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April 19, 2011

Sent via email: spectrum.planning@ic.gc.ca

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Re: *Canada Gazette, Part I, February 12, 2011 Decisions on a Band Plan for Broadband Radio Service (BRS) and Consultation on a Policy and Technical framework to License Spectrum in the Band 2500-2690 MHz (SMSE-005-11)*

Pursuant to procedures outlined in the above noted document and subsequent Industry Canada Notice No. SMSE-006-11 dated March 4, 2011, attached are Comments of Rogers Communications Partnership ("Rogers"). Appendix 1 of the attached is being filed with Industry Canada in Confidence.

Rogers requests that Industry Canada treat all information contained in the appendix as confidential, pursuant to subsection 20(1)(b) of the *Access to Information Act*, and sections 38 and 39 of the *Telecommunications Act*. For competitive reasons, Rogers would never "publicly" disclose the information contained in the appendix other than to Industry Canada. Rogers submits that any possible public interest in disclosure of the information in the attachment is greatly outweighed by the specific direct harm that would flow to Rogers.

The documents are being sent in Adobe PDF Version 8.0. Operating System: Microsoft Windows XP.

Yours very truly,

A handwritten signature in blue ink, appearing to read "Ken Engelhart", written over a light blue horizontal line.

Kenneth G. Engelhart
Senior Vice President – Regulatory
KE/jt

Attach.

Comments of
Rogers Communications Partnership

Decisions on a Band Plan for Broadband Radio Service (BRS)
and Consultation on a Policy and Technical Framework to
Licence Spectrum in the Band 2500-2690 MHz (SMSE-005-11)

April 19, 2011

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Executive Summary

1. Rogers' 9 million customers are demanding faster mobile broadband services to satisfy their growing need to stay in touch and access the information and content they want, any time, any where, on any device. In response to this demand, Rogers is using all of its available mobile spectrum, including its 2500 MHz spectrum, to implement 4G Long Term Evolution ("LTE") technology in Canada's top markets. LTE will allow Rogers to provide the unprecedented data speeds that are necessary to support lightning fast mobile broadband services. Rogers is also undertaking a network densification program in order to add further capacity to our network in major urban markets through the installation of new cell sites. In keeping with these substantial efforts, Rogers will require additional 2500 MHz spectrum in order to provide Canadians with the fastest possible mobile broadband services.
2. There is a significant opportunity for Canada in the upcoming auction of 2500 MHz spectrum because the amount of available spectrum can be used to create wider spectrum blocks than is possible in other mobile spectrum bands. Wider blocks can be used to provide Canadians with significantly faster mobile broadband speeds and higher quality services. At the same time, this high band spectrum is ideally suited to providing mobile broadband coverage in urban centers where demand for faster mobile broadband speeds is most pressing. Lastly, the 2500 MHz band will be licensed on the basis of a globally harmonized band plan, which will allow Canadians to benefit from international roaming and significant economies of scale.
3. As a proven leader in the provision of mobile broadband services in Canada, Rogers must be permitted to bid for and acquire 2500 MHz in the upcoming auction. Through its 50% ownership stake in Inukshuk Wireless Partnership (Inukshuk), Rogers has taken significant risks and made substantial investments in developing the 2500 MHz band so that the benefits of fixed wireless broadband services can be extended across Canada. Inukshuk is also 50% owned by Bell. It holds spectrum in the 2.3, 2.5 and 3.5 GHz bands and provides fixed wireless services. Inukshuk's fixed wireless broadband

network is the largest of its kind in Canada if not the world. Inukshuk has invested several hundred million dollars in extending its network to approximately 7.5 million Canadian households, covering 70% of the households within the cities and communities in Inukshuk's detailed deployment schedule, or about 63% of the households in its Multipoint Communications Systems (MCS) licence areas. Significantly, Inukshuk provides fixed wireless broadband service (up to 3 Mbps) in 45 cities and over 300 rural markets.

4. Inukshuk's extensive network was built on the basis of a unique shared network model that has allowed for the rapid and economically efficient expansion of its network, while at the same time providing for vigorous competition at the retail service level between Inukshuk's two partners. This approach, which was pioneered in Canada, has allowed Inukshuk to serve markets that are not large enough to justify the investment that would be required to implement multiple competing networks.
5. As the only entity willing to take the risk and make substantial investments in the 2500 MHz band, Inukshuk now holds a considerable amount of 2500 MHz spectrum in certain geographic areas. However, since this spectrum is shared between Rogers and Bell their individual entitlement amounts to 50% of the total amount of 2500 MHz spectrum licensed to Inukshuk. This means that, in some areas, Rogers will have access to 20+20 MHz of paired spectrum, while in other areas it will have access to 10+10 MHz of paired spectrum.
6. As a technological leader that has been at the forefront of the Canadian telecommunications industry for the last 25 years, Rogers would like to bid for additional 2500 MHz spectrum so that it will be able to provide Canadians with the unprecedented mobile broadband speeds that will be enabled by LTE and future technologies such as LTE-Advanced.
7. The 2500 MHz auction policy should allow those who value the spectrum the most to put it to its most productive use. This will ensure that the spectrum is fully exploited to

produce the maximum economic and social benefits for Canadians. Setting aside spectrum for new entrants, or capping incumbents at the level of their existing spectrum holdings, will not achieve this outcome and will almost certainly have significant unintended costs. Set-asides, spectrum caps and auction caps will artificially restrain Rogers, one of Canada's largest, most successful and innovative wireless service providers, from acquiring the spectrum we need to implement the most advanced mobile broadband services so that Canadians will have access to the fastest mobile data speeds on the planet. Interference with Rogers' ability to obtain one of the most important inputs – the spectrum resource – will hamper our ability to invest and innovate for our 9 million customers, and threaten the mobile broadband revolution in Canada.

