 million in 2017, but then decrease from 2018 to \$600.0 million in
8 2019. Contributing to the increase in OM&A expenditures is a growth in sustainment
9 expenditures driven primarily by the continuing efforts to address a backlog of vegetation
10 management to manage costs and improve reliability; an increase in PCB testing of oil
11 filled equipment to meet requirements set out by Environment Canada regulations; and an
12 increase in meter verifications to meet requirements set out by Measurement Canada
13 regulations. The slight increases in development expenditures are primarily attributed to
14 the work required to conduct studies which explore viable options for future smart grid
15 investments. Also contributing to the total increase in OM&A is the increase in
16 Operations spending to maintain and support of the Distribution Management System.

17 18 **2.0 SUSTAINING**

19
20 The Sustaining OM&A budget represents investments required to maintain existing
21 components of the distribution system to ensure the system will continue to function as
22 originally designed as well as ensure public and employee safety, provide an acceptable
23 level of reliability and deliver on customer commitments. Details of the expenditures
24 under this program are provided at Exhibit C1, Tab 2, Schedule 2.

1 **3.0 DEVELOPMENT**

2
3 The Development OM&A program consists of system voltage and loading data
4 collection, as well as system and generation connection studies to enable the safe and
5 reliable operation and expansion of the distribution system. This program also ensures
6 appropriate standards are maintained as required to meet construction, legal and
7 regulatory requirements. Details of the expenditures under this program are described in
8 detail at Exhibit C1, Tab 2, Schedule 3.

9
10 **4.0 OPERATIONS**

11
12 The Operations OM&A program represents the annual expenditures required for the
13 work carried out at Hydro One's Ontario Grid Control Centre. Distribution Operations is
14 involved with the real time monitoring and operation of the distribution system, including
15 the coordination of planned outages and the dispatch of field crews in response to
16 distribution system problems (trouble calls) received by the Customer Contact Centre.
17 Details of the expenditures under this program are filed at Exhibit C1, Tab 2, Schedule 4.

18
19 **5.0 CUSTOMER SERVICES**

20
21 The Customer Services OM&A work program represents the set of work activities
22 required to provide services to customers connected to Hydro One Distribution's system
23 and to meet the service levels stipulated in the Electricity Distribution Rate Handbook.
24 Details of the expenditures under this program are filed at Exhibit C1, Tab 2, Schedule 5.

1 **6.0 COMMON CORPORATE COSTS AND OTHER OM&A**

2
3 The Common Corporate Costs and Other OM&A program includes the provision of
4 Common Corporate Functions and Services (CCFS) and Asset Management programs to
5 support the Distribution business, as well as the maintenance of existing infrastructure,
6 including business systems and information technology. CCFS includes the provision of
7 financial, human resources, communications, regulatory, legal and real estate services.
8 Asset Management programs include developing distribution asset strategies, policies and
9 standards and planning and prioritizing specific OM&A and Capital work on the
10 distribution network. Other programs include information technology support and the
11 cost of goods sold in support of external revenues. Other OM&A includes the credits for
12 capitalized overheads. Details of the expenditures under this program are filed at Exhibit
13 C1, Tab 2, Schedules 6 to 11.

14
15 **7.0 PROPERTY TAXES & RIGHTS PAYMENTS**

16
17 This OM&A cost consists of property and proxy taxes, and indemnity payments to the
18 Province. Details of the expenditures under this program are filed at Exhibit C1, Tab 2,
19 Schedule 12.

SUSTAINING OM&A

1.0 INTRODUCTION

Distribution 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 Distribution manages its Sustaining OM&A program by dividing the expenditures into the following four 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.

Sustaining OM&A investments are intended to maintain the viability of the distribution system, ensure public and employee safety, ensure operational effectiveness by providing an acceptable level of reliability, deliver on customer commitments to demonstrate customer focus, and address public policy responsiveness by complying with all legislative, regulatory, and environmental requirements. Below is a summary table showing how each of the Sustaining OM&A programs align to the four key outcomes outlined in the OEB's Renewed Regulatory Framework for Electricity Distributors.

OEB Outcome	Relevant References	
Customer Focus	Section 3.1	Stations Demand and Corrective Maintenance
	Section 4.1	Demand Work: Trouble Calls, Underground Cable Locates, Disconnects/Reconnects
	Section 4.4	Other Services
	Section 6.1	Landowner Notification
	Section 6.4	Demand Vegetation Management
Operational Effectiveness	Section 3.2	Planned Station Maintenance
	Section 4.2	Line Maintenance
	Section 5.3	Telecom, Monitoring and Control
	Section 6.2	Line Clearing
	Section 6.3	Brush Control
	Section 6.4	Demand Vegetation Management
Public Policy Responsiveness	Section 6.5	Hazard Tree Removal
	Section 3.1	Stations Demand and Corrective Maintenance
	Section 3.2	Planned Station Maintenance
	Section 3.3	Land Assessment and Remediation
	Section 4.1	Demand Work: Trouble Calls, Underground Cable Locates, Disconnects/Reconnects
	Section 4.2	Line Maintenance
	Section 4.3	PCB Equipment and Waste Management
	Section 5.1	Retail Revenue Meters
Financial Performance	Section 5.2	Wholesale Revenue Meters
	Section 2.0	Sustaining OM&A Summary

A summary of Hydro One Distribution's sustaining OM&A program and proposed spending levels for the test years 2015 to 2019 are described herein.

2.0 SUSTAINING OM&A SUMMARY

The sustaining OM&A programs fund both planned work and unplanned demand work. The planned OM&A work involves the inspection, verification, maintenance or repair of existing distribution system assets. Asset inspections are crucial in locating substandard or hazardous conditions in the distribution system and are required by the Distribution System Code in accordance with Appendix C. Verification of metering and other

1 equipment allows for compliance with regulatory standards and accurate measurements
2 of system performance. Planned maintenance optimizes the life span and performance of
3 many assets, and protects the system from the effects of premature failure. Repairing
4 assets enables the ongoing safe and reliable operation of the system.

5
6 The selection of planned sustaining OM&A investments is guided by the asset risk
7 assessment process described in Exhibit A, Tab 17, Schedule 7. This process takes into
8 account the condition, age, performance, criticality and utilization of specific assets. An
9 economic evaluation is also performed as part of the process. At times, the economic
10 evaluation may determine that it is more cost-effective to replace an asset rather than to
11 continue to repair or maintain it. These capital replacement activities are described in
12 Exhibit D1, Tab 3, Schedule 2. A summary of the asset risk assessment results is
13 provided in Exhibit D1, Tab 2, Schedule 1.

14
15 As outlined in this exhibit, a greater portion of Hydro One's distribution system is
16 reaching an age where the deterioration in condition is taking place at an increasing rate.
17 This will place added cost pressures on future maintenance programs to maintain
18 equipment performance and reliability until such time that the assets can be replaced. In
19 addition, the distribution system continues to expand and there is a need for increased
20 maintenance expenditures when these new assets are placed into service. For these
21 reasons, despite the increase in Sustaining Capital expenditures, Sustaining OM&A costs
22 do not decline over the test years. At the same time, Hydro One Distribution is
23 continuously looking for opportunities that improve the Hydro One distribution system,
24 minimizing risk and adding value for Hydro One's customers. OM&A expenditures
25 proposed in this exhibit will sustain the assets needs over the test years. It must be
26 recognized that any reductions applied to the test years spending will have a
27 compounding effect on cost pressures in the future.

Demand OM&A work requires an immediate or timely response to customer, safety and system needs. This work includes responding to service interruptions, resolving public safety hazards, replacing or repairing failed equipment, responding to customer requests and providing underground cable locating services. Approximately one third of the Sustaining OM&A expenditure is related to these demand work activities. Due to the variable nature of demand work, Hydro One Distribution develops investment levels based on forecast volumes and costs using observed historical averages. Adjustments to this forecast are made based on the projected impact of any changes to the distribution system or to the planned investment programs.

The rigorous investment planning, prioritization and approval process described in Exhibit A, Tab 17, Schedules 1 to 5, respectively, has been completed for all planned and demand Sustaining OM&A investments in the five test years to ensure that assets are managed prudently so as to meet customer, operational and regulatory requirements. The test year expenditures for Sustaining OM&A along with the historical and bridge spending are provided in Table 1 below.

Table 1
Sustaining OM&A
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stations	27.2	25.8	26.4	23.7	27.9	27.6	28.4	28.9	28.6	28.3
Lines	124.4	137.4	130.9	161.3	134.0	141.3	149.7	152.4	154.6	157.5
Meters, Telecom, & Control	24.1	26.6	14.2	15.8	19.4	18.5	18.7	18.5	18.9	19.4
Vegetation Management	130.2	127.3	136.4	134.9	139.1	142.0	177.6	180.3	161.1	152.9
Total	305.9	317.1	307.9	335.7	320.4	329.5	374.4	380.1	363.2	358.1

1 The increase in overall spending in the test years relative to historical expenditures is
2 largely attributed to the following:

- 3 • An increase in the Lines and Station OM&A expenditures for PCB testing of oil filled
4 equipment to meet requirements set out by Environment Canada regulations;
- 5 • An increase in the Meter, Telecom, and Control OM&A expenditures for meter
6 verifications to meet requirements set out by Measurement Canada regulations; and
- 7 • An increase in the Vegetation Management OM&A expenditures to address a backlog
8 in the vegetation management program that will help manage costs in the long term
9 and improve reliability.

10
11 While some Sustaining programs are growing through the test years due to asset
12 demographics and regulatory requirements (as mentioned above), a number of initiatives
13 are being undertaken to contain increases in maintenance costs associated with the aging
14 system and increased regulatory requirements. These include:

- 15
16 • Optimized maintenance frequencies impacting overall costs and resource utilization,
17 and additional moves to condition based maintenance;
- 18 • Increased bundling opportunities through alignment of maintenance activities and
19 improved visibility of bundling opportunities. These provide efficiencies in the
20 planning and execution of outages as well as with staff mobilization; and
- 21 • Increased capital replacement of assets mitigating the need for increases in corrective
22 maintenance costs and equipment refurbishment activities through addressing worse
23 performing assets and facilitating the integration of new equipment with lower
24 lifecycle maintenance costs.

25
26 Additional details concerning these increases and a discussion of year over year
27 variations in spending, where significant, are discussed in more detail below.

3.0 STATIONS

Hydro One Distribution owns and operates 1,004 distribution and regulating stations province-wide. Distribution stations are used to lower voltages for more localized delivery of power while regulating stations are used to maintain voltages when feeders are long and customer density is low. Station facilities typically contain the following components: transformers, instrument devices, fuses, reclosers, disconnect switches, bus, insulators, support structures, power cables, cable terminators, surge arresters, station service supplies, grounding systems, fences, and buildings. Hydro One Distribution also owns and maintains a fleet of 28 mobile unit substations that are used to provide emergency backup following a failure, and to facilitate planned maintenance and capital replacement activities at distribution and regulating stations to reduce power interruptions.

Stations Sustaining OM&A funding covers investments required to maintain existing assets located within distribution and regulating stations, as well as to maintain the 28 mobile unit substations. Hydro One Distribution manages its Stations Sustaining OM&A program by dividing the program into three categories:

1. Stations Demand and Corrective Maintenance, which funds the OM&A investments to respond to emergency failures at distribution and regulating stations;
2. Planned Station Maintenance, which funds the OM&A investments to reduce the risk of equipment failure at distribution and regulating stations; and
3. Land Assessment and Remediation, which funds the OM&A investments to test and carry out remedial work to manage the contaminated soil at distribution and regulating stations.

1 Required funding for the test years 2015 to 2019, along with the spending levels for the
2 bridge and historical years are provided in Table 2 for each category.

3 **Table 2**
4 **Stations Sustaining OM&A**
5 **(\$ Millions)**

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stations Demand and Corrective Maintenance	8.4	8.2	9.2	8.2	9.2	9.4	10.0	10.2	10.3	10.5
Planned Station Maintenance	13.0	12.8	11.6	8.7	12.2	12.5	12.2	12.4	12.7	12.4
Land Assessment and Remediation	5.8	4.8	5.5	6.8	6.5	5.7	6.2	6.3	5.7	5.5
Total	27.2	25.8	26.4	23.7	27.9	27.6	28.4	28.9	28.6	28.3

6
7 The overall Stations Sustaining OM&A expenditures for the test year 2015 is in line with
8 the 2014 bridge year and continues to remain relatively constant over the five year
9 period.

11 **3.1 Stations Demand and Corrective Maintenance**

13 **3.1.1 Introduction**

14
15 Demand maintenance refers to the repair activities that are undertaken when station
16 components fail. The consequence of a station component failure is typically a service
17 interruption to customers. These station interruptions can impact up to 10,000 customers
18 per occurrence. Hydro One Distribution must address these station interruptions to
19 maintain reliable service in accordance with good utility practice in order to comply with
20 legal and regulatory requirements. Hydro One Distribution's performance in responding
21 to interruptions is reflected by service quality indicators specified in the OEB's
22 Distribution System Code, Section 7, and in the Electricity Distribution Rate Handbook,
23 Sections 15.2.1 and 15.2.3.

1 Corrective maintenance refers to the repair of deficiencies that are identified through
2 preventive maintenance and trouble calls. Station demand and corrective maintenance
3 work must be carried out in a timely manner in order to minimize the risks to customer
4 reliability and safety.

5
6 3.1.2 Investment Plan

7
8 The Stations Demand and Corrective Maintenance program covers the OM&A
9 component of emergency work required to:

- 10 • respond to component failures at distribution and regulating stations,
11 • correct situations where there is a likelihood of failure that could cause a power
12 interruption or present a safety hazard,
13 • complete high priority corrective work discovered during planned maintenance
14 activities that cannot be deferred until the next planned maintenance, and
15 • address security issues (i.e. copper theft) that pose safety risks to the public as well as
16 Hydro One Distribution personnel.

17
18 In most cases, smaller components such as insulators, connectors, switches, etc. will be
19 repaired, temporarily bypassed, or replaced on site. The failure of a large component,
20 such as a transformer, may require moving the equipment off site and repairing it at a
21 central location or replacing it. If a prolonged service interruption is anticipated, service
22 is typically restored through the temporary use of a mobile unit substation.

23
24 The station demand and corrective maintenance program also includes the corrective
25 maintenance requirements for the strategic spare inventory including: leak repair on
26 transformers, underload tap changer testing and repair, transformer painting and cleaning
27 and repair of the cabinet that houses all of the control equipment for the transformer

1 control compartment; to ensure the equipment is in operable condition for deployment
2 into service in case of a failure.

3
4 When the resolution of the emergency work involves the repair of a component, such
5 work is charged to this program. If the resolution involves the replacement of damaged or
6 defective equipment, this replacement is typically charged to the Sustaining Capital
7 program discussed in Exhibit D1, Tab 3, Schedule 2.

8
9 **3.1.3 Summary of Expenditures**

10
11 The planned expenditure for 2015 is \$9.4 million with the proposed spending increasing
12 over the five year period on average by 3% annually. The proposed spending in the test
13 years is based on historical spending with adjustments to incorporate recent trending,
14 such as the declining condition of the transformer fleet.

15
16 **3.2 Planned Station Maintenance**

17
18 **3.2.1 Introduction**

19
20 The Planned Station Maintenance program is required to reduce the risk of equipment
21 failure, which can impact service reliability to the large number of customers supplied
22 from a distribution station. Planned station maintenance is also critical to minimizing life
23 cycle costs and limiting the amount of unplanned corrective maintenance and capital
24 replacement in future years.

25
26 **3.2.2 Investment Plan**

27
28 The planned station maintenance program is divided into three categories: power
29 equipment maintenance, grounds and site maintenance, and PCB testing and retro-filling.

Table 3
Planned Station Maintenance
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Power Equipment Maintenance	11.9	11.3	9.7	6.6	9.4	9.6	9.8	10.0	10.2	9.9
Grounds and Site Maintenance	0.9	1.4	1.8	2.0	2.3	2.4	1.9	1.9	2.0	2.0
PCB Testing and Retro-filling	0.2	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.5	0.5
Total	13.0	12.8	11.6	8.7	12.2	12.5	12.2	12.4	12.7	12.4

Power Equipment Maintenance

The power equipment maintenance program includes station inspections and planned maintenance of the power equipment, strategic spares, and mobile unit substations.

- Station inspections are required by Appendix C – Minimum Inspection Requirements of the Distribution System Code. The inspections are undertaken to identify obvious structural problems, safety hazards, equipment defects and signs of vandalism prior to initiating planned maintenance work. Hydro One Distribution’s stations are inspected two times per year.
- Planned maintenance of power equipment includes condition-based maintenance on reclosers, transformers and underload tap changers. Maintenance for reclosers is based on the number of operations as suggested by the manufacturer; whereas maintenance for transformers and tap changers is largely based on the analysis of the insulating oil and diagnostic tests.

- 1 • Planned maintenance of strategic spares includes inspection and maintenance of spare
2 distribution transformers in order to ensure reliable, deployable spare units. The
3 strategic spares are critical to support the transformer replacements required under
4 demand circumstances.
- 5
- 6 • Planned maintenance of mobile unit substations is required to ensure these assets are
7 available in good working condition when required. The fleet of 28 mobile unit
8 substations play a key role in providing reliable service to Hydro One Distribution's
9 customers as they provide emergency backup, should a distribution station fail, and
10 facilitate planned maintenance programs at distribution stations. The mobile unit
11 substations also provide load relief during heavy load periods in the summer or
12 winter.
- 13

14 The maintenance of power equipment ensures the continued operation of the distribution
15 system which plays an important role in maintaining the level of reliability to customers.

16

17 Grounds and Site Maintenance

18

19 The grounds and site maintenance program includes weed control, grass cutting, fence
20 repair, access road maintenance, site drainage, foundation repairs and inspections.
21 Inspections are required to verify that all fire extinguishers are in working order on a
22 monthly basis, as per the *Ontario Fire Protection and Prevention Act*. Inspections of the
23 spill containment systems are also required on a quarterly basis as stipulated by the
24 Ministry of Environment.

1 PCB Testing and Retro-filling

2
3 The PCB testing and retro-filling program includes testing of the oil filled power
4 equipment and eliminating Polychlorinated Biphenyl ("PCB") contaminated oil by retro-
5 filling the equipment. Hydro One Distribution is required to eliminate all insulating oil in
6 station equipment with PCB contamination levels above 500 ppm by year end 2014, in
7 accordance with Environment Canada regulations. Hydro One Distribution has applied
8 for an extension, requesting that the 2014 deadline be extended to 2025. The extension
9 was requested due to the fact that PCB tests on transformer bushings within a station is a
10 very time consuming process that requires a planned transformer outage and the usage of
11 a mobile unit substation to mitigate customer power interruptions in order to obtain the
12 oil sample required for lab testing. On April 23, 2014 the regulations were amended and
13 passed through legislation, allowing the extension of oil filled equipment with PCB
14 contamination levels above 500 ppm to be eliminated by 2025.

15
16 Also, according to the regulations, any contamination equal to and above 50 ppm must be
17 removed by 2025. Hydro One Distribution will test all outstanding station equipment by
18 2024.

19
20 The PCB testing and retro-filling will ensure that Hydro One Distribution operates in an
21 environmentally responsible manner that minimizes the risk to human health and the
22 environment and remains in compliance with applicable regulations.

23
24 3.2.3 Summary of Expenditures

25
26 The planned expenditure for station maintenance in 2015 is \$12.5 million with an average
27 proposed spending of approximately \$12.4 million annually over the five year period.
28 The planned expenditures are in line with the average historical spending.

3.3 Land Assessment and Remediation

3.3.1 Introduction

Soil contamination has occurred over time within some of the distribution station properties as a result of application of certain long lasting chemicals; such as wood preservatives and arsenic-based herbicides; storage and use of mineral insulating oil, fuel, PCBs, and miscellaneous other materials. The historical use and storage of these materials and chemicals met all applicable environment regulations and guidelines at the time they were first used; however, environmental regulations have changed. This has resulted in Hydro One Distribution now having properties which do not meet the new regulatory requirements.

3.3.2 Investment Plan

There are a number of distribution stations properties that have some level of on-site soil contamination, exceeding applicable Ministry of Environment land-use criterion. Because contaminated properties have the potential to cause adverse effects on human health and the environment, Hydro One Distribution has undertaken to assess its properties and carry out remedial work where environmental risks are significant.

The primary focus of the Land Assessment and Remediation program is to reduce the human and ecological risk of off-property impacts. This is achieved by either the implementation of remedial measures to treat, remove or otherwise manage the contamination found off-site or the implementation of on-site management controls to mitigate future off-property impacts.

1
2 The Land Assessment and Remediation program consists of sample testing to determine
3 contamination levels, installation of monitoring wells, capping sites in order to stop off-
4 site contamination and site remediation. This program will ensure that Hydro One
5 Distribution operates in an environmentally responsible manner that minimizes the risk to
6 human health and the environment and remains in compliance with applicable Ministry
7 of Environment regulations.

8 9 3.3.3 Summary of Expenditures

10
11 The planned expenditure for 2015 is \$5.7 million with an average proposed spending of
12 approximately \$5.9 million annually over the five year period. The variations in
13 remediation spending year-over-year, is due to the complexity and volume of work
14 needed to address the particular sites being assessed and remediated. The planned
15 expenditures are in line with average historical spending.

16 17 **4.0 LINES**

18
19 Distribution lines total approximately 120,000 circuit kilometres province-wide and are
20 used to deliver power to Hydro One Distribution customers. Lines are constructed on
21 road allowances where possible, or on rights-of-way that Hydro One Distribution can
22 legally access and occupy. Line components include poles, conductor, insulators,
23 transformers, switches, fuses, surge arresters, voltage regulators, reclosers, capacitors,
24 and grounding devices.

25
26 Lines Sustaining OM&A expenditures are required to maintain the integrity of the
27 distribution lines system. Hydro One Distribution manages its Lines Sustaining OM&A
28 program by dividing the program into four categories:

1. Demand Work, which funds the OM&A investments to respond to trouble calls, locate underground cables and connect and reconnect customers on request;
2. Line Maintenance, which funds the OM&A investments to maintain distribution line equipment and patrol the distribution system;
3. PCB Equipment and Waste Management, which funds the OM&A investments to inspect and test equipment for PCB contamination and to manage both PCB and non-PCB waste; and
4. Other Services, which funds the OM&A investments to respond to customer inquiries, rent idle transmission lines, track service quality indicators, fund specific community events, and complete joint use audits.

Required funding for the test years 2015 to 2019, along with the spending levels for the bridge and historical years are provided in Table 4 for each category.

Table 4
Lines Sustaining OM&A
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Demand Work	80.6	100.9	96.8	121.1	95.9	92.4	93.2	94.7	95.6	97.4
Line Maintenance	29.0	23.4	18.7	21.2	16.8	23.5	23.9	24.4	24.9	25.4
PCB Equipment and Waste Management	4.9	4.0	5.0	4.6	7.4	11.3	18.3	18.7	19.1	19.4
Other Services	9.8	9.1	10.4	14.4	13.8	14.1	14.3	14.7	15.0	15.3
Total	124.4	137.4	130.9	161.3	134.0	141.3	149.7	152.4	154.6	157.5

The Lines Sustaining OM&A expenditures in 2013 are higher than initially forecasted, largely due to unusually intense storms during the months of November and December.

The overall Lines Sustaining OM&A expenditures for the test year 2015 are approximately 5% greater than the 2014 bridge year. The Lines OM&A expenditures

continue to grow on average 3% annually over the five year period. The primary driver for the OM&A increase is the PCB inspection and testing requirements of oil-filled line equipment set out by Environment Canada regulations as referred to on page 19 of this exhibit.

4.1 Demand Work: Trouble Calls, Underground Cable Locates, Disconnects/Reconnects

4.1.1 Introduction

The demand work programs (Trouble Calls, Underground Cable Locates, and Disconnects/Reconnects) are required to respond to customer service interruptions, power quality concerns, and customer-driven service responses.

4.1.2 Investment Plan

This demand work program is divided into three categories, as described below. The externally driven nature of this work requires Hydro One Distribution to forecast costs based on historical averages, with adjustments made to reflect anticipated changes in expenditure patterns or work requirements.

**Table 5
Demand Work
(\$ Millions)**

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Trouble Calls	57.8	76.3	65.5	87.7	67.9	64.8	65.9	67.7	69.0	70.0
Underground Cable Locates	13.9	15.5	22.0	23.2	18.5	17.9	17.4	16.9	16.3	16.8
Disconnects/Reconnects	8.9	9.1	9.3	10.2	9.5	9.7	9.9	10.1	10.3	10.5
Total	80.6	100.9	96.8	121.1	95.9	92.4	93.2	94.7	95.6	97.4

1 Trouble Calls

2
3 Trouble Calls typically involve the restoration of service to customers impacted by an
4 unplanned power interruption. Unplanned power interruptions on the distribution system
5 are largely due to line component failures or contact with right-of-way vegetation caused
6 by severe weather conditions. Depending on the specific circumstances, these
7 interruptions can vary in size, from impacting single customers for brief periods of time
8 to impacting thousands of customers for several hours. Trouble calls may also be used to
9 respond to customer complaints or to correct defects on the distribution system that
10 present a safety concern or could result in an imminent service interruption.

11
12 When the resolution of a trouble call involves the repair of an affected component or the
13 clearing of fallen vegetation, such work is charged to this program. If the resolution
14 involves the replacement of damaged or defective equipment, this replacement is charged
15 to the Sustaining Capital program discussed in Exhibit D1, Tab 3, Schedule 2.

16
17 Hydro One Distribution must address trouble calls in order to comply with legal and
18 regulatory requirements, to correct known hazards and to maintain reliable service in
19 accordance with good utility practice. Hydro One Distribution's performance in
20 responding to trouble calls is reflected by service quality indicators specified in the
21 OEB's Distribution System Code, Section 7, and in the Electricity Distribution Rate
22 Handbook, Sections 15.2.1 and 15.2.3. The Distribution System Code states that
23 *"emergency calls must be responded to within 120 minutes in rural areas...and must be*
24 *met at least 80% of the time on a yearly basis"*. Hydro One Distribution's targets for
25 these measures are discussed in Exhibit A, Tab 18, Schedule 1.

26
27 The trouble call program is reactive in nature and as such its volume of work varies based
28 on a number of external factors. These factors include weather, equipment failure, and

1 the volume of customer power quality complaints. The proposed spending for the test
2 years is forecasted based on an expected volume of 45,000 calls per year.

3
4 Underground Cable Locates
5

6 The Underground Cable Locates program provides the service of locating and marking
7 Hydro One Distribution underground plant for customers and contractors who request
8 this information. Responding to these requests is in everyone's best interest as anyone
9 excavating near a cable may cause damage to these costly assets and cause harm to
10 members of the public. This service is provided in accordance with the Electrical Safety
11 Authority's "Guidelines for Excavating in the Vicinity of Distribution Lines" and is
12 intended to minimize utility equipment damage while providing worker safety to those
13 excavating in proximity to buried utility plant. In order to encourage the use of this
14 service, the program costs are not recovered through end user charges. This approach is
15 consistent with the practice followed by other regulated utilities, including cable TV,
16 telephone service and natural gas utilities. Hydro One Distribution must address cable
17 locates in order to comply with legal requirements set out in Ontario Regulation 22/04.

18
19 This program is driven by external demand for underground cable locates. Hydro One
20 Distribution has seen an increasing number of requests, attributed to a continued
21 emphasis on the "call before you dig" program. This increased emphasis is intended to
22 reduce the number of "dig in" events that can have worker safety risks and impact service
23 reliability. The proposed spending for the test years is based on a forecast of 170,000
24 locate requests per year.

1 Service Disconnects and Reconnects

2
3 The Service Disconnects and Reconnects program responds to customer requests for
4 isolation of customer owned assets from the distribution system. This isolation may be
5 requested by the customer to allow for safe conditions to facilitate working on customer
6 owned equipment. Responding to these requests is in everyone's best interest as anyone
7 working without isolation may cause harm to themselves or members of the public. This
8 service is provided to each customer once per year at no cost, as specified in Hydro One
9 Distribution's Conditions of Service, in order to encourage customers to maintain their
10 facilities and to work safely.

11
12 Hydro One Distribution must address these customer requests in order to comply with
13 legal requirements set out in Hydro One Distribution's Conditions of Service which is
14 required in accordance with the Distribution System Code. Hydro One Distribution's
15 performance in responding to service disconnects and reconnects is reflected by service
16 quality indicators specified in the OEB's Distribution System Code, Section 7. Hydro
17 One Distribution's targets for these measures are discussed in Exhibit A, Tab 18,
18 Schedule 1.

19
20 The number of service disconnections and reconnections requests have been increasing
21 over the past several years. The proposed spending for the test years is based on a
22 forecast of 13,300 disconnect and reconnect requests per year.

23
24 4.1.3 Summary of Expenditures

25
26 The planned expenditure for demand work in 2015 is \$92.4 million with the proposed
27 spending increasing over the five year period on average by 1% annually. Since these
28 programs are demand driven, costs vary from year over year. The planned expenditures
29 are in line with the average historical spending.

4.2 Line Maintenance

4.2.1 Introduction

The line maintenance program is required to provide ongoing preventive and corrective maintenance on line assets. This maintenance may include the repair or replacement of minor equipment components. This program also includes line patrols used to identify defects and collect asset information which is a key component in the assessment of line assets.

4.2.2 Investment Plan

The line maintenance program is divided into three categories, as described in Table 6.

Table 6
Line Maintenance
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Preventive and Corrective Maintenance	14.2	13.5	9.1	10.2	10.2	16.7	17.0	17.3	17.7	18.0
Line Patrols	14.0	9.0	8.7	10.3	5.6	5.7	5.9	6.0	6.1	6.2
Sentinel Lights	0.8	0.9	0.9	0.7	1.0	1.0	1.1	1.1	1.1	1.1
Total	29.0	23.4	18.7	21.2	16.8	23.5	23.9	24.4	24.9	25.4

Preventive and Corrective Maintenance

Hydro One Distribution's preventive maintenance of line equipment is undertaken on a planned basis and includes maintenance on line reclosers, regulators, insulators, and

1 three-phase air break and load break switches. There are approximately 12,000 reclosers,
2 2,300 line regulators, and 2,600 three phase switches in the distribution lines system.

3
4 Hydro One Distribution's corrective line maintenance activities are focused on the repair
5 and replacement of minor defective components. These may include broken guy wires,
6 damaged insulators, and faulty lightning arresters. The maintenance of these line assets
7 ensures the continued operation of the distribution system which plays an important role
8 in maintaining the level of reliability to customers.

9
10 Defects typically occur due to normal deterioration brought on by age and component
11 usage, but in some cases system wide problems with particular components also drive
12 corrective action. All defects are identified and logged during line patrols. The defects
13 are categorized based on the requirements of the Distribution System Code and corrected
14 in an appropriate time frame. Where possible, defects corrections are combined with
15 other work to improve operational efficiency. The proposed spending for the test years is
16 based on a forecast of approximately 20,000 defect corrections per year.

17
18 Line Patrols

19
20 The patrol of distribution lines is required by Appendix C – Minimum Inspection
21 Requirements of the Distribution System Code. These line patrols are undertaken to
22 identify public safety hazards, damaged equipment, or any other defects that may impact
23 the safe and reliable operation of the distribution system. Line patrols are also a key
24 component in the assessment of condition of distribution assets. Hydro One Distribution
25 patrols one-sixth of all rural feeders and one-third of all urban feeders each year to
26 identify defects for corrective action. Identified defects requiring immediate attention are
27 corrected under the trouble call programs as discussed in Section 4.1 of this Schedule and
28 Section 4.1 of Exhibit D1, Tab 3, Schedule 2. Less serious defects are addressed on a

1 planned basis. This approach meets the requirements of the Distribution System Code.
2 Overhead, underground, and submarine assets are all inspected during a distribution line
3 patrol. While these inspections are typically visual in nature, other techniques, including
4 sounding and boring test for poles and time domain reflectometry tests for submarine
5 cables, are employed when necessary.

6 7 Sentinel Lights

8
9 The sentinel light program provides outdoor lighting for rural customers and has been in
10 existence in Ontario for over 20 years. Hydro One Distribution has a contractual
11 obligation to honour commitments made by the former Ontario Hydro for existing
12 installations, but no longer accepts requests for new sentinel light installations.

13
14 There are currently approximately 31,000 sentinel lights managed by Hydro One
15 Distribution, generating approximately 2,000 maintenance responses per year.

16 17 4.2.3 Summary of Expenditures

18
19 The planned expenditure for line maintenance in 2015 is \$23.5 million, with the proposed
20 spending increasing over the five year period on average by 2% annually. The preventive
21 and corrective maintenance program is forecasted to exceed its historical spending levels
22 due to increased efforts to remove defects from the distribution system. However,
23 improvements to the distribution patrol program are expected to have an offsetting effect.

4.3 PCB Equipment and Waste Management

4.3.1 Introduction

The PCB Equipment and Waste Management program includes the inspection and testing of line equipment potentially contaminated with PCBs, along with the management of waste generated during the course of maintaining distribution assets. These activities ensure that Hydro One Distribution operates in an environmentally responsible manner that minimizes the risk to human health and the environment and remains in compliance with applicable regulations.

4.3.2 Investment Plan

This program is divided into two categories, as described in Table 7.

Table 7
PCB Equipment and Waste Management
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
PCB Lines Equipment Inspection and Testing	1.0	0.0	0.0	0.0	2.2	6.0	12.9	13.2	13.4	13.7
Waste Management	3.9	4.0	5.0	4.6	5.2	5.3	5.4	5.5	5.6	5.7
Total	4.9	4.0	5.0	4.6	7.4	11.3	18.3	18.7	19.1	19.4

PCB Lines Equipment Inspection and Testing

This program includes the inspection and testing of oil filled distribution line equipment to determine their PCB contamination level. Equipment manufactured prior to 1985 may contain insulating oil contaminated with PCBs. Environment Canada has issued

1 regulations that require the removal of pad mounted equipment with insulating oil that
2 contains PCB contamination levels above 500 ppm by 2009 and the removal of all pole
3 mounted line equipment with insulating oil that contains PCB contamination levels above
4 50 ppm by 2025.

5
6 Hydro One Distribution initially focused on the inspection and testing of pad-mounted
7 transformers. Testing of these transformers was completed in 2010. Beginning in 2014,
8 pole mounted line equipment will be inspected and tested. From past experience with
9 PCB testing, Hydro One Distribution projects that approximately 8% of all transformers
10 will exceed the 50 ppm threshold and will need to be retired as part of the Lines PCB
11 Equipment Replacements Program discussed in Section 4.3 of Exhibit D1, Tab 3,
12 Schedule 2. In order to satisfy the PCB regulations by 2025, Hydro One Distribution will
13 perform approximately 44,000 inspections and approximately 26,000 tests annually. Oil
14 filled equipment inspected and found to contain PCB contamination levels above the
15 approved threshold are replaced under Sustaining Capital program discussed in Exhibit
16 D1, Tab 3, Schedule 2. Hydro One Distribution's targets for these replacements are
17 discussed in Exhibit A, Tab 4, Schedule 4.

18
19 Waste Management

20
21 Hydro One Distribution's daily activities also generate regulated waste, such as lead,
22 cadmium, mercury, etc. that are required to be managed and disposed of in accordance
23 with Provincial and Federal Environmental regulations. Once transformers and other
24 distribution equipment are removed from service, there is a requirement to manage the
25 resulting solid and liquid waste materials in an environmentally approved manner.

1 This management includes reporting of PCB inventories to regulatory authorities,
2 disposal and destruction of these inventories, disposal of non-contaminated oils, and
3 management and disposal of other wastes.

4 4.3.3 Summary of Expenditures

6
7 The planned expenditure for 2015 is \$11.3 million with an increase to \$18.3 million in
8 2016. The proposed spending continues to increase over the 2017 to 2019 period by 2%
9 annually. This represents an increase over the historical spending which is required to
10 address the PCB regulations set out by Environment Canada.

11
12 Reduced funding would result in the deferral of a large amount of PCB inspection and
13 testing work until closer to the 2025 deadline and would require even larger annual
14 expenditures in later years, along with significant labour resources to meet the
15 requirements. Failure to complete the mandated PCB removal by the deadline would
16 result in Hydro One Distribution being non-compliant with the PCB regulations and
17 incurring financial penalties. It would also impact Hydro One Distribution's
18 environmental stewardship commitment for responsible waste management and hamper
19 the ability to comply with waste management regulations.

20 21 **4.4 Other Services**

22 23 4.4.1 Introduction

24
25 The Other Services program is required to address a number of miscellaneous services,
26 including response to customer inquiries, idle transmission line rental, tracking of service
27 quality indicators, funding of specific community events, and completing joint use audits.

4.4.2 Investment Plan

The Other Services program is divided into four categories as described in Table 8.

Table 8
Other Services
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Customer Inquiries	5.2	5.4	6.4	8.8	5.5	5.6	5.6	5.8	5.9	6.0
Investigations and Data Collection	1.5	0.9	1.0	1.2	2.0	2.0	2.0	2.1	2.1	2.2
Miscellaneous Services	3.1	2.8	3.0	2.1	2.5	2.5	2.6	2.6	2.7	2.7
Transmission Idle Line Rental	-	-	-	2.3	3.9	4.0	4.1	4.2	4.3	4.3
Total	9.8	9.1	10.4	14.4	13.8	14.1	14.3	14.7	15.0	15.3

Customer Inquiries

This is a customer focused program that includes the work required to respond to inquiries concerning customer services, bills, location of Hydro One Distribution assets on customer properties, planned and unplanned outages, power quality complaints, and clarifications on policies. The number of inquiries can vary from one year to the next. The proposed spending forecast is based on the historic volume of approximately 8,000 inquiries per year.

Investigations and Data Collection

This program includes the work required to respond to requests for detailed information on distribution station and line assets. It addresses information requirements related to specific requests for the condition of selected assets, public and employee safety hazards,

1 unacceptable system performance, and audits of joint use facilities and data required to
2 support responses to customer reliability concerns.

3
4 Miscellaneous Services

5
6 This program includes a number of activities; pole rental payments to Local Distribution
7 Companies (“LDCs”) where Hydro One Distribution wires are supported by these poles,
8 LDC switching requests, collection and reporting service quality indicators to the Ontario
9 Energy Board on an annual basis, and miscellaneous engineering and environmental
10 support.

11
12 Transmission Idle Lines Rental

13
14 This expenditure is for the annual rental payments to Hydro One Transmission for Hydro
15 One Distribution’s use of transmission facilities to supply power to customers at
16 distribution voltages.

17
18 4.4.3 Summary of Expenditures

19
20 The planned expenditure for 2015 is \$14.1 million with the proposed spending increases
21 over the five year period on average by 2% annually. The majority of these expenditures
22 are ‘demand’ driven and are based on historic customer demands and forecast workload.
23 These planned expenditures are greater than the historic average spending as a result of
24 the addition of the Transmission Idle Line Rental commitments.

5.0 METERING

Hydro One Distribution currently owns and maintains revenue meters of two main types: Retail Revenue Meters and Wholesale Revenue Meters. The retail revenue meters are used to measure energy consumption for retail customers. Whereas the wholesale revenue meters are used to settle the purchase of energy where the point of supply is directly connected to the IESO-controlled grid.

Metering Sustaining OM&A expenditures are required to operate and maintain the existing metering assets. Hydro One Distribution manages its Metering Sustaining OM&A program by dividing the program into three categories:

1. Retail Revenue Meters, which funds the OM&A investments to perform routine and corrective maintenance;
2. Wholesale Revenue Meters, which funds the OM&A investments to perform routine and corrective maintenance, and to support IESO registration or inspection processes; and
3. Telecom, Monitoring & Control, which funds the OM&A investments to enable collection of energy consumption data, and to control and operate sectionalizing switches and electronic reclosers installed on distribution system.

Required funding for the test years 2015 to 2019, along with spending levels for the bridge and historic years are provided in Table 9 for each category.

Table 9
Metering Sustaining OM&A
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Retail Revenue Meters*	21.7	22.1	9.1	10.4	13.6	12.6	12.7	12.3	12.6	13.0
Wholesale Revenue Meters	1.3	1.8	1.8	1.9	2.3	2.4	2.4	2.5	2.6	2.6
Telecom, Monitoring and Control	1.1	2.7	3.3	3.5	3.5	3.5	3.6	3.7	3.7	3.8
Total	24.1	26.6	14.2	15.8	19.4	18.5	18.7	18.5	18.9	19.4

* Includes the OM&A expenditures associated with the implementation of the Smart Meter project for historical years 2010 and 2011 in the amount of \$14.5 million and \$15.4 million respectively.

The overall Metering Sustaining OM&A expenditures for the test year 2015 is in line with the 2014 bridge year and continues to remain relatively constant over the five year period.

5.1 Retail Revenue Meters

5.1.1 Introduction

There are three types of retail revenue meters utilized on the Hydro One distribution system based on average monthly demand. The types include:

- Approximately 1.2 million smart meters measuring energy consumption for residential and other customers whose average monthly demand is 50 kW or less under the Time of Use (“TOU”) pricing scheme;
- About 7,300 electronic demand meters for small business customers with an average monthly electricity demand greater than 50 kW; and
- About 1,300 interval meters for existing business customers whose demand exceeds 1,000 kW, recently connected customers whose demand exceeds 200 kW and customers below the threshold who have requested interval meters.

1 Retail revenue meters are required to be operated, maintained and verified in accordance
2 with requirements of the *Electricity and Gas Inspection Act*, Measurement Canada, and
3 the market rules.

4
5 5.1.2 Investment Plan
6

7 The retail revenue meter program is required to carry out meter sampling, which includes
8 verification of the accuracy by an accredited meter verifier. The program also addresses
9 the replacement of faulty meters and other components (such as elements of the
10 communication network which support the meters).

11
12 Based on recent operational experience approximately 18,000 out of the existing 1.2
13 million retail meters are required to be removed and replaced each year due to random
14 failures, damage or obsolescence.

15
16 Meter verifications are required every 6 or 10 years depending on meter classification,
17 typical residential type meters are on a 10 year frequency. Typical meter verifications
18 involve the testing of a statistically derived sample group of meters, according to a
19 sampling program monitored and regulated by Measurement Canada. If the sample
20 passes, then all meters in that sample group are deemed verified; however, if the sample
21 fails, then all meters in that sample group are required to be replaced. For meters that do
22 not qualify to be sampled, such as commercial or industrial meters, then each meter seal
23 must be individually verified.

24
25 Hydro One Distribution has implemented the deployment of smart meters to all
26 residential customers as directed by the Ministry of Energy. Hydro One Distribution
27 continues to examine smart meter options with appropriate communication platforms for
28 its demand and interval-metered customers. If there is a viable smart meter option, Hydro

1 One Distribution will develop and implement smart metering plans for these types of
2 retail revenue meters.

3 4 5.1.3 Summary of Expenditures

5
6 The planned expenditure for 2015 is \$12.6 million with the proposed spending increasing
7 over the five year period on average by 1% annually. The test years proposed spending
8 represents an average increase of 60% over the historical spending, with the exclusion of
9 the 2010 and 2011 Smart Meter project OM&A costs. This increase is a result of meter
10 verification sampling quantities returning to normal levels. Hydro One Distribution
11 received a dispensation from Measurement Canada which allowed meters coming due for
12 verification to remain in place without verification to avoid inefficiencies which would
13 result from verifying meters that were planned for imminent replacement by smart
14 meters. As a result of this dispensation, costs associated with maintaining retail revenue
15 meters have been lower during the years leading up to 2013.

16 17 **5.2 Wholesale Revenue Meters**

18 19 5.2.1 Introduction

20
21 Since 2003, in accordance with market rules, accountability for legacy wholesale revenue
22 meters (“WRMs”) owned by Hydro One Transmission, but used to settle Hydro One
23 Distribution energy purchases from the IESO-administered market, have been
24 transitioning to Hydro One Distribution ownership. By the end of 2013, Hydro One
25 Distribution has assumed accountability for 387 WRMs.

26
27 Wholesale revenue meters are required to be operated, maintained and verified in
28 accordance with the IESO wholesale market rules.

