WIRELINE POLE ATTACHMENT CHARGES

REVIEW OF OEB DRAFT REPORT

AND

NORDICITY EXPERT REPORT

(OEB-2015-0304)

Prepared for Rogers Communications Canada Inc.

Andrew Briggs

AGBriggs Consulting Inc.

February 9, 2018

Contents

Executive Summary

ES-1 This Report provides a review and assessment of the Ontario Energy Board Draft Report of the Board, "Framework for Determining Wireline Pole Attachment Charges" and the associated Nordicity Report, "OEB Wireline Pole Attachment Rates and Policy Framework". It identifies a number of issues and concerns which impact the development of a province-wide pole attachment rate, as summarized below.

Proposed Pole Attachment Rate Framework (Section 2.0)

Province-wide rate

Issue 1 - Province wide average rate may not be appropriate

ES-2 The creation of an average rate across a large number of local distribution companies ("LDCs") may be appropriate if these LDCs are homogenous in nature. However, the LDCs across Ontario are not a homogenous group. The LDCs vary significantly in size and type of geographic area served. Based on the data inputs, the cost structure and attachment characteristics related to pole attachments also vary significantly.

LDC Specific Rates

Issue 2 - One-sided approach to LDC specific rates

ES-3 The OEB Draft Report proposes that, at the time of rebasing, "the LDCs can choose a custom pole attachment rate or simply adopt the provincial rate for the next rate filing period." At the time of rebasing, there is no incentive for an LDC that determines that its pole attachment costs produce a pole attachment rate that is below the province-wide rate to apply for a custom rate. Since the province-wide rate is an "average" across LDCs, this mathematically implies that as LDCs with costs (and thus rates) greater than the province-wide rate opt for custom rates, the province wide-rate should correspondingly be decreased to reflect the removal of these higher cost LDCs from the rate. Otherwise, parties that pay the province-wide rate will end up over-compensating LDCs subject to the province-wide rate for the cost of the service.

LDC Data Collection

Issue 3 - Incomplete and inconsistent data collection

ES-4 The development of a pole attachment rate requires data inputs that accurately reflect the costs associated with providing pole attachment services. While Nordicity collected data through the consultation process from LDCs that represent roughly 90% of the province's pole population, not all of the LDCs that participated in the consultation process submitted information for all the required inputs. Furthermore, simply providing an input does not necessarily reflect the quality of the data, or the consistency of the data either over time or across LDCs. There are numerous instances where the data provided by LDCs raises serious questions regarding the quality of the data, and thus its suitability for inclusion in the pole attachment rate model.

Data Requirements - Use of Sub-accounts

Issue 4 - OEB direction on sub-accounts is incomplete

ES-5 The OEB Draft Report propose that the LDCs be required to set up sub account to track pole attachment costs directly attributable to carrier attachments. Costs directly attributed to telecom attachments form part of direct costs and are not relevant to the indirect costs, which form the majority of costs associated with the pole attachment rate. The OEB direction does not address segregating power specific costs from LDCs accounts for pole capital costs, maintenance or vegetation management.

Issue 5 - Use of sub-accounts is not a panacea

ES-6 While the implementation of sub accounts may improve the data quality of inputs into the pole attachment rate model going forward into the future, it is not a panacea; nor will it necessarily permit a mechanistic approach to annually updating the pole attachment charge.

ES-7 Since the implementation of sub-accounts will only occur on a going forward basis, it does not address any of the issues associated with the current set of data inputs used in the proposed pole attachment rate. Unless these issues are addressed, the proposed provincial-wide rate will effectively "lock-in" these problems until some future time when the use of

sub-accounts may or may not assist in identification of the appropriate cost inputs to include in the pole attachment rate model.

Allocation Methodology (Section 3.0)

Selection of Methodology

ES-8 The three identified methodologies for the allocation of common (indirect) costs are:

- Proportional Use
- Equal Sharing
- Hybrid Equal Sharing

Issue 6 - Hybrid Equal Sharing is untested and benefits are not shared equally

ES-9 The OEB proposes to adopt Nordicity's "Hybrid Equal Sharing" approach. The OEB states that "the adoption of the hybrid equal sharing methodology for common costs is a compromise between the proportional use methodology and the equal sharing methodology." Nordicity's hybrid equal sharing methodology allocates the common space of a joint-use pole equally between power and telecom attachers as two groups. According to the OEB, this recognizes that "both groups require their facilities to be elevated in accordance with applicable codes and standards and benefit equally from the sharing of costs and infrastructure."

ES-10 By Nordicity's own admission, the hybrid equal sharing methodology "is a novel approach proposed by Nordicity and has not been applied by any Canadian jurisdiction to the best of Nordicity's knowledge." Applying an untested, novel approach would not be appropriate.

ES-11 No support is provided that both power and telecom attachers benefit equally. The hybrid equal sharing methodology fails to consider the different burden placed on the common costs by the different user groups (power and telecom attachers). Power space is a higher proportion of the total useable space on a typical pole. Nor does the hybrid equal sharing methodology consider the advantages provided by pole ownership versus tenancy.

ES-12 The proportional use methodology should be considered a superior methodology to the untested, novel hybrid equal sharing methodology.

Issue 7 - Nordicity previously supported the Proportional Use methodology

ES-13 The Nordicity Reports recommended methodology contrasts with its previous support for the proportional use methodology over the equal sharing methodology.

Issue 8 - Nordicity cost sharing example is flawed

ES-14 The Nordicity Report includes an example that attempts to demonstrate the sharing of cost savings between telecom and electricity users. The example is based on simplifying and unsupported assumptions that limit its validity and usefulness.

Treatment of Other Attachers

Issue 9 - Other Attachments not properly captured in the Allocation Methodology

ES-15 The consultation process and the development of a pole attachment rate has focused on wireline attachments by telecom attachers. However, there are other non-wireline attachers that also make use of the LDC poles including wireless attachments, street lights, traffic lights, generators and others. Since these other attachers make use of space on the LDC poles, benefit from the use of the LDC poles and place a burden on these poles, these attachers should be explicitly considered in the allocation methodology to ensure that an appropriate portion of the LDC indirect, common costs are allocated to these attachers. Otherwise, the indirect, common costs may be over-allocated to telecom attachers.

ES-16 None of the pole specification information used in the allocation methodologies include any allowance for or inclusion of useable space **specific** to these other attachers, notwithstanding that these attachers make use of pole space. The information used by the OEB regarding the number of attachers per pole is based on **all** third party attachers (wireline telecom and other attachers), not just wireline telecom attachers. This inappropriately treats "other" attachers as part of telecom attachers group and inappropriately assumes that the "other" attachers make use of the telecom space.

Poles Specifications & Allocation Factor (Section 4.0)

Issue 10 - Allocation factors overstated

ES-17 Poles specification information is provided in the Nordicity Report, Table 14. Different pole specifications and space segments will result in differing allocation factors. Using either

the OEB 2005 Decision specification or the sample based on 75% of poles, results in a higher allocation factor than using the actual average pole specifications. As the allocation factor is used to determine the amount of indirect, common costs to be allocated to telecom attachers in the rate model, these differences are non-trivial.

Issue 11 - Inconsistent approach and using mismatched data

ES-18 Ignoring the actual average data for pole specifications is inconsistent with the approach taken elsewhere in the Nordicity and OEB Draft Reports, where actual data provided by the LDCs is generally relied upon to derive the inputs for the pole attachment rate model.

ES-19 If a 40 foot pole specification is used as the basis for determining the allocation of common costs, then it would be appropriate to match this with the embedded cost data based on 40 foot poles for use in determine the indirect costs in the pole attachment rate model. However, the embedded cost data used is based on average across all embedded poles, including poles of all heights.

ES-20 There is a disconnect with relying on a sample of only 75% of the poles (35, 40 and 45 feet poles) to support the poles specifications used for the allocation factor yet including 100% of the common costs such as the embedded costs of the installed poles – regardless of height. The poles with greater heights, which Nordicity excludes from the sample, are more costly to install and to maintain yet are included in the embedded cost base.

Number of Attachers per Pole (Section 5.0)

Issue 12 - Data in Table 17 and 18 of Nordicity Report is inaccurate

ES-21 A review of the information provided in Tables 17 and 18 raise a number of concerns that call into question the accuracy of the value of 1.30 attachers per pole. For some of the LDCs, Table 17 appears to include the total number of installed poles, not just the number of joint use poles. If this is the case, this will lead to an understatement of the correct value of attachers per pole. This issue also carries over into Table 18 and is compounded by the apparent addition of Toronto Hydro poles, even though Toronto Hydro data is supposedly

excluded. Furthermore, Hydro One data differs from data provided in the OEB-2015-0141 proceeding.

Issue 13 - Toronto Hydro data is not included

ES-22 Table 17 and 18 exclude Toronto Hydro data, notwithstanding that it has more installed poles than the three smaller LDCs (London Hydro, Hydro Ottawa and Horizon) combined. Including Toronto Hydro data would be improve the quality of the combined average attacher per pole as an input to the pole attachment rate model.

Issue 14 - Re-calculating attachments per pole

ES-23 Based on the issues identified above regarding the data included in the Nordicity Report (Tables 17 and 18), it would be appropriate to determine a revised value of attachers per pole. It would be reasonable to use the data presented in the following tables, which results in a revised value of attachers per pole value of 1.38 to 1.44

Bell / LDC Joint Use Pole Agreements (Section 6.0)

Issue 15 - Joint use pole agreements not considered

ES-24 In the OEB Draft Report, the OEB determined that it will not consider the Bell and LDC reciprocal agreement as part of the new pole attachment rate methodology. Under agreements such as the Bell/Hydro One Joint Use Agreement, Hydro One is responsible for installing and maintaining 60% of the poles under the Agreement, with Bell responsible for installing and maintaining 40% of the poles.

ES-25 This implies that for the Hydro One poles subject to the Joint Use Agreement, the indirect common poles costs (i.e. depreciation, capital carrying charges and maintenance) are effectively covered by its reciprocal access to the 40% of poles owned and maintained by Bell. As these costs are already being covered by the Joint Use Agreement, it is inappropriate to require non-Bell telecom attachers to also contribute to the recovery of these costs through the pole attachment rate. As a result, an adjustment should be made in the pole attachment rate model to account for this. This adjustment could take the form of excluding the number of Joint Use Agreement poles from the pole attachment rate model.

Issue 16 - LDCs' effective average cost per pole is lower

ES-26 Under the joint use agreements, an LDC's effective average cost per pole is lower than that based on its embedded cost from its accounting information. This should be reflected in the pole attachment rate model. Other regulators, such as the CRTC, have taken into account the impact of these joint use agreements in establishing the pole attachment rates. A Joint Use Agreement factor can be calculated and applied in the pole attachment rate model.

Direct Costs (Section 7.0)

Issue 17 - Inappropriate weighting of direct costs

ES-27 The OEB calculation of average administration costs and loss of productivity related costs uses an inappropriate weighting approach which leads to an overstatement of these costs, even before considering the validity of the individual cost inputs. These cost inputs should be weighted based on the number of attachers per LDCs.

Administration Cost

Issue 18 - Consistency and appropriateness of cost inputs

ES-28 The cost inputs vary significantly across the three LDCs. Such large variations for in the cost inputs are concerning, particularly as it would be expected that administration functions, and thus costs, would be similar across LDCs. The OEB's expert, Nordicity, even raised concerns regarding the quality of the Toronto Hydro data provided as part of the consultation process.

Loss of Productivity

Issue 19 - Consistency and appropriateness of cost inputs

ES-29 Similar to the issue identified regarding administration costs, the cost inputs for loss of productivity vary significantly across the three LDCs. Unless there are significant differences in operating cost structures, it is unreasonable that LDCs undertaking similar activities – working around telecom attachers - would have such significantly different input costs for loss

of productivity. The OEB Draft Report inclusion of costs varies from the recommendations in the Nordicity Report, which expresses concerns over the possible double counting of costs.

ES-30 While the OEB Draft Report indicates that included a cost for loss of productivity consistent with it recent evidence based determination for Hydro One and Hydro Ottawa, it has also included a cost estimate for Toronto Hydro that has not been subject to an OEB determination regarding its appropriateness.

Indirect Costs (Section 8.0)

Embedded and Net Embedded Costs

Issue 20 - Consistency and appropriateness of cost inputs

ES-31 The embedded and net embedded costs per pole vary significantly across LDCs. No explanation is provided in the Nordicity Report for these variances. Some of the LDCs have minimal levels of accumulated depreciation associated with the pole costs, which are unexplained. Understanding the reasons for this would permit an assessment of whether any adjustment is necessary for using the data in the pole rate attachment model.

Depreciation Expense

Issue 21 - Out of date useful lives included in average

ES-32 The average depreciation rate used by the OEB is significantly impacted by a change in the useful lives for poles for three of the five LDCs included. As these outdated lives are not reflective of the current useful lives of poles, it would be more appropriate to remove the impact of the change in useful lives for the LDCs.

Power-specific Fixture Costs

Issue 22 - Insufficient assessment of LDC inputs

ES-33 The embedded pole costs captured in the LDC accounting records typically include the cost of power-specific fixtures that must be removed to arrive at the embedded, net embedded and depreciation expense per pole to be used in the pole attachment rate model. Only three LDCs provided a ratio of costs attributable to poles. The Nordicity Report does not

indicate whether the three LDCs undertook an analysis of sample data to arrive at the estimated breakdown of costs, nor whether Nordicity reviewed the analyses to assess the reasonableness of the analysis and the resulting cost breakdown.

Capital Carrying Costs

Issue 23 - Alternate approach to weighting

ES-34 The OEB Draft Report uses LDC specific average WACC rates weighted based on installed poles across the LDCs to derive an average WACC rate. A reasonable alternate approach poles would be to weight the LDCs' WACCs using the total net embedded cost of poles as the WACC is applied to the net embedded costs to determine the capital carrying cost.

Pole Maintenance Expense

Issue 24 - Consistency and appropriateness of cost inputs

ES-35 The cost inputs vary significantly across LDCs. Neither the OEB Draft Report nor the Nordicity Report address the wide range in cost across LDCs. Understanding why costs vary so significantly among LDCs for the same cost input is important as maintenance costs are a key indirect cost in the pole attachment rate model.

Issue 25 - Inappropriate averaging of power deduction factors

ES-36 The LDC pole maintenance account includes costs not strictly attributable to poles that should be removed. Only two LDCs provided estimates of the ratio of costs applicable to poles. These estimates ranged from 5% to 92%. The Nordicity Report proposes to use the median average of these two extreme estimates. The OEB Draft Report also adopts this approach. The application of a simple weighted average based on these two vastly different ratios is inappropriate as it provides no meaningful indication of the maintenance cost per pole. In addition, the application of a simple weighted average is inconsistent with the approach applied elsewhere in the Nordicity Report and by the OEB. In most instances, the number of installed poles or attachments is used to weight cost elements or cost factors in

the pole attachment rate model. This approach would be more appropriate rather than the application of a simple average.

Vegetation Management Expense

Issue 26 - Consistency and appropriateness of cost inputs

ES-37 The cost inputs vary significantly across LDCs. Similar to pole maintenance expenses, understanding why costs vary so significantly among LDCs for the same cost input is important as vegetation management costs have not previously been included as an indirect cost in the pole attachment rate model, and because of the magnitude of these costs.

Issue 27 - Use of unsupported power deduction factor

ES-38 A key issue with respect to vegetation management expenses relates to the proportion of the costs that relates to pole attachments. It does not appear that any information was requested or collected as part of the consultation process regarding the proportion of accounting costs that relate to vegetation management associated with pole attachments. The OEB Draft Report proposes to us a deduction factor based on an estimate from Hydro One that is not reference or discussed in the Nordicity Report and varies from the factor ratio proposed by Nordicity. Including such a significant cost element into the proposed pole attachment rate model without sufficient supporting information would not be appropriate as it will "lock in" a potentially inappropriate cost element in the pole attachment rates until some future, undetermined time when more appropriate data may (or may not) be available for this input.

Issue 28 - Vegetation management costs should be excluded

ES-39 Excluding vegetation management costs from the pole attachment rate model until further data is collected would be a more reasonable approach given the issues with this cost input. This approach was proposed by the both the LDCs and carriers in the consultation process, which both preferred that vegetation management costs should be negotiated. Furthermore, evidence presented in other OEB proceedings by Hydro Ottawa indicate that

tree trimming costs are not a cost that is a common cost attributable to both utility and telecom attachers.

Inflationary Adjustment (Section 9.0)

Issue 29 - Productivity offset is inappropriately excluded

ES-40 The OEB proposes to implement an annual inflationary adjustment mechanism to the pole attachment rate based on the OEB Input Price Index (IPI). However, the OEB does not propose to apply a productivity offset.

