Response to Carriers Interrogatory Question #1

Reference: Exhibit H, Tab 7, Schedule 1, page 5, section 3.3

Hydro Ottawa states "As of yearend 2013, Hydro Ottawa had seven companies attaching to Hydro Ottawa poles. Telecom cables and street lighting represented the majority of attachments; however, Bell Canada and Hydro One ("HONI") also had attachments. With the exception of HONI, which applies its own OEB-approved rate, the remaining companies pay the current, province-wide annual pole charge of $22.35 per pole."

Exhibit H, Tab 7, Schedule 1, Attachment H-7(a) (referred to herein as "Attachment H-7(a)") which identifies 35,663 poles with attachments.

Question #1:

a) Confirm that the 35,663 poles with attachments are all Poles with Wireline Attachments. If not, how many Poles do not have Wireline Attachments?
b) In indicate the year used to determine the 35,663 poles with attachments and whether this is based on the number of poles with attachments at year end or the average for the year.
c) Provide a list of the Wireline Attachers that currently have Wireline Attachments on one or more Poles and indicate in each case whether or not the Wireline Attacher pays Hydro Ottawa's OEB-approved pole attachment rate of $22.35 for all of its Wireline Attachments and, if not, indicate what compensation is paid by the Wireline Attacher, if anything.
d) Provide a list of the Wireless Attachers that currently have Wireless Attachments on one or more Poles and indicate in each case whether or not the Wireless Attacher pays Hydro Ottawa's OEB-approved pole attachment rate of $22.35 for all of its Wireless Attachments and, if not, indicate what compensation is paid by the Wireless Attacher, if anything.

e) Provide a list of the Other Attachers that currently have Other Attachments on one or more Poles, indicating for each Other Attacher the types of Other Attachments it has on Poles and whether or not the Other Attacher pays Hydro Ottawa's OEB-approved Pole attachment rate of $22.35 for all of its Other Attachments. If the Other Attacher does not pay the OEB-approved rate of $22.35 for all of its Other Attachments, state what compensation it does pay, if anything.

f) Complete the table below providing the number of Single Use Poles and Poles (at calendar year-end). Use actuals for 2010-2014 and estimates for 2015.

Types of Poles	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Single Use Poles						
Poles with no Wireline Attachers						
Poles with 1 Wireline Attacher						
Poles with 2 Wireline Attachers						
Poles with 3 Wireline Attachers						
Poles with 4 Wireline Attachers						
Poles with 5 or more Wireline Attachers						
Total number of Poles						

g) Complete the table below for Wireless Attachments on Poles.

Types of Poles	2010	2011	2012	2013	2014	2015
Poles with no Wireless Attachers						
Poles with 1 Wireless Attacher						
Poles with 2 Wireless Attachers						
Poles with 3 Wireline Attachers						
Poles with 4 Wireline Attachers						
Poles with 5 or more Wireline Attachers						
Total number of Poles						

h) Complete the table below for Attachers on Poles.

Types of Poles	2010	2011	2012	2013	2014	2015
Poles with no Wireless Attachers						
Poles with 1 Wireless Attacher						
Poles with 2 Wireless Attachers						
Poles with 3 Wireline Attachers						
Poles with 4 Wireline Attachers						
Poles with 5 or more Wireline Attachers						
Total number of Poles						

i) Provide the source of the data provided in response to (f). (g) and (h), indicating whether the data are based on a census of all Hydro Ottawa poles or on a sample or some other methodology and the date of any such census, sample or other methodology. If a sample was used, provide details regarding the nature and scope of the sampling undertaken. If some methodology other than a sample

or census was used, provide a detailed description of the methodology and all data sources and inputs.

j) Describe in detail the methodology and data inputs, including data sources, used to determine that Hydro Ottawa has 35,663 Poles with attachments.

k) Describe in detail the type of attachments HONI has installed on poles owned by Hydro Ottawa (i.e., their purpose of the service they provide). How many Poles have HIONI attachments? Where on the pole are HONI's attachments installed?

l) Provide the rate that is paid by HONI for its attachments to Hydro Ottawa Poles.

m) Define what is meant by "telecom cables" and whether or not this term encompasses attachments by Bell Canada.

n) Has Hydro Ottawa installed any of its own attachments or equipment within the communications space of its Poles? If so, how many Poles have such attachments and describe the type of attachments and their purpose or service provided.

o) Provide the number of Poles with street lighting attachments and the name(s) of all owners of such street lighting attachments.

Response:

Attachers: has the meaning ascribed to it as per ESA's O. Reg. 22/04 Guideline for Third Party Attachments

a. HOL had 35,663 in-service power distribution poles with 3rd party attachers including wireline attachments.

b. This total was determined at EOY 2013.

c. The following list of Wireline Attachers currently have Wireline Attachments on one or more Poles and pays Hydro Ottawa's OEB-approved pole attachment rate of $22.35 for all of its Wireline Attachments:

1. Allstream – telecom attachments
2. BH Telecom – telecom attachments
3. Canadian P2P Fibre Systems - telecom attachments
4. Eastlink - telecom attachments
5. Rogers – telecom attachments
6. Telus – telecom attachments
7. Videotron – telecom attachments
8. Bell Canada - telecom attachments
9. Village of Casselman – street lighting attachments
10. City of Ottawa - street lighting attachments attachments

The following Wireline Attacher currently has Wireline Attachments on one or more Poles and does not Hydro Ottawa's OEB-approved pole attachment rate of $22.35 for its Wireline Attachments:

1. HONI – electrical distribution

d. Rogers is the only 3rd party wireless attacher.

e. Since 2002, HOL has had third party telecom antennas (i.e. wireless attachment) on its poles and currently charges the OEB-approved wireline attachment rate. Since the 3rd party telecom attacher has existing wire attachments on the specific HOL poles with antennas, the attacher does not pay additional attachment rates for its antennas as per the OEB Decision RP-2003-0249. Over

the last several years, 3rd party telecom antennas on provincially regulated power poles have attracted discussion with the OEB and across Canada.

HOL has an immaterial number (three-dozen poles) of community based 3rd party decorative banner attachers that install for temporary festive periods lasting only several weeks during a year. These 3rd party banner attachers are required to provide insurance and meet technical standards, but do not pay for their attachment other than any make-ready work done by HOL.

f. HOL's GIS system is used to track 3rd party attachments. This GIS system is a dynamic database system such that data queries are made on the current data since there are no historical fields. Historical tracking functionality can be added to the GIS system, but, will increase the cost to the pole attachment rate to recover those GIS modification costs.

g. Please see Interrogatory Response to Carriers Question #1, part f.

h. Please see Interrogatory Response to Carriers Question #1, part f.

i. HOL completed a field survey of its poles in 2003-2004 with the participation of its major 3rd party attachers. At the conclusion of this field survey, the relevant survey data was provided to its major 3rd party attachers. This field survey data was imported to HOL's GIS system. Since this last field survey, HOL has used the approved 3rd party attacher permits to update its GIS system.

j. HOL runs standard queries on its GIS data for 3rd party attachments on its poles.

k. HONI has distribution power attachments on HOL poles. The majority of these 602 poles (EOY 2014) are along service boundary roads between HONI and HOL.

l. HONI applies for OEB-approved attachment rates for its agreement with local distribution company ("LDC") pole attachments. These HONI OEB approved rates can be found on the OEB website.

m. "Telecom cables" are cables used for telecommunication purposes. With respect to telecom cables on HOL power poles. Bell Canada wireline attachments are considered telecom cables.

n. Since HOL has electrical protection communication equipment attached to twenty-four of its poles, this small quantity of HOL attachments is immaterial to the total number of 3rd party attachments.

o. 13,265 of HOL poles have street light attachments that have an OEB Attachment Rate. Both the City of Ottawa and the Village of Casselman pay for their street light attachments on HOL poles.

