Pole Attachment Regulation

Canada, U.S., U.K. and Other Jurisdictions

Prepared for:

Ontario Energy Board (OEB)

Prepared by:

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March 2014

About Nordicity

Nordicity (www.nordicity.com) is a leading consulting firm specializing in policy, strategy, and economic analysis for the public and private sector client in the media, creative, telecommunications, and information and communications technology sectors.

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Executive Summary

1. This report provides an overview of pole attachment regulation in Canada, the United States, the United Kingdom and other jurisdictions. For each jurisdiction, the report discusses the overarching regulatory framework for utility pole attachments, access and rate setting issues, as well as any evidence of forbearance. Table 1 summarizes key aspects of pole attachment regulation in Canada, the United States and the United Kingdom.

Table 1 Pole Attachment Regulation in Canada, United States and United Kingdom

	Canada	United States	United Kingdom
Regulatory framework	- Provincially regulated by utilities boards.	- Mix of federal, state, and local regulation. At the federal level, regulated by the FCC.	- Communications providers in the UK do not have regulated access to electricity poles and lampposts.
Access	- No evidence of major access issues.	- Non-discriminatory access mandated by the FCC. - Wireless attachment access to pole tops was frequently denied by utilities. In 2011, however, the FCC mandated that utilities allow pole-top access for wireless attachments.	- Communications providers have entered into commercial agreements with electric utilities and local councils in order to share poles, ducts or lamp posts.
Rates	- Some provinces – such as Ontario, Nova Scotia, and New Brunswick – actively regulate pole attachment rates. - A wide range of pole attachment (lease) rates varying from $8.00 to $45.20 per pole per year, with an average of $19.60 (inflation adjusted). - Rates for installation not specified in tariff. Notionally based on various standard components: engineering, consultation, shore power hook up, etc.	- Negotiated between parties. If negotiation fails, the FCC uses two formulas to calculate rate ceiling. - Rates charged by investor-owned utilities range from US$7 to US$15 per pole per year, although ILECs usually pay higher rates (around US$20 per pole per year). - Rates charged by municipally-owned utilities vary widely, and are usually within the US$5 to US$35 per-pole-per-year range.	- Rates for BT Openreach's poles and ducts are set by Ofcom on the basis of LRIC.
Evidence of	- Although the B.C. Utilities	- Federal regulation does not	- Pole attachment access and

Forbearance or Exemption from Regulation	Commission has jurisdiction over pole attachment rates, it has never exercised this right, letting instead market participants negotiate pole attachment rates between themselves.	apply to municipally-owned utilities (although munis are still subject to state and local regulation). - Federal regulation does not apply to states that opted to regulate pole attachment rates themselves.	rates are not regulated (with the exception of poles belonging to BT Openreach).

Canada

2. Utility pole attachments in Canada are regulated provincially by public utilities boards. In practice, however, not all utilities boards exercise their power. In British Columbia, for example, even though the Utilities Commission has the jurisdiction to regulate pole attachments, it has never exercised this right, letting instead market participants negotiate pole attachment rates between themselves.

3. Utility regulation in Canada has traditionally been applied to electrical infrastructure i.e. electrical poles. Toronto Hydro, however, owns both the lighting and electrical infrastructure and at least 30% of wireless attachments are found on light poles. In many Canadian cities, the lighting infrastructure is owned by the municipalities. In our research, we have not found evidence of wireless companies contesting municipal rental rates, initial installation rates or access conditions for mobile attachments.

4. Nordicity has found few cases of complaints to public utilities boards – whether by electric utilities or other parties – regarding pole attachments. Of the cases found, all involved the setting of pole attachment **rates**, with only few mentions to pole attachment **access**. No complaints were found regarding the cost of initial installation charges. The issue of wireless attachment rates, in particular, does not appear to have been raised elsewhere in Canada.

5. According to a survey conducted by Newfoundland Power, pole attachment (lease) rates charged by electric utilities in Canada ranged from $6.42 to $36.00 per pole per year in 2001, with an average of $15.63 per pole per year. Adjusting these figures by general inflation in the 2001-2013 period suggests a possible range of $8.00 to $45.20 per pole per year in recent years, with an average of $19.60 per pole per year.

United States

6. Utility pole attachments in the United States are regulated by a mix of federal, state, and local requirements. At the federal level, pole attachment access and rates are regulated by the Federal Communications Commission (FCC). At state and local levels, public utilities boards, as well as state and local legislatures, can play a role.

7. At the federal level, U.S. legislation mandates that *investor-owned utilities (IOUs)* allow non-discriminatory pole attachment **access** to cablecos and CLECs, although ILECs have

no statutory right of access to utility poles. Access requirements apply to both wireline and wireless attachments, but access can still be denied due to capacity, safety, reliability and operational concerns.