ES-41 The costs included in the pole attachment rate model are not sunk costs and are impacted by productivity improvements. In other OEB proceedings, LDCs have identified efforts to become more productive in areas that include costs associated with pole attachments.

ES-42 The OEB's proposal exclude a productivity offset is also inconsistent with how the OEB applies it Price Cap incentive based regulation to the LDCs electricity distribution rates, which also incorporate the same cost components include in the pole attachment rate.

ES-43 Consistent with the other components of the pole attachment rate model, the OEB should include a productivity offset. The productivity offset adjustment should be applied to restate pole attachment costs from 2015 to 2018, as well as included as part of the implementation of an annual rate adjustment going forward.

1.0 Background

1. This Report was prepared by Andrew Briggs[1] at the request of Rogers Communications Canada Inc. ("Rogers"). It provides a review and assessment of the Ontario Energy Board ("OEB") Draft Report of the Board "Framework for Determining Wireline Pole Attachment Charges"[2] ("OEB Draft Report") and the associated Nordicity Report "OEB Wireline Pole Attachment Rates and Policy Framework"[3] ("Nordicity Report"). This Report identifies a number of issues and concerns regarding these reports and their attempts to develop a rate setting methodology and a province-wide pole attachment rate.

2. The OEB's review of wireline pole attachments is the first component of its Review of Miscellaneous Rates and Charges (EB-2015-0304). The OEB Draft Report (including the proposed province-wide pole attachment rate) and the Nordicity Report represent the output from the consultation process associated with this review.

3. The wireline pole attachment rate consists of two elements. The first is the incremental or direct costs incurred by local distribution companies ("LDCs") that are directly attributable to the presence of the wireline telecom attachments of telecommunications and cable companies ("telecom attachers") on their poles. These costs consist of the administration and loss of productivity costs and are recovered from the telecom attachers. The second element is the common or indirect costs which are attributable to both parties attached to an LDC pole – the LDC and telecom attachers. These costs are shared between the telecom attachers and the LDC based on an allocation factor, and consist of the net embedded cost per pole (via depreciation expense), associated capital carrying cost, as well as maintenance expenses.

[1] Curriculum Vitae provided in Appendix 3.
[2] EB-2015-0304, Ontario Energy Board Draft Report of the Board, December 18, 2017.
[3] Nordicity Report "OEB Wireline Pole Attachment Rates and Policy Framework", Prepared for the OEB, December 14, 2017.

4. Appendix B of the OEB Draft Report provides a breakdown across these two element of the input values that were used to derive the proposed province-wide pole attachment rate of $52.00. Further supporting details regarding the composition of these inputs is provided in the *Appendix - Cost Breakdown of Provincial Pole Attachment Charge to the Draft Pole Attachment Work Form* ("Cost Breakdown Appendix").[4]

2.0 Proposed Pole Attachment Rate Framework

5. The proposed pole attachment rate framework is set out in Section 4 of the OEB Draft Report and includes: an updated single provincial pole attachment rate; LDC specific pole attachment rates; and new data requirements, including the setting up of sub accounts by LDCs to track pole attachment costs that are directly attributable to telecom attachments.

6. The Nordicity Report refers to a policy framework[5], which addresses issues regarding cost allocation methodology, costing approach, rate methodology and determining annual costs per pole.

2.1 Province-wide rate

7. The OEB proposes to apply a uniform province-wide pole attachment rate based on data inputs from various LDCs.[6] As a result, the proposed pole attachment rate purports to be an average across all of the LDCs (presuming the cost and data inputs from all LDCs are included in the pole attachment rate model).

Issue 1 - Province wide average rate may not be appropriate

8. The creation of an average rate across a large number of LDCs[7] may be appropriate if these LDCs are homogenous in nature. That is, presuming that these LDCs are of a

[4] OEB Draft Work Form (Excel file Draft-Pole-Attachment-WorkForm-20171221.xlsx), December 18, 2017, available at www.oeb.ca/industry/policy-initiatives-and-consultations/review-miscellaneous-rates-and-charges. Printout of the Cost Breakdown Appendix sheet is provided in Appendix 2 for reference.
[5] Nordicity Report, page 20.
[6] Concerns regarding the appropriateness of these data inputs is addressed in detail in this Report
[7] Ontario has more than 60 LDCs, www.ieso.ca/findutility accessed on January 26, 2018.

similar size, serve similar geographic areas (i.e. urban, rural, remote areas, etc.) and have similar cost and operating characteristics with respect to their pole infrastructure and attachments.

9. However, a review of the data provided in the Nordicity Report indicates that this is not the case for the LDCs in Ontario. For instance, a single LDC - Hydro One – had an installed base of 1,571,384 poles in 2015, which represents 85% of the poles included in the Nordicity Report.[8] None of the other four LDCs included in the Nordicity Report exceed 7% of the total poles. Hydro One's overwhelming size also results in a skewing of any province wide average rate to Hydro One's cost inputs, regardless of whether these are representative of the other LDCs operating in the province.

10. The LDCs also serve significantly different areas: Toronto Hydro and Hydro Ottawa serve largely urban areas, while Hydro One serves more rural areas. A review of the cost inputs also indicates that there are substantial differences in the operating characteristics and cost structures among the LDCs. As an example, the average annual maintenance expense per pole ranges from $2.12 for Horizon to $17.46 for London Hydro – a range of 725%.[9] The average net embedded cost per pole also ranges from $1,387 for London Hydro to $2,389 for Toronto Hydro – a difference of 70%.[10]

11. The pole attachment characteristics also differ across LDCs. For instance, Hydro One reports the number of attachers per pole as 1.30[11], while other LDCs report substantially higher values from 1.61 to 1.80 attachers per pole.[12] As indicated above, Hydro One's overwhelming size results in a skewing of a weighted average across LDCs towards Hydro One's value.

[8] Nordicity Report, Table 13. Footnote 2 indicates that the data in Table 14 represents approximately 97% of the installed LDC poles in Ontario.
[9] Based information relied upon by the OEB and provided in the Cost Breakdown Appendix.
[10] Nordicity Report, Table 21.
[11] Based on Hydro One value from EB-2015-0141, Exhibit I, Tab 2, Schedule 2.10 (e) (Filed 2016-04-15)
[12] Based on Hydro Ottawa value from EB-2015-0004, Undertaking J2.1; Horizon input from Nordicity Report Tables 17; and Toronto Hydro input from EB-2014-0116 IRR WR-Carriers-4 (a).

2.2 LDC Specific Rates

12. The OEB Draft Report proposes that, at the time of rebasing[13], "the LDCs can choose a custom pole attachment rate or simply adopt the provincial rate for the next rate filing period."[14]

Issue 2 - One-sided approach to LDC specific rates

13. Since the province-wide rate is supposed to be based on an average across all LDCs, this provides a unique one-sided advantage to the LDCs to the detriment of parties that must pay the pole attachment rate.

14. At the time of rebasing, there is no incentive for an LDC that determines that its pole attachment costs produce a pole attachment rate that is below the province-wide rate to apply for a custom rate. The LDC's pole attachment revenues would be greater with province-wide rate. The LDC is incented to apply for a custom rate only if its pole attachment costs are greater than the province-wide rate.

15. If LDCs are permitted to file for, and receive, custom rates in excess of the province-wide rate, this also has the potential to result in a province-wide rate that is too high for the remaining LDCs that are not subject to custom rates. Since the province-wide rate is an "average" across LDCs, this mathematically implies that as LDCs with costs (and thus rates) greater than the province-wide rate opt for custom rates, the province wide-rate should correspondingly be decreased to reflect the removal of these higher cost LDCs from the rate. Otherwise, parties that pay the province-wide rate will end up over-compensating LDCs subject to the province-wide rate for the cost of the service.

16. The OEB's proposed approach is also one-sided in that it does not permit pole attachers to request an LDC to file for a custom rate in those instances where it

[13] Rebasing is understood to refer to the LDC filing of a cost of service application with the OEB as part of the rate-setting methods available to distributors.
[14] OEB Draft Report, page 47.

believes that the LDC's pole attachment costs would result in a pole attachment rate below the province-wide rate.

2.3 LDC Data Collection

17. Regardless of whether one seeks a province-wide rate or an LDC-specific custom rate, the development of a pole attachment rate requires data inputs that accurately reflect the costs associated with providing pole attachment services. This includes all of the inputs associated with both the direct cost and indirect cost elements.

18. For the province-wide pole attachment rate proposed in Appendix B of the OEB Draft Report, the OEB has relied extensively on the data collected by Nordicity as part of the consultation process.[15] The OEB Draft Report indicates that:

> "This consultation has resulted in a database of cost inputs for pole attachments representative of LDCs that account for roughly 90% of the pole population in the province."[16]

Issue 3 - Incomplete and inconsistent data collection

19. While Nordicity collected data through the consultation process from LDCs that represent roughly 90% of the provinces pole population, not all of the LDCs that participated in the consultation process submitted information for **all** the required inputs.

20. Furthermore, simply providing an input does not necessarily reflect the quality of the data, or the consistency of the data either over time or across LDCs. As the following sections of this Report illustrate, there are numerous instances where the data provided by LDCs raises serious questions regarding the quality of the data, and thus its suitability for inclusion in the pole attachment rate model.

[15] In some instances, the OEB Cost Breakdown Appendix indicates the OEB relied on LDC information from the Electricity Reporting and Record Keeping Requirements (RRR). However, this also appears to be the same source of data supplied by the LDCs to Nordicity as part of the consultation process.
[16] OEB Draft Report, page 34.

21. The following table summarizes what data has been provided or not provided, and any issues that have been identified with the data. The table highlights that there are significant concerns with the database of cost inputs.

Table 1

COST INPUT ELEMENT	Hydro One	Hydro Ottawa	Horizon	Toronto Hydro	London Hydro	CHEC
Average Pole Specifications	Provided	Provided	Provided	Not provided	Provided	Not provided
Pole Population (poles in service)	Provided	Provided	Provided	Provided	Provided	Not provided
No. Telecom Attachers	Provided but issues with data quality	Provided but issues with data quality	Provided but issues with data quality	Not provided	Provided but issues with data quality	Not provided
DIRECT COST						
Administration	Not provided (OEB relies on data from past proceedings)	Not provided (OEB relies on data from past proceedings)	Not provided	Provided but issues with data quality (OEB relies on data from past proceedings)	Not provided	Not provided
Loss in Productivity	Excluded by Nordicity (OEB relies on data from past proceedings)	Excluded by Nordicity (OEB relies on data from past proceedings)	Not provided	Excluded by Nordicity (OEB relies on data from past proceedings)	Not provided	Not provided
INDIRECT COST						
Embedded Cost (account 1830)	Provided	Provided	Provided	Provided but large variances versus other LDCs	Provided	Not provided
Net Embedded Cost	Provided	Provided but very high % of embedded cost	Provided but very high % of embedded cost	Provided but very high % of embedded cost	Provided	Not provided
Depreciation Expense	Provided	Provided but impacted by change in useful life estimate	Provided but impacted by change in useful life estimate	Provided but large variances versus other LDCs	Provided but impacted by change in useful life estimate	Not provided
Power-specific fixtures factor	Estimate Provided	Estimate Provided	Not provided	Not provided	Estimate Provided	Not provided
Capital Carrying Cost	Pre-tax WACC Provided	WACC Provided but exludes taxes	WACC	Pre-tax WACC Provided	Not provided	Not provided
Pole Maintenance (account 5120)	Provided but large variances across LDCs	Provided but large variances across LDCs	Provided but large variances across LDCs	Provided but large variances across LDCs	Provided but large variances across LDCs	Not provided
Pole-specific maintenance factor	Provided but large variances across LDCs	Provided but large variances across LDCs	Not provided	Not provided	Not provided	Not provided
RoW Expense / Vegetation Management (account 5135)	Provided but large variances across LDCs	Provided but large variances across LDCs	Provided but large variances across LDCs	Provided but large variances across LDCs	Provided but large variances across LDCs	Not provided
Pole-specific vegetation management factor	Provided at PAWG meeting but excluded by Nordicity	Not provided	Not provided	Not provided	Not provided	Not provided

22. Simply collecting data from the LDCs in a mechanistic manner as inputs into the pole attachment rate model, without a thorough review and vetting of the quality and appropriateness of these inputs, will potentially lead to inappropriate results for the pole attachment rate.

2.4 Data Requirements - Use of Sub-accounts

23. The Nordicity Report raises concerns with the LDCs' current Uniform System of Account ("USoA") account structure for use in developing the pole attachment rate which it believes could be addressed through the establishment of sub-accounts designed to collect more disaggregated information. In response, in the OEB Draft Report, the OEB proposes the following:

> "The OEB will require all LDCs to set up sub-account to track cost inputs related to the charge … For simplicity, the OEB envisions that one sub-account be set-up per USoA account to track all costs dedicated to attachers within that account."[17] (emphasis added)
>
> "In addition, the OEB will require all LDCs to set up sub accounts to track pole attachment costs directly attributed to carrier attachments."[18] (emphasis added)

Issue 4 - OEB direction on sub-accounts is incomplete

24. The Nordicity Report raises several different issues that it believes could be addressed through the use of sub-accounts.

25. Firstly, for costs associated with Loss of Productivity, Nordicity expresses concerns regarding the potential double counting of costs related to maintenance costs as part of the indirect costs, and loss of productivity costs which are part of the direct costs attributable to telecom attachers. Nordicity indicates that to avoid the potential double counting, "there will a need to require LDCs to create a sub-account to separately track the costs associated with the loss of productivity."[19]

26. Nordicity's recommendation is consistent with the OEB's direction, which would require LDCs to specifically track and capture pole attachment costs directly attributed to telecom attachments.

27. Secondly, Nordicity notes that the LDCs' various accounts "also include costs strictly associated with the power assets installed on the poles. This issue would not exist if

[17] OEB Draft Report, page 35.
[18] Ibid., page 48.
[19] Nordicity Report, page 58-59.

LDCs maintained sub-accounts for the main categories of the different cost elements included in the USoA."[20] The issue highlighted by Nordicity is that the LDC accounts that are used to extract costs for the pole attachment rate model include power-specific costs that are not related to the common costs of poles, and must be excluded from the pole rate attachment model; otherwise telecom attachers would be compensating LDCs for power-specific costs, which is not appropriate.

28. Nordicity points to the example of the creation of an adjustment factor to remove power specific costs from capital asset Account 1830. Other factors applied in the proposed pole attachment rate model due to the lack of segregation of costs in the LDCs accounts include:

- Maintenance (Account 5120)
- Vegetation Management (Account 5135)

29. Nordicity identifies the following concerns regarding adjustment factors:

> "This adjustment factor can have a significant impact on the rate, as evident during the PAWG consultation process and thus subject to major disagreements on interpretations of which items to include or remove from the cost base, depending on the interests of different types of attachers such as LDCs (pole owners) and carriers (third party attachers)."[21]

30. The OEB's direction regarding setting up sub-accounts to "track pole attachment cost directly attributed to carrier attachments" does not address this issue at all, since for the indirect/common cost components, the issue is to isolate common pole related costs from any power specific costs or activities. Costs directly attributed to telecom attachments form part of direct costs and are not relevant to the indirect cost.

Issue 5 - Use of sub-accounts is not a panacea

31. While the implementation of sub-accounts may improve the data quality of inputs into the pole attachment rate model going forward into the future, it is not a panacea; nor

[20] Nordicity Report, page 71.
[21] Ibid.

will it necessarily permit a mechanistic approach to annually updating the pole attachment charge.

32. As described in detail above, the OEB's direction regarding the use of sub-accounts only addresses the **direct costs** attributable to telecom attachments. It does not address the need to create factors to allocate and exclude costs in LDC accounts that are associated with power-specific costs or costs unrelated to pole attachments for the **indirect costs** (common to utility and telecom).

33. Even if the direction on sub-accounts was amended to address the indirect costs, there would still be a requirement to review and assess the costs LDCs are proposing to include or exclude in these sub-accounts. As the review in this Report of the proposed data inputs across the various LDCs demonstrates, there can be significant differences in the tracking and accounting for cost elements across LDCs. These will not simply disappear because the LDCs are mechanically assigning costs to sub-accounts.

34. Since the implementation of sub-accounts will only occur on a going forward basis, it does not address any of the issues associated with the current set of data inputs. Unless these issues are addressed, the proposed provincial-wide rate will effectively "lock-in" these problems until some future time when the use of sub-accounts may (or may not) assist in identification of the appropriate cost inputs to include in the pole attachment rate model.