Response to Carriers Interrogatory Question #2

Reference: Exhibit H, Tab 7, Schedule 1; Exhibit H, Tab 7, Schedule 1, Attachment H-7(a)

Question #02:

a) Does Hydro Ottawa currently have a joint use agreement with Bell Canada whereby Hydro Ottawa and Bell Canada have reciprocal access to one another's poles? If yes, please provide a copy of the agreement.

b) Does Bell Canada pay Hydro Ottawa the OEB-approved Pole attachment rate of $22.35 for its Wireline Attachments? If the answer is no, what compensation or other consideration does Bell Canada provide to Hydro Ottawa?

c) Does Hydro Ottawa provide any services to Bell Canada for work done on Poles owned by Bell Canada, for example, for maintenance related to vegetation, storm or emergency repairs? If yes, provide the amounts received by Hydro Ottawa for any such work and indicate whether the amounts received fully recover Hydro Ottawa's expenditures for the work.

d) Does Bell Canada provide any services to Hydro Ottawa for work done on Poles owned by Hydro Ottawa, for example, for maintenance related to vegetation, storm or emergency repairs? If yes, provide the amounts received by Bell Canada for any such work.

e) Does Hydro Ottawa have any joint use agreements with any third party other than Bell Canada (for example, HONI) that provide for reciprocal access to one another's poles? If yes, provide the information identified in (a) and (d) for all such agreements.

f) Is Hydro Ottawa aware of any plans by any entity which would significantly increase the number of Wireline Attachments or Other Attachments on the Poles such as, for example, the recently announced plan by Bell Canada to roll out new fibre facilities on 80,000 poles in Toronto? If so, please describe the plan and how many Poles may be potentially affected.

Response:

a. Currently, HOL has a reciprocal pole attachment agreement with Bell Canada. Release of this agreement requires Bell Canada's consent.

b. Yes, Bell Canada pays Hydro Ottawa the OEB-approved Pole attachment rate of $22.35 for its Wireline Attachments.

c. The relevance of this question to HOL's proposed pole attachment rate is not clear.

d. The relevance of this question to HOL's proposed pole attachment rate is not clear.

e. HOL has a reciprocal pole attachment agreement with Hydro One. Please see Interrogatory Response to Carriers # 1 (l).

f. Currently, HOL is not aware of any 3rd party attacher plans which would significantly increase the number of wireline attachments.

Response to Carriers Interrogatory Question #3

Reference: Exhibit H, Tab 7, Schedule 1; Exhibit H, Tab 7, Schedule 1, Attachment H-7(a)

Question #03:

a) Provide the following information:
   (i) a map of Hydro Ottawa owned fibre;
   (ii) the number of Hydro Ottawa owned fibre cable kilometers (i.e., not fibre strand kilometers);
   (iii) the number of Poles used for Hydro Ottawa owned fibre;
   (iv) a map of City of Ottawa owned fibre;
   (v) the number of City of Ottawa owned fibre cable kilometers (i.e., not fibre strand kilometers); and
   (vi) the number of Poles used for City of Ottawa owned fibre.

Response:

a.
   (i) Please see response to interrogatory IR Carriers #1(n). A map is not required.
   (ii) HOL owns 400m of overhead fibre optic cable outside of its administrative buildings and electrical substations.
   (iii) Please see response to interrogatory IR Carriers #1(n).
   (iv) No map is required.
   (v) HOL does not know the total amount of overhead fibre optic cable that the City of Ottawa owns.
   (vii) The City of Ottawa has its fibre optic cable on approximately 13 HOL poles.

Response to Carriers Interrogatory Question #4

Reference: **Attachment H-7(a)** which states that Hydro Ottawa has applied an allocation factor of 25.9% based on two third party attachers.

Question #04:

a) Provide a detailed description of the basis for using 2 third party attachers, including all data inputs and the sources of all such data inputs.

b) Complete the table below indicating the dimensions (in feet) for the space on a Pole used by Hydro Ottawa to generate an allocation factor of 25.9%.

Buried Portion	
Clearance Space	
Communications Space	
Separation Space	
Power Space	
Total length of Pole	

c) Indicate whether or not street lights are located in the separation space and, if not, identify the space(s) on a Pole where street lights are located.

d) Indicate whether power facilities, such as transformers, ever encroach on, or are attached in, the separation space on the Poles.

e) Provide all steps in the calculation and all data inputs used to determine an allocation factor of 25.9%.

Response:

a. HOL allows up to a maximum of three telecom support strand attachments, per pole, except for some restricted areas. HOL submits that the actual number attachments on its poles are less than 2.5 as per its end-of-year 2013 data:

$$\frac{Total\ OEB\ Rate\ Attachments\ on\ Hydro\ Ottawa\ poles}{Hydro\ Ottawa\ Poles\ with\ OEB\ Rate\ Attachments} = \frac{43{,}082\ +\ 13{,}265}{35{,}633}$$

$$= \frac{56{,}347}{35{,}633}\ = 1.58\ Attacher\ per\ pole$$

For rate calculation purposes, HOL will use a value of 2.0 third party Attachers, per pole that provides future attacher opportunities. This value of 2.0 third party attachers, per pole may be considered optimistic considering the merger and acquisitions by telecom companies and other types of attachers, but is more representative than 2.5 attachers, per pole. Trending the telecom attachment count rate, HOL had 1.36 telecom attachments per pole in 2004, whereas, at the end of 2013, this value dropped to 1.21 telecom attachments, per pole$(43{,}082/35{,}633\ = 1.21)$.

b. The allocation factor determines the percentage of indirect costs attributed to HOL and to the 3rd party attachers based on the usage of the pole. To calculate the allocation factor, a typical 40-foot (‘) distribution pole (h=40’) is divided into five vertical spaces, as explained below and as shown in the figure that follows the explanation. Each defined space is then allocated to HOL and/or the 3rd party Attachers based on the proportionate usage space on the pole.

   i. Buried depth (b=6’) – this space provides foundational support for the pole (typically 10% of the pole height + 2’ for average soil conditions) and is allocated equally between all parties.
   ii. Clearance Space (c=17.25’) – this space is the height above grade to the lowest wires/fixtures and is allocated equally between all parties.
   iii. Telecommunication Space (t=2’) – this space is only used by the 3rd party attachers and is allocated solely to the 3rd party Attachers.

iv. Separation Space (s=3.25') – this space is required to maintain a minimum clearance from the lowest electrical distribution wires to the highest telecommunication attachments as per CSA C22.3 No. 1 standard. This space is solely allocated to the 3rd party attachers because the separation space is required to accommodate their attachments on the pole and provide a safe working space for the telecom worker. Note that 3rd party street light attachments normally attach to the pole in this space due to their above roadway height requirements for proper illumination.

v. Power Space (p=11. 5') – this space is allocated solely to HOL, as telecoms attachers are not able to attach their equipment in this space.

The allocation space is calculated by dividing each defined space by the total number of users of that space. Where the space is jointly allocated between HOL and the 3rd party attachers, HOL is considered to be one user, based on the average number of users, per pole. Therefore, in total, the allocation factor assumes an average of 3 users per pole. This allocation model yields a space allocation factor of:

n = the average number or 3rd party attachers on a HOL pole = 2.0
e = number of electrical companies in the power space on a HOL pole = 1.0

Individual 3rd party attacher space allocation factor

$$= \frac{1}{h} * \left[\frac{s}{n} + \frac{t}{n} + \frac{c}{(n+e)} + \frac{b}{(n+e)}\right] = \frac{1}{40} * \left[\frac{3.25}{2} + \frac{2}{2} + \frac{17.25}{(2+1)} + \frac{6}{(2+1)}\right] = 25.9\%$$

c. Please see Interrogatory response to Carriers #4, part b.

d. HOL has limited legacy installations where it allowed third party attachers to install their wireline attachments in the separation space. This practice was done

to assist the 3rd party attacher in avoiding the associated make-ready costs of changing the pole to be taller and provide CSA standard (C22.3 Part7) vertical clearances. In such legacy circumstances, this effectively reduced the separation space. This practice was stopped in 2001. The current HOL practice for its poles without sufficient height to maintain the CSA standard separation space, is to change the pole.

e. Please see Interrogatory response to Carriers #4, part b.

