

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

Comments
of
Bell Mobility Inc.

2 August 2019

Table of Contents

	<u>Page</u>
1.0 EXECUTIVE SUMMARY	3
2.0 SPECTRUM SET-ASIDES AND/OR SPECTRUM CAPS	12
3.0 LICENCE AREAS.....	28
3.1 Spectrum available in the auction	28
4.0 AUCTION FORMAT AND RULES	30
4.1 Generic licences	30
4.2 Anonymous bidding	31
4.3 Clock auction format and structure of the clock stage	32
4.4 Price increments in the clock rounds.....	35
4.5 Structure of the assignment stage.....	36
5.0 BIDDER PARTICIPATION: AFFILIATED AND ASSOCIATED ENTITIES.....	37
5.1 Associated entities	37
5.2 Prohibition of collusion and other communication rules.....	37
6.0 CONDITIONS OF LICENCE FOR FLEXIBLE USE SPECTRUM LICENCES IN THE 3500 MHZ BAND.....	38
6.1 Licence term	38
6.2 Licence transferability, divisibility and subordinate licensing	39
6.3 Deployment requirements	40
6.4 Other conditions of licence.....	42
6.5 Research and Development.....	42
6.6 Mandatory Roaming.....	47
6.6.1 The Government should have only one mandatory roaming regulatory regime	47
6.6.2 ISED's mandatory roaming CoL discourages investment	49
6.6.3 Mandatory roaming is unnecessary for national service providers	51
6.6.4 It is premature and inappropriate to mandate roaming on 5G networks.....	52
6.7 Annual Reporting	52
7.0 AMENDING THE CONDITIONS OF LICENCE FOR ALL CURRENT FIXED WIRELESS ACCESS LICENCES.....	54
8.0 AUCTION PROCESS.....	54
8.1 Opening bids.....	54
8.2 Pre-auction deposits	54
9.0 LICENCE RENEWAL PROCESS.....	55

1.0 EXECUTIVE SUMMARY

ES1. In Canada Gazette Notice No. SLPB-002-19, *Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band*, (the Consultation), Innovation, Science and Economic Development Canada (ISED or the Department) seeks comments on all aspects related to the licensing of the above-noted spectrum. The Department notes that the auction of 3500 MHz spectrum presents "a key opportunity to further support the competitiveness of the regional service providers by ensuring that they will have an opportunity to acquire spectrum to effectively compete with the [national mobile service providers], as 5G technology is initially deployed."¹ In furtherance of this goal, the Department concludes that it may be necessary to impose spectrum set-asides and/or spectrum caps. This is a flawed conclusion.

ES2. The Department's basic premise that national mobile service providers have market power does not withstand close scrutiny. This assessment is based on the Competition Bureau's (the Bureau) intervention in the recent Canadian Radio-television and Telecommunications Commission (CRTC) proceeding regarding low-cost data-only plans,² which relies on a flawed and outdated 2014 report prepared by The Brattle Group.³ That report was comprehensively rebutted by economists from the University of Calgary in an August 2014 paper which concluded that The Brattle Group's evidence did not find substantial market power and their findings were not robust.⁴

ES3. The Department is also relying on the Bureau's conclusion that lower prices are caused by the presence of a strong regional competitor.⁵ However, focusing exclusively on price does not account for often very large differences in the quality of the services being compared. As described in a report prepared by Charles River Associates on our behalf in the CRTC's current review of mobile wireless services, not properly accounting for network quality can result in price differences being attributed to market power when they are in reality reflective of higher quality.

¹ Consultation, paragraph 27.

² Comments of the Competition Bureau, Telecom Notice of Consultation CRTC 2018-98, *Lower-cost data-only plans for mobile wireless services*.

³ The Brattle Group, "Canadian Wireless Market Performance and the Potential Effect of an Additional Nationwide Carrier," submitted on behalf of the Competition Bureau in Telecom Notice of Consultation CRTC 2014-76, *Review of wholesale mobile wireless services*.

⁴ Jeffrey Church and Andrew Wilkins, "Wireless Competition in Canada: Damn the Torpedoes! The Triumph of Politics Over Economics," University of Calgary School of Public Policy, SPP Research Papers, August 2014, available at <https://www.policyschool.ca/wp-content/uploads/2016/03/church-wirelessupd2014-v6.pdf>.

⁵ Consultation, paragraph 28.

ES4. Moreover, there is an abundance of compelling evidence that today's wireless marketplace is highly competitive. Canadians can choose from more than 10 brands offering a range of pre-paid and post-paid options, price points, speeds, and usage to suit all types of needs. There have been more than 14,000 individual price reductions made by wireless carriers in Canada since January 2017 and the retail market for wireless services continues to evolve at a rapid pace. Canadians now have widespread access to unlimited data plans and monthly installment device financing plans. In addition to lower prices and more affordable options, all carriers compete vigorously to offer the highest speeds (where Canada has mobile download speeds twice as fast as the United States)⁶, widest and most reliable coverage, best customer service, support for the latest devices, and innovative product and service offerings.

ES5. These facts are inconsistent with the presumption that national mobile service providers have market power. It is, therefore, neither necessary nor appropriate to implement spectrum set-asides and/or spectrum caps in the auction process for the 3500 MHz band in order to foster competition in the Canadian wireless market.

Spectrum set-asides and spectrum caps

ES6. 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 occurs 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.

ES7. 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. When spectrum costs are driven up, consumers end up paying more. "Pro-competitive" measures that increase costs are incongruent with the Government's objective of lowering wireless prices.

⁶ See <https://www.telecompetitor.com/report-u-s-mobile-download-speeds-half-that-of-canada-south-korea-leads-the-world/>.

ES8. The regional service providers, who are among the largest incumbent cable service providers in the country, have been the recipients of several auction windfalls in the last decade. In the Advanced Wireless Services (AWS)-1 spectrum auction, new entrant bidders were able to bid on both set-aside spectrum and non-set-aside spectrum, which allowed them to minimize their own costs of acquiring spectrum while inflating others' costs. There were a number of circumstances where a new entrant bid on non-set-aside spectrum even though equivalent set-aside spectrum was available at a much lower price. As a result, the price for set-aside spectrum ended up being far lower than the price for equivalent non-set-aside spectrum.

ES9. Another example of the distortive impacts of set-asides is the AWS-3 auction where Wind (now Shaw), QMI and Eastlink all won significant blocks of spectrum covering most of the country for a combined total of less than \$100 million or about \$0.11/MHz-Pop. In contrast, incumbents paid over \$3/MHz-Pop for comparable spectrum – about 28 times as much.

ES10. A similar result occurred in the recent 600 MHz spectrum auction. Non-set-aside spectrum licences were acquired for \$1.89 per MHz-Pop on average, which is more than twice the \$0.81 per MHz-Pop paid on average for set-aside spectrum. This implies a subsidy of over \$1 billion dollars to set-aside eligible bidders.