3.0 Allocation Methodology

35. A key factor in the pole rate attachment model is the appropriate methodology used to allocate the indirect (common) costs to telecom attachers. As the OEB Draft Report states, "there are a number of options for allocating the costs and providing access in the "subsidy-free range", where one group is not subsidizing the other and it is economically efficient for the carriers and utilities to share infrastructure."[22] The lower bound of this range is set by the direct costs (incremental) that a telecom attacher

[22] OEB Draft Report, page 26.

imposes on the LDC, whiles the upper bound is the stand-alone cost that an attacher would pay to build and maintain its own duplicate pole network. This latter value is not known and no data regarding this value was collected as part of the consultation process.

3.1 Selection of Methodology

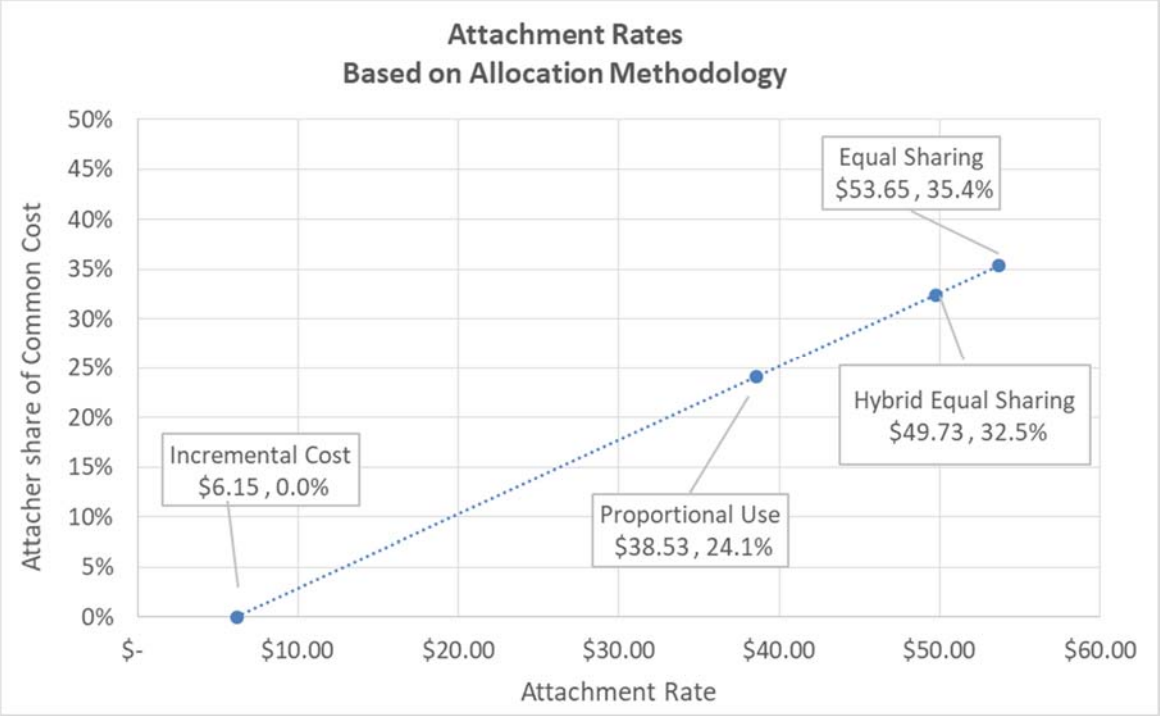
36. The three methodologies for the allocation of common (indirect) costs identified in the Nordicity Report are:

- Proportional Use
- Equal Sharing
- Hybrid Equal Sharing

The OEB Draft Report provides a description and comparison of the three approaches.[23] The table below provides a numerical comparison of the resulting attachment rate under each of the three allocation methodologies, based on the data in Appendix B of the OEB Draft Report.[24]

[23] OEB Draft Report, page 28 and 29.
[24] Allocation % and Attachment Rates are based on 1.30 3rd part attachers, and are 2015 $.

Table 2



37. The "Proportional Use" methodology has been applied by other regulatory bodies in Canada, including the CRTC, Nova Scotia URB and New Brunswick EUB, while the "Equal Sharing" methodology has only been applied by the OEB and Alberta EUB.[25]

Issue 6 - Hybrid Equal Sharing is untested and benefits are not shared equally

38. The OEB proposes to adopt Nordicity's "Hybrid Equal Sharing" approach. The OEB states that "the adoption of the hybrid equal sharing methodology for common costs is a compromise between the proportional use methodology and the equal sharing methodology."[26] Nordicity's Hybrid Equal Sharing methodology allocates the common space of a joint-use pole equally between power and telecom attachers as two groups. According to the OEB, this recognizes that "both groups require their facilities to be elevated in accordance with applicable codes and standards and benefit equally from the sharing of costs and infrastructure."

[25] Nordicity Report, Table 6, page 18.
[26] OEB Draft Report, page 30.

39. In the Nordicity Report, Nordicity presents its new approach as a "hybrid" between Equal Sharing and Proportional Use approaches.[27] However, it is not a actually a hybrid between these two methodologies as there is no proportional use element included. Instead, it simply splits the common space 50/50 (equal shares) between the two groups of users - power and telecom attachers. The hybrid equal sharing methodology is only a compromise in that the resulting allocation share of common costs is lower than the equal sharing methodology and greater than proportional use methodology.

40. As Nordicity acknowledges, its Hybrid Equal Sharing methodology "is a novel approach proposed by Nordicity and has not been applied by any Canadian jurisdiction to the best of Nordicity's knowledge."[28] Applying an untested, novel approach would not be appropriate. Furthermore, no support is provided by either the OEB or Nordicity demonstrating that each group (power and telecom attachers) benefit equally from the sharing of costs and infrastructure, which should be a critical requirement before accepting the new methodology. While the Nordicity Report provides an example attempting to demonstrate the sharing of cost savings between telecom and electricity users, this example has a number of serious flaws that are discussed in detail further below.

41. Indeed, rather than demonstrating that each group benefits equally, the Hybrid Equal Sharing methodology fails to consider the different burden placed on the common costs by the different user groups (power and telecom attachers). Power space is a higher proportion of the total useable space on a typical pole. Nor does the Hybrid Equal Sharing methodology consider the advantages provided by pole ownership versus tenancy.

42. In a recent proceeding to set a rate for attachment to NB Power poles, the New Brunswick Energy and Utilities Board ("NB EUB") preferred and adopted the

[27] Nordicity Report, page 39.
[28] Ibid., page 38-39.

Proportional Use approach as the most appropriate methodology for allocating common costs. [29] As part of its reasoning, the NB EUB noted:

> "The proportionate sharing model, proposed by Rogers, recognizes the practical and economic disparities between NB Power, as pole owner, and third party attachers. Third party communications attachers do not have the rights of ownership of the pole. They are required to apply through an intermediary to gain attachment access."[30] (emphasis added)

43. The Proportional Use methodology should be considered a superior methodology to the untested, "novel" Hybrid Equal Sharing methodology.

Issue 7 - Nordicity previously supported the Proportional Use methodology

44. In its Report, Nordicity recommends the use of the Equal Sharing methodology to allocate indirect cost.[31] However, Nordicity has previously expressed support for the Proportional Use methodology over the Equal Sharing methodology in the setting of rates for attachment to NB Power poles:

> "We believe that the proportionate use methodology – which is consistent with regulatory best practices – is relatively simple to apply. It has been successfully demonstrated in multiple jurisdictions as a superior methodology and a much better alternative to BM's proposed equal sharing methodology."[32] (emphasis added)

45. Further, as part of its counter point to NB Power's expert's argument against the Proportional Use approach, Nordicity states:

> "Finally, we also use the example of the allocation of common condominium costs and unit prices. It is an established fact that common costs of a condominium building that are allocated to individual units according to the respective space and the purchase price of the units, are determined according to their respective size and floor level."[33] (emphasis added)

[29] NB EUB Decision, Matter 272, November 16, 2015, para. 94.
[30] Ibid., para. 93.
[31] Nordicity Report, page 72.
[32] Nordicity Report, "Critique of Bridger Mitchell report, and proposed alternative methodologies", prepared for N6 Networks Inc., NB EUB Hearings: Poles Attachment Rates, May 1, 2015, page 28.
[33] Ibid., page 23.

46. As noted above, the NB EUB adopted the Proportional Use approach as the most appropriate methodology for allocating common costs between NB Power and telecom attachers.

Issue 8 - Nordicity cost sharing example is flawed

47. In Appendix B of the Nordicity Report, Nordicity creates an example in an attempt to demonstrate the sharing of cost savings between telecom and electricity users. The example is based on simplifying and unsupported assumptions, including:

    i. The example treats telecom rate payers as a single rate group and only considers a single service – broadband. In practice, there are multiple communications providers making use of attachments (incumbent telephone companies, cable companies and others), and there are multiple communications services provided by these communications providers (broadband, cable television, wireline telephone services);

    ii. The example assumes that a joint-use pole is 36% more costly than a stand-alone power utility pole; the 36% appears to be based simply on one online list price quote for a 40' versus 35' pole (page 68) and reflects on the material cost of a bare pole, ignoring all the other associated costs with an installed pole, including engineering, labour and installation, vehicles, etc. which can be a substantive part of the installed pole cost;

    iii. The example assumes that a stand-alone power utility pole is 25% more costly than a communications pole; no support is provided for this assumption to demonstrate that it is reasonable.

48. These issues limit the validity, applicability and usefulness of the analysis based on these assumptions, and any conclusions drawn from the results of the analysis.

3.2 Treatment of Other Attachers

49. The consultation process and the development of a pole attachment rate has focused on wireline attachments by telecom attachers. However, there are other non-wireline

attachers that also make use of the LDC poles, including wireless attachments, street lights, traffic lights, generators and others. Since these other attachers make use of space on the LDC poles, benefit from the use of the LDC poles and place a burden on these poles, these attachers should be considered explicitly in the allocation methodology to ensure that an appropriate portion of the LDC indirect, common costs are allocated to these attachers. Otherwise, the indirect, common costs may be over-allocated to telecom attachers.

50. The OEB indicates that its review has taken into account all attachers "including non-carrier attachments" for the purposes of calculating a province-wide rate for wireline attachments and indicates that "this has the effect of lowering the share of costs allocated to carriers".[34] This is only partially correct.

Issue 9 - Other Attachments not properly captured in the Allocation Methodology

51. None of the pole specification information used in the allocation methodologies identified in the Nordicity Report include any allowance for or inclusion of useable space **specific** to these other attachers, notwithstanding that these attachers make use of pole space. In many instances, these other attachers may not be attaching within the communication or separation space that has been designated as "telecommunications space", as illustrated in Figure 1 a) of the OEB Draft Report

52. The Hybrid Equal Sharing methodology proposed by Nordicity (and accepted by the OEB) allocates the common space on a pole equally between two user groups – power and telecom.[35] There is no allocation of common space to other attachers, notwithstanding that these other attachers make use of the pole. Under the Nordicity Hybrid Equal Sharing approach, it would be expected that this "other" attachers group would share in the common space equally – that is one-third for each user group. In its

[34] OEB Draft Report, page 9.
[35] Nordicity Report, page 39, "The second approach is a hybrid between "Equal Sharing" and "Proportionate Use" approaches, with 50% or 15 feet (= 30 ÷ 2) of the common space allocated equally to each of the two user groups (power and telecom)."

description of Nordicity's Hybrid Equal Sharing approach, the OEB Draft Report inappropriately lumps together telecom and other attachers into one group, referring to these as "third party attachers".[36]

53. Under the Proportional Sharing methodology, the common space on a pole is allocated to power and telecom user groups in proportion to the useable space on a pole that each of these two groups uses. As there is no specific useable space identified for the "other" attacher group, none of the common space is allocated to this group, notwithstanding that these other attachers make use of the pole.

54. Under the Hybrid Equal Sharing and Proportional Use approaches, the number of attachers per pole is used to apportion telecom related space per pole (specific useable space and common space) on "per attacher" basis. The information used by the OEB, based on inputs from the LDCs, is based on **all** third party attachers (wireline telecom and other attachers), not just wireline telecom attachers. Applying the number of third party attachers per pole may mathematically reduce the percentage allocation factor to telecom attachers.[37] However, it inappropriately treats "other" attachers as part of telecom attachers group and inappropriately assumes that the "other" attachers make use of the telecom space. As indicated above, the allocation methodologies described by Nordicity specifically recognize telecom space for wireline telecom attachers – there is no specific allowance for space used by these other attachers. Furthermore, as these "other" attachments are a distinct and separate user group, they should not be included as part of the telecom user group for the purposes of allocating common space.

[36] OEB Draft Report, page 30, "Nordicity's hybrid approach first allocates common space equally on a 50/50 basis between power and third party attachers as two groups (rather than the number of total attachers), recognizing that both groups require their facilities to be elevated in accordance with applicable codes and standards and benefit equally from the sharing of costs and infrastructure.

[37] The average attachers per pole is increased only if these other attachers attach to poles that also have telecom attachments. Otherwise, an other attacher on a pole with no telecom attacher results in 1.0 attachers per pole. OEB Draft Report, Figure 1 a) shows a joint use pole with a street light attachment (other), but no wireline telecom attachments.

4.0 Poles Specifications & Allocation Factor

55. As part of the consultation process, Nordicity collected data from the LDCs regarding the installed base of joint-use poles to confirm whether the 40 foot pole, which was used previously in the OEB 2005 decision, fairly represents a standard pole in Ontario for rate making."[38] Actual data on joint-use poles was received from four LDCs – Hydro One, London Hydro, Hydro Ottawa and Horizon, and the summary data is provided in Table 14.

56. Based on Table 14, Nordicity identified some of the differences between the actual average information in the space segments in comparison with those from the 2005 OEB Decision. Nordicity then indicates that these differences are minimized when the calculation of the average is based on 35, 40 and 45 feet size sample, which represent 75% of the submitted data.

57. The OEB Draft Report summarizes Nordicity's findings, indicating that "[d]uring the consultation process, it was confirmed that a 40-foot poles, as shown in Figure 2 above [OEB 2005 Decision], is fairly representative of a standard pole in Ontario for rate making purposes."[39]

Issue 10 - Allocation factors overstated

58. An analysis of the impact of the different poles specifications and space segments on the resulting allocation factor illustrates the sensitivity of the allocation factor, which is a key input to allocate indirect common costs in the pole rate attachment model. The table below provides the resulting allocation factors based on the three poles

[38] Nordicity Report, page 34.
[39] OEB Draft Report, page 14.

specifications and space segments presented in Table 14 of the Nordicity Report.[40] The allocation factors are based on 1.30 telecom attachers.

Table 3

Pole Specifications	Pole Height (Feet)	Allocation Methodology		
		Equal Sharing	Hybrid Equal Sharing	Proportional Use
OEB 2005 Decision	40.00	35.37%	32.45%	24.11%
Sample (Table 14)	38.85	35.28%	32.42%	24.38%
Average (Table 14)	40.49	33.75%	31.00%	21.95%

59. In every instance, using either the OEB 2005 Decision specification or the Nordicity Sample based on 75% of poles, results in a higher allocation factor than using the Average. As the allocation factor is used to determine the amount of indirect, common costs to be allocated to telecom attachers in the rate model, these differences are non-trivial. This results in 5% more indirect costs being allocated to telecom attachers under either the Equal Sharing or Hybrid Equal Sharing methodologies, and 10% more under the Proportional Use methodology.

Issue 11 - Inconsistent approach and using mismatched data

60. Ignoring the actual average data for pole specifications is also inconsistent with the approach taken elsewhere in the Nordicity Report and the OEB Draft Report, where the actual data provided by the LDCs is relied upon to derive the inputs for the pole attachment rate model. No rationale is provided for deviating from this practice for pole specifications.

61. If a 40 foot pole specification is going to be used as the basis for determining the allocation of common costs, then it would be appropriate to match this with the embedded cost data based on 40 foot poles to determine the indirect costs in the pole

[40] Space segment details are provided in Table 14 of Nordicity Report.

attachment rate model.[41] Thus, the embedded cost data for all other poles that are not 40 foot poles would be excluded. However, the embedded cost data used by Nordicity and the OEB is based on the average across all embedded poles, including poles of **all** heights.[42] In this case, it would have been more appropriate to match this use of this data with the use of the pole specifications associated with **all** poles, as this would match the same basis on which the embedded costs are determined.

62. Nordicity's sample results are also a concern. The Nordicity Report does not provide any rationale for excluding 25% of the poles – most of which are of greater heights than the poles included in Nordicity's sample. Yet the sample results (taken from 35, 40 and 45 foot poles) are used to support maintaining the pole specifications from the OEB 2005 Decision.

63. Moreover, there is a disconnect with using only 75% of the poles (35, 40 and 45 feet poles) to support the poles specifications yet including 100% of the common costs such as the embedded costs of the installed poles – regardless of height. Poles with greater heights, which Nordicity excludes from the sample, are more costly to install and to maintain. No explanation is provided why these larger poles, which are presumably required for LDC needs, are included in the common cost base for the pole attachment rate.