8. There is absolutely no need or justification for special measures such as caps or set-asides to promote competition. The Canadian wireless market has gone from being highly competitive to hyper-competitive. AWS new entrants have entered the wireless market and are already making inroads in major Canadian cities. These new competitors include some of the most successful media and communications companies in Canada, as well as one competitor that is part of the Vimpelcom conglomerate.
9. The Department should license 2500 MHz spectrum in blocks of 5+5 MHz in the paired portion of the band and in blocks of 5 MHz in the unpaired portion. The use of these block sizes would provide for more potential licensees of 2500 MHz spectrum. However, in order to allow for the introduction of exceptionally fast mobile data speeds, bidders should be permitted to assemble multiple blocks into wider blocks. Otherwise, Canada will miss the enormous opportunity made possible by this band, and all of the economic and social benefits that will accrue from it.
10. In light of the fact that 2500 MHz spectrum will be an important enabler of mobile broadband services and unprecedented data speeds, Canada's 2500 MHz policy must encourage utilization of this vital resource. Canada cannot afford to let 2500 MHz spectrum lie underutilized in the hands of spectrum speculators while operators around

the world have begun to implement next generation mobile broadband services. To encourage utilization, successful bidders should be required to roll out service in accordance with the Tier 3 five-year roll-out targets that were used for the licensing of Advanced Wireless Services (AWS) spectrum.

Introduction

11. The Department has issued a consultation paper titled **Decisions on a Band Plan for Broadband Radio Service (BRS) and Consultation on a Policy and Technical Framework to License Spectrum in the Band 2500-2690 MHz**, *Canada Gazette*, Part I, February 12, 2011, Notice No. SMSE-005-11, (“the Consultation Paper”). In the Consultation Paper, the Department has invited comments on a policy and technical framework to license spectrum in the band 2500-2690 MHz (“the 2500 MHz band”). Following are the comments of Rogers Communications Partnership (“Rogers”).
12. All information contained in Appendix 1 (Response to Question 3-5) is filed in confidence, as provided for on page 39 of the Consultation Paper.
13. Rogers requests that Industry Canada treat all information noted above as confidential, pursuant to subsection 20(1)(b) of the *Access to Information Act*, and sections 38 and 39 of the *Telecommunications Act*. For competitive reasons, Rogers would never “publicly” disclose the information contained in Appendix 1 other than to Industry Canada. The information submitted contains competitively sensitive information and its release would enable potential and existing competitors to use the information against Rogers. Rogers submits that any possible public interest in disclosure of the information in the attachment is greatly outweighed by the specific direct harm that would flow to Rogers.
14. In general, Rogers requires additional mobile spectrum to satisfy our 9 million customers’ demand for faster mobile broadband services so that they can be more productive, access the information and content they want, and stay in touch, any time,

any where, on any device. To satisfy our customers' needs, Rogers will use all of its available spectrum to seamlessly introduce next generation mobile broadband services by implementing LTE, while maintaining a high level of service for the millions of our customers that use HSPA+ and legacy technologies that operate on our existing licensed spectrum. LTE will enable the exponential growth of mobile broadband traffic that is rapidly consuming available capacity, especially in urban areas. 2500 MHz spectrum will be a critical component of our LTE implementation plans throughout Canada.

15. The 2500 MHz band is the largest mobile spectrum band, in terms of available spectrum, and will allow for the licensing of wider spectrum blocks than has been possible with other mobile bands. Coupled with advanced new technologies, such as LTE and LTE-Advanced, wider spectrum blocks will enable unprecedented mobile data speeds. The introduction of faster data speeds will open up a world of new opportunities, in terms of mobile services and applications. It will be a critical enabler of Canadian productivity, innovation and competitiveness and it will significantly increase the already substantial economic and social benefits that arise from the use of mobile spectrum.

16. Through its 50% stake in Inukshuk, Rogers has taken significant risks and made substantial investments in developing the 2500 MHz band so that the benefits of fixed wireless broadband services can be extended across Canada. Inukshuk has invested several hundred million dollars in extending its fixed wireless network to 45 Canadian cities and over 300 rural communities. In addition, Inukshuk exceeded the implementation of spectrum usage condition of its MCS licences, despite the substantial risk and ongoing uncertainty surrounding the final policy, technology and band plan. We also spent \$174 million acquiring additional 2500 MHz spectrum from Multipoint Distribution Service (MDS) licensees who were not prepared to make the considerable investments that were required for the implementation of advanced new mobile broadband technology and services. Rogers is committed to making further substantial investments in the Band in order to leverage all of the advantages of an internationally

compatible band plan for advanced new mobile broadband services using LTE technology.

