

Canada Gazette Notice No. SLPB-002-19
Consultation on a Policy and Licensing Framework for
Spectrum in the 3500 MHz Band

Reply Comments
of
Bell Mobility Inc.

20 September 2019

Table of Contents

	<u>Page</u>
1.0 EXECUTIVE SUMMARY	3
2.0 SPECTRUM SET-ASIDES AND/OR SPECTRUM CAPS	11
3.0 LICENCE AREAS.....	23
3.1 Spectrum available in the auction	24
4.0 AUCTION FORMAT AND RULES	27
4.1 Generic licences	27
4.2 Anonymous bidding	29
4.3 Clock auction format and structure of the clock stage	30
4.4 Price increments in the clock rounds.....	33
4.5 Structure of the assignment stage.....	33
5.0 BIDDER PARTICIPATION: AFFILIATED AND ASSOCIATED ENTITIES AND PROHIBITION OF COLLUSION RULES	34
6.0 CONDITIONS OF LICENCE FOR FLEXIBLE USE SPECTRUM LICENCES IN THE 3500 MHZ BAND.....	36
6.1 Licence term	36
6.2 Licence transferability, divisibility and subordinate licensing	37
6.3 Deployment requirements	38
6.4 Other conditions of licence.....	39
6.5 Research and Development.....	39
6.6 Mandatory Roaming.....	40
6.6.1 Roaming on 5G Networks	42
6.7 Annual Reporting	43
6.8 Other proposals related to CoLs	43
7.0 AMENDING THE CONDITIONS OF LICENCE FOR ALL CURRENT FIXED WIRELESS ACCESS LICENCES.....	44
8.0 AUCTION PROCESS.....	45
8.1 Opening bids.....	45
8.2 Pre-auction deposits	45
9.0 LICENCE RENEWAL PROCESS.....	47

1.0 **EXECUTIVE SUMMARY**

ES1. In accordance with the procedure set out in Innovation, Science and Economic Development Canada (ISED or the Department) Notice No. SLPB-002-19, *Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band*, as published in the Canada Gazette, (the Consultation), we are pleased to provide the following Reply Comments.

Spectrum set-asides and spectrum caps

ES2. A number of intervenors supported the implementation of spectrum set-asides and/or spectrum caps. There is an abundance of compelling evidence that today's wireless marketplace is highly competitive, however, and as a result, there is no need to implement spectrum set-asides and/or spectrum caps. All carriers compete vigorously to offer the highest speeds, widest and most reliable coverage, best customer service, latest devices, and most innovative product and service offerings.

ES3. In addition, regional providers are demonstrably well-established, successful, and, as demonstrated in the 600 MHz auction, have the financial means necessary to compete for spectrum in an open auction. For example, Shaw had supplementary round bids indicating a willingness to pay up to \$1.5 billion for various packages of spectrum licences¹ while QMI was willing to pay up to \$1.1 billion. The aggressive bidding by set-aside eligible bidders indicates a willingness to pay over a billion dollars for spectrum and contributed to the excessively high prices for non-set-aside spectrum.

ES4. Spectrum set-asides distort the auction process to the significant benefit of the set-aside spectrum recipients. An efficient allocation of spectrum cannot be achieved if spectrum set-asides are implemented as part of an auction process. Set-aside licences enable the favoured bidders to asymmetrically raise costs for set-aside ineligible bidders at little risk to themselves. This asymmetry – wherein the bids of set-aside eligible bidders can affect the prices of ineligible bidders, but the reverse does not hold – makes it probable that set-aside eligible bidders will raise their rivals' costs, thereby distorting prices in the 3500 MHz auction. The distortionary aspects of spectrum set-asides were also noted by Telus: "set-asides exacerbate supply shortages, pick winners and losers at auction, and create asymmetric opportunities for anti-

¹ 600 MHz auction bidding information available at http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf11331.html.

competitive gaming and distort the cost of spectrum."² When spectrum costs are driven up, consumers end up paying more. In this way, "pro-competitive" measures that increase costs are incongruent with the Government's objective of lowering wireless prices.

ES5. While we do not support the adoption of either spectrum set-asides or spectrum caps, from a public policy perspective, a spectrum cap is far superior to a spectrum set-aside. A spectrum cap could address the Department's concerns about limiting the risk of spectrum concentration without introducing the risks of gaming that are associated with set-asides. In previous auctions set-aside eligible bidders were able to inflate the prices paid for non-set-aside spectrum while being completely shielded from such behaviour themselves. In contrast, a spectrum cap ensures that all bidders can fairly and equally compete for spectrum, neither allowing any single competitor to gain an insurmountable advantage over its rivals, nor permitting some bidders to win spectrum at prices below market value.

ES6. The amount of the spectrum cap is important. If the spectrum cap is set too low, then the efficiencies of larger channel widths are not obtained and if the spectrum cap is too high, then the Department's desire to reduce spectrum concentration may not be achieved. A spectrum cap of 50 MHz would be the least objectionable option as it allows for at least four providers to have 3500 MHz spectrum. Several intervenors supported a 50 MHz in-band spectrum cap.

Rogers' asymmetric spectrum cap proposal

ES7. The proposal by Rogers to apply an asymmetric spectrum cap targeting us and Telus is a blatant attempt to convince the Department to impose an unprecedented new rule that would allow Rogers to secure 50% more spectrum (60 MHz versus 40 MHz) than either of its two largest competitors. Rogers does not need new regulatory rules that would allow it to gain any advantage, and it does not need help acquiring sufficient spectrum to serve its subscribers and deploy 5G. They have more spectrum per subscriber than either us or Telus,³ and spent \$1.7 billion to acquire 600 MHz spectrum at auction earlier this year.

² Telus Comments, paragraph 52.

³ See Table 1 of Telus' submission at paragraph 73 which shows Rogers at 23 MHz/subscriber compared to Telus at 19 MHz/subscriber and Bell at 18 MHz/subscriber. It should be noted that none of the national mobile service providers comes close to the MHz/subscriber held by Eastlink (60 MHz/subscriber), Shaw (41 MHz/subscriber) and Videotron (32 MHz/subscriber).

ES8. In addition, on numerous occasions, Rogers' intervention describes how the current market structure has led to excellent outcomes for Canadians. Yet at the same time, Rogers inexplicably claims that the network reciprocity arrangement between us and Telus is bad for competition because it allows providers to "creat[e] a technical advantage over other networks" in order to "stifle facilities-based competition."⁴ In reality, striving to "creat[e] a technical advantage over other networks" is the definition of facilities-based-competition and is an unambiguous benefit to Canadians.

Other Comments – Transition to Flexible Use Licences

ES9. Both Canwisp and Shaw make recommendations with respect to the process related to the transition of fixed-use licences to flexible-use licences.⁵ Canwisp proposed that the Department deny applications where network deployment was only the result of meeting the deployment condition of licence. Shaw went as far as requesting that existing licensees provide advanced notification to all licensees of where they intend to voluntarily convert their fixed-use licences to flexible-use licences and that existing licensees should not be able to use their flexible-use licences until six months after they are issued. The Department should reject both recommendations.

ES10. The Department has consulted on the transition process and has made the decision that "for each licence area, existing licensees that meet all of their conditions of licence will be eligible to be issued flexible use licences covering the same geographic area for a fixed amount of spectrum."⁶ In addition, the Department explicitly took into account concerns related to existing licensees delaying the deployment of flexible-use licences in their decision regarding the transition process. Shaw is simply trying to hinder competition by delaying existing licensees' deployment of mobile networks using 3500 MHz spectrum. Shaw is also trying to obtain valuable competitive information that they would not have access to otherwise. There is no justification for, and significant potential harm from, a rule requiring an existing licensee to provide key competitive information to a competitor such as where and when they will deploy network and services.

⁴ Rogers Comments, paragraph 23.

⁵ Canwisp Comments, paragraph 21 and Shaw Comments, paragraphs 119 to 126.

⁶ SLPB-001-19 – *Decision on Revisions to the 3500 MHz Band to Accommodate Flexible Use and Preliminary Decisions on Changes to the 3800 MHz Band*, Decision D4.

Auction structure – clock rounds

ES11. The majority of intervenors supported the proposed structure of the clock stage, the proposed methodology for calculating processed demands and posted prices after each clock round. Similar to ourselves, however, Cogeco noted that an "all-or-nothing bid helps reduce exposure risk within the tier areas."⁷ The current proposed methodology for calculating eligibility increases this risk because it can result in unrequested reductions in eligibility. This means that a bidder can be forced to lose eligibility relative to its requested demand and can even lose eligibility despite requesting no reduction in activity whatsoever. Therefore, we recommend that the Department adopt our proposed three rules which are designed to address this issue:

Rule 1: a bidder's activity should be set equal to the eligibility points associated with its processed demand or the eligibility points associated with its requested demand, whichever is larger.

Rule 2: allow optional "all-or-nothing" bids by individual product.

Rule 3: allow optional overall "all-or-nothing" bids.

ES12. Rogers and Telus note that it is not clear that the proposed methodology for calculating processed demands would allow two bidders to switch products in the same round.⁸ As described by Telus, the iterative bid processing algorithm implies that "near the end of the auction (when most products have cleared and little excess demand remains), the sequential nature of bid processing would appear to introduce potential "deadlock" scenarios where two bidders that want to switch products may not be permitted to do so."⁹ If this is correct, then we support the recommendation of Rogers that this type of "switch bid" be allowed.¹⁰

ES13. Cogeco recommends that the Department allow bidders to withdraw a standing high bid and include an Extended Round to facilitate the sale of unsold spectrum licences.¹¹ We do not support either recommendation. With respect to allowing bidders to withdraw standing high bids, this can result in an inefficient allocation of spectrum licences as bidders are able to reduce demand in a particular area and then to return at a later point in the auction. As a result, it may appear that the auction is coming to an end, only to have continued excess demand once

⁷ Cogeco Comments, paragraph 175.

⁸ Rogers Comments, paragraph 142, and Telus Comments, paragraph 157.

⁹ Telus Comments, paragraph 157.

¹⁰ Rogers Comments, paragraph 144.

¹¹ Cogeco Comments, paragraphs 195 to 206.

a bidder re-introduces demand in a service area that they withdrew from in a previous round. This unnecessarily prolongs the auction and increases prices.

ES14. With respect to the Extended Round, there is limited to no benefit to adopting this recommendation. Based on the Department's proposed auction format and proposed methodology for calculating processed demands, there is little concern that there would be a large number of unsold licences.

Auction structure – assignment round

ES15. Telus proposed that the Department consider using a "regional bandwidth variation" optimization method to facilitate maximum geography contiguity.¹² We do not support this recommendation. While an optimization algorithm could simplify the process of determining the potential frequency assignments that allow contiguity, the outcome will not be optimised for all bidders since it will not incorporate each bidder's preferences for various frequencies across all service areas. One of the key benefits of the assignment round is that it allows bidders to express their preferences for various frequencies on a service area by service area basis. By having the assignment round progress sequentially by service area, it allows bidders to incorporate additional information and make adjustments as necessary.

ES16. Therefore, we recommend the use of separate assignment rounds for each service area (subject to the creation of assignment areas), and that the rounds proceed sequentially in descending order of population. It is critical that bidders do not end up with fragmented spectrum holdings across service areas. Extra time should be taken during the auction to get the assignment right rather than spending months correcting errors by negotiating and transferring licences after the auction is over.

Auction structure – final payment

ES17. With respect to the final payment, we propose that the due date for the remaining 80% of the final payment should be 30 days after the completion of the applicable protection period or a voluntary transition. It would be unnecessarily onerous for successful bidders to pay hundreds of millions of dollars for something they cannot use, in some cases for as long as three years. These are costs that are borne today but do not contribute to the production of services and

¹² Telus Comments, paragraphs 175 to 180.

generation of revenue because the spectrum cannot be put to use. This results in an inefficient allocation of resources, and is capital that can be allocated to different uses such as network improvements, customer service and the development of new products and services – all of which benefit consumers.

ES18. In the alternative, if ISED demands payments for licences that are not yet usable and the 3500 MHz auction were to begin in November or December 2020, then we recommend that the due date for the remaining 80% of the final payment should be 31 January 2021 or 30 business days following the announcement of the provisional licence winners, whichever is later. This would allow bidders to more effectively manage the financial impact occurring at the end of the reporting year while still allowing the Government to account for the auction proceeds in their 2020 fiscal year which does not close until 31 March 2021.