Response to Carriers Interrogatory Question #5

Reference: Exhibit B, Tab 1, Schedule 2, Updated June 29, 2015, page 94 of 319

Question #05:

a) Explain whether the pole attachment rate proposed by Hydro Ottawa will apply to:
   i. Wireless Attachments;
   ii. equipment related to traffic lights and traffic flow; or
   iii. poles operated by Hydro Ottawa but owned by third parties.

b) If the proposed pole attachment rate will not apply to any of above, provide the rates and charges that will apply.

c) Provide the revenues associated with each of the attachment types identified in (a) above, for the years 2013 to 2016 inclusive.

Response:

a) Please see Interrogatory response to Carriers #1, part d.
(ii) In Ottawa, the majority of city traffic signal lights are on their own aluminum poles at intersections. The few HOL poles that have traffic signal lights also have street light attachments; consequently, the city pays the approved OEB pole attachment rate once per pole as per the OEB rate decision.
(iii) Currently, HOL does not manage 3rd party owned poles.

b) Not applicable.

c) HOL has no additional revenue from the attachers for their additional attachments on a pole for item (a) between the years 2013 to 2015.

Response to Carriers Interrogatory Question #6

Reference: Attachment H-7(a) which identifies a net embedded cost per pole of $1,678.00.

Question # 6:

a) For each of the years 2010-2015 (actuals for 2010-2014 and estimates for 2015), provide Hydro Ottawa's average embedded cost per pole. Identify the categories, descriptions and values of all asset accounts (both aggregate and sub-accounts) used to determine the average embedded cost and the total number of poles used to determine a per pole cost, if applicable.
b) For each of the years 2010-2015 (actuals for 2010-2014 and estimates for 2015), provide Hydro Ottawa's net embedded cost per pole. Identify the categories, descriptions and values of all asset accounts (both aggregate and sub-accounts) used to determine the net embedded cost, as well as the total number of poles used to determine a per pole cost, if applicable.
c) Describe in detail the methodology, including applicable cost inputs, that was used to determine the net embedded cost per pole of $1,678.00. Describe the manner in which the costs of power-specific or power-only assets were excluded from the calculation. Include all supporting evidence, assumptions and calculations employed.
d) Confirm that all of Hydro Ottawa's costs to replace poles for whatever reason are included in the average and net embedded cost of a pole.

Response:

a. Hydro Ottawa's average net embedded cost, per pole, for the years 2011 to 2014 and estimated for 2015 are provided in Table 1, below. Hydro Ottawa does not use

any sub accounts for Poles, Towers and Fixtures. 2010 data has not been provided, as it is not comparable due to the change in capitalization policies.

Table 1: Average and Net Embedded Cost, Per Pole

	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Estimate	Average
Net Book Value Appendix 2-BA ($M)	60.9	67.8	75.3	79.7	88.7	74.5
In-service Poles	48,377	48,298	47,978	47,825	47,650	48,026
Net Embedded cost per pole ($)	**1,259**	**1,405**	**1,569**	**1,666**	**1,861**	**1,552**

b. Please refer to response a).

c. Hydro Ottawa followed OEB methodology in determining indirect cost inputs. For direct costs, see response to Allstream question #1 (a) and (b). The average net embedded cost per pole of $1,678 was calculated by dividing the average net book value of Poles, towers and fixtures, as per Hydro Ottawa's 2013 financial records for external reporting purposes, by the total number of in-service poles. Average net book value of the pole assets is calculated by subtracting the accumulated depreciation from the cost of the pole asset. For year-end 2013, these values were:

i.	Cost	=	$147.1M
ii.	Accumulated depreciation	=	$ 66.6M
iii.	Net book value	=	$ 80.5M
iv.	# of In-service HOL poles	=	47,978
v.	Average net book value per pole	=	$ 80.5M / 47,978
		=	$ 1,678 *

*See Table 1 if the above calculation were based on the MIFRS information included in Exhibit B-2-1, Appendix 2-BA

Power-specific or power-only assets were excluded in the calculation of the pole attachment rate by way of an attacher space allocation factor. Hydro Ottawa calculated the allocation factor based on a typical 40-foot distribution pole, which is divided into five vertical spaces and each defined space is then allocated to Hydro Ottawa and/or the 3rd party attachers. Where the space is jointly-allocated between Hydro Ottawa and the 3rd party attachers, Hydro Ottawa is considered to be one user, based on the average number of users, per pole. The model yielded individual third party attacher space allocation factor of 25.9 percent.

d. Confirmed.

Response to Carriers Interrogatory Question #7

Reference: Exhibit H, Tab 7, Schedule 1; Exhibit H, Tab 7, Schedule 1, Attachment H-7(a)

Question # 7:

a) Confirm that the net embedded cost per pole of $1,678 is based on the net book value of the "Poles, Towers & Fixtures" (account # 1830) provided in *Exhibit B, Tab 2, Schedule 1, Appendix 2-BA*, page 2 of 9. If not, identify the source and derivation of the net embedded cost.

b) Reconcile the net embedded cost per pole of $1,678 with the net book value of the "Poles, Towers & Fixtures" (account # 1830) provided in *Exhibit B, Tab 2, Schedule 1, Appendix 2-BA*, page 2 of 9 or other source identified in (a). Provide all calculations and source references to enable replication of the calculations.

c) Provide the calculation used to determine net embedded cost per pole of $1,678, and separately identify each of the following for fiscal year ends 2012 and 2013:

   i. gross assets
   ii. accumulated depreciation
   iii. net assets
   iv. depreciation expense

d) Provide the amounts from each of the following accounts used to determine the net embedded cost per pole of $1,678.00.

1830	**Poles, Towers and Fixtures**
1830-3	Poles, Towers and Fixtures - Subtransmission Bulk Delivery
1830-4	Poles, Towers and Fixtures – Primary
1830-5	Poles, Towers and Fixtures – Secondary
1835	**Overhead Conductors and Devices**
1835-3	Overhead Conductors and Devices - Subtransmission Bulk Delivery
1835-4	Overhead Conductors and Devices – Primary
1835-5	Overhead Conductors and Devices – Secondary
1840	**Underground Conduit**
1840-3	Underground Conduit - Bulk Delivery
1840-4	Underground Conduit – Primary
1840-5	Underground Conduit – Secondary
1845	**Underground Conductors and Devices**
1845-3	Underground Conductors and Devices - Bulk Delivery

1845-4	Underground Conductors and Devices – Primary
1845-5	Underground Conductors and Devices – Secondary
1850	**Line Transformers**
1855	**Services**
1860	**Meters**

Response:

a. The net embedded cost per pole of $1,678 was not based on the average net book value of the "Poles, Towers & Fixtures" (account # 1830) provided in Exhibit B-2-1, Appendix 2-BA, page 2 of 9, as it was based on Hydro Ottawa's 2013 financial records for external reporting purposes.

b. Reconciliation of the average net embedded cost per pole of $1,678 with the net book value of the "Poles, Towers and Fixtures" (account # 1830) provided in Exhibit B-2-1, Appendix 2-BA is shown in Table 1, below.

Table 1: Pole Rental Cost

		Original $	Revised $	Comment $
A	Direct Cost	12.68	12.68	No change
B	Net Book Value ($M)	80.5	75.3	Appendix 2-BA
C	In-service Poles	47,978	47,978	No change
D	Net Embedded Cost, per Pole	1,678	1,569	B / C
E	Capital Carrying Cost 6.7%	112.42	105.11	D x 6.7%
F	Depreciation	43.29	41.26	Appendix 2-BA
G	Pole Maintenance	12.61	12.61	No change
H	Indirect Costs	168.31	158.98	E + F + G
I	Indirect Costs Allocated	43.59	41.18	H x 25.9%
J	Pole Rental Cost	56.27	53.86	A + I
K	2016 Proposed Rate	**57.00**	**57.00**	Includes 2.1% Inflation factor

c. See response to b) for the average net embedded cost, per pole of $1,678 calculation. Gross assets, accumulated depreciation and depreciation expense for fiscal years 2012 and 2013 are shown in Table 2, below. Figures were based on Exhibit B-2-1, Appendix 2-BA, updated.

