Canadian Radio-television and Telecommunications Commission
Conseil de la radiodiffusion et des télécommunications canadiennes

Telecom Decision CRTC 2010-900

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Ottawa, 2 December 2010

Review of the large incumbent local exchange carriers' support structure service rates

File numbers: 8638-C12-201017137, 8690-C12-200910408, and 8690-T66-200814774

In this decision, the Commission approves revised rates for the wholesale support structure services of Bell Aliant, Bell Canada, MTS Allstream, TCC, and Télébec, effective 21 July 2009. The Commission also initiates a follow-up proceeding regarding service pole rates and a possible markup on Phase II support structure costs.

Introduction

1. In response to an application by TELUS Communications Company (TCC), dated 30 October 2008, and having considered subsequent comments from other parties, the Commission issued Telecom Notice of Consultation 2009-432 (the notice) to examine the support structure service rates of the following incumbent local exchange carriers (ILECs): Bell Aliant Regional Communications, Limited Partnership (Bell Aliant), Bell Canada, and Télébec, Limited Partnership (Télébec) [collectively, Bell Canada et al.]; MTS Allstream Inc. (MTS Allstream); and TCC.[1]

2. The ILECs' support structure services are tariffed wholesale services that make three types of support structures – poles, strands, and conduits – available to third parties for use as an input to provide competitive retail services.[2] ILECs also use their support structures to provide retail services. Each of the three support structure types has a different rate. A brief description of each type is set out in Appendix 1 to this decision.

3. Currently, all ILECs' rates for each type of support structure are the same. The rates, which the Commission approved in Telecom Decision 95-13, were established based on Bell Canada's support structure costs. In the notice, the Commission indicated that any revised rates would be ILEC-specific and would be established using the

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1 Saskatchewan Telecommunications requested that it be excluded from this proceeding.

2 Each ILEC provides support structure service in its incumbent serving territory, which includes, for Bell Aliant, the Atlantic provinces and most rural and remote areas in Ontario and Quebec; for Bell Canada, most large urban, suburban, and non-rural areas in Ontario and Quebec; for MTS Allstream, the province of Manitoba; for Télébec, areas in Quebec; and for TCC, most of Alberta and British Columbia, and areas in Quebec.

pricing methodology in Telecom Decision 95-13 (the 95-13 pricing methodology). Further, the Commission made current rates interim effective 21 July 2009, the date of the notice.

4. Parties that participated in the proceeding included Bragg Communications Inc., the Canadian Cable Systems Alliance, Cogeco Cable Inc., Quebecor Media Inc. on behalf of its affiliate Videotron Ltd., Rogers Communications Inc., and Shaw Communications Inc. (collectively, the cable carriers); TekSavvy Solutions Inc.; and Xittel Télécommunications Inc., on its own behalf and on behalf of the Regroupement québécois des utilisateurs de structures de soutènement (Le Regroupement).[3]

5. Comments were also received from others, including La Fédération Québécoise des Municipalités, La Fédération des commissions scolaires du Québec, and l'Association des commissions scolaires anglophones du Québec (referred to, collectively, with Le Regroupement, as the Quebec submissions); Le ministère de la Culture, des Communications et de la Condition féminine du Québec, with the participation of Le ministère de l'Éducation, du Loisir et du Sport, and Le ministère des Affaires municipales, des Régions et de l'Occupation du territoire (collectively, the MCCCF), and Le Bloc Québécois.

6. Parties commenting on the ILECs' proposals opposed various aspects of those proposals, including the size of the proposed rate increases. The MCCCF, the Quebec submissions, and Le Bloc Québécois opposed the ILECs' proposed rate increases in Quebec because, if approved, they would jeopardize provincial government programs, such as Villages branchés du Québec and Communautés rurales branchées, that aim to make affordable high-speed Internet service available throughout Quebec for public policy reasons. Bell Canada et al. submitted that their proposed rate increases reflect costs, and that they alone should not be required to subsidize public policy objectives or competitors.

7. The public record of this proceeding, which closed on 6 August 2010, is available on the Commission's website at www.crtc.gc.ca under "Public Proceedings" or by using the file numbers provided above.

Issues

8. The Commission has identified the following issues to be addressed in this decision:

   I. Is the 95-13 pricing methodology consistent with the Policy Direction?
   II. Are the ILECs' proposed costs reasonable?
   III. What support structure rates would be just and reasonable?
   IV. Should revised rates be applied on a retroactive basis?
   V. What matters should be considered in a follow-up proceeding?

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[3] Le Regroupement represented a dozen organizations that provide retail services to public and private users, chiefly in non-urban centres in Quebec.

I. Is the 95-13 pricing methodology consistent with the Policy Direction?

9. The 95-13 pricing methodology determines support structure rates on the basis that rates should, at a minimum, exceed the ILECs' Phase II costs[4] and make a reasonable contribution to their fixed structure costs.

10. In Telecom Decision 95-13, the Commission applied a different pricing methodology to determine the ILECs' support structure service rates than it typically uses to establish rates for wholesale services.[5] This different pricing methodology was applied because ILECs make space on their support structures available to third parties on a different basis than they provide other wholesale services. That is, the ILECs' tariffs provide that the ILECs have a right of priority access to use their support structures, with the result that they are required to provide space to a third party only if the structure has spare capacity.[6]

11. As a result, third-party demand for ILEC support structures does not result in, or advance the timing of, construction of the structures themselves. In contrast, third-party demand for other wholesale services typically causes the ILEC to construct or to advance construction of facilities used to provide these services.

12. The 95-13 pricing methodology treats ILEC costs for the structures themselves as fixed costs and assesses them on an embedded cost basis – that is, using historical accounting costs from its books (embedded costs). The amount of contribution third parties make to the ILECs' fixed structure costs is based on third-party use of the ILECs' structures.[7] Phase II costs for support structure services include costs associated with administration and lost productivity.[8]

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4 Phase II costs are costs that are determined on a causal, prospective, and economic basis using a Commission-approved costing manual.

5 When the Commission establishes a new rate or reviews existing rates for a wholesale service, it may require ILECs to submit a cost study in support of proposed rates. This study typically estimates the service's costs based on Phase II costs. The Commission then typically adds an appropriate percentage markup to the service's Phase II costs, with the result that the service's rate equals its Phase II costs plus the amount of markup. The markup contributes to the ILEC's recovery of fixed common expenses (such as corporate overhead expenses) and embedded costs that are not included in Phase II costs.