64. It would be appropriate to address this mismatch in inputs by either reducing the indirect costs (embedded costs, maintenance, etc.) of poles to be reflective of only a) 40 foot poles, b) the 75% sample of 35, 40 and 45 foot poles, or c) to use the pole specifications based on **all** poles in Table 14 to derive the allocation factor for use in the rate model.[43]

[41] Average cost per 40' pole = embedded cost of all 40' poles / installed base of all 40' poles.
[42] LDCs' information on embedded cost, maintenance costs etc. may not provide a distinction by pole height.
[43] Determining the appropriate factor to use to reduce the embedded costs may be challenging if the LDCs' information on embedded cost, maintenance costs etc. does not provide a distinction by pole height.

5.0 Number of Attachers per Pole

65. Another key input into the pole attachment rate model is the number of attachers per pole. The OEB Draft Report (Appendix B) uses 1.30 attachers per pole. The Cost Breakdown Appendix identifies the source of this value as "Nordicity's expert report". The OEB Draft Report also indicates that "[b]ased on the data submitted by London Hydro, Hydro Ottawa, Horizon and Hydro One, the overall average number of attachers per joint-use pole is determined to be 1.3 for the telecommunication space."[44] The relevant information supporting this value is provided in the Nordicity Report is provided in Tables 17 and 18.[45]

66. It is understood that the calculation of the number of attachers per pole is to be determined based on the number of attachers (telecommunications and others) divided by the number of joint use poles with an attacher (one or more attachers).

67. A review of the information provided in Tables 17 and 18 raise a number of concerns that call into question the accuracy of the value of 1.30 attachers per pole.

Issue 12 - Data in Table 17 and 18 of Nordicity Report is incorrect

68. Nordicity Report Table 17 purports to provide the number of joint use poles (i.e., those poles with 3rd party attachers), the total attachers (presumably power, telecom and other attachers) and the resulting number of attachers per pole, by pole size and in total, for London Hydro, Hydro Ottawa and Horizon.

69. The last column, which provides the total for these three columns, is inappropriately labelled as "Province (excl. Hydro One)". In fact, it excludes any data for Toronto Hydro, which did not submit this information and has more installed poles than the three LDCs combined.[46]

[44] OEB Draft Report, page 15.
[45] Nordicity Report, pages 43-45.
[46] See Nordicity Report, Table 13. In 2015, Toronto Hydro had 137,172 installed poles. London Hydro, Hydro Ottawa and Horizon had a combined 126,958 installed poles.

70. For the purposes of determining the number of attachers per pole, the number of poles in Table 17 should represent the number of joint use poles. However, for at least some of the LDCs, the number of poles in Table 17 is the total number of installed poles, not just the number of joint use poles. If this is the case, this will lead to an overstatement of the denominator in the attachers per pole formula and thus an understatement of the correct value of attachers per pole.

71. The table below provides a comparison of the number of joint use poles in Table 17 for London Hydro, Hydro Ottawa and Horizon to the number of installed poles for 2015 in Table 13. Unless every installed pole for an LDC has a 3rd party attachment on it, it is not to be expected that these two numbers would be identical or even similar. For London Hydro, the total poles in Table 17 is **identical** to the number of installed poles in Table13, while for Hydro Ottawa, the number is **extremely close**. For Horizon, the number of poles in Table 17 is slightly lower than the total installed poles, but still implies that 97% of its installed poles had a 3rd party attachment.

Table 4

LDC	London Hydro	Hydro Ottawa	Horizon
Total Joint Use Poles (Table 17)	27,184	48,252	49,734
2015 Installed Poles (Table 13)	27,184	48,384	51,390
Difference	0	(132)	(1,656)

72. The issue with Hydro Ottawa's data in Table 17 of the Nordicity Report is further highlighted by examining the data provided in its recent pole rate proceeding, EB-2015-0004. In the OEB decision to the proceeding, the number of attachers per pole was determined as 1.74.[47] The table below provides the supporting details for this value, along with the comparable data provided in Table 17 of the Nordicity Report.[48]

[47] Decision and Rate Order on Pole Attachment Charge, Schedule A, EB-2015-0004.
[48] Note that the number of attachers from Table 17 of the Nordicity Report has removed the power attachments to arrive at the number of 3rd party attachers (100,871 – 48,252 = 52,619)

Table 5

Hydro Ottawa		2013 EB-2015-0004	2015 Nordicity Report
No of Attachers:			
Wireline		*46,173*	
Street lights		*13,265*	
Wireline - other		*2,715*	
Total attachers	A	62,153	52,619
Total joint use poles with wireline and streetlight attachments	B	35,663	48,252
Attachers per pole	**C = A / B**	**1.74**	**1.09**
Total installed poles	D	48,352	48,384
% of installed poles with an attchment	E = B / D	74%	100%

Source of Data:
EB-2015-0004, Undertaking J2.1
Nordicity Report Tables 13 and 17

73. While the data from EB-2015-0004 is from 2013 and the data in Table 17 of the Nordicity Report is from 2015, this cannot explain the differences in the resulting number of attachers per pole of 1.74 vs 1.09. The EB-2015-0004 information indicates that 74% of installed poles had attachments, while the Nordicity Report shows this value at 100%. It is not reasonable to expect that there has been such a material change in attachments over a two year period to explain this difference. The large variance in the number of attachers between EB-2015-0004 (62,153) and the Nordicity Report (52,619) also raises concerns regarding whether Table 17 of the Nordicity Report appropriately reflects the total number of attachers that are to be included in the formula to determine the number of attachers per pole in the pole attachment rate model.

74. Table 18 of the Nordicity Report purports to provide the number of poles (power only and joint use), the number of attachers (power and telecom + other), and the average attachers per pole. The information in the table is based on the total data for Hydro One as well as for the other three LDCs - London Hydro, Hydro Ottawa and Horizon (together labelled as "Other") from Table 17.

75. For the three LDCs (Other), Table 18 reports the total number of poles as 264,130. However, this number appears to be the total number of installed poles the three LDCs **plus** Toronto Hydro, based on the 2015 data from Table 13 (see table below) – not just the total for the three LDCs. As indicated above, Toronto Hydro did not provide its number of attachers or pole information as part of Table 17. Therefore, Toronto Hydro's poles cannot be included and the correct number of poles should be 126,958.

Table 6

LDC	London Hydro	Hydro Ottawa	Horizon	Sub-Total	Toronto Hydro	Total
2015 Installed Poles (Table 13)	27,184	48,384	51,390	**126,958**	137,172	**264,130**

76. The number of joint use poles for the three LDCs (Other) in Table 18 is reported as 125,170, which corresponds to the total poles from Table 17 (i.e. excluding Toronto Hydro). As described above for at least two of these LDCs (London Hydro and Hydro Ottawa), the total pole information in Table 17 relates to the number of **installed poles**, not the number of **joint use poles**. As a result, since this information does not represent the number of joint use poles, it is inappropriate to use it as an input into the pole attachment rate model.

77. As indicated above, Table 18 includes information for Hydro One regarding the number of poles and attachers. While the Nordicity Report does not indicate the vintage of this data, it differs from data provided by Hydro One in the EB-2015-0141 proceeding for year-end 2015, as illustrated in the table below. The Nordicity Report indicates that the request for data was made following the May 20, 2016 PAWG meeting and presented at the July 27, 2016 PAWG meeting, Prior to using this data for determining

the number of attachers per pole in the pole attachment rate model, the differences in the Nordicity Report data and the EB-2015-0141 data should be reconciled.

Table 7

Hydro One	Y/E 2015 EB-2015-0141	Nordicity Report	Difference
Number of Attachers	746,434	733,753	(12,681)
Number of poles with telecom & other attachments	573,780	572,185	(1,595)

Source of Data:
EB-2015-0141, Exhibit I, Tab 2, Schedule 2.10 (e) (Filed 2016-04-15)
Nordicity Report Tables 18

Issue 13 - Toronto Hydro data is not included

78. As indicated above, neither Table 17 nor 18 of the Nordicity Report includes data for Toronto Hydro. However, Toronto Hydro has more installed poles than the three included LDCs (London Hydro, Hydro Ottawa and Horizon) combined. Including Toronto Hydro data, if available and validated, would improve the quality of the combined average attacher per pole as an input to the pole attachment rate model. A review of the EB-2014-0116 proceeding indicates that Toronto Hydro provided the total number of attachments (74,638) and the number of poles (46,405) for a value of 1.61 attachers per pole, as of March 2014.[49]

79. It should be noted that, since the pole attachment rate established for Toronto Hydro in the EB-2014-0116 proceeding was the subject of a settlement proceeding, the OEB did not issue a decision with regards to the appropriateness of Toronto Hydro's estimated value of 1.61 attachers per pole. Toronto Hydro's value of 1.61 may be understated as the expert evidence was submitted in the proceeding supporting a value of 2.51 attachers per pole.[50]

[49] THESL, EB-2014-0116 IRR WR-Carriers-4 (a) (Filed: 2015 Mar 12)
[50] EB-2014-0116, Expert Evidence of Suzanne Blackwell on behalf of the Carriers, March 26, 2015, Table 19.

80. Furthermore, the value of 1.61 or 2.51 attachers likely understates the current number of attachers per pole as subsequent to the EB-2014-0116 proceeding, Toronto Hydro and Bell Canada entered into a long-term pole sharing agreement to support Bell's Gigabit Fibe project:

> "When the project is complete, Bell teams will have upgraded 27 Bell Central Office facilities across the city and installed over 9,000 kilometres of new fibre, both underground via more than 10,000 manholes and on approximately 80,000 Bell and Toronto Hydro poles around the city."[51] (emphasis added)

Issue 14 - Re-calculating attachments per pole

81. Based on the issues identified above regarding the data included in the Nordicity Report (Tables 17 and 18), it would be appropriate to determine a revised value of attachers per pole. Based on the analysis above, it would be reasonable to use the data presented in the following tables, which results in a revised value of attachers per pole value of 1.38 to 1.44.[52]

[51] BCE Press Release, "Bell Gigabit Fibe bringing the fastest Internet to Toronto residents with a billion-dollar network investment, creation of 2,400 direct jobs", June 25, 2015.
[52] London Hydro data is excluded as the data in Table 17 indicates that 100% of London Hydro installed poles have 3rd party attachments on them. This results seems unlikely based on information from other LDCs.

Table 8

	Hydro One	Hydro Ottawa	Horizon	Toronto Hydro (1)	Total
Number of Attachers	746,434	62,153	89,427	74,638	**972,652**
Number of poles with telecom & other attachments	573,780	35,663	49,734	46,405	**705,582**
Attachers per pole	1.30	1.74	1.80	1.61	**1.38**

Source of Data:
Hydro One - EB-2015-0141, Exhibit I, Tab 2, Schedule 2.10 (e) (Filed 2016-04-15)
Hydro Ottawa- EB-2015-0004, Undertaking J2.1
Horizon - Nordicity Report Tables 17
(1) Toronto Hydro - EB-2014-0116 IRR WR-Carriers-4 (a)

	Hydro One	Hydro Ottawa	Horizon	Toronto Hydro (2)	Total
Number of Attachers	746,434	62,153	89,427	116,664	**1,014,678**
Number of poles with telecom & other attachments	573,780	35,663	49,734	46,405	**705,582**
Attachers per pole	1.30	1.74	1.80	2.51	**1.44**

Source of Data:
Hydro One - EB-2015-0141, Exhibit I, Tab 2, Schedule 2.10 (e) (Filed 2016-04-15)
Hydro Ottawa- EB-2015-0004, Undertaking J2.1
Horizon - Nordicity Report Tables 17
(2) Toronto Hydro - EB-2014-0116 Expert Evidence of Suzanne Blackwell, Table 19

6.0 Bell / LDC Joint Use Pole Agreements

82. Bell Canada, like other incumbent telephone companies (ILECs) in Canada, has reciprocal pole sharing agreements with some of the LDCs in Ontario, such as Hydro One. The nature and structure of these agreements can have an impact on the LDCs indirect pole related costs that should be included in the pole attachment rate model and the cost that telecom attachers pay.

Issue 15 - Joint use pole agreements not considered

83. In the OEB Draft Report, the OEB determined that it **will not** consider the Bell and LDC reciprocal agreement as part of the new pole attachment rate methodology.[53] A review of the OEB Draft Report and the Nordicity Report indicates that much of the focus regarding the reciprocal agreements is with regards to the impact on the number of attachers, the cost per pole for the poles subject to the agreement and whether money changes hands between Bell and the LDCs.

84. Under agreements such as the Bell/Hydro One Joint Use Agreement, Hydro One is responsible for installing and maintaining 60% of the poles under the Agreement, with Bell responsible for installing and maintaining 40% of the poles. The poles owned and maintained by Hydro One as part of the Joint Use Agreement are included in Hydro One's accounts for capital costs and maintenance expenses.

85. As the OEB indicates, Bell and the LDCs have reached agreements that are reflective of parties' costs: "The OEB assumes that the 60/40 ownership ratio selected represents the differences in space, costs and other requirements essential for each of the parties to share a pole."[54]

86. This implies that, for the LDC poles subject to the Joint Use Agreement, the indirect common poles costs (i.e. depreciation, capital carrying charges and maintenance) are effectively covered by its reciprocal access to the 40% of poles owned and maintained by Bell. As these costs are already being covered by the Joint Use Agreement, it is inappropriate to require non-Bell telecom attachers to also contribute to the recovery of these costs through the pole attachment rate. To do so would allow the LDC to over-recover its costs. As a result, an adjustment should be made in the pole attachment rate model to account for this. This adjustment could take the form of

[53] OEB Draft Report, page 44.
[54] Ibid., page 45.

excluding the number of Joint Use Agreement poles from the pole attachment rate model.

Issue 16 - LDCs' effective average cost per pole is lower

87. An alternate approach to understanding this issue is to consider the LDCs' effective average cost per pole under these Joint Use Agreements. As an illustrative example, if under the Joint Use Agreement, Hydro One installed 60 poles for a cost of $60,000 and Bell installed 40 poles for $40,000, Hydro Ones' effective average cost per pole would be $600 per pole ($60,000 divided by the 100 poles to which it has access). However, the embedded costs and pole counts reflected in its accounts and records would be $1,000 per pole ($60,000 divided by 60 poles). Again, the LDCs' lower effective average cost per pole should be reflected in the pole attachment rate model.

88. Other regulators, such as the CRTC, have appropriately taken into account the impact of these joint use agreements in establishing the pole attachment rates.[55] In the proceeding leading to CRTC Telecom Decision 2010-900, the ILECs proposed an approach to developing and applying an adjustment factor for joint-use poles. The factor adjustment is based on the percentage of joint-use poles owned by an ILEC relative to the number of joint-use poles owned by both the ILEC and LDCs (or hydro companies). The ILECs submitted that the approach would reflect "the ILEC's real cost based on its joint-use agreement with the hydro company."[56] In its Decision, the CRTC noted that it:

> "… considers that joint-use agreements effectively reduce an ILEC's cost for joint-use poles. The Commission therefore considers that the approach proposed by Bell Canada et al. and TCC reflects the ILEC's true average cost per joint-use pole for all joint-use poles to which the ILEC has access."[57] (emphasis added)

89. A similar approach should be incorporated into the OEB's pole rate attachment model to reflect the LDCs' true or effective average cost per Joint Use Agreement pole. For an

[55] CRTC Telecom Decision 2010-900, December 2, 2010, paras. 28 – 34.
[56] Ibid., para. 30.
[57] Ibid., para. 33.

LDC with a 60/40 sharing Joint Use Agreement with Bell, the factor would be calculated as follows:

Joint Use Agreement Factor =
100% x Proportion of non Joint Use Agreement poles in installed base
+ 60% x Proportion of Joint Use Agreement poles in installed base

90. In the pole attachment rate model, the LDCs' indirect costs would be multiplied by the Joint Use agreement factor prior to applying the allocation factor. All the information required to determine this factor should be readily available from the LDCs.

91. The following example, based on information provided in the EB-2015-0141 proceeding, provides a detailed illustration of how this approach could be applied. The table below provides the inputs regarding attachers, joint use poles, and joint use agreement poles.