Table 2: Book Value for Poles, Towers and Fixtures

	2012 $	2013 $
Gross Assets	71,187,843	80,588,905
Accumulated Depreciation	(3,352,403)	(5,320,624)
Net book value	67,835,441	75,268,282
Depreciation Expense	1,783,190	1,979,636

d. To determine its average net embedded cost, per pole, HOL only used USofA account 1830.

Response to Carriers Interrogatory Question #8

Reference: **Attachment H-7(a)** which identifies a depreciation expense per pole of $43.29.

Question #08:

a) Reconcile the depreciation expense per pole of $43.29 with amortization expense provided in *Exhibit D, Tab 3, Schedule 1, Amortization Expense* column. Identify the year and provide all calculations used to perform the reconciliation.
b) For each of the years 2010-2015 (actuals for 2010-2014 and estimates for 2015), provide Hydro Ottawa's depreciation expense per pole. Identify the categories, descriptions and values of all asset accounts (both aggregate and sub-accounts) used to determine the depreciation expense per pole, as well as the total number of poles used to determine a per pole cost, if applicable.
c) Describe in detail the methodology, including applicable cost inputs, that was used to determine the depreciation expense per pole of $43.29. Describe the manner in which the costs of power-specific or power-only assets were excluded from the calculation. Include all supporting evidence, assumptions and calculations employed.

Response:

a. Please see Interrogatory response to Carriers #7.

b. Please see Interrogatory response to Carriers #6 and Carriers #7.

c. Please see Interrogatory response to Carriers #6 and Carriers #7.

Response to Carriers Interrogatory Question #9

Reference: Exhibit H, Tab 7, Schedule 1; Exhibit H, Tab 7, Schedule 1, Attachment H-7(a)

Question #09:

a) Is the expected life of Hydro Ottawa pole 45 years? If not, provide the expected life of such poles and indicate why it differs from 45 years.
b) Provide the number of poles that are currently at or near end-of-life.
c) Provide the number of poles that remain in use and are fully depreciated. Indicate whether or not these poles have been included in the count of poles used to determine the net embedded cost per pole and the depreciation expense per pole used to determine the proposed pole attachment rate.
d) Provide the number of poles that have been, or will be replaced, in 2015 pursuant to: (i) a proactive replacement program; (ii) another capital program. Identify the nature of the capital program(s) for these replacements.
e) Complete the table below with respect to poles replaced as part of a proactive replacement program.

	2010	2011	2012	2013	2014
Number of poles replaced					
Percentage of poles replaced					
Percentage of poles replaced that are beyond their expected life					

f) Complete the following table.

	2015	2016	2017	2018	2019
Number of poles to be replaced					
Percentage of poles to be replaced that are beyond their expected life					

g) Is it Hydro Ottawa's practice to automatically replace all poles that are older than their expected useful life?

Response:

a. The MIFRS expected useful life of wood poles is 45 years.

b. Attachment B-1(B) – Annual Planning Report - 2014 Asset Management Plan, Figure 6.6 page 21 shows that 2% of poles are in critical condition and 7% in poor condition which adds up to 9% (4,945) of the wood poles population.

c. The number of poles that remain in use and are fully depreciated is 17,577 under C-GAAP. This number has been included in the count of poles used to determine the net embedded cost per pole and the depreciation expense per pole used to determine the proposed pole attachment rate.

d. The number of poles that have been replaced and will be replaced in 2015 are shown in Table 1 below. These programs are described in Tables 3.1.1, 3.1.2 and 3.1.3 of Exhibit B-1-2.

Table 1: 2015 Pole Replacement Program

Program	Program type	Poles replaced in 2015 YTD	Additional poles to be replaced in 2015
Planned Pole Replacement	Proactive Replacement Program	294	206
System Voltage Conversion	Another Capital Program	156	90
Cable Replacement EOL (Plant Failure)	Another Capital Program	2	*
Plant Failure Capital	Another Capital Program	24	*
Stations Plant Failure Capital	Another Capital Program	1	*
Damage to Plant	Another Capital Program	12	*

Note: Plant Failure and Damage to Plant poles have not been projected since they are not planned.

e. The number of poles shown in Table 2, reflect only the poles replaced under the Pole Replacement Program. Poles are replaced in other programs such as voltage conversion, plant relocation and service connections.

Table 2: Proactive Pole Replacement Program

	2010	2011	2012	2013	2014
Number of poles replaced	142	372	380	257	212
Percentage of poles replaced	0.3%	0.8%	0.8%	0.5%	0.4%
Percentage of poles replaced that are beyond their expected life	100%	100%	100%	100%	100%

Please see Attachment B-1(B) – Annual Planning Report - 2014 Asset Management Plan, Section 6.1, for further details on the Pole Replacement Program.

f. The number of poles listed below reflects only the poles to be replaced under the Pole Replacement Program. Poles are replaced in other programs such as voltage conversion, plant relocation and service connections.

Table 3: Future Pole Replacement Program

	2015	2016	2017	2018	2019
Number of poles to be replaced	500	411	313	362	328
Percentage of poles to be replaced that are beyond their expected life	100%	100%	100%	100%	100%

Please see Attachment B-1(B) – Annual Planning Report - 2014 Asset Management Plan, Section 6.1, for a discussion of the Pole Replacement Program.

g. No, it is not Hydro Ottawa's practice to automatically replace all poles that are older than their expected useful life. Please see Section 6.1 Distribution Poles, Exhibit B-1(B) Asset Management Plan for a pole assessment description.

Response to Carriers Interrogatory Question #10

Reference: **Attachment H-7(a)** which identifies a capital carrying cost per pole of $112.43.

Question #10:

a. Confirm whether or not the capital carrying cost of $112.43 per pole is based on a weighted average cost of capital of 6.70%. If not, identify the weighted average cost of capital that was used. Explain in detail why 6.70% or some other weighted average cost of capital has been used.
b. Provide the capital structure and cost of capital in the same format provided in *Appendix 2, Tab OA Capital Structure*, used for the calculation of the capital carrying costs per pole of $112.43.

Response:

a. This cost was calculated by applying the most recent OEB approved weighted average cost of capital (WACC) rate of 6.7% to the net embedded cost per pole.

   Net Embedded Cost Per Pole * WACC = $1,678 * 6.7% = $112.43

b. Please refer to Exhibit E-1-1, Appendix 2-OA.

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Appendix 2-OA
Capital Structure and Cost of Capital

This table must be completed for the last Board approved year and the test year.

Year:

Line No.	Particulars	Capitalization Ratio (%)		Capitalization Ratio ($)	Cost Rate (%)		Return ($)
	Debt						
1	Long-term Debt	56.00%		$374,683,430	5.09%		$19,071,387
2	Short-term Debt	4.00%	(1)	$26,763,102	2.08%		$556,673
3	**Total Debt**	60.0%		$401,446,532	4.89%		$19,628,059
	Equity						
4	Common Equity	40.00%		$267,631,021	9.42%		$25,210,842
5	Preferred Shares			$ -			$ -
6	**Total Equity**	40.0%		$267,631,021	9.42%		$25,210,842
7	**Total**	100.0%		$669,077,553	6.70%		$44,838,901

Notes

(1) 4.0% unless an applicant has proposed or been approved for a different amount.

Year: 2012 (Actual)

Line No.	Particulars	Capitalization Ratio (%)		Capitalization Ratio ($)	Cost Rate (%)		Return ($)
	Debt						
1	Long-term Debt	52.80%		$327,185,000	5.25%		$17,163,415
2	Short-term Debt	5.37%	(1)	$33,273,515	2.16%		$719,041
3	**Total Debt**	58.2%		$360,458,515	4.96%		$17,882,456
	Equity						
4	Common Equity	41.83%		$259,155,000	10.19%		$26,413,000
5	Preferred Shares			$ -			$ -
6	**Total Equity**	41.8%		$259,155,000	10.19%		$26,413,000
7	**Total**	100.0%		$619,613,515	7.15%		$44,295,456

Notes

(1) 4.0% unless an applicant has proposed or been approved for a different amount.