6 Spare capacity, as defined in the ILECs' tariffs, is considered to be total structure capacity less the sum of (a) all capacity the ILEC requires to meet both its current and anticipated future needs, and (b) all structure capacity currently used by third parties. The bases on which ILECs provide access to their support structures are set out in their support structure tariffs and are not under review in this proceeding.

7 The reasonable amount of contribution to fixed structure costs is 100 percent of the embedded costs attributable to third parties.

8 Administrative costs reflect, for example, billing activities. Productivity loss costs reflect, for example, additional time and money the ILEC may incur to maintain its facilities on its poles when third-party facilities have also been installed.

Positions of parties

13. Bell Canada et al. and TCC submitted that support structure rates determined using the 95-13 pricing methodology would violate the Policy Direction for various reasons, notably because such rates

    - would not recover costs because costs for the structures themselves would not be determined using replacement (cost new) costs,
    - would be below market levels,
    - would subsidize cable carriers and interfere unduly with competitive market forces,
    - would not be competitively neutral, and
    - would not represent efficient regulation.

14. Bell Canada et al. and TCC noted the Commission's statement in Telecom Decision 95-13 that it "considers competitive equity a valid factor to consider in determining rates." They also noted the Commission's characterization of competition in that decision as limited in extent. These ILECs submitted that competition is no longer limited, and that cable carriers are now the ILECs' leading competitor and, as such, should pay their fair share of support structure costs.

15. TCC also submitted that using embedded costs for the capital costs of the structures themselves to develop support structure rates is not consistent with the Commission's typical costing practices. Bell Canada et al. also submitted that Telecom Decision 95-13 did not establish a specific costing methodology for determining support structure rates.

16. Parties disagreed with Bell Canada et al.'s and TCC's views, for the following reasons, among others:

    - rates established using the 95-13 pricing methodology would not understate costs and would not be artificially low or anti-competitive because third-party use of ILEC structures does not cause structure costs; and
    - the reasons why third parties are not encouraged to construct their own support structure facilities, and would have difficulty doing so, are not related to rates.

17. Parties also disagreed with Bell Canada et al.'s and TCC's submissions regarding competitive equity as a rate-setting factor for various reasons, including that ILECs retain the right to priority access to their structures.

Commission's analysis and determinations

18. Regarding Bell Canada et al.'s and TCC's submissions that "cost new" should be used to assess the structure costs, the Commission continues to consider that, given the ILECs' right of priority access to these structures, rates established using the 95-13 pricing methodology recover the appropriate costs. Regarding these ILECs' submissions that current rates are below market level, the Commission notes its finding in Telecom Order 2009-731 that support structures are not provided on a competitive basis. In Telecom Decision 2008-17, the Commission also rejected

Bell Canada et al.'s proposal that the pricing approach for ILEC support structure rates should take into account rates charged by other support structure providers, such as electrical utilities.[9]

19. With respect to the submissions of Bell Canada et al. and TCC regarding competitive equity as a valid factor for rate-setting purposes and the limited extent of competition at the time of Telecom Decision 95-13, the Commission considers that the relevant references in that decision must be read in the context of the full paragraph in which they appear:

> The Commission considers competitive equity a valid factor to consider in the determination of appropriate rates. However, in light of the limited extent of competition at this time, the Commission is of the view that the sharing of support structure costs, as proposed by Stentor[10] in this proceeding, is not justified, *particularly given that the telephone companies will have priority access to support structures in order to meet current and anticipated future service requirements.* (emphasis added)

20. When Telecom Decision 95-13 referred to the limited amount of competition as a reason for rejecting Stentor's cost-sharing proposal, it also made particular reference to the ILECs' right of priority access to support structures as a reason for rejecting the proposal. While retail competition is no longer limited, the Commission notes that ILECs continue to have the right of priority access to their support structures.

21. The Commission considers that, while the level of retail competition is not a separate factor affecting rates, rates established based on support structure service costs and a percent-utilization factor will, at least in part, reflect the level of competition. The Commission notes its determination in Part II of this decision regarding the percent-utilization factor for poles, which is greater than that used to determine pole rates in Telecom Decision 95-13. In the Commission's view, it is reasonable to expect that this greater percent-utilization reflects increased competition in retail markets.[11]

22. Further, regarding Bell Canada et al.'s and TCC's submissions that the cable carriers' competitive position should be taken into account for rating purposes, the Commission notes that support structure rates, and wholesale service rates generally, are not established with specific reference to retail market share or a third party's ability to pay.

23. In light of the above, including the rationale for the 95-13 pricing methodology, the Commission finds that the 95-13 pricing methodology as applied in this decision to determine revised support structure rates would not result in below-cost rates, subsidize

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9 Electrical utility rates are not regulated under the *Telecommunications Act*.

10 Stentor was an ILEC association that existed from 1992 to 1999. It included Stentor Resource Centre Inc., which represented Bell Canada and some of the current ILECs' predecessors in the proceeding that led to Telecom Decision 95-13.

11 Percent-utilization factors for strand and conduit were not changed for the reasons set out in Part II of this decision.

third parties, interfere with competitive market forces, subject ILECs to a competitive disadvantage, or discourage investment in support structures. The Commission also finds that the 95-13 pricing methodology represents efficient regulation. The Commission reiterates its finding in Telecom Decision 2008-17 that the use of this methodology to determine support structure rates is consistent with the Policy Direction.

II. Are the ILECs' proposed costs reasonable?[12]

24. In this proceeding, the ILECs filed proposed costs using the template provided by the Commission.[13] The Commission has reviewed all cost elements in each ILEC's cost estimates and has adjusted many of them. Appendix 3 sets out for each ILEC, by structure type, costs assessed by the Commission, reflecting all adjustments.

25. Costing issues are addressed below in three groups: i) costing issues common to all the ILECs, ii) major ILEC-specific costing issues, and iii) minor ILEC-specific costing issues.

26. Adjustments discussed in i) and ii) account for approximately 90 percent of the effect of all Commission adjustments on each ILEC's proposed costs.

i) Costing issues common to all the ILECs

27. The portion of the ILECs' embedded costs for poles assigned to third parties was determined in Telecom Decision 95-13 based on three considerations. These are a) the percent-communication factor, b) the percent-utilization factor, and c) the fairness factor. For strands and conduits, the portion of the ILECs' embedded costs assigned to third parties was determined based only on the percent-utilization factor.