Conditions of licence

ES19. Every national and regional mobile service provider expressed serious concern about the additional deployment requirement for licensees that currently operate LTE networks. Rogers called the proposed requirement "extremely aggressive and completely unrealistic,"¹³ and QMI echoed this, describing the measures as "indûment onéreuses et irréalistes."¹⁴ Shaw warned that the proposal would "detract from the Department's stated objectives" in addition to being "impractical" and "inequitable."¹⁵

ES20. Many intervenors, including Iristel, QMI, Rogers, SaskTel and Shaw, observed that existing LTE networks are supported by low-band spectrum that is significantly farther-reaching than 3500 MHz.¹⁶ Thus, it would be prohibitively expensive, as well as time-and-resource-consuming, to achieve similar levels of coverage with the 3500 MHz band. To illustrate this point, SaskTel provided a comparison of predicted coverage for 850 MHz versus 3500 MHz, and showed that in order to meet the 97% population coverage requirement they would need to deploy 5G on each of their current cell sites plus build a massive number of additional towers in rural areas (in what they called "the middle of nowhere") to achieve coverage even close to existing levels.¹⁷

¹³ Rogers Comments, paragraph 200.

¹⁴ QMI Comments, paragraph 9.

¹⁵ Shaw Comments, paragraph 99.

¹⁶ Iristel Comments, paragraph 40; QMI Comments, paragraph 72; Rogers Comments, paragraph 200; SaskTel Comments, paragraph 147; and Shaw Comments, paragraph 100.

¹⁷ SaskTel Comments, paragraphs 147 to 151.

ES21. Further, intervenors observed the perversely punitive nature of such a requirement towards carriers who made good faith efforts to broadly deploy their networks in rural areas. Eastlink commented that "existing licence holders, who have made significant investments in deploying LTE to their network footprint, should not be subject to different deployment requirements than other licence holders," calling such a measure "unfair and unduly prejudicial to LTE operators."¹⁸ As Shaw cautioned, this "creates unnecessary risk for long-term competition and deployment."¹⁹ SaskTel also pointed out that this also creates a strong disincentive for the carriers who may be most likely to deploy beyond urban centres to invest in 3500 MHz spectrum.²⁰ Therefore, we recommend that the Department not adopt the proposed LTE-related deployment requirement and instead the Department should strengthen the general deployment requirements that are applied symmetrically to all licensees.

ES22. Moreover, if the deployment targets remain as proposed, the presence of a transition plan means there will be service areas where providers will have less than two years to roll-out 5G coverage in order to meet the proposed five year deployment requirements. Therefore, we recommend that the timing of the general deployment requirements only start once the spectrum is available for flexible use.

ES23. Wireless service providers broadly support the elimination of the condition of licence (CoL) related to research and development (R&D) spending requirements for all spectrum licenses, including those in the 3500 MHz band. If ISED does not eliminate the R&D spending condition, it should, at a minimum, significantly lower the revenue exemption threshold, discontinue using the Scientific Research and Experimental Development (SR&ED) definition of eligible R&D expenditures, and lower the 2% spending requirement significantly (e.g., to 1%).

ES24. We recommend the removal of the CoL related to mandatory roaming in light of the Commission's decision to mandate the provision and regulate the rates of Global System for Mobile communications (GSM)-based wholesale roaming services provided by Rogers, Telus and ourselves to all other wireless carriers. It is redundant and inefficient for two Government entities to regulate the same activities performed by the same companies. In the case of wholesale roaming, the problem is not just duplication and the inefficiencies that this causes. It is also that ISED's wholesale roaming regulations are inconsistent with the Canadian Radio-television and Telecommunications Commission (CRTC)'s wholesale roaming regulations. The

¹⁸ Eastlink Comments, paragraph 40.

¹⁹ Shaw Comments, paragraph 102.

²⁰ SaskTel Comments, paragraph 155.

Government and the Minister have acknowledged at several different points the harm done by duplicative regulations. Eliminating duplicative wholesale roaming regulations between ISED and the CRTC would be consistent with, and supportive of, successive Governments' policy objectives and priorities.

ES25. We support Telus' call for ISED at the very least to eliminate mandatory in-footprint roaming completely in order to close a network arbitrage loophole. As Telus describes, the mandatory roaming CoL leaves wireless carriers vulnerable to network arbitrage, despite attempts to mitigate this risk using deployment requirements.²¹ Therefore, we recommend eliminating the mandatory roaming CoL in its entirety. If the Department does not adopt our recommendation to eliminate mandatory roaming for all carriers, then it should, at a minimum do so for the national mobile service providers.

ES26. Should the Department elect to impose a redundant regulation (in the form of a mandatory wholesale roaming CoL) for 3500 MHz flexible use licences, we recommend that it should apply only to existing network technologies and not future 5G networks. 5G networks will require massive investments to acquire spectrum and build out infrastructure – it would be extremely short-sighted to provide a disincentive to carriers to make these investments at such a critical time.

ES27. Finally, several intervenors highlighted the regulatory burden associated with supplying annual reporting documents to the Department and suggested remedies to alleviate this burden.²² ISED should reduce the regulatory burden related to annual reporting. We agree with other intervenors that this can be accomplished by: reducing the frequency with which the data is collected; and/or streamlining the scope of information requested in the reports to only those data that are essential to the Department's monitoring activities; and/or modifying the CoL such that licensees are required to provide information on the Department's request, with appropriate notice.

²¹ Telus Comments, paragraphs 216 to 217.

²² QMI Comments, paragraph 79; Rogers Comments, paragraph 210; and Telus Comments, paragraph 222.

2.0 SPECTRUM SET-ASIDES AND/OR SPECTRUM CAPS

Q1A. ISED is seeking comments on its proposal to implement pro-competitive measures in the 3500 MHz auction.

Q1B. ISED is seeking comments on the use of a set-aside, an in-band spectrum cap, or a combination of both, including the amount of spectrum that should be applied for the use of a set-aside, and/or the amount of spectrum that should be subject to an in-band spectrum cap. Provide supporting rationale for your responses.

1. While several intervenors supported the implementation of spectrum set-asides and/or spectrum caps,²³ there is an abundance of compelling evidence that today's wireless marketplace is highly competitive and as a result, there is no need to implement spectrum set-asides and/or spectrum caps. All carriers compete vigorously to offer the highest speeds, widest and most reliable coverage, best customer service, latest devices, and most innovative product and service offerings. As noted in a report by Dr. Dippon (the Dippon Report) prepared for Telus:

The mobile wireless market in Canada requires no procompetitive measures. Canadian mobile wireless providers deploy new technology faster than providers do in the United States and the European Union, and Canada is home to some of the fastest mobile wireless networks in the world mostly because Canadian providers invest far more in their networks than their European peers. Intervening in this high performing market will result in the exact opposite of what ISED's term "pro-competitive measures" implies. These measures distort competition and the resulting high spectrum prices artificially increase the cost of providing mobile wireless services. This, in turn, deprives Canadians from additional innovation and cost savings and jeopardizes Canada's world leading position.²⁴

2. In addition, regional providers are demonstrably well-established, successful, have the financial means necessary to compete for spectrum in an open auction and, as long as the CRTC does not mandate mobile virtual network operator access, are in no danger of involuntarily exiting the market. As Rogers notes:

... there is a strong fourth operator in each region of Canada, part of established, diverse telecommunications companies with strong balance sheets that do not need taxpayer subsidies. They all possess spectrum portfolios that include low, mid, and high mobile spectrum bands, providing the fourth carriers with a very

²³ BCBA Comments, paragraph 5; Canwisp Comments, paragraph 11; Cogeco Comments, paragraph 23; Eastlink Comments, paragraphs 14 and 16; Ecotel Comments, paragraph 12; EORN Comments, paragraph 7; Iristel, paragraph 7; QMI Comments, paragraph 24; SaskTel Comments, paragraph 57; Shaw Comments, paragraph 64; TekSavvy, paragraphs 18 and 22; and Xplornet Comments, paragraph 66.

²⁴ Telus Comments – Attachment 1, *Expert Report of Christian M. Dippon, Ph.D. On Behalf of Telus Communications Inc.* (Dippon Report), paragraph ES3.

high MHz-per customer ratio. Therefore, Shaw, Videotron, Eastlink, and Xplornet, some of Canada's largest communications conglomerates, no longer need any public support obtaining spectrum, let alone indirect subsidies worth hundreds of millions of dollars.²⁵

3. The 600 MHz auction provides a recent demonstration that the regional providers have access to the financial resources necessary to compete in an open auction. For example, Shaw made supplementary round bids of up to \$1.5 billion for various packages of spectrum licences while QMI was willing to pay up to \$1.1 billion.²⁶ The aggressive bidding by set-aside eligible bidders indicates a willingness to pay over a billion dollars for spectrum and contributed to the excessively high prices for non-set-aside spectrum.

4. Shaw asserted that without a spectrum set-aside it would be foreclosed from winning any 3500 MHz spectrum.²⁷ Given the amount that Shaw was prepared to spend in the 600 MHz auction, this statement is simply not credible. Moreover, the benefits of uneconomically outbidding an entrant are dubious as it could result in a significant cost disadvantage relative to other wireless operators in the market – a result no operator can afford.

Pro-competitive measures could hinder the achievement of the full benefits of 5G

5. Not only are spectrum set-asides and/or spectrum caps not required to protect competition, they will hinder the achievement of the full benefits of 5G technologies. Peak efficiency for 5G technologies occur with 100 MHz of spectrum. As a result, the 200 MHz of spectrum in the 3500 MHz band is already sub-optimal and the adoption of spectrum set-asides and/or spectrum caps only makes the issue worse.

6. Access to large blocks of contiguous spectrum is necessary for the full benefits of 5G technologies to be realized. This is, in part, because the benefits associated with 5G result from its ability to support larger bandwidths than LTE. Whereas LTE was designed for peak efficiency when employed with 20 MHz bandwidths, 5G for 3500 MHz reaches its peak efficiency in 100 MHz channels. Therefore we support Rogers recommendation to release spectrum above 3650 MHz as soon as possible:

²⁵ Rogers Comments, paragraph 86.

²⁶ 600 MHz auction bidding information available at http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf11331.html.

²⁷ Shaw Comments, paragraph 56.

... We recommend ISED prioritize the release of as much spectrum above 3650 MHz as soon as possible. Ideally, it should release spectrum at 3650-3700 MHz, moving current WBS users to 3400-3650 MHz or to other spectrum, as well as spectrum above 3700 MHz, so as to allow continuity in supply between the current and future award.²⁸

Spectrum set-asides distort the auction process

7. Spectrum set-asides distort the auction process to the significant benefit of the set-aside spectrum recipients. Set-aside licences enable the favoured bidders to asymmetrically raise costs for set-aside-ineligible bidders at little risk to themselves. This asymmetry – wherein the bids of set-aside-eligible bidders can affect the prices of ineligible bidders, but the reverse does not hold – makes it probable that set-aside eligible bidders will raise their rivals' costs, thereby distorting prices in the 3500 MHz auction. The distortionary aspects of spectrum set-asides are also noted by Telus who states "set-asides exacerbate supply shortages, pick winners and losers at auction, and create asymmetric opportunities for anti-competitive gaming and distort the cost of spectrum."²⁹

8. When spectrum costs are driven up, consumers end up paying more. In this way, "pro-competitive" measures that increase costs are incongruent with the Government's objective of lowering wireless prices. As noted by Rogers:

Previous set-asides have therefore come at a significant cost. They have driven up spectrum costs dramatically against Canada's peers, costs which are borne not just by operators but also wireless subscribers, and the economy in general. More importantly, they have skewed auction results, causing large variances in what different operators pay. This directly affects the ability of carriers to invest, and thereby compete with one another. ISED must seriously assess whether such measures are helpful. The main beneficiaries of set-asides have been speculative acquirers of spectrum who have subsequently sold it for a profit.³⁰

9. The Department should support market-based approaches to spectrum allocation as indicated in 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, respectively.³¹ Market forces will ensure that those willing to put the spectrum to its best use will bid for and

²⁸ Rogers Comments, paragraph 161.

