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October 26, 2011

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street
PO Box 2319, 27th Floor
Toronto, ON
M4P 1E4

Dear Ms. Walli:

RE: Application by Canadian Distributed Antenna Systems Coalition ("CANDAS");
Board File No.: EB-2011-0120

We are writing to file the responses of CANDAS to the interrogatories of Energy Probe in respect of CANDAS' Reply Evidence. We will file two paper copies of the responses as soon as possible.

Yours very truly,

(signed) H.T. Newland

HTN/ko

cc: Mr. George Vinyard
All Intervenors

EB-2011-0120

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, (Schedule B);

AND IN THE MATTER OF an Application by the **Canadian Distributed Antenna Systems Coalition** for certain orders under the *Ontario Energy Board Act*, 1998.

RESPONSES TO INTERROGATORIES OF

ENERGY PROBE

(on the Reply Evidence of the Applicant, CANDAS)

October 26, 2011

Interrogatory # 1

Ref: Reply Evidence of Professor R. Ware, para. 23+ at p.13)
Issue: Market for siting wireless attachments

Question:

Both Mr. Starkey (at THESL Interrogatory Responses, Tab 4, Schedule 2) and Professor Yatchew (at Yatchew Affidavit, at p.30, line 2) have indicated that macro-cell towers are good substitutes for hydro poles. Their evidence for this is, in part, that Public Mobile deployed macro-cell towers when pole access was denied by THESL.

There appears to be no evidence that Public Mobile deployed macro-cell towers in the Toronto area when pole access was provided to it from THESL, i.e. when both options were available.

Does Professor Ware have any comment on whether the evidence of macro-cell deployment following withdrawal of pole access supports the conclusion that such cells are good substitutes for hydro poles?

Response:

Wireless attachments to poles was clearly a lower cost and higher quality antenna siting strategy for Public Mobile than use of macrocell towers. There is clear "revealed preference" evidence for this in the actions of Public Mobile itself. In particular, Public Mobile did not deploy on macrocell sites until it had been deprived of the superior low cost option by THESL (see also the Evidence of Brian O'Shaughnessy in this regard). In terms of substitution, this implies that macrocell deployment was not a close substitute for attachment to a power pole network.

Interrogatory # 2

Ref: Reply Evidence of Professor R. Ware, para. 23+ at p.13)
Issue: Market for siting wireless attachments

Question:

Mr. Starkey answers "Yes" with elaboration to Energy Probe Research Foundation Interrogatory #3(b) that reads as follows:

> "Does Mr. Starkey believe that all available alternatives (e.g. femtocells) to DAS that he identifies in his report are in the same "product market" as DAS when the market is delineated using the approach of the Competition Bureau?" (THESL Interrogatory Responses, Tab 4, Schedule 3)
>
> Does Professor Ware agree that Mr. Starkey has followed the approach to market definition presented in either the Merger Enforcement Guidelines or the Abuse of Dominance Guidelines of the Competition Bureau?

Response:

My understanding, based on the Reply Evidence of each of Tormod Larsen and Johanne Lemay, is that femto cells and WiFi are not a substitute for DAS at all in providing full mobile coverage on a network. Rather, they are complements available to supplement or enhance carriage on a mobile network which is supported by antennas based either on macrocell sites or microcell sites (see Tormod Larsen Reply Evidence, paras. 2.1- 3.1 and Table 1; and Johanne Lemay Reply Evidence, pp. 8-13).

The standard approach to market definition would require consideration of the *substitute* technologies of DAS networks to evaluate whether or not they are in the same or different product markets, based essentially on the degree of substitution between them. Either way, since femtocells and WiFi are not a substitute for DAS, they cannot be in the same product market.

With that being said, whether any or all of these wireless technologies belong to the same relevant product market or not is ultimately irrelevant to the matters under consideration in this proceeding primarily for two reasons.

First, leaving aside the question of the correctness of Mr. Starkey's views on the substitutability of different wireless technologies for DAS, Mr. Starkey appears to be of the view that if products in a downstream market (i.e., the market for different types of wireless technologies) fall within the same relevant product market, then the upstream market(s) for the *siting* of those antennae must comprise a single relevant product market.

This analysis is incorrect because it conflates the relevant product market for different types of wireless technologies with the market for the siting of those technologies. Also, different siting

structures would in turn have to be evaluated as to their substitutability in order to make a product market determination. Given the ownership, cost and quality advantages associated with utility pole infrastructure, it seems likely that such utility infrastructure is not in the same product market as macrocell siting options.

Second, the apparent purpose of Mr. Starkey's response to the above-noted interrogatory was to support a request being made by THESL in this proceeding that the Ontario Energy Board should forbear from regulating wireless pole attachments on the basis that they should be treated differently from a regulatory perspective than wireline attachments. It is my understanding from counsel that this request for forbearance is not being considered in this proceeding.