28. This section addresses costing issues related to these three factors, as well as two other common costing issues: service poles and new cost inputs.

a) Percent-communication factor

29. The percent-communication factor refers to the approach used to determine what portion of a pole's cost is attributable to communications. For wholly owned poles,[14] the percent-communication factor is 100 percent. For joint-use poles,[15] the percent-communication factor used in Telecom Decision 95-13 was the

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[12] Appendix 2 to this decision sets out, on a step-by-step basis, the Commission's approach to the assessment of embedded and Phase II costs in Telecom Decision 95-13.

[13] The Commission provided the template in Telecom Order 2009-731. Each ILEC filed its proposed costs on 8 February 2010. Bell Aliant and Bell Canada filed revised proposed costs on 17 March 2010. MTS Allstream filed revised proposed costs on 20 July 2010. TCC filed revised proposed strand costs for Alberta and British Columbia on 23 March 2010, and revised proposed pole and strand costs for Quebec on 28 May 2010.

[14] Wholly owned poles are poles that are owned by the ILEC and for which there is no sharing agreement with hydro companies. Each ILEC has wholly owned poles.

[15] Joint-use poles are poles that are owned either by the ILEC or the hydro company, and for which there is a sharing agreement between the ILEC and the hydro company. Bell Aliant, Bell Canada, Télébec, and TCC in Quebec have joint-use poles.

percentage of physical communications space on a pole relative to total usable space for both communications and hydro. The Commission notes that rates approved in Telecom Decision 95-13 were established using an average percent-communication factor of 51 percent, reflecting the weighted average of Bell Canada's wholly owned and joint-use poles.

30. Bell Canada et al. and TCC proposed to modify the approach used in Telecom Decision 95-13 to calculate the percent-communication factor for joint-use poles. They proposed to use the percentage of the joint-use poles owned by an ILEC relative to the total number of joint-use poles owned by both the ILEC and the hydro company. They submitted that this would reflect the ILEC's real cost based on its joint-use agreement with the hydro company.

31. Cable carriers submitted that costs for support structures should be assessed in the same manner as they were in Telecom Decision 95-13. They also submitted that the ILECs' cost estimates are based on radical departures from the 95-13 methodology.

32. Regarding the cable carriers' submissions, the Commission notes that, when reviewing current support structure service rates to determine whether they remain just and reasonable, it assesses the ILECs' current costs to provide this service. The Commission considers, however, that the use of a different approach to estimate the ILECs' structure costs, on an embedded basis, does not constitute a change in the 95-13 pricing methodology.

33. The Commission notes that in joint-use agreements between ILECs and hydro companies, the ILEC owns a percentage of the total number of joint-use poles and has access to the hydro company's joint-use poles at no cost to the ILEC. The Commission 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.

34. Accordingly, the Commission considers it appropriate to determine the percent-communication factor for joint-use poles by using the percentage of the joint-use poles owned by an ILEC relative to the total number of joint-use poles owned by both the ILEC and the hydro company.

b) Percent-utilization factor

35. The percent-utilization factor refers to the approach used to determine what portion of a structure's embedded cost is attributable to third parties.

36. For poles, all ILECs except MTS Allstream proposed to determine the percent-utilization factor by assigning an equal share of the embedded cost per pole to each party that attaches to the pole,[16] including the ILEC itself, regardless of the number of cables each party has. MTS Allstream proposed an approach that would use forecast usage rather than current usage.

37. In the Commission's view, however, an approach that determines ILEC-specific percent-utilization factors for poles based on the average number of third-party cables relative to the average total number of cables attached to a pole continues to provide a more accurate reflection of ILEC and third-party consumption of pole space than the ILECs' proposed alternatives.[17]

38. For strands and conduits, each ILEC proposed a different approach for determining the percent-utilization factors.

39. For strands, no information was provided that would allow the Commission to determine ILEC-specific percent-utilization factors based on relative use. In view of this, the Commission considers that for costing purposes, consistent with Telecom Decision 95-13, third parties have one cable and ILECs have two cables on an ILEC strand.

40. For conduits, Telecom Decision 95-13 rates reflect embedded costs determined using a percent-utilization factor of 25 percent. ILECs were considered to have twice as many cables in ILEC conduits as third parties did, which would have resulted in a percent-utilization factor of 33 percent. However, the percent-utilization factor was adjusted to 25 percent to take into account that ILECs' cables, comprised mostly of copper cables, were larger than third-party cables.

41. In this proceeding, TCC was the only ILEC to provide information on the relative use of conduits by an ILEC and third parties. TCC's sample information showed that third parties own 30 percent of cables in conduits. The Commission considers this sample information does not differ materially from the 33 percent-utilization factor discussed above. However, unlike in Telecom Decision 95-13, the Commission considers that the percent-utilization factor for conduits should not be adjusted for differences between the size of ILEC and third-party cables given the increased use of fibre cables since that time.

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[16] The support structure tariff states that there can only be one pole rate charged to a third party per pole, regardless of the number of attachments the third party has on the pole.

[17] As part of its determination of the total embedded cost attributable to third parties, in this decision – as in Telecom Decision 95-13 – the Commission determined the number of poles to which third parties attach to be the number of pole-attachment billing units, divided by the average number of third parties per pole. If the average number of third parties attached to a pole is greater than one, the number of pole-attachment billing units will be greater than the number of poles to which third parties attach.

42. Accordingly, the Commission considers it appropriate to use the percent-utilization factors identified in Appendix 3 for each ILEC and structure type.

c) Fairness factor

43. The fairness factor was employed in Telecom Decision 95-13 to recognize differences between the costing of joint-use and jointly owned poles[18] in Bell Canada's and BC TEL's[19] territories, respectively, given that a single pole rate was approved in that decision for all ILECs across the country.

44. In this proceeding, Bell Canada et al. proposed to exclude the fairness factor on the basis that its use would effectively double-count the effect of the ILEC-hydro company split in the ownership of joint-use poles. However, the cable carriers submitted that the fairness factor should be used because ILECs do not pay an additional amount for access to hydro-owned poles.

45. The Commission notes that in this proceeding it is considering revised rates that would be ILEC-specific, and not uniform nationally as was the case in Telecom Decision 95-13.

46. The Commission further notes its finding above that assessing the percent-communication factor as the percentage of the joint-use poles owned by an ILEC relative to the total number of joint-use poles owned by both the ILEC and the hydro company appropriately recognizes an ILEC's reduced costs for access to joint-use poles.