Table 9

Number of Attachers:	Reference	Number	
Bell attachments	A	331,238	
Telecom and other wireline	B	297,728	
	C = A + B	628,966	
Streetlights and other (non wireline)	D	117,468	
Total number of attachments	E = C + D	746,434	

Joint Use Poles:	Reference	Number	% Proportion
Joint use poles with telecom & other attachments	H	573,780	100.0%
Joint use poles with Bell attachments (subject to the Joint Use Agreement)	I = -A	(331,238)	57.7%
Joint use poles with telecom & other attachments (not subject to Joint Use Agreement)	J = H + I	242,542	42.3%

Hydro One/Bell Joint Use Agreement Poles	Reference	Number	% Proportion
Hydro One Owned	K = A	331,238	62.4%
Bell Owned	L	199,677	37.6%
Total Joint Use Agreement Poles	M = K + L	530,915	100%

92. The following table provides the details for the pole attachment rate calculation incorporating the Joint Use Agreement factor.

Table 10

Pole Attachment Charge Calculation to Account for Hydro One/Bell Joint Use Agreement	Reference	EB-2015-0141 Decision	CRTC-based Joint Use Agreement Factor
Indirect Cost per Pole	N	$108.71	$108.71
Total number of poles	O = H	573,780	573,780
Total Indirect costs	P = N x O	$62,375,624	$62,375,624
Joint Use Agreement Factor	Q = (100% x J%) + (K% x I%)	n/a	78.3%
Allocation Factor (Equal Sharing) to Telecom (gross up by Number of attachers)	R = 34.3% x Z	44.6%	44.6%
Total Indirect Costs Allocated to 3rd Parties	**S = P x Q x R**	**$27,813,291**	**$21,789,673**
Indirect Costs Allocated to 3rd Parties per Attachers	= S / U	$37.26	$29.19
Direct Cost per Attacher	T	$3.99	$3.99
Number of Attachers	U = E	746,434	746,434
Total Direct Costs	**V = T x U**	**$2,978,272**	**$2,978,272**
Total Costs	**W = S + V**	**$30,791,562**	**$24,767,945**
Number of Attachers	U = E	746,434	746,434
Annual Pole Rental Charge	**X = W / U**	**$41.25**	**$33.18**
Number of attachers per pole	Z = E / H	1.30	1.30

93. The above tables, along with the supporting sources and additional comments, are provided in Appendix 1.

7.0 Direct Costs

94. Direct costs associated with the pole attachment charge include two components of costs that are directly attributable to telecom attachers: administration (ADM) costs and loss of productivity (LOP) related costs.

95. The OEB Draft Report provides a summary of the Nordicity Report findings and recommendations regarding these two components. However, a review of the Cost Breakdown Appendix identifies the source of data used by the OEB for both the ADM and LOP costs as "Submitted by HONI, HO and THESL in past proceedings (2013-2015)."[58] The OEB's proposed pole attachment rate model does not appear to rely

[58] It is understood that HONI refers to Hydro One, HO refers Hydro Ottawa and THESL is Toronto Hydro.

upon the inputs from the Nordicity Report. There is no rationale or explanation provided in the OEB Draft Report regarding why its experts' proposed approach was not accepted or why it has proposed to rely on data from past proceedings.

Issue 17 - Inappropriate weighting of direct costs

96. A review of the calculations in the Cost Breakdown Appendix indicates that the cost for each of these elements is developed by multiplying the cost for the element from the recent proceeding for the three identified LDCs by the number of attachers per pole for each LDC and summing this amount, then dividing this amount by the sum of the number attachers per pole for each LDC. The calculation of the ADM cost is provided for illustrative purposes:

ADM = ($5.03 x 1.61 + $2.28 x 1.74 + $0.9 x 1.3) / (1.61 + 1.74 + 1.3) = $2.85

97. It is presumed that the OEB calculation is an attempt to create a weighted average of the costs across the three LDCs using the average number of attachers per pole per LDC as the weighting criteria. Notwithstanding any issues with using the LDC costs as inputs, which are addressed below, the weighting approach chosen is not appropriate.

98. Weighting using the average number of attachers per pole per LDC is inappropriate as there is no relationship between the average number of attachers per pole and the ADM or LOP costs. There is no reason why the ADM or LOP cost per attacher for one LDC with 2 attachers per pole, for instance, should have a weighting twice that of the ADM or LOP cost per attacher for another LDC. Such a weighting does not reflect the relative size of each LDC, or relative number of installed poles, as is used in other weightings by the OEB. The average number of attachers per pole for an LDC is simply not a relevant consideration.

99. Since the costs of ADM and LOP are related to telecom attachers, it would be more appropriate to weight the ADM and LOP cost per attacher inputs per LDC by the number of attachers for each of the three LDCs. This information is available from the past proceedings used by the OEB for the ADM and LOP cost per attacher. The

weighted average cost for ADM and LOP using this approach are provided in the table below.

Table 11

LDC	Hydro One	Hydro Ottawa	Toronto Hydro	Weighted Average
Number of Attachers	746,434	62,153	74,638	
Direct Costs (per attacher)				
Administration	$0.90	$2.28	$5.03	**$1.35**
Loss of Productivity	$2.10	$1.96	$5.72	**$2.40**

Source of Data for Number of Attachers:
Hydro One - EB-2015-0141, Exhibit I, Tab 2, Schedule 2.1 (Filed 2016-04-15)
Hydro Ottawa - EB-2015-0004, Undertaking J2.1
Toronto Hydro - EB-2014-0116, IRR WR-Carriers-4 (g)

100. It should be noted that the above table only reflects correcting the weighting applied to the cost inputs relied upon by the OEB in the OEB Draft Report. There are also issues regarding the consistency and appropriateness of the LDC inputs that are addressed below. It is further noted that since the pole attachment rate established for Toronto Hydro was the subject of a settlement proceeding, the OEB did not issue a decision with regards to the appropriateness of Toronto Hydro's cost inputs.

7.1 Administration Cost

101. ADM costs are defined as net incremental costs incurred by LDCs for the placement of the telecom attachers on LDC poles and include functions such as issuance and management of permits, invoices and back office support activities.[59] As these are net incremental costs applicable to the pole attachment rate, any administration related

[59] Nordicity Report, page 57.

costs recovered through other rates and charges to telecom attachers should be excluded from this cost input to avoid the double recovery of costs.

102. The cost inputs for Administration in the Cost Breakdown Appendix for the three LDCs on both a cost per pole and cost per attacher basis are reproduced in the table below. A review of the data highlights a significant range in the costs across the LDCs.

Table 12

LDC	Hydro One	Hydro Ottawa	Toronto Hydro
Direct Costs (per pole)			
Administration	$1.17	$3.97	$8.10
Attachers per Pole	1.30	1.74	1.61
Direct Costs (per attacher)			
Administration	$0.90	$2.28	$5.03

Issue 18 - Consistency and appropriateness of cost inputs

103. For ADM, the Toronto Hydro cost input per attacher is 120% higher than Hydro Ottawa and 460% higher than Hydro One. On a per pole basis, the Toronto Hydro cost input is 100% higher than Hydro Ottawa and 590% higher than Hydro One.

104. Such large variations in the cost inputs are concerning, particularly as it would be expected that administration functions, and thus costs, would be similar across LDCs and cannot readily be explained by differences such as in serving territory characteristics, geography, etc.

105. It is understood that Toronto Hydro initially provided an ADM cost estimate of $18.77 per attacher in the EB-2014-0116 proceeding,[60] which it subsequently revised to $5.03.[61] It is further understood, as noted above, that since the pole attachment rate established for Toronto Hydro was the subject of a settlement proceeding, the OEB did

[60] THESL EB-2014-0116, Exhibit 8A, Tab 2, Schedule 1, Appendix B, ORIGINAL.
[61] THESL EB-2014-0116, Exhibit 8, Tab 2, Schedule 1, Appendix B, Corrected: 2015 Apr 24.

not issue a decision with regards to the appropriateness of Toronto Hydro's estimated costs.

106. The OEB Draft Report's use of Toronto Hydro's cost estimate for ADM is even more troubling given the concerns raised by Nordicity, as detailed below, regarding the reasonableness of Toronto Hydro's cost inputs in the consultation process.

107. It also noted that the Hydro One ADM cost estimate of $0.90 used in the OEB Draft Report is based simplistically on restating the 2005 OEB Order ADM cost component by applying an arbitrary increase factor of 3% per year, rather than applying the OEB's Input Price Index (IPI) to re-state costs.[62]

108. As part of the OEB's consultation process, LDCs were requested to provide data on administration costs attributable to telecom attachers. Only Toronto Hydro responded to the data request.[63] The remaining participating LDCs did not provide any cost inputs.

109. The lack of data inputs provided by other LDCs is very concerning. As a directly attributable cost of providing service to telecom attachers, it should be expected that the relevant ADM costs incurred by an LDC to provide this service are readily available. LDCs should be able to identify the functions and activities involved, the cost drivers such as the volume of activities and the associated costs.

110. Even though Toronto Hydro was the only LDC to respond to the data request, Nordicity expresses concerns with the quality of the Toronto Hydro data which show a cost per pole increase of 47% in four years:

> "This significant increase in the administration cost of Toronto Hydro implies either major year-to-year changes in their cost structure or accounting practice. <u>On this basis, it is not reasonable to rely solely on Toronto Hydro's administration costs for the updated rate model</u>.

[62] A historical IPI, if not available from the OEB, could be created based on the OEB IPI methodology using available historical Statistics Canada data.
[63] Nordicity Report, page 57.

> Nordicity believes detailed cost data analysis is required to develop an average rate that is directly attributable to hosting third party wires on LDC poles. Such analysis would necessarily include an examination of cost drivers such as annual volumes of permits processed, flow process (handling time per touch point), and fixed support and upgrade costs."[64] (emphasis added)

111. Notwithstanding Nordicity's concerns with the Toronto Hydro cost inputs and the lack of any detailed data analysis of the inputs, Nordicity proceeds to estimate ADM costs per pole by creating a simple average of the lowest and highest amounts available using (1) an outdated cost input from the 2005 OEB order for the lowest amount and (2) the cost input from Toronto Hydro that itself identified as having quality issues for the highest amount. The creation of a cost estimate on this basis provides no assurance that the resulting estimate reasonably approximates the costs that a telecom attachers imposes on a LDC.

112. Nordicity's restatement of the 2005 OEB Order cost to 2015 using the CPI is inappropriate as it is inconsistent with the application of OEB's Input Price Index (IPI) to re-state costs, let alone the reliance on a base cost input that is over 10 years old. Furthermore, the cost restatement excludes the application of a productivity offset (X-factor), which leads to an overstatement of costs.

113. It is also noted that the ADM cost input data provided by Toronto Hydro and used by Nordicity in its cost estimate is based on an annual cost per pole. However, as the pole attachment rate is based on a cost per attacher, the application of a cost per pole estimate is inappropriate and overstates that cost per attacher as there are multiple attachers per pole.

7.2 Loss of Productivity

114. The loss of productivity refers to the incremental costs resulting from power utility crews having to work around telecom attachers' facilities.[65]

[64] Nordicity Report, pages 57 – 58.
[65] Ibid., page 58

115. The cost inputs for loss of productivity in the Cost Breakdown Appendix for the three LDCs on both a cost per pole and cost per attacher basis are reproduced in the table below. A review of the data highlights a significant range in the costs across the LDCs.

Table 13

LDC	Hydro One	Hydro Ottawa	Toronto Hydro
Direct Costs (per pole)			
Loss of Productivity	$2.73	$3.41	$9.21
Attachers per Pole	1.30	1.74	1.61
Direct Costs (per attacher)			
Loss of Productivity	$2.10	$1.96	$5.72

Issue 19 - Consistency and appropriateness of cost inputs

116. For LOP costs, the Toronto Hydro cost input of $5.72 per attacher is 190% higher than Hydro Ottawa and 170% higher when expressed on a per pole basis. Such large variations in the cost inputs across LDCs are a cause for concern. Before accepting and applying these costs in the pole attachment rate model, it would be expected that differences of this magnitude would be examined and reconciled to ensure that the cost inputs reflect appropriate differences in LDCs operations and not inappropriate differences due to cost inclusions. Unless there are significant differences in operating cost structures, it is unreasonable that LDCs undertaking similar activities – working around telecom attachers - would have such significantly different input costs for LOP.

117. The OEB's experts, Nordicity, also identified similar concerns in its report:

> "… Nordicity understands that LDCs do not separately track and maintain records of loss in productivity. This means the loss of productivity cost is subject to variation from LDC to LDC depending on accounting and business processes, and lacks verifiability."[66]

118. It appears that Toronto Hydro's LOP cost estimates include costs other than those resulting from power utility crews having to work around telecom attachers' facilities.

[66] Nordicity Report, page 58.

According to information provided in the EB-2014-0116 proceeding, Toronto Hydro includes an allocation of costs associated with its pole inspection program and includes costs associated with the collection of data regarding telecom attachments on the poles (attachment owners, types, heights and equipment configurations).[67] The collection of data regarding telecom attachments on poles does not belong in the LOP cost category, which should include only incremental costs resulting from power utility crews having to work around telecom attachers' facilities.

119. As noted above, since the pole attachment rate established for Toronto Hydro was the subject of a settlement proceeding, the OEB did not issue a decision or determination with regards to the appropriateness of Toronto Hydro's cost inputs, including its cost estimates for LOP.

120. The inclusion of the Toronto Hydro cost input in the Cost Breakdown Appendix, and thus its inclusion in the pole attachment rate in Appendix B of the OEB Draft Report, is further concerning given the related statement in the OEB Draft Report describing the principle differences between the OEB proposed policy approach and that proposed in the Nordicity Report:

> "The OEB included a cost for loss of productivity (LOP) in the calculation of the pole attachment rate, consistent with <u>its recent evidence based determinations in both the Hydro One and Hydro Ottawa applications</u>."[68] (emphasis added)

121. The OEB Draft Report refers **only** to Hydro One and Hydro Ottawa, which would indicate that it did not consider or include the Toronto Hydro cost input in the calculation of the pole attachment rate. This is contrary to the information provided in the Cost Breakdown Appendix and the pole attachment rate in Appendix B of the OEB Draft Report. As noted above, the OEB did not issue determination regarding the appropriateness of Toronto Hydro's estimated cost for LOP.

[67] THESL, EB-2014-0116, IRR WR-Carriers-4 f).
[68] OEB Draft Report, page 25.

122. Re-calculating the LOP cost based only on Hydro One and Ottawa inputs, and weighted based on the number of attachers, results in an LOP cost of $2.09.

Table 14

LDC	Hydro One	Hydro Ottawa	Weighted Average
Number of Attachers	746,434	62,153	
Loss of Productivity	$2.10	$1.96	**$2.09**

Source of Data for Number of Attachers:
Hydro One - EB-2015-0141, Exhibit I, Tab 2, Schedule 2.1 (Filed 2016-04-15)
Hydro Ottawa - EB-2015-0004, Undertaking J2.1

123. As indicated above, the OEB Draft Report's proposed approach for LOP costs differs from the proposed approach in the Nordicity Report. The Nordicity Report does not include any cost in the LOP category as it considers that such costs are already captured in the Maintenance costs as part of the Indirect Costs:

> "Nordicity also believes that such loss of productivity (e.g. cost of extra hours worked by LDC technicians) are implicitly captured in maintenance (account # 5120), and repair and right of way (account # 5135) accounts.
>
> On this basis, Nordicity believes that proper inclusion of maintenance and repair cost attributable to poles, as discussed above, would also capture the cost associated with the loss of productivity. In other words, if loss of productivity is included in the rate as a separate line item, there are reasonable chances of duplication, and therefore it should not be considered as a separate item."[69] (emphasis added)

124. Concerns regarding the double counting or double recovery of costs associated with LOP costs have also been raised in other pole attachment rate setting proceedings.[70]

125. Other than providing a description of the basis for the LOP cost inclusion in the proposed pole attachment rate, the OEB Draft Report does not provide an explanation or rationale regarding its decision not to accept the Nordicity Report proposed

[69] Nordicity Report, page 58.
[70] See OEB Staff Submission, EB-2015-0004, November 12, 2015, pages 7-8.

approach. Nor does the OEB Draft Report address the concerns raised by Nordicity regarding the potential double-counting of costs in the proposed pole attachment rate.

8.0 Indirect Costs

126. In contrast to direct costs, which are directly attributable to telecom attachers, indirect costs are costs that are common to all pole attachers – LDCs, telecoms and other attachers (street lights, traffic lights, wireless, generators, etc.). Indirect costs represent a very significant portion of the total pole attachment related costs. The appropriate sharing of these costs between LDCs and telecom attachers is addressed through the application of the allocation factor, as described above.

127. The main inputs for indirect costs are:

- Embedded and net embedded costs of poles
- Depreciation expense
- Capital carrying costs
- Pole maintenance expenses

8.1 Embedded and Net Embedded Costs

128. Information associated with embedded costs of poles (or Gross Book Value, "GBV") as well as net embedded cost of poles (or Net Book Value, "NBV") in the Cost Breakdown Appendix is sourced from the Nordicity Report for five LDCs (Hydro One, Hydro Ottawa, Horizon, Toronto Hydro and London Hydro).