1 5.2.2 Investment Plan

2
3 The wholesale revenue meter program is required to provide preventative and corrective
4 maintenance, meter re-sealing and verification, trouble call response, IESO registration,
5 and routine maintenance as required by the IESO market rules.

6
7 Wholesale revenue meters are subject to IESO inspections to verify compliance of
8 metering installations with technical specifications contained in the market rules. Any
9 identified deficiencies must be corrected within the prescribed time limits. In general,
10 wholesale meters are re-verified or re-sealed every 6 years.

11
12 As Hydro One Distribution is an IESO-registered meter service provider, it will provide
13 all servicing for its WRMs to ensure accurate wholesale billing by the IESO, and to
14 comply with the market rules and Measurement Canada regulations.

15
16 5.2.3 Summary of Expenditures

17
18 The planned expenditure for 2015 is \$2.4 million with the proposed spending increasing
19 over the five year period on average by 2% annually. The test years proposed spending
20 represents an average increase of 40% over the historical spending. This increase is a
21 result of the gradual increase in the number of WRMs, due to new transformer stations
22 and new wholesale meter points as a result of LDC acquisitions, which Hydro One
23 Distribution has assumed accountability to maintain.

5.3 Telecom, Monitoring and Control

5.3.1 Introduction

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

5.3.2 Investment Plan

The telecom, monitoring and control program is required to:

- maintain and troubleshoot the telecommunication infrastructure which collects energy consumption data from the retail smart meters, and
- maintain telecommunication infrastructure in order to facilitate the upgrade of demand metered customers with electronic demand meters. Note: Hydro One Distribution is looking to leverage its existing network for these meters to minimize 3rd party telecom charges. However, where this option is not available, telecom leased circuits will be used to provide remote interrogation.

The maintenance of telecommunication infrastructure ensures the continued operation of the distribution system which plays an important role in maintaining the level of reliability to customers and ensuring collection of energy consumption data required for customer billing.

As Hydro One Distribution continues to modernize its distribution network, there will be a need for further telecommunication capability to control the new intelligent devices

(such as sectionalizing switches, electronic reclosers, etc.) to provide sufficient network coverage.

5.3.3 Summary of Expenditures

The planned expenditure for 2015 is \$3.5 million with the proposed increasing over the five year period on average by 2% annually. The test years proposed represents an average increase of 30% over the historical spending. This increase is a result of the gradual increase in telecommunication requirements resulting from the smart meters and the modernization of the distribution network.

6.0 VEGETATION MANAGEMENT

Hydro One Distribution has approximately 102,000 km of distribution rights-of-way, which traverse three forest regions in the Province of Ontario. The predominant region, the Great Lakes - St. Lawrence forest region, consists of mixed conifer and deciduous forests stretching from the edges of the Great Lakes and the St. Lawrence River west to the Manitoba boarder. The other two regions include the deciduous forests of southwestern Ontario and the boreal forests of northern Ontario.

The vegetation management program manages clearances to energized equipment to maintain an acceptable and sustainable level of reliability, manages safety hazards posed by trees in proximity to energized lines, manages plant species on the right-of-way floor to permit worker access for maintenance and restoration of power, and minimizes environmental, ecological and social impacts. Strategically, this program aims to improve customer satisfaction through managing the largest contributor to system outages, vegetation. The vegetation management program has been created to address operational effectiveness by continuing to pursue a stable clearing cycle on an average 8-

1 year cycle that will result in improving system reliability and reducing the life-cycle cost
2 of managing vegetation over time. Hydro One Distribution's targets for vegetation related
3 interruptions are discussed in Exhibit A, Tab 4, Schedule 4.

4
5 Hydro One Distribution manages its vegetation management OM&A program through
6 five activities:

- 7 1. landowner notification,
- 8 2. line clearing,
- 9 3. brush control,
- 10 4. demand vegetation management, and
- 11 5. hazard tree removal

12
13 These annual programs are managed using a risk based approach (outlined in Exhibit A,
14 Tab 17, Schedule 7) that considers vegetation condition data, right-of-way age, reliability
15 data, and issues identified by Hydro One Distribution personnel and the general public.
16 Activities are planned to optimize impacts to the distribution system and are audited to
17 ensure continuous improvement.

18
19 Required funding for the test years 2015 to 2019, along with the spending levels for the
20 bridge and historical years are provided in Table 10 for each category.

21

Table 10
Vegetation Management OM&A
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Landowner Notification	7.5	7.3	7.1	7.7	7.1	7.3	10.1	10.0	8.8	8.8
Line Clearing	79.8	81.5	87.4	83.2	92.3	95.4	117.6	120.3	107.0	99.9
Brush Control	34.8	31.2	34.7	35.6	31.4	31.6	42.8	42.8	38.2	37.0
Demand Vegetation Management	8.1	7.3	7.0	8.2	8.1	7.4	6.8	6.9	6.8	6.9
Hazard Tree Removal	-	-	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Total	130.2	127.3	136.4	134.9	139.1	142.0	177.6	180.3	161.1	152.9

The overall Vegetation Management OM&A expenditures for the test year 2015 are approximately 2% greater than the 2014 bridge year. Vegetation Management OM&A continues to grow on average 25% annually over the 2016 and 2017 period. These expenditures allow for a concentrated effort to bring all rights-of-way to an efficient cycle duration of eight years. Unit cost increases reflect the increased tree densities and work complexities resulting from clearing overgrown rights-of-way. The use of herbicide, which is a best practice in vegetation management, is also contributing factor to the unit cost increase, however this upfront investment is expected to reduce future vegetation management workload in the next planned cycle clearing through reducing the regrowth of vegetation.

While line clearing and brush control programs are growing through the test years to reflect the sustaining of an average 8-year cycle (as mentioned above), a number of initiatives are being undertaken to contain increases in vegetation maintenance costs.

These savings are being realized through:

- Eliminating the asset condition assessment program and sourcing the data collection from the line patrols;
- Leveraging mechanization (i.e. feller bunchers and mechanical brush control) to improve operational effectiveness in high density vegetation areas; and
- Utilizing cost effective external labour to resource the ramp up in the brush control and line clearing programs.

By 2018 and 2019, the crest of the backlog wave will have been addressed and Hydro One Distribution will begin to realize the cost benefits of returning feeders on cycle. This is reflected in the declining spending levels for those years and will drive the overall cost of the work program down to a level that is cost efficient and sustainable for the long run.

6.1 Landowner Notification

6.1.1 Introduction

Prior to starting line clearing and brush control, property owners are consulted to review the work plan for their property and to resolve issues concerning tree removal, tree pruning, brush control, property related restrictions and environment concerns.

6.1.2 Investment Plan

The customer notification program includes the consultation process with the property owner, job planning, and the acquiring of approvals from other groups, including Municipalities and the Ministry of Natural Resources, as required. These planning and project management activities are essential for Hydro One Distribution to complete its annual planned vegetation management work programs with minimal disruption, and to manage customer and property owner concerns in a responsible and proactive manner.

1 6.1.3 Summary of Expenditures

2
3 The planned expenditure for 2015 is \$7.3 million with the proposed spending increasing
4 over the five year period. The unit costs for landowner notifications remain stable over
5 the period. The increase is a result of a higher volume of landowner notifications required
6 in conjunction with increases in the line clearing and brush control programs over the
7 same period.

8
9 **6.2 Line Clearing**

10
11 6.2.1 Introduction

12
13 The distribution line clearing program manages the right-of-way edge to meet clearance
14 and reliability expectations, ensure public and employee safety, and minimize
15 environmental, ecological and social impacts.

16
17 6.2.2 Investment Plan

18
19 The line clearing program manages vegetation along the right-of-way edge by:

- 20 1) Removing damaged or diseased trees that pose a threat of falling into a line; and
21 2) Pruning trees to maintain clearances to energized facilities.

22
23 A high proportion of this program has been focused on older, overgrown rights-of way
24 over the historic years; however as outlined in Exhibit D1, Tab 2, Schedule 1, Hydro One
25 Distribution has approximately 23% of right-of-way kilometers beyond the 8-year cycle
26 target. In order to improve the life cycle costs of the vegetation management program and
27 the reliability of the distribution system under both normal conditions and during storm
28 events, Hydro One Distribution is proposing a short term increase in the line clearing

work program in 2016 and 2017 to 14,250 km annually. This increase was based on the age, forest conditions, reliability performance, resourcing, operational costs and maintenance histories of the backlog of rights-of-way beyond the 8-year cycle target. After these two years, the line clearing work program will return to 12,750 km annually, which will sustain the 8-year cycle target. By 2019 program costs will better align with historical spending and reflect the reliability and life-cycle cost benefits of maintaining the system on the 8-year cycle targets.

6.2.3 Summary of Expenditures

The planned expenditure for 2015 is \$95.4 million with proposed spending increasing over the five year period. The increase in spending represents a five year plan to bring all rights-of-way to an efficient 8-year line clearing cycle.

6.3 **Brush Control**

6.3.1 Introduction

The brush control program manages the vegetation on the right-of-way floor to minimize the presence of trees that can grow tall enough to contact the overhead lines and prevent access to our assets.

6.3.2 Investment Plan

Hydro One Distribution uses an Integrated Pest Management approach to the brush control program. This approach is a provincially mandated pest management approach that uses an adaptive strategy to managing non-compatible plant species on the rights-of-way. The approach uses a combination of mechanical, chemical and motor manual

1 methods to lower the life cycle maintenance costs of the right-of-way. Through effective
2 management of non-compatible vegetation, Hydro One Distribution is able to facilitate
3 access to equipment for inspection and maintenance activities as well as emergency
4 response. It will also reduce the safety risks from vegetation growing into electrical
5 equipment. As brush control is performed in conjunction with line clearing, the proposed
6 spending for the test years is forecasted based on the same accomplishment levels as the
7 line clearing program.

8 9 **6.3.3 Summary of Expenditures**

10
11 The planned expenditure for 2015 is \$31.6 million with the proposed spending increasing
12 over the five year period. Mirroring the line clearing program, the brush control program
13 has increased spending through 2017 to address the maintenance backlog. After older,
14 overgrown feeders have been cleared, the 2018 program and beyond will focus on
15 sustaining and managing compatible vegetation on the right-of-way floor. Therefore
16 program expenditures will stabilize and keep pace with the rate of vegetation growth.

17 18 **6.4 Demand Vegetation Management**

19 20 **6.4.1 Introduction**

21
22 All of the 102,000 km of rights-of-way are situated in the public domain and the
23 management of vegetation on and adjacent to these rights-of-way is of interest to many of
24 Hydro One Distribution customers, property owners, municipalities, and government
25 ministries. Each year these groups identify emergent vegetation issues that are addressed
26 outside of the planned programs described above. This is a critical component of the
27 vegetation risk management to ensure customer reliability and public safety.

1 **6.4.2 Investment Plan**

2
3 Demand vegetation management work initiated by the public includes the removal of
4 trees that may fall into a line, restoring clearances to energized equipment and removing
5 healthy trees as required by property owners at locations that are not within the current
6 year's planned program.

7
8 In addition to issues raised by external stakeholders, a number of the reliability and safety
9 issues are identified by Hydro One Distribution personnel each year. These issues may
10 be identified through line patrol observations, routine trouble call response, or reliability
11 monitoring. Once identified, issues are addressed in an off-cycle manner.

12
13 **6.4.3 Summary of Expenditures**

14
15 The planned expenditure for 2015 is \$7.4 million with the proposed spending decreasing
16 in 2016, before stabilizing over the remainder of the period. This decrease reflects the
17 relationship between the expected success of the planned line clearing and brush control
18 programs reducing the volume of demand vegetation management activities.

19
20 **6.5 Hazard Tree Removal**

21
22 **6.5.1 Introduction**

23
24 The hazard tree removal program is a new mid-cycle maintenance program that targets
25 emergent hazard trees on high priority distribution feeder sections.

26

1 6.5.2 Investment Plan

2
3 Industry benchmarking has identified a hazard tree removal program as a best practice
4 management approach for mitigating the risk of trees falling onto assets. This new
5 program to the vegetation management portfolio is employed to mitigate some of the
6 risks associated with having a longer than average maintenance cycle. The objective of
7 the hazard tree removal program is to decrease asset liability and reduce tree related
8 outages on high priority line sections outside of our regular line clearing program.

9
10 6.5.3 Summary of Expenditures

11
12 The planned expenditure for 2015 is \$0.3 million with the proposed spending remaining
13 constant over the five year period. As a new program, spending for the hazard tree
14 program is relatively small compared to other programs. The program is being rolled out
15 gradually to allow the concept to be operationally proven and to allow for efficient
16 processes to be established.

DEVELOPMENT OM&A

1.0 INTRODUCTION

Development OM&A expenditures are required to ensure safe, reliable and efficient operation and development of the distribution system. Data collection and analysis activities are undertaken that ensure existing and forecast customer load and generation demands are met, to maintain distribution system reliability and to ensure the impact of distributed generation that is connected to the system are effectively monitored. These expenditures also ensure that standards are in place to meet distribution construction and planning needs, as well as legal and regulatory requirements.

2.0 DEVELOPMENT OM&A SUMMARY

Development OM&A expenditures are broken down into four main functional areas:

- (1) Data Collection, Engineering and Technical Studies;
- (2) Distributed Generation Connections;
- (3) Standards & Technology; and
- (4) Smart Grid Standards and Technology.

The table below provides a summary of how each of the program areas aligns to the four key outcomes in the OEB's Renewed Regulatory Framework for Electricity Distributors.

OEB Outcome	Relevant References	
Customer Focus	Section 2.2	Distributed Generation Connections
	Section 2.4	Smart Grid Standards and Technology
Operational Effectiveness	Section 2.1	Data Collection, Engineering and Technical Studies
	Section 2.3	Standards and Technology
Public Policy Responsiveness	Section 2.2	Distributed Generation Connections
	Section 2.3	Standards and Technology
	Section 2.4	Smart Grid Standards and Technology
Financial Performance	Section 2.1	Data Collection, Engineering and Technical Studies

Data Collection, Engineering and Technical Studies include activities such as collection and analysis of loading information, feeder balancing, protection review studies, short circuit studies and power quality investigations that are required to support investment decisions.

Distributed Generation Connection studies are undertaken to evaluate the impact of connecting new or modified generation projects to the Hydro One distribution system as per the requirements of the Distribution System Code (“DSC”). Expenditures in this area include program oversight costs, monitoring connection process effectiveness and monitoring and managing impacts of Distributed Generation connections on the distribution system.

The Standards and Technology function covers the development of new and the review of existing technical distribution standards. These are undertaken in response to internal business requirements as well as compliance requirements set by authorities outside

Hydro One Distribution, such as the Electrical Safety Authority (“ESA”). The technology portion of the program encompasses research and development projects.

The Smart Grid Studies function is a critical component of Hydro One’s Smart Grid Deployment Plan. This provides research to support grid modernization activities such as the safe and reliable integration of distributed generators, energy storage and electric vehicles into the distribution system and to address issues that arise in the Smart Grid Program.

The funding for 2015 through 2019, along with the spending levels for the bridge and historic years are provided in Table 1.

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

Description	Historic				Bridge	Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Data Collection, Engineering and Technical Studies	6.6	4.2	3.9	4.0	4.7	4.7	4.7	4.7	4.9	5.0
Distribution Generation Connections ¹	0.0	2.8	2.9	2.5	2.0	2.2	2.0	2.0	2.0	2.1
Standards and Technology	5.4	6.1	4.2	4.0	5.6	5.6	5.8	6.0	6.1	6.3
Smart Grid Studies ²	0.3	2.7	3.7	0.5	6.1	2.9	5.2	4.3	4.3	4.4
TOTAL	12.3	15.8	14.7	11.1	18.4	15.4	17.7	17.0	17.3	17.8

¹ Distribution Generation connections costs have been tracked in a deferral account as approved in proceeding EB-2009-0096, the planned disposition of this account is outlined in Exhibit F1, Tab 1, Schedule 3.

² The costs associated with Smart Grid Studies from January 1, 2010 to December 31, 2012 have been tracked in a deferral account as approved in proceeding EB-2009-0096, the planned disposition of this account is outlined in Exhibit F1, Tab 1, Schedule 3.

The increase in overall spending in the test years relative to historical expenditures is largely attributed to the following:

- Data Collection, Engineering and Technical Studies spending was significantly higher in 2010 as Distribution Generation Connections OM&A expenditures were originally included in this funding. Distribution Generation Connections expenditures have been tracked separately since 2011.
- The combined total of Data Collection, Engineering and Technical Studies and Generation Connections OM&A expenditures in the test years are consistent with historical actuals.
- Standards and Technology spending is relatively flat over the test years compared to the bridge and historic years.
- Smart Grid Studies expenditures have ramped up with the industry focus on new technology implementation and expenditure variations in the bridge and test years are largely due to the timing of project studies.

Details on the line items presented in Table 1 are provided in the sections below.

2.1 Data Collection, Engineering and Technical Studies

Activities performed under Data Collection, Engineering and Technical Studies involve the gathering and analysis of system data to identify capability and reinforcement needs. Most of Hydro One's distribution system does not contain real time monitoring equipment. Data is routinely collected through a series of studies and measurements from annual feeder loading surveys to ensure that up-to-date and accurate information on the operating characteristics of the distribution system is available to make investment decisions. This data is used to assess the adequacy of the distribution system to meet system requirements and customer demand, and to identify investments to System

1 Capability Reinforcement for lines and stations to ensure reliable operation of the
2 electrical system. The System Capability Reinforcement investments are detailed in
3 Exhibit D1, Tab 3, Schedule 3.

4
5 The distribution system data collected is also used to create models and conduct various
6 studies. These studies include load flow analysis; over-current protection studies; minor
7 impact studies on components of the system; and short circuit studies to facilitate
8 customer connections or upgrades. Load flow analyses and over-current protection
9 studies are conducted on a six-year cycle to ensure that the Hydro One Distribution
10 system is compliant with the DSC and associated supply standards (e.g. voltages
11 maintained within acceptable limits). Furthermore, these studies are effective for
12 minimizing line losses and mitigating safety risks on the system. Minor impact and short
13 circuit studies are performed on an as-needed basis.

14
15 Included in this area are expenditures required to sustain and support customized tools
16 which are used to perform various technical studies. The overall Data Collection,
17 Engineering and Technical Study program includes ongoing work that is required to
18 avoid service quality deterioration. The annual expenditures required for this program
19 are \$4.7 million for 2015 through 2017; \$4.9 million in 2018; and \$5.0 million in 2019.

20
21 These expenditures are critical to effective management of the distribution system and the
22 assets. If these activities were not performed, there would be a lack of data available on
23 which to base investment decisions, and an inability to properly analyze the needs of the
24 system to meet customer requirements. In addition, there would be an increased risk of
25 electrically overloading system assets, possibly resulting in equipment damage, and
26 allowing system performance to deteriorate. This would lead to higher line losses,
27 declining reliability for customers and service quality degradation (e.g. voltage
28 degradation, increased frequency of outages, and increased outage duration).

2.2 Distributed Generation Connections

Hydro One's investment plans are based on Ministry of Energy ("MOE") directives on distributed generation ("DG") facilities and the Ontario Power Authority ("OPA") Feed-in Tariff ("FIT") programs for DGs of different sizes. On May 30, 2013, the MOE issued a directive (<http://news.ontario.ca/mei/en/2013/05/ontario-working-with-communities-to-secure-clean-energy-future.html>) regarding the OPA's Small FIT and MicroFIT procurement for small Capacity Allocation Exempt ("CAE") DGs and micro-embedded DGs, respectively. The first procurement for fall 2013 was announced to be 70 MW of Small FIT and 30 MW of MicroFIT DGs. Thereafter, the annual CAE and micro-embedded generation procurement for the years 2014 - 2018 is 150 MW and 50 MW, respectively. Combining the new procurements for CAE and micro-embedded projects with the previously contracted projects provides the connection forecast for 2014 – 2019. For the CAR projects, there are no new procurement targets at this time but existing contracted projects will continue to be connected in the 2014 – 2019 period. The connection forecast for all three categories is presented in Table 2.

Table 2
2014-19 Distributed Generation Connections Forecast

<u>Program Type</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Capacity Allocation Required ("CAR") Projects						
- Greater than 500 kW on 15 kV and above	39	38	38	14	1	1
or						
- Greater than 250 kW on 15 kV and below						

<u>Program Type</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Capacity Allocation Exempt (“CAE”) Projects						
- No greater than 500 kW on 15 kV and above	262	262	262	188	188	188
or						
- No greater than 250 kW on 15 kV and below						
Micro-embedded Projects	1600	1400	1200	1000	800	600
- No greater than 10 kW						

The OM&A expenditures include costs associated with field coordination of connections, CAE and CAR Preliminary Cost Estimates, Power Quality (“PQ”) Investigation and Monitoring, and System Impact Assessment (“SIA”) applications to the Independent Electricity System Operator (“IESO”).

The field coordination of connections expenditures are incurred by field staff while completing distribution generation work related to Connection, Expansion and Renewable Enabling Investments (“REI”).

The CAR preliminary cost estimates expenditures are associated with producing an itemized estimate for the overall connection of a CAR DG. The itemized estimates identify cost allocations into Connection, Expansion and REI assets.

The CAE preliminary cost estimates expenditures are associated with assessing CAE DG connection applications, performing a Connection Impact Assessment (“CIA”) once an application is accepted and providing an itemized preliminary cost estimate based on the CIA.

The PQ Investigation expenditures are related to investigations carried out for selected DGs at the point of connection and along the Hydro One distribution system surrounding

the DG. These investigations are completed on a demand basis and include expenditures associated with data collection and analysis.

The PQ Monitoring expenditures are related to ongoing collection and storage of PQ data for all DGs larger than 250 kW. The purpose of the ongoing PQ data collection is to proactively monitor system performance to aid in identifying potential issues and problems early on in order to maintain power quality on the Hydro One distribution system.

The SIA applications expenditures are 100% recoverable and thus Hydro One's net expenditures are \$0. Further, there are no SIAs forecast for the test years as there is no procurement announced for DGs greater than 500 kW.

Table 3 shows the breakdown of the Generation Connection OM&A expenditures into the categories described above.

Table 3
Summary of Generation Connection OM&A
(\$M)

	2014	2015	2016	2017	2018	2019	Total
Coordination of Connections	1.1	1.1	1.2	1.2	1.2	1.2	7.0
CAE Preliminary Cost Estimate	0.2	0.3	0.2	0.1	0.1	0.1	0.8
CAR Preliminary Cost Estimate	0.1	0.1	0.0	0.0	0.0	0.0	0.1
PQ Investigation	0.2	0.2	0.2	0.2	0.2	0.2	1.3
PQ Monitoring	0.5	0.5	0.5	0.5	0.5	0.6	3.1
SIA Applications	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2.0	2.2	2.0	2.0	2.0	2.1	12.3

Direct Benefits

Consistent with the requirements of Regulation 330/09, a portion of the expenses associated with the connection of renewable generators are allocated to Hydro One ratepayers and a portion of the costs are allocated to all Provincial ratepayers. These allocations are explained in Exhibit F, Tab 1, Schedule 3, Attachment 3.

Table 4 shows the expense allocation between Hydro One ratepayers and Provincial ratepayers for the historic, bridge, and test years.

Table 4
Historic and Forecast OM&A Expense Allocation
(\$M)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hydro One Ratepayer	0.0	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Provincial Ratepayer	0.0	2.5	2.6	2.2	1.8	1.9	1.8	1.8	1.8	1.9
Total	0.0	2.8	2.9	2.5	2.0	2.2	2.0	2.0	2.0	2.1

2.3 Standards and Technology

The Standards and Technology Program provides funding to develop and maintain Hydro One distribution standards, which are driven by public and worker safety, equipment obsolescence, evolving regulatory requirements, technological advancements and changes in work methods. Technical standards form a collection of comprehensive references used as templates and productivity tools to efficiently and effectively carry out operating, maintenance, and capital programs. Standards also incorporate company policies and

1 requirements to ensure compliance with regulations such as the Electrical Safety Code.
2 Hydro One Distribution monitors and influences emerging industry standards and
3 requirements for new standards mainly through participation in Canadian Standards
4 Association working groups. The collection of standards includes over 350 planning,
5 design and maintenance specifications, 500 material specifications and 800 standards-
6 related drawings.

7
8 Reduced funding would result in the unavailability of necessary standards to meet
9 regulatory requirements, construction and planning needs and to effectively deal with
10 technical issues associated with generation connections. Opportunities to utilize
11 emerging technologies would be missed with the potential for increased longer term costs
12 as a result.

13 14 **2.4 Smart Grid Standards and Technology**

15
16 The Smart Grid Studies Program provides necessary and critical support to grid
17 modernization efforts and the integration of renewable and variable generators.

18
19 As stated in the Report on Renewed Regulatory Framework for Electricity Distributors
20 and reiterated in the Board's Supplemental Report on Smart Grid, smart grid
21 development and implementation will be a central focus of the effort to incent innovation,
22 given the importance of grid-enhancing advanced technology systems and equipment to
23 network modernization.

24
25 The Smart Grid Studies Program supports the larger smart grid initiative. The
26 deployment schedule for the smart grid is integrated with, and relies on, the schedule of
27 activities that comprise the Smart Grid Studies Program. The program is also necessary

1 to address issues that arise when deploying smart grid technologies across the Hydro One
2 Distribution system.

3
4 As part of the program, Hydro One Distribution has undertaken multi-year studies with
5 various industry, academic and government partners. These partners include the
6 Canadian Electrical Association, Sustainable Development Technology Canada, Electric
7 Power Research Institute, Electrovaya, Temporal Power, the University of Waterloo, the
8 University of Western, Ryerson University, the Centre of Urban Energy, the Ontario
9 Centres of Excellence and the Ontario Power Authority. The studies being undertaken
10 involve identifying, monitoring, evaluating and validating new grid technologies –
11 including laboratory and field demonstrations – and sharing associated information and
12 findings. These partnership arrangements allow Hydro One Distribution to increase its
13 return on the program expenditures.

14
15 The Board concluded in its Supplemental Report on Smart Grid (February 2013) that the
16 objectives set out in the Minister's Directive (November 2010) are aligned with the
17 objectives of the Board's Renewed Regulatory Framework. The Board further outlined
18 guidance and expectations for distributors on implementing the smart grid to meet the
19 three objectives set out in the Minister's Directive, namely, (1) customer control, (2)
20 power system flexibility and (3) adaptive infrastructure.

21
22 *(1) Enabling Customer Control*
23

24 This Smart Grid Studies Program will address the objective of customer control by
25 educating customers with demonstration projects such as the Energy Hub Management
26 System, which assists customers with energy conservation and utilities with optimizing
27 their feeder operation.

1 Hydro One Distribution's power quality studies will further the customer control
2 objective. With the introduction of inverter technology into various industrial,
3 commercial and residential customers' loads and inverter technology with solar and wind
4 renewable generation, there are potential power quality issues, such as harmonics, which
5 can potentially damage customers' and distributors' facilities. Power quality studies will
6 be conducted with university partners.

7
8 *(2) Improving Power System Flexibility*
9

10 Hydro One Distribution's planned trials of energy storage systems will improve power
11 system flexibility, which facilitates the integration of distributed renewable generation
12 and complex loads. Hydro One Distribution is investigating the use of energy storage to
13 smooth the variable electrical output of distributed renewable generation through
14 counterpoising absorption or release of electrical energy. Hydro One Distribution is
15 planning a trial application of a 5 MW flywheel in the Tillsonburg area. If the trial is
16 successful, the flywheel will be integrated and controlled by the distribution management
17 system (DMS) at Hydro One's Ontario Grid Control Centre (OGCC). Hydro One
18 Distribution also intends to test a 300 kW lithium-ion battery system.

19
20 Microgrids could form with the distributed renewable generation being connected to
21 Hydro One Distribution's grid. Pockets of generation and load could operate
22 independently from the grid and, when needed, reconnect to the grid. This poses possible
23 hazards to worker and public safety as well as customer and utility equipment. To enable
24 the power system's flexibility to safely incorporate distributed renewable generation,
25 Hydro One Distribution intends to study and conduct trials on microgrids and their
26 impact on their host grids. With its partners, Hydro One Distribution also intends to
27 study and test advanced system control devices (Volt/Var Controls) to address specific

1 grid conditions raised by distributed renewable generation and improve overall
2 infrastructure efficiency.

3
4 *(3) Building Adaptive Infrastructure*
5

6 Like other distributors, Hydro One Distribution faces challenges in accommodating
7 electric vehicles (EV) on its existing system. Level 2 charging of a single EV can cause
8 electric load almost equivalent to a house. With academic and other research partners,
9 Hydro One Distribution intends to study and prototype control systems that enable EV
10 recharging on distribution feeders without comprising the health of existing
11 infrastructure.

12
13 With its smart grid improvements, Hydro One Distribution has developed a wealth of
14 data that it can now use to improve planning and operations. Together with its partners,
15 Hydro One Distribution wants to investigate additional ways it can use this newfound
16 data to capture even greater efficiencies and improve the quality of service it provides its
17 customers.

OPERATIONS OM&A

1.0 INTRODUCTION

The Operations function coordinates and dispatches crews as required, plans for and reacts to system contingencies, schedules and coordinates planned outages, provides customer notifications and monitors and reports on the performance of the distribution electric system. Under the current operating environment, the Control Room at the Ontario Grid Control Centre (OGCC) monitors the distribution system at the Transformer Station for correct voltage levels, power quality, equipment loading, and equipment alarms. Operations OM&A investments are required to support these functions.

Operations OM&A also includes initiatives to support environmental, health and safety activities that are required to meet legal obligations, due diligence and aligns with Hydro One's strategic objectives.

Lastly, Operations OM&A includes funding for Smart Grid initiatives corresponding to the Ontario government's renewable generation and conservation initiatives and addresses their impact on distribution operations.

This summary table illustrates the alignment of Operations OM&A investments to the outcome measures outlined in the OEB's Renewed Regulatory Framework for Electricity Distributors.

OEB Outcome	Relevant References	
Customer Focus	Section 3.1.1	Management and Implementation of Planned Outages
	Section 3.1.2	Response and Management of Unplanned Outages
	Section 3.1.3	Emergency Response Coordination
	Section 3.1.4	System Performance Monitoring and Reporting
	Section 3.2.2	Integrated Voice System Support (IVS)
	Section 3.2.3	OGCC Data Collection & Information Updates
Operational Effectiveness	Section 3.1.1	Management and Implementation of Planned Outages
	Section 3.1.2	Response and Management of Unplanned Outages
	Section 3.1.3	Emergency Response Coordination
	Section 3.1.4	System Performance Monitoring and Reporting
	Section 3.2.1	Operating Power system IT Support
	Section 3.2.3	OGCC Data Collection & Information Updates
	Section 3.2.4	Operating Emergency Preparedness - Lines
	Section 3.2.5	Field Verification of Distribution Station (DS) Operating Diagrams
	Section 3.2.6	Distribution Operating Mpas (DOM) Maintenance & DS Operating Diagrams
	Section 3.3	Environmental, Health and Safety Programs
	Section 3.4	Smart Grid
Public Policy Responsiveness	Section 3.1.3	Emergency Response Coordination
	Section 3.2.4	Operating Emergency Preparedness - Lines
	Section 3.3	Environmental, Health and Safety Programs
	Section 3.4	Smart Grid
Financial Performance	Section 3.2.2	Integrated Voice System Support (IVS)
	Section 3.3	Environmental, Health and Safety Programs

2.0 DISCUSSION

The Distribution System Operations activities are carried out centrally at the OGCC. The OGCC is a shared facility which allows central operations of the distribution and transmission systems. Back-Up operating facilities are provided at a separate site in the event the OGCC or its computer systems are rendered unavailable. This centralized approach has been in place since 2003 when the Distribution Operations Management Centre (DOMC) was consolidated with Hydro One Transmission's real-time operations. The cost assigned to Hydro One Distribution for Distribution Operations at the OGCC is based on the "Review of Allocation of Common Corporate Costs" discussed in Exhibit C1, Tab 5, Schedule 1.

Information Technology (IT) tools, systems and infrastructure are required to facilitate distribution system operations. The primary systems supported by Operations OM&A are:

- The **Outage Response Management System (ORMS)** is the distribution outage management tool that automatically analyzes trouble calls received at the Customer Call Centre and predicts the location of faulted equipment, extent of an area experiencing an outage, identifies all affected customers and facilitates optimal dispatch of field crews.
- The **Interactive Voice Response (IVR)** system is the tool used to advise customers of the status of an outage affecting them. The IVR is set automatically by ORMS after it has determined all affected customers for an outage location. This significantly reduces the call volumes that agents need to handle at the Customer Call Centre.

- 1 • The **OGCC Integrated Voice System (IVS)** is designed to allow OGCC Operations
2 to effectively manage voice communications with major customers and field staff.
3 This system provides the interface to the public telephone network and Hydro One's
4 provincial mobile radio system.
5
- 6 • The **Provincial Mobile Radio System** is the medium used by the OGCC and the
7 field operations centres to maintain continuous contact with field crews. It is designed
8 to be reliable in the event of widespread distribution outages and capable of accessing
9 remote locations where field crews would be dispatched.
- 10 • The **Wireless Broadband System (WiMAX)** is the means by which the OGCC will
11 send and receive Supervisory, Control and Data Acquisition (SCADA) signals with
12 smart grid devices. This will include signals to operate remote devices being installed
13 on the distribution system as well as receive telemetry and information (i.e. fault
14 location) from sensors being deployed on the distribution system. Hydro One is
15 leveraging the wireless spectrum (1.80-1.83Ghz) granted to utilities, specifically for
16 protection of critical infrastructure.
17
- 18 • The **Network Management System (NMS)** is the network tool which performs data
19 acquisition and supervisory control of the transmission system and a portion of the
20 distribution system where OGCC Controllers are the operating authority. It provides
21 monitoring of real-time voltages, frequency, loading, equipment status and
22 announces alarms for the change in status of equipment or for equipment in an
23 abnormal operating condition. The NMS also provides control of Hydro One assets in
24 order to switch equipment in and out of service for outages, react to contingencies
25 and change system configurations to provide reliable service to customers. The NMS
26 is continuously being updated to provide additional visibility to the distribution
27 system in unison with smart grid initiatives and distributed generation connections.
28

- 1 • The Distribution Management System (DMS) will monitor and control the
2 distribution system assets. This system will communicate with the new remote
3 controllable and telemetered devices to be installed on the distribution system through
4 grid modernization activities. It will provide a series of power applications focused on
5 the distribution system. These applications include:
6
7 o State Estimation of the distribution system which factors in the effects of
8 renewable generation, providing Controllers with information on the real-time
9 direction of power flows;
10 o A Fault Location application which allows field crews to find faults on the
11 distribution system faster and decreases the restoration time to restore power; and
12 o A Load Flow application that allows the OGCC to conduct studies of the
13 distribution system for planned and forced outages.
14
15 • **Operations Support Tools** provide network outage management, Utility Work
16 Protection Code (UWPC) and electronic logging (EL) functions:
17
18 o **Network Outage Management System (NOMS)** is the transmission and
19 distribution outage management tool that is used for planning, scheduling,
20 assessing and executing outages. In addition, this system is used for transmitting
21 outage requests via a direct communication link to the IESO (Independent
22 Electricity System Operator) for approval.
23
24 o The **Utility Work Protection Code (UWPC)** is used by most distributors in
25 Ontario including Hydro One, when equipment is required to be in a guaranteed
26 condition or status for personnel protection during the performance of work. This
27 program contains the necessary information and tools to support the development
28 of Work Protection packages.

1 ○ **Electronic Logging** is the system of record for control room activities such as,
2 but not limited to; system outages (planned and unplanned), work protections,
3 location of crews and the change in status or condition of equipment. Electronic
4 logging provides system data for distribution asset management and system
5 planning.

6
7 • The **Distribution Operating Maps and Station Diagrams** are used by field crews
8 and by the OGCC to provide detailed information on the normal operating
9 configuration of the distribution system along with the connectivity of the distribution
10 station and generation equipment. This information is essential for ensuring safe and
11 reliable operations.

12
13 • The **OGCC Weather System** provides real-time weather information regarding
14 storm systems, icing and flashover conditions and lightning activity that is critical to
15 managing the distribution system. The information is used to predict and anticipate
16 outage conditions and to notify field crews of impending bad weather. It is displayed
17 on the control room workstations as well as the Control Room Wallboard Display.

18
19 • The **Emergency Services Information System (ESIS)** provides verified up-to-date
20 contact numbers for all emergency service providers (i.e. Police, Fire, Ambulance,
21 Ministry of Environment, gas utilities, etc.) across the Province. This system is
22 designed to enable OGCC and field staff to efficiently contact emergency personnel.
23 Access to ESIS is provided across Hydro One.

24
25 • The **Control Room Wallboards and Displays** are capable of displaying real-time
26 information provided by OGCC systems and tools. The Wallboard Display, which
27 spans the length of the Control Room, provides enhanced situational awareness and
28 an overview of system conditions

- **Media Notifications** provide local media and civic authorities with electronic notifications regarding unplanned outage events and restoration efforts, especially during storms. Media notifications can be distributed according to various local Hydro One geographical areas. This system is considered critical to maintain Hydro One's customer satisfaction rating.

3.0 PROGRAMS

Distribution Operations OM&A programs are divided into four categories, Operations, Operations Support, Environmental, Health and Safety and Smart Grid.

- Distribution Operations funds the staff required for the real-time distribution operating functions.
- Distribution Operations Support funding ensures the various systems and tools are kept current and functioning as required. Specifically, this program provides for the maintenance of the computer tools and systems for the Operating function.
- Environmental, Health and Safety funds initiatives required to support environmental, health and safety activities and corporate health and safety objectives.
- Smart Grid funds the maintenance and support of the smart grid-related computer tools as well as additional staff to leverage the new smart grid business capabilities.

Funding levels are illustrated in Table 1.

Table 1
Operations OM&A
(\$ Millions)

Description	Historic				Bridge	Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Operations	12.3	13.0	14.8	15.7	16.7	16.9	17.1	17.1	17.4	17.6
Operations Support	4.4	4.2	4.8	4.7	5.2	5.4	5.4	5.5	5.5	5.6
Environmental, Health & Safety	1.9	0.9	1.4	1.6	2.4	2.7	2.8	2.6	2.6	2.7
Smart Grid*	N/A	N/A	N/A	N/A	6.1	5.3	9.1	9.6	16.8	15.1
Total	18.6	18.1	21.0	22.0	30.4	30.3	34.4	34.8	42.3	41.0

*Smart Grid OM&A costs prior to 2014/2015 were part of the Smart Grid Pilot project and outlined in Exhibit C1, Tab 1, Schedule 1 in application EB-2013-0141.

- The increase in Operations expenditures from 2010 to 2011 is attributed to an organizational realignment. Customer Operation Support (COS), formerly part of the Large Customer and Generator Relations group was moved under Operations.
- Increases in Operations expenditures from 2015 to 2019 are related to collective agreement obligations regarding the compensation of staff.
- Environmental, health and safety increases from historic to bridge and test years are due to the additional audit requirements to maintain OHSAS 18001 (Health & Safety Management System) certification and the costs to prepare for and to certify under ISO 14001 (Environment Management System).

- Smart Grid expenditures from 2015 to 2019 are related to the support of the Distribution Management System and other smart grid systems as well as staff to monitor and operate through the test years. The expenditures increase over the period as new systems are being commissioned over the test years.

3.1 Operations

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

3.1.1 Management and Implementation of Planned Outages

Planned outages on the distribution system are managed by the Control Room, and typically account for between 5% and 15% of the duration of all Hydro One distribution customer outages. Applications for planned outages are coordinated to capture efficiencies and mitigate impacts on customers. This involves:

- Assessing all equipment involved in the outage to determine appropriate limits and control actions;
- Identifying and notifying customers of upcoming outages using means such as auto-dialer, phone, fax, newspapers, flyers, radio and door-to-door visits;
- Addressing customer concerns regarding outages by moving, where possible, the outage times and dates, transferring customers to other distribution sources, or providing a back-up supply source to ensure reliability; and
- Establishing UWPC conditions as required for all outages to ensure the safety of Hydro One staff and others.

1 3.1.2 Response and Management of Unplanned Outages

2 Equipment failures, tree and vegetation contact, road accidents, severe weather and
3 lightning result in interruptions to the distribution system and cause unplanned outages.
4 Unplanned outages typically account for 85% to 95% of Hydro One Distribution total
5 customer outage durations. Restoration efforts depend on field crews locating the cause
6 of the outage. Once the location of the faulted equipment is determined, the OGCC
7 dispatches repair crews. The OGCC tracks the progress of the crews effecting repairs and
8 communicates to customers. Affected customers are kept advised of the interruption
9 status through the use of the IVR system, which informs customers that the problem is
10 known, crews have been dispatched and the estimated time of power restoration.

11
12 Hydro One now offers a popular free, downloadable outage tracking mobile application
13 (app) compatible with Android, BlackBerry and iPhone, smartphone and tablet devices.
14 The app allows customers to identify the affected areas, check the status of
15 unplanned/planned power outages, crew status, estimated time of power restoration,
16 cause (if known) and the number of customers affected anywhere within Hydro One's
17 service area.

18
19 3.1.3 Emergency Response Coordination

20 When the Hydro One distribution system experiences widespread interruptions due to
21 weather impacts, an emergency response system is implemented. The level of response
22 varies according to the area(s) and number of customers affected and the expected
23 duration of the interruption. The DOMC will dispatch crews normally until a decision is
24 made based on volume of power-off calls, to move to Field Operations Centre Dispatch
25 mode. In this mode, customer power-off calls are spread out over the field operations
26 centres to allow supervisors to dispatch crews at a more local level and manage their
27 resources more efficiently. If the emergency is significantly widespread, Incident
28 Command Centres (ICCs) and Forward Command Posts (FCPs) are established to

1 centralize a local area command structure to address resources, material requirements and
2 restoration activities. These efforts are coordinated through periodic conference calls
3 initiated by the DOMC. The DOMC provides media notifications to keep Hydro One
4 Distribution customers, municipalities and other agencies advised of outage progress
5 updates.

6 7 3.1.4 System Performance Monitoring and Reporting

8 Reliability information used to identify emerging issues is needed to support sustainment
9 and development decisions and to report on system performance to the Ontario Energy
10 Board (OEB), customers and other stakeholders. Data required to calculate the standard
11 reliability indices such as System Average Interruption Duration Index (SAIDI), System
12 Average Interruption Frequency Index (SAIFI) and Customer Average Interruption
13 Duration Index (CAIDI) is acquired at the OGCC. Outage inquiries from customers are
14 reviewed and the data extracted from the various systems to further trend emerging
15 performance issues and establish any additional plans that may be required.

16 17 3.1.5 Operations Summary

18 All of the aforementioned Operations functions continue to be impacted by smart grid
19 and distributed generation activities. These activities are necessitating greater operational
20 visibility and control of the distribution system. Existing processes and systems continue
21 to be leveraged and an increasing number of OGCC staff focusing on distribution
22 elements will continue to be used to manage these requirements.

23
24 This funding will ensure that distribution Operations will continue to deliver its core
25 functions which includes managing and operating the distribution system, scheduling and
26 overseeing planned outages, reacting to unplanned outages, coordinating emergency
27 response, communicating with customers and monitoring system performance. Over the
28 five year test period, Operations costs increase by a total of \$0.7 million dollars which is

1 approximately a 4.0% increase. Cost variability from year-to-year can be affected by
2 factors such as storm activity and planned outages.

3 4 **3.2 Operating Support**

5
6 As highlighted in section 2.0 of this exhibit, Operations relies on a number of systems
7 and tools to manage and operate the distribution system, as well as the redundant Back-
8 Up Control Centre (BUCC). Operating Support funding is related to these systems and
9 tools and includes expenditures for ongoing updates to the NMS and DMS to provide
10 additional monitoring and control, support costs for ORMS, updates to the distribution
11 operating maps and station diagrams, emergency preparedness, and the allocated portion
12 of the maintenance and upkeep of operating facilities at the OGCC and the BUCC.
13 Greater numbers of distributed generation connections have significantly influence the
14 requirements for support (e.g. changes to station and operating diagrams, updates to the
15 DMS network model and NMS extensions).