47. Accordingly, the Commission considers that the fairness factor is no longer relevant and, therefore, should not be used to assess ILEC-specific costs and establish ILEC-specific rates.

d) Service poles

48. The Commission uses the term "service poles" in this decision to refer to poles where the only third-party attachment is a drop wire to the subscriber's premises. The Commission notes that the ILECs' current support structure tariffs effectively provide that an ILEC's service pole rate is zero.[20]

49. All ILECs expressed the view that they should be allowed to recover service pole costs. Bell Aliant, Bell Canada, and TCC included service pole costs in their cost estimates for poles. Bell Canada et al. submitted that service pole costs are real and that service poles benefit the third parties that use them. Cable carriers submitted that the application of the 95-13 pricing methodology to poles does not provide for specific compensation for service pole costs.

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[18] Jointly owned poles are poles that are owned jointly by the ILEC and the hydro company, and for which the ILEC can charge pole attachment rental rates to third parties.

[19] Now TCC's territory in British Columbia.

[20] An ILEC cannot charge a pole rate to a third party if the third-party's only attachment to the pole is a subscriber drop wire.

50. Consistent with the ILECs' tariffs, the Commission considers that pole rates should not recover service pole costs. However, the Commission notes that the ILECs incur service pole costs and that third parties use ILEC service poles. The Commission considers that the current effective service pole rate does not adequately compensate ILECs for third-party use of service poles and should be revised, using the 95-13 pricing methodology, to permit recovery of service pole costs.

51. Accordingly, in Part V below, the Commission establishes a follow-up proceeding to determine a revised service pole rate and seek parties' comments on its preliminary view that each ILEC's service pole rate should be the same as its revised pole rate.

e) New cost inputs

52. The ILECs proposed to include cost items that were not included in the costs used to determine support structure rates in Telecom Decision 95-13.

53. The cable carriers submitted that no additional costs should be included unless the costs can be justified as reasonable and consistent with the 95-13 methodology.

54. The Commission has reviewed all proposed new cost inclusions and considers that costs associated with pine beetle tree clearing, warehousing and distribution, joint-use management, and rights of way are directly related to the provision of support structure service. Further, the Commission considers that the inclusion of these additional embedded cost inputs is consistent with the 95-13 pricing methodology. Accordingly, the Commission considers it appropriate to include these costs.[21]

55. The Commission considers that TCC's proposed corporate overhead costs are not directly related to support structures. Accordingly, the Commission does not consider it appropriate to include these costs.

56. The Commission is not persuaded that TCC's proposed audit costs would be incurred in the foreseeable future and considers that the support structure tariff provides TCC with an opportunity to address the recovery of non-recurring audit costs. Accordingly, the Commission does not consider it appropriate to include TCC's proposed audit costs.

ii) Major ILEC-specific costing issues

57. The following table briefly describes the Commission's major adjustments to each ILEC's proposed costs and provides the rationale for each adjustment. As noted above, the Commission's determinations on these issues and the issues common to ILECs described above account for approximately 90 percent of the effect of all adjustments to each ILEC's proposed costs.

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[21] For pine beetle tree clearing, an adjustment for TCC is reflected in the table following paragraph 57. For warehousing and distribution, the Commission made adjustments for Bell Aliant, Bell Canada, and Télébec. For joint-use management, the Commission made adjustments for Télébec and TCC. For rights-of-way, the Commission made adjustments for TCC.

ILEC	Proposal	Commission adjustment	Rationale for adjustment
Bell companies	For each of poles and strands, exclude fully depreciated structures from the denominator when calculating Net Book Value (NBV) per unit.	Included fully depreciated structures when calculating NBV per unit.	Support structure rates apply to all assets in service, whether they have depreciated or not.
Bell companies	Calculate depreciation expense per unit based on cost new amortized over Phase II life estimate.	Used depreciation expense on the books averaged over in-service assets.	Depreciation should reflect historical embedded costs.
Bell Aliant	Use Bell Canada's removal cost for poles and strands as proxies for Bell Aliant.	Used the average of the Commission-adjusted removal costs of all other ILECs ($3.75 per pole and $0.47 per strand span of 36.6 metres).	No evidence to suggest using Bell Canada costs alone would be the appropriate base. It is better to develop a proxy using a larger base.
Bell Canada	Calculate weighted average percent-communication factor based on number of Bell Canada's joint-use and wholly owned poles.	Included an additional 800,000 joint-use poles owned by Hydro Quebec in the calculation of the weighted average percent-communication factor.	Joint-use agreement with Hydro Quebec allows Bell Canada to charge for pole attachments on Hydro Quebec poles.
Bell Canada	Determine number of strand spans using ratio of new strand metres to new aerial cable metres installed between 2001 and 2008.	Determined number of strand spans based on the number of poles (excluding service poles) to which Bell Canada has access, assuming one strand per pole.	Bell Canada's approach can lead to inaccuracies in cases where new cables were installed on existing strands.

ILEC	Proposal	Commission adjustment	Rationale for adjustment
Bell Canada	Use Phase II cost factor to estimate removal cost for poles.	Used the average number of poles removed over last five years (5,844) multiplied by a removal cost per pole of $400, averaged over total number of Bell Canada poles, to estimate removal cost.	Embedded costs should reflect, to the extent possible, explicit historical costs rather than costs estimated from corporate average factors.
MTS Allstream	For each of poles and conduits, calculate depreciation expense per unit based on original cost amortized over Phase II life estimate.	Used depreciation expense on the books averaged over in-service assets.	Phase II life estimate does not reflect historical life implicit in the depreciation expense on the books.
MTS Allstream	Use Phase II factor to estimate maintenance cost.	Used actual maintenance costs averaged over in-service assets.	Embedded costs should reflect, to the extent possible, explicit historical costs rather than costs estimated from corporate average factors.
Télébec	Estimated original cost for strands using the average cost new for years 1993 to 2008, instead of using original cost on the books.	Calculated original cost for strands using 11.8% of original cost on the books for aerial cable (which includes strand cost). The11.8% figure is the average of the percentages used by the other ILECs.	Approach is consistent with other ILECs' approaches. Many strands pre-date 1993.

