



Meeting #3

Pole Attachment Working Group (PAWG)

“Policy Review of Wireline Pole Attachment Charges”

Minutes of Meeting

Prepared by

NGL Nordicity Group Limited (“Nordicity”)

Issue dates

V.1 - January 23, 2017, V.2 - February 10, 2017



Wireline Pole Attachment Working Group Meeting #3

Meeting Date	Thursday, November 24, 2016	
Location	2300 Yonge Street, Toronto, 25 th Floor (ADR Room)	
Time	9:15 a.m. to 4:15 p.m.	
Organized by	Ontario Energy Board (OEB)	
Facilitated by	Nordicity Group Limited (Nordicity)	
Participants	OEB	1) Michael Lesychyn 2) Vince Mazzone 3) Ian Richler 4) Nancy Marconi 5) Judy But
	Nordicity	6) Stuart Jack 7) Tanveer Ahmed 8) Emily Macrae 9) Greg McClary (afternoon only)
	Utilities	10) Casey Malone (Hydro Ottawa) 11) Pamela Jones (Canadian Electricity Association) - by conference call (morning only) 12) John Boldt (Hydro One) 13) Roy Rogers (Cornerstone Hydro Electric Concepts) 14) Dave Haddock (Horizon Utilities)
	Carriers	15) Kris Eby (BH Telecom) 16) Michael Piaskoski (Rogers) 17) Leslie Milton (Rogers) 18) David Wilkie (TBayTel)
	Ratepayer Groups	19) Bill Harper (Vulnerable Energy Consumers Coalition)
	Regrets	20) Jagoda Borovickic (London Hydro) 21) Arjun Devdas (Canadian Electricity Association) 22) Tim Brown (Cogeco) 23) Mark Rubenstein (School Energy Coalition)

Note to Reader:

In order to capture the comments of participants during the plenary and breakout sessions of the 3rd Working Group Meeting, Nordicity provided 2 recorders. Subsequently, the minutes were circulated for review by participants. Some participants provided clarification of their comments and these are duly noted in the text (italicized) or in footnotes in this final version of the minutes. Where the OEB staff and Nordicity agreed to changes, these have been accepted. A complete tracked version was also provided to allow the participants to review all submitted comments. Actions items and clarifications pertaining to these minutes to be discussed at the next working group meeting have been identified in Annex D.

Agenda Items	Comments
1) Introduction	<ul style="list-style-type: none"> • Mr. Lesychyn (OEB) started the meeting with introduction and overview of the agenda. • Mr. Lesychyn informed the participants that (a) following OEB staff presentation, Nordicity’s presentation will be conducted in two parts: Part 1 will provide a status update on the data collection process, and Part 2 will cover the progress on rate model framework, and (b) after lunch break out sessions will be held to address key issues.
2) Meeting Objectives	<ul style="list-style-type: none"> • Mr. Lesychyn provided a detailed overview of the consultation process to date and the objectives of the third PAWG meeting in relation to the key issues. • Mr. Lesychyn also explained the objectives of the data gathering and consultation process with PAWG members, and how it fits into Nordicity’s analysis in the expert report. • Mr. Eby asked whether the group would work through all the issues during the day. In response, Mr. Piaskoski expressed concern about the progress made to date and stated: <i>“From my perspective we haven’t even scratched the surface so far!”</i> Mr. Boldt agreed with Mr. Piaskoski, and stated: <i>“We race to get data but we haven’t had any interaction yet. At the end of the day we are still polar opposites on the rate. We haven’t discussed loss of productivity, administration, it’s just been an exercise in gathering data. I’d like to see how you’d done the calculations”</i>. Mr. Lesychyn commented that: <i>“It seems like those key issues don’t raise the issues of methodologies. Do you see inputs as methodologies? Not just how you identify inputs but also how you use those inputs.”</i> Mr. Harper indicated in VECC’s view, that the rate question should be framed as standard versus utility-specific rather than what has been identified as rural versus urban. • Mr. Piaskoski further inquired if this consultation process approach had been successful in other past cases. In response, Mr. Richler clarified that there has been a range of approaches to policy consultations, with varying degrees of involvement by consultants and staff. • Mr. Ahmed clarified that in the first PAWG meeting on May 20th, 2016, Nordicity presented a rate framework, including allocation and rate methodologies. The current data collection process was an action item identified by the Working Group during the last two meetings. Mr. Lesychyn added that the OEB would like to understand where the data came from and how it’s been determined. Mr. Lesychyn further noted that if there is not enough time then the OEB will change the plan accordingly. • Mr. Jack pointed out that this is a Working Group so the participants are supposed to come to a consensus about data validity.
3) Status Update – Data Collection	<ul style="list-style-type: none"> • In Part 1 of its presentation, Nordicity provided a status update on the data collection process to date. • Mr. Ahmed pointed out that as a follow up to the second PAWG meeting held on July 22nd 2016, a second data request was issued on September 12, 2016, with a response due date of September 30, 2016. <ul style="list-style-type: none"> ○ This data request included four tables to be completed by LDC, providing a cost break down for the period 2005-2015, associated with (a) Account # 1830 - Poles Capital Cost (Table 1), (b) Account # 5120 - Poles Maintenance Cost (Table 2), (c) Account #5135 – Poles Repair & Right of

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	<p>Way Cost (Table 3), and (d) Cost of installing a new pole (Table 5).</p> <ul style="list-style-type: none"> • Mr. Ahmed clarified that the purpose of this data is to better understand the different costs elements associated with LDC's poles infrastructure and isolate the costs that are strictly electric power related versus third party attachments. • Mr. Ahmed also informed the participants that a follow up conference call was held with LDCs on September 20, 2016 to provide clarification regarding the data requested in the four tables stated above. As a result, an additional data request (Table 5: Account # 1835 – Overhead Conductors and Devices) was issued on October 18, 2016 to LDCs. • Mr. Ahmed informed the participants complete information was only submitted by Hydro One and Hydro Ottawa for Tables 1-4. London Hydro submitted partial information. Information submitted by Horizon was not complete and therefore not included in the analysis. Toronto Hydro and CHEC did not submit any responses. For Table 5, only Hydro One submitted the response. Mr. Ahmed further pointed out that since only one LDC submitted data for Table 5 it was not included in the analysis. • Mr. Ahmed described Accounts # 1830, 5120, 5135 and 1835, as set out in the Board's <i>Accounting Procedures Handbook for Electricity Distributors (2012)</i>. With respect to completeness and accuracy of account descriptions, the participants were asked to point out any issues. • For the purposes of this analysis, Mr. Ahmed pointed out that, in cases where LDC's data was not available or not submitted for a data point or year, data from available years or from other similar LDCs was used as proxy. Ms. Milton inquired how proxies were calculated. Mr. Ahmed clarified that, depending on the data submitted, all four tables were completed for all of the LDCs, aside from CHEC. In response to a further inquiry from Ms. Milton, Mr. Ahmed confirmed that either Hydro One or Hydro Ottawa, or London Hydro data was used.
4) Poles Capital Cost (Account #1830)	<ul style="list-style-type: none"> • Referring to the 19 cost elements listed in Account # 1830 – “Poles, Towers, and Fixtures” description on slide # 5 of Nordicity's presentation, Mr. Ahmed asked the participants to identify anything on the list that is not pertinent or missing. • Ms. Milton pointed out that towers and fixtures are not included in the costing. • Mr. Boldt explained that towers in this case do not refer to the ones installed along the Don Valley. “Hydro One has two and there is no telecom on them but these towers are seventy years old.” • Ms. Milton responded that Hydro One tower information was not previously known to the Carriers and the Carriers still don't know the situation for the other LDCs. Mr. Malone clarified that some items on the list are not used by everyone. • Mr. Lesychyn noted that the breakout sessions in the afternoon will aim to address such issues. • Mr. Ahmed provided an overview of the year over year historical cost per pole for 2005-2015, based on the data submitted by LDCs for Account # 1830 that was broken down into “poles”, “towers”, “power fixtures”, and “other”. It was noted that the total cost per pole increased by 4.8%, from \$1,182.70 (2005) to \$1,890.97 (2015). The 10-year average of \$1,501.16 per pole includes (a) poles: \$1,227.45 (81.8%), towers: 0%, power fixtures: \$247.86 (16.5%), and other \$25.85 (1.7%).

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	<ul style="list-style-type: none"> • Mr. Ahmed identified significant variation in the ratio of poles costed out of the total cost across LDCs e.g. 92% Hydro Ottawa, 85% Hydro One, and 63% Horizon. • Ms. Milton inquired into the process used for these calculations. Mr. Ahmed clarified that the calculations are based on the breakdown submitted by individual LDCs. Mr. Boldt pointed out that that they record cost as aggregate amounts. For this analysis, aggregate cost may be broken into the above four elements using sample designs. Mr. Boldt further pointed out that they have different poles size and paving, varies from urban to rural: <i>“A more urban utility would have very high capital costs because of these issues. Holes are very expensive to dig in urban areas. We could have chosen certain designs to analyze how much each of these cost. For some kinds of poles, you have to dig three holes just to put it in -, that increases the cost of the pole.”</i> • Mr. Harper suggested that the source of variation could be due to different definitions of the account used by an individual utility. Mr. Ahmed responded that Nordicity had considered this problem and intends to address it through this process. Ms. Milton commented that this is a tough issue which needs an appropriate manner of response. Mr. Lesychyn asked Mr. Boldt if they can share their Excel spreadsheet with the participants to help them better understand the process Hydro One followed to calculate its numbers. Mr. Boldt responded that he will check as some costing information is confidential. • Mr. Wilkie inquired into the process Hydro Ottawa used for their calculations. Mr. Malone responded that Hydro Ottawa uses 45 year poles useful life and, based on today’s discussion, they can provide a broader narrative and show where these numbers come from. • In response to Mr. Malone’s question, Mr. Ahmed confirmed that the 10-year average shown is the simple average, which is based on total cost data divided by the total number of poles. No detail was provided on how the total number of poles was determined.¹ • Mr. Boldt pointed out that the age of the infrastructure is going to increase in the next 5 years and there is a need for replacements of aging poles in the near future. Mr. Ahmed clarified that this may be factored in by using a replacement factor, based on year over year incremental poles numbers over 2005-2015.
5) Annual Maintenance Cost per Pole (Account #5120)	<ul style="list-style-type: none"> • Referring to the 14 cost elements listed in Account # 5120 – <i>“Maintenance of Poles, Towers, and Fixtures”</i> description on slide # 6 of Nordicity’s presentation, Mr. Ahmed asked the participants to point out if there is anything on the list that is not pertinent or missing. No further comments were offered by the participants. • Mr. Ahmed provided an overview of the year over year historical annual maintenance cost per pole for 2005-2015, based on the data submitted by LDCs for Account # 5120, broken down into “poles”, “towers”, “power fixtures”, and “other”. It was noted that the total maintenance cost per pole decreased by 10.4%, from \$35.11 (2005) to \$11.67 (2015). The 10-year average of \$17.89 per pole includes (a) poles: \$1.10 (6.1%), towers: 0%, power fixtures: \$16.79 (93.8%), and other \$0.01 (0%). • Mr. Ahmed pointed to significant variation in the ratio of poles related cost out

¹ Nordicity subsequently confirmed that the total number of poles was calculated based on the number of poles provided by the LDCs in response to the 1st data request.