16
17 Distribution Operations Support is organized into investment programs. These programs
18 include Operating Power Systems IT Support, Integrated Voice System Support, OGCC
19 Data Collection and Information Updates, Operating Emergency Preparedness – Lines,
20 Field Verification of DS Operating Diagrams, and Distribution Operating Maps (DOMs)
21 maintenance.

22 23 **3.2.1 Operating Power System IT Support**

24 This investment provides funding to maintain support for operating computer tools and
25 systems related to the operation of Hydro One Distribution's assets to ensure safe,
26 reliable, efficient and cost effective delivery of power to Hydro One customers.
27 Investment categories include ORMS, DMS, NOMS and other system applications, data
28 services, architecture and infrastructure management, voice communication systems, IT

1 building facilities, system control support and program management. Typical services
2 include power restoration, system operating, capacity planning, lifecycle management,
3 performance management, change management, configuration management, release
4 management, and minor modifications.

5
6 3.2.2 Integrated Voice System Support (IVS)

7 This investment funds the maintenance program for the control room voice
8 communication system and provides for essential expert telecommunications support.
9 The integrated voice system is Operating's method of communicating with Customers
10 and Field Crews involved in the management and operation of the distribution electricity
11 system. The IVS provides integrated access and intelligent call routing via multiple
12 communication methods (i.e. Provincial Mobile Radio System, and Public Switched
13 Telephone Network) by incorporating multiple technologies (i.e. IVR technology,
14 Rolodex, Intercom, Voice Messaging, and conference bridge functions) to provide
15 efficient management of hundreds of control room calls each day.

16
17
18 3.2.3 OGCC Data Collection & Information Updates

19 This investment funds the demand category work required to update the Distribution
20 System Connectivity Information and to gather accurate field information describing
21 equipment additions and changes on the Distribution Electric System. Accurate and
22 timely data collection is required to ensure safe and reliable operation and management.
23 Field data updates ensure that the ORMS and DMS accurately represent the Distribution
24 System. Accurate information is also required to communicate the most up to date
25 information to customers regarding any planned or unplanned interruptions through the
26 IVR.

1 3.2.4 Operating Emergency Preparedness – Lines

2 This investment funds the annual work required of Provincial Lines to perform
3 emergency generator testing, emergency communications testing, annual reviews of
4 emergency preparedness procedures and the execution of emergency drills and exercises
5 to ensure the appropriate level of preparedness.

6
7 3.2.5 Field Verification of Distribution Station (DS) Operating Diagrams

8 This investment funds the verification of the accuracy of DS operating diagrams. The
9 initial field verification of DS operating diagrams was completed in 2007. An annual
10 work program is required to verify the continued accuracy of the operating diagrams and
11 to create diagrams for any newly installed DSs. Approximately 10% of the distribution
12 station facility diagrams are re-verified annually. Over a 10-year period all DS and
13 Regulating Station (RS) operating diagrams will be field verified for a second time.
14 Network Operating requires the ability to request an emergency verification of operating
15 information under this program or to request an increase in the number of stations
16 verified annually. These diagrams are used by Control Room and field staff to create
17 UWPC Work Protections and Supporting Guarantees for external staff to create a safe
18 work area.

19
20 3.2.6 Distribution Operating Maps (DOM) Maintenance & DS Operating Diagrams

21 This investment funds the demand category work required to maintain, update and print
22 Distribution Operating Diagrams and Maps. Demand work is defined as work where the
23 volume of work is not fixed. Often this work is completed on a priority basis or to
24 facilitate up-coming planned outages.

25
26 3.2.7 Operations Support Summary

27 This funding will ensure the required maintenance and support of the distribution
28 Operations systems and tools required to execute core functions. Over the five year test

1 period, Operations Support costs increase by a total of \$0.2 million dollars which is
2 approximately a 3.7% increase.

3
4 Distribution Operations are essential activities for the safe and reliable supply of power.
5 Any funding reductions in these programs will negatively impact customer reliability,
6 efficiency of power restoration and the safe operation of the Hydro One distribution
7 system.

8 9 **3.3 Environmental, Health and Safety Programs**

10
11 Programs that are funded through “Greener Choices” and “Environmental, Health and
12 Safety” span both transmission and distribution; therefore the following information will
13 apply to both. These drivers support environmental, health and safety programs that are
14 required to meet legal obligations and ensure a level of due diligence commensurate with
15 the size and scale of Hydro One Networks. In addition, that program funds activities to
16 assist in meeting the corporation’s Environmental and Safety performance targets.

17
18 Greener Choices activities funded by this investment include support of the Corporate
19 Environment Policy by promoting employee awareness on environmental impact
20 reduction, creating a culture of conservation within Hydro One, helping to make Hydro
21 One facilities more energy efficient and reducing emissions from Hydro One fleet
22 vehicles.

23
24 Environmental, health and safety activities funded by this investment include:

- 25
26 • Occupational and non-occupational injury/illness support which includes medical
27 assessments of workplace injuries and illnesses (occupational); the Care Management
28 Program which provides the right care at the right time for Hydro One employees

1 who suffer a major medical absence of five days or more (non-occupational); and
2 Pandemic planning (occupational and non-occupational);

- 3 • Hazardous Materials Management which identifies hazardous materials and
4 establishes a protocol for on-going management of these materials in the workplace
5 as per the Occupational Health and Safety Act (i.e., designated substances such as
6 asbestos, lead, mercury);
- 7 • Public safety which includes school presentations, community events, fall fairs,
8 media campaigns and the development and production of educational material to
9 inform and educate members of the public about the hazards associated with Hydro
10 One's assets;
- 11 • Proactive forums to assist the health and safety of employees by raising awareness
12 and providing education about health, wellness and lifestyle issues;
- 13 • E-learning modules continue to be developed and or refreshed to enable employees to
14 be trained remotely and to allow for timely and immediate delivery of required
15 training. E-learning contributes to employee competence and reduces delivery costs;
- 16 • Development and implementation of new training media to improve the effectiveness
17 of trades training. Web casting, video streaming, mobile learning, simulation and
18 knowledge transfer technologies are being considered. This is used in trades and
19 technical training;
- 20 • The Journey to Zero initiative which supports the objective to eliminate workplace
21 injuries and illnesses through the use of cross-functional teams carrying out review of
22 specific functional areas impacting on safety performance and providing
23 opportunities for improvement;
- 24 • Maintenance of Hydro One's OHSAS 18001 Registration including ongoing system
25 and field audits to ensure Hydro One's Health and Safety Management System is
26 meeting the OHSAS standard and closing of any identified gaps;
- 27 • Obtaining ISO 14001 certification for Hydro One's Environment Management
28 System. Certification requires a complete review of Hydro One's current environment

management system compared to standards, field auditing of execution and closing of any identified gaps; and

- Ice and Water rescue training for staff who work on and around water and ice so that they are prepared to meet the hazards in these environments.

3.3.1 Environmental Health and Safety Summary

Environmental, health and safety increases from historic to bridge and test years due to the additional audit requirements to maintain OHSAS 18001 (Health and Safety Management System) certification and the costs to prepare for and to certify under ISO 14001 (Environment Management System).

3.4 **Smart Grid**

As part of its Green Energy Plan filed in EB-2009-0096, Hydro One detailed its plan to pilot smart grid technologies in a trial area and then deploy those technologies on a wider basis once validated. In its EB-2012-0136 and EB-2013-0141 filings, Hydro One specified funding for operating, supporting and maintaining deployed smart grid assets. As Hydro One begins the process of modernizing its distribution system, Hydro One will continue to operate, support and maintain an increasing set of smart grid assets as part of its normal utility operations.

3.4.1 Operations for Smart Grid

This investment funds the staff, and training in new tools and procedures, to support proactive smart grid-enabled operations. In the past, Hydro One has had little real-time situational awareness of the distribution system and has been dependent on customer calls to notify Hydro One of issues. Through grid modernization and the installation of smart grid devices on the distribution system, Hydro One will be able to remotely monitor and

1 control parts of the distribution system and respond to operational issues that arise in real-
2 time, before customers call.

3 4 3.4.2 Operations Support for Smart Grid

5 This investment funds the maintenance, support and software upgrade of smart grid
6 systems. Hydro One has already installed a base of new smart grid assets including a
7 Distribution Management System. Through the releases of the smart grid project,
8 additional systems will be commissioned and in-serviced. These systems will also require
9 support and maintenance. The investment will provide:

- 10 • staff to support the computer infrastructure and software systems;
- 11 • staff to maintain the distribution network model;
- 12 • software maintenance; and
- 13 • licensing fees amongst other costs.

14 15 3.4.3 Telecommunications Support

16 This investment funds the monitoring and maintenance of the telecommunication
17 infrastructure required to support the smart grid assets to be deployed on the distribution
18 system. This infrastructure will enable Supervisory Control and Data Acquisition
19 (SCADA) for Operations to control and monitor smart grid assets.

20 21 3.4.4 Smart Grid Summary

22 As per the Board's direction in the Renewed Regulatory Framework (October 2012),
23 Hydro One has integrated its smart grid investment as part of its normal investment plans
24 for the first time. In prior years, smart grid expenditures were detailed in Hydro One's
25 Green Energy Plan (EB-2009-0096) or in its request for specific Smart Grid Rate Riders
26 (EB-2012-0136 and EB-2013-0141). The expenditures increase over the period as new
27 smart grid systems are commissioned and an increasing proportion of the Hydro One
28 distribution system is modernized.

CUSTOMER SERVICE OM&A

1.0 INTRODUCTION

Hydro One's Corporate Strategy is fully committed to customer satisfaction and an improved customer experience. In its dialogue with customers, Hydro One focuses on understanding customer needs and their definition of value. It communicates to customers the value provided through its focus on productivity. It pursues growth opportunities that produce efficiencies and provide economic and improved service benefits to its customers. It develops and delivers targeted customer segment strategies, products and delivery channels that will respond to their unique needs. This includes benefits from our new Customer Information System (CIS), continuously improving our process to meet customer commitments on outages, and continuing to focus on delivering conservation and demand management programs that help its customers better manage their bills.

Hydro One's Customer Service OM&A represents the set of customer-focused work activities required to develop, implement and monitor the Corporation's plans to positively influence the relationship, affordability and overall value proposition for the products and services offered to customers. These work activities will enable Hydro One to foster a relationship based on transparency and trust, while ensuring customers understand the value Hydro One provides in their communities. These investments help improve customers' experience with Hydro One and assist the operational effectiveness and financial viability of Hydro One in a manner that is sensitive to customer needs.

The work activities include: improving customer experience when dealing with Hydro One, overseeing meter to bank operations, management of key relationships with large customers including distributed generators, and continued development of Hydro One's Smart Grid in accordance with legislation and OEB policy.

Table 1: Customer Services Costs by Function (\$ Million)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013		2015	2016	2017	2018	2019
Customer Operations	105.5	101.3	105.2	128.5	109.2	96.8	96.2	96.6	98.0	99.6
Distributed Generation	5.0	9.5	9.0	6.9	7.7	7.9	8.1	8.3	8.5	8.7
Conservation & Demand Management	1.7	2.0	1.6	1.8	3.1	3.1	2.7	2.7	2.8	2.8
Customer Experience	0.0	0.0	0.0	1.6	4.2	4.3	4.3	4.3	4.2	4.3
Smart Grid Pilot	2.5	0.4	0.8	9.8	9.5	5.7	4.9	2.8	0.0	0.0
Total Customer Services	114.7	113.3	116.7	148.6	133.7	117.8	116.2	114.7	113.5	115.4

During 2013 and 2014 costs are higher than the historical baseline due to the increased costs associated with the implementation of the new Customer Information System (CIS). As the system stabilizes, overall customer services costs are reduced through the test years due to the realization of the numerous productivity benefits of the new system. These benefits include; a new billing application for easier customer interaction regarding billing questions and improved tracking of collection issues. The introduction of Customer Experience work activities in 2013 will continue to shape the company's vision for the ideal customer experience and assist in moving Hydro One toward a 90% transactional customer satisfaction target and an 85% overall customer satisfaction (perception) target in 5 years.

Table 1.1 is a summary table detailing how the investments set out in this exhibit promote the four key outcomes outlined in the OEB's Renewed Regulatory Framework for Electricity Distributors.

1

Table 1.1: Customer Service OM&A and RRFE Outcomes

OEB Outcome	Relevant References	
Customer Focus	Section 2.1	Customer Service Operations
	Section 2.4	Service Support
	Section 2.5	Customer Service Management
	Section 2.9	Customer Business Relations
	Section 4.0	Conservation and Demand Management
	Section 5.0	Customer Experience
Operational Effectiveness	Section 2.1	Customer Service Operations
	Section 2.2	Meter Reading
	Section 2.3	Field Support
	Section 2.4	Service Support
	Section 2.6	Bad Debt
	Section 2.8	Service Enhancements
Public Policy Responsiveness	Section 2.7	Regulatory Compliance
	Section 3.0	Distributed Generation
	Section 4.0	Conservation and Demand Management
	Section 6.0	Smart Grid Pilot
Financial Performance	Section 2.1	Customer Service Operations
	Section 2.6	Bad Debt

2

3

2.0 CUSTOMER OPERATIONS

Customer Operations OM&A represents the set of work activities required to provide services to customers connected to the Hydro One Distribution system in accordance with regulation, improve customer satisfaction, and to meet the relevant service levels stipulated in the Electricity Distribution Rate Handbook, Chapter 15, Service Quality Regulation and the Distribution Service Code. Services are provided in accordance with Hydro One's Conditions of Service, relevant Codes and legislative direction.

The Customer Operations Work Program includes service programs and projects, including: meter reading, billing, settlements, customer contact handling and collections. Project work includes regulatory compliance initiatives and service enhancements.

Customer Operation programs are provided to approximately 1.3 million customers who are connected to Hydro One Distribution's system. These customers are in residential, seasonal, farm and general service customers segments, as well as sub-transmission ("ST") and distributed generation classifications. The services are provided to customers purchasing electricity through Standard Supply Service or under Retailer contracts.

1

Table 2: Customer Operations Costs by Category (\$ Million)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Customer Service Operations	42.1	41.6	41.7	45.6	40.9	33.4	33.4	34.4	35.3	36.4
Meter Reading	12.7	8.8	15.9	19.1	20.0	14.9	14.3	14.0	14.0	14.1
Field Support	9.9	8.5	9.2	6.7	7.4	7.1	7.3	7.5	7.5	7.6
Service Support	10.3	10.2	9.9	10.8	11.3	11.9	12.2	12.5	13.0	13.4
Customer Services Management	6.8	6.5	7.4	11.4*	11.4	11.3	11.0	11.1	11.3	11.5
Bad Debt	17.7	18.8	18.8	32.8	15.1	15.5	15.4	14.4	14.1	13.7
Regulatory Compliance	4.9	5.5	1.7	1.5	1.6	1.6	1.6	1.6	1.6	1.6
Service Enhancements	0.4	0.7	0.2	0.1	0.8	0.3	0.3	0.4	0.4	0.4
Customer Business Relations	0.8	0.7	0.5	0.5	0.8	0.8	0.8	0.8	0.8	0.8
Total Customer Operations	105.5	101.3	105.2	128.5	109.2	96.8	96.2	96.6	98.0	99.6

2 *The dollar increase is largely due to historic costs being reflected in the Asset Management and
3 Operations Lines of Business.

4

5

6 **2.1 Customer Service Operations**

7

8 Customer Service Operations costs include: the delivery of bills, contact handling,
9 collections, settlement services and customer business relations, which are included in the
10 contract with Inergi LP (Inergi). Although these services are delivered by Inergi, Hydro
11 One retains direct accountability for customer policy, planning, work program budgeting

1 and service performance management. The focus of this work is to translate corporate
2 customer objectives into Inergi service delivery results, and to build a healthy buyer-
3 vendor relationship that allows Hydro One to benefit from the specialized expertise of the
4 outsourcing partners.

5
6 During this five year test period, the existing outsource agreement will expire and Hydro
7 One will establish a new agreement. The current expectation is Hydro One will establish
8 new agreements with one or more vendors with similar scope as the existing agreement
9 with Inergi. More details are provided in Exhibit C1, Tab 2, Schedule 7. Hydro One's
10 role with the new agreement(s) is expected to remain consistent with translating the
11 corporate strategies and objectives into the vendor's performance results. As described in
12 Exhibit A, Tab 19, Schedule 1, Customer Service Operation costs are planned to initially
13 decrease with the negotiation of the new outsource agreement and the realization of CIS
14 benefits as compared to the bridge and the historic years. The outsource contract is
15 expected to remain flat except for the effects of inflation over the test year period.

16
17 Customer Service Operations also manages customer research and surveying, the
18 resolution of escalated customer complaints, management of retail and wholesale
19 settlements, as well as policy planning and account management for distributed
20 generation customers.

21 22 2.1.1 Billing

23
24 This program covers delivery of the billing process, including validation and editing of
25 meter reading data, bill calculation, exception handling, accuracy management, retailer
26 transactions, bill creation, bill insertion and issuance, and receivables processing.
27 Customers are issued monthly bills except seasonal customers who are billed quarterly.

1 Hydro One is implementing a number of initiatives to improve billing services for
2 customers and help reduce operational costs. New initiatives include: reviewing the bill
3 format to improve information provided to customers and increasing the number of
4 customers enrolled with electronic billing (via ePost or Hydro One's self-serve website).

5
6 The new CIS will provide billing and back office savings through the use of a new
7 exception handling tool. The Meter To Cash Composite Application (MTCCA) provides
8 an integrated end to end view of all exceptions affecting a customer's account and
9 presents them in a hierarchal logical order so that the right exceptions are addressed first.

10 11 2.1.2 Collections

12
13 This program includes collection processes and events associated with recovering
14 electricity revenues for both active and final-billed accounts. This work includes issuing
15 collection letters and notices and, if required, disconnection orders, running automated
16 telephone call campaigns of arrears reminders, and managing performance of third-party
17 collection agencies that follow up on outstanding final-billed accounts. The program's
18 focus is to reduce arrears and bad debt while working with customers on a variety of
19 payment options. In addition, the program responds to powers of sale, foreclosures,
20 bankruptcies and receiverships, debt reviews, consumer and business proposals, and theft
21 of power cases.

22
23 Hydro One has added processes and initiatives to manage collections costs, increase
24 flexibility of collection actions, provide more notice and improve ease of making
25 payments of past due amounts. Hydro One has recently added Canada Post Money Gram
26 and Western Union Quick Collect as new payment channels to increase customer choice
27 and payment flexibility.

1 The new CIS will provide collection benefits through: improved tracking of delinquent
2 customers, more robust collection campaigns, and the enablement of remote
3 disconnections and reconnections.

4
5 2.1.3 Contact Handling
6

7 Hydro One's Distribution customers contact the Company in several ways including
8 telephone, letters, faxes, email, self-service features via the Interactive Voice Response
9 (IVR) technology and the Company's website. This program covers the management of
10 customer contacts at Hydro One's contact centres in Markham and London. The contact
11 centres handle approximately 2.5 million calls a year from Hydro One customers and
12 manage all areas of customer call activity, including bill and account enquiries,
13 collections, outages and emergencies, and service requests.

14
15 In addition to responding to customer calls, the contact centres respond to inquiries
16 received via other methods, including: customer letters; lawyer letters for move-in and
17 move-out requests; customer and contractor faxes; and customer email. In addition, the
18 contact centres issue pamphlets, letters, copies of bills, welcome packages, or a summary
19 of Hydro One Distribution's Terms and Conditions of Service.

20
21 Recent and upcoming initiatives continue to contribute to an improved contact experience
22 for customers. Recent initiatives include a quality monitoring program, an automated call
23 back service for periods when wait times are longer than two minutes to reach an agent,
24 the introduction of specialized energy conservation information, and enhancements to the
25 IVR system.

1 2.1.4 Settlements

2
3 The Settlements program ensures the integrity of financial transactions between Hydro
4 One, the Independent Electricity System Operator (IESO), and applicable customers,
5 both load customers and distributed generators. The program includes reconciling
6 purchases of energy and transmission service from the IESO as a distributor, reconciling
7 transmission revenues received from the IESO as a transmitter, billing the approved
8 distribution tariffs (including retail transmission, commodity and others) and energy
9 prices for all complex customers, and settlements for short and long-term load transfers.
10 The Settlements program provides the appropriate level of due diligence to ensure that
11 billing and payment transactions are reconciled accurately for parties involved, and
12 ensure that affected customers receive timely and accurate bills.

13
14 **2.2 Meter Reading**

15
16 This program includes work to support automated reading of smart meters, specific
17 manual meter readings, and remote reading of interval meters. Hydro One has
18 approximately 1.3 million smart meters deployed to its customers.

19
20 Smart Meter & Network Operations (SMNO) provides accurate measurement and
21 delivery of “bill ready” consumption data as well as the sustainment of Life Cycle
22 Management including hardware and data integrity. This includes using approved
23 Advanced Metering Infrastructure (AMI) components such as meters, repeaters,
24 collectors, instrument transformers, and communication networks. In addition, this work
25 ensures that all software, firmware and head end systems are compliant with Hydro One
26 and Measurement Canada requirements.

27

1 SMNO operates Hydro One's AMI network and data collection facilities to ensure smart
2 meters are communicating, provide meter data investigation services, and ensure
3 appropriate parties respond to assigned issues to meet performance requirements. The
4 team responds to technical errors reported by other groups, confirms that meter
5 configurations are correct and maintains end to end communication and performance of
6 Hydro One's AMI Network.

7
8 Although the volume of manual meter reads has decreased since the installation of smart
9 meters, approximately 70,000 meters still require a visit by field staff to the customer
10 premise due to limits in reach of the Smart Meter Network infrastructure. The remaining
11 customers that still require a manual meter reading are spread across the province,
12 thereby increasing the cost per read. Hence, meter reading is still a substantial cost and
13 Hydro One continues to review available advances in technology to provide cost effective
14 options towards reaching these meters. Manual meter reading costs also include ancillary
15 charges required for support activities, such as maintaining meter reading tools and
16 reviewing demand charges annually.

17 18 **2.3 Field Support**

19
20 This work covers the field investigations required to support the billing, collections and
21 settlements service programs. It includes the execution of service orders to disconnect or
22 load limit electricity services due to non-payment, reconnect electricity services when
23 payment issues are resolved, and in certain situations, follow up to ensure the integrity of
24 a reconnect, disconnect, or load limiter. Field work is also requested to investigate high
25 bill complaints, develop and revise revenue metering single line diagrams, and validate
26 wholesale meter data which is required for settlements.

2.4 Service Support

This work reflects costs for a number of other third-party contracts not within the Inergi contract that are required for delivery of the services programs. These include postage and courier services to issue bills, telephone expenses including costs for 1-800 numbers, third party contracts held by Hydro One Distribution for centralized payment processing, service to provide electronic billing, and collection agency costs related to final bill collection activity. Costs are forecast to increase over the test period due to inflation.

The largest component of the Service Support Costs is related to the delivery of customer bills and postage costs. Over the test period, expected increases in the postage rate are the main driver for the increases in this category. Hydro One is actively promoting e-bill options to customers to help mitigate increase in such postage costs.

2.5 Customer Service Management

These work activities include the management to run the customer care programs including the resolution of escalated customer complaints, execution of critical settlement functions of local distribution companies and large accounts, performance management, contract management with outsourced companies, customer research and surveying, and project planning, delivery and implementation.

2.6 Bad Debt

This cost category reflects bad debt expenses, net of recoveries. Bad debt expense is expected to decline each year from 2015 to 2019 due to the benefits of the CIS project. The implementation of the new CIS allowed for the redesign of the business processes which are expected to improve the bad debt expense through the improved ability to track delinquent customers and eliminate final bills on move outs where the customer is moving back into Hydro One's service territory.

To help manage bad debt costs, additional collection methods have been introduced as well as being planned for the test years. Examples of these and other collection methods are noted in the description of the collection services program, Section 2.1.1 Customer Service Operations.

2.7 Regulatory Compliance

Regulatory compliance includes the administration of ongoing programs as well as one-time projects with non-system impacting changes, as directed by the Ontario Energy Board or the Ministry of Energy. The funding is required to remain in compliance with the terms and conditions of Hydro One's operating licence. The main project included in this area is the Low Energy Assistance Program (LEAP). Hydro One administers and funds \$1.2M annually to the OEB Low Energy Assistance Program (LEAP), which provides emergency relief to eligible low-income customers. The United Way Greater Simcoe manages this Fund as Hydro One's Lead Agency.

2.8 Service Enhancements

Service enhancements represent investment in service or productivity improvements to customer service programs. The planned projects over the test period include the following: meter reading route optimization for those customers beyond the reach of the Smart Meter Network infrastructure; marketing campaigns and promotions to encourage Hydro One customers to subscribe to e-Post, thereby reducing costs for postage; marketing campaigns to support Hydro One's electronic billing platform, also known as Biller Direct; and enhancements for self-serve options via Hydro One's web site and the IVR, to address changing customer needs and expectations.

2.9 Customer Business Relations

Improving the level of service that the Company provides to customers is a key objective of Hydro One. Customer Business Relations (CBR) focuses its efforts on managing the relationship with large customers, including embedded Local Distribution Companies (LDCs) and Distribution Connected Large Accounts (> 2MW).

Core work programs include contract development, management, program implementation, customer communications, operational and business support, and customer connection project coordination. Planned long-term initiatives include power quality initiatives to define power quality events and mitigating actions, improving customer communications through enhanced Web self-service, skills training and new database functionality to increase customer knowledge, and improving commitment tracking and reporting. In addition, as new Conservation and Demand Management (CDM) programs are developed in this customer segment, the CBR group will become accountable for delivery and will work to ensure that all targets are achieved.

3.0 DISTRIBUTED GENERATION

The Distributed Generation program manages and maintains the relationship with the distributed generators pre and post connection while ensuring OEB mandated timelines are met. In order to meet customer expectations and OEB mandated timelines, Distributed Generation projects are monitored and managed within a Customer Relationship Management Database (CRM). The Distributed Generation team is accountable to manage the end to end connection process and ensure the process is continually improved and streamlined. Core work activities for the Distributed Generation Team include customer capacity availability consultations, customer application support, contract development, execution and management, customer communications and relationship management. This work is obligatory in that it responds to legislation and regulatory requirements.

Table 3: Distributed Generation Costs by Category (\$ Million)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Customer Operations	2.6	5.8	4.7	3.3	3.6	3.7	3.9	4.0	4.1	4.2
Settlements	0.1	0.7	0.9	1.0	1.4	1.4	1.5	1.5	1.6	1.6
Customer Care Management	2.3	3.1	3.5	2.6	2.7	2.8	2.8	2.8	2.8	2.9
Total	5.0	9.5	9.0	6.9	7.7	7.9	8.1	8.3	8.5	8.7

Costs have increased over the test period primarily due to the increased cost associated with the increase and complexity of the Distributed Generation projects. The number of distributed generators connected to Hydro Ones network has increased from 166 (Non MicroFIT) in 2009 to 11,117 (Non MicroFIT and MicroFIT) in 2013. It is expected that approximately 6,000 micro-embedded generation facilities will be connected over the 5 year test period along with approximately 1,200 generation facilities (>10 kW). The

team is required to support the full life of these contracts and the customer relationships. They manage the ongoing customer relationship; the completion of work to ensure achievement of OEB mandated requirements, the timelines and reporting requirements; and the settlements and payments to generators. In addition, generators are demonstrating a high rate of change of ownership which inceases the contract management activities with respect to both the associated Distribution Connection Agreement and OPA contract.

4.0 CONSERVATION AND DEMAND MANAGEMENT

Since 2005 Hydro One has delivered Conservation and Demand Management (CDM) programs aimed at reducing customers' individual consumption and the overall consumption on the electricity grid. Hydro One participates in OPA sponsored CDM initiatives such as Residential and Small Commercial Demand Response; Electricity Retrofit Incentive Program; and the Fridge and Freezer Pickup as well as Hydro One specific programs which will increase over the 5 year test period.

Table 4: Conservation and Demand Management Costs by Category (\$ Million)

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Conservation & Demand Management	1.7	2.0	1.6	1.8	3.1	3.1	2.7	2.7	2.8	2.8

Under the *Green Energy Act* (GEA), CDM targets for the period of 2011-2014 are a condition of the Distribution License Agreement. On September 16, 2010, the Board issued a CDM Code that required LDCs to meet the four year targets through the delivery of OPA-Contracted programs and Board-approved programs until 2014. As a result,

Hydro One has been participating in current OPA-administered CDM programs and has looked for opportunities to expand this program portfolio as appropriate. Since funding for these OPA-contracted programs have been recovered through the Global Adjustment Mechanism (GAM) from the OPA, it is not included in this Application.

Currently, Hydro One is working with the government and the sector to develop the next CDM framework, expected to cover the period of 2015-2020. Hydro One is seeking funding to support programs in the market to continue research and development, to collaborate with the sector and maintain a base level of CDM capability required to participate in industry activities, including testing of new technologies and delivery of pilot programs.

An example of a pilot program is the Green Button initiative. It enables customers to securely download their own easy-to-understand energy usage information online. Consumers can then use new web and smartphone tools to make more informed energy decisions, optimize the size and cost-effectiveness of solar panels for their home, or verify that energy-efficiency retrofit investments are performing as promised.

5.0 CUSTOMER EXPERIENCE

Table 5 – Customer Experience (Costs by Category (\$ Million))

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Customer Experience	0.0	0.0	0.0	1.6	4.2	4.3	4.3	4.3	4.2	4.3

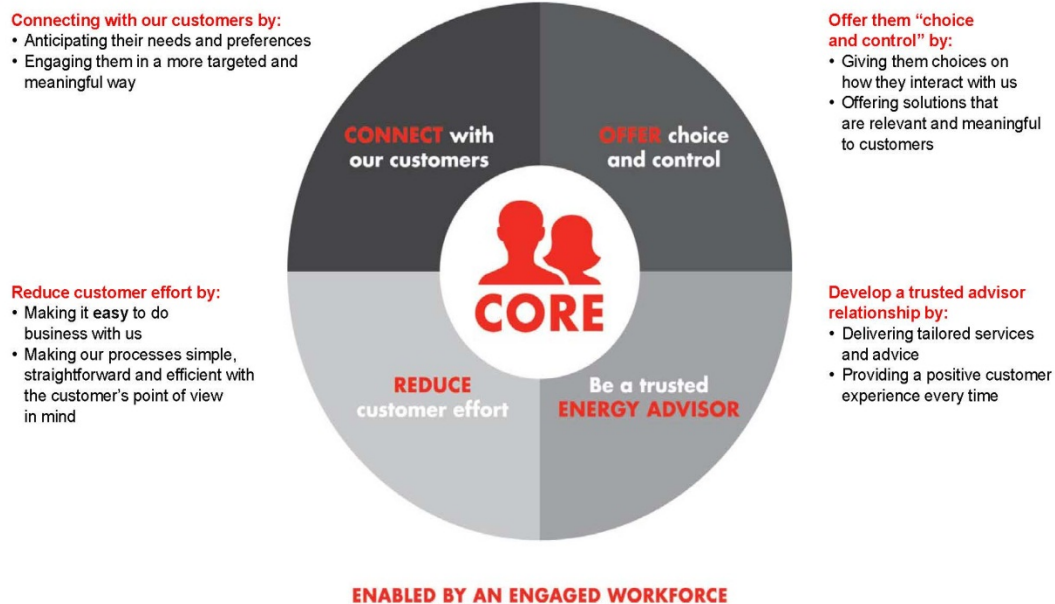
Customer Experience (CE) OM&A reflects the set of work activities required to continue to shape the company's vision for the ideal customer experience, allowing Hydro One to

1 more effectively respond to evolving customer needs and expectations as described in the
2 Introduction of this Exhibit as well as in Exhibit A, Tab 5, Schedule 1.

3
4 The Customer Experience work activities includes conducting a comprehensive analysis
5 to better understand its current customer experience in comparison to external customer
6 focused companies. Efforts are being made to meet the requirements of the Renewed
7 Regulatory Framework and develop a strong understanding of Hydro One's customers:
8 who they are, what they want and need, and how they perceive their interactions with our
9 company.

10 This work has lead to the following set of guiding principles that are being implemented
11 across the Company.

Customer Experience Guiding Principles: CORE



0

6.0 SMART GRID PILOT

Hydro One's smart grid pilot project is a multi-year initiative to identify, deploy, and analyze applications, equipment, and business processes in response to legislation, OEB policy and in support of the following five business objectives:

- 1 • **Distribution Generator (DG) Enablement:** Ensure the ongoing, efficient operation
2 of the system while facilitating the addition of a significant amount of new distributed
3 generation capacity to Hydro One’s distribution system.
4
- 5 • **Distribution Reliability/Operations Improvements:** Automate Hydro One’s
6 distribution system in varying degrees to provide further real-time monitoring,
7 control, automatic restoration and optimized operations, thereby improving reliability,
8 reducing overall utility costs and improving customer satisfaction.
9
- 10 • **Outage Restoration Optimization:** Take advantage of real-time capabilities and
11 enhanced workforce mobilization to minimize customer outage duration through
12 quicker and more efficient fault restoration.
13
- 14 • **Distribution Network Asset Planning and Tools:** Provide improved tools for
15 assessing and planning changes to the distribution network, including the installation
16 of distributed generation facilities.
17
- 18 • **Customer Enablement:** Provide customers with tools for managing and
19 understanding their electricity usage, including the installation of in-home displays
20 and energy management systems.
21

22 **Table 6: Smart Grid Pilot (\$ Million)**

Description	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Smart Grid Pilot	2.5	0.4	0.8	4.0	9.5	5.7	4.9	2.8	0.0	0.0

1 Hydro One continues to execute its smart grid pilot project through 2017. Incremental
2 OM&A is required to complete the smart grid pilot. It includes costs associated with
3 software development, process development and training. Details of the history of this
4 project as well as the pilot project that this OM&A will fund can be found in Section 2.0
5 of Exhibit D1, Tab 3, Schedule 5.

SUMMARY OF COMMON CORPORATE COSTS OM&A

Hydro One Common Corporate Costs OM&A is comprised of Common Corporate Functions and Services (“CCFS”), Asset Management Services, Information Technology (“IT”), Cornerstone, Cost of Sales to external parties and Other OM&A.

CCFS includes Corporate Management, Finance, Human Resources, Corporate Communications, Legal, Regulatory Affairs, Corporate Security, Internal Audit and Real Estate. Common Asset Management services include System Investment and Asset Stewardship and Strategies. IT and Cornerstone activities include providing and managing computer systems and installing enterprise IT systems. Other OM&A includes the capitalized overhead credit, the environmental provision credit, indirect depreciation and other costs.

Hydro One utilizes a centralized shared services model to deliver its common services to the Transmission and Distribution businesses within Hydro One Networks Inc., and to the legal entities Hydro One Inc., Hydro One Telecom Inc., Hydro One Networks Brampton Inc., and Hydro One Remote Communities Inc. Many organizations have adopted a common corporate cost model as an effective method of delivering common services to multiple subsidiaries and/or multiple business units. Hydro One adopted this model when it was established in 1999. The additional cost to establish the common functions in each of its subsidiaries would be cost prohibitive.

Table 1 summarizes the Distribution portion of the Common Corporate Cost and Other OM&A Costs over the Historic, Bridge and Test years.

Table 1
Allocated Distribution Corporate common costs and Other OM&A Costs
(\$ Millions)

Description	Historic				Bridge	Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Common Corporate Functions and Services	69.7	68.5	71.5	76.3	79.1	77.2	76.8	76.7	78.6	79.9
Asset Management	30.6	34.6	25.1	19.9	18.4	18.4	17.8	17.6	17.5	17.8
Information Technology	71.2	72.6	80.6	100.1	86.0	85.7	86.4	86.1	86.5	87.6
Cost of Sales	5.4	5.8	18.5	5.9	2.0	2.1	2.1	2.1	2.2	2.2
Other OM&A	-82.0	-96.0	-107.1	-113.5	-111.7	-116.7	-120.6	-120.1	-122.4	-125.2
Total	94.9	85.5	88.6	88.8	73.8	66.7	62.5	62.4	62.4	62.3

In the 2009-2014 period, Hydro One applied a cost allocation methodology developed by Black and Veatch Corporation (B&V) which utilizes a breakdown of activities and drivers. In 2013, the Company commissioned B&V to update the methodology to allocate common costs among the business entities using the common services, as discussed in Exhibit C1, Tab 5, Schedule 1. The approach utilizes a further breakdown of activities and drivers and is used in this application.

The reduction in OM&A spending in the test years 2015 through 2019 as compared to the historical years is primarily related to:

- CCFS costs increase slightly over the test years due to increased HR support for expanded field work programs and succession planning, long-term relationship building with First Nations and Métis communities and funding for the corporate records management project. See Exhibit C1, Tab 2, Schedule 8 for details.
- Lower Asset Management costs result from productivity initiatives underway that are expected to impact the resourcing and demographic management strategy for the

1 organization, although the work undertaken by Asset Management is expected to
2 increase. See Exhibit C1, Tab 2, Schedule 9 for details.

- 3 • IT costs are lower after 2013 due to the completion of the new CIS system and costs
4 remain stable from 2015 to 2019. See Exhibit C1, Tab 2, Schedule 10 for details.
- 5 • Lower Other OM&A program cost is related to the increase in cost of remediation of
6 environmental contamination. When these OM&A work program costs are incurred,
7 there is a corresponding credit to OM&A for the environmental expenditures to
8 reflect the fact that the cost is reflected in revenue requirement as amortization
9 expense and not as OM&A, thus reducing overall OM&A costs.

10
11 Exhibit A, Tab 19, Schedule 1 further describes the productive efforts responsible for the
12 cost efficiencies reflected in these forecasts.

OUTSOURCING

1.0 BACKGROUND

Hydro One Networks Inc. (“Networks”) entered into a 10-year master services agreement with Inergi LP (“Inergi”) on December 28, 2001 for services commencing on March 1, 2002 (the “Original Agreement”). Inergi is a limited partnership, a wholly-owned subsidiary of Capgemini Canada (formerly known as Cap Gemini Ernst & Young Canada Inc.) held by Capgemini SA. Under the Original Agreement, Hydro One outsourced its information technology services, customer service operations, settlements, source-to-pay, payroll, and finance and accounting services.

The Original Agreement provided for an optional 3-year extension to the original 10-year term.

Before the initial term of the Original Agreement expired, the parties agreed to amend the underlying business terms, effective as of May 1, 2010, to make them consistent with then current market practices and business requirements. The scope of work remained largely unchanged. Networks and Inergi both agreed to extend the Original Agreement by 3 years. The renewal permitted Networks to benefit from updated business terms earlier, including a 12% average annual reduction in fees over the remaining term of extended Original Agreement (“Current Agreement”).

Leading up to the negotiations, Networks retained EquaTerra Inc. to develop and document expectations for the extended agreement to reflect market comparators, and provide negotiation support. In EquaTerra Inc.’s professional judgment the Current Agreement, taken as a whole, is market competitive. Inergi’s affiliate, Capgemini US LLC, has provided a financial guarantee for payment upon demand of all guaranteed

1 financial obligations, as well as a performance guarantee for the performance of all
2 obligations under the Current Agreement.

3
4 The Current Agreement is subject to a *Declaration of the Sole Shareholder regarding the*
5 *power of the Hydro One Inc.'s Board of Directors to enforce, including any and all other*
6 *powers related to the Transfer ("Offshoring") of jobs out of the Province of Ontario*
7 *under the Outsourcing Agreement entered into by Hydro One Inc. with Inergi LP*
8 *("Inergi") on or about December, 2001 (the "Outsourcing Agreement")* issued on
9 September 24, 2008. The Current Agreement and the above Declaration will expire on
10 February 28, 2015.

11 12 **2.0 THE CURRENT AGREEMENT**

13 14 **2.1 Scope of Work**

15
16 The scope of work under the Current Agreement is comprised of services ("Base
17 Services") and project services performed over a finite period to produce a project
18 deliverable, solution or result ("Project Services"). Base Services are divided into the
19 following six areas (individually, a "statement of work" or a "SOW"), each of which
20 relates to a line of business within Networks: (1) information technology services; (2)
21 customer service operations; (3) settlements; (4) source-to-pay; (5) payroll; and (6)
22 finance and accounting services. Appendix A contains the descriptions of Base Services
23 contracted for each SOW.

24 25 **2.2 Fees**

26
27 Under the Current Agreement, Inergi provides Base Services based on a declining fee
28 structure, except for the Settlements SOW for which the parties settled on a "cost-plus"

1 pricing model due to the complex nature of the work. The fees for Base Services will
2 decline over time so long as transaction volumes remain within normal volume ranges as
3 defined in the Current Agreement while meeting or exceeding prevailing service levels.
4 Additional charges apply if there are higher transaction volumes than the prescribed
5 volumes. (For example, an increase in the number of Networks' customers may cause
6 Networks to exceed certain volumes in the customer service operations SOW.)
7 Conversely, Networks is entitled to fee credits if transaction volumes are lower than
8 prescribed volumes.

9
10 For Project Services, Networks pays time-and-material rates. Networks receives an
11 annual volume discount of up to 15% based on qualifying annual expenditures for Project
12 Services.

13
14 All fees are subject to cost-of-living adjustments, using Statistics Canada indices of
15 compensation for employees in Ontario and of the total number of employees in Ontario.

16
17 Hydro One expects to continue outsourcing back office services beyond 2015 through a
18 new competitively bid contract that will result in further savings described in Exhibit A1,
19 Tab 19, Schedule 1.

20
21 Appendix B to this exhibit sets out the outsourcing fees spent in the historical period
22 2010 to 2013 and the forecasted outsourcing expenditures for bridge year 2014 and test
23 years 2015 to 2019.

24 25 **2.3 Benchmarking Review of Fees**

26
27 The Current Agreement provides for optional benchmarking reviews of fees by an
28 independent third party, the costs of which are borne equally by Networks and Inergi.

1 The third party analyst (“Analyst”) is selected from a predetermined list included in the
2 Current Agreement. Fees for the Settlements SOW are excluded from the review due to
3 the unique and complex nature of the services and the absence of comparable suppliers.

4
5 The sample group in the benchmarking review consists of companies comparable to
6 Inergi, meaning companies with the same line(s) of business and a comparable ratio of
7 unionized and non-unionized resources. Where the proportion of unionized and non-
8 unionized differs between companies, the Analyst shall normalize this difference. The
9 Analyst will compare Inergi’s fees with those of the sample group, adjusted for
10 differences in volumes, scope of services, service levels, cost components and applicable
11 cost of living increases with the market price.

12
13 In the fourth quarter of 2013, Networks exercised its right to a benchmarking review of
14 Inergi’s fees under the Current Agreement. The report was completed in February 2014
15 by TPI Sourcing Consultants Canada Corp, an affiliate of Information Services Group
16 Inc. In regards to all Base Services excluding Settlements, the report concluded that the
17 adjusted fees charged by Inergi do not exceed the “benchmark price” as defined in
18 Current Agreement. As a result, there were no changes to the fees charged by Inergi as
19 of March 1, 2014.

20 21 **2.4 Royalty Payment and Provision of Facilities**

22
23 Under the Current Agreement, Inergi makes annual payments to Networks in
24 consideration of Networks’ support of Inergi’s broader marketing efforts.

25
26 Where Inergi staff are located in Networks’ facilities, the cost of those facilities and
27 facility overhead costs (communication services, heating, lighting, consumable goods,
28 etc.) are borne by Networks.

2.5 Service Quality Assurances and Continuous Improvement

The Current Agreement sets out a methodology to measure Inergi's performance, which includes defined service levels or performance indicators ("PIs") and client satisfaction surveys. Inergi's services are measured regularly (monthly, quarterly, and yearly) for achievement of PIs. The PIs vary based on the nature of the service in question and set both minimum and targeted service levels. When Inergi fails to meet certain PIs, Networks is entitled to either: (a) a service credit(s) calculated in accordance with predetermined formuli, (b) at Inergi's cost, remediation action based on a remediation plan that Networks has approved, or (c) both, depending on the level of criticality and frequency of such failures.¹ The PIs are adjusted upwards annually, where applicable, to drive continuous improvement. In the contract year ending February 2013, Inergi met or exceeded 97% of all PIs.