8. When IOUs and attachers cannot reach mutually beneficial, negotiated agreements, the FCC uses cost-based formulas to determine maximum pole attachment **rates**. Federal rate regulation requirements do not apply to municipal utilities or to states that choose to pre-empt federal regulation.

9. Federal pole attachment regulation does not apply to municipal utilities, which are regulated entirely at the state and local levels. In addition, states can choose to pre-empt federal regulation by regulating pole attachments themselves. Currently, 20 states and the District of Columbia have chosen to do so.

10. For cablecos, average pole attachment (lease) rate is around $7 per foot of vertical space occupied by attachment per year; for CLECs, rate was between $10 and $15 per foot per year, but after the FCC's 2011 Pole Attachment Order this rate is expected to go down to the cable level. Prior to the FCC's 2011 Pole Attachment Order, average pole attachment rate was around $20 per foot of vertical space occupied by attachment per year.

11. Rates charged by municipally-owned utilities (*MOUs*) and co-ops vary widely by state, with significant variation even within a state. Nordicity research has found examples of pole attachment rates charged by MOUs as low US$5 and as high as US$35 per pole per year, or even higher.

12. Nordicity did not find any forbearance petition by IOUs regarding pole attachment regulation in the United States. It is important to keep in mind, however, that IOUs have long tried to limit the scope of FCC regulation.

13. With respect to wireless attachments, in particular, even though the FCC asserted jurisdiction over wireless providers and wireless pole attachments in its 1998 Implementation Order, this order was challenged by IOUs. In 2002, however, the U.S. Supreme Court sided with the FCC, determining that the Commission indeed had jurisdiction over rates, terms, and conditions for wireless attachments by telecom providers. In addition, up until recently, IOUs still denied wireless providers access to pole tops, but this issue was dealt with explicitly by the FCC's 2011 Pole Attachment Order.

United Kingdom

14. Communications providers in the UK do not have regulated access to electric utility infrastructure (i.e. electricity poles) or municipal street infrastructure (i.e. lamp posts). However, the incumbent communications provider BT Openreach, wireless carriers such as O2 and telecommunications infrastructure companies such as Arqiva (and perhaps other communications providers) have entered into commercial agreements with utilities and local councils in order to share poles, ducts or lamp posts. Access to BT Openreach's poles and ducts are, however, regulated by Ofcom, and the price of this access is set on the basis of LRIC.

1. Canada

15. Utility pole attachments in Canada are regulated provincially by public utilities boards. Nordicity has found few cases of complaints to public utilities boards – whether by electric utilities or other parties – regarding pole attachments. Of the cases found, all involved the setting of pole attachment **rates**, with only few mentions to pole attachment **access**. The issue of wireless attachment rates, in particular, does not appear to have been raised elsewhere in Canada.

16. Utility regulation in Canada has traditionally been applied to electrical infrastructure i.e. electrical poles. Toronto Hydro, however, owns both the lighting and electrical infrastructure and at least 30% of wireless attachments are found on light poles.[1] In many Canadian cities, the lighting infrastructure is owned by the municipalities. In our research, we have not found evidence of wireless companies contesting municipal rental rates, initial installation rates or access conditions for mobile attachments.

17. Nordicity gathered relevant Canadian pole attachment data through primary and secondary research. This included a review of legal documents between utilities and utilities boards from various provinces. Additional information was requested through contacting public utilities boards directly, as well as various utilities and hydro companies in the provinces.[2]

18. Electric utilities were unable/unwilling to provide Nordicity with relevant information on pole attachment rates. However, Nordicity did talk to the utilities boards in British Columbia and New Brunswick, both of which were very knowledgeable about their respective pole attachment regimes.

1.1. Pole Access

19. While Nordicity found no evidence of any major disputes regarding access to utility poles in Canadian provinces, the subject did arise during the 2002 case before the Nova Scotia Utility and Review Board and NS Power. Although the main issue of the case was adjusting NS Power's pole attachment rates, pole access was also explicitly mentioned: "The issue of the ability of the cable companies to gain access to NSPI's *[Nova Scotia Power Inc.]* poles and the extent of control over these poles that is exercised by MTT / Aliant…" According to NS Power's Director of Regulatory Affairs and Rates, however, the

[1] Of the 200 wireless pole attachments that THESL had as of mid-February 2014, 63 were in THESI poles. From THESL's pre-filed evidence, we know that all of THESI's 23,000 poles are street lighting poles. Thus, at least 31.5% of wireless attachments are found on light poles. No inference can be made about the 137 wireless attachments on poles belonging directly to THESL, since THESL has both regular utility poles and street lighting poles.