17. Inukshuk holds 2500 MHz licences across the country and it has a considerable amount of 2500 MHz spectrum in certain geographic areas. Inukshuk holds 40+40 MHz of paired spectrum and 40 MHz of unpaired spectrum in major markets in Ontario, Quebec and British Columbia. Inukshuk holds 20+20 MHz of paired spectrum and 20 MHz of unpaired spectrum outside of these areas and in Alberta, Manitoba, the Maritimes, Saskatchewan and the Territories.
18. At this time, Rogers does not anticipate that it will jointly build and operate an LTE network with Bell using the 2500 MHz band. Since this spectrum will be shared between Rogers and Bell, their individual entitlement amounts to only 50% of the total amount of 2500 MHz spectrum licensed to Inukshuk. This means that, in some areas, Rogers will have access to 20+20 MHz of paired spectrum, while in other areas it will have access to 10+10 MHz of paired spectrum.
19. As noted by the Department in the consultation paper, 4G technologies such as LTE will deliver the fastest data speeds and greatest efficiencies when operating with wider channels of 20 MHz or more, and LTE-Advanced will support channel widths of up to 40 MHz.¹ For LTE, peak downlink data speeds of 326.4 Mbps and uplink speeds of 86.4 Mbps will be possible using 20+20 MHz blocks of spectrum.² For LTE-Advanced, peak downlink speeds of 600 Mbps and uplink speeds of 270 Mbps will be possible for block sizes of 40+40 MHz.³
20. While Rogers will have access to the bare minimum amount of contiguous spectrum required to provide LTE data speeds in certain geographic areas, we will not have access to the amount of spectrum that is required to deliver the faster speeds that will

¹ Consultation Paper, p. 33.

² *HSPA to LTE-Advanced: 3GPP Broadband Evolution to IMT-Advanced (4G)*, Rysavy Research/3G Americas, September 2009, p. 94.

³ *Report ITU-R M.2134: Requirements related to technical performance for IMT-Advanced radio interface(s)*, 2008, p. 5.

be possible using future technologies such as LTE-Advanced. Since Rogers has even less 2500 MHz spectrum in other geographic areas, it will not be able to provide LTE data speeds in those areas. If Canadians and Canadian business are to benefit from the extraordinary data speeds that will be possible with LTE and LTE-Advanced, Rogers should be permitted to bid for additional 2500 MHz spectrum. This will allow Rogers to assemble wider contiguous blocks of 2500 MHz spectrum with which to realize the full potential of technologies such as LTE and LTE-Advanced and it will ensure that Canada will maintain its broadband leadership position.

Block Sizes

1-1: Should the block sizes be uniform in size?

(a) If a uniform size is preferred, what size should be considered?

(b) If a mix of block sizes is preferred, what combinations and arrangements should be considered?

1-2: In the specific geographic regions discussed above and shown in Appendix A, which block size option(s) should be adopted and why is this option(s) preferred over the other options? Should the combinations and arrangements of block sizes be the same or different in different areas?

21. In the Consultation Paper, the Department has invited comments regarding the block sizes that should be used for licensing 2500 MHz spectrum.
22. Given the anticipated demand for 2500 MHz spectrum, Rogers recommends that the Department licence this spectrum in blocks of 5+5 MHz for paired frequency division duplex (FDD) spectrum and in blocks of 5 MHz for unpaired time division duplex (TDD) spectrum. This would potentially allow more operators to acquire 2500 MHz spectrum and implement mobile broadband services, since it would make more spectrum blocks available in the auction.
23. Rogers further recommends that Industry Canada allow bidders to bid for and assemble the paired and unpaired blocks into larger contiguous blocks since, as the Department has noted in the Consultation Paper, wider blocks will provide for higher

mobile broadband data speeds and better quality services for consumers.⁴ Wider blocks would also allow for more efficient use of 2500 MHz spectrum.⁵

24. As explained in more detail above, Rogers will have access to only 50% of Inukshuk's 2500 MHz spectrum. Rogers will not have enough spectrum in some geographic areas to provide the data speeds that will be possible with LTE. We also will not have enough spectrum in any geographic area to provide the significantly faster data speeds that will be possible using future technologies such as LTE-Advanced. Rogers therefore must be permitted to bid for and assemble larger contiguous blocks of spectrum so that we can provide Canadians in all regions with the faster data speeds that will be possible with LTE and technologies such as LTE-Advanced.
25. The flexibility inherent in Rogers' proposed approach would allow market forces to determine the optimal block sizes since it would permit bidders to bid for the quantity of spectrum required to support their business plans. Premium service, broadband operators would be permitted to assemble larger blocks, while pure play voice and text operators would have the option of acquiring smaller blocks. In a market comprised of operators with different business plans and where mobile broadband traffic is growing exponentially each year, it is the operators, not the Department, that are in the best position to determine the most appropriate block sizes that are required to satisfy ongoing demand.
26. This approach would also be consistent with the Department's spectrum management objective of relying on market forces to the maximum extent. Specifically, it would be consistent with the *Spectrum Policy Framework for Canada's* enabling guidelines (a) and (d) which state that market forces should be relied upon to the maximum extent feasible, and regulatory measures, where required, should be minimally intrusive, efficient and effective.⁶ As noted above, the operators will be a

⁴ Consultation Paper, p.32.

⁵ *Ibid*, p. 33.

⁶ *Spectrum Policy Framework for Canada (DGTP-001-07)*, June 2007, p. 9.

much better position than the Department to determine the block sizes that are best suited for their respective business plans.

27. Lastly, Rogers notes that its proposed approach would also be consistent with the approach that has been used, or is being considered, by spectrum managers around the world. Specifically, regulators in Austria, Denmark, Finland, Germany, Netherlands and Sweden have either already licensed, or are considering licensing, paired 2500 MHz spectrum using block sizes of 5+5 MHz, while also allowing bidders to assemble larger blocks of spectrum.⁷ The majority of these countries have also licensed, or are considering licensing, unpaired 2500 MHz spectrum using blocks of 5 MHz, while allowing bidders to assemble larger blocks.⁸

Tier Sizes

2-1: The Department seeks comments on whether the licensing of 2500 MHz spectrum should be based on uniform tier sizes across all spectrum blocks, or on a mixture of tier sizes.