ILEC	Proposal	Commission adjustment	Rationale for adjustment
Télébec	Reduce the number of conduit spans by 12.5% to account for emergency conduit.	Did not reduce the number of conduit spans to account for emergency conduit.	Embedded cost per conduit span should reflect total costs on the books averaged over all assets in service.
Télébec	Calculate debt interest and return on equity based on specific formulae provided by Télébec.	Recalculated debt interest and return on equity to correct an error.	Error in application of the formulae.
Télébec	Increase NBV to reflect regulatory accounting practices (RAP) instead of generally accepted accounting principles (GAAP).	Calculated NBV based on GAAP.	Télébec's accounting practices have been based on GAAP since 2002. Year 2008 embedded costs should reflect accounting practices for 2008.
Télébec	Calculate Phase II prospective annualized administration costs based on a demand forecast from 2009 to 2013.	Adjusted Phase II prospective annualized costs to reflect 2008 level of demand.	Télébec's Phase II prospective annualized costs, which are associated with higher demand levels than those of 2008, are averaged over 2008 billing units, thereby overestimating the unit costs for 2008.
TCC	Use 792,000 strand spans for Alberta and British Columbia, and 175,300 strand spans for Quebec.	Used the revised strand span estimate of 838,000 for Alberta and British Columbia, and 340,700 for Quebec.	TCC provided revised estimates for number of strand spans but did not revise its cost study.

ILEC	Proposal	Commission adjustment	Rationale for adjustment
TCC	Apply activity-based costing (ABC) administration unit costs only to those structures to which third parties attach.	Recalculated administration costs according to TCC's stated approach.	The record does not support that TCC's administration costs were derived by applying ABC unit costs only to those structures to which third parties attach.
TCC	Apply revenue charge rate to NBV instead of revenue.	Applied revenue charge rate to revenue.	TCC did not apply the revenue charge rate to revenue.
TCC (Alberta/ British Columbia)	Assign vegetation management and pine beetle tree-clearing costs to poles.	Assigned 20% of vegetation management and pine beetle tree clearing costs to poles and 80% to aerial cables. Then attributed to strands the costs assigned to aerial cables based on TCC's 14.1% ratio.[22]	Vegetation management and pine beetle tree clearing is done around poles and cables/strands. Vegetation and dead trees, if not cleared, would affect poles to a much lesser extent than they would cables/strands.
TCC (Quebec)	Use TCC's Alberta and British Columbia maintenance costs for poles and conduits as proxies for TCC Quebec.	Used the average of the Commission-adjusted maintenance costs of all other ILECs ($3.09 per pole and $2.19 per conduit).	No evidence to suggest TCC Alberta and British Columbia costs alone would be appropriate base. It is better to develop a proxy using a larger base.
TCC (Quebec)	For strands, calculate debt interest and return on equity based on specific formulae provided by TCC.	Recalculated debt interest and return on equity to correct an error.	Error in application of the formulae.

[22] The Commission calculated the 14.1% ratio using ratios proposed by TCC for aerial copper cable and aerial fibre cable, weighted using the company's proposed book values.

iii) Minor ILEC-specific adjustments

ILEC	Cost Item	Commission Adjustment
Bell Aliant	Original cost	Included fully depreciated units (poles and strands)
	Maintenance	Reflected adjusted NBV (poles and strands)
	Loss in productivity	Reflected 2008 level of demand (poles)
	Administration	Reflected 2008 level of demand (poles and conduits)
	Depreciation	Excluded double-counting of productivity loss (poles and strands)
Bell Canada	Original cost	Included fully depreciated units (poles and strands)
	Maintenance	Reflected adjusted NBV (poles and strands)
	Loss in productivity	Reflected 2008 level of demand (poles and strands)
	Quebec public utility tax	Used 2.7% tax rate for strands and 2.0% for conduits
	Removal	Reflected adjusted NBV (strands)
	Administration	Reflected 2008 level of demand (conduits)
	Depreciation	Excluded double-counting of productivity loss (poles and strands)
MTS Allstream	Maintenance	Excluded double-counting of productivity loss (strands)
Télébec	Original cost	Included fully depreciated units (poles)
	Maintenance	Reflected adjusted original cost (poles and strands)
	Loss in productivity	Reflected 2008 level of demand (poles and strands)
	Number of billing units	Reflected revised numbers provided by Télébec (poles, strands, and conduits)
	Removal	Applied Télébec's proposed factors of 24% and 11% to adjusted depreciation for poles and depreciation for strands, respectively
	Joint-use management	Reflected zero cost for wholly owned poles (poles)
	Revenue charge	Corrected calculation error (poles, strands, and conduits)
	Depreciation	Excluded double-counting of productivity loss (strands)

ILEC	Cost Item	Commission Adjustment
TCC (Alberta/ British Columbia)	Pole rental	Reflected adjusted percent-utilization factor and excluded double-counting of engineering and sales costs
	Removal	Reflected 108,663 BC wholly owned poles (strands)
	Depreciation	Excluded double counting of productivity loss (poles and strands)
TCC (Quebec)	Maintenance	Reflected adjusted pole maintenance cost (strands)
	Removal	Used average of other ILECs' removal costs for equivalent 47.73-metre length of span (strands)
	Depreciation	Excluded double-counting of productivity loss (poles and strands)

III. What support structure rates would be just and reasonable?

58. In light of its determinations above, the Commission finds that the support structure rates for each ILEC in the table below are just and reasonable. Accordingly the Commission **approves on a final basis** the monthly rates set out below.

ILEC	Pole	Strand (per 30 metres)	Conduit (per 30 metres)
Bell Aliant (Atlantic provinces)	$1.54	$0.48	$1.64
Bell Aliant (Ontario and Quebec)	$1.04	$0.20	$1.76
Bell Canada	$1.04	$0.20	$1.76
MTS Allstream	$1.37	$0.27	$3.15
Télébec	$1.34	$0.24	$4.80
TCC (Alberta/British Columbia)	$1.44	$0.43	$2.25
TCC (Quebec)	$0.80	$0.13	$2.14

59. The Commission directs each ILEC to issue, within 10 days of the date of this decision, revised tariff pages that reflect (a) for poles and conduits, the rates above, and (b) for strands, the 30-metre strand rate above, adjusted as required to reflect tariffed strand spans of different lengths.

IV. Should revised rates be applied on a retroactive basis?

60. The Commission made current support structure rates interim effective 21 July 2009, the date of the notice.

61. Bell Canada et al. submitted that revised rates should be approved on a retroactive basis, as of 21 July 2009, because current rates may not recover costs. Other parties commenting, including the MCCCF and Le Regroupement, opposed rate retroactivity. These parties submitted that applying the ILECs' proposed rate increases with retroactive effect would worsen the significant negative impact of the resulting rate shock. They further submitted that the length of the proceeding had increased the uncertainty associated with interim rates.

62. The Commission notes that the rates approved in this decision reflect current costs and replace rates that were approved in 1995. In the circumstances of this case, the Commission considers it appropriate to approve revised rates with retroactive effect as of 21 July 2009. Regarding the payment of amounts due, whether directly or indirectly, by publicly funded entities as a result of this determination, ILECs are to take into account the reasonableness of payment schedules and provide a period of up to two years for payment of retroactive charges.