Inergi performs client satisfaction surveys of Networks' relevant business managers and internal users. Inergi must address dissatisfaction revealed by the surveys. Together, the parties are to identify opportunities and strategies for responding to any issues the surveys reveal. The scores of these surveys have recently been 3.9 out of 5 for Base Services and 4.0 out of 5 for Project Services.

The Current Agreement also prescribes a process whereby Inergi continually introduces global best practices from Capgemini to Networks. As of mid-2013, Inergi has generated initiatives which have resulted in cost savings, primarily across strategic sourcing and

¹ Termination of individual statements of work or any part thereof is allowed under defined circumstances without payment of any penalties or termination charges.

1 infrastructure storage reductions. The initiatives are presented to and reviewed by
2 Networks.

3
4 The Current Agreement sets out a governing structure to manage the parties' relationship,
5 which includes the Joint Executive Committee, the Joint Governance Committee, the
6 Joint SOW Oversight Committee, and the Joint Service Leadership Committee. These
7 committees meet regularly, at different intervals, to ensure strategic alignment between
8 the parties, oversee relationship, review Inergi's global business strategies, review
9 operational performance, change management, business planning, continuous
10 improvement, and manage and resolve any risks and issues.

11 12 **2.6 Protecting against business interruption**

13
14 There are multiple safeguards against business interruption in the Current Agreement.
15 Inergi is required to develop, maintain, test and execute business continuity and disaster
16 recovery plans. Inergi must maintain and exercise these plans in a state of readiness for
17 execution at all times. If there is a change in the services which impacts the plans, Inergi
18 must modify the plans and, where necessary, retest them to maintain the state of
19 readiness.

20 21 **2.7 Transition at the end of the Current Agreement**

22
23 To prepare for the expiration or full or partial termination of the Current Agreement,
24 Inergi must: (a) provide and maintain a comprehensive termination transition plan at its
25 own cost, and (b) for additional compensation, provide termination transition services
26 described therein. The transition plan must lay out all the information required to enable
27 Networks or a third party to take over provision of the services on a partial or full
28 termination of the Current Agreement in an orderly, cost-efficient, and timely manner.

1 This is expected to reduce the risks of transition and operational problems by facilitating
2 knowledge transfer to the successful supplier(s).

3 The termination transition plan was activated on September 1, 2013 (the “Transition
4 Plan”), 18 months before the expiry date of the Current Agreement. The plan includes a
5 number of preparatory activities in the first stage which Inergi is to undertake. Inergi is
6 required to provide termination transition services until such time as Networks no longer
7 requires such services up to a maximum of 18 months following the expiry date of the
8 Current Agreement. The latest end date for transition services is September 1, 2016.
9 Base Services will continue at the agreed upon rates, and “transition services” will be
10 provided, in parallel, on a time-and-materials basis.

11 12 **3.0 RETURNING TO MARKET**

13
14 To prepare for the Current Agreement’s expiry on February 28, 2015, a project to re-
15 tender the services in scope for the Current Agreement commenced in late 2012. The
16 project is referred to internally as the Outsourcing Agreement Re-tendering (OAR)
17 project. Networks has retained Information Services Group Inc. as an external advisor to
18 assist the company through the process. Osler, Hoskin and Harcourt LLP have been
19 retained as external counsel.

20
21 Multiple factors are shaping Networks’ foray back into the marketplace. The outsourcing
22 market has changed significantly since services under the Original Agreement
23 commenced in 2002; shorter term contracts and multi-supplier environments are the
24 norm. Networks anticipates that its next outsourcing arrangement will reflect this new
25 commercial reality. Overall Networks seeks a new contract(s) which reflects market-
26 based pricing, an improved service delivery model, flexibility for Networks, support of
27 and access to new technologies and delivery of value to its customers and shareholder.

1
2 A governance structure has been established to monitor the OAR project and execute
3 decisions throughout the process. The OAR project team is comprised of representatives
4 from lines of business, the Outsourcing Services Department, Information Services
5 Group, Inc. and internal and external legal counsel. The OAR project team meets on a
6 weekly basis to review status of the project. The project team is governed by a Steering
7 Committee which includes senior management from the affected lines of business, the
8 Executive Committee and the Board of Directors. On a quarterly basis, the project
9 director reports on the OAR project's progress to all of the committees noted above. The
10 procurement process for the OAR project is being monitored by Internal Audit to ensure
11 that the process is fair and transparent. To date, Internal Audit has determined that the
12 process has been compliant.

13
14 Networks has structured its OAR project into three phases: Phase 1 (Development of
15 Strategy and Commercial Documents); Phase 2 (Supplier Selection and Contract); and
16 Phase 3 (Transition). These phases are detailed below.

17 18 **3.1 Phase 1 – Development of Strategy and Commercial Documents**

19
20 Any outsourcing arrangement must allow Networks to focus on its core businesses and
21 meet its strategic objectives. Networks is considering all market options and risks
22 associated with contract length and number of suppliers. Senior management explored the
23 risks associated with the outsourcing strategy at two workshops, one held in December
24 2012 and another held in April 2013. The key risks discussed at these workshops were (a)
25 the possibility of an inadequate response from the market, (b) the complexity of
26 managing a multi-supplier environment, (c) challenges in transitioning to the successful
27 supplier(s), and (d) possible claims by unsuccessful proponents that the procurement
28 process was not fair and transparent. Key mitigation strategies that Networks has

1 employed to minimize these risks are actions such as engaging outsourcing advisors,
2 communicating openly and frequently with potential suppliers, requiring potential
3 suppliers to address transition challenges, and having Internal Audit conduct an
4 independent review of the procurement process. The risks are reviewed at the various
5 committees within the governance structure on an ongoing basis to ensure that mitigation
6 is occurring and is effective.

7
8 With the results of the workshops and guidance from external advisors and lines of
9 businesses, the outsourcing strategy was developed. The strategy is based on the
10 following key objectives:

- 11
12 (a) continually improve value received for money spent;
13 (b) reflect current global best practices in the outsourced services;
14 (c) ensure effective and robust performance management and governance; and
15 (d) maximize Networks' flexibility to adjust volumes and scope of work and the
16 technology employed to perform it.

17
18 All of these objectives reflect Networks' commitment to continuous improvement in
19 productivity which should drive its overall operational and cost effectiveness. The last
20 objective also provides Networks the flexibility to respond to customer preferences,
21 which may change over time.

22
23 This phase involved formulating clear expectations for the next outsourcing contract(s),
24 including a contract term of 5 years with 2 one-year extensions at Networks' option.
25 These expectations have been clearly articulated through the key elements of the
26 outsourcing strategy:

- 27
28 a) multi-source different service offerings;

- 1 b) issue a Request for Pre-qualification (“RFPQ”) to pre-qualify suppliers and gather
- 2 market intelligence over “bundling” of services offerings in preparation for a Request
- 3 for Proposal (“RFP”);
- 4 c) issue a RFP to pre-qualified suppliers to down select and negotiate terms and
- 5 conditions; and
- 6 d) request Board of Director approval over new contract(s).

7

8 In early 2013, the Board of Directors approved the above outsourcing strategy.

9

10 The introduction of a multi-supplier environment would require a new governance

11 structure to monitor and measure the outcomes of the outsourcing contract(s). In this

12 phase, the project team developed a working service integration and management model

13 (“SIAM”). SIAM would coordinate and oversee the performance of the outsourced

14 services in a multi-supplier arrangement. This function will specify the processes and

15 procedures to be implemented across all of the suppliers and as well ensures adherence

16 by all suppliers. A multi-supplier arrangement may result in some SIAM work being

17 outsourced under a separate competitive process.

18

19 Other considerations in formulating the outsourcing strategy is the Shareholder

20 Declaration and Resolution (the “2013 Directive”) dated September 30, 2013 issued in

21 October 2013. The 2013 Directive restricts Hydro One Inc.’s Board of Directors

22 regarding new procurements for provision of services set out in the Current Agreement

23 upon expiration of the agreement. The Minister of Energy exercised those powers to

24 require such services be performed by persons who are employed in Ontario to perform

25 those services and physically located in Ontario at that time they perform those services.

26 A copy of the 2013 Directive is attached to this exhibit as Appendix C.

1 The strategy was further impacted by the Power Worker's Union grievance challenging
2 Networks' ability to seek another supplier to perform the outsourced services through a
3 competitive process filed on March 25, 2013. On December 10, 2013 a settlement was
4 reached between Networks and the Power Worker's Union. The settlement requires the
5 RFP to be amended such that, all pre-qualified proponents, as a condition of being
6 permitted to respond, agree to voluntarily recognize the Power Worker's Union as the
7 bargaining agent for the work and to enter into a Memorandum of Agreement prior to
8 responding to the RFP. A completed collective agreement must be executed before the
9 work commences. Networks has also extended this settlement to the Society of Energy
10 Professionals.

11
12 The RFPQ was designed to screen possible suppliers based on certain evaluation criteria
13 and to gather market intelligence on potential bundling options for the outsourced
14 services. The RFPQ was issued in February 2013. It made no commercial commitments
15 to any suppliers. As part of the evaluation process, the responses were reviewed and
16 suppliers were selected to give oral presentations. Upon completion of the evaluation of
17 the written responses and oral presentations, suppliers were pre-qualified to receive the
18 RFP.

19
20 Networks held a common executive alignment session simultaneously with all pre-
21 qualified suppliers where Executive Management delivered key common messages.
22 Executive alignment sessions were also held individually with pre-qualified suppliers to
23 provide feedback on the responses to the RFPQ and to solicit input on the bundles.
24 Networks also met individually with the pre-qualified suppliers in discovery sessions to
25 scope out the terms of reference and the bundles for the RFP. These activities were key in
26 developing the RFP documents to ensure a competitive market response.

1 Based on the responses to the RFPQ, the project team developed a RFP which
2 provisionally divided the outsourced services into four bundles of work. The proposed
3 bundles were reviewed with senior management at a third risk workshop held in mid-
4 2013. In the RFP, Networks' management has retained the right to re-bundle services
5 based on market response to the RFP. Through the RFPQ process, the project team also
6 determined that SIAM could be covered in a subsequent RFP once the supplier landscape
7 has been determined.

8
9 With the Board of Directors' approval, the RFP was issued in November 2013 to pre-
10 qualified suppliers.

11 12 **3.2 Phase 2 – Supplier Selection & Contract Negotiations**

13
14 In early December 2013, the project team held individual discovery sessions to provide
15 the pre-qualified suppliers with an opportunity to seek clarification regarding the RFP.
16 Responses to the RFP were originally anticipated by February 18, 2014. RFP responses
17 were deferred to April 10, 2014, pending the clarification of certain matters related to the
18 Power Workers' Union settlement. RFP responses will be evaluated, as will the option of
19 Networks performing any or all of the services itself. After the written responses are
20 reviewed, pre-qualified proponents will be short-listed to give oral presentations later in
21 April 2014. Following these presentations, the pre-qualified supplier submissions and
22 oral presentations will be evaluated. As Networks deems appropriate, finalists will be
23 selected to proceed to negotiate business terms. The project team will then make a final
24 business recommendation. The project team anticipates that Networks will enter into any
25 final contract negotiations in the summer of 2014, and final contract(s) will be approved
26 by the Board of Directors in the fall of 2014.

3.3 Phase 3 – Transition

Once the supplier(s) have been selected, the next step will be to transition to the successful supplier(s). Networks will establish a project management office that will govern the overall transition and ensure that all accountable parties are performing the activities as agreed to in the transition plans of the successful suppliers and the incumbent's termination transition plan. The project management office will also monitor the transition risks to ensure that they have been mitigated through this phase. The key elements in this phase include:

- a) migration of workload;
- b) migration of services;
- c) knowledge transfer; and
- d) historical data transfer.

There will be costs associated with all of these transition activities for all of the parties in this phase. As well, the costs related to delivery of services under the Current Agreement throughout the transition phase will continue to be incurred.

Appendices

- Appendix A – Base Services outsourced under the Current Agreement
- Appendix B – Fees (Historical, Bridge and Test Years)
- Appendix C – 2013 Directive

COMMON CORPORATE FUNCTIONS AND SERVICES AND OTHER OM&A

1.0 OVERVIEW

Hydro One Networks has identified certain functions that provide common services to all business units. It was determined that these functions could be shared effectively by all business units, avoiding costly and unnecessary duplication. These costs are referred to as Common Corporate Functions and Services (“CCFS”). Included in this exhibit is a discussion of CCFS costs and activities as well as Other OM&A which is comprised of credits associated with Capitalized Overhead, Environmental Provisions, Indirect Depreciation and Other Costs.

Continuous improvement initiatives and their corresponding savings in the forecast CCFS expenditures during the test years are detailed in Exhibit A, Tab 19, Schedule 1.

2.0 COMMON CORPORATE FUNCTIONS AND SERVICES

Table 1 presents, for comparison purposes, the total Common Corporate Functions and Services (“CCFS”) costs over the Historic, Bridge and Test years as well as the 2015 to 2019 Hydro One Distribution allocation amounts.

Table 1
Total 2010 - 2019 CCFS Costs and 2015 - 2019
Allocation to Distribution (\$ Millions)

Description	Historic Years				Bridge Year	Test Years					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Corporate Management	5.0	5.1	5.0	4.9	5.3	5.4	5.4	5.4	5.5	5.5	2.4	2.4	2.4	2.4	2.4
Finance	31.4	31.9	35.2	41.9	45.0	44.6	43.8	43.0	42.7	43.6	18.0	17.6	17.3	17.2	17.6
Human Resources	16.4	11.0	9.9	11.1	13.1	13.0	12.2	12.1	12.3	12.4	5.7	5.4	5.4	5.4	5.5
Corporate Communications & Services	9.6	8.7	11.3	15.0	13.9	12.6	12.6	12.7	12.8	12.9	6.6	6.6	6.6	6.7	6.7
General Counsel and Secretariat	7.5	7.4	8.8	9.6	10.1	10.2	10.2	10.2	10.4	10.5	4.1	4.1	4.2	4.2	4.2
Regulatory Affairs	21.3	20.1	20.6	20.6	24.1	21.5	22.4	21.6	23.3	22.9	12.0	12.4	12.1	13.2	12.9
Security Management	2.4	3.0	3.1	3.4	4.8	4.8	4.6	4.6	4.7	4.8	2.5	2.4	2.4	2.4	2.5
Internal Audit	2.8	3.1	3.5	3.4	3.6	3.6	3.6	3.6	3.7	3.8	1.1	1.1	1.1	1.2	1.2
Real Estate & Facilities	49.9	51.6	54.6	54.1	60.2	61.4	61.3	62.4	63.8	66.2	24.8	24.7	25.2	25.8	26.8
Total CCF&S Costs	146.3	141.9	152.0	164.0	180.1	177.1	176.1	175.6	179.2	182.6	77.2	76.8	76.7	78.6	79.9

1 Total CCFS costs increased by \$13.1 million from 2013 to 2015 primarily due to the
2 following factors: higher Real Estate costs for additional work space as a result of the
3 growth in the company's work program, increased Finance costs as a result of additional
4 work functions being transferred to the Corporate Controller group previously in other
5 groups and higher Corporate Security and Human Resource expenses. These increases
6 are partially offset by decreased costs related to Outsourcing Contract Management and
7 Regulatory Affairs.

8
9 From 2015 to 2016, total CCFS costs decrease by \$1.0 million primarily due to decrease
10 in Finance and Human Resource costs.

11
12 From 2016 to 2017, total CCFS costs decrease by \$0.5 million decreased in Finance and
13 Regulatory Affair costs, partially offset by higher Real Estate expenses.

14
15 From 2017 to 2018, total CCFS costs increase by \$3.6 million primarily due to increased
16 Regulatory Affairs costs and Real Estate expenses.

17
18 From 2018 to 2019, total CCFS costs increase by \$3.4 million mostly as a result of
19 increased Real Estate expenses and Finance costs.

20
21 Details on costs and work in each CCFS function are provided in the following sections.

2.1 Corporate Management

The following Table 2 provides a summary of Corporate Management costs:

Table 2
Corporate Management Function (\$ Millions)

Description	Historic				Bridge	Test					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Total Cost	5.0	5.1	5.0	4.9	5.3	5.4	5.4	5.4	5.5	5.5	2.4	2.4	2.4	2.4	2.4

Corporate Management represents those functions responsible for providing overall strategic direction to the corporation, including the Board of Directors, Chief Executive Officer ("CEO"), Treasurer's Office, Chief Financial Officer ("CFO") and General Counsel and Corporate Secretariat.

The General Counsel and Corporate Secretariat function provides advice and support to the Board of Directors and Corporate Officers. It provides advice and training, reports on Code of Conduct, reports on activities related to the *Freedom of Information and Privacy Act* (Ontario) as well as the *Personal Information Protection & Electronic Documents Act* (Canada).

The CFO is responsible for overseeing the finance function and for reporting information to Hydro One Inc.'s subsidiaries, regulators, investors and the shareholder. This includes reviewing and approving financial and investment decisions, business and strategic plans and ensuring the integrity of, and compliance with, internal controls over regulatory, financial and accounting activities.

The allocation of the costs associated with the activities of Corporate Management are governed by service level agreements between Hydro One Inc. ("HOI"), Hydro One

Networks and their affiliates as outlined in Exhibit A, Tab 11, Schedule 3. This exhibit also describes the activities performed by HOI, Hydro One Networks and the amounts allocated to the various subsidiaries.

2.2 Finance

Table 3 provides a summary of finance costs.

Table 3
Finance Function (\$ Millions)

Description	Historic				Bridge	Test					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Total Cost	31.4	31.9	35.2	41.9	45.0	44.6	43.8	43.0	42.7	43.6	18.0	17.6	17.3	17.2	17.6

2.2.1 Overview

Finance provides strategic advice and services related to planning, processing, recording, reporting and monitoring all financial transactions taking place within the organization. Clients include parties which are both internal and external to the organization, depending on the service provided. Services are provided through the following specialist functions:

- Corporate Controller;
- Corporate Tax; and
- Treasury.

2.2.2 Corporate Controller

The Corporate Controller provides leadership and direction regarding all business planning, performance management, financial reporting, accounting and internal control

1 policies and procedures to ensure statutory and regulatory compliance and consistency
2 with generally accepted accounting principles.

3
4 This function oversees the development of actual and forecast financial information and
5 manages reporting processes for appropriate audiences or stakeholders. This function is
6 also responsible for managing and providing direction to the company on internal control
7 matters, employing measures such as “organization authority registers” and financial
8 policies and procedures. It also provides leadership on compliance with Ontario
9 securities laws, including Bill 198, and the Multi-Jurisdictional Disclosure System
10 (“MJDS”) rules for a foreign-issuer registered with the U.S. Securities Exchange
11 Commission (“SEC”).

12
13 The Corporate Controller function is responsible for establishing and leading the annual
14 business planning and budgeting processes and for presenting the plan to the Board of
15 Directors and the Provincial Government. This function is also responsible for
16 developing and leading strategies and plans that support corporate goals related to the
17 transmission and distribution businesses. This involves conducting special studies in
18 areas like corporate performance, including reliability performance, benchmarking, work
19 program performance, productivity, and cost savings management. Lastly, the Corporate
20 Controller function performs services such as business case review, business valuation,
21 transaction support, and develops and maintains financial models and provides analytical
22 support for a variety of financial planning and reporting processes.

23
24 Many routine financial services are outsourced to a third party supplier, such as accounts
25 payable, accounts receivable, fixed asset accounting, general accounting, planning
26 budgeting and reporting support, pension support, human resources pay services and a
27 number of administrative procedures. The costs of these services comprise a major
28 portion of the Corporate Controller costs.

1 The total cost of Corporate Controller activities in the test years is as follows: In 2015,
2 \$37.9 million; in 2016, \$37.0 million; in 2017, \$36.2 million; in 2018, \$35.8 million; and
3 in 2019, \$36.7 million. The portion allocated to Hydro One Distribution is \$15.4 million
4 in 2015, \$15.0 million in 2016, \$14.7 million in 2017, \$14.6 million in 2018 and \$14.9
5 million in 2019.

6
7 Corporate Controller costs increased by \$7.9 million in 2013 and a further \$1.5 million in
8 2014, mainly due to the addition of certain functions to the Corporate Controller
9 organization made after company filed its transmission rate application EB-2010-0002.
10 In 2013, additional functions were added to the Corporate Controller organization: the
11 performance reporting functions previously included in the Business Performance
12 category within Asset Management, and the Time Reporting Centre and Corporate
13 Charge Card Compliance functions previously included in work program costs. In 2014,
14 Work Management and Project Accounting Specialists will also be moved to the
15 Corporate Controller's organization. These transfers were made to better align the
16 finance function within the Corporate Controller organization. For the years 2016 to
17 2018, costs are expected to decrease due to process streamlining, productivity
18 improvements and a decline in outsourcing fees.

19
20 Productivity and cost efficiencies are to be achieved through Business Transformation,
21 specifically, the Business Planning and Consolidation tool. The automation of current
22 processes will enable the Corporate Controller group to reduce required headcount and
23 associated costs. This is referenced in Exhibit A1, Tab 19, Schedule 1.

24 25 2.2.3 Corporate Tax

26
27 Corporate Tax manages the tax affairs (compliance, audits and planning), for each
28 taxable entity within the Hydro One group of companies. This includes corporate income

1 taxes, harmonized sales tax (previously, goods and services tax and provincial sales tax),
2 debt retirement charge, payroll and non-resident withholding tax, and the employer health
3 tax. Corporate Tax ensures that internal and external tax compliance requirements are
4 met. Moreover, Corporate Tax provides tax consulting services to other departments
5 with respect to mergers and acquisitions activities, payroll tax, taxable benefits,
6 agreements, financing, and all transactions and information about tax costs for regulatory
7 purposes.

8
9 The costs associated with Corporate Tax activities are \$2.4 million between 2015 to
10 2019, with \$0.9 million being charged to Distribution annually.

11
12 2.2.4 Treasury and Risk

13
14 Total annual treasury costs are \$6.5 million in 2015, \$6.6 million in 2016 and 2017, and
15 \$6.8 million in 2018 and 2019. Of these amounts, \$2.7 million for 2015 and 2016 and
16 \$2.8 million for 2017 to 2019, inclusive, represent annual costs incurred to:

- 17
18 • execute borrowing plans and issue commercial paper and long-term debt;
19 • ensure compliance with securities regulations, banks and debt covenants;
20 • manage the company's daily liquidity position, control cash and manage the
21 company's bank accounts;
22 • settle all transactions and manage the relationship with creditors;
23 • communicate with debt investors, banks and credit rating agencies;
24 • develop business risk management policies, frameworks and processes;
25 • introduce and promote new techniques for assisting management to identify and
26 evaluate risks within operations;
27 • prepare corporate risk assessments; and
28 • maintain a framework of key business risks

1 A portion of the Treasury budget is recovered through the cost of long-term debt, as
2 stated in Exhibit B1, Tab 2, Schedule 1.

3
4 The remaining \$3.7 million for 2015, \$3.8 million for 2016, \$3.9 million for 2017 and
5 \$4.0 million for 2018 and 2019 include costs relating to risk assessment, the negotiation
6 and purchase of insurance policies, and claims management and settlement. These costs
7 cover premiums paid for corporate shared services insurance coverage, including third
8 party liability, fiduciary liability, and directors and officers insurance. They also include
9 the cost of self-insurance for liability exposures that are either not covered by insurance
10 policies or fall below the specified deductibles. The cost of other insurance coverage is
11 paid for and reported by the lines of business to whom the coverage is applicable.

12
13 Hydro One Distribution accounts for \$1.7 million of the \$3.7 million Treasury budget for
14 2015, \$1.7 million of the \$3.8 million budget for 2016, \$1.7 million of the \$3.9 million
15 budget for 2017, and \$1.8 million of the \$4.0 million budget for each of 2018 and 2019.

16
17 Table 4 shows the premiums for all of Hydro One Inc.'s insurance policies and the cost
18 of self-insurance for the 2010 to 2019 period. Self-insurance costs for the 2015 to 2019
19 period take into consideration the company's risks exposures, the long-term historical
20 claims experience, the deductible on the liability policies and the costs of insuring the
21 self-insured exposures. The main driver for self-insurance costs are claims by third
22 parties which can fluctuate from year to year.

23

Table 4
Hydro One Inc. Insurance Costs (\$ Millions)

Description	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Premiums paid for Corporate Functions and Services Insurance Policies *	1.2	1.2	1.3	1.4	1.7	1.8	1.8	1.9	2.0	2.0
Self-insurance Cost	1.1	0.8	3.2	1.2	2.0	2.0	2.0	2.0	2.0	2.0
Total	2.3	2.0	4.5	2.6	3.7	3.7	3.8	3.9	4.0	4.0

*The cost of other insurance coverage is captured and reported by the lines of business where the coverage is applicable.

2.3 Human Resources – “People & Culture”

Table 5 provides a summary of Human Resources costs:

Table 5
Human Resources Function (\$ Millions)

Description	Historic				Bridge	Test					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Total Cost	16.4	11.0	9.9	11.1	13.1	13.0	12.2	12.1	12.3	12.4	5.7	5.4	5.4	5.4	5.5

Early in 2013, the Human Resources function was renamed “People and Culture” (“P&C”) to highlight, in part, the importance of employees and the cultural transformation that Hydro One Networks is undertaking.

The P&C function exists to ensure that Hydro One Networks has the policies, systems and programs to attract, manage, engage and retain a high performing workforce to execute the corporate strategy. P&C provides consulting, leadership development and recruiting, diversity and resourcing programs, compensation and benefits services, and labour relations services.

1 One of the greatest challenges facing Hydro One Networks is in an area where P&C will
2 be expected to play a significant role – the dramatic demographic transition that will be
3 occurring in the company’s workforce over the next few years. In December 31, 2013,
4 approximately 1,000 active staff members (serving both transmission and distribution
5 businesses) were eligible for undiscounted retirement. The number of employees eligible
6 to retire continues to grow, and the uptake in retirement is growing. Based on employee
7 data today, over 2000 employees will be eligible to retire by 2019. Retirement-eligible
8 employees opting to retire increased by 16% between the period 2011 and 2012, and
9 retirement rates for 2013 continue to show an increase in employees electing to retire.

11 2.3.1 Human Resource (HR) Operations

13 Hydro One Networks’ HR Operations provide advice and guidance to managers,
14 supervisors, and employees on a myriad of issues related to HR policies and procedures,
15 collective agreement administration, staffing and other large initiatives that impact staff.
16 In addition to general HR consulting, HR Operations also performs a number of
17 ‘specialist’ support/service activities. The Pension and Benefits Section within HR
18 Operations administers the Hydro One pension plan for approximately 7,100 pensioners.
19 In addition, this Section also administers the benefits programs for all employee groups.

21 2.3.2 Talent Management

23 This P&C function recommends and administers policy in areas related to external hiring
24 and leadership development. In addition, it manages all of Hydro One Networks’
25 management/leadership development activities, including the assessment of high-
26 potential succession candidates and miscellaneous specialized one-off hiring initiatives,
27 as required.

1 2.3.3 Recruitment Solutions & Diversity

2
3 This function manages Hydro One Networks' principal¹ cyclical hiring and on-boarding
4 processes - the New Graduate, the Co-Op Student, Internship and Developmental Student
5 Programs, and the Summer Student Hiring Program. Additionally, this function is
6 accountable for managing Hydro One's Two-year New Grad Training and Development
7 Program and implementing the company's Diversity Plan, which includes Aboriginal
8 recruitment and the Women in Leadership Program.

9
10 2.3.4 Compensation & Benefits

11
12 This function manages compensation, benefits, reporting and master data for all Hydro
13 One Networks' employees and pensioners by ensuring the accurate application, record-
14 keeping and security of all such information. The Compensation and Benefits Group also
15 provides regular, strategic reporting to senior management on HR and pay data on topics
16 such as retirement demographics, headcount, overtime reports, data for OEB
17 submissions, etc., as well as participating in industry wide compensation, benefit and
18 pension surveys. The same group also manages the Short Term Incentive for
19 management's compensation.

20

¹ Trades staff are hired through the Power Workers' Union Hiring Hall processes.

1 2.3.5 Labour Relations

2
3 Labour Relations provides advice, guidance and training to managers regarding collective
4 agreements and labour legislation and manages the grievance and arbitration process. The
5 company is a party to twenty-four collective agreements and a number of mid-term
6 agreements and letters of understanding. Labour Relations is responsible for negotiating
7 and administering all such agreements and letters of understanding. In addition, the
8 company must comply with legislation, such as the *Ontario Labour Relations Act*, the
9 *Employment Standards Act* (Ontario), the *Human Rights Code* (Ontario), etc., all of
10 which require interpretation to advise managers.

11
12 2.3.6 HR Productivity Initiatives

13
14 Continuous improvement is a core value at Hydro One Networks and for the
15 RRFE. Within the P&C function, there have been a number of initiatives to enhance
16 productivity and, therefore, operational effectiveness:

- 17
18 • The Human Resources/Payroll Transformation Project commenced in late 2013. This
19 project will build further on the SAP platform and the SuccessFactors processes and
20 technology to automate a number of talent management processes including,
21 performance management, succession and career development, compensation
22 management, recruitment management, and to update the company's current learning
23 management system.
- 24 • The automation of Hydro One Networks' performance management process will
25 improve the quality of the information available to managers regarding their staff,
26 provide transparency and consistency in creating goals and assessing performance,
27 provide the ability to calibrate performance, improve the ease of accessing this

1 information, and provide reporting and trending information that currently does not
2 exist because the process is manual.

- 3 • The Pension Administration Team is outsourcing additional transactional tasks that
4 are currently completed by the pension analysts. This will allow the team to focus on
5 more strategic pension issues and improve service and communication to plan
6 members. The goal is to reduce costs to the pension plan, increase pension awareness
7 and mitigate risk on the transactional items.
- 8 • HR Operations and Labour Relation have been merged under P&C, which creates an
9 opportunity to leverage relationships throughout the organization to drive the desired
10 cultural transformation and leverage natural synergies between these two groups.
- 11 • The creation of new reports will improve reporting, making information more
12 accessible for managers as required. This will reduce the number of *ad hoc* requests,
13 which will reduce the transactional work required by the P&C Reporting Group,
14 permit them to focus on more strategic and analytical work, and improve their ability
15 to respond to urgent requests (such as requests from the OEB or the Hydro One Board
16 of Directors).
- 17 • A pensioner website is being developed that will provide external access to required
18 information for pensioners. This will reduce the basic transactional work stemming
19 from calls from pensioners. This will also reduce the cost of mailing printed
20 materials to pensioners.
- 21 • P&C re-branded its existing internal website and launched a new “People Matters”
22 internal website, with emphasis being placed on better and more up-to-date
23 information, new tools and better search capabilities. Making this information
24 available on the internal website will reduce basic transactional work for P&C staff
25 and will provide more detailed and consistent information for the company’s staff
26 members, generally.

- P&C will automate some master data transactions, using SAP technology, which will permit managers to complete HR transactions online, capturing data once at its source.
- The vacancy management process has moved from a paper-based format to an electronic format. Files that were once stored in paper hardcopy are now stored electronically, allowing for quick and easy management of the information.
- A new recruitment consultant was selected in 2013. The new consultant will assume many of the administrative duties currently done by P&C's internal recruitment consultants. This will allow the internal recruitment consultants to focus on more strategic or relationship-building activities instead of simply processing paperwork. The goal is to improve customer service and decrease the administrative aspect of the job.

2.4 Corporate Communications

Table 6 provides a summary of Corporate Communications costs.

Table 6
Corporate Communications Function (\$ Millions)

Description	Historic				Bridge	Test					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Total Cost	9.6	8.7	11.3	15.0	13.9	12.6	12.6	12.7	12.8	12.9	6.6	6.6	6.6	6.7	6.7

This function is performed by Corporate Communications, First Nations and Métis Relations and Outsourcing Services. The increase in costs over the historical years through the bridge year is reflective of the activities in the First Nations and Métis Relations, Corporate Communications and Outsourcing Services programs. First Nations and Métis Relations programs sustain long-term relationship building and negotiations with First Nations and Métis communities and are impacted by the growth of Hydro One

1 core SDO work programs. Corporate Communications programs are targeting
2 improvements in customer communications regarding power outages while increasing
3 customer education and engagement efforts and research to support improved customer
4 communication. The current outsourcing contract with Inergi LP expires in 2015. The re-
5 tendering process currently underway which results in additional costs for the
6 Outsourcing Services group. More details on the re-tendering process are available in
7 Exhibit C1, Tab 2, Schedule 7.

8 9 2.4.1 Corporate Communications

10
11 Corporate Relations is comprised of Corporate Affairs, External Relations and the
12 Executive Office. Corporate Relations is responsible for ensuring that Hydro One
13 Networks builds the strategic relationships required to advance corporate objectives and
14 present a single, positive brand internally and externally. Corporate Affairs is responsible
15 for corporate reputation, executive support, customer and employee communications,
16 media relations, community investment, web communications and corporate brand
17 identity. External Relations is accountable for supporting the company's relationships
18 with the government and its key stakeholders. External Relations also leads the Public
19 Affairs Group which supports Hydro One Networks' public consultation obligations and
20 community relations programs. The Executive Office supports the executive team. It
21 advances key strategic initiatives and interfacing with lines of business to assist in the
22 implementation of these initiatives, coordinating the development of processes to ensure
23 alignment within Hydro One Networks and a unified focus on key priorities.

24
25 In 2013, Corporate Relations costs increased primarily due to Corporate Affairs incurring
26 one-time expenses, such as costs to support the Mobile Customer Discovery Centre and
27 an increased number of customer surveys in support of this Custom Application. The

Executive Office also absorbed the costs of two rotational staff in 2013. For the 2015-2019 forecast, these additional costs have not been included.

2.4.2 First Nations and Métis Relations

Another important role that falls within the Corporate Relations function is First Nations and Métis Relations. First Nations and Métis Relations programs foster and maintain long-term relationship building and conduct engagement with First Nations and Métis communities that may be impacted by Hydro One Networks core SDO work programs.

Hydro One Networks owns and maintains assets on reserve lands and within the traditional territories of First Nations & Métis Peoples. Hydro One Networks recognizes that First Nations and Métis peoples and their lands are unique in Canada, with distinct legal, historical and cultural significance. Building relationships with First Nations and Métis communities based upon trust, confidence, and accountability is vital to achieving our corporate objectives. The First Nations and Métis Relations group encompasses the following functions:

- Sustains long-term capability in the areas of First Nations and Métis relationship building, engagement and the successful development and implementation of initiatives to achieve Hydro One Networks' goals and objectives;
- Develops and maintains key relationships with government officials as well as representatives of key businesses including but not limited to other energy companies;
- Supports procurement opportunities for qualified First Nations & Métis businesses;
- Provides engagement services on projects and/or initiatives that potentially affect the First Nations & Métis peoples and communities;

- Provides leadership and advice within the company in the building of knowledge and awareness of First Nations and Métis historic and contemporary issues; and
- Develops, in conjunction with the Human Resources and Labour Relations departments, initiatives to enhance the level of aboriginal employment at Hydro One Network.

First Nations and Métis Relations costs are \$3.1 million between 2015-2017 and \$3.2 million between 2018-2019. The portion allocated to Hydro One Distribution is \$1.2 million between 2015-2019.

The increase in costs in the 2014 bridge year and 2015-2019 test years is required to sustain long-term relationship building and engagement processes with First Nations and Métis as a result of the growth of the Hydro One Networks core SDO work programs.

2.4.3 Outsourcing Services

The mandate of the Outsourcing Services Group is to govern and manage the contractual relationship with the company's outsourcing partner (currently, Inergi LP) in a manner that fosters collaboration and optimizes value and minimizes risk by ensuring that contracted services are delivered. The Outsourcing Services Group is responsible for managing the design, development, and implementation of new service delivery agreements with Hydro One's suppliers.

In 2010, the Outsourcing Services Group extended the current outsourcing contract with the Inergi LP with the support of an external consultant. In 2011, the Outsourcing Services Group's costs are lower than its 2010 costs because these external consultant fees no longer applied. Further details on this are available in Exhibit A, Tab 19,

The current outsourcing agreement with Inergi LP expires in 2015. Higher costs for the Outsourcing Services Group in the 2012 to 2014 period are primarily driven by: (a) fees for external support in preparing and issuing a request for proposals (“RFP”) to replace the current outsourcing agreement, and (b) fees for a benchmarking study commissioned in 2013 to determine whether the costs under the current contract are market-comparable.

For the test years, the Outsourcing Services Group’s annual costs are \$2.9 million in 2015 and 2016, \$3.0 million in 2017 and 2018, and \$3.1 million in 2019. The portion allocated to Hydro One Distribution is \$1.2 million in 2015, and \$1.3 million annually for the period 2016 to 2019. The proposed spending for the test years is consistent with the actual spending in historical years.

2.5 General Counsel and Secretariat

Table 7 provides a summary of the costs of the General Counsel and Secretariat function:

Table 7
General Counsel and Secretariat Function (\$ Millions)

Description	Historic				Bridge	Test					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Total Cost	7.5	7.4	8.8	9.6	10.1	10.2	10.2	10.2	10.4	10.5	4.1	4.1	4.2	4.2	4.2

2.5.1 Overview

The offices of the General Counsel and Corporate Secretary ("GC&CS") provide legal advice and direction to Hydro One Networks and its affiliates, as well as overall guidance in the areas of corporate structure, governance, business ethics and the business code of conduct. The GC&CS consists of two main functions: Law and the Corporate Secretariat. The Corporate Secretariat reports to the General Counsel.

1 The GC&CS functions in Hydro One Networks are set out below:

- 2 • Providing legal services to all business units including the company's major
3 borrowing and financing initiatives, regulatory activities, transmission and
4 distribution businesses (contracts, other commercial matters), employment, including
5 pension and benefits, health, safety and environment, litigation, all Board of
6 Directors-related activities, and arranging for the provision of legal services to the
7 company. The volume of these services is driven by capital and OM&A activities, as
8 well as increasing regulatory and legislative oversight functions;
- 9 • Overseeing the Law and Corporate Secretariat functions; and
- 10 • Ensuring compliance with legal and regulatory requirements.

11
12 Hydro One Networks does most of its legal work in-house, except when the in-house
13 expertise is not available (for example, tax, labour) or when the workload exceeds the
14 capacity of the internal legal group.

15
16 The increase in costs for GC&CS is driven mainly by increased work requirements
17 related to the GEA, securities law matters including registration in the United States with
18 the Securities and Exchange Commission (SEC), corporate finance matters and pension-
19 related matters. Examples of the additional workload include procurement-related work
20 due to large work programs, preparation of legal agreements associated with distributed
21 generation, real estate-related legal work to obtain land and land rights for new
22 development projects, and preparation of renewed securities-related documents for filing
23 in Ontario and with the SEC.

24 25 2.5.2 Law

26
27 Law provides legal advice to all business units of the company, acting as an internal law
28 firm. It advises on most aspects of law affecting Hydro One Networks, and relies on its

experience and knowledge of the company's business in providing economic and timely advice. This function maintains core knowledge of the law and the company's business.

2.5.3 Corporate Secretariat

The Corporate Secretariat provides support to the Office of the Chair, the Board of Directors and its Committees, including the administrative aspects of the Board of Directors and its meetings. It provides advice and analysis with regard to a variety of board-related matters, including corporate governance best practices and emerging trends and issues. It provides advice and direction with regard to the business Code of Conduct, ensuring appropriate actions to resolve known or suspected violations.

2.6 **Regulatory Affairs**

Table 8 provides a summary of Regulatory Affairs costs:

Table 8
Regulatory Affairs Function (\$ Millions)

Description	Historic				Bridge	Test					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Regulatory Affairs	10.0	9.1	7.4	7.6	8.3	8.0	7.9	7.5	7.8	7.9	4.0	4.0	3.9	4.0	4.1
OEB/NEB Costs	11.3	11.0	13.2	13.1	15.8	13.5	14.5	14.0	15.6	15.0	7.9	8.4	8.3	9.2	8.9
Total Cost	21.3	20.1	20.6	20.6	24.1	21.5	22.4	21.6	23.3	22.9	12.0	12.4	12.1	13.2	12.9

2.6.1 Overview

Regulatory Affairs consists of the Compliance, Applications and Regulatory Administration functions. The costs include Hydro One Networks' share of the Ontario

1 Energy Board (“OEB”) costs, including the OEB quarterly assessment costs, OEB
2 proceeding-specific costs and OEB-ordered intervenor cost awards.

3
4 2.6.2 Regulatory Affairs Activities
5

6 Regulatory Affairs is responsible for managing the company's relationships with the
7 regulatory bodies with which it interacts, including the Ontario Energy Board, the IESO,
8 the OPA, and the National Energy Board. Through this function, it is responsible for
9 developing strategy and coordinating the company's submissions to these bodies as well
10 participation in regulatory initiatives.
11

12 Regulatory Affairs is involved in the coordination, preparation and processing of
13 applications, as well as providing support to witnesses and business support staff. Such
14 proceeding-specific services are provided for a wide range of applications, including
15 distribution and transmission rates, transmission leaves-to-construct, merger/ acquisition/
16 amalgamation/ divestiture applications and area and system supply planning. In addition
17 to proceeding-specific work, Regulatory Affairs is responsible for a variety of ongoing
18 reporting and other activities. The function prepares quarterly and annual reports
19 required under OEB Reporting and Record-keeping Requirements. Work includes
20 meeting, reporting on, and responding to regulatory compliance issues. Pricing and cost
21 allocation analysis and support are also provided within Regulatory Affairs for rate
22 applications. This includes the development of rate structures and rates for the regulated
23 transmission and distribution tariffs applicable to Hydro One Networks and provides
24 support in submitting and defending rate proposals. The function also assists with the
25 implementation of approved transmission and distribution rates.
26

27 Load Forecasting and Load Data Management Units are included within the Regulatory
28 Affairs group. Load forecasts are developed to enable system planning and financial

1 planning which underlie Hydro One Networks ' financial forecasts. The load forecast
2 function provides load forecast data including the capture of conservation and demand
3 management impacts. Load forecast staff support the company's business units and the
4 OPA with forecasting analysis and evaluation covering time of use, bypass and
5 embedded generation. The Load Data Management Unit provides analytical support for
6 conservation and demand management projects and provides load research analysis.

7
8 Regulatory costs in 2014 through 2019 are being driven by an extremely aggressive
9 regulatory program. This includes a distribution rate application for 2015-2019 and
10 transmission rate applications for 2015-2016, 2017-2018 and 2019-2020. Furthermore,
11 the OEB is continuing a busy and challenging program of reviews and initiatives, most of
12 which involve the company. At the present time, the OEB is conducting several generic
13 proceedings on issues such as:

- 14 • Code amendments to the Transmission and Distribution System Codes;
- 15 • Consultation to Review the Framework Governing the Participation of Intervenors in
16 Board Proceedings;
- 17 • Initiative to Develop Electricity Distribution System Reliability Standards;
- 18 • Regional Planning for Electricity Infrastructure; and
- 19 • Numerous other matters that arise from time to time.

20 21 2.6.3 Ontario Energy Board Costs

22
23 Under the *Ontario Energy Board Act, 1988*, the OEB is required to recover all of its
24 annual operating costs. Almost all of its costs are recovered from gas and electricity
25 distributors and electricity transmitters. A small fraction of OEB costs are recovered
26 from the IESO, the OPA, Ontario Power Generation and from licensing fees and
27 penalties. OEB costs that are subject to recovery include its staff costs, office space
28 costs, administration costs and overheads. These costs are allocated to one of six

categories – electricity distribution, electricity transmission, gas distribution, IESO, OPA and Ontario Power Generation. Hydro One Networks' allocation arises from OEB costs related to electricity distribution and transmission.

2.7 Security Management

Table 9 provides a summary of Security Management program costs.