ES11. In our view, after 11 years of auction-related advantages and over \$5 billion in auction-related financial subsidies, implementing spectrum set-asides and/or spectrum caps in the 3500 MHz auction, and other future auctions, would be gratuitous, not to mention an unnecessary intervention. The corporate beneficiaries of the Government's largesse do not need taxpayer-funded subsidies. QMI's market capitalization is nearly \$8 billion while Shaw's is over \$13 billion.⁷ Since these corporations became wireless service providers their market value has soared.

ES12. We support the Department's objective of minimizing the risk of speculation by bidders with no intention of deploying 3500 MHz spectrum. However, the proposed set-aside eligibility constraint must be more targeted to achieve this goal. We recommend that ISED narrow the criterion for set-aside eligible bidders to those entities who are: (i) registered with the CRTC as mobile wireless carriers⁸ or can demonstrate that they have deployed a fixed-wireless network;

⁷ As of 25 July 2019.

⁸ See the CRTC's website at: <https://applications.crtc.gc.ca/telecom/eng/registration-list?pt=31>.

and (ii) already have spectrum licences and are actively providing commercial wireless services to the general public in the Tier 4 licence area of interest.

ES13. Providing satellite relay distribution and direct-to-home services should not qualify bidders to become set-aside eligible. As indicated in the Consultation, the Department's objective is to ensure that "regional service providers and [Wireless Internet Service Providers (WISPs)] could benefit from an opportunity to acquire access to additional spectrum to support network improvements to meet the wireless traffic demands of their growing subscribership,"⁹ and that "ISED is of the view that the ability to bid on set-aside spectrum should be limited to a particular sub-set of service providers that are best positioned to compete in either the commercial mobile services market or as rural wireless Internet service providers."¹⁰ Satellite relay distribution and direct-to-home services have nothing to do with wireless network improvement or wireless traffic demand. Thus, designating these service providers as set-aside eligible will not further the Department's objective of ensuring regional providers and WISPs have access to additional spectrum to improve their wireless networks. These service providers would of course be able to bid for open spectrum in the auction.

ES14. With respect to grid-cell and subdivided licences, we do not support the proposal to have these licences apply towards the spectrum cap if it is applied. The proposal unnecessarily punishes existing licensees by distorting the amount of spectrum held by an existing licensee and thus severely restricting the amount of spectrum that existing licensees can bid for. For example, the Consultation states that in Ottawa/Outaouais, we have a grid-cell allocation for 50 MHz covering 0.001% of the population.¹¹ On a population weighted basis – a metric the Department uses to determine national holdings of commercial mobile spectrum licences¹² – we only have 0.0005 MHz of spectrum. Under such circumstances, counting 50 MHz of spectrum, or 100,000 times our population weighted holdings, count towards the spectrum cap is clearly excessive. This proposal severely and unnecessarily restricts our ability to bid on 3500 MHz spectrum by allocating more than 100,000 times more spectrum to our spectrum holdings than we actually have on a population weighted basis. In this context, the proposal flagrantly contravenes enabling guideline (d) of the *Spectrum Policy Framework for Canada* which states

⁹ Consultation, paragraph 37.

¹⁰ Consultation, paragraph 39.

¹¹ Consultation, Table A1, footnote 4.

¹² ISED, *National Holdings for Commercial Mobile Spectrum Licences*, available at <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11210.html>.

that "regulatory measures, where required, should be minimally intrusive, efficient and effective."¹³

ES15. As a result, 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.

Auction structure – clock rounds

ES16. We support the Department's proposal to use 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.¹⁴ We also support the structure of the clock stage.

ES17. The Consultation states that the clock auction format "would provide participants with somewhat reduced exposure risk as compared to [a simultaneous multiple round ascending auction.]"¹⁵ However, as explained below, 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.

ES18. We propose three rules to address this issue. These rules could be implemented in any combination and each of them individually would, at least partially, solve the problems highlighted, but the best outcome can be achieved if all three rules are adopted.

¹³ ISED, *Spectrum Policy Framework for Canada*, DGTP-001-07, June 2007, page 9.

¹⁴ Consultation, paragraph 65.

¹⁵ Consultation, paragraph 67.

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.

ES19. 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% 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.

ES20. 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.

ES21. 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.

ES22. The three proposed rules above support the auction design principle that "once a product has aggregate demand greater than or equal to supply, there will never be any unsold

blocks for the product." The proposed rules ensure, however, that no bidder will be unexpectedly forced to bid for an inefficient combination of licences.

Auction structure – assignment rounds

ES23. We agree with the Department's proposal to assign frequencies for licences won at auction and awarded through the transition process at the same time and to ensure the contiguity of spectrum assignments. This will ensure that bidders do not end up with fragmented spectrum holdings with respect to existing licences and licences obtained in the auction.

ES24. We also support the Department's proposal to conduct a separate assignment round for each of the most populated service areas sequentially, in descending order of population, and that wherever possible it will create assignment areas that consist of a combination of two or more contiguous service areas. However, we do not support the Department's proposal to create assignment sessions for six areas at one time after the completion of the first eight assignment rounds. 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 with respect to existing licences and licences obtained in the auction. Extra time should be taken during the auction to get the assignment right the first time rather than spending months correcting errors by negotiating and transferring licences after the auction is over.

Auction Structure – final payments

ES25. 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 spectrum is put into service. For example, suppose the auction concludes in July 2020 and that the flexible use licence cannot be deployed for two years due to the protection period in the transition plan (i.e., the licence is in a service area with a population centre of more than 30,000 people), then the soonest the spectrum can be put into use is July 2022, or two years after the auction. In this situation, the due date for the remaining 80% of the final payment would be due by August 2022.

ES26. 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 generation of revenue because the spectrum cannot 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.

ES27. 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 its 2020 fiscal year which does not close until 31 March 2021.

Conditions of licence

ES28. With respect to the deployment condition of licence (CoL), the additional deployment requirement for licensees that currently operate LTE networks is unduly punitive to the service providers who have spent billions of dollars deploying LTE networks to 99% of Canadians. Moreover, LTE networks use both low-band and mid-band spectrum. 3500 MHz has a shorter range than 700 MHz spectrum and thus, it is more challenging to build out coverage in rural areas in order to meet the LTE deployment requirement. In addition, the timeline associated with this requirement is inappropriately aggressive, and in some cases licensees will simply not have enough time to meet the condition. The proposed condition effectively punishes carriers for serving all Canadians, including those in rural areas.