V. What matters should be considered in a follow-up proceeding?

63. The Commission considers that two matters arose in this proceeding that merit consideration in a follow-up proceeding. One matter is the level at which revised service pole rates should be approved, which is discussed in Part II above. The other matter is the possible inclusion in support structure rates of an explicit markup on Phase II costs. This other matter was not within the scope of the current proceeding.

64. Interested parties registered in the current proceeding are made parties to the follow-up proceeding.

65. Other persons interested in participating in the follow-up proceeding and receiving copies of all submissions must notify the Commission of their intention to do so by filling out the online form or by writing to the Secretary General (by mail: CRTC, Ottawa, Ontario, K1A 0N2; by fax: 819-994-0218) by **15 December 2010** (the registration date). Parties are to provide their email addresses, where available. If parties do not have access to the Internet, they are to indicate when they notify the Commission whether they wish to receive disk versions of hard-copy filings.

66. As soon as possible after the registration date, the Commission will post on its website a complete list of interested parties, their mailing addresses, and, if available, their email addresses, identifying those parties who wish to receive disk versions.

67. Parties may file written comments with the Commission on the matters below, serving copies on all other parties, by **14 January 2011**:

    a) the Commission's preliminary view that each ILEC's revised service pole rate should be the same as the pole rate approved in this decision for that ILEC; and

    b) whether ILEC support structure service rates should include an explicit markup of 15 percent on Phase II costs.

68. All parties may file written reply comments with the Commission, serving copies on all other parties, by **24 January 2011**.

69. Any person who has not registered but who wishes merely to file written comments in this proceeding, without receiving copies of the various submissions, may do so by writing to the Commission by **14 January 2011** at the address or fax number noted above, or by filling out the comments form.

70. Submissions longer than five pages should include a summary. Where a document is to be filed or served by a specific date, the document must be actually received, not merely sent, by that date. Parties may file their submissions electronically or on paper.

71. The record of the current proceeding is made part of the record of the follow-up proceeding.

72. The Commission expects to publish a decision on the issues raised in this follow-up proceeding within 120 days of the close of record.

73. The Commission will not formally acknowledge comments. It will, however, fully consider all comments, which will form part of the public record of the proceeding.

74. Electronic submissions should be in HTML format. Alternatively, Microsoft Word may be used for text and Microsoft Excel for spreadsheets.

75. Each paragraph of all submissions should be numbered. In addition, the line ***End of document*** should follow the last paragraph. This will help the Commission verify that the document has not been damaged during electronic transmission.

76. The Commission encourages parties to monitor the record of this proceeding and/or the Commission's website for additional information that they may find useful when preparing their submissions.

Secretary General

Related documents

- *Review of the large incumbent local exchange carriers' support structure service rates – Requests from cable carriers*, Telecom Order CRTC 2009-731, 27 November 2009
- *Call for comments – Review of the large incumbent local exchange carriers' support structure service rates*, Telecom Notice of Consultation CRTC 2009-432, 21 July 2009, as amended by Telecom Notice of Consultation CRTC 2009-432-1, 20 August 2009
- *Revised regulatory framework for wholesale services and definition of essential service*, Telecom Decision CRTC 2008-17, 3 March 2008
- *Access to telephone company support structures*, Telecom Decision CRTC 95-13, 22 June 1995

Description of support structure service

Poles support aerial facilities such as strands – which, in turn, are used to carry cables. Poles have varying heights. Taller poles are typically required to support both ILEC and hydro company facilities. The ILEC charges the tariffed pole rate when a third party attaches any of the following: its own strand to the pole, its own cable to the ILEC strand attached to the pole, or any other facility – except a subscriber drop wire – in the pole's communications space.[23]

Strands are steel wires that support cables between two poles. Typically, no more than three strands can be attached to a pole due to space considerations. The ILEC charges the tariffed strand rate when a third party attaches its cable to the ILEC's strand. However, the ILEC does not charge a strand rate when a third party attaches a cable to the third party's own strand.

In contrast to poles and strands, **conduits** are contained in structures installed beneath ground level. An ILEC's conduit structure typically contains more than one conduit. For example, Bell Canada's and Bell Aliant's average number of conduits per conduit structure is about eight and five, respectively. The ILEC charges the tariffed conduit rate for each third-party cable installed in the ILEC's conduit structure.

[23] Some poles have both a "communication space" and a "hydro space." In each case, pole space is assigned exclusively for the attachment of communications facilities and hydro company facilities.

The following steps describe the Commission's approach to the assessment of embedded and Phase II costs in Telecom Decision 95-13.

Step 1: Determine the average embedded cost per unit for those units to which third parties attach

Step 2: Determine how much of the embedded cost per unit is attributable to communication space (See Note following Step 7)

- For poles, the embedded cost per pole from Step 1 was multiplied by the weighted average percent-communication factor and by the fairness factor.

- For joint-use poles, the percent-communication factor was calculated as the percentage of usable space on the pole that was assigned to communications versus hydro requirements. For wholly owned poles, the percent-communication factor was 100 percent.

- In Telecom Decision 95-13, the Commission used Bell Canada's costs to determine the rates for all ILECs. However, Bell Canada had only wholly owned and joint-use poles.

- The "fairness factor" was used to recognize differences between the costing of joint-use poles in Bell Canada's territory, where no consideration was given to the fact that Bell Canada had access to hydro joint-use poles at zero cost, and the costing of jointly owned poles in BC TEL's territory, where BC TEL's cost for jointly owned poles was averaged over all of the BC TEL and BC Hydro jointly owned poles. The fairness factor was calculated as the number of poles owned by Bell Canada divided by the number of poles to which Bell Canada had access.

- For strands and conduits, Step 2 was not applicable since these structures are used only for communications.

Step 3: Determine what proportion of the embedded cost per unit is attributable to third-party use

- The embedded cost per unit from Step 3 for poles, and from Step 1 for strands and conduits, was multiplied by the percent-utilization factor associated with units to which third parties attach. For each of poles, strands, and conduits, the percent-utilization factor was calculated based on the number of cables owned by third parties relative to the total number of cables owned by both the ILECs and third parties.

Step 4: Determine the total embedded costs attributable to third-party use

- The embedded cost per unit from Step 3 was multiplied by the number of units to which third parties attach.

