Undertaking J2.1

To provide year-end 2013 value of the number of third-party attachments that Hydro Ottawa has received payment for, whether it be for the full OEB rate, partial rate, or under the Hydro One agreement; also to provide the number of third-party attachments for which Hydro Ottawa received the full OEB rate in 2013.

Response:

Table 1: Hydro Ottawa - Year-end 2013 third party attachments with an OEB rate

	Number of Attachers	% of OEB rate	Number of Full Rate Equivalent Attachers ✧	Reference
Wireline – Full OEB	46,173	100%	46,173	JTC 1.17
Street lights – Full OEB	13,265	100%	13,265	IR-Carrier #1(o)
Wireline – Clearance	1,952	50%	976	JTC 1.17
Wireline – Partial/Overlash Pre-March 7, 2005	6,957	25%	1739	JTC 1.17
Wireless	1	100% ✦	0	Transcripts Oct 16 page 98
Total Equivalent Attachers			62,153	
HONI low voltage control cable	391	0%		JTC 1.6
HONI power	602	OEB power rate		IR-Carrier #1(k)
Banners	36	0%		IR-Carrier #1(e)
RCMP	2	$50 per agreement		Transcripts Oct 16 page 62

- Hydro Ottawa receives no revenue for this antenna attachment since its attacher is already on that specific pole.

- The partial rate attachment equivalent to a full rate is calculated as follows:

  Wireline weighted full rate equivalent for clearance/partial/overlash attachers
  = (1,952 / 2) + (6,957 / 4) = 2,715 full equivalents

  Full rate equivalent comes from transcripts Sept 30th, 2015, page 86 lines 22 – 26 and Oct 16th, 2015, page 60 lines 18-24.

Table 2: Hydro Ottawa – Year-end 2013 poles

		Number of poles	Reference
a	Total poles with wireline and street lighting	35,663 ★	IR-Carrier #1(a)
b	Total poles in-service	48,352	Transcripts Oct 16 page 46 line 24

★ Includes poles with wireline full, clearances, partials, overlashes, and street light attachers.

Including wireline full rate equivalents:

% poles with wireline and street light = 35,663 / 48,352 = 73.8%

Attachers per pole = (46,173 + 13,265 + 2,715) / 35,663 = 1.74 attachers / pole

Undertaking J2.2

To explain the difference between the total expressed in the footnote of JTC1.5 with the total arrived at by working through the tables multiplying the number of poles times attachments.

Response:

Revised JTC 1.5 Table 1(f) having expanded totals with values from August 2015.

Number of Attachers on the Pole	Number of Poles with Multiple Attachers	Totals
7	43	301
6	111	666
5	113	565
4	896	3,584
3	4,031	12,093
2	11,080	22,160
1	17,595	17,595
0	14,043	0
Total	47,912	**56,964**

(1) Total of 43,825 wireline attachers

\+ (2) Total of 13,516 street light attachers

57,341 wireline & street light attachers

Difference between the footnote total versus Table 1(f) total = 57,341 – 56,964 = 377

JTC 1.5 Table 1(f) did not include HONI low voltage cable in the communications space.

JTC 1.5 Table 1(f) footnote (1) did include HONI low voltage cable in the communications space.

Undertaking J2.3

To provide the total number of paid attachments and the total number of poles as of August 2015.

Response:

Hydro Ottawa is not paid by attachments but rather by attacher per pole as per the OEB Decision RP-2003-0249, and so, the undertaking response is adjusted accordingly.

Table 1: Hydro Ottawa - August 2015 third party attachments with an OEB rate

	Number of Attachers	% of OEB rate	Number of Full Rate Equivalent Attachers ✧	Reference
Wireline – Full OEB	43,825 Δ	100%	43,825	JTC 1.7
Street lights – Full OEB	13,516	100%	13,516	JTC .17
Wireline – Clearance	3,565	50%	1,783	GIS Oct 2015 ❍
Wireline – Partial/Overlash Pre-March 7, 2005	5,356	25%	1,339	GIS Oct 2015 ❍
Wireless	1	100% ⅄	0	Transcripts Oct 16 page 98
Total Equivalent Attachers			60,463	
HONI low voltage control cable	377 ★	0%		JTC 1.6
HONI power	602	100% power rate		IR-Carrier #1(k)
Banners	36	0%		IR-Carrier #1(e)
RCMP	2	$50 per agreement		Transcripts Oct 16 page 62

Δ Rogers purchased Atria Networks which reduced the total wireline full count.

✧ The partial rate attachment equivalent to a full rate is calculated as follows:

Wireline weighted full equivalent for clearance/partial/overlash attachers
= (3,565 / 2) + (5,356 / 4) = 3,122 wireline full equivalents

Full rate equivalent comes from transcripts Sept 30th, page 86 lines 22 – 26 and Oct 16th, page 60 lines 18-24.