2-2: Based on your answer above, if a uniform tier size is preferred, what tier size should be adopted? If a mixture of tiers is preferred, please indicate the proposed tier(s) for each spectrum block.

28. In the Consultation Paper, the Department has invited parties to comment on whether 2500 MHz spectrum should be licensed using uniform tier sizes or a mixture of tier sizes. Parties have also been asked to comment on the tier sizes that should be adopted.
29. Rogers agrees with the Department's view that licensing high mobility spectrum using larger geographic areas would result in fewer neighbouring service providers, translating into less coordination between licensees and more effective use of radio

⁷ dotecon, *Fixed or Flexible? A Survey of 2.6 GHz Spectrum Awards*, June 2010, Annex 1.
<http://dotecon.com/publications/dp1001.pdf>

⁸ *Ibid.*

spectrum.⁹ We also agree that the use of smaller areas would allow licensees to concentrate on the geographic markets of most interest, or aggregate smaller service areas into larger regions corresponding to their business needs.¹⁰

30. For these reasons, Rogers believes that Tier 4 services areas are too small and will make 2500 MHz frequency coordination cumbersome. As well, the use of smaller service areas will make it unnecessarily difficult and complex for carriers to assemble uniform frequency blocks and contiguous spectrum licences. On the other hand, the use of larger service areas, such as Tier 1, would effectively exclude regional carriers from the auction.

31. Rogers believes that Tier 3 service areas strike a reasonable balance between the need for larger areas for the purpose of facilitating high mobility services and reducing the need for coordination between licensees, and the objective of allowing service providers to concentrate on the geographic markets of most interest. In the event that parties acquire Tier 3 licences that include geographic areas that are not required for their business plans, they can avail themselves of the Department's subordinate licensing policy and enter into arrangements with parties that are prepared to implement services in such areas.¹¹

32. Rogers notes that Tier 3 areas were successfully used to license all of the non-set-aside blocks and some of the set-side blocks in the 2008 AWS auction. We also note that the Department has elected to use Tier 3 areas for the conversion of MCS and MDS licences to mobile BRS licences. The use of Tier 3 areas in the 2500 MHz auction would ensure that the areas used for incumbent licences and auction licences are harmonized.

⁹ Consultation Paper, p. 34.

¹⁰ *Ibid*, p. 35.

¹¹ Industry Canada, "Licensing Procedure for Spectrum Licences for Terrestrial Services CPC 2-1-23, Issue 2", (September 2007). [http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/cpc2123i2e.pdf/\\$FILE/cpc2123i2e.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/cpc2123i2e.pdf/$FILE/cpc2123i2e.pdf)

33. Among other things, the use of Tier 3 areas in the 2500 MHz auction would allow incumbent 2500 MHz licensees to acquire additional 2500 MHz spectrum only in the geographic areas where they require it. The use of larger Tier 2 areas could force incumbent licensees to acquire spectrum across a larger geographic area than they actually require to satisfy their business plans. This would needlessly increase their cost and deny the spectrum to other bidders.
34. For example, Rogers will have access to 20+20 MHz of Inukshuk's paired spectrum in some of the Tier 3 areas that fall within the Tier 2 service area named Southern Ontario (2-08). In the remaining Tier 3 areas, Rogers will have access to only 10+10 MHz of spectrum. If the Department elects to use Tier 3 areas in the auction, Rogers could bid for an additional 10+10 MHz of spectrum in only those Tier 3 areas where it currently holds less than 20+20 MHz. If the Department uses Tier 2 areas, Rogers will need to bid for 10+10 MHz of spectrum in the entire Southern Ontario Tier 2 service area even though it might only want the additional spectrum in a sub-set of the geographic areas included in that Tier 2 area.
35. For these reasons, Rogers recommends that the Department use Tier 3 service areas for licensing 2500 MHz spectrum in the upcoming auction.

Promoting Competition

3-1: If the Department determines that there is a need for measures to promote competition in the wireless services market, which of the above mechanisms would be most appropriate in the 2500 MHz band and why should this mechanism be considered over the other? Comments should also indicate if further restrictions should apply.

36. As explained in greater detail in the comments and reply comments filed by Rogers in response to the consultation paper titled *Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum - SMSE-018-10* (the 700 MHz Consultation), the Canadian wireless market is

already hyper-competitive and there is no need for additional artificial measures to promote competition.

37. Rogers opposes the use of any measures that would prevent the 2500 MHz spectrum being equally available to all parties. To do so would simply mean that the regulator is predetermining the outcome of the auction. Auctions should be fair and open to all in order to allocate spectrum impartially and establish a fair market price for the spectrum in question. This ensures a level playing field and that those carriers that need and value the spectrum the most will have access to it and can put it to its highest use.

38. The mechanisms proposed by the department: set-asides; spectrum caps; and auction caps; distort auctions and handcuff carriers, costing the wireless industry billions of dollars. As witnessed during the 2008 AWS auction, set-asides would create massive gaming opportunities that were repeatedly abused during the auction. Spectrum caps create arbitrary limits inconsistent with the capacity needs of wireless carriers. Even an auction cap, while less disruptive than a set-aside or spectrum cap, interferes with the efficient allocation of spectrum and creates waste. Industry Canada should not adopt any of these measures for the reasons detailed below.