[2] Hydro companies contacted include: Manitoba Hydro, ENMAX, Manitoba Hydro-Electric Board, Maritime Electric Company Limited, etc.

utility did "(…) whatever is required to accommodate the cable company on the pole (transcript, p.38)"[3]

20. Further to the Nova Scotia 2002 case, the Competition Bureau (one of the formal 'intervenors') commented on 'fairness of access'. The post-hearing submission is as follows:

> It appears that the joint pole agreement between NSP I and Aliant/MTT will not continue (NSPl Panel - Huskilson, Tr. p.119, Q304-305). Whether the joint use pole agreement does or does not continue, it is important that no party be permitted to deny others access to the communications space on the pole. Moreover, the Bureau believes that any advantages such as those received by Aliant//MTT under the present arrangement between NSPI and Aliant/MTT should be reflected in the rate paid by the user to whom the advantages accrue. In the present case, as discussed above, it is appropriate for Aliant/MTT to be allocated a larger share of the fixed common costs than is allocated to other users the communications space. (Competition Bureau - Post-Hearing Submission, p.9)[4]

21. Another intervenor in the Nova Scotia case was Seaside. Seaside submitted that their company was prevented access to NSPI poles because MTT had control of 'the communications space'. Seaside was thus forced to attach to the more expensive 'field' side of the poles. Seaside suggested that when the Board determined pole attachment rates, they should keep this situation in mind. Specifically, the expert witness noted:

> If the Board wanted to eliminate or even up the score, as it were, in terms of preferential treatment (…), it could presumably do so by arriving at what in its judgement [sic] is an appropriate rate reflecting those advantages. (Transcript, p.276-277)[5]

22. The finding in the NS 2002 case regarding pole access was that the Board "is not persuaded that the Intervenors are unduly impacted by the present NSPI-MTT joint-use pole agreement."[6]

1.2. Pole Attachment Rates[7]

[3] Nova Scotia Utility and Review Board (2002) "In the matter of the Public Utilities Act and in the matter of an application by Nova Scotia Power Incorporated for Approval of an increase in its Pole Attachment Charge," available at http://www.regie-energie.qc.ca/audiences/3653-07/Audi3653/C-6-15_TCE_NovaScotiaPower_3653_12mars08.pdf

[4] Ibid

[5] Ibid

[6] Ibid

[7] Our analysis focused on annual rates that would be considered comparable to the $22.35 rate charged by Toronto Hydro as part of a lease for wireless attachments. Where initial installation rates were part of the rate sheet, we have noted this as well in the text.

23. Table 2**Error! Reference source not found.** summarizes Canadian pole attachment rates based on information gathered by Nordicity.

Table 2 Canadian rates per pole per year

Jurisdiction	Rate per pole per year
Nova Scotia Power	$14.15 (2002)
Quebec (Hydro Quebec)	Beneficial leasing arrangement. (TBC)
Newfoundland (Newfoundland Power and Aliant)	$12.84 (2001)
Toronto	$22.35
New Brunswick	$18.91 (2014)
Alberta (TransAlta and TELUS)	$18.35 (2000)

24. The 2001 application by Newfoundland Power Inc. to the Board of Commissioners of Public Utilities in Newfoundland included survey results of attachment rates across Canada (Table 3**Error! Reference source not found.**).[8] Adjusting these figures by general inflation in the 2001-2013 period suggests a possible range of $8.00 to $45.20 per pole per year in recent years, with an average of $19.60 per pole per year.

Table 3 Canadian 'joint use' survey results, pole rental agreements and annual attachment fees

	Attachment Fee
Range	$6.42 to $36.00
Average	$15.63

Source: Newfoundland Power Inc. "Direct Evidence and Exhibits of Newfoundland Power Inc."

25. In addition to the current application by THESL, Nordicity found only four other cases where either utilities or attachers filed applications regarding pole attachment rates (Table 4**Error! Reference source not found.**). Provincial review boards have used different methods to calculate fair pole attachment rates.

[8] The survey included rates from Nova Scotia Power Incorporated, Maritime Electric Company Limited, New Brunswick Power Commission, Hydro Quebec, Toronto Hydro, Manitoba Hydro-Electric Board, Saskatchewan Power Corporation, Utilicorp Networks Canada (formally TransAlta distribution assets), Canadian Utilities Limited (formally Alberta Power), ENMAX Corporation (formally Calgary Power), West Kootenay Power Ltd., and BC Hydro.

Table 4 Provinces that have had experience with pole attachment rate regulation

Nova Scotia	Newfoundland and Labrador
Ontario	New Brunswick
Alberta	

26. In Nova Scotia, pole attachment rates have been regulated by the Nova Scotia Utility and Review Board since 1994. Currently, the pole attachment rate applies to attachments by both cable and telephone companies. In the past, however, telephone companies had different rates under a separate joint agreement.