✦ Hydro Ottawa receives no revenue for this antenna attachment since its attacher is already on that specific pole.

★ HONI continues with its low voltage control cable removal program with several removals this summer.

✪ These categories were not queried in August 2015. October 2015 values would not be materially different from August 2015.

Table 2: Hydro Ottawa - August 2015 poles

		Number of poles	Reference
a	Total poles with full wireline and street lighting	33,869	JTC 1.7
b	Wireline full equivalents	1,521	GIS Oct 2015 ✪
c	Total poles in-service	48,449	Transcripts Oct 16 page 49 Lines 12-21

Including wireline full rate equivalents:

% poles with wireline equivalents and street light = (33,869 + 1,521) / 48,449= 73.0%

Attachers with wireline equivalents per pole

= (43,825 + 13,516 + 3,122) / (33,869 + 1,521)

= 1.71 attachers / pole

Undertaking J2.4

To change the WACC to use the Board-Approved rate from yesterday and apply the pre-tax amount.

Response:

On October 15, 2015, the Ontario Energy Board released the Cost of Capital Parameter Updates for 2016 Applications. Using these parameters Hydro Ottawa's pre-tax Weighted Average Cost of Capital (WACC) for 2016 to 2020 is shown in Table 1 below:

Table 1: Hydro Ottawa's pre-tax WACC for 2016 - 2020

2016	2017	2018	2019	2020
7.04%	7.07%	7.11%	7.15%	7.17%

Applying these percentages to VECC Exhibit #1 (Exhibit Reference K2.3), would impact the following line items as outlined in Table 2 below:

Table 2: Impact of updated WACC on VECC K2.3 Exhibit

	2016	2017	2018	2019	2020
Line E2	$143.85	$155.13	$168.02	$179.77	$191.55
Line G	$209.28	$225.71	$243.90	$261.05	$278.36
Line H	$54.20	$58.46	$63.17	$67.61	$72.10
Line I	$67.70	$72.24	$77.24	$81.98	$86.76

With the five year average increasing by $7.71 to $77.18.

The Ontario Energy Board's Cost of Capital Parameters are attached as Attachment A and VECC Exhibit K2.3 is also attached as Attachment B.

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BY E-MAIL AND WEB POSTING

October 15, 2015

To: All Licensed Electricity Distributors and Transmitters
All Gas Distributors
Ontario Power Generation Inc.
All Registered Intervenors in 2016 Cost of Service and Custom Incentive Rate-setting Applications

Re: Cost of Capital Parameter Updates for 2016 Applications

The Ontario Energy Board (OEB) has determined the values for the Return on Equity (ROE) and the deemed Long-Term (LT) and Short-Term (ST) debt rates for use in the 2016 applications. The ROE and the LT and ST debt rates are collectively referred to as the Cost of Capital parameters. The updated Cost of Capital parameters are calculated based on the formulaic methodologies documented in the *Report of the Board on the Cost of Capital for Ontario's Regulated Utilities* (the Cost of Capital Report), issued December 11, 2009.

Cost of Capital Parameters for 2016 Rates

For rates with effective dates in 2016, the OEB has updated the Cost of Capital parameters based on: (i) the September 2015 survey from Canadian banks for the spread over the Bankers' Acceptance rate of 3-month short-term loans for R1-low or A:-(A-stable) commercial customers, for the ST debt rate; and (ii) data three months prior to January 1, 2016 from the Bank of Canada, *Consensus Forecasts*, and Bloomberg LP, for all other Cost of Capital parameters.

The OEB has determined that the updated Cost of Capital parameters for rate applications for rates effective in 2016 are:

Cost of Capital Parameter	Value for Applications for rate changes in 2016
ROE	9.19%
Deemed LT Debt rate	4.54%
Deemed ST Debt rate	1.65%

Detailed calculations of the Cost of Capital parameters are attached.

The OEB considers the Cost of Capital parameter values shown in the above table, and the relationships between them, to be reasonable and representative of market conditions at this time.

As documented in the *Report of the Board on Rate Setting Parameters and Benchmarking under the Renewed Regulatory Framework for Ontario's Electricity Distributors* (EB-2010-0379) issued November 21, 2013, the OEB now updates Cost of Capital parameters for setting rates once per year. For this reason, the Cost of Capital parameters above will be applicable for all cost of service and custom IR applications (as applicable) with rates effective in the 2016 calendar year.

The OEB monitors macroeconomic conditions and may issue updated parameters if economic conditions materially change. An applicant or intervenors can also file evidence in individual rate hearings in support of different Cost of Capital parameters due to the specific circumstances, but must provide strong rationale and supporting evidence for deviating from the OEB's policy.