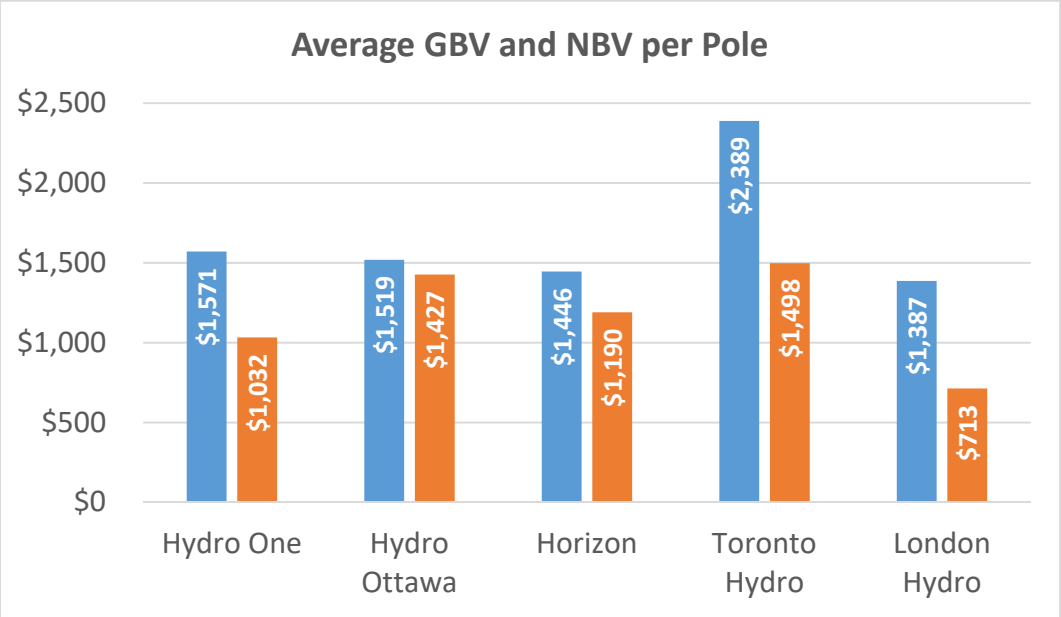
129. This information appears to be based on the LDCs' average estimated embedded cost and net embedded cost per pole from Table 21 and the number of installed poles from Table 13 for 2010 – 2015. Embedded costs for poles are included in the LDCs' account 1830 – Poles, Towers and Fixtures and includes installed costs of poles, towers and fixtures used for supporting overhead distribution conductors and service wires.

Issue 20 - Consistency and appropriateness of cost inputs

130. The table below provides a comparison of the average GBV and NBV per pole across the five included LDCs. For the average GBV per pole, the table shows a significant

variation across LDCs with Toronto Hydro reporting a GBV per pole of $2,389 in comparison to London Hydro at $1,387 – a difference of 70%. No explanation is provided in the Nordicity Report for this wide variance. Such a large variance raises concerns with the Toronto Hydro data that should be reviewed and addressed to understand the cause of the differences to ensure that the data is accurate and comparable, and whether any adjustments are required before the data can be used in the pole attachment rate model.

Table 15



131. For each of the five LDCs, Table 16 provides a comparison of the NBV vs GBV per pole amounts over time from Table 21 of the Nordicity Report. The analysis reveals a number of apparent anomalies for Hydro Ottawa, Horizon and Toronto Hydro where the NBV exceeds 90% of the GBV. This implies that there is relatively minimal accumulated depreciation (and thus annual depreciation expense) associated with poles. Such low levels of accumulated depreciation would not be expected for such long lived assets as poles, which are routinely replaced over time.

Table 16

NBV as % of GBV for Poles

Year	Hydro One	Ottawa Hydro	Horizon	Toronto Hydro	London Hydro
2010	60%	100%	64%	51%	50%
2011	62%	97%	66%	53%	50%
2012	64%	95%	95%	53%	52%
2013	66%	93%	93%	53%	52%
2014	69%	92%	91%	97%	53%
2015	70%	90%	89%	94%	53%

132. A review of the underlying information in Table 21 for Toronto Hydro indicates that the reported average embedded cost per pole declined from $2,910 per pole in 2013 to $1,511 in 2014. A significant year over year changes also occurs for Horizon between 2011 and 2012 where the average embedded cost per pole decline from $1,634 to $1,222. Such a large year over year change raises concerns with the quality and accuracy of the data that should be reviewed and addressed prior to using the data in the pole rate attachment model.

133. It is important to address, explain and, if necessary, adjust for or correct any anomalies such as those described above. Possible explanations could include the use of data for external financial reporting purposes versus for regulatory accounting purposes, or changes in accounting policies for capital assets by LDCs. Understanding the reasons for the anomalies would then permit an assessment of whether any adjustment is necessary for using the data in the pole rate attachment model.

8.2 Depreciation Expense

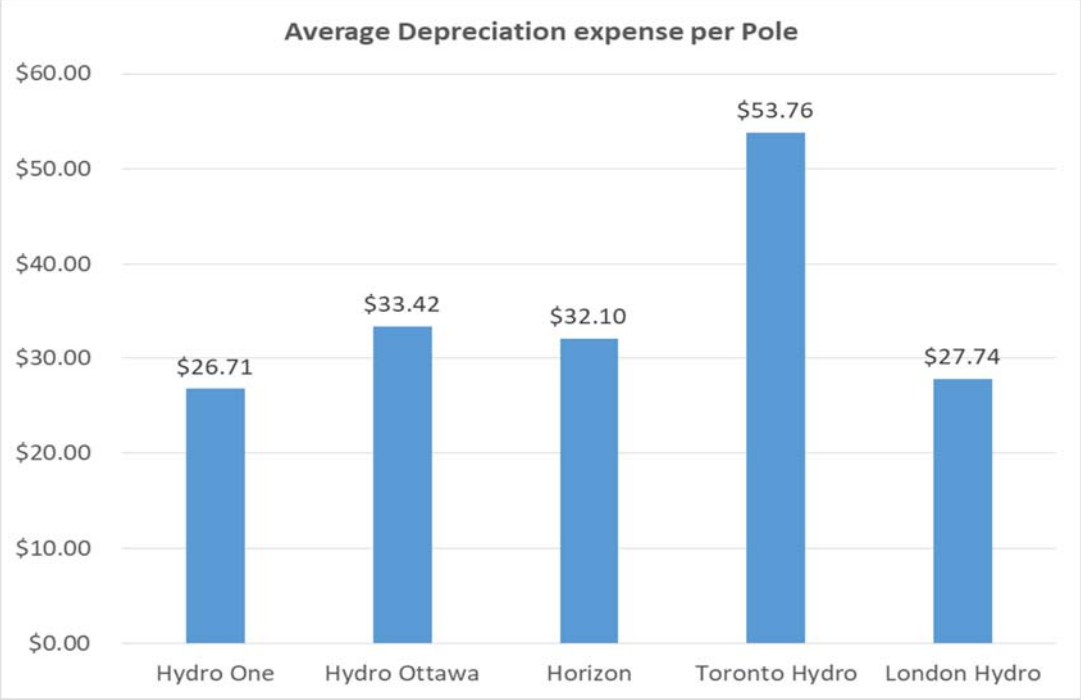
134. The Cost Breakdown Appendix indicates that the inputs for depreciation expense were sourced from the Nordicity Report for both the depreciation percentage (%) and the GBVs.[71] However, the OEB Draft Report did not make use of its expert's proposed

[71] An adjustment of 15% for power fixture costs is also applied.

input for the depreciation percentage, which was not based on the inputs from the LDCs.

135. The table below provides a comparison of the average annual depreciation expense per pole for each of the five LDCs. These costs are impacted by both the GBV per pole, as well as the depreciation rate (%) for each LDC. Concerns regarding the differences in the GBV for Toronto Hydro in comparison to the other LDCs are addressed above.

Table 17



Issue 21 - Out of date useful lives included in average

136. The depreciation rates for 2010-2015 from Nordicity Report Table 22 are provided below. As the table below illustrates, the Cost Breakdown Appendix uses a simple average of the annual depreciation rates for each LDCs.[72] The simple average for three LDCs - Hydro Ottawa, Horizon and London Hydro, is significantly impacted by a change

[72] The LDC specific average depreciation rates are subsequently weighted by installed poles to derive an average depreciation rate of 1.91%. It would also be reasonable to weight using the total GBV of poles for each LDCs, as the depreciation rate is applied to GBV to determine the depreciation expense.

to the useful lives applicable to poles. For 2010 and 2011, these three LDCs applied a depreciation rate of 4%, or 25 years. In 2013, the useful life was revised to between 2.00% - 2.22%, or 45.5 – 50 years. These changes in the LDCs' useful life for poles were also noted by Nordicity.[73]

Table 18

Depreciation Rates

Year	Hydro One	Ottawa Hydro	Horizon	Toronto Hydro	London Hydro
2010	1.83%	4.00%	4.00%	2.25%	4.00%
2011	1.83%	4.00%	4.00%	2.25%	4.00%
2012	1.83%	2.20%	2.22%	2.25%	2.00%
2013	1.83%	2.20%	2.22%	2.25%	2.00%
2014	1.83%	2.20%	2.22%	2.25%	2.00%
2015	1.70%	2.20%	2.22%	2.25%	2.00%
Average (2010-2015)	1.81%	2.80%	2.81%	2.25%	2.67%

137. Using a simple average that includes the two years with the useful lives that are no longer applicable embeds the impact of these changes to useful lives into the pole attachment rate model. As these outdated lives are not reflective of the current useful lives of poles, it would be more appropriate to remove the impact of the change in useful lives for the LDCs. One approach would be to use the 2015 depreciation rates, as these are reflective of the current useful lives. Alternatively, the average depreciation rates could be re-calculated without the 2010 and 2011 depreciation rates, to remove the impact of the change in useful lives.

[73] Nordicity Report, page 50.

Table 19

Re-calculated Depreciation Rates

Year	Hydro One	Ottawa Hydro	Horizon	Toronto Hydro	London Hydro
2015	1.70%	2.20%	2.22%	2.25%	2.00%
Average (2012-2015)	1.80%	2.20%	2.22%	2.25%	2.00%

138. Notwithstanding that Nordicity had access to the data across multiple years and LDCs, the Nordicity Report adopts a depreciation rate of 2.5%, or 40 years.[74] As the table above illustrates, the proposed rate of 2.5% is not appropriate as it exceeds the depreciation rates for each of the LDCs based either on the 2015 rates or the averages over 2012-2015, as is not reflective of the current useful life of poles used by the LDCs. It should be noted that the OEB Draft Report did not make use of its expert's proposed input.

8.3 Power-specific Fixture Costs

139. The embedded costs captured in Account #1830 – Poles, Towers and Fixtures typically include power-specific fixtures. The cost associated with these assets must be removed to arrive at the GBV, NBV and depreciation expense per pole to be used in the pole attachment rate model. The Cost Breakdown Appendix indicates that the OEB has used a "Power Deduction Factor" of 15% from the Nordicity Report.[75]

140. The Nordicity Report identifies two options to identify the capital costs associated with poles, net of power-specific fixtures[76]:

a) Undertake a detailed analysis and audit of the account 1830 maintained by individual LDCs, or

b) Request LDCs to provide estimated breakdowns based on an analysis of sample data.

[74] Nordicity Report, page 51.
[75] Accordingly, 85% of the embedded costs, net embedded costs and depreciation expense of poles are included in the pole attachment rate model.
[76] Nordicity Report, page 47.

141. Option a) was not undertaken by Nordicity as it "was considered to be time consuming, and not feasible given the specified duration and scope of this study." Instead, participating LDCs were requested to provide an estimated breakdown of Account 1830 in poles, power fixtures and other. Only three LDCs submitted data, with Hydro One and London Hydro each providing a ratio of costs attributable to poles or 85% and Hydro Ottawa providing a ratio of 92%.[77] Toronto Hydro, Horizon and CHEC do not appear to have provided the requested information.

Issue 22 - Insufficient assessment of LDC inputs

142. The Nordicity Report does not indicate whether the three LDCs undertook an analysis of sample data to arrive at the estimated breakdown, nor whether Nordicity reviewed the analyses to assess the reasonableness of the analysis and the resulting breakdown.

143. As the costs to be included as part of the indirect costs in the pole attachment rate model should only include those costs common to both the LDC and telecom attachers, it is important to accurately identify and remove any power-specific asset costs. It does not appear that this is the case with the estimates provided in the Nordicity Report. Indeed, the OEB's expert raises concerns with the estimates provided:

> "The range of 92% to 85% may imply either inconsistency in accounting practices across LDCs or peculiar characteristics of individual LDCs' poles cost structure. Without an independent substantive assessment of LDCs' accounts it is not possible to clearly ascertain the cost attributable to poles in their Account 1830 and other related accounts, if any."[78] (emphasis added)

8.4 Capital Carrying Costs

144. Capital carrying costs represent the financing costs associated with an LDC's net embedded investment in poles. The Cost Breakdown Appendix indicates that the inputs for capital carrying costs were sourced from the Nordicity Report for both the

[77] Nordicity Report, pages 47–48.
[78] Ibid., page 48.

pre-tax weighted average cost of capital (WACC) and the NBV[79] for four LDCs (Hydro One, Hydro Ottawa, Toronto Hydro and Horizon) that responded to the data request. Data from Nordicity Report Table 23 for 2010-2015 for these LDCs is reproduced below. A simple yearly average is calculated for each LDC.

Table 20

Cost of Capital (%)

Year	Hydro One	Ottawa Hydro	Horizon	Toronto Hydro
2010	8.97%	6.55%	7.02%	7.04%
2011	8.49%	6.55%	7.17%	6.94%
2012	8.49%	6.95%	7.17%	6.94%
2013	8.49%	6.70%	7.17%	6.94%
2014	8.49%	7.00%	7.17%	6.94%
2015	7.87%	6.70%	5.75%	6.17%
Average (2010-2015)	8.47%	6.74%	6.91%	6.83%

145. The Nordicity Report indicates that the data inputs from the LDCs are **after-ta**x cost of capital and that **before-tax** cost of capital are used for the purpose of the pole rate attachment calculation. This statement does not appear to be accurate.

146. For the pole attachment rate calculation, the pre-tax WACC is applied to the net embedded cost per pole. Based on a review of recent proceedings, the data in the table above (and Nordicity Report Table 23) is the **pre-tax** WACC for Hydro One and Toronto Hydro, not the **after-tax** WACC as indicated by Nordicity. Hydro Ottawa appears to have provided a WACC that does not include an allowance for income taxes. This again raises concerns regarding the inconsistency of data inputs across LDCs and provided as part of the consultation process, particularly given that the LDCs should understand what inputs are required for the pole attachment rate model.

[79] NBV adjusted for power fixture costs.

Issue 23 - Alternate approach to weighting

147. In the Cost Breakdown Appendix, the LDC-specific simple yearly average pre-tax WACC rates are weighted based on installed poles across the LDCs to derive an average pre-tax WACC rate of 8.25%. A reasonable alternate approach to using installed poles would be to weight the LDCs' annual pre-tax WACCs for 2010-2015 using the total NBV of poles for each LDC, and then weight across the four LDCs using the average NBVs as the pre-tax WACC is applied to NBV to determine the capital carrying cost. Based on the information in the Nordicity Report, this approach produces an average pre-tax WACC of 8.14%.