ES29. The proposed LTE deployment rule provides a loophole by which many of the potential licensees of 3500 MHz spectrum will not be required to provide timely 5G coverage in rural areas because they had not previously invested in providing LTE coverage to these areas. In essence, this counter-intuitive requirement rewards service providers for failing to build out their networks to rural areas. Therefore, if the Department's goal is the expansion of 5G coverage to rural areas, this should instead be built into the general deployment requirements that apply equally and symmetrically to all potential providers.

ES30. We do not support the proposal to prevent the transfer of set-aside spectrum to a set-aside-ineligible entity for the first five years of the licence term. A CoL that prevents a wireless carrier from selling spectrum to a willing buyer would contravene several of the enabling guidelines in the *Spectrum Policy Framework for Canada* and place an unnecessary constraint on the exercise of the Minister's discretion to issue spectrum licences in accordance with the *Radiocommunication Act*. For the same reason, we also do not support the Department's proposal that no transfer of licences or issuance of new licences will be authorized if it would result in a licensee exceeding the spectrum cap during the first five years.

ES31. At a minimum, the restriction on transferability should only apply to licences obtained through the auction process. Flexible-use licences obtained through the transition process are not obtained through the auction and thus were not acquired with the benefit of the spectrum set-aside and/or spectrum cap rule. As a result, there is no risk of speculation with respect to these licences.

ES32. We encourage the Department to eliminate the research and development (R&D) spending condition, or at a minimum, lower the revenue exemption threshold, lower the spending requirement and update the definition of R&D eligible expenditures. This CoL is unnecessary and out-of-step with today's modern wireless industry, and inappropriately imposes a regulatory disadvantage on a subset of licensees.

ES33. We also recommend the removal of the proposed mandatory roaming CoL, which is a redundant policy that encourages network arbitrage. Should the Department elect not to remove this CoL, it should be applied only to the benefit of non-national mobile service providers and existing network technologies (3G and 4G) and not 5G networks. Rogers, Telus and ourselves are sophisticated businesses with multifaceted wholesale relationships spanning wireline and wireless telecommunications and broadcasting lines of business. In consideration of these facts, there is no need for ISED to regulate the provision of wholesale roaming services among these companies. Market forces can be relied upon to address any competitive or market issues that may arise related to wholesale roaming.

ES34. Finally, the existing annual reporting CoL is overly burdensome on spectrum licence holders. We encourage the Department to initiate a consultation in the near future with the aim of removing or reducing this requirement for all spectrum licences.

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.

1. The Department is concerned that competition in the post-auction marketplace could suffer because it has concluded that national service providers have market power.¹⁶ As a result, the Department is proposing that mechanisms such as spectrum set-asides and/or spectrum caps may be required. However, the Department's assessment that national service providers have market power and that spectrum set-asides and spectrum caps are required is incorrect for three reasons.

2. First, the Department's basic premise that national mobile service providers have market power does not withstand close scrutiny. This assessment is based on the Bureau's intervention in the 2018 CRTC proceeding regarding low-cost data-only plans,¹⁷ which in turn relied on a flawed and outdated 2014 report prepared by The Brattle Group.¹⁸ That report was comprehensively rebutted by economists from the University of Calgary in an August 2014 paper which concluded that The Brattle Group's evidence did not find substantial market power and their findings were not robust and unreliable:

The evidence with respect to market power is inconsistent with substantiality and it is not robust. The expert evidence does not address whether entry is efficient. Instead it provides only an estimate of the competitive benefits of a fourth national entrant — not its costs — and it does not assess the financial viability of a fourth national competitor. The assessment of the competitive benefits of entry are unreliable, attributable to both the methodologies used by the expert and the assumptions required to implement its simulation methodology. The lack of fit between outcomes derived from the model and calibrated parameters with observed values indicate that the concerns over the specification and assumptions in implementing the model are well-founded. Its inaccuracies pre-entry cast considerable doubt on its use to accurately forecast the effect of a fourth national entrant.¹⁹

¹⁶ Consultation, paragraph 28.

¹⁷ Comments of the Competition Bureau, Telecom Notice of Consultation CRTC 2018-98, *Lower-cost data-only plans for mobile wireless services*.

¹⁸ The Brattle Group, "Canadian Wireless Market Performance and the Potential Effect of an Additional Nationwide Carrier," submitted on behalf of the Competition Bureau in Telecom Notice of Consultation CRTC 2014-76, *Review of wholesale mobile wireless services*.

¹⁹ Jeffrey Church and Andrew Wilkins, "Wireless Competition in Canada: Damn the Torpedoes! The Triumph of Politics Over Economics," University of Calgary School of Public Policy, SPP Research Papers, August 2014, available at <https://www.policyschool.ca/wp-content/uploads/2016/03/church-wirelessupd2014-v6.pdf>.

3. The Bureau's analysis is also out-of-date as it was based upon data from 2013 and older. As will be discussed further below, the wireless businesses of QMI and Eastlink have continued to grow since 2013/2014 and there is no doubt, barring the mandated entry of mobile virtual network operators (MVNOs) by the CRTC, that they will remain in the market for the foreseeable future. Wind, which at the time of the Bureau's submission was having financial difficulties, is now owned by Shaw, one of the largest cable companies in the country, and is no longer in danger of failing. In fact, Freedom, as Wind is now branded, has embarked on an aggressive wireless subscriber acquisition program under its new owners.

4. Second, the Department is relying on the Bureau's conclusion that lower prices are caused by the presence of a strong regional competitor.²⁰ However, focusing exclusively on price does not account for often very large differences in the quality of the services being compared. As described in a report prepared by Charles River Associates on our behalf in the CRTC's current review of mobile wireless services, not properly accounting for network quality can result in incorrect inferences about market power:

If network quality is not properly controlled for, price differences may be incorrectly attributed to an alleged exercise of market power when in fact they are explained by higher quality...

...

Higher wireless service quality explains most of the wireless plan price differences across provinces. ... It is not the exercise of market power in provinces where the regional wireless service provider is not considered "strong" that explains these provinces' wireless plans' prices.²¹

5. In addition, there is an abundance of compelling evidence that today's wireless marketplace is highly competitive. All carriers compete vigorously to offer the highest speeds, widest and most reliable coverage, best customer service, support for the latest devices, and innovative product and service offerings. As discussed further below in our response to Question 1B, the regional providers are demonstrably well-established, successful, in no danger of involuntarily exiting the market and have the financial means necessary to compete for spectrum in an open auction.

²⁰ Consultation, paragraph 28.

²¹ Charles River Associates, "CRTC 2019-57 Review of Mobile Wireless Services: The Value of High Quality Networks" prepared on behalf of Bell Mobility Inc. for Telecom Notice of Consultation CRTC 2019-57: *Review of mobile wireless services*, pages 1 and 31.