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	<p>of the total maintenance cost across LDCs e.g. 92% Hydro Ottawa, 5% Hydro One.</p> <ul style="list-style-type: none"> • Mr. Ahmed further pointed out that 10.4% annual decrease in maintenance was mainly due to significant costs in 2005 (\$35.11) and 2006 (\$42.75). Mr. Eby asked: what drove such high costs in 05 and 06? Mr. Boldt suggested that it may be a change in accounting system: <i>“There was a financial change around that time.”</i> Mr. Eby further inquired: in that case, was the group average decrease was driven by Hydro One rather than Hydro Ottawa? Mr. Malone responded that Nordicity may consider relative adjustment in their calculation. Mr. Lesychyn commented that 2005 and 2006 are outliers. Mr. Harper raised the concern that data that is 10 years old cannot be used to set a rate today: <i>“It gives me an idea of the trend but it doesn’t tell me about today.”</i> • Mr. Piaskoski asked: what is included in the maintenance and would these cost items typically appear in a pole rate hearing? Mr. Boldt responded that, yes it would, but also pointed that some items are not in this account. Mr. Boldt suggested that participants should decide what should be included before collecting any data. Mr. Lesychyn pointed out that three data requests have already been issued to date. Mr. Boldt raised the issue that not enough background was provided about the kind of data required. Mr. Lesychyn pointed out that a conference call was held to provide clarification and instructions were also provided. Mr. Boldt further commented that some guidance is needed to determine what is included and is actually related to poles. Mr. Piaskoski asked Mr. Boldt to confirm that Hydro One provided the data they were asked to provide, and that it is representative. Mr. Boldt responded that not all of the data provided is shown in the tables. Mr. Jack clarified that the additional Table 5 had not been included in the analysis. Mr. Jack also pointed out that it is a question of materiality. Mr. Lesychyn further commented that the OEB would like to understand what’s being added, and why. • Upon inquiry from Mr. Lesychyn, Mr. Rogers clarified that they are still in the process of compiling data for 15 LDCs (CHEC) and due to magnitude of the work involved it was not possible for them to be ready for today’s meeting. • Mr. Ahmed commented that the proposed framework could require the collection of standardized pole attachment data on a yearly basis that will inform the OEB’s decisions on a going forward basis. • Upon inquiry from Mr. Lesychyn, Mr. Haddock responded that Horizon data is incomplete because they did not include all the years. Mr. Haddock further clarified that they had a problem in tracking all of those individual costs for the earlier years as the proper system was not in place then. Mr. Ahmed pointed out that the data that had been submitted by Horizon was also not complete as it appears to be a sample rather than a complete view of the population. • Mr. Malone expressed concern that even if the definition of the data is provided, it is a challenge. Mr. Lesychyn asked LDCs that had provided complete data (Hydro One and Hydro Ottawa) if they can share their notes and explanations with the rest of the participants to understand the process they followed. Mr. Haddock commented that it would be useful as part of a discussion of what should be included and what should not be included. • Mr. Eby pointed out that only Hydro One and Hydro Ottawa provided complete cost data, and inquired if that means the recommendations to be made to the OEB will be based on two utilities. Mr. Ahmed suggested that

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	<p>there may be two options (a) If everyone agrees the data is representative, then the answer may be yes, or (b) otherwise, missing data will need to be collected. Mr. Ahmed further explained that if a province-wide rate is to be established then option (a) may be used; but if regional rates are to be established then data from other LDCs, particularly regional LDCs will be required. Mr. Lesychyn asked Mr. Rogers if they can indicate the timelines to provide complete CHEC LDCs data. Mr. Rogers responded that they can provide data for five regional utilities within the next month. Mr. Rogers further pointed out that the participants may find their numbers relatively small in the overall comparison.</p> <ul style="list-style-type: none"> Mr. Malone noted that the reason Toronto Hydro did not provide data may be that they were not initially invited to be part of this process. Mr. Malone pointed out that Mr. Arjun (Toronto Hydro) attended the previous two meetings on behalf of the CEA as they may have decided not to focus on information specific to Toronto Hydro. Mr. Ahmed pointed out that Toronto Hydro did submit their response to the first data request.
6) Annual Repair & Right of Way Cost Per Pole (Account #5135)	<ul style="list-style-type: none"> Mr. Ahmed pointed out that repair & right of way cost is the second category of the maintenance cost, and the objective is to determine how much of this cost should apply to poles. Regarding the “<i>Right of Way Cost</i>” description on slide # 7 of Nordicity’s presentation, Mr. Ahmed asked the participants to point out if there is anything on the list that is not pertinent or missing. (The slide set out language contained in the OEB Accounting Procedures Handbook – it did not indicate whether the costs were common or power-specific.) No further comments were offered by the participants. Mr. Ahmed provided an overview of the year over year historical annual repair and right of way cost per pole for 2005-2015, based on the data submitted by LDCs for Account # 5135, broken down into “labour”, “material”, “truck”, and “other”. It was noted that the total repair cost per pole increased by 2.5%, from \$53.94 (2005) to \$69.06 (2015). The 10-year average of \$71.01 per pole includes (a) labour: \$57.88 (81.5%), material: \$0.84 (1.2%), truck: \$10.81 (15.2%), and other \$1.47 (2.1%). Ms. Milton asked for a full explanation of this account. Mr. Boldt clarified that, based on Hydro One’s reporting process, this account represents forestry and maintenance of the right of way - making sure the right of way is clear. Mr. Haddock inquired if anything else other than forestry is included in this account. Mr. Haddock further inquired if it is strictly vegetation cost. Mr. Boldt clarified that in this account there are sub accounts for storms, line clearing, customer notification. “<i>It’s basically forestry and keeping the right of way clear. It’s got nothing to do with the pole.</i>” Mr. Ahmed pointed out that this cost is still associated with the pole infrastructure and it needs to be appropriately accounted for in the rate calculation. Mr. Boldt responded that this working group needs to discuss what portion of maintaining the right of way relates to the pole or the neutral and what portion should be allocated to the power and the telecom. Mr. Lesychyn asked whether this is a significant cost and inquired into how much time is required to address it, Mr. Boldt responded that it is a significant cost. Mr. Rogers pointed out that it relates to all the different framings, and types of lines. Ms. Milton commented that they need to further understand these numbers, and asked where these numbers are coming from in the context of vegetation management. Ms. Milton further noted that in the past neutral was identified as

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	<p>a capital cost but now it is being discussed in relation to maintenance. Mr. Boldt clarified that there is capital cost and maintenance cost for the (electricity) wires, and the same is the case for grounding. Mr. Boldt further expressed concern that the cost of wire had been excluded from this analysis. Mr. Ahmed clarified that if the cost of wire relates to the pole then it should be included. Mr. Boldt explained that there are two separate issues – poles and wire. Ms. Milton noted that the Working Group needs to decide what portion is power specific and telecom specific. Mr. Ahmed pointed out that electricity wires would have a very high maintenance cost.</p> <ul style="list-style-type: none"> • Ms. Milton further pointed out that they pay separately for access rights. Mr. Malone commented that “<i>I don’t think land rights are a separate account.</i>” Mr. Boldt commented that they have asked from day one to identify what data is required and how to collect it. Mr. Ahmed clarified that in some cases, the approach of identifying the data in separate accounts could be subjective and it might be more productive to examine the data the way it is currently reported. • Mr. Boldt further explained that telecom attachers rely on a neutral, and they do all the grounding for that neutral. Mr. Boldt asked whether the data should be included as part of the methodology. Mr. Boldt further commented that so far no one has recognized the cost of the primary neutral and suggested that cost should be included. Mr. Lesychyn clarified that one of the questions for the afternoon breakout sessions will address this issue directly. Ms. Milton noted: “<i>And recognizing that we strongly objected to this as it played out in New Brunswick. We’d have to do a lot of homework once we saw the numbers.</i>” Mr. Lesychyn, responded to Ms. Milton that their feedback in the afternoon session will be noted.
7) Installation Cost Per Pole	<ul style="list-style-type: none"> • Mr. Ahmed provided an overview of the year over year historical installation cost per pole for 2005-2015, based on the data submitted by LDCs for Table 4 (Data Request 2), broken down into “purchase price”, “labour”, “material”, and “other”. It was noted that the total repair cost per pole increased by only 0.1%, from \$8,047.3 (2005) to \$8,177.0 (2015). The 10-year average of \$7,571.57 per pole includes (a) purchase price: \$409.41 (5.4%), labour: \$3,971.11 (52.4%), material: \$706.59 (9.3%), and other \$2,484.46 (32.8%). • Mr. Ahmed further noted that the 10.8% increase in poles purchase prices from \$254.48 (2005) to \$675.70 (2015) is consistent with independent quotes from the vendors. • Mr. Ahmed also pointed out that installation labour appears to be very high as it may reflect the cost related to power installations. Mr. Haddock asked to clarify the high labour in comparative terms. Mr. Ahmed clarified that in the past proceedings the embedded cost used in the rate calculation ranged from \$400 to \$800. Mr. Haddock further commented that this means that the total cost rather than the installation cost is high. Mr. Ahmed further explained that the total cost is higher due to a significant proportion of labour \$3,971.11 (52.4%) compared to purchase price of \$409.41 (5.4%). Mr. Boldt commented that there are several components involved in cost including materials and labour for transferring installation to the new poles. Mr. Lesychyn informed that Nordicity/OEB have contacted contractors for independent details of the costs associated with installation of poles. Mr. Eby inquired about the name of contractors who have been contact. Mr. Ahmed, replied that K-Line and Black & McDonald Limited have been contacted and their response