8.5 Pole Maintenance & Vegetation Management Expense

148. The OEB Draft Report, Appendix B includes Pole Maintenance Expense of $32.33. This consists of two categories of costs:

- Pole Maintenance (derived from Account 5120)
- Vegetation Management (derived from Account 5135)

8.5.1 Pole Maintenance – Account 5120

149. The Cost Breakdown Appendix indicates that the cost information for pole maintenance comes from the OEB's RRR (Electricity Reporting and Record Keeping Requirements) for the five LDCs. This data is similar to the information in the Nordicity Report, Table 24. However, it is not possible to fully reconcile the two sources based on the available information.[80]

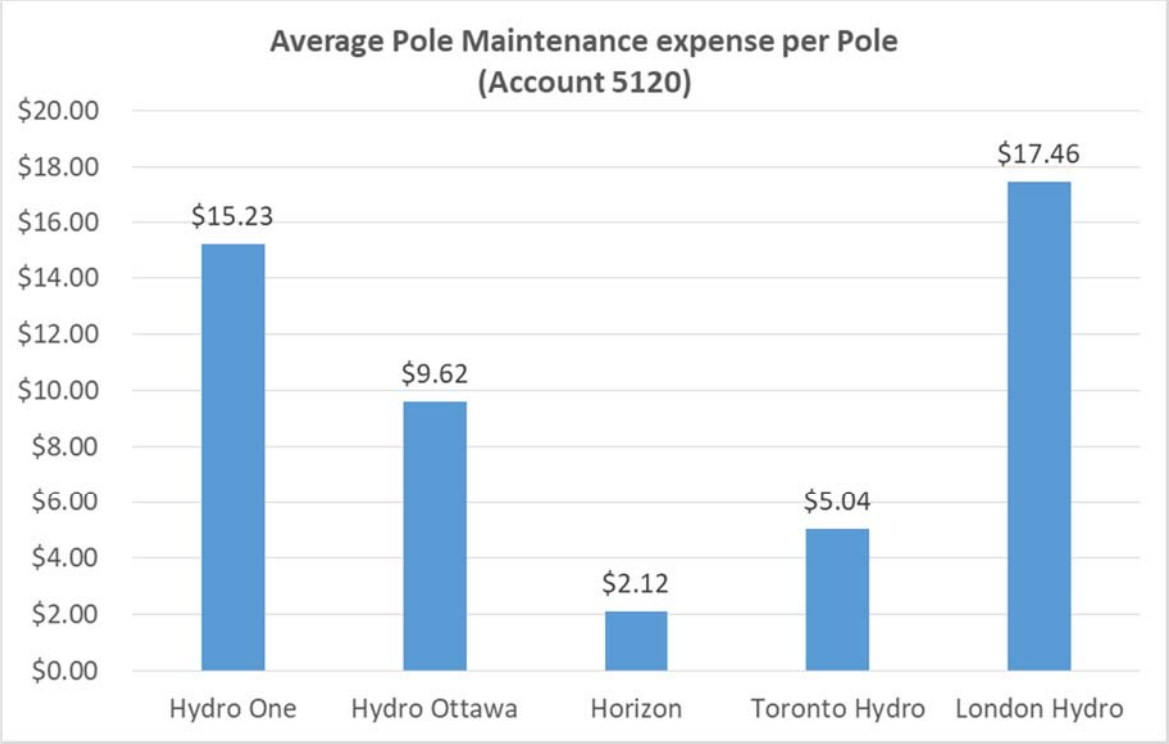
Issue 24 - Consistency and appropriateness of cost inputs

150. The table below provides a comparison of the average pole maintenance expense per pole based on the information relied upon by the OEB. The maintenance cost per pole

[80] The OEB uses a weighted average cost of $13.97 per pole as input to the pole attachment rate model; Table 24 from the Nordicity Report yields weighted average of $13.60 based on 2010-2015, a difference of 3%. The Nordicity Report does not identify which LDCs supplied data for Table 24.

ranges considerable among LDCs, from a low of $2.12 for Horizon to a high of $17.46 for London Hydro, 725% higher than Horizon.

Table 21



151. The OEB Draft Report does not address the wide range in cost across LDCs. Understanding why costs vary so significantly among LDCs for the same cost input is important as maintenance costs are a key indirect cost in the pole attachment rate model. Costs could vary due to differing operational practices, geographies, and accounting policies and practices. These variations may be reasonable, or they could be unreasonable, which would raise concerns regarding the suitability of these inputs for the pole attachment rate model. However, neither the OEB nor Nordicity Report address these variations.

Issue 25 - Inappropriate averaging of power deduction factors

152. According the OEB Accounting Procedures Handbook ("APH"), Account 5120 "shall include the cost of labour, materials used and expenses incurred in the maintenance of overhead distribution line facilities, the book cost of which is included in Account 1830,

Poles, Towers and Fixtures".[81] The Nordicity Report indicates that the account includes items that are not strictly attributable to poles.[82] Nordicity requested the LDCs to provide estimates of the distribution of costs between poles, power fixture and other. Only two LDCs submitted data – Hydro One and Hydro Ottawa. The estimates of the proportion of costs in Account 5120 attributable to poles provided by these two LDCs vary significantly: Hydro One – 5% versus Hydro Ottawa – 92%.

153. This is an extreme range in the proportion of costs associated specifically with pole maintenance that should be included in the pole attachment rate model. Applying these proportions to the respective Account 5120 cost per pole also yields dramatic variances in the cost per pole maintenance for these two LDCs, as illustrated in the table below.

Table 22

Pole Maintenance per Pole		**Hydro One**	**Hydro Ottawa**
Pole Maintenance (Account 5120)	A	$15.23	$9.62
Ratio of expenses attributable to poles	B	5%	92%
Estimated pole maintenance	C = A x B	$0.76	$8.85

154. Based on the information provided by the two LDCs to Nordicity, the estimated cost per pole applicable to the pole attachment rate model ranges from $0.76 to $8.85 – a range of over 1,000%. Unfortunately, as indicated above, no other LDCs submitted data to Nordicity could be used to understand and reconcile this difference.

155. The Nordicity Report raises concern regarding the range of ratios:

> "Given Hydro One poles constitute about ~85% of the total pole population, the overall ratio averages at 6.8%. However, the range of 92% to 5% may imply either

[81] OEB Accounting Procedures Handbook, Account 5120, page 166 (Effective: January 1, 2012).
[82] Nordicity Report, page 52.

> inconsistency in accounting practices across LDCs or peculiar characteristics of individual LDCs' pole cost structure. Without an independent substantive assessment of LDCs' accounts it is not possible to clearly ascertain the cost attributable to poles in Account 5120 and other related accounts, if any."[83] (emphasis added)

156. Notwithstanding its concerns about this disparity, the Nordicity Report proposes to use a median average of 48.5% based on a simple weighting of the only two data points it had available.[84] The Cost Breakdown Appendix indicates that the OEB has applied this same "power deduction factor" of 48.5% to derive the maintenance cost per pole for inclusion in the pole attachment rate model.

157. The application of a simple weighted average based on these two vastly different ratios is inappropriate as it provides no meaningful indication of the maintenance cost per pole. Indeed, for Hydro One, the application of a 48.5% ratio results in an implied cost of $7.39 per pole, over 800% more than the $0.76 per pole based on its own estimate of costs.

158. The application of a simple weighted average is also inconsistent with the approach applied elsewhere in the Nordicity Report and the OEB's Cost Breakdown Appendix. In most instances, the number of installed poles or attachments is used to weight cost elements or cost factors in the pole attachment rate model.[85] The Nordicity Report produces (but does not use) a weighted average factor of 6.8%[86], while a weighting based on installed poles for Hydro One and Hydro Ottawa results in a factor of 7.6%. Either of these weighting approaches would be more appropriate rather than the application of a simple average used in the Nordicity Report and the OEB Draft Report.

8.5.2 Vegetation Management – Account 5135

159. Similar to Pole Maintenance, the Cost Breakdown Appendix indicates that the cost inputs for vegetation management comes from the OEB's RRR (Electricity Reporting

[83] Nordicity Report, page 54
[84] Ibid.
[85] For instance, installed poles is used as a weighting for embedded costs, net embedded costs, maintenance cost, vegetation management cost, depreciation rate percentage, and pre-tax WACC percentage.
[86] Nordicity Report, Table 25.

and Record Keeping Requirements) for the five LDCs for Account 5135 – Overhead Distribution Lines and Feeders – Right of Way. The data used by the OEB corresponds with the information in the Nordicity Report, Table 26.

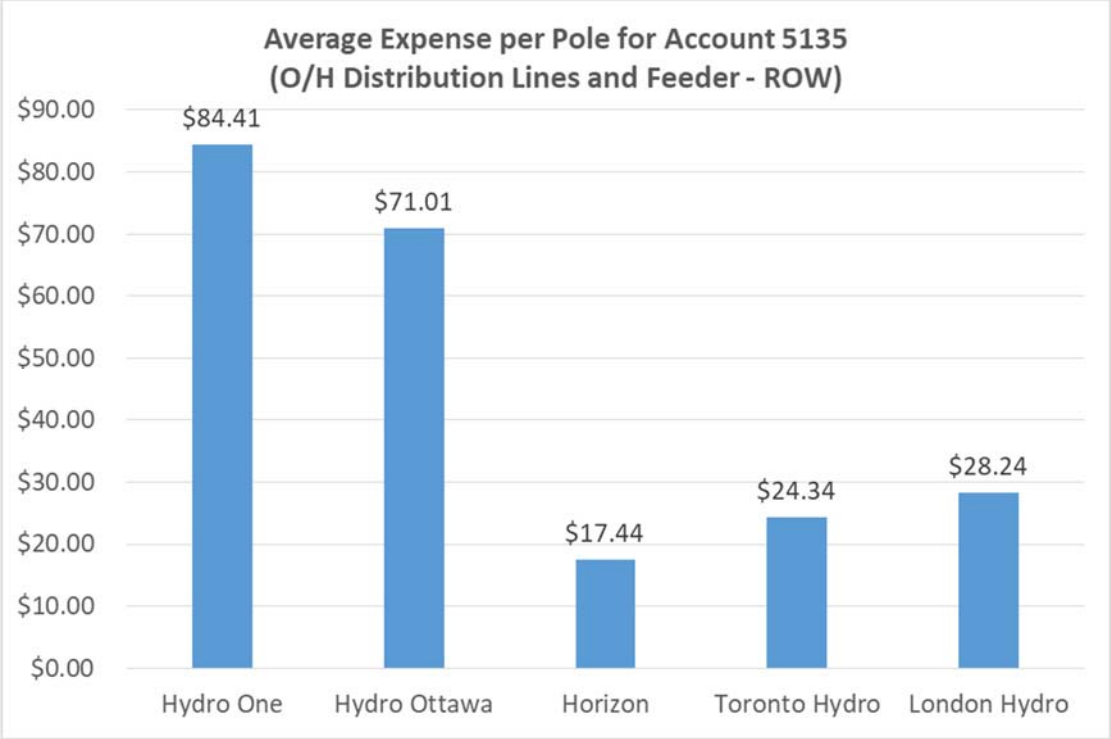
160. The OEB's APH provides the following description of this account: "These accounts shall include labour with payroll burden, material, trucking, and other expenses incurred in connection with tree trimming, etc. and other costs incurred in maintaining right of way subsequent to construction of a line."[87]

Issue 26 - Consistency and appropriateness of cost inputs

161. The table below provides a comparison of the average expense per pole for Account 5135 based on the information relied upon by the OEB. The cost per pole varies significantly across the LDCs, from a low of $17.14 for Horizon to a high of $84.41 for Hydro One, 380% higher than Horizon.

[87] OEB Accounting Procedures Handbook, page 168 (Effective: January 1, 2012)

Table 23



162. As the Nordicity Report notes, the inclusion of vegetation management costs in terms of its definition and dollar estimate has been a major topic of discussion in recent pole attachment rate proceedings.[88] It is understood that to date the OEB has excluded vegetation management costs from the pole attachment rate calculation.[89]

163. The OEB Draft Report does not address the wide range in the cost per pole across LDCs for Account 5135. Costs may vary due to differing operational practices, geographies (including density of vegetation and location), and accounting policies and practices. Similar to the case with pole maintenance expenses, understanding why costs vary so significantly among LDCs for the same cost input is important as vegetation management costs have not previously been included as an indirect cost in the pole attachment rate model, and because of the magnitude of these costs.

[88] Nordicity Report, page 56.
[89] OEB Draft Report, page 37.

Issue 27 - Use of unsupported power deduction factor

164. A key issue with respect to vegetation management expenses relates to the proportion of the Account 5135 that relates to pole attachments if it is to be included in the pole attachment rate model.

165. While the Nordicity Report gathered cost distribution data regarding labour, materials, trucks and other from two LDCs (Hydro One and Hydro Ottawa), it does not appear that any information was requested or collected regarding the proportion of Account 5135 costs that relate to vegetation management associated with pole attachments. The importance of this type of information is addressed in the Nordicity Report:

> "Without a detailed field study and examination of related operational data (truck roll/field dispatch orders), it is not possible to clearly ascertain the cost attributable to poles and telecom wires in account 5135. It is also worth noting that during the consultation meeting, telco's argued that they undertake their own repair work when it directly concerns their customers."

166. The Nordicity Report concludes that it would be reasonable to apply the ratio of 6.8%, which represents the weighted average ratio of maintenance expenses (account 5120) applicable to poles.[90] Nordicity's recommendation to use 6.8% for Account 5135 stands in contrast to its proposal to apply the simple average based ratio of 48.5% for maintenance expenses. The Nordicity Report does not provide any rationale for the use of these two different ratios, notwithstanding that they are based on the same set of cost inputs. Nor does the Nordicity Report explain why a factor applicable to maintenance costs would be applicable to vegetation management costs.

167. Notwithstanding its expert's recommended ratio of 6.8%, the OEB Draft Report uses a ratio of 33% to include vegetation management costs in Account 5135 in the pole attachment rate model. The OEB Draft Report indicates that the ratio is "based on the 33% allocation put forth by Hydro One".[91] The Nordicity Report provides no reference to, yet alone a discussion of or rationale for, the proposed allocation from Hydro One.

[90] Nordicity Report, page 55.
[91] OEB Draft Report, page 38.

Assessing the reasonableness of the proposed allocation is critical before including it in the pole attachment rate model.

168. While the OEB Draft Report does not explain how Hydro One derived the proposed allocation, it does explain its support for the proposed allocation as follows:

> "The OEB sees merit in Hydro One's allocation because the telecommunication space represents approximately 33% of the useable space on a pole, as illustrated in OEB staff's slide 22 presented at the fourth working group meeting. Slide 22 depicts the vegetation that would require clearing within the power and telecommunication space."[92]

169. This explanation does not address what portion of the costs that LDCs record in Account 5135 are relevant to the pole attachment rate model as common costs shared between pole attachers, which is what the intent of the indirect costs.

170. Relying on the untested ratio proposed by Hydro One is not appropriate for such a significant cost. The OEB appears to appreciate the concern regarding the inclusion of vegetation management costs as proposed:

> "The OEB recognizes vegetation management is a significant cost and as such, Part II will endeavour to analyze any new LDC data collected with respect to the allocation of vegetation management costs. This should provide a significant benefit to the OEB's next wholesale review of the default charge as better information would be available."[93]

171. Including such a significant cost element into the proposed pole attachment rate model without sufficient supporting information would not be appropriate as it will "lock in" a potentially inappropriate cost element in the pole attachment rates until some future, undetermined time when more appropriate data may (or may not) be available for this input.

[92] OEB Draft Report, footnote 37.
[93] OEB Draft Report, page 38-39.

Issue 28 - Vegetation management costs should be excluded

172. Excluding vegetation management costs from the pole attachment rate model until further data is collected would be a more reasonable approach given the issues with this cost input. This approach was proposed by the both the LDCs and carriers in the consultation process, which both preferred that vegetation management costs should be negotiated:

> "Both LDCs and carriers both have taken the position that vegetation management costs should not be included in the rate, and should be negotiated as part of the joint use agreements. They suggest that the OEB could provide the principles/methodology for sharing vegetation management costs to allow for a fair and reasonable charge."[94] (emphasis added)

173. This approach is also reasonable based on information presented to the OEB by Hydro Ottawa in another proceeding with regards to its vegetation management (tree-trimming) practices. Hydro Ottawa[95] has clearly indicated that it does not incur tree-trimming costs associated with the communications space:

> MR. HARPER: Yes, I just have a couple of questions with respect to Carriers 11. First one has to do with your response to part (d), where you indicated that tree-trimming costs were not included in the calculation of the maintenance. I was wondering if you could just explain why that was the case?
>
> MR. BENNETT: Tree-trimming costs, we don't trim for communications space, we trim for the power space, ...[96]

174. Based on this evidence, for Hydro Ottawa, vegetation management costs are not an indirect common cost applicable to both the utility and telecom attachers. It is solely applicable to power. In this case it would not be appropriate to include any vegetation management expenses in the pole attachment rate.

[94] OEB Draft Report, page 38.
[95] Hydro Ottawa Final Argument, EB-2015-0004, paragraph 34, November 5, 2015.
[96] EB-2015-0004 Transcript, Technical Conference, August 13, 2015, pages 56-57.

9.0 Inflationary Adjustment

175. In the OEB Draft Report, the OEB proposes to implement an annual inflationary adjustment mechanism to the pole attachment rate based on the OEB Input Price Index (IPI).[97] However, the OEB does not propose to apply a productivity offset (X-factor consisting of a productivity and/or stretch factor). The OEB also applies the IPI, but not a productivity offset, to adjust the pole attachment rate in Appendix B from 2015 dollars to 2018 dollars.