Step 5: Determine the Phase II annual equivalent costs associated with administration and loss of productivity

Step 6: Determine the total annual costs to be recovered from third-party use

- The total annual costs recoverable from third parties were determined by adding the total embedded costs from Step 4 and the Phase II costs from Step 5.

Step 7: Determine the average annual cost to be recovered for each billing unit

- For each of poles, strands, and conduits, the total annual costs from Step 6 were divided by the number of billing units. The Commission set the rates equal to this average annual cost per billing unit.

Note: All seven steps were used to assess embedded costs and Phase II costs for the purpose of approving rates in Telecom Decision 95-13. These steps are also used in this decision to assess costs and establish revised rates. However, in Step 2, the Commission has adopted a different approach to calculate the percent-communication factor and has determined that the use of the fairness factor is no longer relevant. These matters are discussed in Part II, section i) of the decision.

Bell Aliant (Atlantic provinces)	**Poles**	**Strands 36.6 metres**	**Conduits 30 metres**
Embedded and net embedded costs per unit (year-end 2008)			
Total number of poles / strands / conduits	504,273	1,027,985	177,831
Embedded cost (book value or original cost)	$553.51	$130.46	$552.14
Net embedded cost (NBV)	$224.92	$42.20	$253.34
Annual embedded costs per unit (2008)			
Depreciation	$15.26	$5.34	$13.86
Maintenance	$1.75	$0.51	$3.47
Removal	$3.75	$0.47	$0.00
Capital taxes	$1.75	$0.33	$1.98
Revenue charge	$0.92	$0.22	$0.92
Debt interest	$9.19	$1.72	$10.35
Return on equity	$12.37	$2.32	$13.93
Income tax expense	$5.78	$1.09	$6.52
Other costs (warehousing and distribution)	$3.82	$0.90	$3.81
Other costs (joint-use management)	$0.27		
Total annual embedded cost per unit	$54.86	$12.89	$54.83
Percent-communication factor	54.90%		
Percent-utilization factor	48.78%	33.33%	33.33%
Embedded cost per unit attributable to third parties	$14.69	$4.30	$18.28
Number of structures to which third parties attach	202,633	265,764	11,478
Total embedded cost attributable to third parties	$2,976,795	$1,142,015	$209,789
Annualized Prospective Incremental Costs			
Loss in productivity costs	$517,911	$263,528	
Administration costs	$260,967	$463,853	$16,054
Total annualized prospective incremental costs	$778,878	$727,381	$16,054
Total costs			
Total annual costs	$3,755,674	$1,869,396	$225,842
Number of annual billing units	202,633	265,764	11,478
Annual cost per billing unit	**$18.53**	**$7.03**	**$19.68**
Monthly cost per 36.6m strand billing unit		**$0.59**	
Monthly cost per billing unit (30m for strands)	**$1.54**	**$0.48**	**$1.64**

Bell Canada and Bell Aliant (Ontario and Quebec)	**Poles**	**Strands 36.6 metres**	**Conduits 30 metres**
Embedded and net embedded costs per unit (year-end 2008)			
Total number of poles / strands / conduits	1,859,226	3,064,513	4,218,375
Embedded cost (book value or original cost)	$531.76	$76.58	$497.78
Net embedded cost (NBV)	$231.44	$19.77	$274.01
Annual embedded costs per unit (2008)			
Depreciation	$16.83	$1.59	$10.41
Maintenance	$2.03	$0.34	$2.40
Removal	$1.26	$0.22	$0.00
Capital taxes	$0.22	$0.02	$0.26
Other taxes	$8.97	$0.53	$5.48
Revenue charge	$0.50	$0.05	$0.45
Debt interest	$6.13	$0.52	$7.26
Return on equity	$15.38	$1.31	$18.21
Income tax expense	$6.95	$0.59	$8.22
Other costs (warehousing and distribution)	$3.67	$0.53	$3.43
Other costs (Joint-use management)	$0.85		
Total annual embedded cost per unit	$62.78	$5.71	$56.12
Percent-communication factor	60.49%		
Percent-utilization factor	50.00%	33.33%	33.33%
Embedded cost per unit attributable to third parties	$18.99	$1.90	$18.71
Number of structures to which third parties attach	572,458	988,281	282,957
Total embedded cost attributable to third parties	$10,869,796	$1,879,930	$5,293,587
Annualized prospective incremental costs (AEC)			
Loss in productivity costs	$767,109	$415,510	
Administration costs	$504,743	$625,681	$687,808
Total annualized prospective incremental costs	$1,271,852	$1,041,191	$687,808
Total costs			
Total annual costs	$12,141,648	$2,921,121	$5,981,395
Number of annual billing units	973,179	988,281	282,957
Annual cost per billing unit	**$12.48**	**$2.96**	**$21.14**
Monthly cost per 36.6m strand billing unit		**$0.25**	
Monthly cost per billing unit (30m for strands)	**$1.04**	**$0.20**	**$1.76**

MTS Allstream	**Poles**	**Strands 36 metres**	**Conduits 30 metres**
Embedded and net embedded costs per unit (year-end 2008)			
Total number of poles / strands / conduits	12,529	144,127	30,333
Embedded cost (book value or original cost)	$255.87	$41.49	$854.34
Net embedded cost (NBV)	$161.20	$25.31	$599.11
Annual embedded costs per unit (2008)			
Depreciation	$12.86	$2.31	$35.36
Maintenance	$2.09	$1.39	$1.27
Removal	$4.71	$0.51	$0.00
Salvage	-$0.13	-$0.12	$0.00
Capital taxes	$0.23	$0.04	$0.84
Revenue charge	$0.34	$0.06	$0.91
Debt interest	$3.84	$0.60	$14.26
Return on equity	$10.64	$1.67	$39.54
Income tax expense	$4.22	$0.66	$15.69
Other costs (warehousing and distribution)	$3.73	$0.32	$5.03
Total annual embedded cost per unit	$42.52	$7.44	$112.90
Percent-communication factor	83.99%		
Percent-utilization factor	45.85%	33.33%	33.33%
Embedded cost per unit attributable to third parties	$16.37	$2.48	$37.63
Number of structures to which third parties attach	4,603	106,432	31,771
Total embedded cost attributable to third parties	$75,369	$264,065	$1,195,598
Annualized prospective incremental costs (AEC)			
Loss in productivity costs		$131,935	
Administration costs	$538	$12,433	$3,919
Total annualized prospective incremental costs	$538	$144,368	$3,919
Total costs			
Total annual costs	$75,907	$408,433	$1,199,517
Number of annual billing units	4,603	106,432	31,771
Annual cost per billing unit	**$16.49**	**$3.84**	**$37.76**
Monthly cost per 36m strand billing unit		**$0.32**	
Monthly cost per billing unit (30m for strands)	**$1.37**	**$0.27**	**$3.15**