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	<p>is awaited. Mr. Malone pointed out that Hydro Ottawa has been contracting part of their poles replacements over the past few years and they find Black & McDonald and K-Line are costlier, on a per hour basis than their own Hydro Ottawa crews, however, they get the job done quicker so the total cost works out to be about the same compared to the Hydro Ottawa crews. Mr. Piaskoski asked to explain the value of collecting the installation cost per pole in relation to the determination of pole attachment rate. Mr. Ahmed explained that there are two reasons: (a) to validate if the historical costs being collected reflects the current costs, and (b) to validate whether it is <i>“just and reasonable”</i>, it allows the owner to recover costs at a reasonable rate. Mr. Ahmed pointed out that in the last meeting Nordicity’s presentation showed that the current attachment rate does not allow the recovery of the cost of the pole. Mr. Jack further explained that the intent is to flag it because it is significant as cost driver. Mr. Piaskoski raised the issue that it is the net embedded cost (instead of installation cost) that is used. Mr. Ahmed explained that depending on the age of respective pole populations, the embedded and net embedded costs may vary significantly from utility to utility, which creates some uncertainty in rate determination. Mr. Ahmed further noted that information will allow an analysis that will help minimize the uncertainty. Mr. Harper commented: <i>“It’s useful to think about installation and embedded if you want to think about how the rate will be set. If you’re thinking about the future, then installing new poles could have an impact on rates. But I agree, rates are set based on accounting costs.”</i> Mr. Piaskoski thanked Mr. Harper for his comment.</p>
8) Key Issues	<ul style="list-style-type: none"> • Mr. Ahmed summarized the data collection update by identifying the following three key issues: <ul style="list-style-type: none"> a) Data Quality <ul style="list-style-type: none"> - Majority of LDC provided incomplete data or did not respond - The distribution of costs provided in Tables 1 to 4 is not consistent among utilities. Examples: ratio of pole cost varies from ~63% to ~92% of the total capital cost reported in Account #1830; ratio of pole price ranges from ~5% to ~42% of total pole installation cost b) Rate Type <ul style="list-style-type: none"> - The data was not complete enough to allow development of regional rates e.g. rural versus urban - Utility specific rate may potentially result in significantly different rates within the same jurisdiction. For instance, average installation cost of new pole range from ~\$2,400 to ~\$8,000 per pole c) Cost Accounting <ul style="list-style-type: none"> - Cost information provided is based on financial reporting standards rather than cost accounting structure • Mr. Piaskoski asked Mr. Ahmed and Mr. Jack for an opinion with respect to information collected and inconsistencies found so far. Mr. Jack respond that Nordicity’s opinion will be formed once data collection and analysis process has been completed. Mr. Lesychyn suggested this question be held until the end of the day. Mr. Ahmed further clarified that Nordicity will adhere to the mandate from the OEB. Mr. Piaskoski further commented that, as the collector of the data, Nordicity should be able to see whether the data is sufficient or inconclusive. Mr. Ahmed pointed out that Nordicity had contacted third parties for more information for that same reason. Nordicity further commented that the data collected provides the OEB with one of the most complete data sets

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	related to wireline attachments in the industry.
9) Break	<ul style="list-style-type: none"> Participants recessed for 15 minutes (10:30 am – 10:45 am)
10) Past Decisions in Canadian Jurisdictions	<ul style="list-style-type: none"> In Part 2 of its presentation, Nordicity provided the update on its data analysis with regard to rate model framework. Mr. Ahmed provided a comparative view of 11 decisions in Canadian jurisdictions since 1999 – see Annex A. Ms. Milton commented that, in their view, the CRTC decision is not comparable because they only looked at poles that had attachers. Mr. Boldt pointed out that, in their view, the CRTC has a different mandate, which may be focused more on competition rather than recovering rates. In response Ms. Milton commented: <i>“But we disagree with that so let’s just move on.”</i> Mr. Lesychyn asked Mr. Boldt to clarify that their view is that decisions cannot be compared across the country. Ms. Milton agreed with Mr. Boldt that multiple decisions by a single agency should not be counted, however, Ms. Milton noted her disagreement on Mr. Boldt’s position on the CRTC’s mandate. Mr. Boldt clarified that an approach that is appropriate in this case needs to be identified. Mr. Jack pointed out that approaches taken in decisions are not being studied as a precedent to be followed in this case.
11) Rate Model and Poles Specs	<ul style="list-style-type: none"> Mr. Ahmed provided a recap of the key elements of the pole attachment rate model that was presented in the first Working Group meeting, including (a) Costing Approach, (b) Allocation Methodology, and (c) Rate Methodology. As a recap Mr. Ahmed also presented the poles specifications agreed to by the participants in the first Working Group meeting – see Annex B. Ms. Milton commented that they are fine with space allocations but their position is that separation space is common space, therefore it needs to be allocated equally. Mr. Harper pointed out that these allocations have not been used in recent OEB decisions. Mr. Piaskoski pointed out that the same allocations were used in the recent Hydro Ottawa Decision, which was also confirmed by Mr. Malone.
12) Capital Cost Input Framework	<ul style="list-style-type: none"> Mr. Ahmed provided illustrations of the capital cost input framework using the data collected so far. Mr. Ahmed pointed out that the calculations presented are for illustrative purposes only and should not be read as recommendations. Mr. Ahmed also presented three possible options to capture capital cost input data: <ul style="list-style-type: none"> a) Implement appropriate modification in general reporting structure to ensure data quality and completeness, and inclusion of factors to reflect future trends, OR b) Develop cost estimates based on independent assessment and update on periodic basis – 5-year period, AND c) Ad hoc rate increase for extraordinary costs Ms. Milton inquired into the reasoning behind new installation costs for rate calculations when most of the poles are old poles. Mr. Lesychyn clarified that Mr. Ahmed’s intent is to provide two different approaches for discussion. Mr. Ahmed commented that since poles are old, embedded costs will change over time as replacements increase, which will create uncertainty in rate determination on a going forward basis. Mr. Haddock suggested a third alternative could be to use 2015 embedded cost as the most recent. Ms.

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	<p>Milton agreed that this is a potential alternative.</p> <ul style="list-style-type: none"> • Mr. Piaskoski asked about the significance of adjusting installation costs (of \$7,571.57) to match average historical costs (of \$1,501.16). Mr. Ahmed clarified it is just for illustration purposes. In response to Mr. Boldt's inquiry, Mr. Ahmed confirmed that in the illustration, the 15.2% adjustment factor was used to set the poles related installation cost equal to the historical cost. Mr. Piaskoski asked why those two numbers should be same. Mr. Ahmed explained that theoretically the difference between the two costs should be very small if a full life cycle of the pole is considered. • Mr. Malone referred to Mr. Harper's earlier comment that the question is how to future proof rates, and determining what is representative. Mr. Haddock pointed out two options to determine power and non-power portions of the cost – based on historical records or based on current cost to install poles. Mr. Malone inquired as to whether going back to 1990 to get a 20-year data would provide a reasonable trend. Mr. Malone further inquired as to whether LDCs are heavily into renewals at present, and whether that would increase the cost. • Mr. Piaskoski stated that their understanding is that embedded costs reflect new and old poles. Mr. Ahmed explained that, from an economic point of view, it is initial investment that needs to be recovered through a rate. Ms. Milton pointed out that they are not just on new poles, they are on a lot of old poles.
13) Maintenance Cost Input Framework	<ul style="list-style-type: none"> • Mr. Ahmed provided an illustration of the maintenance cost (including annual maintenance cost and repair & right of way cost) input framework using the data collected so far. Mr. Ahmed pointed out that the calculations presented are for illustrative purposes only and should not be read as recommendations. • Mr. Ahmed also presented three possible options to capture maintenance cost input data: <ul style="list-style-type: none"> a) Implement appropriate modifications in the general reporting structure to ensure data quality and completeness (incl. productivity loss, vegetation costs etc.), and inclusion of factors to reflect future trends, OR b) Develop cost estimates based on historical trends, benchmarks and update on periodic basis – 5-year period, AND c) Ad hoc rate increase for extraordinary maintenance cost • Mr. Piaskoski inquired whether all the repair and right of way costs would apply to poles. Mr. Ahmed clarified that only a certain portion of it may apply to the telecom space.
14) Common Cost Allocation Framework	<ul style="list-style-type: none"> • Mr. Ahmed pointed out the most commonly used two methodologies: (a) equal sharing, and (b) proportional use. • Mr. Ahmed also noted that the difference in rates using the two methodologies becomes increasingly material at higher common costs.
15) Rate Calculation Framework	<ul style="list-style-type: none"> • Mr. Ahmed identified three options to determine rates: <ul style="list-style-type: none"> a) Number of “attachments” versus “number of “attachers” (users) <ul style="list-style-type: none"> - Feasibility study required to develop a system to track accurate number of attachment on regular basis - All other jurisdictions use the number of attachers to calculate rate b) “Presumptive” or “Actual” number of attachers <ul style="list-style-type: none"> - 2005 OEB Order based on presumptive number of attachers (2.5) - NB Power and recent OEB decisions for Hydro Ottawa and Hydro One applied actual number of attachers (as per evidence)

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	<ul style="list-style-type: none"> - CRTC used presumptive number of attachers (2.0) in its 1999 decision - In USA, based on FCC 2015 Order, presumptive number of attachers range from 2 to 5 attachers, according to the service area c) Number of attachers to be based on “joint-use” or “total” pole population <ul style="list-style-type: none"> - 2005 OEB Order implies “joint-use” pole approach - Best practice principle - CRTC and FCC apply joint use pole • Mr. Boldt pointed out that the main issue is to determine the definition of an attachment - <i>bolt through the pole or it's the physical wire that is overlashed on the strand?</i> Mr. Boldt further inquired whether a case where Rogers (carrier) has one strand but two fibres would constitute three attachments. Mr. Boldt stated that the current permit process makes tracking attachments difficult. Mr. Malone pointed out that the current discussion is to determine what is needed to revise their GIS tracking for any newer attacher or attachment model. Mr. Malone further pointed out that the current methodology is based on attachers: <i>“The question is, how onerous is it with telecoms and LDCs to track one or the other. Increased admin costs? Materiality? Is there any value to a new approach?”</i> • Ms. Milton asked for clarification on the definition of a joint use pole. Mr. Ahmed, responded that a joint use pole is the pole which has a telecom space and a telecom attacher. • Mr. Harper asked to what extent the rate will be applied – if applied to two attachers does that include streetlight attachers? Mr. Harper noted the need for consistency in the methodologies. Ms. Milton also noted the need for some consistency that would take into account every user of the pole in setting the rate. • Mr. Boldt argued that if joint use poles are considered then the cost associated with joint use poles should also be considered. Mr. Boldt provided the example, that a 5 attachers poles are predominantly large and in urban centres and their installation cost is very high. Mr. Boldt suggested that high installation costs shown earlier are related to the accommodation of lots of attachers. Mr. Eby pointed out that (Hydro One) is not installing large poles to accommodate lots of attachers. Mr. Boldt commented that using net embedded cost takes into account every user. • Ms. Milton questioned the allocation of significant common costs associated with poles that might never be used.
16) Rate Calculation – Direct Cost	<ul style="list-style-type: none"> • Mr. Ahmed identified two types of direct costs: <ol style="list-style-type: none"> a) Loss in Productivity: <ul style="list-style-type: none"> - Included as direct cost in 2005 OEB Order - Included in common cost in other Canadian jurisdictions such as NB. - Complete inclusion of maintenance cost based on relevant cost drivers will likely capture this cost under common cost b) Admin Cost <ul style="list-style-type: none"> - Ranges between less than \$1.00 to over \$2.00 across different Canadian jurisdictions - LDC to provide detailed cost data to develop an average rate, which then can be adjusted periodically to reflect inflation and productivity improvements - The cost data required will include order volumes, process flow, touch points and handling time, fixed system support and upgrade costs • Ms. Milton inquired after the decisions in Canadian jurisdictions where productivity loss has been included as common cost. Mr. Ahmed referred to the 2005 OEB order and also suggested that the New Brunswick Energy and