²⁹ Telus Comments, paragraph 52.

³⁰ Rogers Comments, paragraph 61.

³¹ *Spectrum Policy Framework for Canada*, page 9.

acquire it. A market-based approach to spectrum allocations will also ensure that the Government garners the highest possible value for the spectrum it administers on behalf of Canadians.

10. In addition, the implementation of spectrum set-asides as part of the auction process is not commonly done around the world. As noted by Telus:

No other jurisdictions around the globe have used set-asides as frequently as ISED nor in magnitudes as large as ISED. A study of 4G and 5G spectrum auctions in the OECD outside of Canada between July 2008 and July 2019 reveals that out of the 65 auctions, 8 had both a cap and a small set aside and only one 4G auction in the Netherlands in 2012 had a set aside but no cap. Thus, during these eleven years, ISED applied three extra large (43% - 60%) set-asides without spectrum caps while the rest of the OECD applied nine tiny (c.5-7% with two exceptions) set-asides, eight of the nine with an accompanying cap. Moving into the 5G world, the comparison becomes even more stark. Out of 64 completed and planned auctions outside of Canada, only two set asides have been applied and only two are planned. Each of these set-asides is also applied in conjunction with spectrum caps and set-aside eligibility is restricted to market entrants. None of the four 5G completed or planned set-asides involve the setting aside of any 3.x GHz spectrum. They involve small set-asides of more traditional mobile bands as part of large multiband auctions. To be clear, no other regulator in the world has or plans to apply a set-aside in 3.x GHz auction.³²

In-band spectrum cap

11. While we do not support the adoption of either spectrum set-asides or spectrum caps, from a public policy perspective, a spectrum cap is far superior to a spectrum set-aside. A spectrum cap could address the Department's concerns about limiting the risk of spectrum concentration without introducing the risks of gaming that are associated with set-asides. As indicated above, in previous auctions set-aside eligible bidders were able to inflate the prices paid for non-set-aside spectrum while being completely shielded from such behaviour themselves. Thus, a spectrum cap ensures that all bidders can fairly and equally compete for spectrum, neither allowing any single competitor to gain an insurmountable advantage over its rivals, nor permitting some bidders to win spectrum at prices below market value.³³

12. The amount of the spectrum cap is important. If the spectrum cap is set too low, then the efficiencies of larger channel widths are not obtained and if the spectrum cap is too high,

³² Telus Comments, paragraph 23.

³³ A spectrum cap limits the amount of spectrum any provider can obtain. As a result, a spectrum cap addresses any foreclosure concerns, such as those raised by Shaw, without the negative distortions that arise from the implementation of a spectrum set-aside.

then the Department's desire to reduce spectrum concentration may not be achieved. A spectrum cap of 50 MHz would be the least objectionable option as it allows for at least four providers in any given service area to have 3500 MHz spectrum. Several intervenors supported a 50 MHz in-band spectrum cap. For example, as described by Telus:

In the remaining 160+ markets, a 50 MHz cap would make some or all of the four main bidders per region compete on quantity through price discovery. Prices could escalate. But with a 50 MHz cap, there would be no risk of over-concentration of spectrum in the hands of NMSPs. In areas where incumbent WISPs will hold 50+ MHz of spectrum due to transition, spectrum has already been "set aside", and in all remaining areas (where incumbent WISPs will hold less than 50 MHz of transitioned spectrum), the remaining (complementary) spectrum up to 50 MHz will become an effective set-aside at auction.³⁴

13. Similarly, SaskTel states:

A spectrum cap of 50 MHz is a good balance between the need for licensees to provide high bandwidth to subscribers, and the need to avoid undue spectrum concentration. No one licensee could therefore acquire more than 50 MHz or 25% of the entire band. A spectrum cap of 50 MHz out of a total of 200 MHz of spectrum will ensure at least four service providers have the ability to access this very valuable spectrum.³⁵

14. Moreover, arbitrarily dividing spectrum between set-aside and non-set-aside spectrum – and offering different encumbrance levels with each – is more likely to expose non-set-aside eligible bidders to the risk of acquiring an inefficiently small number of licences and/or obtaining a disproportionate number of encumbered licences. A spectrum cap will allow market forces to determine the level of encumbrance and the prices paid for accepting encumbered licences.

15. After 11 years of auction-related advantages and over \$5 billion in auction-related financial subsidies, the regional providers are demonstrably well-established and successful and, barring the mandated entry of mobile virtual network operators by the CRTC, are in no danger of involuntarily exiting the market if they do not continue to receive auction subsidies. As noted above, both Shaw and QMI indicated a willingness to pay over one billion dollars for spectrum in the 600 MHz auction. Therefore, there is no need to implement a spectrum set-aside. A spectrum cap could address the Department's concerns about limiting the risk of

³⁴ Telus Comments, paragraph 81. While other intervenors did not support the implementation of just a spectrum cap, Canwisp (Canwisp Comments, paragraph 20), SaskTel (SaskTel Comments, paragraph 8), Shaw (Shaw Comments, paragraph 81), and TekSavvy (TekSavvy Comments, paragraph 21) all indicate that 50 MHz is an appropriate quantum for a spectrum cap.

³⁵ SaskTel Comments, paragraph 9.

spectrum concentration without introducing the risks of gaming that are associated with set-asides.

Rogers' asymmetric spectrum cap proposal

16. The proposal by Rogers to apply an asymmetric spectrum cap targeting us and Telus is a blatant attempt to convince the Department to impose an unprecedented new rule that would allow Rogers to secure 50% more spectrum (60 MHz versus 40 MHz) than either of its two largest competitors. As explained below, Rogers' submission is internally inconsistent on several fronts. Moreover, Rogers does not need any assistance from ISED to acquire spectrum and remain competitive with the other network operators.

17. Rogers' overarching corporate position with respect to spectrum is that it should be licensed to those who value it the most: "We continue to believe having market forces fully determine the outcome of spectrum licensing ensures those companies that value the spectrum the most will be able to acquire it and put the spectrum to its highest use."³⁶ They argue against the use of a set-aside because artificially withholding spectrum from the carriers that serve 90% of the country would "deprive the vast majority of Canadians from access to good quality early 5G services."³⁷ Apparently, this logic does not apply equally to each national provider. According to their proposal, Rogers' subscribers (32% of the market) are deserving of 30% of the available 5G spectrum, while our subscribers and Telus' subscribers (29% and 29% of the market respectively) must each make do with 20% of the available spectrum.³⁸

18. It is worth noting that Rogers has more spectrum per subscriber than either us or Telus.³⁹ In addition, in the 600 MHz auction earlier this year, it spent \$1.7 billion to acquire 52 of the 64 spectrum licences available for them to bid on, and CEO Joe Natale announced afterwards: "This spectrum is vital to the deployment of 5G in Canada and we are well positioned to bring the very best of 5G to Canadians."⁴⁰ Rogers does not need new regulatory rules that would allow it to gain any advantages, and it clearly does not need help acquiring sufficient spectrum to serve its subscribers and deploy 5G.

³⁶ Rogers Comments, paragraph 76.

³⁷ Rogers Comments, paragraph 16.

³⁸ Total subscribers as of Q2 2019, available at <https://www.cwta.ca/wp-content/uploads/2019/08/Sub-Stats-2019-Quarter-2-EN-Web.pdf>.

³⁹ See Table 1 of Telus' submission at paragraph 73 which shows Rogers at 23 MHz/subscriber compared to Telus at 19 MHz/subscriber and Bell at 18 MHz/subscriber. It should be noted that none of the national mobile service providers comes close to the MHz/subscriber held by Eastlink (60 MHz/subscriber), Shaw (41 MHz/subscriber) and Videotron (32 MHz/subscriber).

⁴⁰ <https://about.rogers.com/2019/04/10/rogers-secures-new-5g-spectrum-every-province-territory/>.

19. The lack of a need for regulatory intervention aligns with Rogers' own comments on the competitiveness of the market. On numerous occasions, Rogers' intervention describes how the current market structure has led to excellent outcomes for Canadians⁴¹ yet inexplicably says that the network reciprocity arrangement between us and Telus is bad for competition. Rogers does not dispute that Telus and ourselves actively compete against each other in retail or wholesale markets. Rogers' primary complaint seems to be that it is dissatisfied with its own cost structure and/or business model. Rogers is simply seeking to use the Department's auction rules to secure a new competitive advantage for itself. For example, Rogers argues that "the use of a spectrum cap applied to networks is necessary to ensure competition between the three national operators remains effective and allow the Department to ensure a 4th regional player has a reasonable opportunity to acquire spectrum in the urban areas where they are concentrated."⁴² However, if competition between the three national operators is effective today (as the statement above states), then it is illogical to suggest that the rules must now be fundamentally changed to maintain the situation.

20. In fact, as Rogers observes in their submission, asymmetric spectrum caps have had a negative impact on the prices that Canadians pay for wireless services.⁴³ Therefore, by its own logic, Rogers' proposal to impose an asymmetric spectrum cap will increase retail prices in Canada.

21. It is also unclear how exactly network sharing agreements harm competition according to Rogers. It argues that without an asymmetrical cap, providers will be able to "creat[e] a technical advantage over other networks" in order to "stifle facilities-based competition."⁴⁴ In reality, striving to "creat[e] a technical advantage over other networks" is the definition of facilities-based-competition and is an unambiguous benefit to Canadians. Rogers acknowledges the benefits of network sharing in its submission while at the same time arguing for ISED to undermine the efficiencies afforded by network sharing arrangements.⁴⁵ It does not explain this inconsistency.

⁴¹ For example, Rogers Comments, paragraphs 55, 71 and 86.

⁴² Rogers Comments, paragraph 76.

⁴³ Rogers Comments, paragraph 72.

⁴⁴ Rogers Comments, paragraph 23.

⁴⁵ Rogers Comments, paragraph 22.

22. It is completely contradictory for Rogers to assert that network sharing arrangements are anti-competitive as it has multiple such arrangements of its own, e.g., with Tbaytel and QMI.⁴⁶ Moreover, Rogers does not explain why a network sharing arrangement between us and Telus is an indication of coordinated bidding in auctions⁴⁷ but its own network sharing arrangements with Tbaytel and Videotron are not.

23. Rogers' assertions that Bell and Telus coordinate their bidding in auctions and that "carriers already sharing networks will, almost assuredly, share future spectrum as well"⁴⁸ are undermined by the fact that we acquired no spectrum in the recent 600 MHz auction despite the fact that Telus spent \$930 million. Rogers uses convoluted logic to attempt to explain how this outcome somehow proves its point, but this argument, on its face, is ridiculous. In addition, the data for Bell and Telus in Table 3⁴⁹ contradicts Rogers' coordinated bidding argument, i.e., Telus acquired 104 MHz of spectrum while we acquired only 44 MHz.

24. For all of the above reasons, Rogers' proposal to impose an asymmetric spectrum cap should be rejected.

Other Comments – Transition to Flexible Use Licences

25. Both Canwisp and Shaw make recommendations with respect to the process related to the transition of fixed-use licences to flexible-use licences.⁵⁰ Canwisp proposed that the Department deny applications where network deployment was only the result of meeting the deployment condition of licence. Shaw went as far as requesting that existing licensees provide advanced notification to all licensees of where they intend to voluntarily convert their fixed-use licences to flexible-use licences and that existing licensees should not be able to use their flexible-use licences until six months after they are issued. The Department should reject both recommendations.

26. The Department has already consulted on the transition process and made the decision that "for each licence area, existing licensees that meet all of their conditions of licence will be eligible to be issued flexible use licences covering the same geographic area for a fixed amount

⁴⁶ 2018 Annual Report, <https://1vjoxz2ghkcity8c1wjch1-wpengine.netdna-ssl.com/wp-content/uploads/2018/03/Rogers-2018-Annual-Report.pdf>, page 28

⁴⁷ Rogers Comments, paragraph 26.

⁴⁸ Rogers Comments, paragraphs 26 and 27.

⁴⁹ Rogers Comments, paragraph 58.