All queries on the Cost of Capital parameters should be directed to the OEB's Industry Relations hotline, at 416 440 7604 or industryrelations@ontarioenergyboard.ca.

Yours truly,

Original Signed By

Kirsten Walli
Board Secretary

Attachment

Ontario Energy Board
Commission de l'Énergie de l'Ontario

Attachment: Cost of Capital Parameter Calculations

(For rate changes effective in 2016)

Cost of Capital Parameter Calculations

Return on Equity and Deemed Long-term Debt Rate

Step 1: Analysis of Business Day Information in the Month

Month: September 2015

Day		Bond Yields (%) Government of Canada 10-yr	Government of Canada 30-yr	A-rated Utility 30-yr	Bond Yield Spreads (%) 30-yr Govt over 10-yr Govt	30-yr Util over 30-yr Govt
1	1-Sep-15	1.43	2.18	4.06	0.75	1.88
2	2-Sep-15	1.45	2.21	4.08	0.76	1.87
3	3-Sep-15	1.46	2.22	4.09	0.76	1.87
4	4-Sep-15	1.44	2.20	4.07	0.76	1.87
5	5-Sep-15					
6	6-Sep-15					
7	7-Sep-15					
8	8-Sep-15	1.48	2.24	4.09	0.76	1.85
9	9-Sep-15	1.49	2.26	4.09	0.77	1.83
10	10-Sep-15	1.49	2.26	4.09	0.77	1.83
11	11-Sep-15	1.47	2.23	4.05	0.76	1.82
12	12-Sep-15					
13	13-Sep-15					
14	14-Sep-15	1.45	2.21	4.03	0.76	1.82
15	15-Sep-15	1.56	2.31	4.12	0.75	1.81
16	16-Sep-15	1.59	2.33	4.13	0.74	1.80
17	17-Sep-15	1.53	2.29	4.08	0.76	1.79
18	18-Sep-15	1.46	2.22	4.02	0.76	1.80
19	19-Sep-15					
20	20-Sep-15					
21	21-Sep-15	1.54	2.29	4.09	0.75	1.80
22	22-Sep-15	1.48	2.23	4.03	0.75	1.80
23	23-Sep-15	1.48	2.24	4.04	0.76	1.80
24	24-Sep-15	1.46	2.22	4.03	0.76	1.81
25	25-Sep-15	1.53	2.27	4.11	0.74	1.84
26	26-Sep-15					
27	27-Sep-15					
28	28-Sep-15	1.44	2.19	4.03	0.75	1.84
29	29-Sep-15	1.43	2.18	4.03	0.75	1.85
30	30-Sep-15	1.45	2.21	4.06	0.76	1.85
31						
		1.48	2.24	4.07	**0.756**	**1.831**
	Sources:	*Bank of Canada*		*Bloomberg L.P.*	❶	❷

Step 2: 10-Year Government of Canada Bond Yield Forecast

Source: *Consensus Forecasts* Survey Date: September-07-15

	3-month	12-month		Average	
September 2015	1.700	2.200	❸	**1.950**	%

Step 3: Long Canada Bond Forecast

10 Year Government of Canada Concensus Forecast (from Step 2)	❸	1.950	%
Actual Spread of 30-year over 10-year Government of Canada Bond Yield (from Step 1)	❶	0.756	%
Long Canada Bond Forecast (LCBF)	❹	**2.706**	%

Step 4: Return on Equity (ROE) forecast

Initial ROE		9.75	%
Change in Long Canada Bond Yield Forecast from September 2009			
LCBF (September 2015) (from Step 3)	❹ 2.706 %		
Base LCBF	4.250 %		
Difference	-1.544 %		
0.5 X Difference		-0.772	%
Change in A-rated Utility Bond Yield Spread from September 2009			
A-rated Utility Bond Yield Spread (September 2015) (from Step 1)	❷ 1.831 %		
Base A-rated Utility Bond Yield Spread	1.415 %		
Difference	0.416 %		
0.5 X Difference		0.208	%
Return on Equity based on September 2015 data		**9.19**	%

Step 5: Deemed Long-term Debt Rate Forecast

Long Canada Bond Forecast for September 2015 (from Step 3)	❹	2.706	%
A-rated Utility Bond Yield Spread September 2015 (from Step 1)	❷	1.831	%
Deemed Long-term Debt Rate based on September 2015 data		**4.54**	%

Ontario Energy Board
Commission de l'Énergie de l'Ontario

Attachment: Cost of Capital Parameter Calculations

(For rate changes effective in 2016)

Cost of Capital Parameter Calculations

Deemed Short-term Debt Rate

Step 1: Average Annual Spread over Bankers Acceptance

Once a year, in September, Board staff contacts prime Canadian banks to get estimates for the spread of short-term (typically 90-day) debt issuances over Bankers' Acceptance rates. Up to six estimates are provided.