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	<p>Utility Board (NBEUB) may have also included productivity loss in common costs, but will double check to confirm. Mr. Ahmed asked Ms. Milton whether it should be considered a direct cost. Ms. Milton replied that if the cost is causal to the attachers, then it is direct. Ms. Milton pointed out that their evidence in the NBEUB case was for it as a direct cost. Mr. Ahmed inquired since it is mainly labour cost, which would already be reflected in the maintenance accounts discussed earlier.</p> <ul style="list-style-type: none"> • Mr. Piaskoski pointed out that there are other significant losses in productivity costs that not captured in maintenance. Mr. Roger pointed out that some of it is booked in the overhead service maintenance account. Mr. Eby argued that LDCs are not capturing this cost. Mr. Haddock stated that the question pertains to what percentage of maintenance should go towards power and telecom. Mr. Boldt suggested that one will need to examine sub accounts to figure out how much labour is attached to productivity loss. Mr. Boldt provided the example of admin people who answer phone calls when people are not relocating cables. Mr. Boldt further stated that they would need to know where fixed distribution labour is recorded. Mr. Ahmed asked if LDCs can provide abstracts of their accounts. Mr. Boldt pointed out that the details included in their response to the second data collection request was from sub accounts, identifying what is related to power. • Mr. Piaskoski commented that it can be dealt with if it is a direct cost, the confusion arises when we try to bring it into maintenance. Mr. Lesychyn added that it is a small number overall. Mr. Malone inquired whether productivity loss will be material if it is \$5 to \$6 in the final rate. Mr. Lesychyn responded that, in that case, it will be material. Mr. Malone stated that Hydro Ottawa actually tracks part of its productivity loss for trees on non-HOL wires and wires low/down in its Outage Management System. • Mr. Malone further noted that this allows them determine how they can improve productivity because telecoms expect them to do better. Mr. Lesychyn stated that if there is risk of double counting then it will need to be addressed.
17) Rate Calculation - Overlashing Revenue	<ul style="list-style-type: none"> • Mr. Ahmed noted that the issue of overlashing revenue has not been raised in other Canadian jurisdictions and it is not subject to regulation in USA.² • Mr. Ahmed further pointed out that inclusion of overlashing revenue (received by third party attacher) will increase the complexity of the rate calculation framework. • Mr. Ahmed pointed out that if it needs to be included in the rate calculation framework then additional data will be required such as details about the process currently used by LDC to manage overlashing and the volume of impacted poles. Based on such information a framework may be recommended to share overlashing revenue between the host attacher and LDC. • Mr. Piaskoski questioned the relevance of overlashing revenue in this analysis. Mr. Lesychyn pointed out that one of the objectives from the Board was to look at overlashing revenue. Ms. Milton pointed out that every overlasher currently pays a rate - <i>LDCs are getting that revenue</i>. Mr. Boldt added that an overlasher is considered as one of the attachers and are tracked with separate permits. Mr. Boldt further clarified that in their case the number of attachers is not just the number of bolts but the number of overlashers. Ms. Milton further pointed out that every distinct overlasher is

² Refer to Nordicity's presentation for PAWG #3, slide # 27 which references FCC 01-170, 2001, para 76

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	<p>billed and commented that it is a way of using the pole space very efficiently to the benefit of the owner and third party attachers.³ Mr. Boldt agreed and said that is why they charge overlashers.</p> <ul style="list-style-type: none"> • Mr. Piaskoski pointed out that this is the one item that all agree on. A comment was made and to be confirmed that the host Telecom charges for the use of strand approximately \$2 per year per overlash but the charge for poles goes to the pole owner. • Mr. Piaskoski also noted that the LDCs know their revenue numbers from overlashing, however, the Carriers do not know this revenue. Mr. Boldt stated that in some cases overlashing is done without the permission of pole owners. Mr. Boldt also noted that even if they do count for overlashing attachers, the host attacher (carrier) who owns the strand still collects significant revenue. Ms. Milton clarified that that revenue only recovers the cost of the strand not the pole attachment cost. • Mr. Piaskoski stated that LDCs count all poles, including those that have nothing on them. Mr. Malone clarified that in the case of Hydro Ottawa the power only poles are excluded from the count. Ms. Milton pointed out that there are a lot of poles that just have Bell on them. • Mr. Lesychyn asked whether their contract is made between a third party and the LDC to add another one in cases where there is only one strand and the primary attacher pays \$22.35. Ms. Milton says yes. • Mr. Boldt pointed out that in rural areas Hydro One is building extra space but these costs are not being recovered because there is never an attacher. Ms. Milton inquired whether that means that Hydro One is building more than 2 feet for telecom space.
18) Average Attachers per Pole	<ul style="list-style-type: none"> • Mr. Ahmed provided an overview of the average attacher pole calculations, which were based on the data submitted by LDCs in response to the first data request. Mr. Ahmed noted that the average attacher per pole is 2.30 (including 1 for power) if only joint use poles are considered. This number reduces to 1.49 (include 1 for power) if all poles are considered in the calculations. • Mr. Malone suggested that third party attachers could be an urban-rural issue. Mr. Lesychyn asked whether all agree that the number of average attachers per pole includes all third parties. Ms. Milton pointed out that there are other users - streetlight attachers, and commented that the number to be used would depend on the objective to be achieved. Mr. Haddock asked whether there is definition of joint use that will determine what is included and not included. Mr. Piaskoski asked after the meaning of joint use. This question was answered previously during the morning. Mr. Jack responded that it is actual joint use. Mr. Jack asked whether there is an urban and rural difference. Ms. Milton suggested that it might vary a lot, and in some places street lights are separate. • Mr. Eby asked whether Bell pays the maintenance fee. Mr. Malone responded that Bell pays the same rate as others. Ms. Milton pointed out that they find a distinction – in some cases Bell is like any other attachers, and in some other cases they are not. • Mr. Boldt clarified that, in the case of Hydro One, there is no joint ownership. However, Bell owns some poles and Hydro One owns some poles, and they both use each other's poles. Hydro One Maintenance costs are incurred on its assets only. When Hydro One attaches to Bell poles, it pays for make ready costs but not the annual cost. Mr. Piaskoski pointed out that it is a highly

³ OEB staff notes that third party attachers benefit from overlashing.

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	<p>complex issue that needs to be discussed in the afternoon (breakout sessions) Mr. Piaskoski argued that, given Bell and LDCs give access to each other's poles, it is difficult to determine how Bell contributes and charges LDCs.</p>
19) Rate Calculation – Illustrations	<ul style="list-style-type: none"> • Mr. Ahmed provided a detailed overview of the two illustrations of rate calculation model using a Discounted Cash Flow (DCF) approach. • Mr. Harper inquired into the basis of the 5.67% discount rate used in the model. Mr. Ahmed responded that 5.67% is a rate published by the OEB (link). • Mr. Lesychyn inquired into the parameters used in the model, and asked the participants whether they find them reasonable.
20) Lunch Break	<ul style="list-style-type: none"> • Participants recessed for lunch break (12:00 pm – 12:45 pm)
21) Breakout Sessions	<ul style="list-style-type: none"> • Based on Nordicity's presentation, and discussions by the Working Group members, Mr. Lesychyn identified the following four key issues for in depth discussion by Working Group members in the break-out sessions: <ol style="list-style-type: none"> a) Issue # 1: What cost data should be collected and tracked going forward? b) Issue # 2: Should there be a single rate for the whole province? c) Issue # 3: Should there be an adjustment to the rate in the future (i.e., adjusted annually for CPI)? d) Issue # 4: Should the allocation be based on the number of Attachers or the number of Attachments? • The members were organized into 2 groups. Nordicity's two team members, Mr. Jack and Mr. Ahmed) facilitated Group 1 and Group 2 discussion, respectively. OEB staff members participated in each group discussion as observers. To balance the two groups, the groups were organized as follows: <p>Group 1 <u>Participants:</u> David Wilkie, Bill Harper, Casey Malone, Leslie Milton, Roy Rogers <u>Facilitator:</u> Stuart Jack <u>Rapporteur:</u> Emily Macrae <u>OEB Observers:</u> Michael Lesychyn, Judy But</p> <p>Group 2 <u>Participants:</u> John Boldt, Kris Eby, David Haddock, Michael Piaskoski <u>Facilitator:</u> Tanveer Ahmed <u>Rapporteur:</u> Greg McClary <u>OEB Observers:</u> Nancy Marconi, Vince Mazzone</p>
22) Breakout Session # 1 – Group 1	<p>Topic: Issue # 1: What cost data should be collected and tracked going forward?</p> <ul style="list-style-type: none"> • Referring to slide # 5 of Nordicity's presentation, Mr. Jack asked the participants to suggest a sub account for a further breakdown of total capital cost reported in Account # 1830 in terms of 19 items listed in the description. • Ms. Milton commented that the issue is which items are power specific. Ms. Milton also noted that participants may not be the right experts as not all are engineers. Mr. Harper asked Mr. Malone to comment. Mr. Malone suggested three categories: common, power, and not applicable. Ms. Milton pointed out that this categorization would be not applicable if such categorization is not used by other LDCs in Ontario. • Mr. Malone provided further categorization as below: <ul style="list-style-type: none"> – Power: brackets, cross arm, braces, extension arms, guards (3), insulator pins, suspension bolts, transformer racks and platforms;