6. In our submission in the CRTC's current review of mobile wireless services (TNC 2019-57)²² we provided a great deal of evidence to support these conclusions. For example:

- There is at least one wireless subscription in Canada for every Canadian 10 years of age or older, and a notable 1.5 million new Canadian wireless subscribers were added in 2018 (more than three times as many as the year before);
- Entrant carriers have gained a market share of 28% of net additions and added more than 1.1 million subscribers since 2015;
- There have been more than 14,000 individual price reductions made by wireless carriers in Canada since January 2017, data prices in terms of dollars per GB have decreased significantly since 2015 and according to the *Mobile Telecommunications Services Price Index* the price of wireless services in Canada has fallen 54% since 2014;
- Consumers can choose from more than 10 brands offering a range of pre-paid and post-paid options, price points, speeds, and usage to suit all types of needs, with a recent focus on offering a variety of attractive options focused on affordability; and
- In addition to lower prices and more affordable options, all carriers compete vigorously to offer the highest speeds (where Canada has mobile download speeds twice as fast as the United States)²³, widest and most reliable coverage, best customer service, support for the latest devices, and innovative product and service offerings. This competitive intensity among facilities-based carriers is reflected in the fact that Canada's wireless providers invest more per subscriber and as a percentage of revenue than their peers in other markets.

7. The retail market for wireless services continues to evolve at a rapid pace. On 13 June 2019, Rogers introduced mobile service rate plans with no data overage charges.²⁴ Similar plans are now being offered by us²⁵ and Telus²⁶. Canadians also have access to

²² Telecom Notice of Consultation CRTC 2019-57, *Review of mobile wireless services*, available online at: https://crtc.gc.ca/eng/archive/2019/2019-57.htm?_ga=2.224989274.1755735874.1562866581-555904013.1545084296.

²³ See <https://www.telecompetitor.com/report-u-s-mobile-download-speeds-half-that-of-canada-south-korea-leads-the-world/>.

²⁴ See <https://about.rogers.com/2019/06/12/rogers-introduces-infinite-wireless-data-plans-no-overage-charges/>.

²⁵ See https://www.bell.ca/Mobility/Cell_phone_plans/Unlimited-plans#INT=MOB_mobhmpg_BAN_BellUnlimitedPlans_Mass_061319_SD.

²⁶ See https://www.telus.com/en/bc/mobility/plans?INTCMP=tcom_mob_tile_tb_shop_plans&linktype=products_and_services.

monthly installment device financing plans.²⁷ These are in addition to the Freedom²⁸ and Eastlink²⁹ rate plans that also have no data overage fees. As noted in a recent article in the Financial Post, competition in Canada's wireless market continues to intensify:

In June, BCE Inc., Rogers Communications Inc. and Telus Corp. all introduced unlimited data plans that throttle speeds after a user exceeds their data allotment instead of charging overage fees, the first time the largest carriers adopted the unlimited strategy that has proven popular with smaller competitors and in other markets including the U.S.

As of last week, the Big Three had also introduced financing options so customers can pay for devices in installments over at least a two-year period with no upfront costs and zero per cent interest, reducing the amount the carriers pay in device subsidies.

"The 'great shift' in wireless plans marches on," Desjardins analyst Maher Yaghi noted to clients last week, adding that certain pricing strategies "signal that competition in the Canadian wireless market is currently intense."³⁰

8. Third, the view that national service providers likely have the means and incentive to prevent other service providers from acquiring spectrum licences in an open auction is misplaced. The benefits of outbidding an entrant are dubious, especially if outbidding results in a significant cost disadvantage relative to other wireless operators in the market. No operator can afford to significantly increase its cost relative to the other operators in the market and still remain competitive. A wireless operator will not want to spend hundreds of millions of dollars more than its rivals to acquire spectrum which it will not put to productive use.

9. All of these facts are inconsistent with the presumption that national mobile service providers have market power. It is therefore neither necessary nor appropriate to implement spectrum set-asides and/or spectrum caps in the auction process for the 3500 MHz band in order to foster competition in the Canadian wireless market.

²⁷ See https://www.bell.ca/Mobility/Mobility-promotions/smartpay#INT=MOB_mobhmpg_BAN_IntroSmartPay_Mass_72519_AF.

²⁸ See <https://www.freedommobile.ca/en-ca/plans-and-devices/plans>.

²⁹ See <https://www.eastlink.ca/mobile/plans/worry-freedata.aspx>.

³⁰ Emily Jackson, "'Great shift' in wireless plans continues as carriers shake up smartphone subsidies: Competition in the Canadian wireless market is currently intense," Financial Post, 29 July 2019.

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.

10. 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.

11. 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. When spectrum costs are driven up, consumers end up paying more. "Pro-competitive" measures that increase costs are incongruent with the Government's objective of lowering wireless prices.

12. In our view, after 11 years of auction-related advantages and over \$5 billion in auction-related financial subsidies, implementing spectrum set-asides and/or spectrum caps in the 3500 MHz auction, and other future auctions, would be gratuitous, not to mention an unnecessary intervention. The corporate beneficiaries of the Government's largesse do not need taxpayer-funded subsidies. QMI's market capitalization is nearly \$8 billion while Shaw's is over \$13 billion.³¹ Since these corporations became wireless service providers their market value has soared.

Hindering the achievement of the full benefits of 5G

13. Both spectrum set-asides and spectrum caps restrict the amount of spectrum available to service providers and should not be adopted. 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.

³¹ As of 25 July 2019.

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.

14. While 3rd Generation Partnership Project recognizes that 100 MHz channels may not always be possible and has designed equipment standards to accommodate smaller channel sizes, anything smaller than 100 MHz will result in less efficiency. As noted by Huawei, "the availability of at least 100 MHz channel bandwidth per 5G network with the adoption of massive MIMO will boost peak, average and cell edge throughput with affordable complexity".³² Similarly, Ericsson states "100 MHz TDD Channel[s are] key to providing an expected peak rate of 1.8 Gbps, [and] delivering a true 5G experience".³³

15. As a result, the 200 MHz of spectrum in the 3500 MHz band is already sub-optimal which is why an additional 100 MHz of spectrum in the range of 3700-3800 MHz would have benefited all providers including alleviating concerns regarding the need for spectrum set-asides and/or spectrum caps. With only 200 MHz available, the adoption of spectrum set-asides and/or spectrum caps only make the issue worse. For example, a set-aside of 40 MHz would result in no spectrum being available for set-aside ineligible bidders in Edmonton, Kelowna, London, Ottawa, and Trois-Rivières. Moreover, allocating an insufficient amount of spectrum also impacts the ability of existing licence holders to continue serving their fixed wireless customers, the majority of whom reside in rural communities and have few comparable options for broadband connectivity.

16. A report by Analysys Mason ranked Canada last in '5G readiness' out of 14 benchmark countries, while countries like the United States, China, Japan and South Korea received top marks.³⁴ Reducing the amount of 5G spectrum to several key providers will do nothing to improve Canada's 5G readiness.