27. In Nova Scotia, rate calculation used the annual cost per pole taking into account contribution, loss in productivity and administration costs. Among the research found in the various cases, there were several proposed ways of calculating pole attachment rates – these cases explored different weighting schemes for loss of productivity, etc. Although the proposed rate calculations are not detailed in this report, they can be explored in the cases themselves.[9]

28. In New Brunswick, Aliant has a joint use agreement with NB Power to use their poles, and therefore does not pay for attachments on a per pole basis. All other attachers pay an annual per pole rate, which is regulated by the province's Energy and Utilities Board. Currently, the rate is $18.91 per pole per year. In October 2013, the rate increased by 3%, the maximum increase allowed by the Board without requiring a full review. There has been no significant change in pole attachment rates in recent years.[10]

29. In Alberta, a December 2000 hearing of the Alberta Utilities Commission ruled that the electric utility TransAlta could charge $18.35 per pole per year to TELUS and any other telco or cableco who wished to attach to their poles. TransAlta went to the Alberta Utilities Commission after negotiations with TELUS regarding pole attachment rates

[9] See the following documents: 1) Newfoundland Power Inc. (2001) "Direct Evidence and Exhibits of Newfoundland Power Inc.," May 8; 2) Nova Scotia Utility and Review Board (2002) "In the Matter of the Public Utilities Act and in the Matter of an Application by Nova Scotia Power Incorporated for Approval of an Increase in its Pole Attachment Charge;" 3) Canadian Cable Television Association (2003) "Appendix C: Evidence of Donald A. Ford on Behalf of the Canadian Cable Television Association," December 15; and 4) Bull, Housser, & Tupper LLP on behalf of Shaw Cablesystems Limited (2009) "Application to the British Columbia Utilities Commission for an Order Allowing the Use of FortisBC Inc. Electricity Transmission Facilities," October 26.

[10] Phone correspondence with New Brunswick Energy and Utilities Board, Week of February 3, 2014.

broke down. The $18.35 per pole per year rate was determined using a cost-based calculation.[11]

30. In British Columbia, pole attachment rates are *de facto* not regulated. Although the BC Utilities Commission has jurisdiction (under BC's Public Utilities Act) to regulate attachment rates, it has never actively done so, and appears to have no intention of doing so in the foreseeable future – see FortisBC case below. In practice, market participants negotiate pole attachment rates between themselves.

31. In 2009, Shaw filed a complaint against FortisBC with the BC Utilities Commission (BCUC), arguing that FortisBC was charging unfair pole attachment rates. Since the BCUC had never dealt with this issue in the past, it was not sure if it had jurisdiction over pole attachment rates. The BCUC then launched an investigation on the issue, and found that, under Section 70 of the *Utilities Commission Act*, it did indeed have the jurisdiction to regulate pole attachment rates in the province. After this investigation, however, Shaw withdrew the complaint and negotiated privately with FortisBC for an acceptable rate. BCUC does not plan to actively regulate pole attachment rates.[12]

[11] Alberta Energy and Utilities Board "TransAlta Utilities Corporation 1996 Phase II – Constitutional Question Decision 2000-86," available at http://www.auc.ab.ca/applications/decisions/Decisions/2000/2000-86.pdf

[12] Phone correspondence with B.C. Utilities Commission, February 13, 2014.

2. United States

33. Utility pole attachments in the United States are regulated by a mix of federal, state, and local requirements. At the federal level, pole attachment access and rates are regulated by the Federal Communications Commission (FCC). At state and local levels, public utilities boards, as well as state and local legislatures, can play a role.

2.1. Pole Access

34. U.S. federal legislation mandates that *investor-owned utilities (IOUs)* allow non-discriminatory pole attachment access to cablecos and CLECs.[13] ILECs, however, have no statutory rights to pole access.[14] In the case of cablecos and CLECs, investor-owned utilities can still deny access, but only due to capacity, safety, reliability and operational concerns.[15]

35. States can pre-empt federal regulation by regulating pole attachments themselves.[16] Currently, 20 states and the District of Columbia have chosen to do so (Table 5).

Table 5 States that have certified that they regulate pole attachments

Alaska	Arkansas	California	Connecticut	Delaware	District of Columbia	Idaho
Illinois	Kentucky	Louisiana	Maine	Massachusetts	Michigan	New Hampshire
New Jersey	New York	Ohio	Oregon	Utah	Vermont	Washington

Source: FCC's 2011 Pole Attachment Order, Appendix C.