39. An open auction is especially crucial with respect to the 2500 MHz band. As noted already, the band holds significant promise for the delivery of unprecedented mobile data speeds given that a significant amount of spectrum is available for assembling wide contiguous blocks of spectrum. While LTE can deliver faster data speeds than current generation technologies using spectrum blocks of 20+20 MHz, significantly faster data speeds will be possible with LTE-Advanced technology using spectrum blocks of 40+40 MHz. Unless bidders are provided with the flexibility to bid for and assemble adequately sized blocks, Canadians will not have access to the exceptionally fast mobile data speeds that will be possible with next generation technologies. If bidders are restricted from assembling enough contiguous spectrum, Canada will miss

out on the economic and social benefits arising from lightening fast mobile broadband services.

40. The Department should allow market forces to determine the optimal block sizes. Bidders should be permitted to bid for the quantity of spectrum required to support their business plans. In an open auction, the bidders will determine whether exceptionally fast mobile data speeds are worth more to premium broadband providers than they are to voice and text providers. It should be market forces through an open auction that make this determination, not the Department.

Set-asides

41. As demonstrated in the AWS auction, a spectrum set-aside produces distortions in the auction process. The results of the auction demonstrate that the set-aside had a substantial negative impact in the form of artificially high prices. There was a corresponding advantage to new entrants who “gamed” the auction process and were permitted to bid up the price of non-set-aside spectrum with impunity. In addition, the use of the set aside resulted in wide divergence in prices paid for similar licences.
42. These discrepancies are most evident when comparing the final prices of identical set-aside and non-set-aside licences. For example, the price per pop per MHz for non-set aside spectrum was \$1.60, 38% higher than the price per pop per MHz of the set-aside spectrum, which was \$1.16.
43. This was due to the extensive gaming behaviour demonstrated by new entrants in the AWS auction, particularly the “parking strategies” exhibited by a number of new entrants. Normally, as an auction progresses, bidders are forced to drop eligibility points and are required to focus their efforts on the licence areas they truly value. However, new entrants were able to avoid this discipline and to preserve eligibility points by bidding on the non set-aside spectrum licences targeted by incumbents. They even bid upon non-set aside licenses when they were more expensive than equivalent licenses

in the set-aside spectrum. The end result of this type of behaviour was to drive up licence prices for incumbents.

44. This gaming came at a significant cost. The auction's design and associated "gaming" behaviour by bidders ". . . resulted in an overpayment of approximately CAN \$2.4 billion by the auction participants, the incumbent wireless providers in particular."¹² This is money that could have been reinvested into the wireless industry creating jobs and improving infrastructure to benefit all Canadians.
45. Even more significantly, including a set-aside in any spectrum auction could result in this valuable resource being obtained by speculators with no intention of building out new networks. As demonstrated in the AWS spectrum, which saw set-aside spectrum sell at well below the prices of similar non set-aside spectrum licences, the potential would exist for speculators to obtain valuable 2500 MHz spectrum at low prices only to flip the spectrum at a later date to receive a higher amount than the purchase price, or wait for a relaxation of the foreign ownership rules. This ultimately would take spectrum out of the hands of carriers who would use it to deploy new services and meet consumer demand and would place it on the side-lines for future sale by the speculators.
46. As such there is no justifiable reason to use a set aside in the 2500 MHz auction. Its consequences were clearly witnessed in the AWS auction. It is for those reasons that it has fallen out of favour around the world.

Spectrum Caps

47. A spectrum cap is simply another form of regulatory intervention designed to interfere with the efficient allocation of resources pursuant to an open auction process. It establishes an artificial limit on how much spectrum an individual carrier may hold. Such

¹² NERA Economic Consulting, "Regulatory Policy Goals and Spectrum Auction Design. Lessons from the Canadian AWS Auction", (14 July 2009), p 18.

a limit equates to a subsidy that effectively creates a situation where one group of companies is given Government assistance at the expense of another group of companies.

48. A spectrum cap is an arbitrary number. It fails to recognize the constant evolution of the wireless industry as technology continuously changes. Once set, the limits cannot be adjusted easily as new limits are caught in bureaucratic process. As noted by Jeffrey Church,

*the case against a hard cap on aggregate spectrum holdings remains a substantial one. For one thing, caps are inherently arbitrary and they cannot easily be adjusted to respond to actual demand conditions. Thus, once a cap is set, it would typically be a difficult thing for a firm to change that cap to respond to changes in its needs for spectrum. Since the cap would be set by a body such as Industry Canada or the Federal Communications Commission, this would typically involve a lengthy and contentious procedure, subject to much lobbying by all sides. Although periodic reviews might be an alternative, this would all seem to go against the goal of creating something of a market in spectrum trading.*¹³

49. As explained in the comments and reply comments filed by Rogers in response to the 700 MHz Consultation, spectrum is a finite resource and increased demands on networks require additional spectrum. Wireless data is growing exponentially and will continue to grow, putting further pressure on network capacity. As demand grows, Rogers will run out of spectrum despite cell site densification efforts. Additional spectrum is needed to continue to offer customers high-quality and innovative services. Consumers expect continuing evolution of technologies and services, but there will be no improvement in networks or services without more spectrum. Given the dynamic nature of mobile data growth rates and market realities, *“a cap seems like an undesirable instrument given its rigidity and given the technical and economic backdrop against which it is being implemented.”*¹⁴

¹³ Jeffrey Church, “Spectrum Policy as Competition Policy”, para 209. [http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/smse-018-10-jeffreychurch-rogers.pdf/\\$FILE/smse-018-10-jeffreychurch-rogers.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/smse-018-10-jeffreychurch-rogers.pdf/$FILE/smse-018-10-jeffreychurch-rogers.pdf)

¹⁴ Jeffrey Church, “Spectrum Policy as Competition Policy”, Para 212.