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	<ul style="list-style-type: none"> - Common: anchors, guy guards, strain insulators, excavation and back fill, foundations, paving, permits for construction, poles/pole material, reinforcing and stubbing, settings (placing the pole into the hole), shaving, painting, tagging; - Not Applicable: Towers, (Hydro One does not put distribution on transmission towers), railings, racks complete with insulators (old technology), pole steps and ladders; <ul style="list-style-type: none"> • The group then discussed the possible categorization of items listed in the description of Account # 5120 and suggested: <ul style="list-style-type: none"> - Power: realigning and straightening cross arms, braces, reclaiming fixtures, relocating cross arms/brackets/fixtures, shaving or cutting cross arms, supporting transformers and conductors; - Common: installing additional clamps/removing clamps or strains on guys, moving lines or guys, readjusting guys or braces, realigning and straightening poles, reclaiming pole, shaving or cutting poles, stubbing poles already in use, maintain pole signs, stencils and tags; - Not Applicable: painting (now looking at new ways to preserve poles), repairing pole supported platforms, repairs by others to jointly-owned poles (need to confirm what is meant by jointly-owned poles); <p>The group then discussed the possible categorization of items listed in the description of Account # 5135. Ms. Milton inquired whether this account is about land rights or vegetation, and asked whether it would be common. Mr. Harper commented: <i>"I don't think labour or material tells us what it's being done for."</i> Mr. Malone pointed out that, in respect to vegetation management, Hydro Ottawa maintains the right of way to get to the pole, and the mid span. Mr. Malone asked whether the benefits may be for telecoms, power or both.</p> • As an example, Mr. Jack asked the participants to clarify if tree trimming would first hit power or telecom. Mr. Malone indicated that it might hit either power or telecom. In response, Mr. Jack further inquired whether, in that case, it would be a common cost for all trimming. Ms. Milton commented that there are cases when telecom companies go in and do their own trimming. Mr. Wilkie pointed out that the service providers (LDC or carrier) often maintain the portion relevant to them. In response, Ms. Milton stated that it varies. Mr. Malone stated that Hydro Ottawa has a three-year trim cycle to maintain power – <i>"we actually trim past the telecom space."</i> Mr. Malone further pointed out that trimming below the telecoms benefits both, and asked after the appropriate allocation between power and telecoms. Mr. Milton stated that there is an allocation issue. Mr. Malone stated that it is not all vegetation management as there is an overarching access issue, and suggested access would be common. <p>Regarding Account 5135 (Overhead Conductors and Devices), Ms. Milton suggested that most of it (10 items) is power. Mr. Malone pointed out that some items have multi-grounding neutral. By referring to slide # 9, Mr. Malone indicated that items # 2, 3, 7, and 9 are common and the rest are power. Mr. Jack inquired after the initial cost of tree trimming, conductors, ground wires, clamps, and splices and further asked who typically installs the neutrals on the ground. Mr. Lesychyn commented that there is an allocation issue of how the cost for multi-grounded neutral should apply.</p>
23) Breakout Session # 1 –	Topic: Issue # 1: What cost data should be collected and tracked going forward?

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<p>Group 2</p>	<ul style="list-style-type: none"> • Mr. Ahmed initiated the discussion and asked the participants for suggestions on how to categorize the different items listed in Account 1830 into power and common. Mr. Piaskoski asked to first determine what is to be included. Mr. Boldt suggested the inclusion of maintenance account 5120 and capital account for overhead wires (account 1830). Mr. Eby suggested that there is a need to first recognize the proportion value of each component in terms of allocation percentage. • Mr. Boldt further added account # 5125 to capture capital maintenance on poles related to neutral mount and grounding. Mr. Eby suggested to consider excluding items and inquired whether Hydro One is including anchors. Mr. Boldt pointed out the need to allocate from an overall cost – <i>“sometimes work orders include Other category that would require too much time to disaggregate”</i> Mr. Eby then commented that exclusions make more sense. Mr. Boldt pointed out that there are 44KV (circuits), and suggested that the methodology should address the determination of the common pole and then provide a cost comparison of pole value to the fixture cost. • Mr. Ahmed asked the participants to discuss how such cost should be tracked in future years. Mr. Eby commented that operators are not going to track it on an ongoing basis, therefore there’s a need to establish a ratio that can be used to establish what is attributable to a pole maintenance versus fixtures. For this purpose, Mr. Boldt suggested the use of average unit cost, including contractor cost, and divide to pole and hardware. Mr. Boldt further pointed out that, based on known quantities of wire inputs, 96% is poles. Mr. Piaskoski asked whether this method is reasonable. Mr. Eby commented that this has an urban bias. Mr. Boldt clarified that they developed a weighted average of single to two or three phase pole and assigned pole length based on the phase. • Mr. Eby stated that it is easier to axe items that are just not tracked at all. • Mr. Piaskoski asked whether Mr. Boldt’s methodology applies to all, or whether it should be applied separately. Mr. Haddock responded that it would work but it will need to incorporate more 3-phase poles. Mr. Eby pointed out that there may be significant difference that will need to be considered independent and <i>“proxy and speculation”</i> may be needed. Mr. Piaskoski asked whether the required information is available to allocate as per Mr. Boldt’s methodology. • Mr. Ahmed asked whether it will work for all if job orders are broken down into components, using cost based and if the current accounting system and process can accommodate it? Mr. Boldt responded that that won’t work because of the way jobs are currently booked. • Mr. Piaskoski suggested that proxies may work, or everyone could say yes to 15% - tree trimming, for example, it was allocated at 35% for the purpose of OEB hearing? Mr. Boldt suggested three buckets including (a) Line Clearing (telecom should pay a portion to be discussed and determined by PAWG for, (b) Brushing – up to telecom level split equally , and (c) customer notification, should be split equally. 5120 - maintenance of poles: up to 5%. Mr. Piaskoski responded that they cannot agree to 5% and suggested a percentage can be calculated. Mr. Piaskoski also pointed out that they would first like to see other’s calculations (Hydro Ottawa) similar to that of Mr. Boldt’s (Hydro One). Ms. Marconi comments that it makes the most sense to apply common methodology to each LDC (LDC-specific rates). • Mr. Boldt inquired whether there is loss of productivity in a maintenance

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	<p>account. Mr. Ahmed suggested that it could be applied as a loading rate. Mr. Piaskoski suggested that a rate could be established by tracking it for a sample of crews.</p>
<p>24) Breakout Session # 1 – Summary</p>	<ul style="list-style-type: none"> • At the end of first breakout session, Mr. Lesychyn invited Mr. Jack and Mr. Ahmed to share their respective group’s conclusions with all of the participants. • Mr. Lesychyn asked Mr. Ahmed to name the categories (account #s) group 2 suggested added. Mr. Ahmed stated that it includes Account 5125 (maintenance of the neutral), and Account 1835 (capital cost of the neutral and grounding). Mr. Boldt commented that the Dx Line Patrol Maintenance – Act 5020 is 50/50 (poles versus fixtures). Mr. Boldt clarified that the field crew has to get out of the truck and walk around. Half the time is spent inspecting the pole and half the time is inspecting the attachments. • Mr. Haddock stated that the account for right of way and maintenance does not include paying for right of way access so that may need to be added. Ms. Milton disagreed as the Carriers pay their own access fees. Mr. Malone pointed out that Section 42 of the Electricity Act https://www.ontario.ca/laws/statute/98e15#BK86 allows them to convey their easement rights to telecoms, and they typically don’t charge for use of their easements. • Mr. Boldt stated that there are some differences between companies because they don’t share and expect (carriers) to get their own access rights. • Mr. Lesychyn suggested that a recommended approach is needed from both groups, deciding what is included and not included and then allocation ratios. Ms. Milton commented that the carriers still don’t know how to do the allocations; even if we were to agree on the cost inputs they know is the cost. • Conclusion: <ul style="list-style-type: none"> – Overall there was agreement in Group 1 to categorize different elements of capital costs (account # 1830) and maintenance cost (account # 5120 and account 5135 as applicable) into the following main classes: <ol style="list-style-type: none"> 1) Power only costs 2) Common costs 3) Not applicable (for rate calculations) – Group 2 agreed to include account 1830, 5120 and 5153 for analysis and, if shown to be reasonable, use Hydro One’s approach to distribute cost of each elements in these accounts into the four categories used in second data request template. – Overall the was general agreement on the need to allocate costs according to appropriate categories viz. “Power”, “Common”, “Telecom”, and “Other”.
<p>25) Breakout Session # 2 – Group 1</p>	<p>Issue # 2: Should there be a single rate for the whole province?</p> <ul style="list-style-type: none"> • Mr. Lesychyn asked whether, in principle, a single rate the ideal solution. Ms. Milton responded with a question: <i>“how do we do this if we don’t have the numbers?”</i> • Mr. Harper suggested there may be a third option. Mr. Harper further stated that based on the data seen so far, there appears to be variation across the utilities and not everyone would want to go through this effort right at the start. Mr. Harper suggested a standard rate should be established, and at the same time a methodology should be established that can be used to determine, where applicable, for an individual LDC. This will provide LDCs the

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	<p>option to apply the methodology as appropriate in their case. Ms. Milton stated that the disadvantage is that it may result in multiple proceedings, which are costly for everyone involved to put together the data, and it will continue to be debated after additional proceedings. Ms. Milton further inquired if the standardized rate will representative if it is used by quite different people (LDCs)?</p> <ul style="list-style-type: none"> • Mr. Harper suggested that the group think about it in terms of how this it will fit into the Board’s overall approach to setting rates – <i>“They only look at utilities about once every 5 years.”</i> Mr. Harper further inquired after whether it would be optional or mandatory to make it part of (general) rate applications. • Ms. Milton stated that a situation where there are rates for bigger utilities with higher costs and a standardized rate based on these higher costs would create a double whammy. Ms Milton further inquired after whether a standard rate can be developed that would represent all users. Mr. Malone pointed out that CRTC has different rates for incumbents. Ms. Milton clarified that that was not the case prior to 2010. • Mr. Harper pointed out that data for more than 2 utilities would be required to develop a single rate. Mr. Harper further noted that Hydro One may have 80% of the poles in the province but probably not most of the attachers. Mr. Harper further inquired after whether Hydro One is urban or rural, or both. The same applies to Hydro Ottawa, which is 35% urban. • Mr. Jack suggested the group consider the option of a single standard rate, but with exceptions. Mr. Harper pointed out that 2005 Order was based on one utilities’ data and asked whether the Group wanted to replicate the same issue. Mr. Wilkie asked whether the 2005 rate was more of a rural setting. Mr. Harper clarified that it may be correct as at that time Milton was rural which has likely changed now. • Mr. Wilkie pointed out that in the context of internet coverage. Ms. Milton suggested that a fair sized population data that is fully representative is needed to develop a single standard rate. • Hydro Ottawa is suggesting populations of under 30,000 as rural.⁴ Mr. Harper asked whether that context is applicable. Mr. Malone further stated that the ratio between overhead (aerial) and underground primary for a LDC also depends on rural and urban. Mr. Wilkie pointed out that they actually have buried in rural areas. • Mr. Lesychyn stated that Nordicity presented a model and the Working Group has three recent decisions based on recent data. Ms. Milton pointed out that there is a huge discrepancy between the Hydro One rate and the Hydro Ottawa rate. Mr. Harper commented that CHEC data will confirm if there is variability or may show even more variability. Mr. Lesychyn further commented that more data could confirm the principle drivers of the costs. • Mr. Harper suggested a hybrid methodology approach comprising of one method to estimate costs such as admin costs and the second methodology to estimate costs such as embedded costs. Ms. Milton, asked whether that would mean some cost inputs would be variable and some would be fixed. Ms. Milton commented that it may result in proceedings as it cannot be known how to determine a just and reasonable rate without looking at the inputs and the methodology. Ms. Milton further noted <i>“I do see some benefits to a standard rate and then if you don’t like it having the option to apply. From an efficiency standpoint, a representative rate could help. I just don’t know if we</i>

⁴ OEB staff notes that definitions of what constitutes rural vs. urban has been defined by the OEB.