Table 9
Security Management (\$ Millions)

Description	Historic				Bridge	Test					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Total Cost	2.4	3.0	3.1	3.4	4.8	4.8	4.6	4.6	4.7	4.8	2.5	2.4	2.4	2.4	2.5

The Security Management function (formerly referred to as Corporate Security Services) exists to enable Hydro One Networks' success primarily in the protection of assets (assets include people, property and information), development and maintenance of Business Continuity and Emergency Preparedness & Response Plans and to assist in the reliable delivery of electricity. Security Management adds value by providing advice, coordination, guidance, investigative, technical and intelligence gathering expertise and services to company staff that support and optimize the reliable delivery of electricity, the protection of Hydro One Networks' assets, and the resumption of business in the event of an all hazards (natural, technological or human-caused) incident. Effective asset protection and recovery can be the primary differentiating factor between success and failure for a critical infrastructure organization such as Hydro One Networks. This is achieved by effective corporate security policies, directives, guidelines and services, which can significantly enhance employee and business productivity and safety.

1 The increase in costs is a result of an increased focus on a variety of mitigating strategies
2 to reduce the impact of metal theft (primarily copper) that threaten the reliability of the
3 transmission and distribution systems and the safety and security of staff, first responders
4 and the general public.

5
6 Incidents of copper theft have dropped, in part, due to adding security protection systems
7 at heavily targeted transmission sites. However, more organized criminal incidents have
8 occurred in relation to metal thefts recently, primarily targeting stations that have not
9 benefited from increased capital expenditures for protection systems. Although the total
10 number of incidents has dropped, the average loss per incident is increasing due to the
11 sophistication and organization of these crime groups. These crimes take longer to
12 investigate, and prevention methods and strategies are often very complex and costly.

13
14 Total Security Management costs are \$4.8 million in 2015, \$4.6 million in 2016 and
15 2017, \$4.7 million in 2018 and \$4.8 million in 2019. The amount allocated to Hydro One
16 Distribution is \$2.5 million for 2015, \$2.4 million from 2016 to 2018 annually, and \$2.5
17 million in 2019.

18 19 **2.8 Internal Audit**

20
21 Table 10 provides a summary of Internal Audit costs.

Table 10
Internal Audit Function (\$ Millions)

Description	Historic				Bridge	Test					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Total Cost	2.8	3.1	3.5	3.4	3.6	3.6	3.6	3.6	3.7	3.8	1.1	1.1	1.1	1.2	1.2

Internal Audit reports to the CEO and the Audit and Finance Committee of the Board of Directors. It provides independent and objective assurance and consulting services designed to add value to and improve Hydro One Networks' operations. The mandate for Internal Audit is to provide independent assurance to the CEO and the Board of Directors that internal controls are adequate in areas of high-risk and to follow-up and report on management actions to address findings from past audits.

The department helps the company accomplish its objectives by bringing a systematic and disciplined approach to evaluating and improving the effectiveness of risk management, internal control and governance processes. The total costs for this function are \$3.6 million annually from 2015 to 2017, \$3.7 million in 2018, and \$3.8 million in 2019. The portion allocated to Hydro One Distribution is \$1.1 million annually from 2015 to 2017 and \$1.2 million annually from 2018 to 2019.

2.9 Real Estate and Facilities

Table 11 provides a summary of Real Estate and Facilities costs.

Table 11
Real Estate and Facilities (\$ Millions)

Description	Historic				Bridge	Test					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Real Estate	8.6	9.3	8.8	9.3	9.7	9.8	9.8	9.9	10.0	10.2	1.9	1.9	1.9	1.9	1.9
Facilities	41.3	42.3	45.8	44.8	50.5	51.6	51.5	52.5	53.8	56.0	22.9	22.8	23.3	23.9	24.9
Total Cost	49.9	51.6	54.6	54.1	60.2	61.4	61.3	62.4	63.8	66.2	24.8	24.7	25.2	25.8	26.8

2.9.1 Overview

The total cost for the Facilities and Real Estate function in 2015 is \$61.4 million, with \$24.8 million allocated to Hydro One Distribution. The 2016 cost is \$61.3 million, with \$24.7 million of that allocated to Hydro One Distribution. The 2017 cost is \$62.4 million, with \$25.2 million of that allocated to Hydro One Distribution. The 2018 cost is \$63.8 million, with \$25.8 million of that allocated to Hydro One Distribution. The 2019 cost is \$66.2 million, with \$26.8 million of that allocated to Hydro One Distribution.

The 2015-2019 funding is required for the expanded facilities work program that responds to current and future anticipated Hydro One Networks' work space accommodation needs. This includes new facilities in the field. The facilities work program accounts for approximately 84% of total funding in test years 2015 to 2019.

The increase in funding requirements is mainly driven by new facilities and building additions being put in-service. New facilities will be replacing existing facilities at the end of their useful lives, and new facilities are also needed to meet increased accommodation needs driven by Hydro One Networks' work program and operating requirements (which include housing specialized work equipment). The increase in funding requirements in bridge year 2014 and test years 2015 to 2019 is attributable to planned office improvements, which are expected to result in additional swing space and office moves costs. The funding requirements in the bridge and test years also reflect corporate health and safety initiatives and expected increases in fixed operating costs.

Details on these investments are provided in Exhibit D1, Tab 2, Schedule 3, investment summary document C01 and investment summary document C02.

2.9.2 Real Estate Services (“RES”)

Real Estate Services manages Hydro One Networks’ land rights portfolio across the Province. This involves maintaining rights across over 200,000 acres of owned corridor, easement and “statutory right” properties and acquiring any new rights needed to ensure the safe and reliable operation of the transmission and distribution system. In addition, Real Estate Services oversees the management of Hydro One Networks’ rights associated with distribution and transmission lands, stations and other property.

Real Estate Services’ key work activities include:

- managing the acquisition of new real estate rights, which supports the company’s distribution and transmission development and reinforcement project initiatives across the Province including those designed to accommodate renewable power sources on the grid;
- managing the Provincial secondary land use program on behalf of Ministry of Infrastructure/ Infrastructure Ontario leasing transmission corridor lands to external parties);
- managing easement, other rights agreements on public/private sector, railway and other lands;
- managing First Nations land use permit settlements on reserve lands;
- managing about 500,000 unregistered, low-voltage, real estate rights agreements;
- providing specialized real estate service activities including managing property tax payments to municipalities, appealing property tax assessments, and providing employee relocation services; and
- maintaining Geographic Information System (GIS) – property record database.

1 More specific support is provided on a selected project basis. This includes provision of
2 land ownership information, damage claim settlement, road access and other rights
3 acquisitions.

4
5 Specialized real estate services are provided as necessary. This includes assessment
6 appeals, payment of property taxes on lands/buildings, and employee relocation services
7 as appropriate.

8
9 2.9.3 Facilities

10
11 The Facilities work program includes all aspects of company work space requirements
12 which comprise not only company-owned facilities, but management of the portfolio of
13 leased facilities and oversight of the construction of new facilities. The Facilities
14 function manages all of the building and site facilities across the company. This includes
15 leasing costs and contract management for head office. In addition, it includes costs for
16 administrative facilities, service centres, and other work locations (for example, the
17 London Call Centre). The Facilities organization is responsible to ensure program
18 delivery in terms of service levels, planned capital improvements and providing for
19 Hydro One Networks' accommodation needs.

20
21 The Facilities program focuses on providing employee workspace at sites across the
22 province including head office, administrative and service centres, the OGCC, and other
23 work locations (for example, the London Call Centre).

24
25 Providing adequate workspace, storage and garage facilities for employees and trades is
26 critical to the effective undertaking of organizational work programs. Equally important
27 is ensuring that new or existing employee workspaces are consistently maintained to a
28 standard that meets current work requirements and complies with all corporate,

1 legislative and other related health, safety and environmental standards. This program
2 includes:

- 3
- 4 • providing accommodation strategies and acquiring new employee / trades workspace
5 in line with operational requirements;
 - 6 • managing 46 contract lease agreements for workspace rented from other parties,
7 including renewals and contractual obligations undertaken regarding payment of
8 rent, operating expenses and taxes;
 - 9 • co-ordinating activities related to the ongoing management, operation, maintenance
10 and inspection of 91 Administrative/Service Centres and Ontario Grid Control
11 Centre; and
 - 12 • providing support services for head office space, such as provision of office supplies
13 and equipment, coordination of office moves, records management and tenant
14 services.
- 15

16 The facilities costs are largely driven by space needs (including workspace and housing
17 space for material and work equipment) which is affected by company work programs
18 and factors such as changing business and operating requirements and fixed cost
19 contractual obligations. Also, the current regulatory environment (including health and
20 safety requirements) ultimately impacts operating costs. Accommodation needs are
21 influenced by the development and growth of the company's work programs and
22 initiatives.

23

24 The majority of the Facilities work program costs are fixed. The Facilities work program
25 is driven by fixed-cost contractual obligations, which arise primarily through
26 relationships with external landlords. For example, rent, operating and tax costs are
27 specified in formal lease agreements and opportunities to significantly amend these set
28 costs typically do not materialize until the agreement expires. Other fixed costs are

represented by negotiated contracts with internal and external service providers for base level facility maintenance (administrative/service centre building maintenance, janitorial and snow removal, minor repairs, building component inspections) and similar activities. These contracts focus on maintaining facilities in a condition that meets current employee work requirements and corporate/legislative requirements. Fixed facility cost components (for example, utilities, property taxes, operational costs) are expected to continue to rise. 2015-2019 test year funding also takes into consideration changing factors in the operating environment.

3.0 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 12.

Table 12
Total Distribution Other OM&A (\$ Millions)

Description	Test				
	2015	2016	2017	2018	2019
Capitalized Overhead	(85.9)	(81.4)	(80.2)	(82.5)	(85.3)
Environmental Provision	(14.2)	(22.0)	(22.4)	(22.0)	(21.6)
Indirect Depreciation	(13.2)	(13.7)	(14.0)	(14.4)	(14.8)
Other	(3.5)	(3.5)	(3.5)	(3.5)	(3.5)
Total	(116.8)	(120.6)	(120.1)	(122.4)	(125.2)

3.1 Capitalized Overhead Credit

Table 13
Distribution Corporate Overhead Credit (\$ Millions)

Description	Test				
	2015	2016	2017	2018	2019
Distribution	(85.9)	(81.4)	(80.2)	(82.5)	(85.3)

Capitalized overheads represent that portion of allocated shared corporate and/or business unit functions and services that support capital work. These costs are included in shared services and in the lines of businesses. OM&A expenses are thus reduced by the capitalized amounts.

Capitalized OM&A costs are charged to capital work based on a capital overhead rate derived from the allocation and capitalization studies performed by Black & Veatch.

3.2 Environmental Provision

Table 14
Distribution Environmental Provision (\$ Millions)

Description	Test				
	2015	2016	2017	2018	2019
Distribution	(14.2)	(22.0)	(22.4)	(22.0)	(21.6)

In 2001, Hydro One Networks first recognized a liability on its balance sheet for the present value of the future estimated environmental expenditures needed manage the risks associated with two legacy environmental issues inherited from Ontario Hydro. These risks pertained to polychlorinated biphenyls (PCBs) and two chemically contaminated lands. Future expenditures are required to inspect, test and remediate the contamination. Environmental work is initially recognized in the sustaining OM&A

work program. The amount is then removed from OM&A as the costs are charged to the balance sheet provision. As well, the offsetting environmental regulatory asset is amortized based on the pattern of expenditure. The resultant impact on revenue requirement of this environmental work is nil, since the amortization expense is grouped with 'Depreciation and Amortization' on the operating statement.

3.3 Indirect Depreciation

Table 15
Distribution Indirect Depreciation (\$ Millions)

Description	Test				
	2015	2016	2017	2018	2019
Indirect Depreciation	(13.2)	(13.7)	(14.0)	(14.4)	(14.8)

Transportation and Work Equipment (“TWE”) charges in the OM&A work programs include depreciation expense associated with the asset being used. For accounting classification purposes, it is necessary to remove this depreciation amount from OM&A work programs and appropriately charge it as a depreciation expense. The credit increases in the test years due to the expanded use of T&WE in the larger SDO work program.

3.4 Other

Table 16
Distribution Other Costs (\$ Millions)

Description	Test				
	2015	2016	2017	2018	2019
Other Costs	(3.5)	(3.5)	(3.5)	(3.5)	(3.5)

- 1 These costs represent material unexpected or non-recurring expenses. For example, they
- 2 include items such as adjustments to provisions, vacation reserves, Gregorian or fiscal
- 3 adjustments and inventory adjustments.

COMMON CORPORATE COSTS OM&A – ASSET MANAGEMENT

1.0 OVERVIEW

The Transmission and Distribution businesses are operated using the Asset Management model, which the company adopted in 1998. The model separates the asset management functions of planning, decision-making and approvals from the services functions of engineering, construction and customer and grid operations which execute approved plans. The Asset Management model is further discussed in Exhibit A, Tab 6, Schedule 1.

The Asset Management organization remains focused on ensuring that the necessary transmission and distribution assets are planned, acquired, constructed, maintained and operated such that they deliver the required function and level of performance expected by customers in a sustainable manner over the long term. Asset Management is responsible for delivering on the following key accountabilities, which promote operational effectiveness, customer focus and public policy responsiveness:

- Developing system investment plans for the sustainment, development and operation of the Distribution and Transmission systems consistent with good asset stewardship practices;
- Developing asset strategies, long-term perspectives and investment plans to support corporate objectives;
- Optimizing the release, bundling and sequencing of the work to ensure the effective delivery of the investments within the plan;
- Redirecting investments in response to new or unforeseen factors (e.g. major storms) and drivers.

- 1 Asset Management costs for the historical, bridge and test years are shown in Table 1.
- 2 The costs allocated to the Distribution business are also provided in Table 1.

Table 1
Asset Management Function (\$ Millions)

Description	Historical Years				Bridge Year	Test Years					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
System Investment	43.7	45.0	42.5	39.2	41.6	41.5	39.4	38.7	37.8	38.2	14.5	13.8	13.5	13.4	13.5
Asset Stewardship and Strategies	15.3	14.6	15.1	12.5	14.3	14.0	14.1	14.0	14.4	14.8	3.9	4.0	4.0	4.2	4.3
Total	58.9	59.6	57.5	51.6	55.9	55.5	53.5	52.7	52.2	53.1	18.4	17.8	17.6	17.5	17.8

1 Total Asset Management costs decrease from 2015 to 2019 and the costs allocated to the
2 Distribution business also decline from \$18.4 million in 2015 to \$17.8 million in 2019.
3 The work undertaken within Asset Management is not expected to decline, however there
4 are productivity initiatives underway that are expected to impact the resourcing and
5 demographic management strategy for the organization. This strategy seeks opportunities
6 to distribute the workloads of retiring staff among existing staff to mitigate the extent to
7 which it is necessary to backfill for retirements and engage external resources. This
8 strategy will also leverage the use of various tools to help fewer planners make the
9 investment decisions. The reduction in budgeted OM&A costs reflects the company's
10 commitment to deliver value to rate payers.

11
12 The primary focus of Asset Management is on core work programs, with overarching
13 initiatives that adapt the business to changing industry and regulatory standards,
14 government policy, and an aging workforce and asset base. These initiatives have notable
15 resource demands, and must therefore be strategically rolled-out to balance cost-effective
16 and reliable electricity supply with efforts to improve, modernize, and address aging
17 infrastructure. The overall resource strategy has therefore needed to target flexibility and
18 adaptability so that costs, core work program impacts, and long term workforce capacity
19 can be appropriately managed.

20
21 **Major Overarching Cost Drivers:**

22
23 Aging Assets and Increasing Complexity: Asset Management resources must manage the
24 increasing complexities that result as large portions of Hydro One's asset fleet reach the
25 end of their expected service lives and the transmission and distribution systems are
26 further adapted to integrate distributed generation and smart grid into the distribution
27 system. These complexities particularly impact the System Investment activities of
28 replacement planning and decision making, evaluating modern technological
29 developments, adapting to regulatory change, and strategies for enhancing performance.

1 In addition, System Investment has recently implemented enhancements in Hydro One's
2 asset analytics and integrated planning capability to meet the increased demands of an
3 aging asset base.

4
5 Aging Workforce: The bow-wave of end-of-expected service life asset replacements that
6 is expected in the next ten years, the increasingly stringent reliability compliance
7 standards, and the opportunities for technological modernization of the power system
8 have resulted in a need to augment staff resources and expertise in the System Investment
9 area. However, this is complicated by the significant loss of experience that will result
10 from the large portion of the workforce that is approaching retirement. The need for
11 structured information transfer is particularly acute because our demographic
12 composition involves marked segmentation between staff that have more than 20 years of
13 experience, and staff with less than 5 years of experience. This experience gap drives the
14 need for a period of overlap between the staff approaching retirement and staff that are
15 intended to take over their workloads once they retire. Protection and Control staff for
16 instance, require 7-12 years of development after graduation and therefore some hiring
17 must occur in advance of the expected retirement dates to allow time for experience-
18 building and knowledge transfer from current employees.

19
20 FIT and Micro-FIT: The decline in System Investment costs through the test years reflect
21 the impact and maturing of the OPA's FIT and Micro-FIT programs. The timelines and
22 technical complexities of these programs initially necessitated non-permanent resources
23 to support these programs and evaluate the project impacts on the distribution grid
24 pursuant to regulation.

25
26 **Asset Management Re-alignment (2012 to 2013)**

27
28 In the current application, some of the functions in Asset Management have been re-
29 aligned compared to the previous Transmission Cost of Service application (EB-2012-

0031). This re-alignment has resulted in a consolidation of some activities previously included in the Business Performance category with the System Investment and Asset Stewardship and Strategies functions. Other Business Performance activities have left the Asset Management to better align with the work function; these changes have financial impacts on Asset Management OM&A in this application and the impacts are outlined in Table 2 below:

Table 2
Impact on Asset Management OM&A due to Asset Management Re-alignment

	2010	2011	2012	2013	2014
Asset Management OM&A Filed in EB-2012-0031	58.9	59.6	64.2	62.5	62.7
Minus:					
Performance Management (1)				(3.1)	(3.2)
Advanced Distribution System Alignment (2)				(0.3)	(0.3)
Asset Management Cost Reductions (3)			(6.6)	(7.5)	(3.3)
Asset Management OMA in this Application	58.9	59.6	57.5	51.6	55.9

- (1) Performance Management costs for the bridge and test years, previously included in the Business Performance category have moved out of Asset Management and are now included in Shared Services- Common Corporate Functions and Services & Other OM&A; see Exhibit C1, Tab 2, Schedule 8.
- (2) Advanced Distribution System Alignment costs for the historic, bridge and test years, previously included in the Business Performance category, have moved out of Asset Management and are now included in Customer Service; see Exhibit C1, Tab 2, Schedule 5.
- (3) The cost reductions in Asset Management of \$6.8 million in 2013 and \$3.3 million in 2014 represent shifts in the timing of hires to later years in accordance with the demands of the sustainment, development, and operations work programs and savings enabled by business process improvements.

2.0 System Investment

The following Table 3 provides a summary of System Investment costs:

Table 3
System Investment Function (\$ Millions)

Description	Historical Years				Bridge Year	Test Years					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
System Investment	43.7	45.0	42.5	39.2	41.6	41.5	39.4	38.7	37.8	38.2	14.5	13.8	13.5	13.4	13.5

Note: Organization reflects a partial consolidation of activities from the System Investment and former Business Performance function.

2.1 Overview

System Investment develops and scopes transmission and distribution plans to address equipment performance, system reliability, system capacity, system capabilities, compliance obligations, customer requests, as well as OPA and Government initiatives.

This function also leads Asset Management's participation in the various regulatory processes including Transmission and Distribution rate applications and Section 92 Leave to Construct applications. System Investment ensures integration of all aspects of Asset Management including investment planning, execution planning, work bundling and release of the capital and OM&A work programs in accordance with the Asset Management model and the Asset Management Planning Process, which is discussed at Exhibit A, Tab 17, Schedule 2.

The year over year cost trend from 2014 to 2019 reflects a consistent decrease in System Investment costs. The work undertaken within System Investment is not expected to

1 decline, however there are productivity initiatives underway that are expected to impact
2 the resourcing and demographic management strategy for the organization. These
3 productivity and cost efficiency initiatives are detailed in Exhibit A1, Tab 19, Schedule 1.
4 Business Transformation tools such as Asset Analytics Value Realiztion will enable the
5 Company to strategically invest in areas that have the highest priority based on our
6 system information. Given the current staff demographics, initiatives are underway to
7 facilitate the structured transfer of information from highly experienced employees
8 nearing retirement age to newer employees to help mitigate the experience gap that is
9 expected to result as large portions of the workforce retire. Further, this strategy seeks
10 opportunities to distribute the workloads of retiring staff among existing staff to mitigate
11 the extent to which it is necessary to backfill for retirements and engage external
12 resources.

13
14 The resource demands for these functions have intensified in relation to the complexities
15 brought about by an aging asset base, the increasing levels of transmission and
16 distribution sustainment work relating to the refurbishment and replacement of assets to
17 maintain condition and reliability, and more stringent regulatory compliance
18 requirements, industry standards and codes. Given that workloads are not declining, this
19 strategy is contingent on productivity realization (detailed in Exhibit A, Tab 19, Schedule
20 1), and reflects Hydro One's commitment to deliver value to rate payers.

21
22 The decrease in System Investment spending from 2010 to 2012 must be considered in
23 combination with the increase in Asset Strategy costs, as this reflects a realignment of
24 work between these two functions. Further decreases from 2010 to 2012 reflect the
25 maturing of the OPA's FIT and Micro-FIT program impacting the need for non-
26 permanent resources; the short term increased resource demands were driven by efforts to
27 accommodate distributed generation as required by regulation:

- 28
29
- Additional preparation of engineering protection and control specifications required

- 1 • to accommodate generators on a distribution system that was primarily designed for
- 2 load customers;
- 3 • Additional studies to determine the impacts of reverse flow on power equipment,
- 4 as new local generation may exceed the load on a feeder which will result in power
- 5 flows in the opposite direction to that designed;
- 6 • Development of P&C standards for transmission and distribution stations, and other
- 7 controllable elements;
- 8 • An increase in the number of requests for generation applications, requiring
- 9 connection impact assessments;
- 10 • The need to develop new standards related to configurations or connections to the
- 11 Transmission and Distribution networks;
- 12 • The need to develop, scope and obtain approvals for distribution plans in response to
- 13 Government policy decisions related to the province's generation mix, in consultation
- 14 with the OPA;

16 **2.2 System Investment Activities**

18 System Investment activities include:

- 20 • Developing Transmission and Distribution sustainment, development and operations
- 21 investment plans consistent with Hydro One's objectives, constraints, strategies, and
- 22 asset stewardship obligations, and obtaining approvals for such plans;
- 23 • Interfacing and collaborating with external governmental, regulatory and planning
- 24 authorities on matters of planning direction, requirements, policy and guidance, and
- 25 integrating such into the investment plans;
- 26 • Identifying, scoping and obtaining approval for specific investments in support of
- 27 approved investment plans;
- 28 • Engaging with service delivery units to ensure the effective execution of specific
- 29 investments;

- 1 • Analyzing the results of project and program execution and integrating these into
2 future plans;
- 3 • Supporting the redirecting and re-prioritizing of investments in response to
4 unforeseen events and work execution opportunities;
- 5 • Supporting the development of opportunities to optimize leveraging of Hydro One
6 Networks' assets (e.g. distributed generation connections, secondary land use, and
7 utility boundary adjustments);
- 8 • Performing technical studies to assess the viability of proposed connections,
9 alternatives or investment plans;
- 10 • Investigating and addressing power system disturbances;
- 11 • Conducting various asset and system centered analytics including asset condition
12 assessments in the context of the Reliability Centric Maintenance methodology and
13 integrating the results into specific investment plans;
- 14 • Monitoring equipment and network performance and addressing issues as these are
15 identified;
- 16 • Establishing performance standards that form the basis for detailed engineering
17 designs;
- 18 • Responding to customer requests for new or expanded connections or customer
19 concerns regarding connection security or power quality;
- 20 • Advising external agencies and customers of the Transmission and Distribution
21 impacts of their plans;
- 22 • Consulting with affected stakeholders regarding new Transmission and Distribution
23 facilities;
- 24 • Development and leadership of strategies and plans that support corporate goals
25 related to the Transmission and Distribution businesses;
- 26 • Evolving and enhancing the implementation of the asset management model;

- Advancing and leading the OM&A and capital Investment Planning process in the development of multi-year Transmission and Distribution Investment Plans;
- Analyzing and managing project and program costs and results and collaborating with service delivery units to ensure targets are achieved;
- Managing the execution planning, work bundling and releasing processes, and redirecting investments in response to unforeseen events and work execution opportunities;
- Managing the business case approval and interim review of variance processes;
- Developing work collaboration tools, systems and processes to drive continuous improvements across the corporation;
- Ensure an integrated approach to data, systems, and processes as well as contributing to change management within Hydro One.
- Developing and advancing better approaches and tools in such areas as asset analytics, leading to improved asset sustainment planning approaches;
- Providing regulatory support for Asset Management and others in Hydro One including evidence development for regulatory filings, expert witness support, and interrogatory response and undertaking preparation, and through preparing documentation and supporting the Section 92 Leave to Construct process for major transmission projects; and
- Specifying technical requirements and work in such areas as new technologies (e.g. smart meters, IEC 61850), animal abatement, transformer refurbishment (core heating) and remote monitoring.

3.0 ASSET STEWARDSHIP AND STRATEGIES

Table 5 provides a summary of Asset Stewardship and Strategies costs:

Table 5
Asset Stewardship and Strategies Function (\$ Millions)

Description	Historical Years				Bridge Year	Test Years					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Asset Stewardship and Strategies	15.3	14.6	15.1	12.5	14.3	14.0	14.1	14.0	14.4	14.8	3.9	4.0	4.0	4.2	4.3

Note: Organization reflects a partial consolidation of activities from the Asset Strategy and former Business Performance functions

3.1 Overview

The Asset Stewardship and Strategies group provides leadership and supports asset stewardship by developing and advancing functional, business and technological strategies and plans, as well as detailed policies and standards. This group also includes research and development activities, and liaison with external industry organizations, government agencies and universities. Also included is funding for property, boiler and machinery insurance costs. The insurance amounts for the test years are provided in Table 6 below:

Table 6
Property, Boiler and Machinery Insurance

	Historical			Bridge	Test Years				
	2011	2012	2013	2014	2015	2016	2017	2018	2019
Property, Boiler and Machinery Insurance	5.0	5.5	5.4	6.6	6.9	7.2	7.5	7.8	8.1

The steady year-over-year trend indicates that assumed cost escalations are being offset by decreases in other base costs. As in the case of System Investment, the work undertaken within the Asset Stewardship and Strategies group is not expected to decline. Rather, there are productivity initiatives underway that are expected to impact the resourcing and demographic management strategy for Asset Stewardship and Strategies. This resource strategy seeks opportunities to distribute the workloads of retiring staff among existing staff to mitigate the extent to which it is necessary to backfill for retirements and engage external resources. Given that workloads are not declining, this strategy is contingent on productivity realization, and reflects Hydro One's commitment to deliver value to rate payers.

1 The overall trend in Asset Stewardship and Strategies spending must be considered in
2 combination with the decrease in System Investment costs, as this reflects realignment of
3 work between these two functions. In particular, the Asset Stewardship and Strategies
4 group consolidated and intensified its focus in the areas operating reliability compliance
5 requirements and the management of corporate operational policies.

6 7 **3.2 Asset Stewardship and Strategies**

8
9 Asset Stewardship and Strategies activities include:

- 10
- 11 • Developing and advancing technological, functional and business strategies for Asset
12 Management and Hydro One;
 - 13 • Developing and advancing asset and business related policies, practices and standards
14 for Asset Management and Hydro One; Supporting the planning and advancement of
15 the Advanced Distribution System (ADS) initiative, including Hydro One's "Living
16 Lab" in the Owen Sound and Walkerton areas as well as subsequent phases;
 - 17 • Interfacing and collaborating with governmental agencies such as the OPA, ORF
18 (Ontario Research Fund) and OCE (Ontario Centres of Excellence) on asset
19 management matters, and research and development issues affecting the electricity
20 industry;
 - 21 • Providing expert participation in, and representing Hydro One's interests on, various
22 national and international industry entities and standard-setting bodies including
23 CIGRE, CEA, CEATI, IEEE, NERC, NPCC, the North American Transmission
24 Forum, NIST, and the IESO. For example, this function participates in reliability
25 standards development and compliance monitoring with NERC and the NPCC, and
26 also represents Canada at the International Electrotechnical Commission (IEC). In
27 addition, this function serves as the transmitter representative on the Independent
28 Electricity System Operator ("IESO") Technical Panel, which reviews and

1 recommends amendments to the Ontario wholesale electricity market rules, and
2 advises the IESO Board of Directors on specific technical issues related to the
3 operation of the Ontario Electricity Market;

- 4 • Providing oversight, overall management and subject matter expertise for
5 interpreting, advising upon and demonstrating Hydro One's compliance with North
6 American or regional reliability standards (IESO/NERC/NPCC) to external
7 regulatory authorities (e.g. IESO's MACD) pursuant to Hydro One's license and
8 market rules' obligations;
- 9 • Managing or contributing to research and development in such areas as smart grid,
10 electrical vehicles, energy storage and distributed generation, through industry and
11 research organizations (e.g. EPRI and CEATI) and Ontario universities;
- 12 • Interfacing and collaborating with Ontario universities on matters of electrical or
13 power-systems engineering;
- 14 • Leading Asset Management's business improvement and employee engagement plans
15 and initiatives; and
- 16 • Overseeing the governance of corporate standards and ensure appropriate standards
17 are in place ahead of corporate requirements.
- 18 • Advancing and integrating all Asset Management functions, initiatives, plans,
19 processes and practices in support of overall asset stewardship;
- 20 • Participating in the development of, and demonstrating compliance with North
21 American or regional reliability standards (e.g. Market Assessment and Compliance
22 Division (MACD) audits); and
- 23 • Managing the Operating Compliance Management function including the Compliance
24 Management System (CMS) and supporting the demonstration of compliance with
25 North American or regional reliability standards (IESO/NERC/NPCC) to external
26 regulatory authorities (e.g. IESO's Market Assessment and Compliance Division
27 (MACD)).

COMMON CORPORATE COSTS OM&A - INFORMATION TECHNOLOGY

1.0 OVERVIEW

Information Technology (“IT”) refers to computer systems (hardware, software and applications), data and voice communication systems that support business processes and allow employees to perform their work.

IT work programs include both OM&A and capital items and involve: the ongoing maintenance and sustainment of existing and newly commissioned applications and technologies; the development and implementation of new technologies or systems; the provision of Business Telecom services; and the overall management and control of the information technology program – including capital projects. IT capital investments are made in accordance with approved business strategies and are described in Exhibit D1, Tab 3, Schedule 7.

OM&A costs associated with supporting Hydro One’s information technology assets are shown in Table 1 and are described below.

Table 1

Information Technology Summary of OM&A Expenditures
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Sustainment	84.6	81.7	88.5	84.9	84.5	88.7	87.7	85.8	88.3	90.2	54.4	53.8	52.6	54.2	55.3
Development ¹	11.9	11.0	8.2	18.4	21.0	19.7	21.6	23.7	21.9	21.7	12.4	13.8	14.9	13.8	13.7
Business Telecom	16.9	18.5	18.4	19.5	18.5	18.0	18.4	18.4	18.4	18.6	8.1	8.3	8.3	8.3	8.3
IT Management & Project Control	20.1	19.5	19.0	21.6	24.2	24.2	23.6	23.0	23.0	22.7	10.8	10.6	10.3	10.3	10.2
Cornerstone	1.8	1.4	8.6	18.3	4.5										
Total	135.3	132.1	142.7	162.6	152.7	150.6	151.3	150.9	151.6	153.2	85.7	86.5	86.1	86.6	87.5

¹ Customer Care work related to Regulatory Compliance and Service Enhancements moved to IT from Customer Service Operations in 2013

1 **1.1 Sustainment**

2
3 Sustainment costs are costs to support the Hydro One information technology
4 applications and infrastructure. Some of these costs are paid to Inergi LLP (“Inergi”)
5 pursuant to the current outsourcing contract which expires in 2015 for which a re-
6 tendering process is underway. The remaining costs are for third party software/hardware
7 license and maintenance fees.

8
9 **1.2 Development**

10
11 The development budget is comprised of application upgrades, enhancements and the
12 OM&A portions of capital projects. The funds are required to maintain the applications
13 at vendor-supported levels and to support enhancements to those applications.

14
15 **1.3 Business Telecom**

16
17 Business Telecom costs include data and voice telecommunications and associated
18 maintenance of Hydro One’s telecom network. Changes in costs vary with the addition of
19 data and voice telecom capacity at sites throughout the province, and the addition of
20 security-related services for the expanding telecom network.

21
22 **1.4 IT Management and Project Control**

23
24 IT Management and Project Control costs relate to IT administration, outsourced services
25 oversight, project governance and reporting, system and security architecture, program
26 and spend coordination, and Quality Assurance (“QA”)/Quality Control (“QC”)
27 processes.

1 Technology costs are validated through Hydro One's IT governance process. IT
2 governance looks proactively at IT strategy, project expenditures and service delivery to
3 align technology spend with business and corporate objectives. The IT governance
4 model involves the senior business managers who provide guidance, direction and
5 support to the decision-making for corporate technology decisions.

6
7 **2.0 IT SUSTAINMENT OM&A**

8
9 Table 2 shows the specific expenditures for IT sustainment of the Information
10 Technology platform.

1
2
3

Table 2
OM&A Sustainment of Information Technology
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Base IT Sustainment Services	70.9	68.8	73.6	68.2	65.5	66.7	64.9	63.4	65.0	66.9	40.9	39.8	38.9	39.9	41.0
3 rd Party Contracts	13.7	12.9	14.9	16.7	19.0	22.0	22.8	22.4	23.3	23.3	13.5	14.0	13.7	14.3	14.3
Total	84.6	81.7	88.5	84.9	84.5	88.7	87.7	85.8	88.3	90.2	54.4	53.8	52.6	54.2	55.3

1 IT Sustainment work includes: help desk and desk-side support; implementing system
2 and security patches; applying fixes for applications, resolving application problems;
3 decommissioning or installing software applications or equipment; maintaining and
4 operating Hydro One's IT assets located at offices throughout the province and within the
5 data centres; data storage capacity and data storage management; and disaster recovery.

6
7 3rd Party Contract costs include amounts which are paid to third parties for software and
8 hardware licenses and annual maintenance fees.

9 10 **2.1 Base IT Sustainment Services**

11
12 The term "Base" IT Sustainment Services refers to those IT services outsourced to Inergi
13 and which are scheduled in the negotiated contract. The new outsourcing contract will
14 continue to refer to those same IT services.

15
16 Base IT services are discussed under the four categories below.

17 18 Application Maintenance

19
20 Application maintenance includes the work to maintain, address and fix matters
21 associated with approximately 875 business software applications (this includes core
22 business applications, desktop tools and specialty software) used by the various business
23 units across the Province. Within these applications there are business critical software
24 used in major functional areas, such as those shown in Table 3, which support business
25 processes across the enterprise.

26
27 Based on support levels established by IT and the respective business operations,
28 applications are managed via the ITIL (IT Infrastructure Library) - framework focusing

on Incident, Problem, and Change Management. Application incidents and user inquiries are logged, prioritized, and managed through to resolution.

Table 3
Strategic Information Technology Systems

IT Systems	Description
Desktop Applications	These include Microsoft Office XP and the Windows 7 and Office 2010 platforms (for example, Word, Excel, Access, and PowerPoint), e-mail, Internet browser, and various other applications such as anti-virus and directory functions.
SAP™	This is an integrated Enterprise Resource Planning, Business Intelligence, and Enterprise Asset Management application suite that provides Asset and Work Management, Purchasing and Supply Chain as well as Inventory Management functions. It also provides General Ledger, Accounts Receivable, Fixed Assets, Project Accounting, Payroll, Time Reporting, Reporting, Human Resources and Pension functions. Customer Information System (CIS) provides improved call center interactions with our customers, increased accuracy and timelines in our billing process, and improved ability to help our customers address their problems with up to date information.
Contact Centre Technology	This suite of applications enables contact centre operators to respond to customers (service requests, billing inquiries, information), including telephony interfaces and call centre technology and provides operators scheduling and service quality-monitoring functions.
Field Design Tool (ArcFM)	This is a geographic application that is used to design and modify customer connections to the electrical distribution system as part of the GIS suite of applications.

IT Systems	Description
Work Execution Tools	Work Execution Tools consists of a collection of applications which are used to plan, schedule, dispatch and report on field work completion. The applications are linked to ArcFM and SAP through the use of enterprise middleware.
Smart Meter Head End System and MDMR Interface	The billing system produces bills for customers through its integration with the IESO meter data management repository (MDMR) and the Smart Meter Infrastructure.
Computer Aided Design and Drafting (CADD)	Computer Aided Design and Drafting is a suite of tools that aid in the design, engineering and construction of Transmission, Distribution, and Network infrastructure.

1

2 Data Centre Services

3

4 Data centre services include the operations, maintenance, and management of hardware
 5 (servers, mainframe, storage area network and data storage devices), operating systems,
 6 associated applications and infrastructure located at the data centre facilities. This
 7 hardware is used to run enterprise business applications, noted above, that are critical to
 8 operating the business.

9

10 Data Centre service levels have been established to ensure the reliable operation of
 11 business applications and are based on system criticality. The system hardware is located
 12 at production and backup data centres, which have the required system redundancies
 13 including 24/7 monitoring. Hydro One utilizes the backup data centre facility as a disaster
 14 recovery site in the case it is unable to operate from its production data centre.

15

1 Distributed Server Sustainment

2
3 Distributed server sustainment includes the support services that maintain and operate the
4 application and file servers that are located at various Hydro One facilities across the
5 province. The servers are used to run business applications and administration systems
6 such as file sharing, e-mail exchange, web hosting and security monitoring systems. This
7 work is required to maintain the reliability of the business applications supporting
8 business operations.

9
10 Help Desk and Deskside Support

11
12 Help Desk and Deskside Support includes daily management and maintenance services
13 delivered to employees across the Province.

14
15 The support function is provided through two key service areas: the Help Desk which
16 provides centralized incident resolution by phone and through e-mail for all IT and
17 telecom service areas; and Deskside Support which provides physical desk side support
18 to fix hardware and software problems for laptops, desktops and rugged tablet computers.
19 Deskside Support includes the support for IT peripherals such as printers, plotters,
20 scanners and other equipment.

21
22 Deskside and Help Desk support is available to all users across the province and
23 assistance can be provided by telephone, remotely through the data network, or if
24 necessary through the use of Inergi field technicians. Effective and timely response
25 ensures the efficient operation of the technology infrastructure which enables Hydro One
26 staff to perform their work unimpeded.

1 Base IT Sustainment Costs Summary

2
3 In 2013 and 2014, costs decline year over year due to the scheduled price reduction in the
4 Inergi Outsourcing contract and the IT Sustainment savings realized for the CIS
5 replacement project. In 2015, there is a small but expected increase in cost as this is a
6 transition year in terms of the outsourcing contract. In 2016 and 2017, the new contract
7 savings will be realized thus reducing the costs. In 2018 and 2019, the normal growth in
8 work program will begin to offset the contractual savings.
9

10 **2.2 3rd Party Contracts**

11
12 3rd Party Contracts are the fees related to hardware maintenance, application software
13 license and maintenance fees that are paid to third party vendors for the IT applications
14 and infrastructure used by Hydro One.
15

16 License or maintenance agreements are usually subject to annual increases as part of the
17 contractual terms with the vendor. These fees are subject to annual audits by the third
18 party vendors to confirm the fees match the services provided.
19

20 In 2014 and 2015, contract costs increase due to an expected 15% increase in software
21 license fees and higher volumes when the Microsoft Enterprise contract is renewed in
22 November, 2014. Costs stabilize in 2016 through 2019.
23

24 **3.0 IT DEVELOPMENT OM&A**

25
26 Table 4 lists the expenditures driven by non-Capital IT projects and the OM&A portions
27 of capital projects.

1
2
3

Table 4
OM&A Development Expenditures
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Enhancements ¹	8.6	9.5	4.3	14.6	9.8	9.7	10.6	11.8	11.4	11.4	6.6	7.3	7.9	7.5	7.5
Upgrades	3.2	1.5	3.9	3.8	7.6	7.6	8.9	9.3	8.6	8.6	4.7	5.5	5.8	5.4	5.4
Impact of Capital Projects	0.1	0.0	0.0	0.0	3.6	2.4	2.1	2.6	1.9	1.7	1.1	1.0	1.2	0.9	0.8
Total	11.9	11.0	8.2	18.4	21.0	19.7	21.6	23.7	21.9	21.7	12.4	13.8	14.9	13.8	13.7

⁴ ¹ Customer Care work related to Regulatory Compliance and Service Enhancements moved to IT from Customer Service

⁵ Operations starting in 2013

3.1 Enhancements

Enhancements include required application, data and process changes to SAP and Non-SAP systems to meet legal/regulatory requirements as well as delivery of required business functionality to meet the objectives of both the lines of business and to enable the application rationalization strategy.

2012 had a reduced spend on enhancements due to a freeze on system changes as focus shifted to the implementation of the SAP Customer Information System Capital project. Costs for 2013 and 2014 include system stabilization work post SAP Customer Information System implementation and deferred system changes implementation from 2012. Also, starting in 2013, Customer Care work related to Regulatory Compliance and Service Enhancement moved from Customer Service Operations to IT. Enhancement costs for 2014 through 2019 resume for required application, data and process changes to SAP and Non-SAP systems to meet legal/regulatory requirements as well as ongoing delivery of required business functionality.

3.2 Upgrades

Hydro One utilizes approximately 875 business software applications in order to equip its employees to perform their work functions. The upgrade program provides the needed software vendors' releases, periodic version upgrades, and replacement of applications that are charged to OM&A as they do not meet the total capital threshold of \$2 million.

Applications are replaced or upgraded to ensure they remain compatible with current IT platforms and other interfacing applications. In this manner, vendor support is maintained to help fix breakdowns or other issues that may occur with the application.

1 Funding decisions are made based on software lifecycles, vendor schedules, reliability
2 requirements, and experience with similar initiatives/projects.

3
4 In 2014, costs increase due to deferral of the refresh program in the previous years.
5 These costs include refresh of iHub upgrade, Open text and Stream Serve that are
6 required for the SAP Customer Information System. 2015-2019 planned costs include
7 enhancement pack upgrades for modules of SAP, Trilliant Head-end system, enterprise
8 mobile platform as well as minor upgrades to several other enterprise applications and
9 infrastructure in order to keep them in a vendor-supported state. In 2016 and 2017, costs
10 include upgrades to GIS and Tivoli. Costs stabilize in 2018 and 2019.

11 12 **3.3 Impact of Capital Projects**

13
14 This program includes business process re-engineering costs such as training and change
15 management work efforts that are required to implement and train the line of business
16 personnel when new or revised IT applications are introduced. These costs are associated
17 with the IT capital projects discussed in Exhibit D1, Tab 3, Schedule 7.

18
19 In accordance with Hydro One's accounting practices, the cost associated with this
20 implementation work (training and business process change) is not capitalized. The
21 implementation work ensures each new business application or upgrade is properly
22 introduced and has the necessary user understanding and support.

23 24 **4.0 BUSINESS TELECOM**

25
26 Business Telecom provides the data and voice telecommunications services, network
27 operations management and field service repairs which are required for the company to
28 operate from its province-wide locations. The business telecommunications data network

- 1 is comprised of a mixture of company owned and leased facilities and equipment. Costs
- 2 incurred in this area are primarily costs for third party services.