50. A spectrum cap could also create an “*elevated risk (relative to what pertained in the past) of constraining the successful expansions of an incumbent operator if it cannot acquire the spectrum.*”¹⁵ A spectrum cap jeopardizes Rogers’ ability to adapt and grow. Rogers current spectrum holdings are either fully engaged or will be so in the near future. Rogers 850 MHz and 1900 MHz spectrum are both fully deployed providing GSM/HSPA service to its 9 million customers. Rogers cannot prematurely redeploy this spectrum without disrupting the service of millions of Rogers existing customers. Plans for all remaining available spectrum have been finalized and will be deployed to deliver the next generation of wireless service. Rogers needs 2500 MHz spectrum to provide the exceptionally fast mobile data speeds that will be possible with LTE using wide blocks of spectrum.
51. For all the reasons detailed above, Rogers reiterates its position that there should be no spectrum caps imposed on participants in the 2500 MHz auction.

Auction Caps

52. Auction caps also prevent the efficient allocation of spectrum. An auction cap limits the amount of spectrum an individual bidder may obtain in a specific auction, surviving perhaps for a short period afterwards. Like spectrum caps, an auction specific cap is another form of regulatory intervention where the regulator predetermines the outcome of the auction. An auction cap also creates a situation in which the Government gives assistance to one group of companies at the expense of another.
53. It is worth noting however that while auction caps distort auctions, they are far less damaging than set-asides and spectrum caps. Auction caps are normally used to ensure multiple winners in an auction. Unlike a set-aside, an auction cap creates few if any gaming opportunities. An auction cap only limits how much spectrum a bidder can obtain, not which specific license blocks are available to it. Every bidder therefore can place bids upon any licence as long as they do not exceed the cap. The cap ensures

¹⁵ Jeffrey Church, “*Spectrum Policy as Competition Policy*”, Para 216.

there are multiple winners in the auction without the distortions and waste created by a set-aside.

54. An auction cap is also less damaging than a spectrum cap. A spectrum cap impedes a carrier's ability to meet the increasing demands for faster mobile broadband services. Establishing arbitrary limits is simply inconsistent with every current forecast of spectrum demand. An auction cap however is a temporary one-off measure to ensure accessibility during an auction, and may not interfere with a carrier's long term ability to meet the needs of its customers.
55. Under the current circumstances however, Rogers believes that any measure introduced into the auction will interfere with its efficient allocation of the spectrum. There is therefore no need for further measures governing the distribution of spectrum in Canada.

Spectrum Aggregation Limits

**3-2: (a) If the Department were to implement spectrum aggregation limits (caps):
Should the cap apply to the 2500 MHz band? If a cap is necessary:
(i) What should be the size of the cap and should this be specific to either the paired and/or unpaired spectrum bands?
(ii) Should bidders and their affiliates or associates share the cap?
(iii) How long should the cap remain in effect?**

3-2(a) Should the cap apply to the 2500 MHz band?

56. If Industry Canada adopts a spectrum aggregation limit, the Department should apply an auction cap and not a spectrum cap. While both types of caps distort markets, the auction cap creates far less damage than a spectrum cap and for a shorter period of time. A broader spectrum cap in capturing all bands would harm carriers, denying them access to a particular band's technology ecosystem and obstructing them from addressing capacity needs, resulting ultimately in reduced mobile broadband speeds,

inferior call quality and preventing them from delivering the next generation of wireless technology. A broad cap would also be contrary to the Government's goal of maintaining and expanding Canada's digital advantage to provide the basis for a stronger and more competitive economy. The cap should therefore be limited to an auction cap for the 2500 MHz spectrum only.

3-2(a)(i) What should be the size of the cap?

57. In order to minimize the inefficiencies created by the auction cap, it should be made as large as possible. Carriers need the flexibility to obtain sufficient spectrum to develop and deploy the next generation of wireless service in accordance with their business plans. The auction must remain as open as possible in order to properly allocate the spectrum.
58. The size of the cap should not prevent bidders such as Rogers from acquiring adequate contiguous spectrum with which to offer faster mobile data speeds that will be possible with LTE and future technologies such as LTE-Advanced.

3-2(a)(ii) Should bidders and their affiliates or associates share the cap?

59. If a cap is imposed, it should be shared by affiliates and associated entities. If two (or more) carriers are cooperating in building their network or marketing their service, they should be treated as one entity. Failing to do so undermines the cap and the auction as a whole. Two carriers acting in concert would be able to obtain twice the spectrum a competing carrier would be able to obtain. That would provide the associated entities with a superior performing network with far faster speeds. The quality of a carrier's network should be based upon their level of investment and ability to compete, and not determined by a regulatory restriction. An even playing field requires that entities working together during or even after the auction should share the cap.

60. As stated above, Rogers does not anticipate that it will jointly build and operate an LTE network with Bell using 2500 MHz spectrum. Since this spectrum is shared between Rogers and Bell, their individual entitlement amounts to 50% of the total amount of 2500 MHz spectrum licensed to Inukshuk. Any cap that will apply to Rogers must only apply to Rogers' share of Inukshuk's 2500 MHz spectrum. Rogers' ability to bid for additional spectrum must not be limited by the total amount of spectrum that is licensed to Inukshuk, since Rogers will not have access to half of Inukshuk's spectrum.

3-2 (a)(iii) How long should the cap remain in effect?