⁵⁰ Canwisp Comments, paragraph 21 and Shaw Comments, paragraphs 119 to 126.

of spectrum."⁵¹ This decision is not being reconsidered as part of the current consultation. In addition, the Department explicitly took into account concerns related to existing licensees delaying the deployment of flexible-use licences into their decision regarding the transition process:

To address the concern raised by Cogeco, Eastlink, and TELUS that existing licensees may delay transitioning while at the same time deploying new flexible use spectrum in the same area, ISED is clarifying the following: An existing licensee will be issued a flexible use licence in a given partial or full licence area only if a transition has been triggered and a date has been established for the termination of their fixed licence. The licensee will not be able to operate under both a fixed licence and a new flexible use licence in the same geographical area, except for a limited time within the transition period, which will be established by ISED where necessary. During this limited time, the licensee may be issued a new flexible use licence for the frequencies to which it has been displaced, and its fixed use licence for the displaced area will be revoked after the transition is complete.⁵²

27. Shaw is simply trying to hinder competition by delaying existing licensees' deployment of mobile networks using 3500 MHz spectrum. Shaw is also trying to obtain valuable competitive information that they would not have access to otherwise. There is no justification for, and significant potential harm from, a rule requiring an existing licensee to provide key competitive information to a competitor such as where and when they will deploy network and services.

If a set-aside is to be applied:

Q1C. ISED is seeking comments on its proposal to limit the eligibility criteria to bid on setaside spectrum licences to those registered with the CRTC as facilities-based providers* that are not National Mobile Service Providers, and that are actively providing commercial telecommunication services to the general public in the relevant Tier 2 service area of interest, effective as of the date of application to participate in the 3500 MHz auction.

*** An applicant would need to be registered on one of the CRTC lists of facilities-based providers by the date that applications are due.**

Q1E. ISED is seeking proposals for other eligibility criteria along with supporting rationale.

28. We do not believe that a set-aside should be implemented. However, if a set-aside is to be applied, we recommend two modifications to the proposed eligibility criteria.

⁵¹ SLPB-001-19 – *Decision on Revisions to the 3500 MHz Band to Accommodate Flexible Use and Preliminary Decisions on Changes to the 3800 MHz Band* (SLPB-001-19), Decision D4.

⁵² SLPB-001-19, paragraph 142.

29. First, we recommend that the Department narrow the criterion for set-aside eligible bidders to those entities who are registered with the CRTC as mobile wireless carriers⁵³ or can demonstrate that they have deployed a fixed-wireless network. Our comments, along with those of QMI, Rogers, and Iristel, raised concerns that in the recent 600 MHz auction Shaw was able to bid on multiple blocks of set-aside spectrum in areas outside their current wireless operating territories because they are providers of satellite relay distribution and direct-to-home services in those areas.⁵⁴ These bids contributed to higher prices in these areas and potentially distorted the auction outcome. As Iristel observed, Shaw's bids raised prices on set-aside spectrum in the North and one third of these licences ultimately went unsold.⁵⁵

30. Providing satellite relay distribution and direct-to-home services should not qualify bidders to become set-aside eligible for a mobile spectrum auction. As indicated in the Consultation, the Department's objective is to ensure that regional service providers and Wireless Internet Service Providers (WISPs) can acquire additional spectrum "to support network improvements to meet the wireless traffic demands of their growing subscribership."⁵⁶ Satellite relay distribution and direct-to-home services have nothing to do with wireless network improvement or wireless traffic demand and will not further the Department's objectives. Further, as QMI observed, satellite distribution services are not a form of "telecommunication" under the *Telecommunications Act*, and are instead governed by the *Broadcasting Act*.⁵⁷ They are therefore wholly irrelevant to the purpose of the proposed set-aside and should have no bearing on an entity's eligibility to participate.

31. As result, we recommend limiting eligibility to those entities who are registered with the CRTC as mobile wireless carriers or can demonstrate that they have deployed a fixed-wireless network in the relevant area of interest. A similar recommendation was put forward by Eastlink,⁵⁸ while QMI and Iristel advocated specifically for the exclusion of satellite relay distribution and direct-to-home services from the eligibility definition.⁵⁹ Even Shaw recommended that the Department modify the eligibility criteria "to require that an applicant that

⁵³ See the CRTC's website at: <https://applications.crtc.gc.ca/telecom/eng/registration-list?pt=31>.

⁵⁴ Iristel Comments, paragraph 11; QMI Comments, paragraphs 33 to 34; and Rogers Comments, paragraph 103.

⁵⁵ Iristel Comments, paragraph 11.

⁵⁶ Consultation, paragraph 37.

⁵⁷ QMI Comments, paragraphs 31 to 32.

⁵⁸ Eastlink Comments, paragraph 19.

⁵⁹ Iristel Comments, paragraph 10; and QMI Comments, paragraph 35.

wishes to bid on set-aside spectrum provide proof that it is actively providing commercial mobile wireless services in Canada using a radio access network that it owns and operates."⁶⁰

32. Second, the Department should limit the geographic parameters of set-aside eligibility to entities who already have spectrum licences and are actively providing commercial mobile and/or fixed wireless services to the general public in the Tier 4 licence area of interest. Xplornet agreed with this proposal. As Xplornet noted, this will ensure that set-aside spectrum "addresses the immediate needs of both rural and urban service providers" to enhance network performance in their existing footprint.⁶¹

33. ISED should reject the proposal from Telus that would allow them to take advantage of a spectrum set-aside.⁶² The Department has clearly stated that the purpose of a set-aside would be to give further opportunity to "regional service providers and WISPs" to acquire spectrum. Telus is neither of these things and should not be given discounted access to spectrum.

Q1D. ISED is seeking comments on its proposal that any set-aside licences acquired by set-aside-eligible bidders would not be transferable to set-aside-ineligible entities for the first five years of the licence term.

34. While some intervenors, such as Telus, supported the proposed five-year moratorium on transferring set-aside spectrum,⁶³ this proposal is not in the best interest of Canadians. The proposed restriction also contravenes the Government's own spectrum policy framework and places an unnecessary constraint on the Minister's flexibility to manage spectrum resources. There may be situations where, for the benefit of Canadians, the best course of action is for set-aside spectrum to be sold to an incumbent. Prohibiting this would frustrate secondary spectrum market dynamics and could delay the deployment of spectrum to the detriment of Canadians. We recommend that ISED remove the transfer prohibition altogether.

If a spectrum cap is to be applied:

Q1F. ISED is seeking comments on the inclusion of grid-cell and sub-divided licences towards the spectrum cap, and the proposal to allow the return of these licences in order to increase a licensee's eligibility to bid on additional spectrum within the related licence area.

⁶⁰ Shaw Comments, paragraph 89.

⁶¹ Xplornet Comments, paragraph 81.

⁶² Telus Comments, paragraph 105.

⁶³ Telus Comments, paragraph 109.

35. Xplornet, SaskTel and Canwisp all noted that the Department's proposal to have grid-cell and sub-divided licences apply towards a possible spectrum cap is unnecessarily restrictive to existing licensees. In many cases, these licences cover only a very small portion of the full Tier 4 licence areas' residents. Counting all grid-cell and sub-divided licences towards a spectrum cap would distort the amount of spectrum held by an existing licensee and thus severely restrict the amount of spectrum that existing licensees can bid for.

36. As a solution, SaskTel suggested that grid-cell and sub-divided licences only be allocated towards the cap when they cover more than 50% of the associated Tier 4 area.⁶⁴ We do not support this recommendation because it still allocates all of the spectrum in the service area towards the spectrum cap even though 50% of the population is not covered. Our proposal as described below accounts for population coverage.

37. Xplornet and Canwisp proposed instead that existing partial tier licensees should be permitted to bid up to the cap on the condition that their existing partial tier licences would be replaced by any full-tier licences they won in excess of the cap.⁶⁵ We do not support these recommendations. These proposals increase the complexity of the auction because the application of the spectrum cap depends on the grid-cell or sub-divided licensee being the winner of the remaining spectrum in the service area – a result that must be accounted for in the auction process but cannot be determined until the conclusion of the clock stage.

38. We recommend that grid-cell and sub-divided licences only apply towards a spectrum cap if the population weighted total spectrum amount is 10 MHz or more. The amount of spectrum that would be applied towards the spectrum cap would then be equal to the population weighted total rounded to the nearest 10 MHz. This approach results in spectrum holdings being applied to the spectrum cap in sizes consistent with the band plan's 10 MHz blocks. For example, in Strathroy, the Consultation states that we have a grid-cell allocation for 20 MHz covering 51% of the population. This yields a population weighted total MHz of 10.2 MHz. Therefore, in Strathroy, we would have 10 MHz allocated towards the spectrum cap.

39. No parties disagreed with the proposal to allow existing licensees to return any of their existing sub-divided or grid-cell licences to ISED in order to increase their eligibility to bid on spectrum in the respective licence areas. TekSavvy, however, argued that licensees returning

⁶⁴ SaskTel Comments, paragraph 74.

⁶⁵ Xplornet Comments, paragraph 88; and Canwisp Comments, paragraph 29.

this spectrum should not benefit from any transition period, but should be required to vacate the licence area immediately after the auction.⁶⁶ This proposal would unnecessarily put at risk the existing services being provided to Canadians through these licences, and should not be adopted. It will take time to migrate customers off of these systems, and the Department should permit licensees a reasonable period of time to find alternative solutions for their customers.

3.0 LICENCE AREAS

Q2. ISED is seeking comments on its proposal to use Tier 4 service areas for the 3500 MHz licensing process.

40. Intervenors generally agreed that the use of Tier 4 service areas is appropriate because this band is currently licensed on a Tier 4 basis. A small number, however, advocated for the use of the recently introduced Tier 5 areas. Some advocated for their use for all licences,⁶⁷ while Cogeco recommended the use of Tier 5 areas solely for the regions covering Toronto, Vancouver and Montreal.⁶⁸ The Eastern Ontario Wardens' Caucus and the Eastern Ontario Regional Network (EORN) proposed subdividing the areas covering Ottawa and Kingston.⁶⁹

41. We support the Department's proposal to use exclusively Tier 4 service areas in this auction. Several intervenors, including Rogers, Telus and Xplornet, noted that the use of Tier 5 service areas would pose serious interference challenges for operators. As we previously demonstrated in our comments on the consultation to establish Tier 5 areas, radio frequency "spillage" would be inevitable in mid-band spectrum such as 3500 MHz with the use of such small service areas.⁷⁰ In using 3500 MHz in the existing Tier 4 service areas, we have already experienced cases of interference at very far distances, in keeping with Rogers' experience of interference at 40 km to 80 km.⁷¹

42. The interference issues are even more problematic if the service area boundaries are within cities such as Toronto, Vancouver, Montreal, Ottawa and Kingston. As Telus points out, smaller licensing areas would be harmful if applied to highly populated urban areas:

⁶⁶ TekSavvy Comments, paragraph 29.

⁶⁷ Ecotel Comments, paragraph 34; TekSavvy Comments, paragraph 30; and BCBA Comments, paragraph 32. Canwisp proposed that any set-aside spectrum should be auctioned on a Tier 5 basis, or, in the case that there is no set-aside, the entire auction should be Tier 5 - see paragraph 19.

⁶⁸ Cogeco Comments, paragraph 110.

⁶⁹ EORN Comments, paragraphs 22 to 23.

⁷⁰ ISED DGSO-002-18 *Consultation On a New Set of Service Areas for Spectrum Licensing*, Bell Comments, Figure 1, paragraph 19.

⁷¹ Rogers Comments, paragraph 112.

[T]he challenges of TDD coordination would be compounded with the introduction of new borders, especially within the urban markets which have been further subdivided within areas of dense population in the new Tier 5 service areas.⁷²

43. Xplornet, another experienced operator in the 3500 MHz band, emphasized the negative impact Tier 5 areas would have on deployment in rural areas:

If this spectrum were licensed on a tier 5 basis, this would significantly impact the efficiency with which the 3500 MHz spectrum could be deployed by requiring the reduction of the power to stay within a small tier 5 area. This will compromise the ability to provide effective and affordable broadband service to rural Canadians. Accordingly, licensing 3500 MHz spectrum on a tier 5 basis would not be appropriate and could undermine the Government of Canada's goal of providing improved rural broadband services to Canadians.⁷³

44. We therefore encourage the Department to reject any proposals to auction 3500 MHz spectrum by licence areas smaller than Tier 4.