1
2
3

Table 5
Business Telecom OM&A Expenditures
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Operations and Carrier Management	5.0	5.5	5.8	7.5	7.4	7.5	7.9	8.0	8.2	8.5	3.4	3.6	3.6	3.6	3.6
Field Services	1.9	2.9	2.7	2.5	2.3	1.8	1.8	1.8	1.8	1.8	0.8	0.8	0.8	0.8	0.8
Voice and Data Network Services	10.0	10.1	9.9	9.5	8.8	8.7	8.7	8.6	8.5	8.4	3.9	3.9	3.9	3.9	3.9
Total	16.9	18.5	18.4	19.5	18.5	18.0	18.4	18.4	18.4	18.6	8.1	8.3	8.3	8.3	8.3

4.1 Operations and Carrier Management

Operations and Carrier Management costs relate to telecommunications management services provided by Hydro One Telecom (HOT) to provide telecommunications monitoring and network operations for the power system and the business operations of Hydro One. Costs reflected in Operations and Carrier Management reflect the contracted costs with HOT to provide Hydro One with telecommunication management services and operations oversight and control for its business operations. The affiliate agreement is found in Exhibit A, Tab 11, Schedule 3.

In 2011, an independent industry review was conducted which concluded that “the HOT Network Operation Center is performing networking monitoring functions at a more efficient level than comparable Canadian utilities’ 24x7 telecommunication operation.” The study also reaffirmed there are unique requirements for operating the telecommunication system of an electric utility which are not easily delivered through a third party non-electric utility carrier. The assessment process included looking at the service level agreements and statements of work for services to be covered in the regulatory review period. The report considered the revised services which will be performed in the years covered and the costs to be charged by Hydro One Telecom in providing those services.

The study states: “Cost of services increases to HONI since 2002 have been less than if the network monitoring function had remained within HONI. HOT continues to achieve efficiency gains relative to its peer group of utilities, and has now achieved the status of most efficient in performing the network monitoring function. The differentiating factor for the HONI operations as compared to the benchmarked utilities is that they have found a way to interject a commercial telecommunication approach with a solid power system

1 telecommunication operation to bring a successful and cost effective solution to both
2 businesses.”

3
4 The report reaffirmed that Hydro One obtains cost and operations benefit through its
5 relationship with Hydro One Telecom.

6
7 Work performed by Hydro One Telecom includes operating and monitoring the business
8 telecom and data networks, management of security firewalls, security patching, security
9 event monitoring, management of network interfaces with third parties, managing data
10 and voice system problems, obtaining and managing fibre services from third party
11 vendors, and directing other telecom service providers and vendors to change, maintain,
12 and restore the networks as required. On an ongoing basis, this function includes
13 managing third party supplier contracts as well as analyzing and processing bill payments
14 to 3rd party common carriers and other telecom service providers.

15
16 Telecom service firms who provide fibre and network access include common carriers
17 such as Bell Canada, Telus and MTS/Allstream. These companies lease telecom data and
18 voice circuits to Hydro One at competitive market rates. The management of these
19 services requires the contracted services of Hydro One Telecom to proactively liaise with
20 the many carriers in Ontario and other service suppliers.

21
22 Operations and Carrier Management also provides oversight of the Bell Field Services
23 contract as described below.

24
25 In 2013, there is an increase in cost attributed to increased work related to network and
26 application security event management and these costs stabilize in 2014 through 2019.
27 Over these years, to address a heightened focus on information and cyber security, HOT
28 will be playing a critical role in security event monitoring for Hydro One’s critical

1 networks and information systems. They will use security event detection tools, and the
2 related process and procedures, to monitor, analyze, detect and alert based on trend
3 analysis. This investment serves to enhance the existing security monitoring and will
4 provide a more robust monitoring, escalation and management structure.

5 6 **4.2 Field Services**

7
8 Field Services includes the maintenance and repair of voice and data telecom equipment.
9 Field Services also includes the handling of connection changes for moves, additions,
10 changes, and deletions (“MACDs”). In 2013, an RFP was issued for Field Services and
11 awarded to Bell Canada. As a result, Hydro One realized a reduction in rates for the
12 contracted managed service. The year-over-year cost for Field Services has decreased
13 due to the reduction in move/add/changes to voice and data.

14
15 The agreement calls for Bell Canada technicians to be dispatched across the province to
16 resolve any telecommunications issues. These include MACDs and preventive
17 maintenance at any of the Hydro One sites across the province. Selected Bell Canada
18 staff has been specifically trained to work at the Hydro One sites and facilities in order to
19 work safely in a high voltage environment.

20
21 Costs stabilize in 2015 through 2019 based on expected moderate facilities changes and
22 non-capital refresh work.

23 24 **4.3 Voice Services and Data Network Services**

25
26 Voice Services investments consist of payments made to common carriers and vendors to
27 use and lease voice circuits and equipment. Rates charged by common carriers are
28 competitive. Voice Services include monthly charges, usage fees and equipment rentals

1 for voice grade business telecom (local and long distance). The local voice service rates
2 are regulated under the CRTC. Long distance rates were secured using a competitive bid
3 process. Annual costs are volumetric and usage-based.

4
5 Data Network Services investments consist of payments made to third party common
6 carriers such as Bell, MTS/Allstream, and Telus to lease data network circuits and
7 equipment at market rates. The data network is used to connect servers and computers
8 across the province for software applications.

9
10 Hydro One continues to monitor and upgrade bandwidth as applications are deployed to
11 field offices in order to support business processes and business requirements.

12
13 While network capacity grows each year to accommodate sharing more data among more
14 functions, the Company has maintained cost control on data network components.
15 Downward cost pressure is maintained through investments in efficient up-to-date IT
16 platforms.

17
18 In 2015 to 2019 the costs for Voice and Data Network Services decrease due to contract
19 negotiations with circuit carriers.

20 21 **5.0 IT MANAGEMENT & PROJECT CONTROL**

22
23 To manage the overall IT program and as the enabler and controller of IT projects, IT
24 Management and Project Control develops and implements: IT strategies; policies and
25 processes; IT architectural standards for application interoperability, infrastructure
26 capacity, network security, regulatory compliance; and IT governance. Within the scope
27 of these costs is work associated with hardware procurement, training, detailing vendor
28 responsibilities, architecture development, and research services that are required to

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Exhibit C1

Tab 2

Schedule 10

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- 1 match IT solutions to known business needs for enabling business efficiencies. Work
- 2 performed also includes keeping current on industry trends, product innovations,
- 3 technology changes in infrastructure and applications, while researching industry best
- 4 practices for future investments.

1 Table 6 lists the associated costs for IT Management and for Project Support and Control.

2

3

4

5

Table 6
IT Management & Project Control Expenditures
(\$ Millions)

Description	Historical Years				Bridge Year	Test Years					DX Allocation				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
IT Management	18.6	18.0	17.8	20.1	22.2	22.1	21.5	20.9	20.9	20.6	9.5	9.3	9.0	9.0	8.9
Project Support and Control	1.5	1.5	1.2	1.5	2.0	2.1	2.1	2.1	2.1	2.1	1.3	1.3	1.3	1.3	1.3
Total	20.1	19.5	19.0	21.6	24.2	24.2	23.6	23.0	23.0	22.7	10.8	10.6	10.3	10.3	10.2

5.1 IT Management

IT Management includes the cost to plan, coordinate and manage the extensive IT infrastructure and to manage the IT outsourced services. IT Management also performs work covered through needs assessment, solution architecture development, and service delivery to the lines of business.

Projects or programs that IT Management will manage or deliver include: lifecycle refresh and infrastructure upgrades; application rationalization; data architecture and data management; evolving business-technology roadmaps; ongoing security requirements and enhancements; negotiation of contracts; supporting hardware purchases for major projects and for growth; continuously improving the outsourced services; and implementation of more self-service and automation for end users.

In 2012 and 2013, costs decreased primarily due to recovery of costs from the SAP Customer Information System Capital project. In 2014, the primary reasons for the increases in cost are due to incremental resources needed to support the expanding functions of the enterprise systems such as Mobile IT, SAP, and GIS. To counter-balance this increase in ongoing work effort from 2014 to 2019 costs will be reduced by simplification of the Information Systems environment through application rationalization and creating streamlined support processes.

5.2 Project Support and Control

Project Support and Control provides standard project management services for the delivery of any and all projects impacting information systems. It provides: project management processes, templates and tools; project governance and controls of scope,

1 quality, effort, risk and schedule; change management processes to address project-
2 related changes affecting organizational culture, business processes, organization and job
3 design; training to both project staff and to the users of the systems and services being
4 delivered; and transition of projects into sustainment and ultimate closure. In 2015-2019,
5 no increase in costs are necessary for the project management services to support the
6 required enhancements and upgrades outlined in section 3.0

COMMON CORPORATE COSTS OM&A – COST OF SALES – EXTERNAL WORK

1.0 OVERVIEW

Hydro One Distribution directly tracks cost of sales for unregulated revenues, which includes contestable work such as: Lines - new connections and service upgrades; storm damage work; distribution generation studies; Ministry of Transportation work; and Forestry – vegetation work. These are competitive services requested by customers and are individually priced. Exhibit E1, Tab 1, Schedule 2 describes the categories of external business and associated revenues over the 2010 to 2019 period, which also relate to the level of external costs.

The cost of sales for the historical, bridge and test years (2010 to 2019) is provided below.

Table 1
Cost of Sales – Distribution External Work (\$ Millions)

	Historical Years				Bridge Year	Test Years				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
New Connects & Service Upgrades	0.3	0.2	0.3	1.2	0.2	0.3	0.3	0.3	0.3	0.3
Contestable Work	4.3	4.1	16.7	2.6	0.8	0.7	0.7	0.8	0.8	0.8
Other Cost of Sales	0.8	1.5	1.5	2.1	1.0	1.0	1.1	1.1	1.1	1.1
Total	5.4	5.8	18.5	5.9	2.0	2.0	2.1	2.2	2.2	2.2

1 The costing of external work is calculated the same way as for internal work as described
2 in Exhibit C1, Tab 4, Schedule 1.

3 4 **2.0 NEW CONNECTIONS AND SERVICE UPGRADES**

5
6 Costs associated with new connections and service upgrade activities are expected to be
7 relatively consistent for the test years as shown in Table 1 above. The stability of the
8 forecast is driven by the current economic climate, which is tempering growth in this
9 area, as well as Hydro One Distribution's focus on the growing core distribution work
10 program.

11 12 **3.0 CONTESTABLE WORK**

13
14 Costs associated with contestable work is expected to remain stable as shown in Table 1
15 above. This work includes activities such as Ministry of Transportation-related work and
16 the provision of health and safety training to third parties.

17 18 **4.0 OTHER COSTS OF SALES**

19
20 In the test years, Hydro One Distribution is expected to incur and recover costs of
21 approximately \$1.1 million, for the provision of services to other Hydro One entities.
22 Hydro One Distribution will not be adding a markup for providing these services to other
23 Hydro One entities. The revenues for which this cost will be incurred can be seen in
24 Exhibit E1, Tab 1, Schedule 2.

PROPERTY TAXES

1.0 SUMMARY OF TAXES AND FEES OTHER THAN INCOME TAX

Table 1
(\$ Millions)

	Historic				Bridge	Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Property	3.8	3.8	3.6	3.7	3.8	3.9	4.1	4.2	4.4	4.6
Indemnity Payment	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Rights Payment	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Total	4.6	4.6	4.5	4.4	4.6	4.7	4.9	5.0	5.2	5.4

2.0 PROPERTY TAX

Hydro One Networks Inc. is responsible for the payment of property taxes similar to every other land owner within the province of Ontario. Property taxes for Hydro One are regulated under the *Electricity Act 1998*, the *Municipal Act 2001*, and the *Assessment Act 1990*. Property taxes are paid on company-owned distribution lands and buildings including service centre sites, distribution transformer stations, and distribution lines. Property tax payments are made to over 400 municipalities each year by Hydro One Networks Inc.

A summary of annual distribution property taxes (including property proxy taxes) is presented in Table 2.

Table 2
(\$ Millions)

	Historic				Bridge	Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Property	3.8	3.8	3.6	3.7	3.8	3.9	4.1	4.2	4.4	4.6

The total assessed property values are assigned by the Municipal Property Assessment Corporation and are updated utilizing the same schedule as the rest of the province. Except for distribution transformer stations, all distribution properties owned by Hydro One Networks Inc. are assessed using a current value assessment method – the valuation method used for other property owners within the province.

Distribution transformer stations buildings are assessed at a statutory rate of \$86.11 per square meter, per the *Assessment Act* R.S.O. 1990, Chapter A31, Section 19. Distribution transformer stations are subject to additional property tax payments, called property proxy taxes, payable to the Minister of Finance under O. Reg. 423/11 of the *Electricity Act, 1998*. Property proxy taxes are calculated for each distribution transformer station building owned by Hydro One Networks Inc. and total \$0.1 million per year and are included in the property tax amount.

Notices of Assessment are received and reviewed for accurate valuation and tax classification each year. Any incorrect classes and overvaluations are appealed through the Municipal Property Assessment Corporation, and/or the Assessment Review Board.

Property taxes are increasing on an annual basis due to financial pressures on municipalities and school boards.

1 **3.0 INDEMNITY PAYMENT TO PROVINCE**

2
3 The Ontario Electricity Financial Corporation (“OEFC”) has indemnified Hydro One
4 with respect to the failure of any transfer orders in 1999. (Transfer orders were used to
5 establish the company as one of the successor companies to the former Ontario Hydro.)
6

7 The OEFC indemnification covers any defects in the transfer orders encompassing the
8 following areas:
9

- 10 1. the transfer of any asset, right, thing, or any interest related to the business;
11
12 2. some adverse claims or interests of third parties or based on property title deficiencies
13 arising from the transfer orders, except for some claims and rights of the Crown, and
14
15 3. claims related to any equity account previously referred to in the financial statements
16 of Ontario Hydro including amounts relating to any judgement, settlement or payment
17 in connection with litigation initiated by certain utilities commissions.
18

19 The Province has unconditionally and irrevocably guaranteed to Hydro One the payment
20 of all amounts owing by OEFC under its indemnity.
21

22 Hydro One Networks Inc. pays an annual fee of \$5.0 million to the OEFC for the
23 aforementioned indemnification. As the transfer order primarily relates to land assets, the
24 amount allocated to Hydro One Distribution is based on the proportion of Hydro One
25 Distribution land assets in relation to the total land assets of Hydro One Networks Inc.
26 This results in \$0.5 million of the \$5.0 million total being allocated to Hydro One
27 Distribution.
28

4.0 RIGHTS PAYMENT TO OTHER ENTITIES

Through agreements or permits (approximately 950 in total), Hydro One Distribution line facilities cross and/or occupy properties owned by railway companies and/or governmental bodies. Per the terms of the individual agreements, Hydro One Networks Inc. pays annual fees to the railway companies and the government entities for the right to cross and/or occupy their properties.

A financial summary of the annual right payment fees is presented in Table 3, below:

Table 3
(\$ Millions)

	Historic				Bridge	Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Rights Payments	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3

CORPORATE STAFFING

1.0 OVERVIEW

Hydro One continues to face the prospect of a scarcity of skilled and professional staff to operate, sustain and develop its transmission and distribution systems at a time in which a greater number of our employees are reaching eligibility and are in fact, opting to retire. Hydro One's greatest corporate risk with respect to its human resources continues to be an aging workforce and a world-wide scarcity of core skills in the electricity industry, in a highly competitive labour market.

This issue and associated risks are not unique to Hydro One, but apply to the Canadian electricity sector as a whole. In the Canadian electricity industry, the Power in Motion, 2011 Labour Market Information (LMI) Study, states “Between 2011 and 2016, Canada’s electricity and renewable energy industry will need to recruit 45,000 new employees – almost half of the starting workforce, and more than twice the number recruited in the last five years. Of these new employees, 23,000 will be in critical occupations that are specific to the electricity industry. Many will replace a wave of specialized and experienced retirees”.

EMPLOYEE DEMOGRAPHICS

“Electricity industry workforce dynamics are notably skewed towards a high and rising number of retirements that will run well above other industries” (Source: *Power in Motion - 2011 LMI Study*).

Table 1 illustrates the trend of an increasing eligibility rate for retirement and an increase in actual uptake in retirement for Hydro One employees.

Table 1
Annual Retirements

Date	# of Networks staff eligible to retire	# of Retirements	% of eligible staff
December 31, 2009	1,000	105	10.5
December 31, 2010	1,300	137	10.5
December 31, 2011	1,150	166	14.4
December 31, 2012	1,158	192	16.5
December 31, 2013	919	253	28

Table 2 illustrates the forecasted number of eligible retirements up to 2019.

Table 2
Annual Retirement Forecast

Date	# of Networks staff eligible to retire	Retirements Forecasted
2014	1,085	194
2015	1,322	217
2016	1,536	179
2017	1,768	176
2018	1,903	198
2019	2,036	278

To address this demographic challenge, Hydro One has been proactive by implementing a number of initiatives. These initiatives include implementation of a new People Strategy and the continuation of a staffing strategy for the recruitment and training of new staff. These initiatives are discussed in the sections which follow.

1 **2.0 PEOPLE STRATEGY**

2
3 The Hydro One Vision is to be an innovative and trusted company, delivering electricity
4 safely, reliably and efficiently to create value for our customers. To accomplish this, we
5 require a stable workforce, top talent and highly engaged employees. The newly created
6 People Strategy provides Hydro One's management team with a framework to help guide
7 decision-making, inform policy and program development, and define practices,
8 procedures, systems and collective agreements, all with a view to ensuring they are
9 aligned, and consistent with, those of a high-performing corporate culture.

10
11 **Employee Engagement and Craft of Management**

12 Two key initiatives in support of the People Strategy are employee engagement and the
13 *Craft of Management*.

14
15 Employee engagement, which is a key differentiator in terms of business success, is the
16 extent to which employees commit to someone or something in their organization. It can
17 influence how hard they work and how long they stay as a result of that commitment.
18 Engaged employees provide greater discretionary effort which often leads to increased
19 productivity and other positive business outcomes. Hydro One continues to monitor and
20 make improvements to employee engagement.

21
22 Since 2010, Hydro One has been active in implementing the *Craft of Management*
23 program throughout the managerial levels. The *Craft of Management* is designed to
24 introduce managers to a comprehensive and rigorous accountability based performance
25 management system – a system that is based on clarity of accountabilities and authorities.
26 The *Craft of Management* will lead to structures which better reflect the needs of the
27 work and the accountabilities associated with the effective performance of that work,
28 vertically and laterally within the organization. *Craft of Management* and Engagement

1 are linked. Good managerial leadership – combined with an organization structure
2 suitable for the needs of the work, with an effective process to allow and encourage
3 employees to do that work, together will drive engagement.

4 5 **2.1 Staffing Strategy**

6
7 Hydro One has an integrated workforce for its transmission and distribution businesses.
8 This allows Hydro One to take advantage of economies of scale and efficiencies that
9 would not be available through separate transmission and distribution operations.
10 Examples would include a centralized control centre, centralized fleet operations, and an
11 integrated asset management strategy.

12
13 Hydro One utilizes a work-based approach to staffing, whereby the Company resources
14 according to work programs rather than plans the work around the number of internal
15 resources available. To address the fluctuating and seasonal nature of work programs,
16 the Company maintains as much flexibility as possible by utilizing a variety of labour
17 resources, including regular, temporary, hiring hall and contract staff.

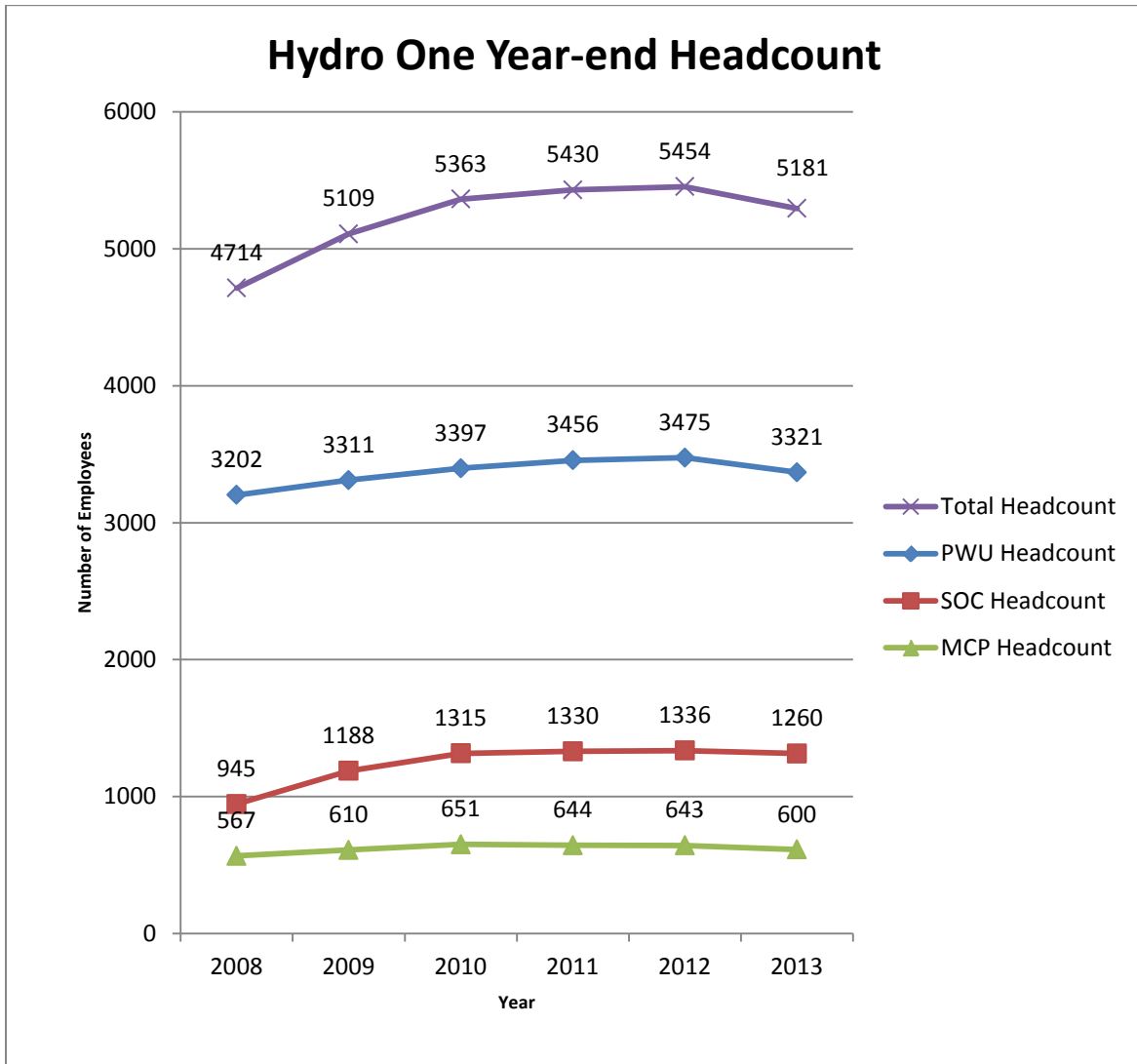
18
19 Matching staff to dynamic work programs requires a rigorous approach to staff planning.
20 The company must consider the amount of work to be done, the nature of the work and
21 the skills required, while at the same time looking for the most cost effective means of
22 acquiring those skills, within the constraints of the collective agreements. Demographic
23 and skills analyses are conducted annually to ensure that Hydro One retains the
24 appropriate talent in the present and is positioned properly in the market to attract the
25 talent needed in the future. In order to more accurately forecast retirements, human
26 resources has developed a retirement forecasting model that will allow for more accurate
27 data especially in key hiring classifications.

1 Progress has been made in attaining the optimal number and mix of staff required to
2 complete the Company's increasing work programs. However, increases in Hydro One's
3 Transmission and Distribution programs will result in additional challenges, given the
4 tight competition for labour and power system professionals. It is essential that the
5 Company hires well in advance of expected retirements due to the long learning curves
6 required for competent performance of Hydro One's highly skilled jobs.

7
8 **HEADCOUNT**
9

10 Hydro One recognizes the concerns raised in previous Decisions with respect to
11 increasing headcount. Increases to regular headcount are tightly managed. Currently, all
12 requests for additional regular employees must be approved by the Chief Executive
13 Officer. Table 3 shows the year end headcount from 2008 to 2013 has risen by
14 approximately 10%. Over the same time period, Hydro One's work program has
15 increased by 19.5%. Furthermore, regular headcount is trending downwards with 2013
16 year end regular headcount less than year end 2010 levels. The business plan covering
17 2014-19 shows that regular headcount will continue to decrease until we reach 5000
18 employees.

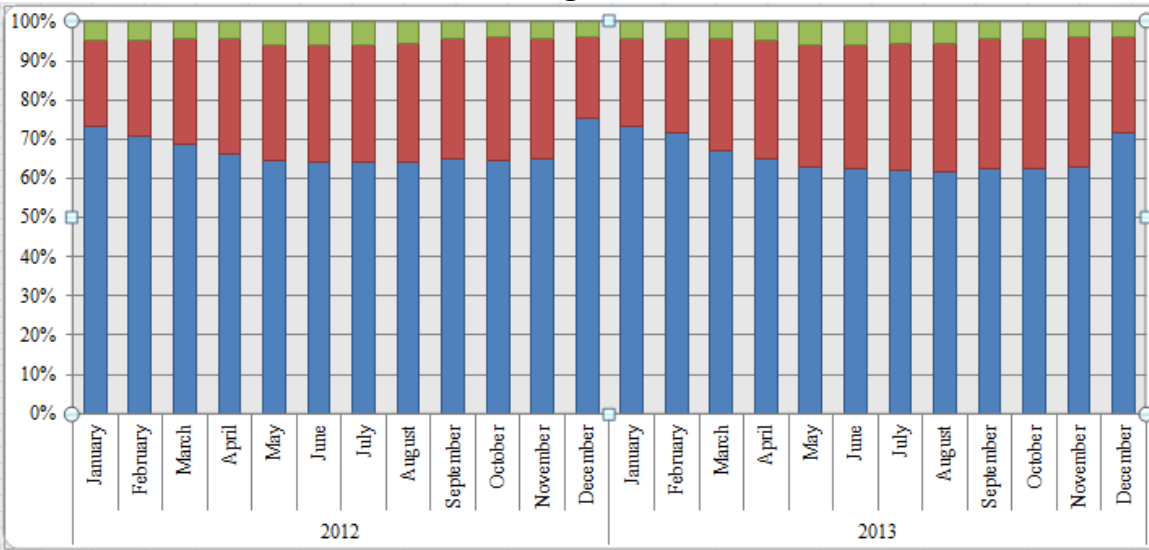
Table 3
Annual Year-end Headcount



In order to complete the rising work program with fewer regular staff, Hydro One uses non-regular resources (Power Workers Union Hiring Hall, temporary employees, Consultants/Contractors). Table 4 illustrates Hydro One employs a large number of non-regular staff throughout the year to assist with its various work programs and match fluctuating requirements from month to month.

1
2

Table 4
Staffing Profile



3
4

3.0 STAFFING

5
6
7
8
9

Critical to the People Strategy and ultimately to the success of Hydro One in meeting our customer needs, is a comprehensive and robust staffing strategy.

10
11
12
13
14
15
16

To help address the significant wave of retirements in critical trades, technical and engineering groups, Hydro One continues to hire, albeit at a lesser level than previous years, into its Apprentice and Graduate Training Programs. Since January 1, 2004, 440 graduate trainees have been hired through the Company's on-campus recruitment program. New Graduates bring not only much needed skills but also new perspectives and fresh energy to the work of Hydro One.

17
18
19

Hydro One also continues its recruitment into trades apprenticeship and technical training programs and has partnered with universities and colleges to develop curricula that educate students in areas where the Company faces a shortage of skilled professionals

1 and trades people. Hydro One has taken a leadership role in support for power system
2 engineering programs, assisting in developing on-line power system engineering
3 programs and providing scholarships to encourage enrolment in key areas where the
4 Company faces a labour shortage. Hydro One received a Partnership Award which
5 recognizes the very successful Hydro One College Consortium. Hydro One partnered
6 with four community colleges and provides support for scholarships, curriculum
7 development, co-op placements and equipment to educate the next generation of energy
8 professionals. In 2013, one of the College Consortium members launched an innovative
9 Women in Electrical Engineering Technology (WEET) program. Hydro One's role in the
10 WEET program will be to provide work terms for the students between their first and
11 second year. This will provide a significant cohort of women on-the-job experience in a
12 utility, and provide them with skills to assist in their employment upon graduation.

13
14 In addition, Hydro One, with the clear support of the PWU and the Society of Energy
15 Professionals, has become a corporate participant in Career Bridge – a national, private-
16 sector, non-profit initiative, which aims to provide internationally qualified professionals
17 with Canadian work experience in their field of expertise in order to gain entry into the
18 permanent workforce.

19
20 Hydro One will also continue its support of the University and College Co-Op Education
21 Program, hiring approximately 300 co-op students a year. This is a mutually beneficial
22 process in that Hydro One gains bright, skilled workers trained in the latest theories and
23 practices for four-month or eight-month work-terms, while the students gain practical and
24 relevant work experience that can be used to develop their future careers. Hydro One has
25 also found that the Co-op programs have proven a rich source of talented candidates for
26 Graduate Trainee positions by offering the Company an opportunity to assess the
27 student's "fit" and long-term potential with the company. Once hired Hydro One's

1 experience shows that these former co-op students have a shorter learning curve than
2 other new hires with no previous Hydro One experience.

3 External recruitment into entry level new graduate or apprentice positions has been
4 successful. However, Hydro One has had some difficulty attracting more experienced
5 external candidates into higher rated technical, engineering and management positions.
6 For these positions, factors such as compensation and head office location sometimes act
7 as barriers to successful recruitment.

8
9 Hydro One believes a more sustainable and longer term strategy to deal with large scale
10 retirements, is to invest in programs where knowledge transfer is the key objective.
11 Programs such as New Grad and Apprentice Hiring, and knowledge documentation all
12 contribute to ensuring knowledge is transferred to more junior staff.

13 14 **4.0 TRAINING**

15
16 To address the demographic issue, it is not enough to only hire new staff. Hydro One is
17 active in developing current staff in order to enhance and/or develop new skills.

18 19 **4.1 Trades and Technical Training**

20
21 Hydro One provides a comprehensive selection of trades and technical training, designed
22 to target the specific needs of field staff in relation to the work requirements of the asset
23 base.

24 25 **4.2 Leadership and Senior Management Development**

26
27 The primary objective of this program is to ensure that Hydro One has a systematic
28 management development framework. This helps ensure the Company retains a

1 competitive advantage by developing, maintaining, and enhancing those management
2 competencies deemed to be essential.

4 **4.3 Succession Planning**

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.

11 Other human resources productivity initiatives are described in Exhibit C1, Tab 3,
12 Schedule 2.

14 **5.0 HYDRO ONE'S LABOUR PROFILE**

16 As part of Hydro One's strategy to efficiently and economically manage its fluctuating
17 work requirements, Hydro One utilizes four broad groups of staff: regular employees,
18 temporary employees, casual workers (the Building Trade Unions -BTU's under
19 agreements with the Electrical Power Sector Construction Association – EPSCA, the
20 Labourers' International Union of North America - LIUNA, the Canadian Union of
21 Skilled Workers - CUSW, and Power Workers Union - PWU Hiring Hall employees)
22 and contract staff, discussed below.

24 **5.1 Regular Employees**

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

- 1 i) PWU represented staff: The PWU is an industrial union that represents the trades,
2 operators, technicians and clerical workers, totaling roughly two thirds of Hydro One
3 regular staff. They perform line work, forestry, electrical, mechanical, protection and
4 control, meter reading, stock keeping, system operation, technical and
5 clerical/administrative work.
- 6 ii) Society represented staff: The Society is a professional union that represents
7 engineers, technical, administrative and supervisory staff, totaling about one quarter
8 of regular staff. They perform engineering, high level technical and administrative
9 work as well as supervisory functions.
- 10 iii) Management staff, who are excluded from representation because they carry out
11 managerial duties or work on confidential labour relations matters or legal matters.

12

13 **5.2 Temporary Employees**

14

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

17

18 **5.3 Casual Workers**

19

20 Although the PWU does perform some construction work, the majority is performed by
21 the PWU Hiring Hall, the Building Trades Unions (under agreements with EPSCA), and
22 members of the Canadian Union of Skilled Workers (CUSW).

- 23
- 24 i) Hiring Hall Employees (PWU) are utilized to meet fluctuating work demands,
25 performing primarily supplemental construction and maintenance work on the
26 distribution system. Non-recurring work peaks and special projects are resourced
27 through the hiring hall.

1 ii) Fifteen construction BTUs supply a contingent workforce through their hiring halls,
2 negotiating their collective agreements with EPSCA. These represent the
3 construction trades employed by Hydro One, with the exception of those represented
4 by the CUSW.

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

14 15 **5.4 Contract Staff**

16
17 Contract staff is individuals engaged as independent contractors, not on the Corporation's
18 payroll. Contract staff is retained for their particular skill sets on projects, or to perform
19 other work that is not of an ongoing nature. They are engaged at Hydro One for varying
20 amounts of time and paid varying amounts commensurate with their skill sets and the
21 market rate for that skill. Contract staff is tracked by work programs or activities and not
22 by headcount. Where applicable, the procurement of contract staff is governed by the
23 terms of the collective agreements between the Corporation and its respective unions.

24 25 **6.0 SUMMARY**

26
27 Attracting, motivating and retaining the right people is key to Hydro One's success.
28 Despite the Company's efforts to ensure that it has an adequate supply of labour, it

1 continues to face staffing challenges. Hydro One will continue to utilize a mix of regular,
2 non-regular and contract staff in order to maintain the necessary flexibility to respond to
3 this increased workload.

4 In an industry with aging demographics and a highly competitive labour market, Hydro
5 One needs to be positioned as an attractive employer if it is to succeed in recruiting and
6 retaining staff with the requisite skills. To do so, it must provide challenging and
7 rewarding job opportunities and a competitive compensation package. Hydro One
8 believes its staffing strategy will allow it the flexibility to respond effectively and
9 efficiently to any scenario that will arise over the test years.

COMPENSATION, WAGES, BENEFITS

1.0 INTRODUCTION

In previous Board decisions, the Board has expressed concerns with rising compensation levels at Hydro One. In a 2006 Board Decision, Hydro One was directed to conduct a total compensation study and in a subsequent decision, the Board directed that the study be updated. At the first stakeholder session for this filing a stakeholder enquired as to whether Hydro One would be updating the compensation study. In response to this request, Hydro One initiated another study to update the two previous studies. In total, three total compensation studies have been conducted and the results show that Hydro One has succeeded in lowering total employee compensation as compared to market median. The results of this Compensation Cost Benchmarking Study are detailed later in this exhibit as Attachment 1.

While lowering compensation cost relative to market median is desirable from a rate payer point of view, the fact remains, that Hydro One must attract, and engage a highly skilled workforce, in the face of an aging workforce and worldwide competition for similar skills. Coupled with the fact that Hydro One is heavily unionized and Hydro One was created with legacy collective agreements only adds to the challenge of further reducing compensation costs.

Despite these challenges, Hydro One has been successful in balancing the competing pressures of reducing compensation costs relative to market median at the same time as attracting and maintaining an engaged workforce. Ultimately, the rate payers benefit from the quality, expertise and reliability of Hydro One employees.

2.0 TOTAL COMPENSATION STUDIES

In EB-2006-0501, the Board directed Hydro One to file a total compensation study that “will provide useful and reliable information concerning Hydro One’s compensation costs, and how they compare to those of other regulated transmission and/or distribution utilities in North America”. Following stakeholder sessions to obtain input on how this study would be conducted, Mercer undertook a Compensation Cost Benchmarking Study (the “2008 Study”) and the results were filed in EB-2008-0272.

In EB 2010 -0002, the Board directed Hydro One “to revisit its compensation cost benchmarking study in an effort to more appropriately compare compensation costs to those of other regulated transmission and/or distribution utilities in North America. Further stakeholder sessions took place and Mercer once again conducted a total compensation study (the “2011 Study”) that was filed in EB-2012-0031.

Responding to a stakeholder request for an updated study in this current application, Hydro One requested Mercer to conduct another study (the “2013 Study”).

Table One compares the study results for all three studies.

Table 1
Mercer Compensation Benchmarking Study Results vs. Market Median
Total Compensation

Employee Group	2013 Survey Results	2011 Survey Results	2008 Survey Results	Total Change from 2008 to 2013
Management	-1%	-17%	-1%	0%
Society	9%	5%	5%	4%
PWU	12%	18%	21%	-9%
Overall	10%	13%	17%	-7%

The 2013 study findings show that on an overall weighted average, Hydro One is positioned approximately 10% above market median. This is an improvement relative to the 2008 Mercer study where Hydro One's overall weighted average was found to be 17% above market median. Mercer stated the shift towards market median was notable, especially given the peer group, like Hydro One, had worked to minimize labour costs through the substantial economic downturn which began in 2008. In other words, Hydro One improved its standing against others in the peer group who were also attempting to reduce compensation costs.

For the individual groups, Hydro One management classifications surveyed were found to be 1% below market median. Compared to the 2011 study, this shows that non-represented compensation has moved toward market median. The 2011 study result was mainly due to the impact of a two year wage freeze on non-represented compensation. The 2013 study results would indicate that non-represented classifications are closer to the desired non-represented compensation policy of being at the 50th percentile. Professionals (Society of Energy Professionals – “the Society”) classifications were found to be 9% above market median. Power Workers' Union (PWU) represented classifications were found to be 12% above market median, a significant improvement from the 2008 result of 21% above market median reflecting the increased use of hiring

1 hall staff and the increased pension contributions negotiated as part of the new collective
2 agreement.

3 4 **3.0 THE UNIONIZED ENVIRONMENT**

5
6 Approximately 90% of the Hydro One work force is unionized. Hydro One has collective
7 agreements with the Power Workers' Union (PWU), The Society of Energy Professionals
8 (The Society), the Canadian Union of Skilled Workers (CUSW), and each of the 15
9 Building Trade Unions (BTUs) (via EPSCA).

10
11 The collective agreements establish the terms and conditions of the employment
12 relationship for a fixed period of time. It is critical to understand that Hydro One
13 inherited collective agreements from Ontario Hydro which established terms of
14 employment. These legacy collective agreements established a 'floor' upon which future
15 negotiations were based. While legacy collective agreements continue to strongly
16 influence current Hydro One collective agreements, Hydro One has done much to change
17 the status quo. Hydro One has been successful in incrementally reducing costs and/or
18 increasing productivity through collective bargaining. Obtaining dramatic compensation
19 reductions in the environment facing Hydro One is unrealistic.

20
21 Collective Agreements are legal contracts. In labour agreements, more so than
22 commercial contracts, parties must also consider their longer term relationship. Hydro
23 One's Human Resources strategy is to negotiate fair and reasonable collective
24 agreements to foster and promote healthy union-management relationships.

4.0 COLLECTIVE BARGAINING

4.1 PWU

The PWU represents over 70% of Hydro One employees. The PWU is an industrial union that represents the trades, controllers, technicians and clerical workers. Its members perform line work, forestry, electrical, mechanical, protection and control, meter reading, stock keeping, system operation, technical and clerical/administrative work.

An attempt by Hydro One to achieve significant cost reductions in wages, benefits and pension would likely result in a strike. The last PWU strike was in 1985 and lasted 12 days. It was handled by placing management and Society-represented staff in key functions to maintain operations/service to the extent possible. However, as a result of numerous downsizing programs, and reorganization of work, there is fewer management staff available today with the requisite skills and experience to occupy key PWU positions during a strike. Furthermore, unlike other industries, Hydro One does not have a product that can be stockpiled. As a result, the Company would be unable to continue operations for a sustained period of time during a PWU strike.

Rather than risk jeopardizing the supply of reliable electricity, the company has sought to achieve overall cost reductions by negotiating increased management flexibility to run the operations, as opposed to wide scale reductions in wages, benefits and pensions.

4.2 The Society of Energy Professionals

The Society represents approximately 20% of Hydro One employees. Society-represented staff performs engineering, high level technical and administrative work as well as

1 supervisory functions. The majority of the Society-represented employees in Hydro One
2 have either post-secondary education (university degrees) and/or post-graduate education.
3 These include graduate engineers, finance and telecommunication specialists.

4
5 In 2005, the Society initiated a fifteen week strike in response to Hydro One's desire to
6 reduce wages and benefits and increase hours of work for new employees. Hydro One
7 was requested by the Shareholders to enter into mediation-arbitration to end the strike.
8 The arbitration award resulted in some cost savings for future hires, highlighted with less
9 costly pension provisions for new Society employees.

10 11 **5.0 COLLECTIVE BARGAINING**

12
13 The collective bargaining relationships at Hydro One are very complex and sophisticated.
14 Hydro One and the bargaining agents with whom the Company negotiate are
15 professionals and very seasoned in the area of collective bargaining. Hydro One has been
16 able to achieve reasonable settlements with incremental cost reductions and increased
17 flexibility in a variety of areas in every round of collective bargaining since 2001.
18 Examples include:

- 19
- 20 • elimination of costly incentive pay plans
 - 21 • reasonable economic increases;
 - 22 • reductions and cost containment in benefit improvements;
 - 23 • introduction of new salary schedules with lower starting rates and lower maximum
 - 24 rates;
 - 25 • introduction of a less costly pension plan;
 - 26 • increased employee pension contributions;
 - 27 • increased flexibility to contract out work;
 - 28 • reduction in the hourly rate for a variety of jobs;

- increased flexibility to move staff;
- increased utilization of contingent workers;
- introduction of less costly classifications;
- greater shift scheduling flexibility; and
- reduction in temporary work headquarter costs.

5.1 Recent Negotiation Highlights

5.1.1 PWU Negotiations

In 2013, a new 2 year collective agreement was successfully negotiated by the bargaining committees of Hydro One and the PWU and ratified by the PWU-represented staff. The term of this collective agreement ends on March 31st, 2015. Modest economic increases were negotiated (2.5% in each year). To lessen the cost impact of these increases, they were phased in on April 1st and October 1st in 2013 and 2014.

Employee pension contributions were also increased. In the last Transmission Decision, the Board commented that it expects to see demonstrated measurable progress towards increasing employee pension contributions. The Board stated that “Hydro One must demonstrate measurable progress towards having its pension contributions reflect those prevailing in the public sector generally. The evidence suggests that an employee contribution level of 50% is the norm”. In 2011, Hydro One negotiated a 0.5% increase to the PWU employee pension contributions and in the most recent negotiations, employee contributions have increased by a further 0.75% in 2013 and 1.0% in 2014.

To address rising benefit costs, the parties agreed to the requirement to use mandatory generic prescribed drugs and to establish a joint committee to make recommendations to reduce costs in the area of biological and other expensive drugs.

1 Increased resourcing flexibility was achieved by negotiating enhancements to use more
2 temporary staff and to contract out more work.

3
4 **5.1.2 Society Negotiations**

5
6 In 2013, a new three year collective agreement was successfully negotiated by the
7 bargaining committees of Hydro One and the Society and ratified by the Society-
8 represented staff. The term of this collective agreement ends on March 31st, 2016.

9
10 Modest economic increases were negotiated (2%, 2% and 2.25%). Employee pension
11 contributions were increased by 0.75%, 1% and 0.75% in each year of the term of the
12 collective agreement.

13 Increased flexibility was achieved by increasing the length of new hire probationary
14 periods and formalizing the deletion of the Purchase Service Agreement so that
15 contracting out can be fully utilized when appropriate.

16
17 **6.0 MANAGEMENT (MCP) COMPENSATION**

18
19 Changes to management compensation are wholly at the discretion of senior
20 management. The management compensation structure is comprised of two key
21 components:

- 22
23 1. Merit pay which recognizes competency, performance and retention risk; and
24 2. A short term incentive (STI) program, which is discretionary and is based on the
25 Hydro One Board and Senior Management's assessment of achievement of the
26 corporate scorecard and achievement of individual performance agreements.

1 The *Broader Public Sector Accountability Act (BPSAA) 2010* froze all management
2 compensation from 2010 to 2012. The 2012 Ontario Budget amended this Act so that
3 compensation for Vice President's and above are frozen until such time that there is no
4 deficit in the Budget.

5
6 Since the wage freeze legislation expired for management positions below the Vice
7 President level, Hydro One has had a limited base wage program in 2013. A rigorous
8 process was used to align pay for performance by considering a number of factors such as
9 overall performance, engagement scores, pay relative to performance of peers and
10 potential flight risk. In 2013, all MCP employees increased their pension contributions by
11 0.75%.