61. If the Department imposes any cap, for the reasons outlined above it should remain in effect for as short a period as possible. The wireless industry is possibly the fastest changing industry today. A carrier's capacity needs are constantly changing and normally growing. Setting a limit today could have drastic consequences tomorrow. As such, the cap should have as short a duration as possible. This is particularly important given that operators will need to assemble wider blocks of spectrum in order to realize the faster mobile data speeds that will be possible with future generations of technology. The longer the cap remains in effect, the more likely that operators will not be able to realize the benefits associated with future technologies. Canada's broadband leadership will suffer as a result.

Set-Aside

3-2(b): If the Department were to implement a set-aside in the 2500 MHz auction:

- (i) Who should be entitled to bid in the set-aside block(s) and should the entitled bidders be restricted to bidding on the set-aside only?**
- (ii) How much spectrum should be set-aside and which block(s) should be set-aside?**
- (iii) If the set-aside were to include multiple blocks of spectrum, should they be contiguous?**
- (iv) What restrictions should be put in place to ensure that policy objectives are met (for example, should trading of the set-aside spectrum be restricted for a given time period)?**

3-2(b)(i) Who should be entitled to bid in the set-aside block(s) and should the entitled bidders be restricted to bidding on the set-aside only?

62. Rogers reiterates that no wireless carrier should be entitled to a set-aside. As noted by Jeffrey Church, *"it is unlikely that a set-aside was required in 2008, and it is at least equally unlikely that a parallel set-aside will be required in 2012 on order for firms other than Bell, Telus and Rogers to acquire spectrum."*¹⁶ Several of the new entrants have financial resources that equal or even exceed the resources of the incumbent carriers. They are fully capable of competing in an open auction for spectrum.
63. Should Industry Canada however adopt a set-aside, those bidders entitled to bid upon the set-aside blocks should be restricted to the set-aside blocks. As discussed above, the set-aside in the AWS auction allowed the new entrants to game the auction, driving up non set-aside blocks while keeping prices in the set-aside down. They repeatedly bid in the non set-aside blocks when equivalent set-aside blocks were available for less. Ultimately, the set-aside blocks were obtained at a significant discount to the non set-aside blocks. After the AWS experience, Industry Canada must amend its auction rules to prevent such abuse occurring in the future.
64. Furthermore, allowing new entrants to bid upon the non-set-aside blocks would run contrary to the entire purpose of the set-aside. Despite having significant financial resources, the new entrants have repeatedly argued that they could not compete with the incumbents in an open auction. If Industry Canada agrees with that proposition, then there is no purpose allowing them to bid in the non set-aside blocks except to game the system. If a set-aside is required because the new entrants cannot compete with the incumbents, then there is no need to allow them to bid upon the non set-aside blocks in competition with the incumbents.

¹⁶ Jeffrey Church, *"Spectrum Policy as Competition Policy"*, Para 182.

3-2(b)(ii) How much spectrum should be set-aside and which block(s) should be set-aside?

65. Rogers reiterates its opposition to the use of mechanisms that would limit access to spectrum in the 2500 MHz spectrum, including the use of a set-aside. As detailed above, the use of a spectrum set aside in the 2008 AWS auction produced distortions in the auction process.
66. In the event that Industry Canada does impose a set-aside for the 2500 MHz auction, it should be as small as possible. Voice-centric carriers will not need as much 2500 MHz spectrum as Rogers, which offers both voice and broadband services and its customers have very high levels of broadband usage. As noted by Lemay-Yates, for voice centric carriers with lower data subscriptions and usage, the business model can be implemented with modest spectrum resources. *“For such a carrier not offering high data speeds, the data downlink requirement is relatively low – less than 10 MHz even with legacy technology.”*¹⁷ Meanwhile incumbents have substantially more existing customers than the new entrants. Rogers currently has 9 million customers, whereas collectively the new entrants have less than 500,000 subscribers.¹⁸

3-2(b)(iii) If the set-aside were to include multiple blocks of spectrum, should they be contiguous?

67. Rogers re-iterates its view that the Department should not establish a set-aside. In the event that the Department implements a set-aside, the set-aside should be as small as possible.

3-2(b)(iv) What restrictions should be put in place to ensure that policy objectives are met (for example, should trading of the set-aside spectrum be restricted for a given time period)?

68. In order to discourage, if not prevent, speculation and flipping, and to ensure that this valuable spectrum is used, any blocks of spectrum set-aside should have tight roll-

¹⁷ Lemay-Yates, *“The Impact of 700 MHz Spectrum on LTE Deployment and Broadband in Canada, (28 February 2011)”*, p 36. [http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/smse-018-10-lemay-submission.pdf/\\$FILE/smse-018-10-lemay-submission.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/smse-018-10-lemay-submission.pdf/$FILE/smse-018-10-lemay-submission.pdf)

¹⁸ Merrill Lynch, *“Global Wireless Matrix 4Q10”*, (23 December 2010), p 34.

out requirements. As witnessed in the AWS auction, set-aside blocks were obtained at a discount to the non-set aside blocks. The 2500 MHz spectrum is valuable enough without creating financial incentives for speculators. A strongly enforced roll-out requirement is essential if Industry Canada proceeds with a set-aside.

Other Mechanisms

3-3: Are there other mechanisms that should be considered in the 2500 MHz band to promote competition? If so, how should such mechanisms be applied in this band?