Year: 2016 (Test Year)

Line No.	Particulars	Capitalization Ratio (%)			Cost Rate (%)		Return
	Debt						
1	Long-term Debt	56.00%		$517,051,284	3.72%		$19,252,624
2	Short-term Debt	4.00%	(1)	$36,932,235	2.16%		$797,736
3	**Total Debt**	60.0%		$553,983,519	3.62%		$20,050,360
	Equity						
4	Common Equity	40.00%		$369,322,346	9.30%		$34,346,978
5	Preferred Shares			$ -			$ -
6	**Total Equity**	40.0%		$369,322,346	9.30%		$34,346,978
7	**Total**	100.0%		$923,305,865	5.89%		$54,397,338

Notes

(1) 4.0% unless an applicant has proposed or been approved for a different amount.

Year: 2017 (Test Year)

Line No.	Particulars	Capitalization Ratio (%)			Cost Rate (%)		Return
	Debt						
1	Long-term Debt	56.00%		$543,525,815	3.94%		$21,397,607
2	Short-term Debt	4.00%	(1)	$38,823,273	2.16%		$838,583
3	**Total Debt**	60.0%		$582,349,088	3.82%		$22,236,190
	Equity						
4	Common Equity	40.00%		$388,232,725	9.30%		$36,105,643
5	Preferred Shares			$ -			$ -
6	**Total Equity**	40.0%		$388,232,725	9.30%		$36,105,643
7	**Total**	100.0%		$970,581,813	6.01%		$58,341,833

Notes

(1) 4.0% unless an applicant has proposed or been approved for a different amount.

Year: 2018 (Test Year)

Line No.	Particulars	Capitalization Ratio (%)			Cost Rate (%)		Return
	Debt						
1	Long-term Debt	56.00%		$571,366,562	4.08%		$23,290,133
2	Short-term Debt	4.00%	(1)	$40,811,897	2.16%		$881,537
3	**Total Debt**	60.0%		$612,178,459	3.95%		$24,171,670
	Equity						
4	Common Equity	40.00%		$408,118,973	9.30%		$37,955,064
5	Preferred Shares			$ -			$ -
6	**Total Equity**	40.0%		$408,118,973	9.30%		$37,955,064
7	**Total**	100.0%		$1,020,297,432	6.09%		$62,126,734

Notes

(1) 4.0% unless an applicant has proposed or been approved for a different amount.

Year: 2019 (Test Year)

Line No.	Particulars	Capitalization Ratio (%)			Cost Rate (%)		Return
	Debt						
1	Long-term Debt	56.00%		$588,405,524	4.17%		$24,560,548
2	Short-term Debt	4.00%	(1)	$42,028,966	2.16%		$907,826
3	**Total Debt**	60.0%		$630,434,490	4.04%		$25,468,374
	Equity						
4	Common Equity	40.00%		$420,289,660	9.30%		$39,086,938
5	Preferred Shares			$ -			$ -
6	**Total Equity**	40.0%		$420,289,660	9.30%		$39,086,938
7	**Total**	100.0%		$1,050,724,150	6.14%		$64,555,312

Notes

(1) 4.0% unless an applicant has proposed or been approved for a different amount.

Year: 2020 (Test Year)

Line No.	Particulars	Capitalization Ratio			Cost Rate		Return
		(%)			(%)		
	Debt						
1	Long-term Debt	56.00%		$612,791,380	4.23%		$25,900,220
2	Short-term Debt	4.00%	(1)	$43,770,813	2.16%		$945,450
3	**Total Debt**	60.0%		$656,562,193	4.09%		$26,845,670
	Equity						
4	Common Equity	40.00%		$437,708,128	9.30%		$40,706,856
5	Preferred Shares			$ -			$ -
6	**Total Equity**	40.0%		$437,708,128	9.30%		$40,706,856
7	**Total**	100.0%		$1,094,270,321	6.17%		$67,552,526

Notes

(1) 4.0% unless an applicant has proposed or been approved for a different amount.

Response to Carriers Interrogatory Question #11

Reference: **Attachment H-7(a)** which identifies a pole maintenance expense per pole of $12.61.

Question #11:

a) Provide a detailed description of all activities undertaken as part of "pole maintenance", including the tasks performed, the employee categories involved, the hourly wages, vehicle costs and time required to complete each task.

b) Provide a detailed description of the methodology, assumptions and all data inputs (and data sources), including the number of poles, used to generate a "pole maintenance" expense of $12.61 per pole.

c) Indicate whether the costs of "pole maintenance" that are attributable to power-only assets were excluded from the calculation leading to the figure $12.61. If yes, explain and demonstrate how these costs were excluded. Indicate whether the costs of maintaining Single Use Poles were excluded from the same calculation. If yes, explain and demonstrate how these costs were so excluded. In both cases, provide the methodology, assumptions and calculations used.

d) Indicate whether tree trimming costs are included in the pole maintenance expense. If yes, confirm that Wireline Attachers are required to perform their own or pay separately for tree trimming in respect of their attachments and provide all amounts paid to Hydro Ottawa by third parties for tree trimming for each year from 2010 to 2015.

e) For each year from to 2010 to 2015, provide all amounts paid to Hydro Ottawa by third parties for any activities included in pole maintenance expense (excluding tree trimming) for each year from 2010 to 2015.

f) Complete the table below with respect to the costs associated with the maintenance expenses for each of the years 2010 to 2015, using actuals for 2010-2014 and estimates for 2015. Provide the sources and supporting data for the values used to populate the table.

	2010	2011	2012	2013	2014	2015
Total pole maintenance expenses						
Number of poles						
Total pole maintenance expenses per pole						

Response:

a. The pole maintenance expense captures the cost of these activities (pole testing, repairs and straightening) undertaken by HOL for the purposes of maintaining the structural integrity of its distribution poles.

b. To arrive at this cost, the expenditures incurred by HOL were divided by the total number of poles to determine the cost per pole of executing its maintenance programs. The costs, per pole, of each program were added to derive the total annual pole maintenance expense per pole. As of yearend 2013, these values were:
   i. Total pole maintenance = $605,081
   ii. In-service Hydro Ottawa poles = 47,978
   iii. Maintenance costs per pole = $605,081 / 47,978
   = $12.61 / in-service Hydro Ottawa poles / year

c. Pole maintenance costs are independent of having 3rd party attachers.

d. Tree trimming costs were not included in the calculation of pole maintenance expense.

e. Make-ready costs for HOL to accommodate 3rd party attachment requests on its power poles are not part of maintenance costs. Between 2010 and 2015, 3rd party

attachers did not pay any direct maintenance cost for their attachments other than the cost component built into the OEB pole attachment rate.

f. With reference to Table 1, the 2010 to 2014 pole maintenance expenses for 2010 to 2014 are based on the 2013 calculation methodology for proposed pricing.

Table 1: 2010 – 2015 Pole Maintenance Expenses

	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Total pole maintenance expenses ($)	361,834	449,361	656,170	605,081	506,153	515,720
Number of poles	48,574	48,377	48,298	47,978	47,825	47,650
Total pole maintenance expenses per pole ($/pole)	7.45	9.29	13.59	12.61	10.58	10.82

Notes:

i. 2010-2014 Total pole maintenance expense data taken from JDE Enterprise.

ii. In service Hydro Ottawa poles data taken from GIS data sheet.

iii. 2015 Estimate based on average pole maintenance expense totals from 2010 to 2014. $ 2,578,598 / 5 years = $ 515,720.

iv. 2015 Estimate of number of poles in service = based on average decline in poles in service from 2009 to 2014 over 5 years = 874 over 5 years = 175 (rounded up).This amount is subtracted from the 2014 number of poles 47,825 – 175 = 47,650.

Response to Carriers Interrogatory Question #12

Reference: Attachment H-7(a) which identifies "Admin" costs of $3.96 per Pole relating to the following three functions: (1) Invoicing, (2) GIS Tracking and (3) Permit.