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	<p><i>can get to a standard rate.”</i></p> <ul style="list-style-type: none"> • Mr. Lesychyn asked if the group could identify a threshold percentage so that anything below a certain point would allow the assumption of a number and then focus on a few cost drivers. • Mr. Wilkie pointed out that when large telecom companies go for rate increases they use a costing methodology that small telecom companies can also use, which shows transferability (of methodology) in density areas. Mr. Jack asked whether, if using this analogy, the OEB could allow LDCs to file their rates and associated methodology so as to enable their use by others. Mr. Lesychyn responded that it is an idea that requires further consideration.
<p>26) Breakout Session # 2 – Group 2</p>	<p>Issue # 2: Should there be a single rate for the whole province?</p> <ul style="list-style-type: none"> • Mr. Ahmed initiated the discussion by asking the participants to comment on the question. • Mr. Boldt suggested that Hydro One is both rural and urban and they prefer a single LDC (specific) rate as it is easy to administer, however not easy to delineate between rural/urban. Mr. Eby suggested that a single Ontario rate could work as it is simple to administer. • Mr. Piaskoski pointed out that a single rate may not “fairly” cover the costs. Mr. Eby commented that some LDCs might lose out (not cover the cost). Mr. Piaskoski argued that detailed cost numbers would be needed. Mr. Boldt pointed out the low participation rate of LDCs in responding to the two data collection requests. • Mr. Piaskoski further pointed out that the age of the poles is going to significantly affect actual costs reported by some utilities. • Mr. Ahmed stated that regional rates will require more tracking. Mr. Boldt added that their current system uses regional permits to pass on costs to telecoms which involves 110 telecoms to administer. • Mr. Piaskoski noted that they (Rogers) don’t want provincial or urban/rural rates because the process could come out badly for them. Mr. Eby pointed out that the rates could change differently over time. • Mr. Boldt pointed out that the 2005 decision allowed for updates but nobody did it. • Mr. Haddock noted that it would be effective to have a provincial rate as long as it was equitable – agreed rationale (but need to see numbers). Mr. Boldt pointed out that Hydro One deals with 110 telecoms. Mr. Haddock pointed out that and they (Horizon) deals with 60 telecoms • Mr. Ahmed pointed out that if LDC specific rates are developed, where LDCs are in close proximity, the attacher will likely move to lower rate LDC and as a result competition between LDCs for renting out the telecom space on their poles will lead to the convergence of rates in the long run. • Mr. Eby echoed Mr. Piaskoski’s concerns and noted Mr. Boldt’s suggested approach of a single rate may prevent bringing everyone back into a process like this again. • Mr. Piaskoski commented that if there is a methodology that is duly specific, then they won’t have a problem with questions of fairness. • Mr. Boldt pointed out that rural has a higher cost. Mr. Haddock responded that rural/urban are not workable for a single utility. Mr. Boldt further pointed out that some rural is more expensive than other rural – <i>“not a good basis to distinguish rates”</i>, and finally recommended a single rate per utility. Mr. Eby added that it should be based on costing methodology that ensures cost recovery and Mr. Piaskoski expressed agreement with both.

Agenda Items	Comments
27) Breakout Session # 2 – Summary	<ul style="list-style-type: none"> • At the end of the second breakout session, Mr. Lesychyn invited Mr. Jack and Mr. Ahmed to share their respective group’s conclusions with all of the participants. • Mr. Jack pointed out that the basic pro for a single rate is the regulatory cost of multiple proceedings but the con is getting a representative rate. Mr. Jack further noted that a standard rate and a standard methodology could be introduced and allow LDCs to apply. Mr. Jack further added that the CRTC model is another option, allowing smaller LDCs to use reference rates established for Bell or other LDCs with similar asset and cost base that are representative, absent costing data within their jurisdiction. • Mr. Ahmed stated that their group agreed on a single rate as it is simple to administer but there may be cross subsidization if a utility works in rural and urban areas. Mr. Ahmed further noted that there could also be a single rate for each utility. • Ms. Marconi stated that there was some agreement that if there is a specific methodology then each LDC could put in their numbers. Mr. Eby commented that using that methodology would allow each LDC to apply appropriate rates. Mr. Boldt responded that this goes back to the use of reference rates for small LDCs. Mr. Eby clarified that essentially it will be a single rate by LDC - not urban and rural. • Ms. Milton pointed out that establishing a just and reasonable rate is about the methodology as well as the input – It is about more than just the formula. • Mr. Ahmed pointed that the cost inputs discussed today were based on financial accounts, which are verifiable. Ms. Milton responded that one can massage the costing, it is always a two-part process. • Mr. Haddock commented that distinction needs to be made between the formula and the number that comes out, as it is an issue of impact. • Mr. Jack asked if the group agrees that it is worth working towards a standard rate and standard methodology with some sort of application process, this will reduce the regulatory burden and this is one way of doing it. Ms. Milton asked whether that it comes down to the data and whether a standard rate can be developed at all. • Mr. Boldt stated that the risk of a single provincial rate is that it could be really good or really bad, but if it is set by a utility it allows for the management of their costs. Mr. Lesychyn pointed that there is a risk of dealing with 70 different LDCs. Mr. Boldt commented that setting a rate is a front loaded and labour intensive process. Mr. Harper pointed out that if the rate is too low it is not the utility that suffers. Mr. Lesychyn asked Mr. Harper whether that means the current rate should be maintained. Mr. Harper responded that there should be a mechanism to manage changes to the rates, and this has to match up with the OEB’s approach to rate setting. • Conclusion: <ul style="list-style-type: none"> – The members generally agreed that a single rate is simple and easy to administer. – A majority of the members of Group 1 and 2 recommended a single province wide with the option to adjust to a particular’s LDCs cost structure, if required, using a standard formula; the carriers did not agree with this recommendation.
28) Breakout Session # 3 –	<p>Issue # 3: Should there be an adjustment to the rate in the future (i.e., adjusted annually for CPI)?</p> <ul style="list-style-type: none"> • Mr. Lesychyn initiated the discussion point out the issue of variation in costs

Agenda Items	Comments
<p>Group 1</p>	<p>over time. Mr. Lesychyn pointed out that if there is an aggressive replacement program that will hugely increase the rates. Ms. Milton stated that an annual price adjustment was appropriate only if the evidence shows that costs generally move in a manner that is consistent with a price escalator, and a productivity factor is included.⁵</p> <ul style="list-style-type: none"> • Mr. Harper stated that the Board looks at inflation factors that are more relevant to the utilities industry. Mr. Harper further noted that, depending on the classification of the utility, the rate is also reduced by a productivity factor, and it is done every year. Mr. Harper then commented that going forward, a different factor than that is applied to every other cost would be hard to introduce, and suggested a determination on how to adjust one miscellaneous charge when the Board is in the process of reviewing them all. Mr. Harper also noted that such a decision by the Group could well be revisited by the OEB for internal consistency. • Mr. Lesychyn inquired for further information about the productivity offset. Mr. Harper responded by saying that the fact that the OEB applies to utilities overall recognizes both capital and maintenance costs, and according to his understanding it on StatsCan escalations in certain labour areas. Ms. But pointed out that the price cap mechanism is on the OEB's website, and said it is generic. Mr. Lesychyn asked whether the price escalator would be the same but the productivity offset changes, and raised the question of whether that would be reasonable. • Mr. Malone stated that last year Hydro Ottawa asked for inflationary adjustment. Mr. Lesychyn asked Mr. Malone to provide more information in this regard. • Mr. Harper noted that CPI is heavily weighted by items such as food and that does not have such an impact in the subject matter.
<p>29) Breakout Session # 3 – Group 2</p>	<p>Issue # 3: Should there be an adjustment to the rate in the future (i.e., adjusted annually for CPI)?</p> <ul style="list-style-type: none"> • Mr. Ahmed ask the group to comment on the question. Both Mr. Boldt and Mr. Haddock agreed with the use of CPI. • Mr. Ahmed asked the group if the rate adjustment factor should also account for productivity (using index). Mr. Haddock asked whether that wouldn't be captured by the CPI methodology and wouldn't require completely new inputs. • Mr. Piaskoski asked whether the OEB can increase reference rates on a predetermined basis. • Mr. Boldt commented that, in contrast to a broad assumption of efficiency gains, some costs are going up such as municipal approvals, requiring engineered drawings, etc. Mr. Ahmed suggested costs such as dispatch/operations etc. might be decreasing due to process improvements and optimization of field force utilization etc. Mr. Piaskoski suggested that it would be relevant to the treatment of maintenance allocations in the methodology. Mr. Boldt responded that the challenge is what to use as a benchmark – might take time to implement. • Mr. Ahmed asked for comments about using annual financial account

⁵ The OEB notes that the productivity factor is already included in the annual price cap adjustment mechanism.

Agenda Items	Comments
	<p>submission for rate adjustment versus CPI. Mr. Boldt pointed out that when an LDC applies for rate (e.g. for 2018-22), it's forward looking.</p>
<p>30) Breakout Session # 3 – Summary</p>	<ul style="list-style-type: none"> • At the end of the third breakout session, Mr. Lesychyn invited Mr. Jack and Mr. Ahmed to share their respective group's conclusions with all of the participants. • Mr. Ahmed stated that the group discussed two options: CPI and annual account submissions. If annual submission reflects cost in excess of CPI, it would trigger an adjustment. Mr. Ahmed further noted that the group also discussed the productivity improvements but agreed that it is subject to further details. Mr. Ahmed further noted that generally the group was in agreement with avoiding a complicated approach. The CPI index has the advantage of not requiring complex calculations year over year basis. • Mr. Jack explained that the group focused on the industry and agreed that CPI is too general, and more for consumers. Mr. Jack further pointed out that the group noted that there should be categories according to specific factors for the LDCs, and there would be a net factor applicable for the industry year by year. • Conclusion: A majority of the members of both groups agree to the principle of a price adjustment. However, there was also no clear agreement on what an appropriate adjustment factor might conceivably be.
<p>31) Breakout Session # 4 – Group 1</p>	<p>Issue # 4: Should the allocation be based on the number of Attachers or the number of Attachments?</p> <ul style="list-style-type: none"> • Mr. Jack initiated the discussion and Mr. Lesychyn added that this topic was covered in the morning discussion. • Mr. Harper asked whether the discussion involves telecoms attachers only or streetlights as well. Mr. Lesychyn underscored that the numbers of attachers can change the rate significantly. • Mr. Malone pointed out the issue of legacy rates that are built into the area agreements. Some carriers paying only 50 to 75% of the full rate of \$22.35. Mr. Lesychyn asked after the length of those agreements. Mr. Malone responded that it is 5 years and they also have a one-year renewal clause. Mr. Lesychyn further asked whether the agreement can be renegotiated after one-year renewal. Mr. Malone responded that it provides annual opportunity for (negotiation of) a new rate. Mr. Lesychyn inquired after the portion of the poles that are covered under those old agreements. Mr. Malone pointed out that all the agreements are more or less the same between the non-HONI LDCs, and they affect about 5% of the total attachments in Ottawa.
<p>32) Breakout Session # 4 – Group 2</p>	<p>Issue # 4: Should the allocation be based on the number of Attachers or the number of Attachments?</p> <ul style="list-style-type: none"> • The group noted that this topic was discussed at length in the morning session and due to time constraint group moved to join the first group for final breakout conclusion session.
<p>33) Breakout Sessions - Conclusion</p>	<ul style="list-style-type: none"> • Mr. Lesychyn initiated the discussion by asking the participants to provide their final comments about the framework and the suggested approaches. Mr. Lesychyn asked participants to indicate what's important to them and their rationale. • Mr. Harper asked Mr. Ahmed to explain how the proposed cash flow model proposed is linked with methodology that OEB already uses. Mr. Harper