3.1 Spectrum available in the auction

Q3A. ISED is seeking comments on its proposal to include all remaining spectrum (including partially encumbered Tier 4 areas) as part of the auction as shown in table A1 of annex A.

45. Only Xplornet objected to the proposal to include all remaining spectrum as part of the auction, arguing that encumbered licences should instead be allocated through an application process "in order to ensure that these licences are allocated to wireless operators who appreciate the interference complexity and are able to manage the conditions of the coordination agreements."⁷⁴ We disagree with this proposal – spectrum auctions are the most efficient way to allocate spectrum, and there are existing mechanisms to resolve coordination issues. We note that the proposed conditions of licence require all licensees to comply with the relevant Radio Standards Specifications and Standard Radio System Plans and to coordinate with other licensed users. If any operator fails to comply, they would be at risk of losing their licence.

⁷² Telus Comments, paragraph 115.

⁷³ Xplornet Comments, paragraph 92.

⁷⁴ Xplornet Comments, paragraphs 63 to 64. Xplornet also makes reference to a spectrum interference issue that arose between itself and Inukshuk. It is important to note that this issue arose in 2013 and was resolved quickly. The fundamental cause was incompatible technologies and the need to synchronize networks between operators.

46. We support the Department's proposal to include all remaining spectrum including partially encumbered Tier 4 areas as part of the auction.

Q3B. ISED is seeking comments on its proposal to consider all spectrum acquired through the auction and only Tier 4 licences that will be issued through the transition process, simultaneously in the assignment round of the auction, in order to determine the specific frequency assignments of all licences in the 3500 MHz band.

Q3C. ISED is seeking comments on the proposal that licensees who acquire multiple flexible use Tier 4 licences in a given area, either as a result of the auction or as a result of the transition process, be assigned contiguous spectrum, and that this also apply to partial area licences acquired through the auction.

47. Intervenors generally agreed with the Department's proposal to consider all spectrum simultaneously in the assignment round, both auctioned and transitioned. However, Xplornet and TekSavvy argued that existing licensees should be given assignment priority,⁷⁵ while BCBA and Canwisp argued that only existing users who are set-aside-eligible should be prioritized.⁷⁶ Canwisp, TekSavvy and BCBA also proposed reserving the upper portion of the band for small WISPs to allow them to aggregate with existing wireless broadband service (WBS) spectrum holdings.⁷⁷ We disagree with each of these proposals. Assigning all spectrum simultaneously will ensure that bidders do not end up with fragmented spectrum holdings with respect to existing licences and licences obtained in the auction, which will be critical in order to maximize the potential benefits of 5G networks. In addition, as discussed further in response to Question 4A, the proposal to reserve spectrum for WBS users should be rejected given the uncertainty surrounding the future of the WBS band and the minimal benefits it would confer on a small group of licensees.

48. To the extent that bidders have a strong preference for particular frequencies in the spectrum band, the proposed auction framework allows bidders to express this preference in the assignment stage of the auction. As the Department notes, the assignment stage is designed to allow all bidders "an opportunity to express their preferences for specific blocks at the same time," and "there will be no specific blocks reserved for unencumbered, encumbered, open or set-aside products."⁷⁸

⁷⁵ Xplornet Comments, paragraph 104; and TekSavvy Comments, paragraph 40.

⁷⁶ BCBA Comments, paragraph 41; and Canwisp Comments, paragraph 45.

⁷⁷ BCBA Comments, paragraph 41; Canwisp Comments, paragraph 46; and TekSavvy Comments, paragraph 42.

⁷⁸ Consultation, paragraph 101.

Q3D. ISED is seeking comments on the proposal to classify all partial tier licences as encumbered blocks.

Q3E. ISED is seeking comments on the proposal to bundle the remaining portions of the encumbered areas offered in the auction as a combined encumbered block of 20, 30, 40 MHz or more, depending on the number of 10 MHz blocks being bundled. In particular the bundle would include the tier areas where existing sub-divided or grid cell licenses are encumbering the majority of the tier. This would apply where the geography of the remaining portions is the same or similar, and/or the remaining area covers a relatively small population. Comments on the proposed list of encumbered service areas where multiple blocks may be combined for the purpose of the auction are also sought.

If a spectrum cap is applied:

Q3F. ISED is seeking comments on the proposal that the bundled encumbered blocks would not count towards the spectrum cap during the auction, but that any transfers of the licences post-auction would be subject to the spectrum cap and the conditions of licence as described in section 11.2.

49. Cogeco was the only intervenor to object to the classification of all partial tier licences as encumbered blocks, proposing instead that a licence should be considered unencumbered based on a threshold level of population coverage.⁷⁹ We support classifying all partial tier licences as encumbered blocks. As SaskTel pointed out in their submission, all partial tier licences will be impacted by the existing encumbrance, regardless of size:

SaskTel [...] wishes to emphasize the importance of recognizing all partial tier licences as encumbered, regardless of the amount of encumbrance in terms of population percentage. Any encumbrance, even with a small percentage of population and/or over a small geographical region, will require discussion, coordination and negotiations with the incumbent licence holder. This may likely require the establishment of buffer zones to reduce interference. This added complexity could hinder network deployment using this partial tier licence, and therefore de-valuing this spectrum. This lower spectrum value must be incorporated into the licensing process through the designation as being an encumbered spectrum block.⁸⁰

50. With respect to the proposal that bundled encumbered blocks should not contribute to a spectrum cap, SaskTel, for example, recommended that bundled encumbered spectrum should count towards a spectrum cap.⁸¹ We agree with the Department, however, that bundled encumbered spectrum should not count towards the spectrum cap. These spectrum licences do not cover 100% of the population in the Tier 4 service area and thus, are not of the same

⁷⁹ Cogeco Comments, paragraphs 51 to 54.

⁸⁰ SaskTel Comments, paragraph 87.

⁸¹ SaskTel Comments, paragraph 92.

value as unencumbered spectrum. As a result, they should not count towards the spectrum cap in the same manner as unencumbered spectrum.

51. We do not support the Department's proposal that any transfer of bundled encumbered spectrum licences post-auction would be subject to the spectrum cap and the respective CoL. We recommend that any transfer of bundled encumbered spectrum licence post-auction would not be subject to the spectrum cap. These licences are encumbered by existing licensees and thus only a portion of the population is covered by the spectrum licence. This clearly implies a lower value spectrum licence relative to unencumbered spectrum and this difference should be reflected in how the spectrum licences are applied to the spectrum cap post-auction.

4.0 AUCTION FORMAT AND RULES

4.1 Generic licences

Q4A. ISED is seeking comments on its proposal to use generic licences.

52. Only Canwisp and TekSavvy objected to the proposal to use generic licences, arguing instead that the upper and lower half of the band should be auctioned as two separate products.⁸² They claimed that WBS users would place significant value on acquiring blocks above 3600 MHz, which would enable them to aggregate their spectrum without needing to replace their equipment. We do not support this recommendation. If bidders have a preference for the upper part of the spectrum band, then they can express this preference during the assignment round of the auction by bidding for these higher frequencies. In addition, we note that there is significant uncertainty surrounding the future of the WBS band, and the Department has indicated that it is considering moving WBS operators out of the 3650-3700 MHz band and into the 3400-3450 MHz.⁸³ If this were to happen, WBS users would not gain any benefit from acquiring spectrum at the top of the band; in fact, it would be to their disadvantage.

53. With respect to unencumbered spectrum, Telus was concerned with the Department's proposal to allocate unencumbered spectrum towards set-aside spectrum first.⁸⁴ We agree with this concern. As Telus indicates, there is no policy rationale for the Department to intrusively interfere with market forces in the allocation of encumbered and unencumbered spectrum and that the best way to address this issue is to not implement a spectrum set-aside:

⁸² Canwisp Comments, paragraph 60; and TekSavvy Comments, paragraph 51.

⁸³ SLPB-001-19, paragraph 179.

⁸⁴ Telus Comments, paragraph 134.

Setting aside unencumbered spectrum for regional providers may actually work against their desired business cases for spectrum acquisition and 5G deployment. Rather than forcing regional operators to purchase unencumbered set-aside spectrum, TELUS believes that regional operators should be permitted to express their own values for encumbered vs. unencumbered spectrum. In this way, a regional provider could decide for itself whether it wants to realise the discount that will almost certainly come with an encumbered block (as it covers a smaller portion of the Tier 4 population than unencumbered spectrum) and be permitted to decide whether it wants to assume the obligation to deploy deep into the rurals, well beyond the historical extent of its network coverage.

The rural nature of WISPs' fixed network deployments combines with the predominantly urban footprint of regional operators' LTE networks in a manner that is highly complementary. But regional providers should neither be forced to limit their deployments to just their existing urban footprint, nor to deploy aggressively beyond the support of their business case for network expansion. The only competitive measure that will allow them (and NMSPs and WISPs comprising the remainder of the market) to determine the best market outcome is to use a spectrum cap rather than a set-aside. A spectrum cap will allow for balanced competition for encumbered and unencumbered spectrum, placing the rural spectrum in the hands of the operators that value it the most and who intend to put the spectrum to use the soonest. Competitive measures should not penalise rural Canadians by stifling deployment and enabling regional operators to warehouse rural spectrum without any near-term obligation to deploy it.⁸⁵

If a set-aside is applied (with or without a spectrum cap):

Q4B. ISED is seeking comments on its proposal to categorize all blocks won by set-aside-eligible bidders as set-aside blocks.

54. Xplornet agreed with our view that categorizing all blocks won by set-aside-eligible bidders as set-aside blocks is not appropriate.⁸⁶ Doing so would make otherwise "open" spectrum blocks subject to the proposed transferability restrictions raised in section 11.2 of the Consultation. As noted in our response to Question 1D, the proposed transferability restriction contravenes the Government's own spectrum policy framework, places an unnecessary constraint on the Minister's flexibility to manage spectrum resources, frustrates secondary spectrum market dynamics and could delay the deployment of spectrum to the detriment of Canadians.

⁸⁵ Telus Comments, paragraphs 139 and 140.

⁸⁶ Xplornet Comments, paragraph 114.

Q4C. ISED is seeking comments on its proposal to create separate categories for encumbered and unencumbered blocks, as well as open and set-aside blocks.

If only a spectrum cap is applied:

Q4D. ISED is seeking comments on its proposal to create separate categories for unencumbered and for various encumbered block in a service area.

55. No intervenor objected to the proposal to create separate categories of licences such as encumbered, unencumbered, open and set-aside, with the exception of Xplornet who did not support auctioning off encumbered spectrum.⁸⁷ Encumbered spectrum should be auctioned off given that in most cases the extent of encumbrance is small. With respect to the categorizing of the different spectrum blocks, we do not object to the Department's proposals. These proposed spectrum blocks have different characteristics associated with them and should be separated into different categories of licences in the auction.

56. Rogers proposed that encumbered blocks with population coverage that differs by less than 10% be grouped together in one product.⁸⁸ We do not support this recommendation. Small differences in population coverage can result in important differences that must be accounted for in terms of network deployment and interference. As a result, each encumbered block will have its own unique characteristics that will affect the value of the spectrum. Thus, aggregating encumbered blocks together will make it difficult to appropriately value the spectrum for these blocks.

4.2 Anonymous bidding

Q5. ISED is seeking comments on the use anonymous bidding during the auction.

57. Eastlink was the only intervenor to express opposition to the use of anonymous bidding.⁸⁹ We disagree with their claim that anonymous bidding disadvantages smaller, regional providers – this policy equally benefits all participants by reducing the likelihood of gaming.

58. However, if a spectrum set-aside is imposed, it is critical that the Department provide information regarding the demand for open spectrum separately, rather than the combined demand for both open spectrum and set-aside spectrum. This recommendation was also made

⁸⁷ Xplornet Comments, paragraphs 116 to 117.

⁸⁸ Rogers Comments, paragraph 133.

⁸⁹ Eastlink Comments, paragraph 32.

by Rogers.⁹⁰ This would help bidders mitigate the exposure risk that arises with a clock auction (and is absent from a combinatorial clock auction), where a bidder wins some, but not all of the licences needed for its business plan and is left with an inefficient number of spectrum licences that cannot be used effectively.

4.3 Clock auction format and structure of the clock stage

Q6. ISED is seeking comments on its proposal to use a clock auction format for the 3500 MHz spectrum auction.