36. Federal access requirements do not apply to municipal utilities (municipal exemption). In practice, however, their behaviour is constrained by a number of factors, including:[17]

[13] 47 U.S.C. § 224(f)(1): "A utility shall provide a cable television system or any telecommunications carrier with non-discriminatory access to any pole, duct, conduit, or right-of-way owned or controlled by it."
[14] "See, for instance, § 207 of the FCC's 2011 Pole Attachment Order, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-50A1.pdf ".
[15] 47 U.S.C. § 224(f)(2).
[16] 47 U.S.C. § 224(c).

- *The Telecommunications Act prohibits local governments from imposing barriers to entry, determining that local management of rights of way must be provided on a competitively-neutral and non-discriminatory basis;*[18]
- *Some states apply federal standards (or variations of) to municipal entities; an*
- *Federal standards are often invoked as benchmarks.*

37. Pole attachment access regulated by the FCC includes not only wireline, but also wireless attachments. The FCC's 2011 Pole Attachment Order,[19] explicitly states that when an investor-owned utility denies access to wireless attachments, much like wireline attachments, it must provide a written statement of why access was denied, listing concerns with respect to "capacity, safety, reliability, or engineering standards" (§ 75).[20] In addition, the FCC's 2011 Pole Attachment Order also clarifies that telcos have a right to pole-top access for wireless attachments (§ 77).

2.2. Pole Attachment Rates

38. When *investor-owned* utilities and cableco and CLEC attachers cannot reach mutually beneficial, negotiated agreements, the FCC uses cost-based formulas – delineated in 47 U.S.C. § 224(d)-(e) – to determine the maximum pole attachment rates that these utilities can charge. The FCC's formulas do not apply to: 1) States that pre-empted federal regulation and chose to regulate pole attachments themselves; 2) Municipal utilities.

39. The FCC uses two formulas to determine maximum pole attachment rates, one for cable services and one for telecommunications services. Up until the FCC's 2011 Pole Attachment Order, the two formulas yielded very different results (Box 1). The reason for this difference was the "space factor" component of the formula. For cable service attachments, this factor was calculated based only on the attachment's share of *usable* space on a pole, whereas for the "old" telecommunications services formula it also depended on the attachment's share of *unusable* (or common) space.[21] As a result, pole

[17] Jim Baller and Sean Stokes (2002) "A Practical Primer on Pole Attachments," p. 2, available at http://www.publicpower.org/files/Member/BallerHerbstPrimerPoleAttachments.pdf

[18] 47 U.S.C. § 253(a)-(c).

[19] The 2011 Pole Attachment Order was contested by several electric utility companies after it was issued by the FCC on April 7, but the U.S. Court of Appeals for the District of Columbia upheld the FCC's order on February 26, 2013. On October 7, 2013, the U.S. Supreme Court denied a petition by electric utilities challenging the earlier decision by the D.C. Court of Appeals. For more information, see article by Troutman Sanders available at http://www.troutmansandersenergyreport.com/2013/10/fccs-pole-attachment-order-survives-challenge-at-the-supreme-court/

[20] The FCC's 2011 Pole Attachment order is available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-50A1.pdf

[21] Raymond Kowalski (2003) "Access to Poles, Ducts, Conduits and Right-of-Way by Cable and Telecommunications Companies – A Primer for Electric Utilities," p. 8, available at

attachment rates for telecommunications services were much higher than cable attachment rates (Table 6).

Table 6 Evidence on Pole Attachment Rates, 2006-2007 (US$ per foot of vertical space occupied by attachment per year)

Commenter	Cable Rate	CLEC Rate	ILEC Rate
Cable Industry	$5.25	$11.97, $17.01	..
CLEC Industry	$6.46	$15.09	..
ILEC Industry	$3.26	$4.45	$13.00
Utilities	$6.63	$10.02, $15.15	$20.40

Source: George Ford, Thomas Koutsky, and Lawrence Spiwak (2008) "The Pricing of Pole Attachments: Implications and Recommendations," p. 7, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1360940

40. Rates charged by municipally-owned utilities (MOUs) and co-ops vary widely by state, with significant variation even within a state. Nordicity research has found examples of pole attachment rates charged by MOUs as low US$5 and as high as US$35 per pole per year, or even higher. Seattle City Light, for instance, charges US$28.79 per pole per year (for a pole owned solely by City Light).[22] Cedar Fall Utilities, on the other hand, charges only US$11.25 per pole per year.[23]

41. Prior to 2011, ILECs had very limited rights regarding pole attachment rates. Traditionally, ILECs had been considered pole owners, not attachers. As such, the pole attachment rates paid by ILECs were not capped by the FCC's telecommunications services formula and ILECs had little to no room for filing rate-related complaints with the FCC.

42. The FCC's 2011 Pole Attachment Order made substantial changes to the existing regulation, reinterpreting the telecom services formula and essentially creating rate parity for telecommunications and cable services (§ 214-220). In addition, the Order concluded that, much like CLECs, ILECs are entitled to rates, terms and conditions that are "just and reasonable (§ 202). The FCC thus allowed ILECs to "file complaints with the Commission challenging the rates, terms and conditions of pole attachment agreements with other utilities" (§ 203).