Question #12:

a) Describe in detail the activities performed for the three functions identified and the type and category of employee used to perform the tasks and the associated hourly wages.
b) Provide a detailed description of the information contained in any database that contains GIS tracking information collected by Hydro Ottawa, including a listing of the fields in the database and the manner in which the data in the fields has been collected.
c) Indicate whether or not the Admin costs stated are in respect of only Poles with one or more Wireline Attachments.
d) Describe in detail the methodology and data sources and inputs used to determine the hourly rate of $95.00.
e) Describe in detail the methodology and data sources and inputs used to determine the 16 hours attributed to the "Invoicing" function.
f) Describe in detail the methodology and data sources and inputs used to determine the 167 hours attributed to the "GIS Tracking" function.
g) Describe in detail the methodology and data sources used to determine the $123,906.00 attributed to "Permit" costs.
h) Using the table below, please provide the historical and estimated Admin Costs, broken down by function. Use actuals for 2010-2014 and estimates for 2015.

	2010	2011	2012	2013	2014	2015
- Invoicing						
- GIS						
- Permit						
Total Admin Costs						
# of poles used in calculation						
Admin Costs per pole						

Response:

a. The administrative costs represent the on-going operational costs of managing and administrating third party attachment permits and occupancy on those HOL poles that have 3rd party attachers. These costs capture the following operational expenditures in HOL's current work for others labour rate, which in 2013 was $95 labour rate. The three components that comprise these direct administrative costs are:

1. Annual routine invoicing costs related to processing of the Attacher invoices:
   - 16 hours/year x $95/hour = $1,520/year
   - tracked by internal finance scheduling calendar
2. Annual routine updating of GIS permit tracking and reporting system with third party attachments:
   - 167 hours/year x $95/hour = $15,865/year
   - 2013 tracked internally to establish baseline estimated annual commitment.
3. Annual routine permit processing (both in office and field permit review) and O. Reg. 22/04 annual attachment installation audits for third party Attachers:
   - $123,906/year
   - Tracked by dedicated internal tracking work order

b. In HOL's Geographic Information System (GIS), each pole has a 3rd party attachment field that lists if a specific 3rd party attacher is attached to that pole. The data collection is as identified in Interrogatory Response to Carriers #1, part i.

c. The direct administrative costs are in respect to only HOL poles with 3rd party attachers.

d. Please see Interrogatory Response to OEB #21, part ii.

e. HOL's accounts receivable department takes the annual pole attachment statistics from HOL's GIS group, develops the invoices for each 3rd party attacher, has it verified and approved before sending the annual attachment invoice out to each 3rd party attacher.

f. After each 3rd party attachment permit is approved, the permit is sent to HOL's Geographic Information System (GIS) group for input into the GIS. Each pole associated with the permit is updated with the permit data.

g. This function receives the initial 3rd party attachment permit, reviews it for completeness and pole ownership in the HOL Geographic Information System (GIS). Any missing or incomplete items are communicated back to the 3rd party attacher for follow up action. Once the permit is complete at the initial intake stage, it is sent for HOL initial field review for feasibility (height, strength, available space, location, and other technical requirements) and to identify or confirm any required make ready work. The permit is returned for further review with the HOL asset and design groups for any existing project conflicts or any known upcoming projects. Final HOL review of the technical requirements is also completed before the permit is approved or denied by HOL. Any make ready work requirement by HOL is forwarded to the associated HOL lines area

manager. No installation can proceed before the make ready work by HOL is complete.

This HOL work group also conducts the required annual O. Reg. 22/04 post construction audit. In 2004, the province introduced O. Reg. 22/04 to ensure public safety with power distribution systems. This regulation extends to third party attachers on power system structures. The provincial authority (Electrical Safety Authority - ESA), for O. Reg. 22/04 developed a "Guideline for Third Party Attachments" as well as requiring minimum field audits of installations as per Section 8 of the regulation. ESA's Technical Guideline for Section 8 - Inspection and Approval of Construction (Section 2.4.5.6) specifies that the distributor audit the 3rd party attacher's field installations for assurance of construction compliance during each annual audit period. A minimum of ten percent annual sample rate of the completed third party attacher's permits is audited as per HOL's Construction Verification Program (CVP) as approved by ESA. HOL provides its 3rd party attachers with the results of this annual audit with any required corrective actions to be completed and follows up with further O. Reg. 22/04 audits if required during an audit period with the attachers. This mandated regulatory routine construction compliance audit is beyond the originally negotiated standard support structure agreement (with its audit period of five years) and has been calculated into these direct administrative costs.

h. Table 1, below, provides the historical and estimated administration costs, by function, using actuals for 2010 to 2014 and estimates for 2015.

Table 1: Historical and Estimated Administration Costs by Function

Function	2010 $	2011 $	2012 $	2013 $	2014 $	2015 $ (estimate)
Invoicing ($)	1,520	1,520	1,520	1,520	1,663	1,663
GIS * ($)	17,293	14,530	10,661	15,865	14,944	14,231**
Permit ($)	41,907	71,245	171,254	123,906	139,069	127,813***
Total Admin Costs ($)	**60,720**	**87,295**	**183,435**	**141,291**	**155,675**	**143,706**

# of poles used in calculation****	36,075	35,929	35,870	35,633	35,519	35,389
Admin Costs per pole ($/pole)	**1.68**	**2.43**	**5.11**	**3.97**	**4.38**	**4.06**

Notes:

*For 2010-2012, 2014-2015 for GIS, time to update GIS extrapolated by using 2013 permit and cost data.

**For 2015 Estimate for GIS, took YTD June actuals ($7,115) and averaged out over the year. $7,115 / 6 months * 12 months = $14,231.

***For 2015 Estimate for Permit, took YTD June actuals ($63,906) and averaged out over the year. $63,906 / 6 months * 12 months = $127,813.

****For 2010-2012, 2014-2015, # of poles used in calculation estimated by using annual number of poles count * 35,633 / 47,978 (Using 2013 Actuals - total number of poles with third party attachments divided by Total number of poles).

Response to Carriers Interrogatory Question #13

Reference: **Attachment H-7(a)** which identifies costs for the following four functions:

- Pole Replacement – Field Verification
- Pole Replacement – Returning Crew
- Field Verification – Wires Down
- Field Verification – Tree on Wires

Question #13:

a) Please describe in detail the activities performed for the above four functions including the tasks performed and the types and categories of employees involved and the associated hourly wages.

b) Describe in detail the methodology, data sources and data inputs used to determine the number of hours of labour identified for each of the four functions.

c) Complete the table below with respect to loss in productivity costs for the years 2010-2015, using actuals for 2010-2014 and estimates for 2015.

LIP Costs	2010	2011	2012	2013	2014	2015
Pole Replacement						
Field Verification						
Returning Crew						
# of poles affected						
# of poles used in calculation						
Field Verification						
Wires Down						
Tree on Wires						
# of poles affected						
Total LIP Costs per pole						

d) Hydro Ottawa uses a labour rate of $95 per hour. Provide the comparable labour rates for each of the years 2012 to 2015 inclusive.

e) Describe in detail the methodology, data sources and data inputs used to determine the "rate/amount" identified for "Small Vehicle Time" for each of the four functions.

f) Explain the variations for "Small Vehicle Time" in the Rate/ Amount column.

Response:

a. Pole replacements

When Hydro Ottawa Limited replaces an old pole with a new pole that has 3rd party attachments on it, the old pole cannot be removed until the 3rd party attachments(s) are transferred to the new pole. As a result, Hydro Ottawa Limited has a three step process in replacing its old poles, rather than a one-step process, as a result of a delayed 3rd party transfer:

- The Hydro Ottawa Limited crew installs the new pole and transfer its power equipment from the old pole to the new pole. The old pole remains until the 3rd party attachers transfer off to the new pole.
- After the transfer notice has been issued to the 3rd party(s), Hydro Ottawa Limited field verifies that the 3rd party(s) transfers are complete before scheduling its line crew to remove the old pole.
- The Hydro Ottawa Limited crew returns to remove the old pole.
- If there are no attachers on Hydro Ottawa Limited's poles, no site returns are required since Hydro Ottawa Limtied crew removes its pole(s) at the same time of its equipment transfer work.