59. No intervenor objected to the Department's proposal to use a clock auction format. We support the use of a clock auction format and agree with the Department's view that, given the number of 3500 MHz licences being auctioned, using a combinatorial clock auction would introduce computation risks as well as significant complexity for bidders.⁹¹

Q7. ISED is seeking comments on the proposed structure of the clock stage and on the proposed methodology for calculating processed demands and posted prices after each clock round, as described in annex C.

60. The majority of intervenors supported the proposed structure of the clock stage, the proposed methodology for calculating processed demands and posted prices after each clock round. Similar to ourselves, Cogeco noted that an "all-or-nothing bid helps reduce exposure risk within the tier areas."⁹² The current proposed methodology for calculating eligibility increases this risk because it can result in unrequested reductions in eligibility. This means that a bidder can be forced to lose eligibility relative to its requested demand and can even lose eligibility despite requesting no reduction in activity whatsoever. Therefore, we recommend that the Department adopt the three rules described below which are designed to address this issue.

Rule 1: a bidder's activity should be set equal to the eligibility points associated with its processed demand or the eligibility points associated with its requested demand, whichever is larger.

61. A bidder's eligibility in a given round should not be determined using its processed activity level in the previous round, but instead be determined using the larger of its processed activity level in the previous round and its requested activity level in the previous round. Any adjustments to eligibility that may be required while the activity requirement is less than 100%

⁹⁰ Rogers Comments, paragraph 134.

⁹¹ Consultation, paragraph 65.

⁹² Cogeco Comments, paragraph 175.

would then still be applied as the Consultation describes. This ensures that a bidder will not lose eligibility unless it has explicitly requested to reduce its overall demand. Bidders will be assured that they will not be subject to unrequested reductions in eligibility and can safely bid truthfully at the current prices.

Rule 2: allow optional "all-or-nothing" bids by individual product.

62. For each product, a bidder should be allowed to indicate whether a bid to change its demand is "all-or-nothing." If a bid for some product is specified as "all-or-nothing," it would only be processed if it could be satisfied fully; otherwise the bid would not be processed and bid processing during the round would proceed as if the bidder had submitted a bid at the current round's clock price equal to its processed demand in the previous round for that product. This rule would ensure that bidders can correctly express economies of scale in bandwidth, thereby addressing an important part of the exposure problem. It could also help bidders avoid unrequested reductions in eligibility.

Rule 3: allow optional overall "all-or-nothing" bids.

63. A bidder should be able to choose to specify whether a given overall bid (for multiple products in multiple areas at a given price point) is an "all-or-nothing" bid. If an overall bid is specified as "all-or-nothing," it is processed only if the entire bid can be accommodated fully; if the overall bid cannot be fully accommodated, the bid processing during the round proceeds as if the bidder had submitted a bid at the current round's clock price equal to its processed demand in the previous round for all products included in the overall bid.

64. Rogers and Telus noted that it is not clear that the proposed methodology for calculating processed demands would allow two bidders to switch products in the same round.⁹³ As described by Telus, "Annex C of the Consultation describes an iterative bid processing algorithm that processes each bid sequentially in queues," which implies that "near the end of the auction (when most products have cleared and little excess demand remains), the sequential nature of bid processing would appear to introduce potential "deadlock" scenarios where two bidders that want to switch products may not be permitted to do so."⁹⁴ If this is correct, then we support the recommendation of Rogers that this type of "switch bid" be

⁹³ Rogers Comments, paragraph 142, and Telus Comments, paragraph 157.

⁹⁴ Telus Comments, paragraph 157.

allowed.⁹⁵

65. Cogeco and Telus recommended that the Department allow waivers.⁹⁶ We support this recommendation. As Telus notes, the Department has allowed waivers in previous auctions:

As in past auctions, ISED could grant additional waivers to bidders should the auction extend past the expected end point. As ISED noted in its AWS licensing framework, "*activity rule waivers (waivers) are designed to prevent bidders from losing eligibility points when, for example, they suffer from technical or communication problems, or some other internal issue that prevents them from satisfying the activity requirements in a given bidding round.*"⁹⁷ [emphasis in original]

66. In addition, Cogeco recommends that the Department allow bidders to withdraw a standing high bid and for the inclusion of an Extended Round in order to facilitate the sale of unsold spectrum licences.⁹⁸ We do not support either recommendation. With respect to allowing bidders to withdraw standing high bids, this can result in an inefficient allocation of spectrum licences as bidders are able to reduce demand in a particular area and then to return at a later point in the auction. As a result, it may appear that the auction is coming to an end, only to have continued excess demand once a bidder re-introduces demand in a service area that they withdrew from in a previous round. This unnecessarily prolongs the auction and increases prices. Moreover, as indicated by the Department, one of the reasons they decided not to adopt a simultaneous multiple round ascending auction format is because it "would result in a very long auction."⁹⁹

67. With respect to the Extended Round, there is limited to no benefit to adopting this recommendation. Based on the Department's proposed auction format and proposed methodology for calculating processed demands, there is little concern that there would be a large number of unsold licences. As described by the Department, "the general principle is that a bid to decrease demand for a product is applied only if the reduction will not cause aggregate demand to fall below supply for that product (or to fall further below supply, if it is already below supply)," and that "this guarantees that once a product has aggregate demand greater than or equal to supply, there will never be any unsold blocks for the product."¹⁰⁰

⁹⁵ Rogers Comments, paragraph 144.

⁹⁶ Cogeco Comments, paragraph 188 and Telus Comments, paragraph 161.

⁹⁷ Telus Comments, paragraph 161.

⁹⁸ Cogeco Comments, paragraphs 195 to 206.

⁹⁹ Consultation, paragraph 66.

¹⁰⁰ Consultation, paragraph 80.

4.4 Price increments in the clock rounds

Q8. ISED is seeking comments on the proposed range of percentage increments.

68. Most intervenors supported the proposed price increments of 1% to 20% per round, though Rogers, Shaw, TekSavvy, and Telus all urged the Department to use caution in using price increments above 5% to 10%.¹⁰¹ As noted by Telus, "using bid increments in the order of 10-20% in the early-to-mid stages of the auction could quickly reduce low-demand regions to miniature sealed-bid auctions using intra-round bidding, especially with such high opening bids proposed."¹⁰² We agree that the Department should use caution in using large bid increments. Smaller price increments – especially later in the auction and in areas with small populations – will result in less drastic demand reductions, allowing for a more efficient allocation.

69. Iristel and Rogers, however, argued for fixed price increments. Iristel argued for price increments to be set at 5% and Rogers recommended that price increments not exceed 10% or an absolute dollar per MHz-Pop, whichever is lower.¹⁰³ We do not support either recommendation. While we share others' concerns about prices escalating too quickly, we agree with the Department that the judicious use of round-to-round price increases within a predetermined range will allow the Department the flexibility to manage the progress of the auction in an efficient and timely manner.¹⁰⁴

4.5 Structure of the assignment stage

Q9A. ISED is seeking comments on the proposed structure of the assignment stage, including the order of the assignment rounds, treatment of existing holdings, the combination of service areas into a single assignment area and parallel bidding.

70. Most intervenors did not object to the Department's proposed structure for the assignment stage. Telus, however, proposed that the Department consider using a "regional bandwidth variation" optimization method to facilitate maximum geography contiguity.¹⁰⁵ As described by Telus, "this assignment mechanism would take on much of the burden of pre-arranging better outcomes for the industry at large by pre-computing a set of best-optimised global options for all bidders simultaneously."¹⁰⁶ We do not support this recommendation.

¹⁰¹ Rogers Comments, paragraph 148; Shaw Comments, paragraph 151; TekSavvy Comments, paragraph 73; and Telus Comments, paragraph 164.

¹⁰² Telus Comments, paragraph 164.

¹⁰³ Iristel Comments, paragraph 33; and Rogers Comments, paragraph 151.

¹⁰⁴ Consultation, paragraph 84.

¹⁰⁵ Telus Comments, paragraphs 175 to 180.

¹⁰⁶ Telus Comments, paragraph 177.

71. While an optimization algorithm could simplify the process of determining the potential frequency assignments that allow contiguity, the outcome will not be optimised for all bidders since it will not incorporate each bidder's preferences for various frequencies across all service areas. One of the key benefits of the assignment round is that it allows bidders to express their preferences for various frequencies on a service area by service area basis. By having the assignment round progress sequentially by service area, it allows bidders an opportunity to incorporate additional information and make adjustments as necessary.

72. Therefore, we recommend the use of separate assignment rounds for each service area (subject to the creation of assignment areas), and that the rounds proceed sequentially in descending order of population. It is critical that bidders avoid holding fragmented spectrum licences across service areas. Extra time should be taken during the auction to get the assignment right rather than spending months correcting errors by negotiating and transferring licences after the auction is over. By getting the assignment right during the auction, licensees will not be required to negotiate spectrum transfers with other licensees and then file a transfer application with the Department for approval to obtain contiguous spectrum holdings. This will save months of time and significant resources for both licensees and the Department.

Q9B. ISED is seeking comments on the proposal to apply bidder optimal core prices and to use the "nearest Vickrey" approach in determining the assignment prices.

73. We support the Department's proposal to use a second-price rule which applies bidder optimal core prices and uses the "nearest Vickrey" approach, and note that there were no objections to such an approach during the Comments round.

5.0 BIDDER PARTICIPATION: AFFILIATED AND ASSOCIATED ENTITIES AND PROHIBITION OF COLLUSION RULES

Q10. ISED is seeking comments on the proposed affiliated and associated entities rules that would apply to bidders in the 3500 MHz auction.

Q11. ISED is seeking comments on the proposed rules prohibiting collusion and other communication rules, which would apply to bidders in the upcoming 3500 MHz auction.

74. The majority of intervenors supported the Department's proposed affiliated and associated entity rules as well as the proposed rules prohibiting collusion and other

communication rules. Cogeco and Ecotel, however, raised concerns about our relationship with Rogers' as a result of the Inukshuk partnership. Cogeco recommended a rule governing entities affiliated with the same third-party entity,¹⁰⁷ while Ecotel argued that Rogers and Bell should be required to divide Inukshuk's spectrum prior to the auction.¹⁰⁸ Furthermore, Rogers proposed a significant overhaul of the rules regarding affiliated and associated entities, specifically targeting the network-sharing arrangement between us and Telus.¹⁰⁹

75. We support the proposed affiliated and associated entity rules and the rules prohibiting collusion and other communication rules. The current collusion and affiliated and associated entities policies and rules have a proven track record of working together to maintain the integrity of the auction process. The policies and rules establish a clear and comprehensive set of behavioural norms that prohibit parties from inappropriately engaging in collusive conduct.

76. The Department has reviewed the affiliated and associated entities rules on numerous occasions and every time has concluded that they are sufficient to maintain auction integrity. We agree. Providing entities with an opportunity to bid separately if there is no harm to the integrity of the auction is entirely consistent with regulating to the minimum extent necessary to achieve the underlying policy objective. Entities that have demonstrated a clear intention to compete against each other in the downstream retail market are motivated to independently source and control their critical network inputs. This leads them to seek access to their own spectrum in order to meet their own subscribers' needs.

77. The Department has minimized the risk related to associated or affiliated entities by requiring an extensive review of a number of factors before allowing associated entities to bid separately in the auction. The Department states:

To obtain approval to participate separately in the auction, associated entities will be required to demonstrate to ISED's satisfaction that they intend to separately and actively provide services in the applicable licence area. Associated entities wishing to participate in the auction separately would be required to submit their application at least two weeks in advance of the final application deadline. This requirement would provide ISED with the additional time necessary to assess the nature of the association between the entities. Should the request be denied, only one of the associated entities will be eligible to apply to participate in the auction.¹¹⁰

¹⁰⁷ Cogeco Comments, paragraphs 217 to 230.

¹⁰⁸ Ecotel Comments, paragraph 56.

¹⁰⁹ Rogers Comments, paragraphs 180 to 192.

¹¹⁰ Consultation, paragraph 121.

78. Rogers argues that "the associated entity rules should be amended to recognize existing relationships between the national carriers."¹¹¹ It is clear under the Department's proposed associated entity definition that Telus and ourselves are not associated entities for the purposes of the 3500 MHz auction.