³² Huawei, "5G Spectrum: Public Policy Position", page 2, available at https://www-file.huawei.com/-/media/corporate/pdf/public-policy/public_policy_position_5g_spectrum_2018.pdf?la=en-ca.

³³ Ericsson, "C-band NR Requirement vs. satellite spectrum usage," submitted to FCC Re: Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz, GN Docket No. 17-183. Available at <https://ecfsapi.fcc.gov/file/10329453530188/Ericsson%20Mid%20Band%20Ex%20Parte%20GN%2017-183%20COMBINED%20TO%20BE%20FILED.pdf>.

³⁴ Analysys Mason, "Global Race to 5G – Update", April 2019, page 68.

Spectrum set-asides distort the auction process

17. Previous Canadian auctions employing set-asides have proven that they distort the process to the significant benefit of the set-aside spectrum recipients and the detriment of Canadian taxpayers. This will also be the result of the proposed 3500 MHz auction framework which is designed to minimize the auction prices paid by regional providers.

18. 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.³⁵ 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.

19. 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.

20. Previous set-aside policies have resulted in increasing the wireless industry's costs by hundreds of millions of dollars by artificially reducing the supply of spectrum and creating arbitrage opportunities. Furthermore, spectrum set-asides can delay the allocation of valuable spectrum. After originally going unsold, the set-aside spectrum in the areas of Manitoba, Saskatchewan and the North in the first AWS-3 auction had to be put up for auction again by the Department without the set-aside restriction. Similarly, in the recent 600 MHz auction, set-aside licences in Newfoundland and Labrador, Northern Ontario, Manitoba and the North all went unsold.

³⁵ Industry Canada, *Spectrum Policy Framework for Canada*, June 2007, available at <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08776.html#s44>.

21. The regional service providers, who are among the largest incumbent cable service providers in the country, have been the recipients of several auction windfalls in the last decade. In the AWS-1 spectrum auction new entrant bidders were able to bid on both set-aside spectrum and non-set-aside spectrum, which allowed them to minimize their own costs of acquiring spectrum while inflating others' costs. There were a number of circumstances where a new entrant bid on non-set-aside spectrum even though equivalent set-aside spectrum was available at a much lower price. As a result, the price for set-aside spectrum ended up being far lower than the price for equivalent non-set-aside spectrum.

22. Another example of the distortive impacts of set-asides is the AWS-3 auction where Wind (now Shaw), QMI and Eastlink all won significant blocks of spectrum covering most of the country for a combined total of less than \$100 million or about \$0.11/MHz-Pop. In contrast, incumbents paid over \$3/MHz-Pop for comparable spectrum – about 28 times as much. Canaccord Genuity put the result into perspective:

...the national incumbents won 670 [million] MHz PoPs of spectrum for \$2.01 billion or \$3.00 per MHz PoP, while the new entrants purchased 934 [million] MHz PoPs for only \$98 million or \$0.105 per MHz PoP. If the Government had sold the whole auction at \$3.00 per MHz PoP (which would still have been at a discount to the C\$3.42 MHz PoP for the equivalent spectrum in the U.S.), total proceeds would have been \$4.8 billion rather than the actual \$2.1 billion, implying a new entrant "subsidy" of \$2.7 billion.³⁶

23. As investment firm Macquarie Capital Markets concluded, the spectrum subsidies have provided Shaw (previously Wind) and QMI with a cost advantage over the incumbents.

... we believe new entrants Wind and Quebecor hold a near-term product competitive advantage to incumbents given both their amount of spectrum per subscriber (Fig 3) and their cost per MHz/Pop on that spectrum.³⁷

24. A similar result occurred in the recent 600 MHz spectrum auction. Non-set-aside spectrum licences were acquired for \$1.89 per MHz-Pop on average, which is more than twice the \$0.81 per MHz-Pop paid on average for set-aside spectrum. This implies a subsidy of over \$1 billion dollars to set-aside eligible bidders.

25. These outcomes were the direct result of an auction framework that employed set-

³⁶ Canaccord Genuity, *Government gives wireless new entrants another huge subsidy*, 9 March 2015, page 4.

³⁷ Macquarie Capital Markets Canada Ltd., *Carrier ROIC, why it matters more now*, 6 January 2016, page 2.

asides which limited the number of eligible bidders and shielded the eventual set-aside spectrum winners from a fully competitive auction. We estimate that since the AWS-1 auction in 2008, more than \$5 billion in spectrum subsidies have been given to wireless entrants through spectrum set-asides.

26. The corporate beneficiaries of the Government's largesse do not need taxpayer-funded subsidies. QMI's market capitalization is nearly \$8 billion while Shaw's is over \$13 billion.³⁸ Since these corporations became wireless service providers their market value has soared. In Shaw's case, its market capitalization has increased by almost \$2 billion in only three years, while QMI, which first won its subsidized spectrum in 2008, has seen its market capitalization increase by over \$5 billion.³⁹

27. Shaw and QMI now have over 2.6 million wireless subscribers.⁴⁰ In their 2018 fiscal year, Shaw generated over \$950 million in annual wireless revenue,⁴¹ while QMI generated over \$530 in annual wireless revenue.⁴² Both companies are: (i) large; (ii) offer a full suite of communication services that compete with the broadband, telecommunication and broadcasting services of Rogers, Telus and ourselves; and (iii) profitable.

28. Eastlink, which is privately held and therefore does not publically release its financial results, also continues to grow its wireless business – a strong indication that it is also performing well. For example, in the past six years it has launched or expanded service in six provinces.⁴³ Most recently, on 11 April 2019, Eastlink announced the expansion of its mobile service in Grande Prairie, Alberta. Over the past year, Eastlink has invested over \$4 million to expand its wireless networks:

Eastlink has invested more than \$4 million in the past year (\$1M in Grande Prairie alone) to expand its mobile network to several more Canadian communities including New Waterford, Baddeck, Tatamagouche in Nova Scotia, Goulds, Torbay, and Bell Island in Newfoundland/Labrador, Saint John,

³⁸ As of 25 July 2019.

³⁹ Shaw purchased Wind Mobile in March 2016. Shaw's market capitalization increased from about \$11.5 billion at the end of 2015 to \$13.2 billion as of 25 July 2019. QMI first won auctioned spectrum in 2008. QMI's market capitalization increased from about \$2.4 billion at the end of 2007 to \$7.75 billion as of 25 July 2019.

⁴⁰ Shaw Communications Inc News Release, *Shaw Announces Second Quarter and Year-To-Date Fiscal 2019 Results*, 9 April 2019, page 1, and Quebecor Inc., *Management Discussion and Analysis, Quarter Ending March 31, 2019*.