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http://www.troutmansanders.com/files/FileControl/e7755b85-b44f-4870-b837-d5a0a5982b9a/7483b893-e478-44a4-8fed-f49aa917d8cf/Presentation/File/tele1.pdf

[22] http://www.seattle.gov/light/rates/summary.asp

[23] http://www.cfu.net/webres/File/2014%20Final%20Electric%20Rate%20Schedules.pdf

43. There are still significant differences between the FCC's treatment of ILECs and other players:[24]

    - *Existing "joint use" agreements (i.e., agreements between joint pole owners), which typically give reciprocal rights to the parties, will generally be considered reasonable.*
    - *The ILEC must show that it is similarly situated as a cable company or CLEC to obtain comparable rates, terms and conditions. For example, if an ILEC is not a pole owner but merely an attacher in a particular region, the FCC might find that the ILEC, in that instance, is "similarly situated" to a cable company/CLEC and in an inferior bargaining position to the electric utility pole owner.*
    - *The FCC's "old" telecom rate will be the starting point in any rate case where the ILEC is not similarly situated to account for particular arrangements (e.g., no make-ready payments) that provide net advantages to an ILEC relative to cable companies/CLECs.*
    - *ILECs do not have a right of access to electric utility poles under the federal law and any access challenge must be pursued at the appropriate state public utility commission.*

44. The FCC also has jurisdiction over rates, terms and conditions for wireless attachments by telcos. According to the FCC's 2011 Pole Attachment Order, wireless providers are "entitled to the same attachment rate formula as other telecommunications providers. Where a wireless attachment requires more than presumptive one-foot of usable space on a pole, a utility may impose a higher fee proportionate to the amount of space actually used on the pole" (§ 153).

45. Nordicity did not find any forbearance petition by IOUs regarding pole attachment regulation in the United States. It is important to keep in mind, however, that IOUs have long tried to limit the scope of FCC regulation.

46. With respect to wireless attachments, in particular, even though the FCC asserted jurisdiction over wireless providers and wireless pole attachments in its 1998 Implementation Order, this order was challenged by IOUs. In 2002, however, the U.S. Supreme Court sided with the FCC, determining that the Commission indeed had jurisdiction over rates, terms, and conditions for wireless attachments by telecom providers. In addition, up until recently, IOUs still denied wireless providers access to pole tops, but this issue was dealt with explicitly by the FCC's 2011 Pole Attachment Order.

2.3 Other infrastructure

[24] John Seiver and Jill Valenstein (2013) "SCOTUS Declines to Review Decision Granting ILECs Federal Pole Attachment Rights," available at http://www.lexology.com/library/detail.aspx?g=e8aab9bb-5845-4c30-a147-78317236f7c2

47. Most aspects of the federal regulatory framework described in the previous subsections apply not only to utility poles – regardless of whether they are owned by LECs or by a utility company – but also to ducts, conduits and rights-of-way.[25]

48. It is not clear to Nordicity at this point if streetlight poles are also covered under federal regulation. In the United States, "some cities own and maintain their own streetlights and pay their utilities for the energy they use," but it is more common for "utilities [to] own the lights and charge towns and cities a monthly rate that includes the fixture, maintenance and energy costs."[26]

[25] See 47 U.S.C. § 224(a)(1). Note, however, that rate ceilings for ducts and other shared infrastructure are calculated using different rate formulas.

[26] Kate Linebaugh (2011) "Cities, Utilities Are Poles Apart Over Streetlights," December 24, available at http://online.wsj.com/news/articles/SB10001424052970204083204577078202836500244

BOX 1: The Telecommunications Services Rate Prior to the FCC's 2011 Pole Attachment Order

The FCC's 2011 Pole Attachment Order revised the telecommunications rate, essentially creating rate parity between telecommunications and cable services. Prior to the 2011 Order, the two rates yielded significantly different results. Both rates can be expressed as:[a]

$$Rate = Space\ Factor\ x\ Net\ Cost\ of\ Pole\ x\ Carrying\ Charge\ Rate$$

where the carrying charge rate accounts for the percentage of a pole owner's "depreciation expenses, administrative and general expenses, maintenance expenses, taxes, rate of return, pro-rated annualized costs for pole audits or other expenses that are attributable to the pole owner's investment and management of poles."[b]. The space factor was defined differently in each formula. For the pre-2011 telecommunications formula, the space factor was defined as:

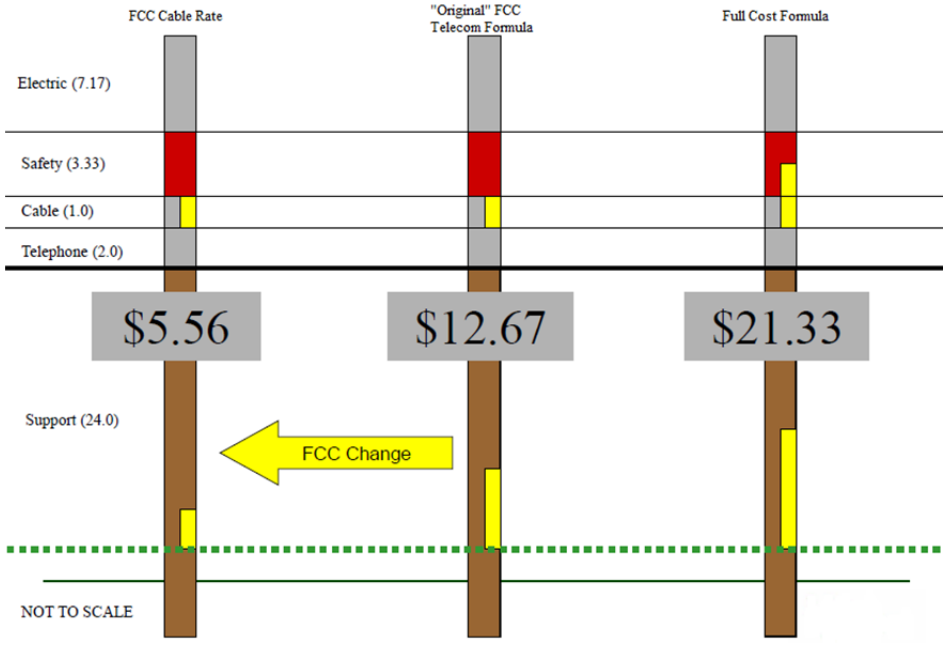
$$Space\ Factor = \frac{Space\ Occupied + \frac{2}{3}\left(\frac{Unusable\ Space}{Number\ of\ Attachers}\right)}{Pole\ Height}$$

For the cable services formula, the space factor is defined as:

$$Space\ Factor = \left(\frac{Space\ Occupied}{Total\ Usable\ Space}\right)$$

Under the standard FCC assumptions of an average pole height of 37.5 feet with 13.5 feet of usable space, and assuming three attachers, a pole attachment occupying one vertical foot of usable pole space would imply a space factor of 16.9% of the annual net pole cost for telecommunications services vs. only 7.4% for cable services. Electric utilities proposed a third formula, not adopted by the FCC, which arrived at a "full-cost" space allocation of attachments, yielding a space factor of 28.4%.[c] As an example, assuming a net cost of the bare pole of $250 and a carrying charge of 30%, Figure 1 provides a comparison of rates and space allocations according to different formulas.

Figure 1: Comparison of Rates and Space Allocations According to Different Formulas



Note: Areas in yellow represent the relative allocation of pole space (and therefore cost) according to each formula.
Source: Mark Smith (2013) "Pole Attachment Update," available at http://www.tvppa.com/SiteAssets/Pages/conferences/Conf_AF/Pole%20Attachment%20Legalities.pdf

[a] Reuben Kyle and Chris Klein (2007) "Analysis of Pole Attachment Rate Issues in Tennessee," p. 10, available at http://www.state.tn.us/tacir/PDF_FILES/Other_Issues/pole%20attachment%20rate%20issues.pdf

[b] Brian Grogan (2010) "Pole Attachments – Are Cities Asleep at the Wheel on the Information Super Highway?", available at http://municipalcommunicationslaw.com/docs/1644974.pdf

[c] Jim Ballard and Sean Stokes (2009), p. 12.

3. United Kingdom

3.1. Utility poles

49. There is currently no regulation of communications providers' access to electric utility infrastructure (i.e. water/sewerage, electricity and natural gas).

50. Although there is no regulated access to utility infrastructure, the incumbent communications provider, BT plc (through its BT Openreach subsidiary) does both share infrastructure with electric utilities and access infrastructure owned exclusively by utilities. The agreements and associated rates for this access are set on commercial terms without intervention by Ofcom, Ofgem (the energy-sector regulator) or Ofwat (the water/sewerage sector regulator). Indeed, BT Openreach has "long-standing agreements" with several electricity distribution companies in the UK under which the electricity utilities provide access to low-voltage overhead poles in order to facilitate last-mile connectivity.[27]

51. In 2010, the Department for Business, Industry and Skills (BIS) released a discussion paper on Broadband deployment and sharing other utilities' infrastructure and launched an associated consultation.[28] Among other things, that consultation found that there was, in fact, little incentive for utility companies in the UK to "charge" for access to their physical infrastructure (i.e. poles or ducts), since the regulatory regime governing these utilities limits the amount of revenue they can earn from non-core activities. In effect, any income that electricity utilities earn from pole access would be clawed back through lower rates charged to their electricity customers.[29]