A.		Average Spread over 90-day Bankers Acceptance		Date of input
	Bank 1	100.0	bps	Sept., 2015
	Bank 2	100.0	bps	Sept., 2015
	Bank 3	82.5	bps	Sept., 2015
	Bank 4	100.0	bps	Sept., 2015
	Bank 5	80.0	bps	Sept., 2015
	Bank 6			

B.	Discard high and low estimates If less than 4 estimates, take average without discarding high and low.		
	Number of estimates	5	
	High estimate	100.0	bps
	Low estimate	80.0	bps

C.				
	Average annual Spread	94.167	bps	❶

Step 3: Deemed Short-Term Debt Rate Calculation

Calculate Deemed Short-term debt rate as sum of average annual spread (Step 1) and average 3-month Bankers' Acceptance Rate (Step 2)

Average Annual Spread	0.942	%	①
Average Bankers' Acceptance Rate	0.712	%	②
Deemed Short Term Debt Rate	**1.65**	%	

Step 2: Average 3-month Bankers' Acceptance Rate

Calculation of Average 3-month Bankers' Acceptance Rate during month of September 2015

Month:		**September 2015**
	Day	**Bankers' Acceptance Rate (%) 3-month**
1	1-Sep-15	0.68 %
2	2-Sep-15	0.68 %
3	3-Sep-15	0.68 %
4	4-Sep-15	0.68 %
5	5-Sep-15	
6	6-Sep-15	
7	7-Sep-15	
8	8-Sep-15	0.68 %
9	9-Sep-15	0.68 %
10	10-Sep-15	0.70 %
11	11-Sep-15	0.71 %
12	12-Sep-15	
13	13-Sep-15	
14	14-Sep-15	0.72 %
15	15-Sep-15	0.72 %
16	16-Sep-15	0.73 %
17	17-Sep-15	0.73 %
18	18-Sep-15	0.72 %
19	19-Sep-15	
20	20-Sep-15	
21	21-Sep-15	0.73 %
22	22-Sep-15	0.73 %
23	23-Sep-15	0.72 %
24	24-Sep-15	0.73 %
25	25-Sep-15	0.73 %
26	26-Sep-15	
27	27-Sep-15	
28	28-Sep-15	0.73 %
29	29-Sep-15	0.73 %
30	30-Sep-15	0.74 %
31		
		0.712 % ❷

Source Bank of Canada / Statistics Canada
Series V39071

Reference on Calculation Method:

- Appendix D of the *Report of the Board on Cost of Capital for Ontario's Regulated Utilities*, issued December 11, 2009.

K 2.3

VECC EXHIBIT #1

SPECIFIC CHARGE FOR POLE ACCESS
HYDRO OTTAWA METHODOLOGY USING FORECAST COSTS AND INPUT VALUES

Line #	Item	2013	2016	2017	2018	2019	2020	Basis for 2016-2-2020 Forecast
A	Direct Cost	$12.68	$13.50	$13.78	$14.07	$14.36	$14.67	2013-2020: 2.1%/annum per Carriers #18
B	NBV-Year End (M)	$75.27	$96.96	$103.74	$111.31	$117.99	$124.90	Settlement Proposal - Appendix 2-BA
C	In-Service Poles	47,978	47,453	47,278	47,103	46,928	46,753	2013 Count Reduced by 175/year per Carriers #11 f)
D	NBV / Pole	$1,568.81	$2,043.31	$2,194.19	$2,363.14	$2,514.26	$2,671.59	B/C
E1	Carrying Cost (%)	6.70%	5.78%	5.81%	5.85%	5.89%	5.90%	Settlement Proposal - RRWFs
E2	Carrying Cost/Pole	$105.11	$118.10	$127.48	$138.24	$148.09	$157.62	D * E-1
F1	Depreciation (M$)	$1.98	$2.55	$2.77	$3.00	$3.23	$3.46	Settlement Proposal - Appendix 2-AB
F2	Depreciation/Pole	$41.26	$53.78	$58.67	$63.69	$68.82	$74.06	F1/C
G1	Maintenance (K$)	$605.08	$552.59	$563.15	$573.90	$584.86	$596.03	Settlement Proposal - Cost Allocation Models, Tab I3, Account #5120
G2	Maintenance/Pole	$12.61	$11.65	$11.91	$12.18	$12.46	$12.75	G1/C
G	Total Indirect Cost/Pole	$158.98	$183.53	$198.07	$214.12	$229.37	$244.43	E2+F2+G2
H	Indirect Cost Allocation per Attacher	$41.18	$47.53	$51.30	$55.46	$59.41	$63.31	G * 25.9%
I	**Total Cost per Attacher**	**$53.86**	**$61.03**	**$65.08**	**$69.53**	**$73.77**	**$77.97**	A+H
	Five Year Average				**$69.48**			