Wires Down

Hydro Ottawa Limited routinely receives reports of wire down or low from external sources. These reports are logged into Hydro Ottawa Limited's outage

management system (OMS) and Hydro Ottawa Limited field staff is dispatched to field verify the report. If the wires are not owned by Hydro Ottawa Limited, Hydro Ottawa Limited reports back to the wire owner about the wires down.

Trees on Wires

Hydro Ottawa Limited routinely receives reports of trees in wires from external sources. These reports are logged into Hydro Ottawa Limited's outage management system (OMS) and Hydro Ottawa Limited field staff is dispatched to field verify the report. If the wires are not owned by Hydro Ottawa Limited, Hydro Ottawa Limited reports back to the wire owner about the trees in the wires.

b. Pole Replacement

In 2013, Hydro Ottawa Limited changed out 1,087 poles of which 74.3% had 3rd party attachers. The annual incremental costs for the field verification, after transfer notice, for one site visit to confirm third party transfers are complete (although several field visits are the norm over several months with delayed transfers), were:

1 hour travel per site x ($95/labour hour + $5.80/car hour) x 1,087 poles x 74.3% of the poles had attachments = $81,410/year

The annual incremental costs for the Hydro Ottawa Limited returning crew travel time to remove the old poles were:

1 hour travel per site x ($95/labour hour x 2 person crew + $44.00/truck hour) x 1,087 poles x 74.3% of the poles had attachments = $188,988/year

The total old pole replacement annual incremental costs due to 3rd party attachers = $81,410 + $188,988 = $270,398/year

Normally, 3rd party attachers are delayed from completing timely transfers causing incremental site visit costs with multiple site visits to Hydro Ottawa Limited. These delayed transfers from the old poles have caused frustration with the public and the road authority within Ottawa.

Field Verification

Routine field verification of non- Hydro Ottawa Limited wires low/down, of which there were 115 reported in 2013:
1 hour travel per site x ($95/labour hour + $33.00/truck hour) x 115 reports
= $14,720/year

Routine field verification of non- Hydro Ottawa Limited tree-on-wires, of which there were 251 reported in 2013:
1 hour travel per site x ($95/labour hour + $5.80/truck hour) x 251 reports, which equals $25,300/year

To date, Hydro Ottawa has not calculated the associated lost time with its staff and contractors working around existing third party attachments on its existing in-service poles or managing public inquiries or complaints about the removal of old poles still having 3rd party attachers.

c. Table 1 outlines the loss in productivity costs for the years 2010-2015, using actuals for 2010-2014 and estimates for 2015.

Table 1: Loss in Productivity Costs

LIP Costs	2010	2011	2012	2013	2014	2015 Estimate
Pole Replacement						
Field Verification ($)	48,007	72,797	70,251	81,410	79,163	100,743
Returning Crew ($)	111,446	168,994	163,083	188,988	183,772	233,870
# of poles affected	476	722	697	1087	785	999
# of poles used in calculation	641	972	938	1,087	1,057	1,345
Field Verification						
Wires Down ($)	1,664	1,408	5,504	14,720	896	4,838
Tree on Wires ($)	21,974	24,898	18,043	25,301	20,866	22,216
# of poles affected	36,075	35,929	35,870	35,633	35,519	35,389
Total LIP Costs per pole ($/pole)	5.08	7.46	7.16	8.71	8.02	10.22

d. The labour rate remained constant from 2012 to 2015 at $95 per hour.

e. Field verification to confirm third party transfers are complete required a Hydro Ottawa Limited car for the site visit.

Return visits for returning crew travel time to remove the old poles required a Hydro Ottawa Limited line truck and pole trailer.
Routine field verification of non- Hydro Ottawa Limited wires low/down required a Hydro Ottawa Limited small line truck for the site visit.
Routine field verification of non- Hydro Ottawa Limited tree-on-wires required a HOL car for the site visit.

f. See Interrogatory Response to Carriers #13 part e.

Response to Carriers Interrogatory Question #14

Reference: **Attachment H-7(a)** which identifies costs for pole replacement

Question #14:

a) Describe in detail the methodology, data sources, data inputs and year used to determine that 808 poles with attachments were replaced. Provide the number of poles with attachments that were replaced in each year from 2010-2015 (estimate for 2015).
b) Where five or more adjacent poles were subject to "Field Verification" activity, identify the locations of the poles and the number of poles for each location.
c) Where five or more adjacent poles were subject to "Returning Crew" activity, identify the locations of the poles and the number of poles for each location.
d) Do the costs for pole replacement and the number of poles replaced include poles for which Hydro Ottawa received payment to replace (e.g., customer requested replacements or relocations, make ready work to accommodate Wireline Attachers)? If so, provide the amount of revenues received and the corresponding number of poles replaced for each of the years indicated in the table above.
e) Regarding the “Returning Crew”, is the same crew employed for installing the new pole, transferring the hydro attachments and removing the old pole?
f) Provide a detailed description of the differences in crew, equipment, time and number of visits required to complete pole replacements of Single Use Poles or poles without Wireline Attachments as compared to poles with Wireline Attachments.
g) Confirm that it is Hydro Ottawa’s practice to replace a group of poles within a given area (e.g., on the same street or within the same neighbourhood) at the same time rather than replacing each pole in that area individually at separate times. Indicate how many of the 808 poles identified as being replaced were replaced along with a group of contiguous poles in the same area.

Response:

a. In 2013, Hydro Ottawa Limited changed out 1,087 poles of which 74.3% (see Interrogatory Response to Carriers #13 part b) had 3rd party attachers. The 1087 pole count comes from Hydro Ottawa Limited's Pole, Tower and Fixtures account.

b. Many poles are replaced as one-offs for several reasons:
    1. planned replacement at end-of-asset life (60% of the poles replaced);
    2. electrical system enhancements;
    3. relocation request by others;
    4. electrical connection/upgrade request;
    5. pole upgrade request by a 3rd party pole attacher;
    6. damaged by others.

    As per Interrogatory Response to Carriers #9, part b, Hydro Ottawa Limited replaces end-of-asset life poles through its planned pole testing program. Although Hydro Ottawa Limited groups poles into neighbourhoods for its annual replacement program, the poles for replacement are normally not immediately adjacent to each other but distributed throughout an area. To field verify poles replaced through its planned replacement program, several hours are required to drive through the planned replacement area (for both front lot and off road poles).

c. The duration for a Hydro Ottawa Limited returning crew of one hour per pole includes travel time and setup/take-down time at the site. Although an estimate, one hour is not much time for additional time required to get to a pole and complete its work. With a very low estimate of one hour per pole, there would not be more efficiencies with five or more area poles.

d. Yes, the costs for pole replacement and the number of poles replaced include poles for which Hydro Ottawa Limited has received payment to replace.
The capital contribution received with pole replacements for years 2011-2014 are shown in Table 1, below. 2010 has not been provided as it is not comparable, due to the change in capitalization policies.

Table - 1: Capital Contribution and Number of Poles Affected

Year	2011	2012	2013	2014
# of Poles Affected	210	186	190	86
Capital Contribution ($'000)	2,414	1,222	1,054	2,667

e. The Hydro Ottawa Limited returning crew is of the same skill set and equipment as the original pole installation and electrical attachment transfer.

f. See Interrogatory Response to Carriers #14, part e, for crew/equipment composition. If there are no 3rd party attachers on Hydro Ottawa Limited poles, no site returns are required since Hydro Ottawa Limited crew removes its pole(s) at the same time of its equipment transfer work.

g. Please see Interrogatory Response to Carriers #14 part b and part c.