69. Roll-out requirements are the most effective mechanism. The theory of the new entrants is that incumbents will buy spectrum they do not need or want just to keep it out of the hands of the new entrants. Roll-out requirements are the best way of ensuring that this does not happen. Indeed, given the benefits that Canadians should enjoy arising from the spectrum, roll-out requirements seem appropriate. In effect, the government needs to determine whether bidders really need 2500 MHz spectrum to build networks or only want to keep it away from other bidders. Roll-out requirements force bidders to reveal their true preferences.
70. Rogers notes that Inukshuk and other incumbent 2500 MHz licensees were subject to detailed roll-out requirements when they were initially licensed to implement MCS and MDS. For its part, Inukshuk exceeded its roll-out requirements by investing several hundred million dollars in extending its network to approximately 7.5 million Canadian households, covering 70% of the households within the cities and communities in Inukshuk's detailed deployment schedule, or about 63% of the households in its MCS licence areas.
71. As explained in greater detail below, successful bidders in the 2500 MHz auction should be similarly required to implement services in their 2500 MHz spectrum through roll-out requirements. Licensees should be required to unlock the economic and social benefits associated with this spectrum.

Changes to Foreign Investment Restrictions

3-4: The Government of Canada has undertaken a consultation on potential changes to the foreign investment restrictions that apply to the telecommunications sector. How would the adoption of any of these proposed changes impact your responses to the questions above?

72. For the reasons provided above, Rogers is strongly opposed to the notion of artificial measures such as spectrum set-asides and spectrum caps. There would be no argument whatsoever for any such measures in the event that the Government of Canada relaxes or eliminates the foreign investment requirements that apply to the telecommunications sector.
73. It is hard to imagine how any of the huge foreign operators such as AT&T, Verizon, Orange, Orascom, Vodafone, or VimpelCom would require any special advantages in a Canadian spectrum auction when their respective market capitalization towers over all of the largest incumbent Canadian operators.
74. Using their financial might, foreign operators could easily out-bid any of the Canadian operators. There would be no need, for example, to set-aside spectrum for these companies to ensure that they will have a better chance of acquiring spectrum and entering the Canadian market. Similarly, there would be no need to artificially restrain the incumbents from acquiring additional spectrum to the benefit of foreign firms. The large foreign firms will simply buy all of the spectrum they need. It is equally unclear why the relatively smaller incumbent Canadian operator's costs of acquiring spectrum should be artificially inflated through measures such as set-asides so that the larger foreign operators could enjoy a subsidy on the price of set-aside spectrum.
75. For these reasons, the Department should not impose a spectrum cap or spectrum set-aside in the event that the foreign investment restrictions are relaxed or removed.

Auction Cooperation

3-5: Do you plan to use the 2500 MHz spectrum acquired in the acution with, or on behalf of, another entity, which may participate in the auction? If yes, with which entity?

76. See Appendix 1 for Rogers' confidential response to this question.

Promoting Service Deployment in Rural Areas

4-1: Comments are sought on specific measures that could be adopted within the 2500 MHz spectrum auction process to ensure further deployment of BRS in rural and remote areas (e.g. roll-out conditions, tier structure, etc.)

77. As explained above, the 2500 MHz band is the largest mobile spectrum band and provides Canada with the opportunity of realizing the unprecedented mobile data speeds made possible by LTE and LTE-Advanced. The availability of faster data speeds will allow Canada to maintain its broadband leadership and will promote the development of the Digital Economy.
78. The Department must not allow the vitally important 2500 MHz spectrum resource to lie fallow in the hands of spectrum speculators who have no intention of implementing services. Licensees should be required to unlock the economic and social benefits associated with this valuable resource by implementing services in accordance with roll-out requirements. This approach would be consistent with the approach used by the Department in licensing this spectrum for MCS and MDS spectrum and with the approach used for licensing valuable spectrum in other mobile spectrum bands.
79. However, in establishing roll-out requirements for the 2500 MHz band, it is important for the Department to take the band's propagation characteristics into consideration. As the Department knows, this high-band spectrum is ideally suited for the provision of

coverage across a relatively small geographic area compared to lower band spectrum. This means that the band is best suited for coverage in urban areas. Since operators would need to implement significantly more base stations to cover large geographic areas using 2500 MHz spectrum than lower band spectrum, wide area coverage of sparsely populated rural areas using 2500 MHz spectrum will not be economic.

80. The significant economic disparity between the provision of wide area coverage using low band sub-1 GHz spectrum versus high band 2.5 GHz spectrum has been noted in other jurisdictions. For example, a 2007 study published by the European Parliament concluded that the cost savings associated with low band coverage compared to high band coverage are substantial. The study quoted the following from research performed by Open Spectrum UK:

The use of the 700 MHz UHF spectrum instead of a 2.4 GHz (unlicensed) or 2.6 GHz band would reduce network infrastructure costs enormously. Cell radii at 700 MHz are more than 100% larger than comparable systems at 2.6 GHz. As a result, the required number of base stations is reduced by more than half. Analysis of a wireless Internet service provider (WISP) shows that using spectrum below 1 GHz would need about 1/3 fewer base stations and about 50% of the capital investment of a WISP using the 2.4 GHz or 5 GHz bands (Open Spectrum UK, 2007, p. 20).¹⁹

81. In light of the above, Rogers believes that the Department should require licensees to implement services according to the Tier 3 five-year roll-out targets that were used for the licensing of AWS spectrum.²⁰ We believe that this approach would be reasonable since it would balance the need to ensure that licensees put the spectrum to productive use with the fact that coverage of relatively large and sparsely populated areas cannot be economically achieved using this high-band spectrum.

¹⁹ European Parliament Policy Department, Economic and Science Policy, "A Common European Spectrum Policy, Barriers and Prospects", (December 2007), p. 19.

²⁰ *Licensing Framework for the Auction for Spectrum Licences for Advanced Wireless Services (AWS) and other Spectrum in the 2 GHz Range (DGRB-011-07)*, December 2007, Appendix C.
<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08866.html>