3.2. Lamp posts

52. In the UK, local councils (i.e. municipal governments) own lamp posts and other street infrastructure. In recent years, lamp posts have been identified as a type of infrastructure that could be used to install WiFi transceivers in order to offer public-space Wi-Fi services. Communications providers such as O2 and telecom infrastructure providers such as

[27] SSE (2012) "Relaxing the restrictions on the deployment of overhead telecommunications lines," pp. 1-2, response to Department for Culture, Media and Sport consultation, February 21, 2012, available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/185620/SSE.pdf

[28] BIS (2010) "Broadband deployment and sharing other utilities' infrastructure: A discussion paper," July 2010, available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/72845/10-1046-broadband-deployment-discussion-paper.pdf

[29] DCMS (2010) "Broadband deployment and sharing other utilities' infrastructure: Summary of responses to 15 July discussion paper," ¶3.8., December 2010, available at http://webarchive.nationalarchives.gov.uk/20130128202050/http://www.culture.gov.uk/images/consultation_responses/10-1308-broadband-deployment-sharing-infrastructure-summary-of-responses.pdf

Arqiva have entered into contracts with local councils to provide public-space WiFi services.[30] Where the communications provider or telecom infrastructure provider pay the local council for use of its infrastructure such as lamp posts, this has been negotiated on a case by case basis. For example, in 2013, Arqiva entered into a contract with Hammersmith and Fulham Council to provide public-space WiFi services. As part of the contract, Arqiva agreed to the pay the local council approximately £500,000 for use of its street infrastructure (i.e. lamp costs) along with a 20% share of any revenue generated by the WiFi services.[31] Arqiva struck a similar contract with Hounslow Council in London, which also included a £500,000 payment for use of infrastructure.

3.3. Access to BT infrastructure

53. In 2012, BT Openreach launched its physical infrastructure access (PIA) program whereby competitive communications providers can gain access to its poles or ducts. As part of the PIA program BT Openreach has published a price list. According to Ofcom, the rates reflected in this price list have been set by BT Openreach on the basis of its long-run incremental cost (LRIC) of provision.[32] From the price list, however, it is unclear, what the equivalent rate would be for the attachment of wireless equipment to a pole.

[30] Dan Worth (2012) "O2 switches on free London-wide Wi-Fi network for Olympics," *V3.co.uk*, July 25, 2012, available at http://www.v3.co.uk/v3-uk/news/2193834/o2-switches-on-free-londonwide-wifi-network-for-olympics

[31] Hannah Langston (2013) "Arqiva to bring free Wi-Fi to London borough," *Cable.co.uk*, May 16, 2013, available at http://www.cable.co.uk/news/arqiva-to-bring-free-wi-fi-to-london-borough-801586137/

[32] Ofcom (2010) "Review of the wholesale local access market," ¶1.23, March 23, 2010, available at http://stakeholders.ofcom.org.uk/consultations/wla/summary#Content

4. Other Jurisdictions

4.1. Australia

54. Electric utilities in Australia have provided access to their poles and ducts infrastructure to telcos and cablecos, but from our research it would appear that this access has been negotiated on a case-by-case basis rather than mandated by the government or regulated by the Australian Competition and Consumer Commission (ACCC). In 2008, for instance, the Queensland government launched a project in which "Ergon Energy agreed to construct optical fibre links along new high voltage power lines."[33]

55. Schedule 3 of the Australian Telecommunications Act, however, provides carriers with the power to "enter land to inspect land, maintain facilities and install certain types of facilities, and immunity from some state and territory laws, including planning laws, when carrying out those activities."[34] In April 2013 NBN Co. – the company responsible for rolling out the Australian broadband network – invoked Schedule 3 powers to access pole infrastructure after negotiations with the utility Ausgrid reached a stalemate.[35]

4.2. Portugal

56. In Portugal, non-discriminatory access to poles and ducts installed in state-owned property is mandated by law. Access issues are dealt with by local and state governments.[36]

[33] CSMG (2010) "Economics of Shared Infrastructure Access," p. 18, available at http://stakeholders.ofcom.org.uk/binaries/consultations/wla/annexes/csmg.pdf

[34] http://www.communications.gov.au/policy_and_legislation/carrier_powers_and_immunities

[35] John Taylor (2013) "NBN Co Invokes Federal Powers to Get Ausgrid Pole Attachment," available at http://www.zdnet.com/nbn-co-invokes-federal-powers-to-get-ausgrid-pole-access-7000013420/

[36] CSMS (2010), p. 25.