While the evidence provided by CANDAS in this proceeding makes it clear that femto cells and WiFi are not substitutes for DAS and, therefore, not in the same relevant product market, as noted above, the information being sought in this interrogatory relates to a matter which has been determined to be out of scope.

Interrogatory # 3

Ref: Reply Evidence of Professor R. Ware, para. 23+ at p.13)
Issue: Market for siting wireless attachments: Barriers to Entry

Question:

Mr. Starkey states that the "economics associated with wireless attachments like DAS Antennae are different from traditional cable attachments" (Starkey Affidavit, p.21). He further states that the primary difference is the "barriers to entry that exist with respect to alternatives supporting traditional wireline attachments but are absent for wireless attachments." (Starkey Affidavit, p.22).

He also states that

"…it is this relatively unique contiguous nature of a pole-route's design that creates "barriers to entry" which realistically limits the number of alternative forms of supply thereby arguably creating market power which regulation is intended to combat." (Starkey Affidavit, p.23).

In Professor Ware's view, does the contiguous nature of a pole-route's design create a "barrier to entry" that limits the number of alternative forms of supply? If so, please provide a brief explanation.

Response:

The role of a pole network in providing wireline and wireless attachments is not significantly different. Barriers to entry for good substitutes to pole attachment are present in both cases. In both cases it would be socially undesirable and probably infeasible to construct a duplicate pole network. In both cases the next best alternative involves significantly higher costs and potentially lower quality – namely, buried underground cable for wireline components of communications services and towers, rooftops and building attachments for the wireless components of the same or other communications services. See also the Written Evidence of Tormod Larsen, Q.4 and Q.9.

Interrogatory # 4

Ref: Reply Evidence of Professor R. Ware, para. 23+ at p.13)
Issue: Market for siting wireless attachments: Barriers to Entry

Question:

Mr. Starkey also states, in a footnote relying on his text on p.23 above:

> "In the traditional case for regulated pole attachments, the substantial reproduction cost, difficulty in obtaining necessary access to rights-of-way and societal impact (e.g., aesthetics) of erecting competing pole routes increase the relative barriers to entry associated with the market for utility attachments." (Starkey Affidavit, p.23, fn.21)

(a) If there are barriers to entry associated with regulated pole attachments, would this indicate to Professor Ware that poles would constitute a separate market within the broader "market for utility attachments"?

(b) Please briefly define "entry barriers" as economists use that term and indicate what entry barriers are or may be relevant to the Board.

Response:

(a) Although I have not carried out any quantitative analysis (and neither have any of the parties to this proceeding), I believe that the ownership, cost and quality advantages for communications attachments to a pole network are sufficiently great over the set of next best alternatives, that pole networks would be identified in a separate product market (within the category of antenna siting alternatives).

(b) There are several definitions of Entry Barriers that are used by economists. (My textbook, *Industrial Organization: a Strategic Approach* (2000) McGraw-Hill, at pp. 513-519 discusses this issue.) In the instant case, the definition that is most relevant for this issue is that of an Absolute Cost Advantage. An Absolute Cost Advantage is any scarce factor of production or input that confers lower costs on one producer (e.g. cable companies offering telephone service) than on rival producers (new wireless carriers). The relevant entry barrier in this case is the extreme difficulty and social undesirability of constructing a duplicate pole network.

Interrogatory # 5

Ref: Reply Evidence of Johanne Lemay, at p.21 and Appendix D
Issue: Canadian wireless siting market

Question:

Ms. Lemay indicates that Antenna Management Corp (cited by Mr. Starkey) manages only 7 sites in Toronto.

(a) Please confirm that the 7 sites managed by Antenna Management are, per the Antenna Management website, within 5 miles of the center of Toronto and none of them are downtown.

(b) Please also confirm that within 25 miles of the center of Toronto, per the Antenna Management website, the company managed 8 sites, none of them downtown.

Response:

(a) As of October 25, 2011, Antenna Management listed eight potential antenna sites within five miles of the centre of the City of Toronto (see http://www.antennamgt.com/potential-sites accessed on: 25 October 2011). All but one of these sites are located outside the downtown core of Toronto, which is defined by Bathurst Avenue to the west and the Don Valley parkway to the east, Lake Ontario to the south to Dupont Street and Rosedale Valley to the north (see map available at http://www.toronto.ca/planning/official_plan/pdf_chapter1-5/6_downtown_oct2009.pdf).

(b) As of October 25, 2011, Antenna Management listed 10 potential antenna sites within 25 miles of the centre of the City of Toronto (see http://www.antennamgt.com/potential-sites accessed on: 25 October 2011). All but one of these sites are located outside the downtown core of Toronto, as defined in response to (a) above.

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