12
13 In 2014, MCP employees will be eligible for a merit pay program. A 2.5% merit pay
14 adjustment fund was established for Director level employees and below. The merit
15 program once again will align pay and performance and will be allocated in a manner that
16 differentiates between levels of performance. This is not an across the board 2.5%
17 increase for all MCP staff. Once again, all MCP employees will have their pension
18 contributions increased by another 0.75%.

19 20 **7.0 COMPENSATION STRATEGY**

21
22 Hydro One has experienced rapidly increasing transmission and distribution work
23 programs since 2004. Resourcing of these work programs must occur on the most cost
24 effective basis possible within a highly competitive labour market.

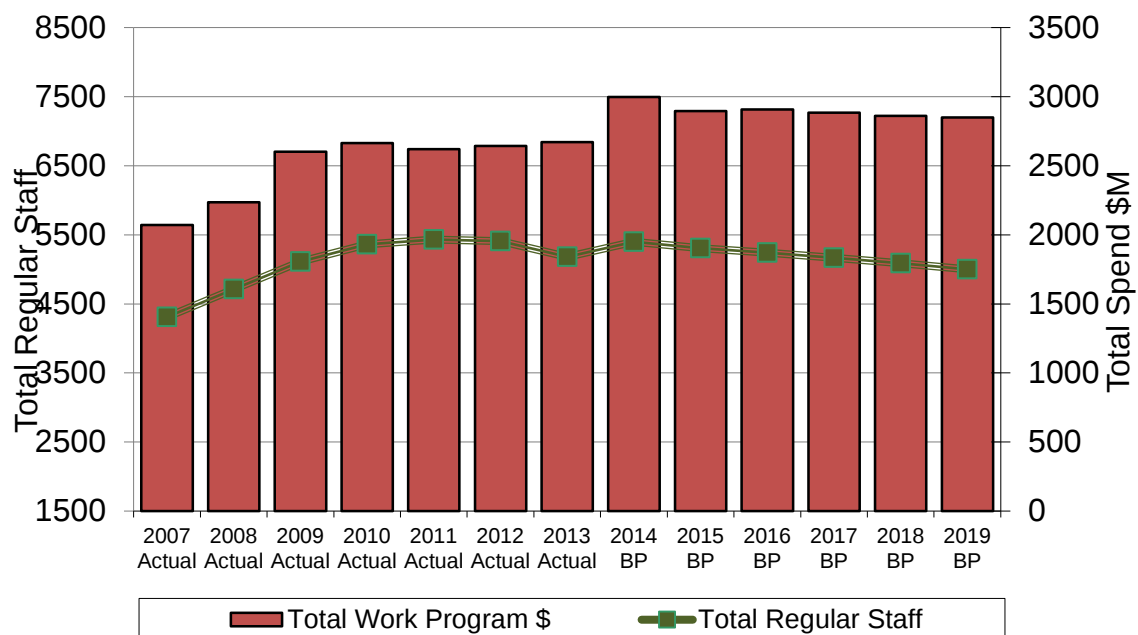
25
26 Attachment 2 provides year end compensation costs for Hydro One Networks
27 (Transmission and Distribution) from 2010 to 2012 and forecasted year end
28 compensation cost for 2013, the bridge year (2014) and test years (2015-2019). The

Company believes that the upward trend in these costs is reasonable in light of the steadily increasing transmission and distribution work programs since 2004, as well as the negotiated increases in labour rates.

Note this data represents year end payroll costs for Hydro One Networks in total (i.e. Distribution and Transmission). The purpose of this table is to illustrate the trend in compensation costs.

For the period 2014-2019, the total Networks (Transmission and Distribution) work program is expected to decrease by approximately 4.9% while the regular headcount is expected to decrease by 7.5% by year end 2019.

Table 2
Work Program and Head Count Forecast (2015 to 2019)



Hydro One believes that the goal of reducing overall wages, pension and benefits for future new hires reflects a reasonable balance between the need to attract and retain new staff while pursuing a more favourable cost structure. This is a difficult balance to

1 achieve. Too much of a reduction in compensation and benefits will impact the ability to
2 attract the new skills necessary to replenish the workforce. However, as outlined in
3 Exhibit C1, Tab 3, Schedule 1, as the proportion of Hydro One staff qualifying for and
4 taking early retirement is growing substantially, the goal of reducing compensation for
5 future new hires will reduce overall compensation costs for Hydro One and its ratepayers.

6
7 Hydro One's best performers are highly marketable, and a number of management staff
8 have left the company in recent years. The Hydro One succession plan has facilitated
9 internal promotion and a smooth transition in most cases, but our internal replacement
10 capacity is now significantly diminished in key areas. External recruitment has proven
11 challenging as our compensation levels and structures have fallen below the market for
12 top people.

13 14 **8.0 COMPARISON OF COLLECTIVE AGREEMENTS**

15
16 When assessing the prudence of Hydro One's collective agreements, a useful comparison
17 is the compensation wage scales for similar PWU (table 3) and Society (table 4)
18 classifications in the Ontario Hydro successor companies as Hydro One competes for
19 staff with these companies and is vulnerable to losing staff to these organizations. Such a
20 comparison is instructive since all these wage scales have the same starting point, which
21 is the establishment of the successor companies in 1999. It is important to compare
22 compensation escalation based on total "dollar" base rates of similar classifications.
23 Simply comparing accumulated base rate percentage increases does not capture the true
24 difference between total base compensation paid at the successor companies.

25
26 In the two wage scale comparison tables for each of PWU and Society staff which follow
27 the wage scale rates shown are for the top end of the wage scale band.

- 1 As shown in Table 3 for PWU staff, Hydro One has negotiated substantially lower wage
 2 scales than OPG and Bruce Power for all seven positions with the exception of one.

3 **Table 3**
 4 **Power Workers' Union – Wage Comparisons, 1999 and 2013**

	1999	2013	Percent Change
Mechanical Maintainer/Regional Maintainer - Mechanical			
Hydro One	\$ 28.23	\$ 42.48	50 %
OPG	\$ 29.08	\$ 50.08	72 %
Bruce Power	\$ 29.08	\$ 57.10	96 %
Shift Control Technician/Regional Maintainer – Electrical			
Hydro One	\$ 28.23	\$ 42.48	50 %
OPG	\$ 30.31	\$ 50.08	65 %
Bruce Power	\$ 30.31	\$ 57.27	89 %
Clerical – Grade 56 (based on a 35-hour work week)			
Hydro One	\$ 21.46	\$ 32.30	51 %
OPG	\$ 21.46	\$ 31.99	49 %
Bruce Power	\$ 21.46	\$ 35.59	66 %
Clerical – Grade 58 (based on a 35-hour work week)			
Hydro One	\$ 24.20	\$ 36.42	50 %
OPG	\$ 24.20	\$ 38.95	61 %
Bruce Power	\$ 24.20	\$ 40.13	66 %
Regional Field Mechanic/Transport & Work Equipment Mechanic			
Hydro One	\$ 26.20	\$ 39.43	51 %
OPG	\$ 26.20	\$ 50.08	91 %
Bruce Power	\$ 26.20	\$ 49.71	90 %

Stockkeeper			
Hydro One	\$ 23.27	\$ 36.75	58 %
OPG	\$ 23.27	\$ 38.95	67 %
Bruce Power *	\$ 23.27	\$ 44.88	93 %
Labourer			
Hydro One	\$ 19.03	\$ 28.63	50 %
OPG	\$ 19.03	\$ 38.95	105 %
Bruce Power *	\$ 19.03	\$ 44.88	136 %

* Assumes that the position falls within the Civil Maintainer II classification and corresponding wage rate

1
2
3

Table 4
Society of Energy Professional – Wage Comparisons 1999 and 2013

	1999	2013	Percent Change
MP2			
Hydro One	\$ 77,954.79	\$ 100,078.50	28 %
OPG	\$ 77,954.79	\$ 101,333.39	30 %
Bruce Power	\$ 77,954.79	\$ 102,113.46	31 %
IESO	\$ 77,954.79	\$ 118,068.03	51 %
MP4			
Hydro One	\$ 88,651.39	\$ 113,801.46	28 %
OPG	\$ 88,651.39	\$ 115,171.67	30 %
Bruce Power	\$ 88,651.39	\$ 116,045.14	31 %
IESO	\$ 88,651.39	\$ 134,218.03	51 %
MP6			
Hydro One	\$ 100,756.80	\$ 129,350.68	28 %
OPG	\$ 100,756.80	\$ 130,950.99	30 %
Bruce Power	\$ 100,756.80	\$ 131,907.42	31 %
IESO	\$ 100,756.80	\$ 152,617.49	51 %

For Society staff, Hydro One, OPG and Bruce Power have successfully negotiated lower end rates as compared to the PWU wages. However, for all three Society categories, Hydro One has lower wage scales than OPG and Bruce Power. The IESO has continued with the wage schedule structure that existed at demerger.

It is quite clear that compared to these four other companies, Hydro One has been quite successful in controlling costs in collective bargaining over the past ten years to the benefit of all ratepayers.

9.0 POWER LINE TECHNICIAN RATE COMPARISON

Within Ontario, the largest LDCs are Hydro One Networks Inc., Toronto Hydro Electric System Limited, Hydro Ottawa Limited, Enersource Hydro Mississauga Inc., London Hydro Inc., Horizon Utilities Corp. and Powerstream Inc. Each of the LDCs employ Power Line Maintainers (PLMs). Table 5 compares the PLM rate at each of the LDCs to the PLM rate paid at Hydro One Networks. The PLM classification was chosen since it represents a highly skilled and highly populated classification that is core to the other LDCs.

Table 5
POWER LINE MAINTAINER WAGE COMPARISON

Company	Classification	Wage – 2012(\$/hr)	H1 % Difference
Hydro One	Power Line Maintainer	38.75	-
Toronto Hydro	Power Line or Cable Person	40.26	-3.9%
Enersource	Power Line Technician	38.95	-.5%
Powerstream	Linesperson	38.31	+1.1%
Horizon	Power Line Maintainer	37.88	+2.3%
London Hydro	Power Line Maintainer	36.42	+6.0%
Hydro Ottawa	Power Line Maintainer	36.53	+6.0%

Hydro One uses a multi-skilled position called a Regional Maintainer–Lines classification (RLM). The RLM uses the PLM as the base job with additional duties such as lead hand, contract monitor, establishment and holding of work protection as well as

1 additional technical, trade and customer relations skills beyond the Power Line
2 Maintainer classification.

3
4 Table 4 illustrates that the PLM rate at Hydro One ranges from being slightly below to
5 slightly above the larger LDCs in Ontario. Despite the rates being very close, the type of
6 work and skills required at Hydro One are often more complex. Hydro One employees
7 often work in a more rural setting than their counterparts in other LDCs. As a
8 consequence, Hydro One employees can work in conditions and with equipment not
9 normally required at these LDCs. Trades employees working on lines maintenance often
10 work on both Distribution and Transmission assets and are required to be knowledgeable
11 and proficient with overhead, underground and submarine cable. Again, this is not typical
12 of the PLM role in other Ontario LDCs.

13 14 **10.0 SUMMARY**

15
16 Compensation levels at Hydro One are reasonable and appropriate given the environment
17 in which the Company operates. In recent years, despite significantly increased work
18 volumes, overall costs have been minimized by the simplification of required job skills
19 and pay levels where appropriate. Hydro One's demographic challenge requires the
20 Company to be active in the labour market and with worldwide competition for these
21 skills there is a need for competitive compensation.

22
23 The updated Mercer Total Compensation Benchmarking Study demonstrates that there
24 has been a significant improvement in total compensation costs at Hydro One relative to
25 market median. It is important to emphasize that in a time where other organizations are
26 facing similar cost pressures, Hydro One has lowered its overall total compensation from
27 2008 to 2013 by 7% against the peer group.

1 A strong barometer of Hydro One's ability to restrict compensation increases is a direct
2 comparison to companies such as OPG, Bruce Power, and IESO. Hydro One competes
3 directly with these organizations for skilled workers. Hydro One is also at risk of losing
4 experienced staff to these organizations if our compensation is not competitive. Despite
5 these competitive pressures, Hydro One has negotiated compensation levels that are less
6 costly than OPG, Bruce Power and the IESO.

7
8 In addition, in a heavily unionized environment, there are significant constraints on an
9 employer's ability to reduce compensation costs per employee. However, despite these
10 constraints, the Corporation has made gains with the reduction in the area of
11 compensation and benefit reductions.

HYDRO ONE YEAR END COMPENSATION PAYROLL TABLE 2010 - 2019**2010**

REPRESENTATION	TOTAL NO. EMPLOYEES	TOTAL WAGES	Base Pay	Overtime(Incl Premium)	Incentive	Other**	Average Base Pay
PWU Reg	3,397	327,600,666	260,915,303	51,809,932	6,528	14,868,904	76,808
SOCIETY Reg	1,315	125,599,454	117,961,991	4,326,114	22,859	3,288,489	89,705
MCP Reg	651	88,150,303	74,337,104	403,461	8,568,152	4,841,586	114,189
Total Reg	5,363	541,350,422	453,214,398	56,539,507	8,597,538	22,998,979	84,508
PWU Temp	185	5,762,822	5,627,702	62,451		72,670	30,420
Society Temp	80	5,097,027	4,793,945	112,596		190,486	59,924
MCP Temp	21	1,366,870	1,315,636			51,234	62,649
Total Temp	286	12,226,719	11,737,283	175,047		314,389	41,039
CASUAL	1707	109,976,920	84,735,113	12,740,012		12,501,795	49,640
Total	7356	663,554,061	549,686,793	69,454,566	8,597,538	35,815,164	74,726

2011

REPRESENTATION	TOTAL NO. EMPLOYEES	TOTAL WAGES	Base Pay	Overtime(Incl Premium)	Incentive	Other**	Average Base Pay
PWU Reg	3,456	353,770,142	275,254,552	63,197,265		15,318,324	79,645
SOCIETY Reg	1,330	134,279,772	126,051,768	4,947,039	2,250.00	3,278,715	94,776
MCP Reg	644	88,234,049	73,880,625	69,859	9,414,079	4,869,486	114,721
Total Reg	5,430	576,283,963	475,186,946	68,214,163	9,416,329	23,466,525	87,511
PWU Temp	211	5,508,958	5,331,454	85,668		91,836	25,268
Society Temp	79	5,234,552	4,983,808	26,116		224,627	63,086
MCP Temp	22	1,660,391	1,612,601	1,331		46,460	73,300
Total Temp	312	12,403,901	11,927,862	113,115		362,923	38,230
CASUAL	1488	106,663,199	80,054,576	14,588,897		12,019,727	53,800.12
TOTAL	7,230	695,351,063	567,169,384	82,916,175	9,416,329	35,849,175	78,447

Updated: 2014-05-30

EB-2013-0416

Exhibit C1-3-2

Attachment 2

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2012

REPRESENTATION	TOTAL NO. EMPLOYEES	TOTAL WAGES	Base Pay	Overtime(Incl Premium)	Incentive	Other**	Average Base Pay
PWU Reg	3,475	357,280,035	284,842,527	56,320,273	3,000.00	16,114,235	81,969
SOCIETY Reg	1,336	139,483,054	131,185,379	4,758,285	54,686.00	3,484,704	98,193
MCP Reg	643	88,165,625	73,683,706	126,637	9,884,915	4,470,367	114,594
Total Reg	5,454	584,928,714	489,711,612	61,205,195	9,942,601	24,069,306	89,789
PWU Temp	214	5,476,528	5,366,490	78,090	0.00	31,949	25,077
Society Temp	61	3,758,898	3,549,772	28,883	0.00	180,243	58,193
MCP Temp	18	1,061,210	1,018,662	0	0	42,548	56,592
Total Temp	293	10,296,636	9,934,925	106,973		254,739	33,908
CASUAL	1493	104,268,709	81,843,677	10,569,037		11,855,994	54,818.27
TOTAL	7,240	699,494,059	581,490,214	71,881,205	9,942,601	36,180,039	80,316

2013

REPRESENTATION	TOTAL NO. EMPLOYEES	TOTAL WAGES	Base Pay	Overtime(Incl Premium)	Incentive	Other**	Average Base Pay
PWU Reg	3,321	361,121,121	282,009,791	63,909,056	5,000.00	15,197,274	84,917
SOCIETY Reg	1,260	137,307,219	127,603,743	6,218,672	18,650.00	3,466,154	101,273
MCP Reg	600	82,932,593	70,297,687	176,885	8,236,068	4,221,953	117,163
Total Reg	5,181	581,360,932	479,911,220	70,304,613	8,259,718	22,885,381	92,629
PWU Temp	205	6,747,274	6,521,171	189,533	0.00	41,214	31,811
Society Temp	46	3,144,181	2,911,798	115,174	0.00	117,601	63,300
MCP Temp	25	1,221,374	1,175,065	1,172	0	45,138	47,003
Total Temp	276	11,112,830	10,608,034	305,878	0.00	203,953	38,435
CASUAL	1781	127,908,507	98,518,887	14,668,063	11,000.00	14,710,557	55,317
TOTAL	7,238	720,387,304	589,038,140	85,278,555	8,270,718	37,799,890	81,381

2014

REPRESENTATION	TOTAL NO. EMPLOYEES	TOTAL WAGES	Base Pay	Overtime(Incl Premium)	Incentive	Other**	Average Base Pay
PWU Reg	3,467	381,570,832	300,295,846	65,187,237		16,087,749	86,615
SOCIETY Reg	1,311	145,456,033	135,424,029	6,343,045		3,688,958	103,298
MCP Reg	622	90,121,621	74,332,774	180,423	11,149,916	4,458,508	119,506
Total Reg	5,400	617,148,485	510,052,648	71,710,705	11,149,916	24,235,215	94,454
PWU Temp	381	12,624,883	12,362,231	193,323	0.00	69,328	32,447
Society Temp	103	7,035,467	6,650,294	117,477	0.00	267,695	64,566
MCP Temp	56	2,789,114	2,684,789	1,195	0	103,131	47,943
Total Temp	540	22,449,464	21,697,314	311,996	0.00	440,154	40,180
CASUAL	2283	167,171,831	128,813,583	19,178,514		19,179,734	56,422.94
TOTAL	8,223	806,769,780	660,563,545	91,201,215	11,149,916	43,855,104	80,331

2015

REPRESENTATION	TOTAL NO. EMPLOYEES	TOTAL WAGES	Base Pay	Overtime(Incl Premium)	Incentive	Other**	Average Base Pay
PWU Reg	3,435	386,223,662	303,474,633	66,490,982		16,258,047	88,348
SOCIETY Reg	1,281	145,118,122	134,971,583	6,469,906		3,676,634	105,364
MCP Reg	592	87,499,293	72,162,544	184,032	10,824,382	4,328,336	121,896
Total Reg	5,308	618,841,077	510,608,760	73,144,919	10,824,382	24,263,017	96,196
PWU Temp	410	13,842,539	13,569,252	197,190	0.00	76,097	33,096
Society Temp	132	9,162,915	8,693,161	119,827	0.00	349,927	65,857
MCP Temp	85	4,317,515	4,156,628	1,219	0	159,669	48,902
Total Temp	627	27,322,970	26,419,041	318,236	0.00	585,693	42,136
CASUAL	2283	170,515,267	131,389,854	19,562,084		19,563,329	57,551.40
TOTAL	8,218	816,679,314	668,417,655	93,025,239	10,824,382	44,412,039	81,336

Updated: 2014-05-30

EB-2013-0416

Exhibit C1-3-2

Attachment 2

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2016

REPRESENTATION	TOTAL NO. EMPLOYEES	TOTAL WAGES	Base Pay	Overtime(Incl Premium)	Incentive	Other**	Average Base Pay
PWU Reg	3,414	391,954,343	307,651,717	67,820,801		16,481,826	90,115
SOCIETY Reg	1,252	144,818,913	134,554,340	6,599,304		3,665,268	107,472
MCP Reg	574	86,541,326	71,367,780	187,712	10,705,167	4,280,666	124,334
Total Reg	5,240	623,314,582	513,573,837	74,607,818	10,705,167	24,427,760	98,010
PWU Temp	437	15,035,958	14,752,093	201,134	0.00	82,731	33,758
Society Temp	148	10,464,228	9,941,815	122,224	0.00	400,189	67,174
MCP Temp	94	4,870,026	4,688,676	1,243	0	180,106	49,880
Total Temp	679	30,370,212	29,382,585	324,600	0.00	663,026	43,273
CASUAL	2283	173,925,572	134,017,651	19,953,325		19,954,596	58,702.43
TOTAL	8,202	827,610,366	676,974,074	94,885,744	10,705,167	45,045,382	82,538

2017

REPRESENTATION	TOTAL NO. EMPLOYEES	TOTAL WAGES	Base Pay	Overtime(Incl Premium)	Incentive	Other**	Average Base Pay
PWU Reg	3,392	397,662,922	311,782,576	69,177,217		16,703,128	91,917
SOCIETY Reg	1,224	144,562,294	134,176,041	6,731,290		3,654,963	109,621
MCP Reg	554	85,203,139	70,258,720	191,466	10,538,808	4,214,144	126,821
Total Reg	5,170	627,428,355	516,217,337	76,099,974	10,538,808	24,572,235	99,849
PWU Temp	461	16,167,699	15,873,523	205,156	0.00	89,020	34,433
Society Temp	161	11,600,100	11,031,385	124,668	0.00	444,048	68,518
MCP Temp	109	5,759,898	5,545,607	1,268	0	213,023	50,877
Total Temp	731	33,527,698	32,450,514	331,092	0.00	746,091	44,392
CASUAL	2283	177,404,084	136,698,004	20,352,392		20,353,688	59,876.48
TOTAL	8,184	838,360,136	685,365,855	96,783,459	10,538,808	45,672,014	83,745

2018

REPRESENTATION	TOTAL NO. EMPLOYEES	TOTAL WAGES	Base Pay	Overtime(Incl Premium)	Incentive	Other**	Average Base Pay
PWU Reg	3,366	403,047,949	315,580,588	70,560,762		16,906,599	93,755
SOCIETY Reg	1,189	143,433,469	132,946,093	6,865,916		3,621,459	111,813
MCP Reg	534	83,776,808	69,076,750	195,296	10,361,513	4,143,249	129,357
Total Reg	5,089	630,258,226	517,603,432	77,621,974	10,361,513	24,671,307	101,710
PWU Temp	492	17,585,924	17,279,758	209,259	0.00	96,906	35,121
Society Temp	180	13,213,431	12,579,890	127,161	0.00	506,380	69,888
MCP Temp	125	6,737,306	6,486,834	1,294	0	249,179	51,895
Total Temp	797	37,536,661	36,346,481	337,714	0.00	852,465	45,604
CASUAL	2283	180,952,166	139,431,964	20,759,440		20,760,761	61,074.01
TOTAL	8,169	848,747,052	693,381,878	98,719,128	10,361,513	46,284,534	84,880

2019

REPRESENTATION	TOTAL NO. EMPLOYEES	TOTAL WAGES	Base Pay	Overtime(Incl Premium)	Incentive	Other**	Average Base Pay
PWU Reg	3,336	408,086,297	319,023,285	71,971,977		17,091,035	95,630
SOCIETY Reg	1,156	142,435,979	131,841,377	7,003,235		3,591,367	114,050
MCP Reg	508	81,301,442	67,027,732	199,202	10,054,160	4,020,349	131,944
Total Reg	5,000	631,823,718	517,892,395	79,174,413	10,054,160	24,702,750	103,578
PWU Temp	524	19,090,436	18,771,718	213,445	0.00	105,273	35,824
Society Temp	204	15,257,432	14,542,352	129,705	0.00	585,375	71,286
MCP Temp	151	8,301,164	7,992,817	1,319	0	307,028	52,933
Total Temp	879	42,649,032	41,306,887	344,469	0.00	997,677	46,993
CASUAL	2283	184,571,209	142,220,604	21,174,629		21,175,977	62,295.49
TOTAL	8,162	859,043,959	701,419,886	100,693,510	10,054,160	46,876,403	85,937

PENSION COSTS

1.0 PENSION COSTS

Hydro One Networks is a participant in the Hydro One Pension Plan (“the Plan”). The Plan is a contributory, defined-benefit pension plan whose members comprise represented employees of the Power Workers Union (“PWU”), the Society of Energy Professionals (“Society”), MCP employees, pensioners who were employees, and pensioners who are beneficiaries of employees or pensioners.

The Plan covers Hydro One and its subsidiaries, except Hydro One Brampton Inc. The Plan does not segregate assets in a separate account for individual subsidiaries, nor is the accrual cost of the benefit plans allocated to, or funded separately by, entities within the consolidated group. Accordingly, for Hydro One Networks, the Plan is accounted for as a defined contribution plan and no deferred pension asset or liability is recorded on Hydro One Network’s financial statements.

The Board has previously allowed cash payments related to pension obligations to be recorded in rates (RP-1998-0001). As well, in April 2006, the OEB in its Decision with Reasons, approved full recovery of Distribution pension costs included in OM&A (RP-2005-0020/EB-2005-0378). Pension costs were similarly approved for Transmission pension costs (EB-2006-0501, EB-2008-0272, and EB-2010-0002); this treatment was continued in Hydro One Distribution’s last cost of service application as well (EB-2009-0096).

The Hydro One pension cost allocated to Hydro One Networks is based on the ratio of base pensionable earnings for Hydro One Networks’ staff, as compared to the total base pensionable earnings for all of Hydro One employees. The method of allocation of the

pension cost and the Inergi annual pension charge is consistent among all common corporate costs, for operating and capital costs, and is consistent with the methodology reviewed during RP-2005-0020/EB-2005-0378, EB-2006-0501, EB-2007-0681 and EB-2008-0272, EB-2009-0096, EB-2010-0002 and EB-2012-0031.

For the Distribution business, the annual charge to be recovered through rates is estimated as follows:

Annual cash pension cost (millions)

(may not add due to rounding)

2015

Corporate Pension					
Costs		Transmission	Distribution	Other	Total
OM&A	\$M	29	41	4	74
Capital	\$M	42	45		87
	\$M	71	86	4	161

2016

Corporate Pension					
Costs		Transmission	Distribution	Other	Total
OM&A	\$M	29	45	4	78
Capital	\$M	40	44		84
	\$M	69	89	4	162

1

2017

Corporate	Pension				
Costs		Transmission	Distribution	Other	Total
OM&A	\$M	29	45	4	79
Capital	\$M	40	44		83
	\$M	69	89	4	162

2018

Corporate	Pension				
Costs		Transmission	Distribution	Other	Total
OM&A	\$M	31	44	4	79
Capital	\$M	39	45		84
	\$M	70	89	4	163

2

2019

Corporate	Pension				
Costs		Transmission	Distribution	Other	Total
OM&A	\$M	31	44	4	78
Capital	\$M	39	46		84
	\$M	70	89	4	163

3

4 **2.0 ACTUARIAL CALCULATION**

5

6 The most recent actuarial valuation for the Plan was as at December 31, 2011. In May
7 2012, Hydro One filed this actuarial valuation with the Financial Services Commission of
8 Ontario (FSCO). The valuation showed that the Plan had a deficit of \$498 million, on a
9 going-concern basis. The required contribution for the Hydro One companies was

1 initially set at \$159 million starting in 2012, variable based on the level of base
2 pensionable earnings. Of this amount, about \$99 million represented annual current
3 service costs, and the remaining portion represented special payments over 15 years
4 required toward the going-concern deficiency.

5
6 In accordance with applicable regulations, Hydro One makes all required contributions
7 on a monthly basis.

8
9 Hydro One's next actuarial valuation is required by December 31, 2014. The valuation
10 will depend on investment returns, changes in benefits, and actuarial assumptions.

11
12 The staff reductions reflected in the current service cost supports the requirements of the
13 work program.

14
15 During 2011, 2012 and 2013, actual contributions were \$153 million, \$161 million, and
16 \$160 million respectively. Actual contribution requirements in 2014 may differ
17 depending on the level of base pension earnings used to compute the monthly
18 contribution. As well, actual contribution requirements in 2014 may materially differ
19 from the estimates provided depending on the timing of the next actuarial funding
20 valuation. The difference between the estimated and actual pension costs will be tracked
21 in a variance account (see Exhibit F1, Tab 1, Schedule 1).

22 23 **3.0 PENSION PLAN GOVERNANCE AND PERFORMANCE**

24
25 Hydro One is the Plan sponsor and administers the pension assets and obligations of the
26 Plan. As of December 31, 2012, the Plan had a reported net asset value of \$5,004 million
27 and about 13,019 members. About 43% of the Plan's members are active. The
28 remaining Plan members are inactive, either retired, beneficiaries of retirees, former

1 employees eligible for a deferred pension or members on long-term disability. The Plan
2 governance was reviewed during RP-2005-0020/EB-2005-0378.

3
4 The Fund has consistently outperformed the benchmark made up of passive market
5 indices. In the period from June 29, 2001 (the Fund's inception) to December 31, 2013,
6 the Fund returned 6.56% annualized while the Fund's target benchmark is 6.29%, thus
7 outperforming its target benchmark return by 0.27%. The fund's investments are divided
8 into asset classes and each asset class has a corresponding market index (i.e. Canadian
9 Equities market index is the S&P/TSX). The actual performance of each asset class is
10 then measured against this market index (policy benchmark). The Fund's policy
11 benchmark is a calculated weighted average benchmark based on the Fund's strategic
12 asset mix.

13

COSTING OF WORK

1.0 OVERVIEW

Hydro One Distribution's work program is bundled into packages of work identified as programs or projects. Program and project costs are comprised primarily of activities associated with labour, equipment and material acquisition. This Exhibit details the breakdown of each of these three cost activities, and how the costs are applied to programs and projects. This costing approach is consistent with the requirements of US Generally Accepted Accounting Principles ("USGAAP").

Hydro One Distribution categorizes its costs into two major classifications - common and direct. Common costs, both OM&A and capital expenditures, are allocated to Distribution and Hydro One's other lines of business. 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. All of these elements are described in detail in this Exhibit.

2.0 PROJECT AND PROGRAM MAJOR COST CATEGORIES

2.1 Labour Rate

Labour hours are distributed directly to benefiting programs and projects by using timesheets, consistent with common industry practice. Standard hourly labour and equipment rates are then used to convert the reported hours into costs. Both labour and equipment rates are "fully loaded" to ensure that all associated support costs required to

1 deploy resources and equipment are accurately and cost effectively distributed to the
 2 benefiting work.

3
 4 On an annual basis, the standard labour rates are derived based on information gathered
 5 through the annual budgeting process. Resource budgets for each major resource
 6 category are calculated and categorized into three basic cost components: forecast
 7 billable (direct charged) hours, forecast non-billable hours and forecast non-billable
 8 expenses. Total payroll and expense costs along with an assignment of support activity
 9 costs, divided by the forecast billable hours, create the standard labour rate. Table 1,
 10 below, shows an example of the composition of a standard labour rate for one category,
 11 the Regional Line Maintainer – Regular Staff,, over the period 2010 to 2019.

12
 13 **Table 1**
 14 **Standard Hourly Labour Rate Composition**
 15 **Regional Line Maintainer – Regular Staff**

	Historic				Bridge	Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Payroll Obligations	69.09	70.60	74.42	75.76	76.85	77.50	78.15	78.80	79.45	80.10
Contractual time away from work	9.76	9.61	9.81	10.00	10.20	10.29	10.38	10.46	10.55	10.63
Time not directly benefiting a specific Program or Project	6.47	5.84	5.95	6.07	6.19	6.25	6.30	6.35	6.40	6.46
Field Supervision and Technical Support	10.17	8.41	9.94	10.98	10.27	10.36	10.44	10.53	10.62	10.71
Support Activities	14.51	15.53	14.88	15.18	14.49	14.61	14.74	14.86	14.98	15.10
Hourly Rate	110.00	110.00	115.00	118.00	118.00	119.00	120.00	121.00	122.00	123.00

16
 17 The cost elements embedded in the standard rate as illustrated in Table 1 are explained in
 18 the pages following, using the position of Regional Line Maintainer – Regular Staff and
 19 the 2014 cost composition, as an example.

2.1.1 Payroll Obligations (\$76.85)

A brief description of the cost elements included in this category is provided below. Compensation, wages and benefits are more fully explained in Exhibit C1, Tab 3, Schedule 2.

Base Labour and Payroll Allowances (58% of Payroll Obligations)

- Base Pay: Contractually negotiated and reflected in wage schedules.
- Payroll Allowances: Allowances are also contractually negotiated and stated in collective agreements. Regular staff (PWU) is entitled to travel, footwear and on-call allowances. Casual trades are entitled to board and travel allowances where circumstances require it.

Company Benefits (37% of Payroll Obligations)

- Regular Staff: Comprising pension (30.9% of base pensionable earnings) and current and post-employment benefits; health, dental, etc. (24.2% of base pensionable earnings).
- Non-Regular Staff (for example, casual trades): Pension and welfare contributions made on behalf of the non-regular employee. These contributions are significantly lower in comparison to the Company benefit contributions made on behalf of the regular employee.

Government Obligations (5% of Payroll Obligations)

- Consists of Canada Pension Plan (CPP), Employment Insurance (EI), Employee Health Tax (EHT) and Workplace Safety and Insurance Board (WSIB) contributions.

1 2.1.2 Contractual Time Away from Work (\$10.20)

2
3 This category consists primarily of employee vacation and statutory holidays, all
4 established and identified in the Company's collective agreements. Sickness and
5 accident costs are also included and are based on historical trends and consider current
6 Company initiatives.

7
8 2.1.3 Time Not Directly Benefiting a Specific Program or Project (\$6.19)

9
10 This category includes time for attendance of safety meetings, housekeeping and
11 downtime often created due to inclement weather. These estimates are based primarily
12 on historical trends.

13
14 2.1.4 Field Supervision and Technical Support (\$10.27)

15
16 This category includes the costs associated with field trades supervision and other
17 management and technical staff providing support services to manage and monitor the
18 status of the assigned programs and projects.

19
20 2.1.5 Support Activities (\$14.49)

21
22 Administrative Expenses and Support (76% of Support Activities)

23
24 These costs include administrative expenses such as travel costs, cell-phones and other
25 miscellaneous expenses that cannot be specifically attributed to a particular program or
26 project. Also included is an assignment of costs for clerical support activities and other
27 centralized support to facilitate work management system requirements.

1 Work Methods & Training (14% of Support Activities)

2
3 Costs to design, develop, continually update and maintain and deliver work methods and
4 training programs. Costs are assigned based on the forecast consumption of these
5 services as agreed to by the Work Methods & Training function and service recipient.

6
7 Health, Safety & Environmental Support (10% of Support Activities)

8
9 Costs to design, develop, continually update and maintain and deliver health, safety and
10 environmental practices primarily for staff working in field locations. Costs are assigned
11 based on the forecast consumption of these services as agreed to by the Health, Safety &
12 Environment function and the service recipient.

13
14 **2.2 Fleet Rate**

15
16 Hydro One controls and manages approximately 7,300 vehicles and other fleet equipment
17 to support its work programs and staffing requirements used for both Distribution and
18 Transmission work. The fleet has grown by 1,600 vehicles and other fleet equipment
19 since 2009 reflecting an increase in the work program to be executed. Fleet Management
20 is described in Section 3.0 of this Exhibit.

21
22 Fleet assets are categorized into 59 classes of equipment. For each equipment class, a
23 standard equipment rate is calculated by dividing the annual forecast cost to maintain
24 each class of equipment by the annual forecast hours that the class of equipment is
25 required to work (utilization hours). Utilization hours are derived based on a review of
26 historical trends and an annual review of the upcoming work program. Utilization hours
27 are defined as the hours the equipment is being used “on the job”. Table 2 below
28 displays the hourly fleet rate, as an example for one of the commonly used classes of

equipment in the Distribution business (a line maintenance truck) for historical, bridge and test years, illustrating that the rate includes all costs attributable to the benefiting work.

Table 2
Hourly Fleet Rate - Line Maintenance Truck

	Historic				Bridge	Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Operations & Repairs	34.46	35.28	37.43	35.44	35.72	35.99	36.27	36.55	36.82	37.10
Fuel Costs	7.85	6.28	7.88	8.78	8.85	8.92	8.99	9.05	9.12	9.19
Depreciation	17.70	18.44	18.69	19.78	19.93	20.09	20.24	20.40	20.55	20.71
Hourly Rate	60.00	60.00	64.00	64.00	64.50	65.00	65.50	66.00	66.50	67.00

Below is a listing of each cost category, with percentages reflective of the 2014 fleet rate. A further description of each cost category is more fully explained in Section 3.4 of this Exhibit.

Operations & Repair Costs (55% of Fleet Rate)

Fuel Costs (14% of Fleet Rate)

Depreciation (31% of Fleet Rate)

2.3 Material Surcharge Rate

A standard material surcharge rate, which captures supply chain procurement costs benefiting a particular program or project, is applied to material costs. A detailed description of Hydro One's approach to supply chain management is found in Section 4.0 of this Exhibit.

Material costs charged to a project or program is based on the issue cost from Inventory, which is the Moving Average Price (MAP) or the direct-shipped purchase order price.

1 On a monthly basis, total monthly material charges are surcharged with a fixed
2 percentage cost to recover costs associated with purchasing, transportation and inventory
3 management. The percentages range from 11% to 17%, depending on work program
4 service requirements. The percentages are derived by assigning the costs of these
5 activities to the work programs based on an annual assessment of the consumption of
6 these services divided by the annual forecast of purchased material.

7
8 The costs recovered in the surcharge are as follows:

- 9
- 10 • Hydro One Costs: Management, demand planning, warehousing and transportation
11 of material, and investment recovery (comprising approximately 60% of the total
12 costs); and
 - 13 • Inergi Contract Costs: Procurement (comprising approximately 40% of the total
14 costs).
- 15

16 **2.4 Other Program and Project Costs**

17

18 Depending on the nature of the work, Hydro One Distribution's program or project costs
19 also include additional costs beyond the major contributors identified above. These
20 additional costs may include the costs of external contractors and/or miscellaneous job
21 specific consumables such as travel expenses or the purchase of low value material.

22

23 In terms of estimating and costing of capital work, there may be circumstances when
24 removal costs or customer contributions need to be separately identified. In these cases,
25 the cost of removal work is accounted for as depreciation, and customer contributions are
26 netted against gross capital costs.

27

1 Capital work also receives a monthly charge for its share of corporate interest and
2 overhead costs. The composition of these two cost categories and the annual calculation
3 are explained in Exhibit D1, Tab 4, Schedule 1, Interest Capitalized and Exhibit C1, Tab
4 5, Schedule 2, Overhead Capitalization Rate.

6 **2.5 Standard Rates**

7
8 When using standard rates, residual costs naturally arise when actual costs incurred differ
9 from the standards. These variances are accounted for on a monthly basis and assigned to
10 both capital and maintenance programs. The monthly assignments of residual costs are
11 made to OM&A and Capital based on the program and project cost activities responsible
12 for generating the year-to-date variances.

14 **3.0 FLEET MANAGEMENT SERVICES**

15
16 Fleet Management Services provides centralized and turnkey services that include
17 maintenance, administration, vehicle replacement and disposal. Vehicles are maintained
18 to an optimum level to ensure public and employee safety and compliance with laws and
19 Ministry regulations, including, but not limited to; CSA 225, the Highway Traffic Act
20 and the Commercial Vehicle Operator's Registration regulations. Fleet Management
21 Services also ensures that environmental impacts are minimized and line-of-business
22 productivity is optimized by minimizing downtime and travel time, and by optimizing
23 technology and continuous improvement opportunities.

1 Fleet Management Services has adapted to the changing needs of its business by:

- 2 • Revising the Company's model for responding to internal customers from fixed
3 zone service to a mobile and fire hall model, with maintenance garages
4 strategically placed throughout the Province to facilitate a more rapid turnaround
5 for vehicle servicing;
- 6 • Optimizing the number of geographical locations served through implementation
7 of Garage hubs;
- 8 • Reducing equipment downtime and improving our equipment utilization;
- 9 • Providing more competitive and cost efficient fleet support, enhanced through the
10 procurement of modern maintenance facilities;
- 11 • Adopting a flexible service delivery model that matches the nomadic and variable
12 work program needs of Hydro One's lines of business with service delivery
13 options that mirror private sector practices. Such options include shift work,
14 extended hours of service and mobile service delivery;
- 15 • Developing more timely, strategic and cost-efficient processes for equipment
16 procurement and disposal;
- 17 • Developing a long-range capital replacement program; and
- 18 • Adopting data collection and information management systems that match the
19 nomadic requirements of the Company's business units.

21 **3.1 Maintenance Model**

22
23 Fleet Management Services has developed a balanced maintenance model for mobile
24 service delivery and centralized facilities. This model provides for 38 provincial
25 locations and balances geographical customer requirements, travel time, third party
26 vendor support and response time. Mobile/satellite repair units minimize costs
27 organizationally by providing timely on-site field support for various nomadic work
28 programs, such as vegetation control, new construction and off-road tower maintenance.

Services provided to the lines of business meet the rigorous requirements of Fleet Management Services' agreements and are structured as a mobile and fire hall operating model to meet customer requirements.

3.2 Managed Systems

Fleet Management System

The strategic alliance to implement a fleet management system (FMS), developed with Automotive Resources International (ARI) in 2003, was renewed in 2008. In 2013 the contract was extended to 2015 to allow pursuit of a potential amalgamation of a FMS with the Ontario Public Service. The implementation of the FMS created an automated web-based system that uses a single credit card for each vehicle to capture all operating costs including fuel, parts and repairs. The FMS also incorporates programs to manage contracts, such as tender agreements, and the system prescribes spending guidelines and negotiated discounts. The system measures a variety of targets that reconcile approved purchase orders, estimates versus actuals, and vendor-related expenditures, discounts and complaints.

The benefits of the FMS include:

- Improved scheduling of preventative maintenance, reduced repair times, travel time and reduced equipment downtime;
- Increased access to a number of vendors for fuel, repairs and parts, thus minimizing cost and downtime;
- Improved cost and efficiency, through carefully-considered procurement strategies and economies of scale, including improved volume discounts for fuel, parts and service;

- 1 • A 1-800 number for repairs, roadside assistance and towing and improved
- 2 reporting and data collection; and
- 3 • Exposure to best practices for fleet management by similar sector organizations.
- 4

5 The FMS uses a variety of linked programs to manage the data and information for all

6 facets of the business, including internal and external repairs. This takes advantage of

7 both internal and external intelligence and technology.

8

9 The maintenance program minimizes avoidable and expensive repairs and minimizes

10 equipment downtime, which results in improved equipment utilization. Both internal and

11 external service providers have access to the appropriate information through state-of-

12 the-art automated management systems, allowing for quality decision-making at all levels

13 of the maintenance program. Examples of the information provided include:

14

- 15 • Real time vehicle history;
- 16 • Warranty criteria and warranty recovery;
- 17 • A work and resources scheduling tool;
- 18 • A pending and overdue work information alert system;
- 19 • Product information, including vendor-specific information;
- 20 • Repair and safe practices manuals;
- 21 • Process and policy information;
- 22 • Invoice and cost-management details;
- 23 • Monthly and ad-hoc reports; and
- 24 • Work order management.
- 25

1 Telematics

2 In 2009, Hydro One Fleet Services entered into a pilot program to install GPS (Global
3 Positioning System) into 500 Transportation and Work Equipment (TWE) units as part of
4 the Hydro One Environmental Plan. From this Pilot Project, Hydro One Fleet Services
5 recorded a number of lessons learned. These lessons were incorporated in the tender for a
6 new generation fleet telematics system for 2,700 fleet vehicles that will provide
7 significant enhancements to operator safety, workplace efficiency and reduction of
8 environmental impacts. This project is currently scheduled to be implemented by end of
9 2014. The Telematics initiative will allow for continuous improvements and permit
10 implementation of best practices through:

- 11
- 12 • Improved operator safety through awareness and driver aids;
 - 13 • Decreased kilometers driven through route optimization;
 - 14 • Increased productivity/utilization of vehicles;
 - 15 • Expanded environmental benefits, including increased fuel efficiency and reduction
16 of greenhouse gases;
 - 17 • Increased fleet response time;
 - 18 • Providing acceptable data for Fuel Tax Credits;
 - 19 • Tracking of vehicle condition, including fluid levels, pressures and temperatures; and
 - 20 • Increased security of fleet vehicles.
- 21

22 **3.3 Fleet Complement and Utilization**

23

24 Fleet Management Services controls and manages approximately 7,300 vehicles and
25 other equipment primarily for Transmission and Distribution work. Inventory levels are
26 controlled and set by the Hydro One lines of business and Fleet Management Services
27 within the guidelines set for staffing versus fleet ratio, type and volume of work
28 programs, geographic locations and utilization targets. The increase in the fleet
29

1 complement, therefore, is directly related to the increase in the Company's work on
2 system infrastructure and corresponding staffing levels. Fleet Management Services
3 maintains 38 facilities to support 17 Forestry locations, 1,004 Distribution Stations, 289
4 Transmission Stations, and 54 Provincial Lines operational centers.