176. The OEB IPI measure is based on a weighted value of non-labour and labour costs. The OEB indicates that the "[t]he IPI covers inflation in the prices of capital equipment used by the industry, as well as inflation in operating expenses."[98]

Issue 29 - Productivity offset is inappropriately excluded

177. The proposal to exclude a productivity offset is concerning. The OEB provides the following rationale for its proposed approach:

> "Pole attachment charge components are generally sunk costs and most underlying cost items are not easily impacted by productivity improvement."[99]

178. While the depreciation expense and carrying costs are related to the embedded cost of poles, the installed base of poles is subject to a steady annual replacement as older poles are retired and replaced. These new poles are not sunk costs and there are ongoing opportunities for the LDCs to become more productive in the replacement of these poles.

179. In addition, maintenance costs (including repair, inspection and vegetation) are not sunk costs. These are ongoing annual costs and these are areas that are impacted by productivity improvements. Similarly, the direct costs of administration and loss of

[97] OEB Draft Report, page 34.
[98] Ibid.
[99] Ibid.

productivity are ongoing annual costs that are also should be subject of productivity improvements.

180. As examples of relevant LDC efforts to become more productive, Hydro One identifies the following key sources for potential productivity saving, many of which would incorporate cost elements included in the pole attachment costs[100]:

- More effective procurement programs, including investments in new processes and tools;
- Reductions in administrative expenditures through improved processes and optimization of internal staff skills;
- Rationalization of Hydro One's IT spending;
- Improved field efficiency through improved work planning; and
- Improved execution through the consolidation of stations work.

181. As a specific, relevant example, Hydro One's Business Plan states "[t]he vegetation management program will deliver saving from various initiatives such as use of hiring hall workers to complete a large portion of the low-skilled brush control activities".

182. Furthermore, Hydro One is proposing to track a metric associated with 'Pole Replacement – Cost per Pole', noting that "[t]his cost per unit metric will demonstrate how successful Hydro One is in delivering productivity improvement in this area."[101] Similarly, Hydro One is proposing a metric for 'Vegetation Management – Cost per KM' which will demonstrate how successful Hydro One is at delivering productivity improvement in its vegetation management program. It is unlikely that Hydro One would propose these metrics to track productivity improvement in these areas if either it or the OEB did not expect the LDC to be able to achieve such improvements.

183. Finally, the proposal not to apply a productivity offeset is also inconsistent with how the OEB applies it Price Cap incentive based regulation to the LDCs electricity

[100] Hydro One Distribution Business Plan 2017-2022, pages 18-19 filed as part of Hydro One Rate Application, EB-2017-0049, Exhibit A-3-1, Attachment 1 (filed 2017-03-31).
[101] Hydro One Rate Application, EB-2017-0049, Exhibit B1-1-1 DSP Section 1.4, page 6 (filed 2017-03-31).

distribution rates, which also incorporate the same cost components include in the pole attachment rate.

184. Consistent with the other components of the pole attachment rate model, the OEB should include a productivity offset, which could be developed based on a weighted average of the X-factors across the various LDCs. The productivity offset adjustment should be applied to restate pole attachment costs from 2015 to 2018, as well as included as part of the implementation of an annual rate adjustment going forward.

10.0 Conclusion

185. This Report demonstrates that there are numerous concerns and issues regarding the Nordicity Report, the OEB Draft Report and the proposed province-wide pole attachment rate. The areas of concern identified include:

- Proposed pole rate attachment framework
- LDC data collection
- Allocation methodology
- Poles specification and allocation factor
- Number of attachers per pole
- Bell/LDC joint use pole agreements
- Direct and indirect costs
- Inflationary adjustment

186. The identified issues and concerns should be addressed and resolved prior to the finalization of any wireline pole attachment rates by the OEB.

APPENDIX 1

ILLUSTRATION OF ADJUSTMENT FACTOR TO ACCOUNT FOR
HYDRO ONE/BELL CANADA JOINT USE AGREEMENT

(based on data from OEB Decision and Rate Order EB-2015-0141 for illustrative purposes)

Number of Attachers:	Reference	Number		Source / Comments
Bell attachments	A	331,238		EB-2015-0141, Exhibit I, Tab 2, Schedule 2.10 (c) (Filed 2016-04-15). Bell attachments on Hydro One/Bell joint use agreement poles
Telecom and other wireline	B	297,728		EB-2015-0141, Exhibit I, Tab 2, Schedule 2.10 (c) (Filed 2016-04-15).
	C = A + B	628,966		
Streetlights and other (non wireline)	D	117,468		EB-2015-0141, Exhibit I, Tab 4, Schedule 1 (d) (Filed 2015-09-08).
Total number of attachments	E = C + D	746,434		EB-2015-0141, Exhibit I, Tab 2, Schedule 2.10 (e) (Filed 2016-04-15)

Joint Use Poles:	Reference	Number	% Proportion	Source / Comments
Joint use poles with telecom & other attachments	H	573,780	100.0%	EB-2015-0141, Exhibit I, Tab 2, Schedule 2.10 (e) (Filed 2016-04-15)
Joint use poles with Bell attachments (subject to the Joint Use Agreement)	I = -A	(331,238)	57.7%	
Joint use poles with telecom & other attachments (not subject to Joint Use Agreement)	J = H + I	242,542	42.3%	

Hydro One/Bell Joint Use Agreement Poles	Reference	Number	% Proportion	Source / Comments
Hydro One Owned	K = A	331,238	62.4%	Proportion of 62.39% from EB-2015-0141, Motion Hearing Transcript, May 19, 2016, page 38, lines 2-3
Bell Owned	L	199,677	37.6%	Proportion of 37.61% from EB-2015-0141, Motion Hearing Transcript, May 19, 2016, page 38, lines 2-3
Total Joint Use Agreement Poles	M = K + L	530,915	100%	

Pole Attachment Charge Calculation to Account for Hydro One/Bell Joint Use Agreement	Reference	EB-2015-0141 Decision	CRTC-based Joint Use Agreement Factor	Source / Comments
Indirect Cost per Pole	N	$108.71	$108.71	EB-2015-0141 Decision, Line H
Total number of poles	O = H	573,780	573,780	
Total Indirect costs	P = N x O	$62,375,624	$62,375,624	
Joint Use Agreement Factor	Q = (100% x J%) + (K% x I%)	n/a	78.3%	Factor = 100% x Proprotion of Non Joint Use Agreement Poles (42.3%) + 62.4% (Hydro One proportion of Joint Use Agreement Poles) x Proportion of Joint Use Agreement Poles (57.7%)
Allocation Factor (Equal Sharing) to Telecom (gross up by Number of attachers)	R = 34.3% x Z	44.6%	44.6%	EB-2015-0141 Decision, Line I Allocation Factor of 34.3% x average # of Attachers per Pole
Total Indirect Costs Allocated to 3rd Parties	**S = P x Q x R**	**$27,813,291**	**$21,789,673**	Total indirect costs x JU Agreement Factor x Allocation Factor (Telecom)
Indirect Costs Allocated to 3rd Parties per Attachers	= S / U	$37.26	$29.19	
Direct Cost per Attacher	T	$3.99	$3.99	EB-2015-0141 Decision, Line C
Number of Attachers	U = E	746,434	746,434	
Total Direct Costs	**V = T x U**	**$2,978,272**	**$2,978,272**	
Total Costs	**W = S + V**	**$30,791,562**	**$24,767,945**	
Number of Attachers	U = E	746,434	746,434	
Annual Pole Rental Charge	**X = W / U**	**$41.25**	**$33.18**	
Number of attachers per pole	Z = E / H	1.30	1.30	

APPENDIX 2

Appendix: Cost Breakdown of Provincial Pole Attachment Charge

Breakdown of costs by PAWG LDC from Pole Attachment Consultation (EB-2015-0304)

	Provincial Average 2010-2015	Source of Data	Hydro One	Hydro Ottawa	Horizon	Toronto Hydro	London Hydro
Pole Population	1,807,302	Pole Count and Attachers from Nordicity's expert report	1,541,380.33	48,192.83	51,793.83	137,602.17	28,332.83
Average Number of Attacher	1.30						
Direct Cost							
Admin	$ 2.85	Submitted by HONI, HO and THESL in past proceedings (2013-2015)					
LOP	$ 3.30						
Total Direct Costs	**$ 6.15**						
Indirect Cost							
Net Book Value of Poles [USoA 1830 less accumulated depreciation]	$ 1,948,152,737	NBV and Power Deduction Factor from Nordicity's expert report	$ 1,591,428,358	$ 68,769,164	$ 61,628,420	$ 206,118,741	$ 20,208,054
NBV, per pole	$ 1,077.93						
NBV, per pole (net of power fixture costs)	**$ 916.24**						
Pole Maintenence [USoA 5120]	$ 25,239,422	OEB's RRR	$ 23,477,746	$ 463,594	$ 109,591	$ 693,740	$ 494,751
Maintenance cost, per pole	$ 13.97						
Maintenance, per pole (net of power fixture costs)	**$ 6.77**	Power Deduction Factor from Nordicity's expert report					
Vegetation Management [USoA 5135]	$ 138,584,809	OEB's RRR	$ 130,110,288	$ 3,422,382	$ 903,350	$ 3,348,588	$ 800,201
Vegetation Management, per pole	$ 76.68						
Vegetation Management, per pole (net of power fixture costs)	**$ 25.56**	Power Deduction Factor from HONI					
Gross Book Value of Poles [USoA 1830]	$ 2,938,150,829	Gross Book Values from Nordicity's expert report	$ 2,421,998,497	$ 73,213,203	$ 74,890,104	$ 328,753,323	$ 39,295,702
Gross Book Value, per pole	$ 1,625.71						
Depreciation Rate %	1.91%	6-year weighted average using figures in Nordicity's expert report	1.81%	2.80%	2.81%	2.25%	2.67%
Depreciation expense, per pole (net of power fixture costs)	**$ 26.40**						
Pre-tax WACC %	8.25%	6-year weighted average using figures in Nordicity's expert report	8.47%	6.74%	6.91%	6.83%	n/a
Carrying costs, per pole	**$ 75.57**						
Total Indirect Costs	**$ 134.30**						
Allocation Factor, with 1.3 attachers	32.45%	Hybrid Equal Sharing Methodology from Nordicity's expert report					
Total Indirect Costs	**$ 43.58**						
Annual Pole Rental Charge (2015)	**$ 49.73**						
GDP-IPI							
Year 1 (2015/16)	1.021	OEB's inflation factor for the incentive rate setting under Price Cap IRs and Annual Index Plans.					
Year 2 (2016/17)	1.019						
Year 3 (2017/18)	1.012						
Annual Pole Rental Charge (escalated to 2018)	**$ 52.36**						
Annual Pole Rental Charge (rounded)	**$ 52.00**						

APPENDIX 3

ANDREW BRIGGS MBA CPA,CMA CBV
AGBriggs Consulting Inc.

PROFESSIONAL EXPERIENCE:

Independent Consultant 2000 - Present
AGBRIGGS CONSULTING INC.
Oakville, ON

Provide financial, economic and regulatory advisory services to private and public sector clients in the communications, broadcasting and content production industries. Deliver financial and business analysis services including financial modelling, business planning, business valuations, cost analysis, competitive assessment and research services. Provide advice and support services on various regulatory matters (economic, financial and costing/accounting issues), including preparation of written submissions (evidence, comments, reports, interrogatories).

Senior Associate 2007 - 2009
VINE VALUATIONS INC.
Hamilton, ON

Provided business valuations and litigation support services to clients in family law matters, shareholder disputes, tax planning and the potential sale and purchase of businesses. Prepared draft calculation and estimate business valuation reports, undertook industry and economic research, and developed valuation models.

Assistant Vice President, Business Planning 1999 - 2000
STAR CHOICE / CANCOM
Mississauga, ON

Senior member of finance team responsible for business planning and modelling, competitive assessments, and analysis of business opportunities. Supported CFO with investor relations activities and development of long-term business plan to secure $415 M bank credit facility to finance the growth of the DTH business. Provided analysis and advice regarding business and operational synergies from the merger between Cancom and Star Choice.

Director, Economics 1995 - 1999
CANADIAN CABLE TELEVISION ASSOCIATION
Toronto, ON

Developed regulatory positions, prepared and assessed submissions on a variety of telecommunications and broadcasting issues including terms of entry by cable companies into the local telephone market. Undertook various ad hoc economic analyses and performed on-going competitive analysis of the Canadian and U.S. broadcasting industries, telecommunications and broadband industries including monitoring industry developments and publishing assessment reports for senior cable industry executives.

Manager, Regulatory Costing 1994 - 1995
UNITEL COMMUNICATIONS
Toronto, ON

Responsible for developing and defending Unitel's regulatory positions before the CRTC on various costing issues including long distance contribution rates and other telco interconnection charges. Analyzed regulatory filings and prepared written/oral submissions to the CRTC for a number of major telecommunications proceedings including Split Rate Base proceeding and Phase III costing review.

Senior Tariff Specialist 1991 - 1994
UNITEL COMMUNICATIONS
Toronto, ON

Determined pricing structure and positioning for residential and business long distance service offerings in conjunction with Product Managers. Undertook competitive pricing and revenue impact analyses of proposed pricing initiatives for senior management review.

Senior Financial Analyst 1988 - 1991
CIBC – Information Technology Division
Toronto, ON

Project team member responsible for developing a costing and inventory system for the bank's voice and data telecommunications services. Reviewed and assessed monthly operating results and variance reports, prepared operating budgets, capital plans and business cases.

EDUCATION:

Chartered Business Valuator, Canadian Institute of Chartered Business Valuators, 2009

Certified Management Accountant, Society of Management Accountants of Ontario, 1991

Masters of Business Administration, McMaster University, Hamilton, ON, 1988

Bachelor of Arts, Hons., Economics, York University, Toronto, ON, 1985

Bachelor of Arts, Economics, University of Western Ontario, London, ON, 1984

Telecommunications Management studies (part-time)**,** Ryerson University, ON 1992-1995

PROFESSIONAL AFFILIATIONS:

Member, Chartered Professional Accountants of Ontario

Member, Canadian Institute of Chartered Business Valuators

AGBriggs Consulting Inc.

Overview of Telecommunications-related Engagements

- Developed and maintained detailed cost models and completed costing studies to support the determination of regulated prices for Third Party Internet Access (TPIA) services for several cable companies; supported companies during the regulatory proceedings regarding the provision of aggregated and disaggregated TPIA services.
- Provide advisory services to a cable company regarding TELUS support structure tariff and cost study filings to the CRTC
- Advised a number of cable companies on the CRTC's approach to developing cost-based rates for TPIA services, including the impact of determinations in TRP 2016-117 *Review of Costing Inputs and the application process for wholesale high-speed access services*.
- Advised and supported a wireless carrier's development of cost-based rates for regulated wholesale roaming services in response to TRP 2015-177 *Regulatory Framework for Wholesale Mobile Services.*
- Co-ordinated filing of client's application for project funding from Industry Canada's Broadband Canada: Connecting Rural Canadians program
- Provided analysis and advisory services to cable companies on ILEC support structure costing as part of the CRTC's *Review of ILEC Support Structure Service rates and costs* (TNC 2009-432)
- Authored report on International Broadband Services Comparison for Consumer Groups as part of TNC 2009-261 Wholesale High-speed Access Services
- Conducted cost studies for wireless carrier to determine the carrier's internal costs associated with wireless tower access
- Provided research and analytic support as an advisor to the federal government's Telecommunications Policy Review (TPR) Panel Secretariat leading to the issuance of a report by the Panel in March 2006
- Co-authored report for PIAC on the residential experience with telecommunications competition from 1992 to 2002. Analyzed rate plans and prepared pricing comparisons over time.
- Provided analysis and advisory services to a cable company on Nova Scotia Power Inc.'s Pole Attachment Charge proceeding (Nova Scotia Utility and Review Board, 2002)
- Provided financial and regulatory support to clients for numerous CRTC proceedings including:
  - *Review of Basic Telecommunications Services* (TNC 2015-134)
  - *Review of Costing Inputs for Wholesale High-Speed Services* (TNC 2015-225)
  - *Feasibility of Establishing a Video Relay Service* (TNC 2013-155)
  - *Review of NWTel Regulatory Framework and Modernization Plan* (TNC 2012-669)
  - *Confidentiality of Cost Information* (TNC 2012-168)
  - *Review of Price Cap Regulatory Framework for NWTel* (TNC 2011-302)
  - *Review of regulatory requirements pertaining to imputation test for retail services and to costing methodologies for wholesale services* (PN 2008-5)
  - *Review of Certain Phase II Costing Issues* (PN 2007-4)
  - *Review of regulatory framework for wholesale services and definition of essential service* (PN 2006-14)
  - *Local Market Forbearance* (PN 2005-2)
  - *VoIP Service Regulatory Framework* (PN 2004-2)
  - ILEC tariff filings for ADSL wholesale and Ethernet access services