⁴¹ Shaw Communications Inc. News Release, *Shaw Announces Fourth Quarter and Full Year Fiscal 2018 Results*, 25 October 2018.

⁴² Quebecor Inc., *Consolidated financial statements, Years ended December 31, 2018 and 2017*.

⁴³ See <https://www.newswire.ca/news-releases/eastlink-continues-mobile-expansion-into-grande-prairie-894842311.html>.

Fredericton, Shediac and Sussex in New Brunswick, and Chelmsford, Val
Therese and Kirkland Lake in Ontario.⁴⁴

29. While some have argued that the national wireless service providers received their non-auctioned spectrum for free, this is incorrect and misleading. Annual spectrum licence fees are payable on all non-auctioned spectrum. Current annual spectrum licence fees are in excess of \$189 million per year and the total amount paid between 1987 and 2018 is approximately \$3.7 billion.⁴⁵

30. The 600 MHz auction also demonstrated that the regional providers have access to the financial resources necessary to compete in an open auction. For example, Shaw had supplementary round bids indicating a willingness to pay for various packages of spectrum licences ranging from \$869 million to \$1.46 billion.⁴⁶ Similarly, QMI was willing to pay \$662 million to \$1.12 billion for various packages of spectrum. 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.

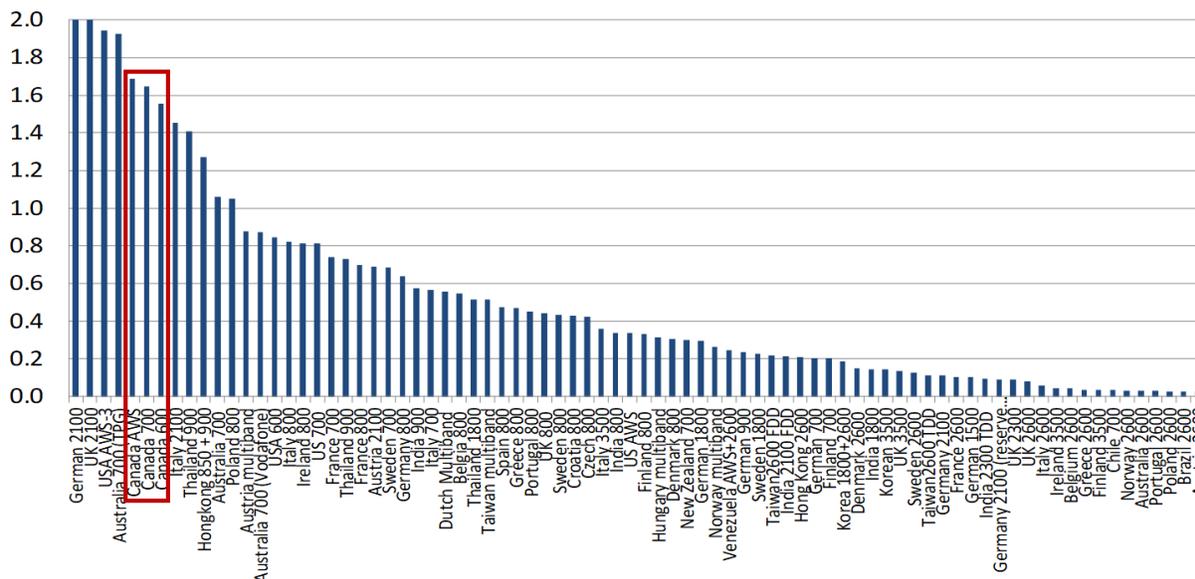
31. As Figure 1 shows, the Canadian auctions for AWS-1, 700 MHz and 600 MHz spectrum – all of which had spectrum set-asides – resulted in some of the highest prices paid for spectrum in the world.

⁴⁴ See <https://www.newswire.ca/news-releases/eastlink-continues-mobile-expansion-into-grande-prairie-894842311.html>.

⁴⁵ CWTA Facts and Figures, available at <https://www.cwta.ca/facts-figures/>.

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

Figure 1: Amount Paid for Spectrum in Various Auctions⁴⁷
 (Euro per MHz-Pop)



32. In other situations, the shareholders of set-aside eligible spectrum licensees were able to benefit from financial windfalls at the expense of Canadian tax payers. For example, Public Mobile was acquired by Telus for close to five times Public Mobile's original spectrum cost, and Wind's business was purchased by Shaw from private equity firms for \$1.6 billion⁴⁸ or almost six times the amount paid they paid for it.⁴⁹ The latter situation, is also an example of Shaw's financial ability to purchase spectrum without further Government subsidies. These are illustrations of the unintended consequences and perverse outcomes of intrusive regulations.

33. 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 MVNOs 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, implementing spectrum set-asides and/or spectrum caps in the 3500 MHz auction, and other future auctions, would be gratuitous.

34. At a minimum, there should be no set-aside spectrum for the licences being auctioned in low demand areas such as the North and Northern Ontario. For example, it took three auctions

⁴⁷ Nokia.
⁴⁸ See <https://www.pehub.com/canada/2016/03/shaw-ties-up-1-6-bln-acquisition-of-pe-backed-wind-mobile/>.
⁴⁹ Montreal Economic Institute, *The State of Competition in Canada's Telecommunications Industry – 2016*, pages 21 to 23.

for the Department to successfully licence all 700 MHz spectrum in the North. Not applying the set-aside requirement on Northern spectrum licences would also be consistent with the approach taken by ISED for Northern licences in the 2500 MHz band where the spectrum aggregation limit does not apply.

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.**

35. We support the Department's objective of minimizing the risk of speculation by bidders who have no intention of deploying 3500 MHz spectrum and who will instead attempt to resell any licences they win for a quick financial gain. However, the proposed set-aside eligibility constraint, which would allow facilities-based service providers of any type to bid in the 3500 MHz auction, must be more targeted to achieve this goal. We recommend that ISED narrow the criterion for set-aside eligible bidders to those entities who are: (i) registered with the CRTC as mobile wireless carriers⁵⁰ or can demonstrate that they have deployed a fixed-wireless network; and (ii) already have spectrum licences and are actively providing commercial wireless services to the general public in the Tier 4 licence area of interest. Refining the criterion in this way will increase the likelihood that any spectrum won in the auction will be put to use as quickly as possible to the benefit of Canadians.

36. Providing satellite relay distribution and direct-to-home services should not qualify bidders to become set-aside eligible. As indicated in the Consultation, the Department's objective is to ensure that "regional service providers and [Wireless Internet Service Providers (WISPs)] could benefit from an opportunity to acquire access to additional spectrum to support network improvements to meet the wireless traffic demands of their growing subscribership,"⁵¹ and that "ISED is of the view that the ability to bid on set-aside spectrum should be limited to a particular sub-set of service providers that are best positioned to compete in either the

⁵⁰ See the CRTC's website at: <https://applications.crtc.gc.ca/telecom/eng/registration-list?pt=31>.