5
6 As capital and OM&A investments have been increasing, the options to meet increased
7 equipment demand include the purchase of new equipment, rental of additional
8 equipment or increased utilization of existing equipment. The optimum option is to
9 increase utilization, which minimizes capital investment compared to the option of
10 additional purchases. Simultaneously, it maximizes the advantage of owned core
11 equipment versus the additional cost of external rentals, which is 30 percent higher than
12 owned equipment rates. This assessment is based on an internal comparison of the actual
13 costs of equipment rentals versus those of owned core equipment.

14
15 The benefits of improving utilization include:

- 16
- 17 • decreased long term capital requirements;
 - 18 • improved ability to respond to fluctuations in work programs; and
 - 19 • reduced rental costs, with a correspondingly lower impact on the Company's
20 OM&A budget.
- 21

22 Equipment utilization averages have increased from approximately 65 percent in 2001 to
23 approximately 80 percent in 2012. The 2012 average equipment rate is \$21.38 per hour;
24 this is established by averaging total annual fleet equipment costs over total annual fleet
25 utilization hours.

26
27
28

3.4 Fleet Management Services Budget

Fleet Management Services' annual budget is developed and managed based on the all-in costs of operating the fleet and the following criteria:

- Historical and forecast fixed and variable costs including fuel, depreciation, maintenance and repair, labour/staffing, and external rentals;
- Historical cost and mechanical fitness evaluations;
- Work program forecasts provided by the lines of business;
- Estimates provided by internal and external providers;
- The requirements of the capital/vehicle replacement program; and
- Projected escalators.

Table 3, below, provides total expenditures on the components comprising the fleet rate for historic, bridge and test years. These expenditures are distributed among each of the 59 classes of vehicles.

Table 3
Fleet Management Services Budget Expenditures
(\$ Million)

	Historic				Bridge	Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Operations & Repairs	52.9	51.5	55.3	57.8	60.5	62.7	63.7	64.8	66.3	67.7
Depreciation	34.3	34.9	35.3	35.3	37.3	38.3	39.3	40.3	41.3	42.3
Fuel	22.0	28.3	29.1	30.2	30.3	30.8	31.2	32.0	32.9	33.6
Subtotal	109.2	114.7	119.7	123.3	128.1	131.8	134.2	137.1	140.4	143.6
Rentals	5.0	1.9	1.1	0.9	2.0	2.0	2.0	2.0	2.0	2.0
Total	114.2	116.6	120.7	124.2	130.1	133.8	136.2	139.1	142.4	145.6

1 3.4.1 Operations and Repairs

2
3 This cost category primarily consists of repair costs (external and internal labour and
4 parts). The budget is based on a forecast of the annual maintenance schedules for each
5 piece of equipment. The age and the history of the vehicles are considered in the
6 calculations. Throughout the year, all repair costs are charged directly to each piece of
7 equipment. Operations costs include administration staff and their allocated share of
8 central service support costs (for example, work methods and safety training activities).

9
10 3.4.2 Depreciation

11
12 The depreciation for each class within the fleet is calculated based on the current
13 depreciation policies in Hydro One, the current composition of the fleet, and annual
14 forecast additions and deletions.

15
16 3.4.3 Fuel Cost

17
18 Fuel cost per class of equipment is calculated based on past history and current market
19 projections as well as the current composition of the class. Throughout the year, fuel
20 costs are charged directly to the particular piece of equipment consuming the fuel.

1 3.4.4 External Fleet Rentals

2
3 Due to the seasonal and fluctuating nature of the Company's work program, Hydro One
4 Distribution requires the use of externally-owned equipment to meet the peaks in its
5 programs. Using a process similar to that used to cost Hydro One Distribution's own
6 fleet, standard rates are calculated and costs are distributed to the Company's programs
7 and projects.

8
9 **3.5 Recent Productivity Improvements in Fleet Management Services**

10
11 Hydro One Distribution supports continuous improvement. This section details current
12 work in progress in fleet management that promotes workplace and operator safety,
13 productivity, efficiency and environmental considerations.

14
15 Hydro One Distribution's fleet management system is an automated web-based system
16 under which a single credit card captures all operating costs (including fuel, parts and
17 repairs) for each vehicle. This system is used to measure a variety of targets which
18 identify opportunities to reduce costs and increase productivity efficiencies through
19 strategic procurement practices and economies of scale, including improved volume
20 discounts for fuel, parts and service.

21
22 Hydro One Distribution has a maintenance program for its fleet of vehicles. Internal and
23 external service providers are granted access to appropriate information through state-of-
24 the-art management systems linked to Hydro One Distributions fleet management
25 system. This allows for improved work and resource scheduling tools, information alerts
26 and invoice and cost management details, resulting in avoidable and expensive repairs
27 and equipment downtime being minimized and improved fleet efficiency.

1 As discussed in section 3.2, the Telematics Initiative will allow Hydro One Distribution
2 to continuously improve and implement best practices in operator safety, workplace
3 efficiency and environmental impacts. Operator safety will be improved through
4 awareness and driver aids. Improvements in productivity efficiencies will include
5 decreased kilometers driven through route optimization, increased fleet response time and
6 automated tracking of vehicle condition. Also, with the implementation of telematics,
7 environmental benefits such as increased fuel efficiency and a reduction of greenhouse
8 gases will be realized.

9 10 **4.0 SUPPLY CHAIN MANAGEMENT**

11
12 Hydro One delivers end-to-end supply chain services for the Distribution, Transmission,
13 Telecom and Remotes businesses. The focus is on the right product with the right
14 quality, at the right place, right time and at the right cost.

15
16 The forecast 2015 costs for Supply Chain Services are expected to be \$40.5 million and
17 remain fairly flat through 2019. These services include strategic sourcing (purchase) of
18 materials and services, storage and distribution of materials; demand planning, inspection
19 services, transportation, inventory management, and investment recovery of disposed
20 assets.

21
22 Supply Chain Services costs are allocated to work programs and projects through the
23 material surcharge rate.

24
25 This section describes the budgeted cost levels, followed by a description of the
26 components of Supply Chain Management.

Table 4
Supply Chain
(\$ Million)

	<i>Historic</i>				Bridge	Test	Test	Test	Test	Test
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total	38.2	42.9	40.5	39.2	40.2	40.5	39.9	39.5	39.9	40.4

The increase in supply chain costs between 2010 and 2013 reflects the increase in transaction volumes, as well as cost increases related to transportation and warehousing.

Hydro One Distribution's Supply Chain is a service which has been largely outsourced to Inergi L.P. The components of supply chain management performed by Inergi include sourcing (purchase) of materials and services, execution of transportation contracts, and contract management.

4.1 Supply Chain Policies and Procedures

Hydro One Distribution operates a fair and transparent procurement process that gives all companies equal opportunity to do business consistent with its Procurement Policy and Principles.

Tenders and proposals are evaluated based on predefined evaluation criteria by cross-functional teams as required. The outcome of the evaluation is the foundation for awarding procurement contracts.

4.2 Sourcing of Materials and Services

The sourcing of materials and services, primarily carried out within Inergi, includes the following:

- Demand Management and Procurement – Market intelligence with respect to commodities, processing purchase transactions and inspecting and expediting services to ensure delivery to contract commitments.
- Sourcing and Vendor Management – Services to support sourcing all commodities and services which include managing the size and composition of the vendor base and resolving issues.

Hydro One Distribution manages its procurement and supply base by using strategic sourcing in the acquisition of goods and services. Strategic sourcing is a disciplined business process for purchasing goods and services on a Company-wide basis using cross-functional teams to manage the supply base as a valued resource. The methodology's five-step process includes spending analysis, market analysis, development of a sourcing strategy, negotiation, award and contract management.

4.3 Inspection Services

Inergi LP is engaged to provide timely inspection services to assure that products are manufactured in accordance to specifications established by Hydro One Distribution, and tracks costs and schedules on a product and project basis.

4.4 Storage and Distribution of Materials - Warehousing

Hydro One Distribution's central warehouse operation in Barrie is responsible for the storage and distribution of materials for the service centres and station locations. This warehouse services two primary customers, Customer Operations and Grid Operations. Customer Operations is further serviced through 88 field service centres and Grid Operations through 21 station locations. The field staff is responsible for receiving shipments and for storing and ordering material. Deliveries to the service centres are contracted to a third party transportation carrier.

The intent of a consolidated warehouse operation is to realize efficiencies through focusing on activities such as:

- Bar coding to improve operating efficiencies such as receipting, cycle counting, shipping and tracking inventory;
- Managing and coordinating the delivery of materials on the scheduled delivery date to the service centres to ensure that the field operation receives the right material at the right time; and
- Improving receipting efficiency by integrating with the contracted transportation company to provide visibility into the supply chain and scheduling the inbound shipment.

4.5 Transportation

Hydro One Distribution manages its inbound and outbound transportation of materials through contracts with third party companies. In 2013, Hydro One Distribution entered into a new transportation contract for material delivery in and out of the central warehouse.

4.6 Investment Recovery

The final step of the supply chain is the disposal and investment recovery of end-of-life assets. This recovery is typically in the range of \$2.5 million to \$4.4 million per year, and primarily involves vehicle sales and scrap metal. Hydro One Distribution continues to focus on extracting the maximum value possible from the sale of these assets.

A breakdown of the sale of assets is as follows:

Table 5
Breakdown of Sales of Assets through Investment Recovery Program
(\$ Million)

Type of Sale	Recovery 2010	Recovery 2011	Recovery 2012
Vehicle Sales	1.1	2.0	1.0
Scrap Metal	1.4	2.4	1.6
Total	2.5	4.4	2.6

Note: 2011 Vehicle Sales include a sale of a helicopter (\$0.5M)

4.7 Cost Savings from Strategic Sourcing

Between 2008 and 2015, due to its collaborative planning and strategic sourcing initiative, Hydro One Networks estimates \$141 million in cumulative savings in the purchase of major equipment, commodities and services such as power transformers, circuit breakers, wood poles, distribution transformers, wire and cable, and pole and line hardware. Strategic sourcing results vary from commodity to commodity or from one service to another.

1 The main benefits of sourcing strategies are described below:

- 2
- 3 • Active involvement of internal stakeholders to communicate their business needs
- 4 for the products and services;
- 5 • Cost reduction by increased leverage of Company-wide expenditures – purchases
- 6 are consolidated by commodity and/or service to ensure that the business receives
- 7 maximum value. This eliminates the need to tender and purchase as requirements
- 8 surface -- an added benefit of this approach;
- 9 • Reduced total life cycle cost for materials and services – when purchasing
- 10 equipment, all aspects are identified to ensure that Hydro One Distribution
- 11 acquires maximum value for the life cycle of the equipment. For example,
- 12 specifications, maintenance requirements, installation services and warranty
- 13 services are defined and reviewed to ensure that business needs will be met, and
- 14 order and invoice processes, lead time and inventory requirements, etc. are
- 15 evaluated to determine where greater efficiencies may be realized;
- 16 • Improved security of supply through longer-term agreements. To maximize
- 17 value, longer-term agreements are established with fixed prices, or formula
- 18 pricing is considered to ensure that Hydro One Distribution achieves best value;
- 19 • Improved and/or consistent quality of material and services.
- 20

21 Collaborative planning and strategic sourcing will continue to be a major focus, as the
22 Company emphasizes cost control and security of supply while demand in the global
23 utility sector increases.

4.8 Recent Productivity Improvements in Supply Chain Management

Hydro One Distribution is interested in continuous improvement, and supply chain management is one example. This section details some work in progress to provide effectiveness and efficiency gains.

Previously, procurement of material for projects usually occurred after the release of the project. The supply management process is evolving, however, to consider the broader work program over multiple years, and obtain quotes for materials required over multiple delivery dates. This approach assists vendors by allowing them to better plan their activities, and leads to lower costs and a stronger relationship between Hydro One Distribution and the vendor – which has additional benefits if difficulties arise in the supply of materials.

Hydro One Distribution has also developed “outline agreements” with vendors to establish a standing order or relationship for critical materials, such as cable and autotransformers as well as material for day to day consumption. In addition, the Company involves some suppliers in its planning activities, and studies historical buying patterns to assist in planning purchases.

Streamlining standards is another way in which Hydro One Distribution is improving the strategic sourcing process. In addition to simplifying procurement, this also increases both the likelihood that spares will be available for use, and the ease of maintaining a lower inventory.

DEPRECIATION AND AMORTIZATION EXPENSES

1.0 INTRODUCTION

The purpose of this evidence is to summarize the method and amount of Hydro One Distribution's depreciation and amortization expense for the 2015 to 2019 test years.

The depreciation and amortization expense accepted by the Board for Hydro One's 2010 and 2011 Electricity Distribution revenue requirement, followed the methodology originally accepted by the Board for 2006 rates. The depreciation rates in the RP-2005-0020/EB-2005-0378 proceeding were supported by an independent depreciation study completed in June 2005 by Foster Associates Inc. (Foster Associates). The Board accepted the costs flowing from this depreciation study for the purpose of supporting Hydro One Distribution's rates in 2006 and similarly accepted the methodology again in the 2007-0681 proceeding for 2008 rates.

Foster Associates have completed a new full depreciation study covering Hydro One Networks' distribution and common assets for purposes of determining depreciation and amortization expense for the 2015 – 2019 test years. The Foster Associates' study is attached as Attachment 1 to this exhibit.

Consistent with the findings and recommendations of the Foster study combined depreciation and amortization expense levels for the test years are: 2015 - \$355.4 million; 2016 - \$374.9million; 2017 - \$390.2 million; 2018 - \$402.9million; and 2019 - \$413.6 million.

2.0 DEPRECIATION EXPENSE

Based on the recommendations found in Foster Associates' new study, the depreciation expense amounts for each of the five test years can be found in the detailed depreciation schedules filed at Exhibit C2, Tab 4, Schedule 1.

Table 1
Distribution Depreciation Expense
\$ Million

Description	Historic				Bridge	Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Depreciation On Fixed Assets	232.7	250.4	269.3	277.7	253.2	300.0	309.6	321.4	331.9	341.0
Less Capitalized Depreciation	(15.4)	(16.7)	(17.1)	(15.9)	(12.7)	(13.2)	(13.7)	(14.0)	(14.4)	(14.8)
Asset Removal Costs	43.2	45.5	46.5	51.0	50.7	54.5	57.0	60.4	63.3	65.8
Losses/(Gains) On Asset Disposition	(0.2)	(0.1)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total	260.4	279.2	298.9	313.0	291.2	341.3	352.9	367.8	380.8	392.0

The increase in 2015 depreciation on fixed assets amount relative to the 2014 amount is due to the higher level of fixed assets placed in service in 2015, by including assets related to Distributed Generation, Smart Meter, and Smart Grid into the core rate base, previously recorded as regulatory assets.

Capitalized depreciation refers to depreciation on transport & work equipment and other minor fixed assets (e.g. tools) that is charged to capital work projects. For purposes of

1 calculating the revenue requirement, capitalized depreciation is deducted from annual
2 depreciation expense, as it is treated as a capital expenditure.

3
4 Fixed asset removal costs are presented as part of depreciation expense for financial
5 reporting purposes and are recorded on an “as incurred” basis unless an asset retirement
6 obligation has been recorded.

7
8 Losses/gains on asset disposition may result from the sale of assets. Losses/gains on asset
9 disposition are based on historic actual experience and trends and are not separately
10 forecast for the bridge or test years.

11 12 **3.0 AMORTIZATION EXPENSE**

13
14 Amortization expense pertains to certain regulatory amounts the Board has allowed
15 Hydro One Distribution to defer for recovery at a future date. The Board has, in past
16 decisions, approved the deferred balance and prescribed the method and time period over
17 which the balance in each regulatory deferral or variance account may be disposed.

18
19 Historical, bridge and test year amortization schedules are filed at Exhibit C2, Tab 4,
20 Schedule 1.

Table 2
Distribution Amortization Expense
\$ Million

Description	Historic			Bridge		Test				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Environmental	9.4	7.7	9.2	8.5	11.2	14.2	22.0	22.4	22.0	21.6
Other Amortization	7.7	0	0	0	0	0	0	0	0	0
Total	17.2	7.7	9.2	8.5	11.2	14.2	22.0	22.4	22.0	21.6

3.1 Environmental

Hydro One Distribution records an obligation for the net present value of estimated future expenditures required to remediate legacy environmental contamination inherited from Ontario Hydro upon demerger in 1999. Since these expenditures are expected to be recovered in future rates, Hydro One Distribution also records these amounts as a regulatory asset for financial reporting purposes. This regulatory asset is amortized on a basis consistent with the pattern of actual expenditures incurred. The combined work program to manage polychlorinated biphenyls (PCBs) and to carry out Hydro One's land assessment and remediation (LAR) program are currently estimated to continue until the year 2025. When OM&A work program costs are incurred, there is a corresponding credit to OM&A for the environmental expenditures to reflect the fact that the cost is reflected in revenue requirement as amortization expense and not as OM&A. The work programs are discussed further in Exhibit C1, Tab 2, Schedule 2.

3.2 Other Amortization

The other amortization in 2010 related to the final year of asset amortization for a subset of the total net regulatory assets included in the Regulatory Asset Recovery Account (RARA) II rate rider. For elements of the RARA II account that represented deferred

1 costs that had not yet been recorded in the Statement of Operations, an amortization entry
2 was required to record that cost. The remainder for the RARA recovery was reflected as a
3 balance sheet entry (i.e. regulatory receivable) for which no amortization expense
4 recognition was required.

HYDRO ONE NETWORKS INC.
DISTRIBUTION
Cost of Service
Historical (2010, 2011 2012, 2013), Bridge (2014) and Test (2015 to 2019) Years
Year Ending December 31
(\$ Millions)

Line No.	Particulars	2010 (a)	2011 (b)	2012 (c)	2013 (d)	2014*** (e)	2015 (f)	2016 (g)	2017 (h)	2018 (i)	2019 (j)	Reference
1	Total Operation, Maintenance & Administrative Expenses	550.9	554.5	553.4	610.6	581.3	564.3	610.2	614.0	603.9	600.0	Exhibit C1, Tab 2, Schedule 1
2	Depreciation & Amortization Expenses*	269.8	286.9	308.1	321.5	340.4	355.4	374.9	390.2	402.9	413.6	Exhibit C1, Tab 6, Schedule 1
3	Income Taxes**	8.0	66.1	43.6	24.0	27.5	52.5	60.5	63.0	65.4	69.5	Exhibit C2, Tab 5, Schedule 1 for test years only
4	Total Cost of Service	828.7	907.5	905.1	956.1	949.2	972.2	1045.6	1067.2	1072.2	1083.1	

* The depreciation and amortization amount in 2010 does not include the \$7.7 million in other regulatory amortization, more details are provided at Exhibit C1, Tab 6, Schedule 1.

** The numbers shown for historical years reflect the actual amounts in Hydro One Distribution's audited financial statements, thus including both current and deferred provision for PILs.

*** Includes Regulatory asset impact

COMPARISON OF OM&A EXPENSE BY MAJOR CATEGORY

<u>Distribution OM&A (\$millions)</u>	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sustaining OM&A										
Stations	27.2	25.8	26.4	23.7	27.9	27.6	28.4	28.9	28.6	28.3
Lines	124.4	137.4	130.9	161.3	134.0	141.3	149.7	152.4	154.6	157.5
Meters, Telecom & Control	24.1	26.6	14.2	15.8	19.4	18.5	18.7	18.5	18.9	19.4
Vegetation Management	130.2	127.3	136.4	134.9	139.1	142.0	177.6	180.3	161.1	152.9
Total Sustaining OM&A	305.9	317.1	307.9	335.7	320.4	329.5	374.4	380.1	363.2	358.1
Development OM&A										
Data Collection, Engineering and Technical Studies	6.6	4.2	3.9	4.0	4.7	4.7	4.7	4.7	4.9	5.0
Distribution Generation Connections	0.0	2.8	2.9	2.5	2.0	2.2	2.0	2.0	2.0	2.1
Standards and Technology	5.4	6.1	4.2	4.0	5.6	5.6	5.8	6.0	6.1	6.3
Smart Grid Studies	0.3	2.7	3.7	0.5	6.1	2.9	5.2	4.3	4.3	4.4
Total Development OM&A	12.3	15.8	14.7	11.1	18.4	15.4	17.7	17.0	17.4	17.8
Operations OM&A										
Operations Support	4.4	4.2	4.8	4.7	5.2	5.3	5.4	5.5	5.5	5.6
Operations	12.3	13.0	14.8	15.7	16.7	16.9	17.1	17.1	17.4	17.6
Health, Safety & Environment	1.8	0.9	1.4	1.6	2.4	2.7	2.8	2.6	2.6	2.7
Smart Grid	0.0	0.0	0.0	0.0	6.1	5.3	9.1	9.6	16.8	15.1
Total Operations OM&A	18.5	18.1	21.0	22.0	30.4	30.2	34.4	34.8	42.2	41.0

<u>Distribution OM&A (\$millions)</u>	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Customer Service OM&A										
Customer Operations	105.5	101.3	105.2	128.5	109.2	96.8	96.2	96.6	98.0	99.6
Distributed Generation	5.0	9.5	9.0	6.9	7.7	7.9	8.1	8.3	8.5	8.7
Conservation & Demand Management	1.7	2.0	1.6	1.8	3.1	3.1	2.7	2.7	2.8	2.8
Customer Experience	0.0	0.0	0.0	1.6	4.2	4.3	4.3	4.3	4.2	4.3
Smart Grid Pilot	2.5	0.4	0.8	9.8	9.5	5.7	4.9	2.8	0.0	0.0
Total Customer Service OM&A	114.7	113.3	116.7	148.6	133.7	117.8	116.3	114.7	113.5	115.4
OM&A Common Corporate Costs and Other Costs										
Asset Management	30.6	34.6	25.1	19.9	18.4	18.4	17.8	17.6	17.5	17.8
Common Corporate Functions & Services	69.7	68.5	71.5	76.3	79.1	77.2	76.8	76.7	78.6	79.9
Information Technology (including Cornerstone)	71.2	72.6	80.6	100.1	86.0	85.7	86.4	86.1	86.5	87.6
Cost of Sales	5.4	5.8	18.5	5.9	2.0	2.1	2.1	2.1	2.2	2.2
Other	-82.0	-96.0	-107.1	-113.5	-111.7	-116.7	-120.6	-120.1	-122.4	-125.2
Total OM&A Common Corporate Costs and Other Costs	94.9	85.5	88.6	88.8	73.8	66.7	62.5	62.4	62.4	62.3
Property Taxes & Rights Payments	4.6	4.6	4.5	4.4	4.6	4.7	4.9	5.0	5.2	5.4
Total Distribution OM&A	550.9	554.4	553.4	610.6	581.3	564.3	610.2	614.0	603.9	600.0

HYDRO ONE NETWORKS INC.
DISTRIBUTION
Depreciation & Amortization Expenses
Historical Years (2010, 2011, 2012 and 2013)
Year Ending December 31
(\$ Millions)

Line No.	Particulars	2010		2011		2012		2013	
		Deprn Rate	Provision	Deprn Rate	Provision	Deprn Rate	Provision	Deprn Rate	Provision
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
	<u>Depreciation Expenses</u>								
1	Major Fixed Assets	2.85%	191.7	2.90%	208.5	2.96%	226.1	2.91%	236.2
2	Minor Fixed Assets	9.93%	41.1	9.37%	41.9	9.25%	43.3	8.40%	41.5
3	Depreciation on Fixed Assets		<u>232.7</u>		<u>250.4</u>		<u>269.3</u>		<u>277.7</u>
4	Less Capitalized Depreciation		(15.4)		(16.7)		(17.1)		(15.9)
5	Asset Removal Costs		43.2		45.5		46.5		51.0
6	Losses/(Gains) on Asset Disposition		(0.2)		(0.1)		0.1		0.1
7	Total Depreciation Expenses		<u>260.4</u>		<u>279.2</u>		<u>298.9</u>		<u>313.0</u>
	<u>Amortization Expenses</u>								
8	Environmental Costs		9.4		7.7		9.2		8.5
9	Other Regulatory Amortization		7.7		0.0		0.0		0.0
10	Other Amortization		0.0		0.0		0.0		0.0
11	Total Amortization Expenses		<u>17.2</u>		<u>7.7</u>		<u>9.2</u>		<u>8.5</u>
12	Total Depreciation & Amortization Expenses		<u>277.5</u>		<u>286.9</u>		<u>308.1</u>		<u>321.5</u>
13	Exclude Other Reg Amort		7.7		0.0		0.0		0.0
14	Depreciation & Amortization for recovery		<u>269.8</u>		<u>286.9</u>		<u>308.1</u>		<u>321.5</u>

HYDRO ONE NETWORKS INC.
DISTRIBUTION
Depreciation & Amortization Expenses
Bridge Year (2014) and Test Years (2015 to 2019)
Year Ending December 31
(\$ Millions)

Line No.	Particulars	2014		2015		2016		2017		2018		2019	
		Deprn Rate	Provision (\$M)	Deprn Rate	Provision (\$M)	Deprn Rate	Provision (\$M)	Deprn Rate	Provision (\$M)	Deprn Rate	Provision (\$M)	Deprn Rate	Provision (\$M)
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
	<u>Depreciation Expenses</u>												
1	Major Fixed Assets	2.78%	211.5	2.71%	255.0	2.66%	263.6	2.63%	275.1	2.59%	284.6	2.54%	291.8
2	Minor Fixed Assets	9.55%	41.7	9.39%	45.0	8.94%	46.0	8.41%	46.3	8.01%	47.4	7.72%	49.1
3	Depreciation on Fixed Assets		<u>253.2</u>		<u>300.0</u>		<u>309.6</u>		<u>321.4</u>		<u>331.9</u>		<u>341.0</u>
4	Less Capitalized Depreciation		(12.7)		(13.2)		(13.7)		(14.0)		(14.4)		(14.8)
5	Asset Removal Costs		<u>50.7</u>		<u>54.5</u>		<u>57.0</u>		<u>60.4</u>		<u>63.3</u>		<u>65.8</u>
6	Total Depreciation Expenses		<u>291.2</u>		<u>341.3</u>		<u>352.9</u>		<u>367.8</u>		<u>380.8</u>		<u>392.0</u>
	<u>Amortization Expenses</u>												
7	Environmental Costs		11.2		14.2		22.0		22.4		22.0		21.6
8	Other Regulatory Amortization		0.0		0.0		0.0		0.0		0.0		0.0
9	Other Amortization		<u>0.0</u>		<u>0.0</u>		<u>0.0</u>		<u>0.0</u>		<u>0.0</u>		<u>0.0</u>
10	Total Amortization Expenses		<u>11.2</u>		<u>14.2</u>		<u>22.0</u>		<u>22.4</u>		<u>22.0</u>		<u>21.6</u>
11	Total Depreciation & Amortization Expenses		<u>302.5</u>		<u>355.4</u>		<u>374.9</u>		<u>390.2</u>		<u>402.9</u>		<u>413.6</u>
12	Exclude Other Reg Amort		0.0		0.0		0.0		0.0		0.0		0.0
13	Depreciation & Amortization for recovery		<u>302.5</u>		<u>355.4</u>		<u>374.9</u>		<u>390.2</u>		<u>402.9</u>		<u>413.6</u>

HYDRO ONE NETWORKS INC.
DISTRIBUTION
Calculation of Utility Income Taxes
Test Years (2015 to 2019)
Year Ending December 31
(\$ Millions)

Line No.	Particulars	2015 (a)	2016 (b)	2017 (c)	2018 (d)	2019 (e)	
	<u>Determination of Taxable Income</u>						
1	Regulatory Net Income (before tax)	\$ 307.0	\$ 334.0	355.3	\$ 373.4	390.9	
2	Book to Tax Adjustments:						
3	Other Post Employment Benefits expense	27.9	26.4	22.9	23.9	22.7	
4	Other Post Employment Benefits payments	(31.1)	(33.7)	(35.6)	(37.4)	(39.7)	
5	Inergi pension payments	0.0	0.0	0.0	0.0	0.0	
6	Depreciation and amortization	355.4	374.9	390.2	402.9	413.6	
7	Capital Cost Allowance	(377.4)	(384.3)	(406.1)	(426.1)	(433.8)	
8	Removal costs	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	
9	Environmental costs paid	(14.2)	(22.0)	(22.4)	(22.0)	(21.6)	
10	Hedge loss - amortization	0.1	0.1	0.1	0.1	0.1	
11	Non-deductible meals & entertainment	2.4	2.4	2.4	2.4	2.4	
12	Capital amounts expensed under \$2K	6.7	6.7	6.7	6.7	6.7	
13	Research & Development ITC	1.2	1.2	1.2	1.2	1.2	
14	Federal apprenticeship credits	0.3	0.3	0.3	0.3	0.3	
15	Capitalized overhead costs	(21.8)	(20.7)	(20.4)	(20.9)	(21.7)	
16	Capitalized pension costs	(45.2)	(43.5)	(43.5)	(44.9)	(45.9)	
17	Debt Issuance costs - amortization	1.1	1.2	1.4	1.4	1.5	
18	Debt Issuance costs - 21(e) deduction	(1.8)	(2.0)	(2.1)	(2.1)	(2.1)	
19	Premium/Discount - amortization	(0.6)	(0.7)	(0.7)	(0.4)	(0.5)	
20	Bond discount deduction	(0.4)	(0.2)	0.0	0.0	0.0	
		\$ (103.3)	\$ (100.0)	(111.7)	\$ (121.0)	(122.8)	
21	Regulatory Taxable Income	\$ 203.7	\$ 233.9	243.6	\$ 252.4	268.1	
22	Corporate Income Tax Rate	26.50 %	26.50 %	26.50 %	26.50 %	26.50 %	
23	Subtotal	\$ 54.0	\$ 62.0	64.5	\$ 66.9	71.1	
24	Less: R&D ITC / Federal apprenticeship credits	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)	
25	Regulatory Income Tax	\$ 52.5	\$ 60.5	63.0	\$ 65.4	69.5	
	<u>Tax Rates</u>						
26	Federal Tax	15.00 %	15.00 %	15.00 %	15.00 %	15.00 %	
27	Provincial Tax	11.50 %	11.50 %	11.50 %	11.50 %	11.50 %	
28	Total Tax Rate	26.50 %	26.50 %	26.50 %	26.50 %	26.50 %	

HYDRO ONE NETWORKS INC.
DISTRIBUTION
Calculation of Capital Cost allowance (CCA)
2015 to 2019 Networks Allocation to Dx
Year Ending December 31
(\$ Millions)

2015	CCA Class	Opening UCC	Net Additions	UCC pre-1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
	1	1,558.6	21.2	1,579.8	10.59	1,569.2	4%	62.8	1,517.0
	2	257.1	0.0	257.1	-	257.1	6%	15.4	241.7
	3	11.2	0.0	11.2	-	11.2	5%	0.6	10.6
	6	12.0	0.0	12.0	-	12.0	10%	1.2	10.8
	8	123.9	46.7	170.6	23.34	147.3	20%	29.5	141.2
	9	0.9	0.0	0.9	-	0.9	25%	0.2	0.7
	10	104.8	32.2	137.1	16.11	121.0	30%	36.3	100.8
	12	12.0	15.7	27.7	7.85	19.8	100%	19.8	7.8
	13	8.7	3.7	12.3	1.83	10.5	20%	1.4	10.9
	17	7.5	0.0	7.5	-	7.5	8%	0.6	6.9
	35	(0.1)	0.0	(0.1)	-	(0.1)	7%	(0.0)	(0.1)
	42	0.1	0.0	0.1	-	0.1	12%	0.0	0.1
	45	0.1	0.0	0.1	-	0.1	45%	0.1	0.1
	46	1.2	0.0	1.2	-	1.2	30%	0.4	0.8
	47	2,277.3	447.1	2,724.4	223.54	2,500.9	8%	200.1	2,524.3
	50	18.1	10.7	28.8	5.33	23.5	55%	12.9	15.9
		4,393.6	577.2	4,970.8	288.60	4,682.2		381.2	4,589.6
Dx CEC Continuity		28.8	4.0	32.8	2.0	30.8	7%	2.2	30.6
						Total CCA and ECE		383.4	
						Non-Regulatory		(4.7)	
						Adjustment to CCA re goodwill		(1.2)	
						Total CCA for RR		377.4	

2016	CCA Class	Opening UCC	Net Additions	UCC pre-1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
	1	1,517.0	18.4	1,535.4	9.2	1,526.2	4%	61.0	1,474.3
	2	241.7	0.0	241.7	-	241.7	6%	14.5	227.2
	3	10.6	0.0	10.6	-	10.6	5%	0.5	10.1
	6	10.8	0.0	10.8	-	10.8	10%	1.1	9.7
	8	141.2	33.6	174.8	16.8	158.0	20%	31.6	143.2
	9	0.7	0.0	0.7	-	0.7	25%	0.2	0.5
	10	100.8	36.5	137.3	18.3	119.0	30%	35.7	101.6
	12	7.8	10.2	18.1	5.1	13.0	100%	13.0	5.1
	13	10.9	2.8	13.7	1.4	12.3	20%	1.7	12.0
	17	6.9	0.0	6.9	-	6.9	8%	0.6	6.4
	35	(0.1)	0.0	(0.1)	-	(0.1)	7%	(0.0)	(0.1)
	42	0.1	0.0	0.1	-	0.1	12%	0.0	0.1
	45	0.1	0.0	0.1	-	0.1	45%	0.0	0.0
	46	0.8	0.0	0.8	-	0.8	30%	0.3	0.6
	47	2,524.3	436.4	2,960.7	218.2	2,742.5	8%	219.4	2,741.3
	50	15.9	4.9	20.8	2.5	18.4	55%	10.1	10.7
		4,589.6	542.9	5,132.5	271.5	4,861.0		389.6	4,742.8
Dx CEC Continuity		30.6	3.8	34.4	1.9	32.5	0.1	2.3	32.2
						Total CCA and ECE		391.9	
						Non-Regulatory		(6.5)	
						Adjustment to CCA re goodwill		(1.1)	
						Total CCA for RR		384.3	

2017	CCA Class	Opening UCC	Net Additions	UCC pre-1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
	1	1,474.3	19.3	1,493.6	9.6	1,484.0	4%	59.4	1,434.3
	2	227.2	0.0	227.2	-	227.2	6%	13.6	213.5
	3	10.1	0.0	10.1	-	10.1	5%	0.5	9.6
	6	9.7	0.0	9.7	-	9.7	10%	1.0	8.7
	8	143.2	40.6	183.8	20.3	163.5	20%	32.7	151.1
	9	0.5	0.0	0.5	-	0.5	25%	0.1	0.4
	10	101.6	33.9	135.4	16.9	118.5	30%	35.6	99.9
	12	5.1	23.8	28.9	11.9	17.0	100%	17.0	11.9
	13	12.0	2.8	14.8	1.4	13.4	20%	1.9	12.9
	17	6.4	0.0	6.4	-	6.4	8%	0.5	5.9
	35	(0.1)	0.0	(0.1)	-	(0.1)	7%	(0.0)	(0.1)
	42	0.1	0.0	0.1	-	0.1	12%	0.0	0.1
	45	0.0	0.0	0.0	-	0.0	45%	0.0	0.0
	46	0.6	0.0	0.6	-	0.6	30%	0.2	0.4
	47	2,741.3	481.3	3,222.6	240.6	2,982.0	8%	238.6	2,984.0
	50	10.7	19.8	30.5	9.9	20.6	55%	11.4	19.2
		4,742.8	621.4	5,364.2	310.7	5,053.5		412.4	4,951.8
Dx CEC Continuity		32.2	4.0	36.2	2.0	34.2	0.1	2.4	33.8
						Total CCA and ECE		414.8	
						Non-Regulatory		(7.6)	
						Adjustment to CCA re goodwill		(1.1)	
						Total CCA for RR		406.1	

2018	CCA Class	Opening UCC	Net Additions	UCC pre-1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
	1	1,434.3	17.4	1,451.7	8.7	1,443.0	4%	57.7	1,394.0
	2	213.5	0.0	213.5	-	213.5	6%	12.8	200.7
	3	9.6	0.0	9.6	-	9.6	5%	0.5	9.1
	6	8.7	0.0	8.7	-	8.7	10%	0.9	7.8
	8	151.1	29.4	180.5	14.7	165.8	20%	33.2	147.4
	9	0.4	0.0	0.4	-	0.4	25%	0.1	0.3
	10	99.9	37.5	137.4	18.8	118.6	30%	35.6	101.8
	12	11.9	11.7	23.5	5.8	17.7	100%	17.7	5.8
	13	12.9	3.1	16.0	1.6	14.4	20%	2.2	13.8
	17	5.9	0.0	5.9	-	5.9	8%	0.5	5.4
	35	(0.1)	0.0	(0.1)	-	(0.1)	7%	(0.0)	(0.1)
	42	0.1	0.0	0.1	-	0.1	12%	0.0	0.1
	45	0.0	0.0	0.0	-	0.0	45%	0.0	0.0
	46	0.4	0.0	0.4	-	0.4	30%	0.1	0.3
	47	2,984.0	504.5	3,488.5	252.3	3,236.3	8%	258.9	3,229.6
	50	19.2	6.5	25.7	3.2	22.4	55%	12.3	13.3
		<u>4,951.8</u>	<u>610.1</u>	<u>5,561.9</u>	<u>305.1</u>	<u>5,256.9</u>		<u>432.5</u>	<u>5,129.4</u>
Dx CEC Continuity		33.8	4.4	38.1	2.2	36.0	0.1	2.5	35.6
						Total CCA and ECE		435.0	
						Non-Regulatory		(8.0)	
						Adjustment to CCA re goodwill		(1.0)	
						Total CCA for RR		<u>426.1</u>	
2019	CCA Class	Opening UCC	Net Additions	UCC pre-1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
	1	1,394.0	16.4	1,410.3	8.2	1,402.1	4%	56.1	1,354.2
	2	200.7	0.0	200.7	-	200.7	6%	12.0	188.7
	3	9.1	0.0	9.1	-	9.1	5%	0.5	8.6
	6	7.8	0.0	7.8	-	7.8	10%	0.8	7.1
	8	147.4	22.4	169.7	11.2	158.6	20%	31.7	138.0
	9	0.3	0.0	0.3	-	0.3	25%	0.1	0.2
	10	101.8	35.1	136.9	17.6	119.4	30%	35.8	101.1
	12	5.8	13.3	19.1	6.6	12.5	100%	12.5	6.6
	13	13.8	3.2	17.0	1.6	15.4	20%	2.3	14.7
	17	5.4	0.0	5.4	-	5.4	8%	0.4	5.0
	35	(0.1)	0.0	(0.1)	-	(0.1)	7%	(0.0)	(0.1)
	42	0.1	0.0	0.1	-	0.1	12%	0.0	0.1
	45	0.0	0.0	0.0	-	0.0	45%	0.0	0.0
	46	0.3	0.0	0.3	-	0.3	30%	0.1	0.2
	47	3,229.6	493.0	3,722.7	246.5	3,476.2	8%	278.1	3,444.6
	50	13.3	8.2	21.6	4.1	17.5	55%	9.6	12.0
Dx CCA		<u>5,129.4</u>	<u>591.6</u>	<u>5,721.0</u>	<u>295.8</u>	<u>5,425.2</u>	4.0	<u>440.0</u>	<u>5,281.1</u>
Dx CEC Continuity		35.6	4.5	40.1	2.2	37.9	0.1	2.7	37.5
						Total CCA and ECE		442.6	
						Non-Regulatory		(7.9)	
						Adjustment to CCA re goodwill		(0.9)	
						Total CCA for RR		<u>433.8</u>	

HYDRO ONE NETWORKS INC.
DISTRIBUTION
Calculation of Capital Cost allowance (CCA)
2013 and 2014 Networks Allocation to Distribution
Year Ending December 31
(\$ Millions)

2013	CCA Class	Opening UCC	Net Additions	UCC pre-1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
	1	1,683.3	(19.1)	1,664.2	2.3	1,661.9	4%	66.5	1,597.7
	2	290.9	0.0	290.9	-	290.9	6%	17.5	273.5
	3	12.3	0.0	12.4	-	12.4	5%	0.6	11.8
	6	11.9	2.7	14.6	1.4	13.3	10%	1.3	13.3
	8	116.4	23.8	140.2	11.9	128.3	20%	25.7	114.5
	9	1.6	0.0	1.7	-	1.7	25%	0.4	1.2
	10	98.1	40.9	138.9	20.5	118.5	30%	35.5	103.4
	12	9.9	170.5	180.4	85.2	95.1	100%	95.1	85.2
	13	3.4	1.7	5.2	0.9	4.3	NA	0.7	4.5
	17	7.7	1.2	8.9	0.6	8.3	8%	0.7	8.2
	42	0.1	0.0	0.1	-	0.1	12%	-	0.1
	45	0.4	0.0	0.4	-	0.4	45%	0.2	0.2
	46	1.4	0.9	2.3	0.5	1.8	30%	0.5	1.7
	47	1,796.2	405.6	2,201.9	196.1	2,005.7	8%	160.5	2,041.4
	50	30.0	13.7	43.6	6.8	36.8	55%	20.2	23.4
	Dx CCA	4,063.6	641.9	4,705.7	326.2	4,379.5		425.4	4,280.1
	DX CEC Continuity	27.9	0.6	28.5	0.0	28.5	7%	2.0	26.5
					Adjustment to CCA re goodwill		(1.7)		
					Total CCA for RR		425.7		

2014	CCA Class	Opening UCC	Net Additions	UCC pre-1/2 yr	50% net additions	UCC for CCA	CCA Rate	CCA	Closing UCC
	1	1,597.7	25.3	1,623.0	12.7	1,610.4	4%	64.4	1,558.6
	2	273.5	0.0	273.5	-	273.5	6%	16.4	257.1
	3	11.8	0.0	11.8	-	11.8	5%	0.6	11.2
	6	13.3	0.0	13.3	-	13.3	10%	1.3	12.0
	8	114.5	35.9	150.4	18.0	132.5	20%	26.5	123.9
	9	1.2	0.0	1.2	-	1.2	25%	0.3	0.9
	10	103.4	38.2	141.6	19.1	122.5	30%	36.7	104.8
	12	85.2	24.0	109.2	12.0	97.2	100%	97.2	12.0
	13	4.5	5.2	9.7	2.6	7.1	20%	1.0	8.7
	17	8.2	0.0	8.2	-	8.2	8%	0.7	7.5
	42	0.1	0.0	0.1	-	0.1	12%	0.0	0.1
	45	0.2	0.0	0.2	-	0.2	45%	0.1	0.1
	46	1.7	0.0	1.7	-	1.7	30%	0.5	1.2
	47	2,041.4	415.9	2,457.3	207.9	2,249.3	8%	179.9	2,277.3
	50	23.4	10.5	33.9	5.3	28.7	55%	15.8	18.1
	52	-	0.0	-	-	-	100%	-	-
		4,280.1	555.0	4,835.1	277.5	4,557.6	5.0	441.5	4,393.6
	Dx CEC Continuity	26.5	4.3	30.8	2.2	28.7	0.1	2.0	28.8
					Total CCA and ECE		443.5		
					Non-Regulatory		(34.8)		
					Adjustment to CCA re goodwill		(1.3)		
					Total CCA for RR		407.4		