Agenda Items	Comments
	<p>further asked if it is the initial capital cost or the net embedded cost that should be used. Mr. Piaskoski pointed out that they have never seen it before in hearings. Mr. Ahmed clarified that the cash flow model illustrated is use to demonstrate the recovery of economic cost.</p> <ul style="list-style-type: none"> • Ms. Milton raised the issue that Carriers cannot assess the numbers without more inputs and assumptions. Ms. Milton further asked whether the group members have agreed on proportionate use versus equal sharing, as the approach to determining the average number of attachers varies depending on the allocation methodology. • Mr. Harper asked about the source of the 5.67% discount rate used in the model, and further inquired as to whether the \$1,501 capital cost input used in the model is based on a 10-year average. Mr. Harper also noted that they prefer to take a more traditional approach. Mr. Ahmed confirmed that it is a historical average and referred to the pertinent slides to explain the basis of capital cost input. Mr. Harper further commented that a \$1,501 value is not representative of a 2015 cost. Ms. Milton asked how \$1,501 relates to net embedded costs in 2015. • Ms. Milton stated that they don't agree with the model. Mr. Piaskoski pointed out that they would need to consult an economist to verify fairness as currently they (the Carriers) are paying for more than half of the costs of a pole. • Mr. Ahmed pointed out this model was presented in the second July 22nd PAWG meeting, using the cost inputs based on 2005 OEB Order, including embedded cost. To further explain how the 2005 OEB order inputs were used in the economic return model, Mr. Ahmed presented slides 39-42 of Nordicity's deck that was presented at the second July 22nd PAWG meeting. • Mr. Ahmed further clarified that the main purpose of the cash flow model is to demonstrate whether the rate provides full cost recovery on a fair and reasonable basis – generates net present value (NPV) of zero (breakeven) at a reasonable rate of return. Mr. Ahmed also indicated NPV calculation is the basis of deriving the common cost that is used in the second step of the process. Mr. Harper commented that it is a fundamentally different type of input than the old model. • Ms. Milton stated that the Carriers do not agree with a 25-year useful life ⁶ and the number of attachers used to impute total cost. Mr. Malone clarified that these were the rates used under Canadian GAAP. • By referring to slide 35: "Cost Recovery (40 Year Useful Life)", Ms. Milton inquired how the rate is determined using the inputs. Mr. Ahmed, clarified that the rate is calculated using present value approach. Ms. Milton then inquired how the total rate is allocated to users. Mr. Ahmed, clarified that the allocation is the second step of the rate calculation which may either be based on an equal sharing basis or proportionate use basis. Mr. Piaskoski asked whether this is the total attachment revenue per year for a pole. Mr. Ahmed confirmed that it is correct. Ms. Milton then asked whether the revenue is from all parties. Mr. Harper pointed out that Mr. Ahmed has not yet addressed the issue of allocation, and further raised the issue with respect to the 10-year average.

⁶ The OEB notes that the Kinetrics Asset Depreciation Study for the OEB conducted in 2010 (Table F-1, p. 17) reported a range of 20-55 years, with an average of 45 years (useful life) for wood poles.

Agenda Items	Comments
	<p>Mr. Harper further demanded to see a comparison of this approach with a standard regulatory approach and how it adds for a single year. Mr. Ahmed reminded that in the previous presentation (July 22 PAWG # 2 meeting), Nordicity showed that current rate would produce a negative NPV, which means that the cost is not fully recovered. Mr. Harper emphasized the use of a standard regulatory approach (methodology used in 2005 OEB order) instead of fitting inputs into an economic model.</p> <ul style="list-style-type: none"> • Ms. Milton asked how this new approach will move the PAWG forward. Ms. Milton further noted that they don't understand all the assumptions and it's not addressing the fundamental issue of allocation: <i>"This doesn't address any allocations as far as I can tell."</i> Mr. Piaskoski further noted that to comment on this model, they will need to retain economists, and if turns out to be fair, reasonable and easy to use then they will adopt it. Mr. Lesychyn commented that its needs to be considered from a principled standpoint and to ensure the basis idea is valid. • Mr. Piaskoski further commented that there are cases where they (the Carriers) use 2 feet but are charged for more than half of the costs of a pole and they believe it is not fair. Mr. Boldt pointed out that Mr. Ahmed has provided the calculations to show how much revenue is required to offset costs to zero amount over 40 years and has not yet gotten into allocation stage. • Mr. Eby asked whether the issue of depreciated poles should be accommodated. Mr. Eby further inquired how the cost increase on going forward basis will be accommodated and asked if \$1,501 is the depreciated value of the pole. Mr. Ahmed clarified that \$1,501 is an illustration and represents gross value of the pole, instead of net book value. Ms. Milton argued that gross value should not be used as a starting point as they are attaching to a lot of old poles and they believe it is important to recognize that. Mr. Lesychyn pointed out the \$1,501 is the average over 10 years. • Mr. Harper noted that the economic model presented is fundamentally different than the one used by the OEB. Ms. Milton noted that there are a lot of assumptions that they would not agree with. Mr. Boldt suggested scheduling an additional meeting would be important to address maintenance cost issues. Mr. Lesychyn pointed out that many of those issues are known, however the OEB will look into the possibility of scheduling another meeting, and whether that is feasible before Christmas. Mr. Lesychyn further noted that certainly the Group could not deal with all the questions that came up and would need to address those questions at the next meeting. • Mr. Lesychyn concluding the meeting by noting that the objective of this process is that parties will work together. • Conclusion: There was general agreement (between LDCs and carriers) on the use of OEB existing embedded costing methodology for rate calculation. The participants asked for further analysis and justification for consideration of DCF approach, which is based on poles life cycle (40 year) cost inputs i.e. detailed cash flow (NPV) analysis encompassing poles initial installation cost, year over year replacement factors and associated maintenance expenses and revenues.
34) Meeting Outcomes	<ul style="list-style-type: none"> • The focus of the meeting remained on critical issues associated with the six following key areas of the rate calculation. <ul style="list-style-type: none"> a) Embedded costs;

Agenda Items	Comments
	<ul style="list-style-type: none"> b) Maintenance costs; c) Direct costs; d) Average number of attachers (with Overlashing); e) Rate calculation(Equal Sharing versus Proportional Use); and f) NPV calculation versus the OEB current rate setting model. <ul style="list-style-type: none"> • With respect to the above items, different issues were raised and discussed at length among the participants. For each issue, the participants stated their position and their line of reasoning. The outcome was that participants either (a) reached to agreement on some items, or (b) did not agree on certain other items, or (c) indicated the need for further discussion on the remaining items. • Annex C provides the summary of key items discussed according the above three outcome categories.
35) Action Items	<ul style="list-style-type: none"> i) Nordicity: To incorporate information and comments generated from the PAWG meeting as well as costing data expected from approximately five CHEC members by the end of December and Hydro Ottawa into the costing model. It was noted that Toronto Hydro did not fully respond to the first data request and also did not submit any response to the second data request. OEB may consider to also follow up with Toronto Hydro to submit costing data ii) OEB: To schedule the next PAWG meeting in function of the time required to incorporate the data sets, the number of outstanding issues as well as availability of members during the holiday period. The next PAWG meeting is tentatively scheduled for January 31, 2017. Agenda will focus on areas where agreement has been reached and further discussion on areas of disagreement to close the gaps. Nordicity to present a summary of all the analysis to date.

Annex A – Summary of Decisions in Canadian Jurisdictions⁷

Year	Canadian Jurisdiction	Annualised Common Cost	Annual Rate	Pole Population	Costing Approach	Allocation Methodology	Rate Methodology	
							Communication Space Attachments	#
1999	CRTC - Power Utility Poles (CRTC 99-13)	\$78.21	\$15.89	Joint Use Poles	Historical (representative)	Proportional	Presumptive Attachments	2.00
2000	Alberta Energy and Utilities Board (2000-86)	\$51.00	\$18.36	Joint Use Poles	Historical cost	Equal Sharing (implied)	Presumptive Attachments	2.00
2002	Nova Scotia Utility and Review Board (2002 NSUARB 1)	\$75.11	\$14.15	Joint Use Poles	Historical (representative)	Proportional	Presumptive Attachments	2.00
2005	Ontario Energy Board (RP-2003-0249)	\$93.31	\$22.35	Joint Use Poles	Historical (representative)	Equal Sharing	Presumptive Attachments	2.50
2006	New Brunswick Energy and Utilities Board (June 19, 2006)	n.a	\$18.00	<i>Interim order based on decisions in other jurisdictions</i>				n.a
2010	CRTC – Telephone Poles Ontario and Quebec (CRTC 2010-900) - Bell Canada and Aliant ⁸	\$62.78	\$12.48	Joint Use Poles	Historical	Proportional	Actual Attachments	1.70
2015	New Brunswick Energy and Utilities Board (matter no. 272) - NB Power	\$79.91	\$20.77	Total poles	Historical	Proportional	Actual Attachments	1.40
2015	Ontario Energy Board (EB-2015-0004) – Hydro Ottawa	\$169.69	\$53.00	Total Poles	Historical	Equal Sharing	Actual Attachments	1.74
2015	Ontario Energy Board (EB-2015-0141) – Hydro One	108.71	\$41.28	Total Poles	Historical	Equal Sharing	Actual Attachments	1.30
2016	Ontario Energy Board (EB-2014-0116) – Toronto Hydro ⁹	\$144.53	\$42.00	Total poles	<i>Not available (agreed upon in a settlement agreement)</i>			1.61

⁷ The OEB notes that this list includes all major decisions that were part of Nordicity's jurisdiction scan.