79. Rogers wants ISED to change its associated and affiliated entity rules in part because it argues that the 3500 MHz band is more important than any other band. The Department should exercise caution when assessing such a statement as Rogers regularly makes this argument. For example, in 2014 Rogers' CEO said that 700MHz spectrum is the highest-quality wireless frequency ever auctioned in Canada.¹¹² He also noted that: "not all 700MHz spectrum in the auction was the same; we secured the beachfront property we wanted," and that "you either want your customers to have the best for the next 20 years or you don't."¹¹³ With regards to 600 MHz spectrum, Rogers said: "This 5G spectrum is a precious and scarce resource that will benefit Canadians and Canadian businesses across the country," and "this spectrum is vital to the deployment of 5G in Canada and we are well positioned to bring the very best of 5G to Canadians. We went into this auction with a clear, disciplined plan and seized this opportunity for the benefit of our customers and shareholders."¹¹⁴

80. There is no compelling reason for the Department to change their affiliated and associated entity rules or their prohibition of collusion and other communication rules. Therefore, the Department should reject proposals that request changes to the proposed rules regarding affiliated and associated entities and prohibition of collusion and other communication rules.

6.0 CONDITIONS OF LICENCE FOR FLEXIBLE USE SPECTRUM LICENCES IN THE 3500 MHZ BAND

6.1 Licence term

Q12. ISED is seeking comments on its proposal to issue new flexible use spectrum licences in the 3500 MHz band with a 20-year licence term and the proposed wording of the condition of licence above. Licence terms for all flexible use licences, regardless of when they are converted from fixed to flexible use, will terminate on the same date as licences issued through the auction process.

¹¹¹ Rogers Comments, paragraph 189.

¹¹² See: <http://telecoms.com/224582/rogers-and-telus-spend-big-in-700mhz-spectrum-auction/>.

¹¹³ Ibid.

¹¹⁴ See <https://about.rogers.com/2019/04/10/rogers-secures-new-5g-spectrum-every-province-territory/>.

81. There were no objections to the Department's proposal to issue flexible use spectrum licences with 20-year licence terms. We support long-term, or indeed indefinite, licence terms, in consideration of the very significant investments required by carriers to deploy spectrum, the need to coordinate with international standards bodies and equipment manufacturers, and the technology lifecycles common in the wireless industry.

82. However, we disagree with the Department's proposal which states that "all licences will terminate on the same date, 20 years after the initial licence issuance date," regardless of whether the licence was issued on the initial licence issuance date.¹¹⁵ We recommend that all auctioned licences have a term of 20 years from the date they become usable. There are limited efficiencies to be gained by harmonizing the expiry date of all licences within the band and there will be numerous situations where licensees will not receive the full value of the spectrum because of the mandatory transition period.

83. In the alternative, if the Department wants all licences to be co-terminus, we recommend that all licences expire 20 years after the "expected" transition period is over. The longest protection period under the Department's transition plan is three years. Thus, if the auction concludes in July 2020, then the longest protection period ends in July 2023 and the expiry date for all licences would be 2043.

6.2 Licence transferability, divisibility and subordinate licensing

Q13. ISED is seeking comments on the proposals on the condition of licence related to transferability and divisibility, and the proposed wording above.

84. There was little objection to the CoL related to transferability and divisibility as a whole. However, Rogers argued the restriction should be applied to set-aside eligible and set-aside ineligible licensees alike.¹¹⁶ This suggestion should be rejected. Preventing the transfer of set-aside spectrum for a period of five years would not be consistent with the *Spectrum Policy Framework for Canada* as it would not: rely on market forces to the maximum extent feasible; be minimally intrusive; be responsive to changing marketplace demands; permit the flexible use of spectrum; make spectrum available in a timely fashion; and facilitate secondary markets for spectrum. Moreover, as the Minister of ISED must ultimately approve any spectrum transfer,

¹¹⁵ Consultation, paragraph 151.

¹¹⁶ Rogers Comments, paragraphs 107 to 108.

the proposal to have a five-year prohibition of transfers is unnecessary. The Minister will have the opportunity to determine whether any transfer is warranted through this approval process. Therefore, the restriction on licence transfers should be removed entirely.

6.3 Deployment requirements

Q14. ISED is seeking comments on the proposed deployment condition of licence as stated above as well as on the proposed levels of deployment.

85. Every national and regional mobile service provider expressed serious concern about the additional deployment requirement for licensees that currently operate LTE networks. Rogers called the proposed requirement "extremely aggressive and completely unrealistic,"¹¹⁷ and QMI echoed this, describing the measures as "indûment onéreuses et irréalistes."¹¹⁸ Shaw warned that the proposal would "detract from the Department's stated objectives" in addition to being "impractical" and "inequitable."¹¹⁹

86. Many intervenors, including Iristel, QMI, Rogers, SaskTel and Shaw, observed that existing LTE networks are supported by low-band spectrum that is significantly farther-reaching than 3500 MHz.¹²⁰ Thus, it would be prohibitively expensive, as well as time and resource consuming, to achieve similar levels of coverage with the 3500 MHz band as carriers have achieved with lower band spectrum. To illustrate this point, SaskTel provided a comparison of predicted coverage for 850 MHz versus 3500 MHz, and showed that in order to meet the 97% population coverage requirement they would need to deploy 5G on each of their current cell sites plus build a massive number of additional towers in rural areas (in what they called "the middle of nowhere") to achieve coverage even close to existing levels.¹²¹ Rogers noted that a network build of this magnitude would not just cost too much, it would be impossible from a resource-availability perspective:

Nearly matching that low band LTE coverage with a band that has limited propagation in only a handful of years would require more engineering resources and tower crews than exists in all of Canada. Multiplying that by the demand of the other national network and the various regional LTE mobile networks may require more resources than exist in North America.¹²²

¹¹⁷ Rogers Comments, paragraph 200.

¹¹⁸ QMI Comments, paragraph 9.

¹¹⁹ Shaw Comments, paragraph 99.

¹²⁰ Iristel Comments, paragraph 40; QMI Comments, paragraph 72; Rogers Comments, paragraph 200; SaskTel Comments, paragraph 147; and Shaw Comments, paragraph 100.

¹²¹ SaskTel Comments, paragraphs 147 to 151.

¹²² Rogers Comments, paragraph 202.

87. Further, intervenors observed the perversely punitive nature of such a requirement towards carriers who made good faith efforts to broadly deploy their networks in rural areas. Eastlink commented that "existing licence holders, who have made significant investments in deploying LTE to their network footprint, should not be subject to different deployment requirements than other licence holders," calling such a measure "unfair and unduly prejudicial to LTE operators."¹²³ As Shaw cautioned, the proposed LTE deployment CoL "creates unnecessary risk for long-term competition and deployment."¹²⁴ SaskTel also pointed out that it creates a strong disincentive for the carriers who may be most likely to deploy beyond urban centres to invest in 3500 MHz spectrum.¹²⁵ Therefore, we recommend that the Department not adopt the proposed LTE-related deployment requirement. If it feels that the proposed general deployment requirements are insufficient, then it could strengthen them as they are applied symmetrically to all licensees.

88. Moreover, if the deployment targets remain as proposed, the presence of a transition plan means there will be service areas where providers will have less than two years to roll-out 5G coverage in order to meet the proposed five year deployment requirements. Therefore, we recommend that the timing of the general deployment requirements only start once the spectrum is available for flexible use.

6.4 Other conditions of licence

Q15. ISED is seeking comments on the proposed conditions of licence outlined in annex H that would apply to flexible use licences.

89. There was general support for the proposed CoLs outlined in annex H, with several notable exceptions that are elaborated upon below.

6.5 Research and Development

90. Wireless service providers broadly support the elimination of the CoL related to R&D spending requirements for all spectrum licenses, including those in the 3500 MHz band. In this proceeding, QMI, Rogers, Shaw, and Telus joined us in calling for the removal or significant reduction of this obligation.¹²⁶

¹²³ Eastlink Comments, paragraph 40

¹²⁴ Shaw Comments, paragraph 102.

¹²⁵ SaskTel Comments, paragraph 155.

¹²⁶ QMI Comments, paragraph 78; Rogers Comments, paragraphs 207 to 209; Shaw Comments, paragraphs 168 to 169; and Telus Comments, paragraphs 218 to 221.

91. As Rogers argued, this CoL has become obsolete and no longer serves its original purpose:

As the Department has noted elsewhere, this condition of licence was initially established to stimulate R&D in the telecommunications sector when the first mobile spectrum licences were issued in the mid-1980s. Since then, billions of dollars have been invested in R&D and the mobile industry in Canada is well established. This condition has therefore achieved its objective and is no longer required.¹²⁷

92. Rather than stimulating investment in innovation, the R&D CoL unnecessarily constrains the investment strategies of operators, as Telus explained in their submission:

In fact, an R&D COL actually serves to impede and constrain capital investment. Rather than mandating a certain percentage of revenues go into projects designated as R&D, a WSP should retain full flexibility to determine how it wishes to spend its scarce capital and operational expenditures to build its networks, enhance its services and provide the best experience for its customers. R&D will naturally occur because all WSPs need to be on the cutting edge of new wireless and telecommunications technologies, but a defined percentage of revenue restricts flexibility that WSPs need to make their investment decisions.¹²⁸

93. If ISED does not eliminate the R&D spending condition, it should, at a minimum, significantly lower the revenue exemption threshold, discontinue using the SR&ED definition of eligible R&D expenditures (which was put in place for an entirely different policy purpose and is inappropriately restrictive), and lower the 2% spending requirement significantly (e.g., to 1%). Rogers also called for the latter change in their comments.¹²⁹

6.6 Mandatory Roaming

94. We recommend the removal of the CoL related to mandatory roaming in light of the Commission's decision to mandate the provision and regulate the rates of GSM-based wholesale roaming services provided by Rogers, Telus and ourselves to all other wireless carriers. As the Commission concluded in TRP 2015-177¹³⁰, after examining the competitiveness of the wireless market, the provision of wholesale roaming by Rogers, Telus and ourselves to each other is subject to a level of competition that is sufficient to protect the interests of users. As such, the Commission continues to forbear from the regulation of these

¹²⁷ Rogers Comments, paragraph 207.

¹²⁸ Telus Comments, paragraph 220.

¹²⁹ Rogers Comments, paragraph 209.

¹³⁰ Telecom Regulatory Policy CRTC 2015-177, *Regulatory framework for wholesale mobile wireless services*.

services.

95. Rogers stated that this CoL is not duplicative of CRTC tariff regulation, arguing that the mandatory roaming requirement and roaming request process help to balance "the objective of encouraging the "deployment of advanced networks that provide the greatest choice of basic and advanced services available at competitive prices to the greatest number of Canadians" with the fact that operators may require access to wholesale roaming services on a reasonable basis as they continue to expand their networks in an orderly manner."¹³¹ We disagree.

96. It is redundant and inefficient for two Government entities to regulate the same activities performed by the same companies. In the case of wholesale roaming, the problem is not just duplication and the inefficiencies that this causes. It is also that ISED's wholesale roaming regulations are inconsistent with the CRTC's wholesale roaming regulations. The Government and the Minister have acknowledged at several different points the harm done by duplicative regulations. Eliminating duplicative wholesale roaming regulations between ISED and the CRTC would be consistent with, and supportive of, successive Governments' policy objectives and priorities.

97. Further, the mandatory roaming CoL is not balanced; it puts carriers at risk of arbitrage and distorts roaming rates. It is at odds with the principles of facilities-based competition and creating incentives to invest in network infrastructure. Additionally, the fact that wholesale roaming rates are commercially negotiated but subject to mandatory arbitration in the event of a dispute effectively means that the rates do not reflect true market value. The rates are, instead, subject to downward pressure because: a) the provision of wholesale roaming services is mandatory; and b) the rates imposed in arbitration typically reflect historic rates.