⁵¹ Consultation, paragraph 37.

commercial mobile services market or as rural wireless Internet service providers."⁵² Satellite relay distribution and direct-to-home services have nothing to do with wireless network improvement or wireless traffic demand. Thus, designating these service providers as set-aside eligible will not further the Department's objective of ensuring regional providers and WISPs have access to additional spectrum to improve their wireless networks. These service providers would of course be able to bid for open spectrum in the auction.

37. The proposed overly broad criterion for set-aside eligibility creates incentives to game the auction process and increase prices for open spectrum. For example, in the 600 MHz auction, Shaw was able to bid on seven blocks of set-aside spectrum in Newfoundland and Labrador, Nova Scotia and Prince Edward Island, New Brunswick, Eastern Quebec, Southern Quebec, Northern Ontario, Manitoba, Saskatchewan, Yukon, Nunavut and the Northwest Territories. These bids contributed to higher prices in these areas, which are outside of Shaw's current wireless operating territories of British Columbia, Alberta, Southern Ontario and Eastern Ontario/Outaouais.

38. We also do not support the Department's proposal to use Tier 2 service areas as a criterion for set-aside eligibility. The 3500 MHz licences are being auctioned on a Tier 4 basis. There is no justification for providers being credited as providing wireless service in Chatham just because they are providing wireless service in Toronto. Therefore, we recommend that set-aside eligibility criterion be based on the relevant Tier 4 service area and not the relevant Tier 2 service area.

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.

39. The Department proposes to prevent the transfer of set-aside spectrum to a set-aside-ineligible entity for the first five years of the licence term to "ensure the effectiveness of the set-aside" and deter speculation.⁵³ We disagree with this proposal. Preventing a wireless carrier from selling spectrum to a willing buyer contravenes several of the enabling guidelines in the *Spectrum Policy Framework for Canada*, specifically:

- (a) Market forces should be relied upon to the maximum extent feasible.

⁵² Consultation, paragraph 39.

⁵³ Consultation, paragraph 42.

- (d) Regulatory measures, where required, should be minimally intrusive, efficient and effective.
- (f) Spectrum management practices, including licensing methods, should minimize administrative burden and be responsive to changing technology and market place demands.
- (h) Spectrum policy and management should support the efficient functioning of markets by:
 - permitting the flexible use of spectrum to the extent possible;
 - making spectrum available for use in a timely fashion; and
 - facilitating secondary markets for spectrum authorizations.⁵⁴

40. In particular, preventing the transfer of set-aside spectrum for a period of five years 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, 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.

41. A five-year transfer prohibition places an unnecessary constraint on the Minister because 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. For example, the spectrum in question may cease to be necessary for a regional service provider's strategy and/or the regional service provider prefers to deploy the capital it used to acquire the spectrum in other ways. In this case, if there are no regional service providers willing to acquire the spectrum, or acquire it at a reasonable price, then the spectrum will not be deployed and Canadians will not benefit from the licence. Upon reviewing such circumstances, the Minister might decide that the spectrum's sale to an incumbent is preferable to the alternatives. However, if the proposed transfer prohibition is put in place, then transfer applications involving incumbents will not be submitted and the Minister will not have the opportunity to make that decision. This places an unnecessary constraint on the exercise of the Minister's discretion to issue spectrum licences in accordance with the *Radiocommunication Act*.

42. If a regional service provider requires spectrum won at auction for the continued success of its wireless business, then it will deploy that spectrum. However, if a regional service provider chooses not to deploy the spectrum (e.g., for strategic reasons) or cannot deploy the spectrum (e.g., for financial reasons), then it is not in the country's best interest to prevent its

⁵⁴ ISED, *Spectrum Policy Framework for Canada*, DGTP-001-07, June 2007, page 9.

transfer to another carrier who will deploy it. The Government's *Framework for Spectrum Auctions in Canada* notes that "auctions are an efficient market-based means of assigning spectrum licences, through a fair and transparent process, to those that value them most".⁵⁵ Whether the carrier that values the spectrum the most is an incumbent or another regional service provider should not be the primary consideration.

43. Fostering a healthy secondary market was identified by the Auditor General of Canada as a key strategy to promote connectivity in rural and remote areas.⁵⁶ In its reply, the Department agreed with this recommendation, and indicated that encouraging secondary market activity is a priority: "While the Department does not mandate secondary market access to unused spectrum, it does encourage access through its rules regarding the transfer and division of spectrum licences."⁵⁷ The Department should therefore ensure that the secondary market is able to function as freely as possible, which will, in turn, ensure that spectrum is put to use more rapidly.

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

44. See our response to Question 1C.

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.

45. The proposal to have grid-cell and sub-divided licences apply towards a possible spectrum cap is unnecessary and severely punishes existing licensees. This proposal distorts the amount of spectrum held by an existing licensee and thus severely restricts the amount of spectrum that existing licensees can bid for. For example, the Consultation states that in Ottawa/Outaouais, we have a grid-cell allocation for 50 MHz covering 0.001% of the population.⁵⁸ On a population weighted basis – a metric the Department uses to determine

⁵⁵ ISED, *Framework for Spectrum Auctions in Canada*, Issue 3 March 2011, page 7.

⁵⁶ Auditor General of Canada to the Parliament of Canada, *2018 Fall Reports of the Auditor General of Canada to the Parliament of Canada: Report 1 — Connectivity in Rural and Remote Areas*, section 1.81.

⁵⁷ *Ibid.*

⁵⁸ Consultation, Table A1, footnote 4.

national holdings of commercial mobile spectrum licences⁵⁹ – we only have 0.0005 MHz of spectrum. Under such circumstances, counting 50 MHz of spectrum, or 100,000 times our population weighted holdings, towards the spectrum cap is clearly excessive. This proposal severely and unnecessarily restricts our ability to bid on 3500 MHz spectrum by allocating more than 100,000 times more spectrum to our spectrum holdings than we actually have. In this context, the proposal flagrantly contravenes enabling guideline (d) of the *Spectrum Policy Framework for Canada* which states that "regulatory measures, where required, should be minimally intrusive, efficient and effective."⁶⁰

46. 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.

47. If a spectrum cap is adopted and the proposed rule for grid cell licence and sub-divided licences is retained, then we agree that existing licensees should be allowed 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. However, existing licensees will require time to migrate customers off of these systems. Therefore, we propose that existing licensees are permitted a reasonable amount of time to find alternative solutions for customers using these systems. Under this proposal, ISED will still be able to determine the amount of encumbered spectrum and inform bidders of the amount and type (i.e., encumbered and unencumbered) of spectrum available prior to the auction.