Télébec	**Poles**	**Strands 56.5 metres**	**Conduits 30 metres**
Embedded and net embedded costs per unit (year-end 2008)			
Total number of poles / strands / conduits	111,690	225,330	14,370
Embedded cost (book value or original cost)	$557.72	$88.29	$1,223.53
Net embedded cost (NBV)	$174.31	$16.25	$561.51
Annual embedded costs per unit (2008)			
Depreciation	$18.72	$3.26	$28.75
Maintenance	$2.45	$1.38	$0.17
Removal	$4.49	$0.36	$0.00
Capital taxes	$0.63	$0.06	$2.02
Other taxes	$7.34	$0.68	$23.64
Revenue charge	$0.48	$0.07	$1.01
Debt interest	$4.64	$0.43	$14.94
Return on equity	$10.32	$0.96	$33.23
Income tax expense	$4.61	$0.43	$14.86
Other costs (warehousing and distribution)	$2.68	$0.42	$5.87
Other costs (joint-use management)	$2.96		
Total annual embedded cost per unit	$59.31	$8.06	$124.49
Percent-communication factor	51.57%		
Percent-utilization factor	45.64%	33.33%	33.33%
Embedded cost per unit attributable to third parties	$13.96	$2.69	$41.50
Number of structures to which third parties attach	24,331	54,773	438
Total embedded cost attributable to third parties	$339,668	$147,081	$18,176
Annualized prospective incremental costs (AEC)			
Loss in productivity costs	$73,404	$52,069	
Administration costs	$158,308	$94,520	$7,052
Total annualized prospective incremental costs	$231,712	$146,589	$7,052
Total costs			
Total annual costs	$571,380	$293,671	$25,228
Number of annual billing units	35,601	54,773	438
Annual cost per billing unit	**$16.05**	**$5.36**	**$57.60**
Monthly cost per 56.5m strand billing unit		**$0.45**	
Monthly cost per billing unit (30m for strands)	**$1.34**	**$0.24**	**$4.80**

TCC (Alberta and British Columbia)	Poles	Strands 36.6 metres	Conduits 30 metres
Embedded and net embedded costs per unit (year-end 2008)			
Total number of poles / strands / conduits	826,663	838,000	1,412,000
Embedded cost (book value or original cost)	$452.06	$175.30	$723.63
Net embedded cost (NBV)	$203.35	$55.01	$397.16
Annual embedded costs per unit (2008)			
Depreciation	$13.39	$6.90	$18.59
Maintenance	$7.11	$1.24	$3.64
Removal	$4.84	$0.90	$0.00
Capital taxes	$0.02	$0.01	$0.04
Property taxes	$4.07	$1.10	$7.94
Revenue charge	$0.47	$0.15	$0.65
Debt interest	$8.01	$2.17	$15.64
Return on equity	$12.30	$3.33	$24.03
Income tax expense	$5.16	$1.40	$10.08
Other costs (pine beetle)	$1.35	$0.75	
Other costs (joint-use management)	$0.34	$0.10	
Other costs (rights of way)	$0.41		
Total annual embedded cost per unit	$57.47	$18.03	$80.62
Percent-utilization factor	40.96%	33.33%	33.33%
Embedded cost per strand attributable to third parties		$6.01	
36.6m to 30m strand conversion factor		81.97%	
Embedded cost per unit attributable to third parties	$23.54	$4.93	$26.87
Number of structures to which third parties attach	259,193	714,786	234,920
Total embedded cost attributable to third parties	$6,101,891	$3,522,119	$6,312,742
Embedded pole rental cost per unit[24]	$16.24		
Number of rented poles to which third parties attach	85,399		
Total pole rental costs	$1,386,987		
Annualized prospective incremental costs (AEC)			
Loss in productivity costs	$534,296	$121,669	
Administration costs	$55,135	$50,035	$14,095
Total annualized prospective incremental costs	$589,431	$171,704	$14,095
Total costs			
Total annual costs	$8,078,309	$3,693,823	$6,326,837
Number of annual billing units	468,645	714,786	234,920
Annual cost per billing unit	**$17.24**	**$5.17**	**$26.93**
Monthly cost per billing unit (30m for strands)	**$1.44**	**$0.43**	**$2.25**

[24] The Commission considers that pole rental costs are to be treated as embedded costs since they are not caused by the presence of third parties.

TCC (Quebec)	Poles	Strands 47.73 metres	Conduits 30 metres
Embedded and net embedded costs per unit (year-end 2008)			
Total number of poles / strands / conduits	144,680	340,675	27,306
Embedded cost (book value or original cost)	$508.71	$66.56	$939.34
Net embedded cost (NBV)	$157.59	$23.66	$416.04
Annual embedded costs per unit (2008)			
Depreciation	$20.71	$2.25	$13.68
Maintenance	$3.09	$0.75	$2.19
Removal	$3.46	$0.61	$0.00
Capital taxes	$0.02	$0.00	$0.04
Property taxes	$3.15	$0.47	$8.32
Revenue charge	$0.42	$0.06	$0.62
Debt interest	$6.21	$0.93	$16.38
Return on equity	$9.53	$1.43	$25.17
Income tax expense	$4.00	$0.60	$10.56
Other costs (joint-use management)	$0.35	$0.09	
Other costs (rights of way)	$0.37		
Total annual embedded cost per unit	$51.30	$7.19	$76.97
Percent-communication factor	45.40%		
Percent-utilization factor	39.51%	33.33%	33.33%
Embedded cost per unit attributable to third parties	$9.20	$2.40	$25.66
Number of structures to which third parties attach	72,270	197,448	3,138
Total embedded cost attributable to third parties	$664,970	$473,057	$80,511
Annualized prospective incremental costs (AEC)			
Loss in productivity costs	$93,511	$21,294	
Administration costs	$11,563	$13,821	$188
Total annualized prospective incremental costs	$105,074	$35,115	$188
Total costs			
Total annual costs	$770,045	$508,172	$80,700
Number of annual billing units	80,374	197,448	3,138
Annual cost per billing unit	**$9.58**	**$2.57**	**$25.72**
Monthly cost per 47.73m strand billing unit		**$0.21**	
Monthly cost per billing unit (30m for strands)	**$0.80**	**$0.13**	**$2.14**