98. We support Telus' call for ISED at the very least to eliminate mandatory in-footprint roaming completely in order to close a network arbitrage loophole. As Telus describes, the mandatory roaming CoL leaves wireless carriers vulnerable to network arbitrage, despite attempts to mitigate this risk using deployment requirements:

...in the in-footprint scenario, the introduction of strict deployment requirements is insufficient in addressing TELUS' concerns with mandatory roaming – an outcome which TELUS observes is taking place with alarmingly increasing frequency in urban and suburban settings. Here, network arbitrage is the result

¹³¹ Rogers Comments, paragraph 211.

of a decision to "under-deploy" (i.e., fail to continue infilling the network and deploying indoor and small cell coverage) within an operator's network footprint, while choosing to rely on the right to obtain roaming. Though rates for mandatory roaming are supposed to be commercially-negotiated, the recourse to arbitration provides a licensee to obtain roaming [sic] at lower than commercially-negotiated rates, providing an avenue to exploit roaming rather than deploying spectrum to the fullest extent to eliminate in-footprint roaming altogether. ... Therefore, the way to close this loophole is to eliminate the requirement for providing in-footprint roaming.¹³²

99. Therefore, we recommend eliminating the mandatory roaming CoL in its entirety. If the Department does not adopt our recommendation to eliminate mandatory roaming for all carriers, then it should, at a minimum do so for the national mobile service providers.

6.6.1 Roaming on 5G Networks

100. Should the Department elect to impose a redundant regulation (in the form of a mandatory wholesale roaming CoL) for 3500 MHz flexible use licences, we recommend that it should apply only to existing network technologies and not future 5G networks. 5G networks will require massive investments to acquire spectrum and build out infrastructure – it would be extremely short-sighted to provide a disincentive to carriers to make these investments at such a critical time.

101. In addition, as Telus pointed out, no operator is at an advantage when it comes to deploying this next generation network technology:

Given that 5G spectrum is just being made available and all wireless service providers (WSPs) will eventually have to migrate their own networks to 5G, the notions of incumbency advantages for any specific licensee or group of licensees are no longer relevant.¹³³

102. The national mobile service providers are aware that the capital investment requirements to build a 5G network will be very significant. These companies will be fully capable of making the necessary investments to fill in any network gaps that may exist or, if needed, to negotiate roaming rights with other carriers on a commercial basis. In addition, access to 5G service will not be necessary to provide a customer with sufficient speeds or coverage – existing LTE networks can meet the needs of incidental voice, text and data coverage without issue.

¹³² Telus Comments, paragraphs 216 to 217.

¹³³ Telus Comments, paragraph 208.

103. Telus proposed limiting roaming on 5G networks to out-of-footprint areas if the Department does not remove the CoL in its entirety.¹³⁴ We recommend that no part of this duplicative regulation should be extended to a new network technology. Therefore, to the extent that the 3500 MHz licences are used for 5G in the future, they should not be subject to the mandatory roaming CoL.

6.7 Annual Reporting

104. Several parties highlighted the regulatory burden associated with supplying annual reporting documents to the Department and suggested remedies to alleviate this burden.¹³⁵ Rogers noted that these annual report "consume significant regulatory and engineering resources" while appearing to provide "uncertain value for ISED at such a high frequency."¹³⁶

105. ISED should reduce the regulatory burden related to annual reporting. We agree with other intervenors that this can be accomplished by: reducing the frequency with which the data is collected; and/or streamlining the scope of information requested in the reports to only those data that are essential to the Department's monitoring activities; and/or modifying the CoL such that licensees are required to provide information on the Department's request, with appropriate notice. We encourage the Department to launch a consultation process to review this CoL, as was proposed in the decision on the renewal process for AWS-1 licences.¹³⁷

6.8 Other proposals related to CoLs

106. The Department should not heed Canwisp and Ecotel's request to mandate subordination where spectrum is unused.¹³⁸ Mandated subordination is an overly intrusive regulatory policy that would be contrary to Enabling Guidelines (a) and (d) of the *Spectrum Policy Framework for Canada* which state "market forces should be relied upon to the maximum extent feasible," and "regulatory measures, where required, should be minimally intrusive, efficient and effective"¹³⁹ and would interfere with carriers' long-term network deployment plans. Licence terms and deployment conditions are designed to give licensees sufficient time to undertake the significant investment and planning required to deploy spectrum. If licensees

¹³⁴ Telus Comments, paragraph 211.

¹³⁵ QMI Comments, paragraph 79; Rogers Comments, paragraph 210; Telus Comments, paragraphs 222 to 223.

¹³⁶ Rogers Comments, paragraph 210.

¹³⁷ SLPB-001-18 - *Spectrum Licence Renewal Process for Advanced Wireless Services (AWS-1) and Other Spectrum in the 2 GHz Range*, paragraph 69.

¹³⁸ Canwisp Comments, paragraph 90; and Ecotel Comments, paragraph 66.

¹³⁹ *Spectrum Policy Framework for Canada*, page 9.

were forced to subordinate all or part of their licences, it could seriously hinder their own plans to deploy in that area. The current policy framework and deployment requirements continue to be an effective method of facilitating spectrum use and the Department should not alter their approach.

107. Canwisp and TekSavvy argued that the Department should implement a new service obligation CoL that would require the provision of subscriber numbers, revenues, and marketing efforts.¹⁴⁰ The implementation of this type of condition of licence is simply not necessary and results in an additional administrative burden on spectrum licence holders. Implementing this CoL would be contrary to Enabling Guideline (d) of the *Spectrum Policy Framework for Canada* which states that "regulatory measures, where required, should be minimally intrusive, efficient and effective,"¹⁴¹ especially since the Department can simply ask licence holders to provide this information to the extent they have any concerns about a provider's deployment.

7.0 AMENDING THE CONDITIONS OF LICENCE FOR ALL CURRENT FIXED WIRELESS ACCESS LICENCES

Q16A. ISED is seeking comments on its proposal to amend all FWA conditions of licence based on the proposed conditions of licence in annex I.

Q16B. ISED is seeking comments on its proposal to apply this amendment on June 5, 2019, plus one year—June 5, 2020.

108. Intervenors had no objections to the proposed amendments to the CoL for all current fixed wireless access licences and having the amendments apply starting 5 June 2020, although Canwisp, TekSavvy and Xplornet recommended that the amended CoLs only remain in place until the transition process is complete and then the new conditions of licence for flexible-use licences apply.¹⁴² We do not support this recommendation. If an existing FWA licensee decides to request flexible-use licences through the transition process and is successful, then the new conditions of licence will apply. Moreover, as the Department decided, "existing licensees will be eligible to be issued annual fixed licences until they are required to transition as per the transition plan," and "these annual fixed licences would only be renewed where all conditions of licence have been met."¹⁴³ There is no need to update the CoLs that allow for flexible-use when the spectrum is only continuing to be used for fixed-use. As noted

¹⁴⁰ Canwisp Comments, paragraph 93; and TekSavvy Comments, paragraph 86.

¹⁴¹ *Spectrum Policy Framework for Canada*, page 9.

¹⁴² Canwisp Comments, paragraph 96; TekSavvy Comments, paragraph 88; and Xplornet Comments, paragraph 140.

¹⁴³ SLPB-001-19, Decision D11.

above, once the spectrum is being used for flexible-use as per the transition plan, the CoLs will be updated.

8.0 AUCTION PROCESS

8.1 Opening bids

Q17. ISED is seeking comments on the proposed opening bids as presented in annex D.

109. While many parties expressed support for the proposed opening bids, a number of intervenors said they were set too high. Of these, the majority objected specifically to the increase in prices for service areas with a population over 2 million from the level used in the 2500 MHz auction,¹⁴⁴ while a few others argued that they should be reduced across the board.¹⁴⁵ The Department's objective is to set opening bid prices to ensure that Canadians receive a fair return for the use of this spectrum.¹⁴⁶ The best way to ensure that spectrum is sold at fair value is to hold an auction without spectrum set-asides. Moreover, auctions without spectrum set-asides can have lower opening bids since market forces will determine the fair value of the spectrum.

110. Therefore, if the Department does not impose a spectrum set-aside, then we agree with Telus, Shaw, QMI and Cogeco that the Department should lower the opening bid prices for service areas with a population over 2 million to the same opening bid price level used in the 2500 MHz auction in 2015. If the Department imposes a spectrum set-aside, then we agree with Eastlink that the opening bid prices should remain at their proposed level in order to mitigate the "shortchanging" of Canadian tax payers with respect to the price of set-aside spectrum.

8.2 Pre-auction deposits

Q18. ISED is seeking comments on the proposed eligibility points for spectrum licences in the 3500 MHz as outlined in annex D, and pre-auction deposits as outlined above.

111. Only Xplornet and Canwisp had recommendations related to pre-auction deposits. Xplornet requested a 50% reduction to the pre-auction deposit requirement for set-aside-eligible

¹⁴⁴ Telus Comments, paragraph 235; Shaw Comments, paragraph 111; QMI Comments, paragraph 84; and Cogeco Comments, paragraph 267.

¹⁴⁵ Telus Comments, paragraph 235; Iristel Comments, paragraph 46. TekSavvy argued that auctioning spectrum on a Tier 4 basis resulted in prices that are too high for small operators, but did not recommend a specific reduction: see paragraph 90.

¹⁴⁶ Consultation, paragraph 193.

bidders and Canwisp recommended the Department provide bidding credits that result in a discount to the winning bid price for rural service providers and small businesses.¹⁴⁷ We do not support either request. We agree with the Department that the proposed pre-auction financial deposits will enhance the integrity of the auction.¹⁴⁸ Requiring auction participants to have access to funds that at least cover the opening bid amounts will reduce the probability that bidders are bidding for spectrum that they cannot afford. This reduces the possibility of incurring the significant administrative burden and inefficiencies that would arise in the auction process and the delayed deployment of the spectrum, if a bidder were to default on their payment.

112. Moreover, with the licensing of spectrum on a Tier 4 basis, there are a number of rural and remote service areas which have lower opening bid prices and will likely have lower winning bid prices which would reflect their lower relative value due to their smaller populations. Thus, implementing bidding credits would not be relying on market forces or minimally intrusive. The Department should support a market-based approach to spectrum allocation as indicated in 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, respectively.¹⁴⁹ Market forces will ensure that those willing to put the spectrum to its best use will bid for and acquire it. A market-based approach to spectrum allocations will also ensure that the Government garners the highest possible value for the spectrum it administers on behalf of Canadians.

113. With respect to the final payment, we propose that the due date for the remaining 80% of the final payment should be 30 days after the completion of the applicable protection period or a voluntary transition. It would be punitive for successful bidders to pay hundreds of millions of dollars for something they cannot use, in some cases for as long as three years. These are costs that would be borne today but would not contribute to the production of services and generation of revenue because the spectrum could not be put to use. This results in an inefficient allocation of resources which could have been allocated to different uses such as network improvements, customer service and the development of new products and services.

114. In the alternative, if ISED demands payments for licences that are not yet usable and the 3500 MHz auction were to begin in November or December 2020, then we recommend that the

¹⁴⁷ Xplornet Comments, paragraph 141; and Canwisp Comments, paragraph 99.

¹⁴⁸ Consultation, paragraph 198.

¹⁴⁹ *Spectrum Policy Framework for Canada*, page 9.

due date for the remaining 80% of the final payment should be 31 January 2021 or 30 business days following the announcement of the provisional licence winners, whichever is later. This would allow bidders to more effectively manage the financial impact occurring at the end of the reporting year while still allowing the Government to account for the auction proceeds in their 2020 fiscal year which does not close until 31 March 2021.

9.0 LICENCE RENEWAL PROCESS

Q19. ISED is seeking comments on the proposed renewal process for spectrum licences in the 3500 MHz band.

115. No intervenors objected to the proposed renewal process, although Ecotel requested that unassigned licences be made available on a "first come first served" (FCFS) basis.¹⁵⁰ We disagree. ISED should include any licences that are unassigned in the future 3800 MHz auction and refrain from using pro-competitive measures in the auction. This would ensure the efficient allocation of spectrum licences and avoid the distortionary impacts of a set-aside or cap. Only if the licences remain unassigned after the second auction should they be made available on an FCFS basis.

116. We generally support the proposed renewal process. However, ISED should modify their proposed policy that "licensees will have a high expectation that a new licence will be issued for a subsequent term through a renewal process"¹⁵¹ to include all subsequent terms, assuming compliance with CoLs, the absence of a fundamental reallocation of spectrum to a new service, or the absence of an overriding policy need.

*** End of Document ***

¹⁵⁰ Ecotel Comments, paragraph 73.

¹⁵¹ Consultation, paragraph 207.