⁸ The methodology that was adopted by the CRTC here is different from its 1999 approach and entirely different from the OEB's 2005 methodology. The approach allocates costs to telecom attachments based on the joint ownership ratio between the LDC and the ILEC (e.g., 60/40), the relative number of cables on a pole owned by the telecom pole owner and third party telecom attachments, and the number of billable attachments per pole.

In any event, the 1.7 refers to the number of **third party** telecom attachments. If you add the telecom pole owner, you get a total of 2.7 telecom attachments. **(Nordicity's comment: CRTC 2010-900 decision was shown for reference purposes only.)**

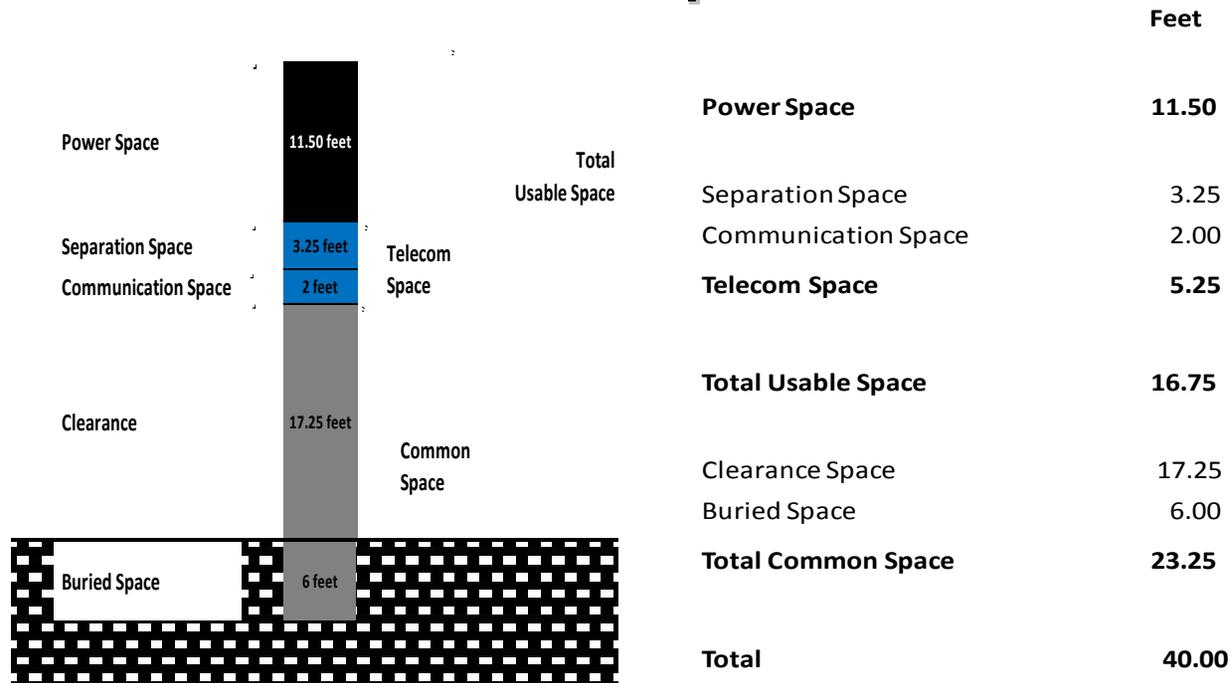
2016	CRTC 2016-228 - TELUS ¹⁰	\$62.26	\$19.33	Joint Use Poles	Historical	Proportional	Actual Attachers	1.32
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Common Cost per Pole = Annual Depreciation Expense + Annual Maintenance Expense + Loss in Productivity (in most cases) + Utility Tax (if applicable) + Carrying Cost (= Net Embedded Cost x Capital Carrying Cost %)

⁹ OEB 2014-0116 was cited for reference purposes.

¹⁰ CRTC 2016-228 was cited for reference purposes (the CRTC used the same methodology it applied in 2010.)

Annex B: Poles Specification for Rate Model ^{11 12}



¹¹ The Carriers do not agree that Separation Space is purely Telecom Space. If a telecom builds a joint use pole for use by LDCs, it must include the Separation Space so both it and the LDC can use the pole. Similarly, if an LDC builds a joint use pole for use by telecoms, it must include the Separation Space so both it and the telecom users can use the pole. Separation Space does not become Power Space or Telecom Space based on who builds the pole. Further, the Separation Space is often used by non-telecom attachers.

It is particularly important to treat Separation Space as common space if an Equal Sharing methodology is adopted, where the LDC and the telecom attachers are considered to be equal users of the pole. If all users are assumed to benefit equally from the pole, then all users benefit equally from the sharing of the pole and hence from the Separation Space.

¹² The OEB notes that separation space is a requirement of the CSA C22.3 No. 1, and is defined within the ESA guideline (section 1.1.13) for third party wireline attachments. This topic will be discussed further at the next working group meeting.

Annex C – Key Outcomes of November 24, 2016 PAWG Meeting # 3

Items -	Items Agreed to	Items Not Agreed to	Needs More Discussion
Pole Design	<ul style="list-style-type: none"> Space allocations for a 40 foot pole Power , Communication, Separation, Clearance and Buried 	<ul style="list-style-type: none"> Total Common Space = Common Space + Buried Space versus Total Common Space = Common Space + Buried Space + Separation Space 	<ul style="list-style-type: none"> Why is separation space needed? Re. ESA doc. For attacher – separation space is directly related to all third party non-power (CSA standards & ESA Guideline for Third Party Attachments) attachments. Inclusion of separation space into telecom space would also depend on whether proportionate use or equal sharing methodology is used.
Embedded Cost	<ul style="list-style-type: none"> Calculate the updated rate using the 2005 approved methodology for comparison purposes with Nordicity’s proposed methodology ¹³ Consider calculating the rate using 2015 data, as representative of the pole infrastructure data, as compared to historical costs. ¹⁴ Cost category inputs to break down total capital cost into three categories: “power”, “common”, “not applicable” how it aligns with that of Hydro One’s approach. Attach a summary of the costs that the majority of working group agreed to in each account 	<ul style="list-style-type: none"> Use of gross cost in pole cost, rather than net embedded cost (net book value) Use of NPV (Economic Return) framework and assumptions to determine common cost (Mr. Harper, and Carriers) 	<ul style="list-style-type: none"> Use of an average 10-year costing analysis of 1830, 5120, 1835, 5135 1-year cost inputs, per current revenue requirement filings Cost category inputs to break down total capital cost into three categories: “power”, “common”, “not applicable”, and how it may align with that of Hydro One’s approach. Use of Hydro One methodology to calculate the power specific assets Appropriateness of the Nordicity “formula” (discounted cash flow analysis) to determine common cost
Maintenance Cost	Cost of neutral should be considered (as it relates to		<ul style="list-style-type: none"> How to determine % vegetation management that’s applicable to the

¹³ The OEB notes that there may not have been agreement on this particular point, however, there was discussion around this issue and as such the OEB is requesting Nordicity to perform the analysis.

¹⁴ Ibid.

Items -	Items Agreed to	Items Not Agreed to	Needs More Discussion
	maintenance & capital cost) Lines and Forestry to be included		carriers <ul style="list-style-type: none"> Given that some LDCs charge separately for vegetation management or allow the carriers to do their own vegetation management, should it even be included in the rate?
Direct Costs	Direct costs are small, ¹⁵ not a major driver of the rate		<ul style="list-style-type: none"> Discussion on methodology and how to record admin and LOP costs
Number of attachers	<ul style="list-style-type: none"> All types of attachments should be included (streetlights, etc.) Not charging by attachment (given data at this time) 	<ul style="list-style-type: none"> Bell attachers being included on Hydro One poles (raised by Carriers) 	<ul style="list-style-type: none"> Definition of an attacher Use of actual or average (presumptive) number of attachers Should Carriers that overlash their own wires be charged per overlash because of additional weight, thus stress?¹⁶
Overall Rate	<ul style="list-style-type: none"> Rate should increase with an escalator¹⁷ No need to differentiate the rate and methodology between regions (rural vs. urban rate) 	<ul style="list-style-type: none"> Allocation Methodology (equal sharing vs. proportional) 	<ul style="list-style-type: none"> Variability in the rate with CHEC data LDC-specific rates or a province wide rate?¹⁸ What the specific escalator should be: a price cap adjustment mechanism (inflation – productivity) or just CPI? Updating process to manage the price increases, future data and stakeholder input (future steps and process issues) Consideration of a reference costing approach for smaller LDCs

¹⁵ The OEB notes that direct costs are approximately 10% of the final rate.

¹⁶ The OEB notes that this issue was clearly identified as part of the scope for this consultation from the onset. A Carrier who overlashes his own strand multiple times puts additional stress/burden on the poles

¹⁷ OEB notes the working group generally agreed to the principle of a price adjustment.

¹⁸ OEB believes that there was no resolution and requires discussion at the next meeting.

Annex D - Action Items and Clarifications pertaining to Minutes

The following actions items and clarifications have been identified as part of the review of the minutes to be discussed at the upcoming PAWG meeting.

1. Page 14, Rate Calculation - Overlapping Revenue, paragraph 5—confirmation of comment regarding \$2 paid by overlasher to Carriers.
2. Page 17, Breakout Session # 1 – Group 2, paragraph 3 John Boldt to confirm 96% is poles.
3. Page 19, Breakout Session # 2 – Group 1, paragraph 4, Clarification by what is meant by double whammy by carriers. To discuss at the next pole attachment meeting. - If you set a standardized pole rate based on higher cost LDCs, those higher cost LDCs get their own rates and lower cost LDCs rely on the standardized rate. This will result in the telecom attachers over-paying and the low-cost LDCs are over-recovering
4. Page 21, Breakout Session # 2 – Summary, Page 23, Breakout Session # 3 – Summary – What is meant by majority.
5. Page 24, Breakout Sessions – Conclusion, paragraph 4, clarification to Mr. Harper comment of the **initial** capital cost or **the net** embedded cost that should be used
6. Page 24, Breakout Sessions – Conclusion, paragraph 5, Discussion of carriers comment they are (the Carriers) are paying for more than half of the costs of a pole.
7. Page 25, Breakout Sessions – Conclusion, paragraph 11, they (the Carriers) use 2 feet but are charged for more than half of the costs of a pole and they believe it is not fair
8. Annex A – Summary of Decisions in Canadian Jurisdictions CRTC – Telephone Poles Ontario and Quebec (CRTC 2010-900) - Bell Canada and Aliant confirmation of 1.7 attachers
9. Annex A – Summary of Decisions in Canadian Jurisdictions CRTC 2016-228 - TELUS Nordicity to confirm 1.32 attachers
10. Annex C – Key Outcomes of November 24, 2016 PAWG Meeting # 3 Rate should increase with an escalator –Carriers would like further discussion on this issue.