Response to Carriers Interrogatory Question #15

Reference: **Attachment H-7(a)** which identifies costs for field verification

Question #15:

a) Describe the nature of "Wires Down" and explain why they are associated with pole attachment costs, including and an explanation whether "Wires Down" refers to exclusively to telecommunications cable or any type of wires and how the nature of the "Wires Down" was determined.
b) Describe in detail the methodology, data sources, data inputs and year used to determine the 115 reported "Wires Down" and 251 reported "Tree on Wires", including if these wires were Wireline Attachments and, if so, how this was determined. Provide the number of reported "Wires Down" and "Tree on Wires" for each year from 2010-2015 (estimate for 2015).
c) Where five or more adjacent poles were subject to "Wires Down" activity, identify the locations of the poles and the number of poles for each location.
d) Describe the nature of "Tree on Wires" and explain why they are associated with pole attachment costs, including and an explanation whether "Tree on Wires" refers to exclusively to trees on telecommunications cable or any type of wires and how the nature of the "Tree on Wires" was determined.
e) Where five or more adjacent poles were subject to "Tree on Wires" activity, identify the locations of the poles and the number of poles for each location.

Response:

a. For non-Hydro Ottawa Limited wires low/down, these wires are 3rd party telecom wires. Although streetlights are attachment to Hydro Ottawa Limited poles, these street light fixtures receive their power directly from Hydro Ottawa Limited secondary

wires and do not have dedicated wires spanning aerially between Hydro Ottawa Limited poles.

b. Please see Interrogatory Response to Carriers #13, part a and part c.

c. Reviewing the Hydro Ottawa Limited Outage Management System (OMS) logs, the non-Hydro Ottawa Limited wires low/down were one-off pole spans except one storm in the summer of 2012 where Bell was attached to seven Hydro Ottawa Limited poles.

d. Please see Interrogatory Response to Carriers #15, part a.

e. Reviewing the Hydro Ottawa Limited OMS logs, the non-Hydro Ottawa Limited trees in wires were one-off pole spans.

Response to Carriers Interrogatory Question #16

Reference: Exhibit H, Tab 7, Schedule 1; Exhibit H, Tab 7, Schedule 1, Attachment H-7(a)

Question #16:

a) Complete the table below with respect to revenues from pole attachments for each of the years 2011 to 2016.

	2011	2012	2013	2014	2015 (estimate)	2016 (estimate)
No. of Wireline Attachers						
No. of Wireline Attachments						
Pole Attachment Fee	$22.35	$22.35	$22.35	$22.35		
Revenues from Wireline Attachers						
No. of Wireline Attachers						
No. of Wireline Attachments						
Pole Attachment Fee						
Revenues from Wireline Attachers						
No. of Wireline Attachers						
No. of Wireline Attachments						
Pole Attachment Fee						
Revenues from Wireline Attachers						

b) Provide the underlying data inputs used to derive the estimated revenue from pole attachments for 2015; specifically, the number of Wireline and Other Attachers per Pole, the number of Poles with billable Wireline and Other

Attachments and the total billable Wireline and Other Attachments. Include in the response supporting evidence and assumptions employed.

Response:

a. For previous years number of wireline attachments, please see Interrogatory Response Carriers #1, part f. Hydro Ottawa Limited does not receive revenue from wireless attachers (see rationale in Response to Carriers Interrogatory Question #5(a)). Please see Interrogatory Response to Carriers #1, part d, for further details. Similarly, Hydro Ottawa Limited does not receive revenue from other attachers. Please see Interrogatory Response to Carriers #1, part e, for further details.

Table 1, below, summarizes the pole attachment revenues for the year 2011 to 2016.

Table 1: Pole Attachment Revenues for the Years 2011 to 2016

	2011	2012	2013	2014	2015* actual	2016* estimate
No. of Wireline Attachers	8	8	8	7	8	8
No. of Wireline Attachments	52,741	54,723	55,082	50,269	50,420	51,029
Pole Attachment Fee ($)	22.35	22.35	22.35	22.35	22.35	57.00
Revenues from Wireline Attachers ($)	1,034,593	1,082,773	1,092,680	1,007,064	1,013,914	2,552,583

*Note, 2015 revenues are billed in January based on number of attachments at EOY 2014 + EOY 2015 True-up. Estimated revenues for 2016 attachments based on 2015 attachment numbers and attachment rate submitted.

b. Please see Interrogatory Response to Carriers #16, part a.

Response to Carriers Interrogatory Question #17

Reference: Exhibit H, Tab 7, Schedule 1; Exhibit H, Tab 7, Schedule 1, Attachment H-7(a)

Question #17:

a) Provide a detailed description of the process, including all steps involved, for a Wireline Attacher to receive approval to install:
   i. its first Wireline Attachment on a Pole; and
   ii. each subsequent Wireline Attachment.

b) Further to response (a), provide copies of all forms, permit applications or similar documents that Hydro Ottawa requires Wireline Attachers to complete.

c) Does Hydro Ottawa charge a Wireline Attacher a separate fee to review and process applications, and issue permits, to install a Wireline Attachment on a Pole?

d) If the answer to (c) is "yes", (i) what is the current value of that fee for each permit application and (ii) provide the total annual revenues received in respect of such permit fees for each of the years 2010 through 2014, and estimated for 2015.

e) Confirm that a request from a Wireline Attacher to install Wireline Attachments on a Pole is subject to that Pole having sufficient space or structural integrity to accommodate the Attachment (i.e., spare capacity). Is the determination of whether there is spare capacity on a Pole made solely by Hydro Ottawa? If not, please identify any other party that may participate in the determination of whether there is spare capacity on a Pole.

f) If no spare capacity is available for the Wireline Attachment, confirm that there is a process by which Hydro Ottawa will modify or replace the Pole to accommodate the Wireline Attachment, subject to the Wireline Attacher paying for all costs associated with such work (i.e., make ready). Confirm that all such costs are included in the average and Net Embedded Cost of a Pole identified by Hydro Ottawa for purposes of its requested pole attachment rate.

g) Further to (f), provide the total annual revenues received from Wireline Attachers for make-ready work for each of the years 2010 through 2014, and estimated for 2015.

h) If Hydro Ottawa has a template (or templates) of the support structure agreements it requires Wireline Attachers and Other Attachers to enter into, provide copies of all such templates.

Response:

a. Before Hydro Ottawa Limited provides a copy of its model pole attachment agreement for execution, the applying 3rd party must obtain written permission from the road authority for access to the public road allowance. Once the model pole attachment agreement is executed, several administrative items within the agreement must be completed before HOL accepts any permit applications for attachment. See Interrogatory Response to Carriers #12 part g for the permit process.

b. The permit application process and forms are contained within the pole attachment agreement.

c. As per its model pole attachment agreement (see Interrogatory Response to Carriers # 17 part h, HOL does not charge a separate fee to wireline attachers for permit review and processing fee except where a 3rd party cancels more that 15% of its submitted permits or when a 3rd party requires a rush review on their submitted permits.

d. Please see Interrogatory Response to Carriers #17, part c.

e. Please see Interrogatory Response to Carriers #12, part g.

f. Please see Interrogatory Responses to Carriers #4, part a, Carriers #12, part g and Carriers #14, part d.

g. Table 1, below, provides the actual total revenues received from Wireline Attachers for make-ready work for each of the years 2010 through 2014 and estimated for 2015.

Table 1: Revenues from Wireline Attachers for Make-ready Work

	2010* $	2011 $	2012 $	2013 $	2014 $	2015 $ estimate
Revenue Received	-	1,691	28,281	11,333	5,514	6,754

*Note: there were no revenues received for Make Ready work in 2010.

h. HOL does not have an up-to-date template of its competitive carrier pole attachment agreement. HOL questions the relevance of providing the template agreement for determination in this rate proceeding. Please see Interrogatory Response to Carriers #2, part a, for the Bell Canada agreement. Please see Interrogatory Response to Carriers #2, part a, and part e for the HONI agreement.

Response to Carriers Interrogatory Question #18

Reference: Attachment H-7(a)

Question #18:

a) Confirm that "Total Cost per Pole with attachments per year" of $56.26 is an annual cost.

b) Explain why Hydro Ottawa is seeking an initial pole attachment rate of $57.00 when the calculations require only a rate of $56.26.

Response:

a. EOY 2013 calculated rate = $56.26.

b. Hydro Ottawa Limited's annual rate escalation factor for OM&A = 2.1% per year for its rate application. Escalating the 2013 EOY rate of $56.26, increases this amount to $57.46. This amount was then rounded down to $57.00 for 2016.