⁵⁹ ISED, *National Holdings for Commercial Mobile Spectrum Licences*, available at <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11210.html>.

⁶⁰ ISED, *Spectrum Policy Framework for Canada*, DGTP-001-07, June 2007, page 9.

3.0 LICENCE AREAS

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

48. We agree with the proposal to use Tier 4 service areas. This will align with the existing licences in this band, which are licensed on a Tier 4 basis.

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.

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.

49. We agree with the Department's view "that it would be beneficial for both auctioned licences and licences obtained through the transition process to be assigned specific frequencies at the same time," and that "this would facilitate a more efficient assignment of spectrum as the determination of frequencies for the full band would be considered simultaneously."⁶¹ Contiguous spectrum is preferable to non-contiguous spectrum in terms of technological efficiency. As a result, we support the Department's proposals to:

- Include all remaining spectrum (including partially encumbered Tier 4 areas) as part of the auction;
- Consider all spectrum acquired through the auction and the Tier 4 licences that will be issued through the transition process simultaneously in the assignment round of the auction;
- Exclude sub-divided and grid-cell licences from being assigned frequencies through the auction process and not guaranteeing contiguity of spectrum for these grid-cell and sub-divided licences; and

⁶¹ Consultation, paragraph 59.

- Ensure contiguous spectrum for licensees that 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, including partial area licences acquired through the auction.

50. The Department's proposals will help to ensure that bidders do not end up with fragmented spectrum holdings with respect to existing licences and licences obtained in 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.

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

51. We support the Department's proposal to classify all partial tier licences as encumbered blocks. Given that partial tier licences only cover a portion of the population, it is clear that they are encumbered by existing grid-cell and sub-divided licences.

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.

52. We have no comments on the proposal to bundle the remaining portions of the encumbered areas offered in the auction as combined encumbered blocks.

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.

53. We support the Department's proposal that bundled encumbered blocks would not count towards the spectrum cap during the auction. These spectrum licences do not cover 100% of

the population in the Tier 4 service area and thus, are not of the same value as unencumbered spectrum. As a result, they should not count towards the spectrum cap in the same manner as unencumbered spectrum. We also agree with the Department's view that this proposal would simplify the bidding process.⁶²

54. However, we do not support the proposal that any transfer of bundled encumbered spectrum licence post-auction would be subject to the spectrum cap and the respective conditions of licence. 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.

55. Our recommendation is also consistent with our view expressed in response to Question 1F, that in most instances, licences that only cover a portion of the population should not count towards the spectrum cap. It is also consistent with the Department's proposal that the bundled encumbered spectrum blocks would not count towards the spectrum cap during the auction. There is no reasonable justification to have separate rules apply to the same spectrum during the auction and after the auction.

4.0 AUCTION FORMAT AND RULES

4.1 Generic licences

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

56. We agree with the Department's proposal to use generic licences.

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.

57. We do not agree with the proposal to categorize all blocks won by set-aside-eligible bidders as set-aside blocks after the auction. This would make otherwise "open" spectrum blocks subject to the proposed transferability restrictions raised in section 11.2 of the

⁶² Consultation, paragraph 57.

Consultation. As noted in our response to Question 1D, the proposed transferability restriction contravenes the Government's own spectrum policy framework,⁶³ 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.

58. If a spectrum set-aside and transferability restriction are imposed – which we oppose – then we recommend that after the auction only the initial spectrum set-aside amount be subject to the transferability restriction. For example, if the spectrum set-aside is 40 MHz (i.e., four blocks of 10 MHz) and a set-aside eligible entity wins 50 MHz of spectrum, then only 40 MHz would be subject to the transferability restriction.

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.

59. If the Department implements spectrum set-asides and/or spectrum caps – which we oppose – then we do not object to creating separate categories of licences such as encumbered, unencumbered, open and set-aside. These proposed spectrum blocks have different characteristics associated with them and should be separated into different categories of licences in the auction.

4.2 Anonymous bidding

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

60. We agree with most aspects of the Department's proposed rules regarding anonymous bidding. However, if a spectrum set-aside is imposed, then we recommend 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 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.

⁶³ *Spectrum Policy Framework for Canada*, DGTP-001-07, June 2007, page 9.

As discussed further below, this is especially true given the increase in exposure risk as a result of the proposed methodology for calculating eligibility which can result in unrequested reductions in eligibility. Knowing the level of open demand will allow set-aside ineligible bidders to better assess whether a proposed demand reduction might be rejected due to it causing excess supply.

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.

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.

61. We support the Department's proposal to use 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.⁶⁴ We also support the structure of the clock stage.

62. The Consultation states that the clock auction format "would provide participants with somewhat reduced exposure risk as compared to [a simultaneous multiple round ascending auction.]"⁶⁵ However, as explained below, the current proposed methodology for calculating eligibility increases this risk because it can result in unrequested reductions in eligibility. The following example, which is based on the Department's example to demonstrate how the activity rule works, demonstrates the negative consequence of the current proposed methodology for calculating processed demands.

63. The Department has proposed that a bidder's eligibility will be determined by its processed demand in the previous round. 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. An "unrequested reduction" in activity of this kind is illustrated in the Department's third example demonstrating the activity rule where Bidder Z attempts to move demand from products A and B to product C. Due to the proposed methodology for calculating eligibility, Bidder Z only ends up with sufficient eligibility to continue bidding for

⁶⁴ Consultation, paragraph 65.

⁶⁵ Consultation, paragraph 67.

product A, rather than sufficient eligibility to bid for product C or both products A and B.⁶⁶ In that example, it is possible that Bidder Z is moving demand from products A and B to product C because products A and B have become relatively more expensive and that, at the time it placed its bid, Bidder Z observed significant excess demand on product B and had little reason to expect that its request to reduce demand for product B would be refused.

64. This "unrequested reduction" is detrimental to both Bidder Z and the overall efficiency of the auction. Bidder Z is now unable to ever bid for or win a block in product C, even if the prices on products A and B rise substantially. In addition, Bidder Z may have no value for product A or product B individually, valuing only the pair, but now cannot ever win both. All of this occurs even though Bidder Z did not request to reduce its activity. Bidder Z was merely attempting to move demand from blocks A and B to block C. Indeed, Bidder Z might have been willing to express extremely high values for one block of products A and B and/or one block of product C. Inefficiently reducing demand should also be expected to reduce overall auction revenue by not allowing bidders to express the full extent of their demand at the current prices, and possibly by reducing competition in the auction as well.

65. Moreover, inefficiencies may arise even if such unrequested reductions do not occur in practice: bidders may inefficiently choose not to switch demand to preferred licences because there is a risk that doing so will unexpectedly reduce their eligibility.

66. We propose three rules to address this issue. These rules could be implemented in any combination and each of them individually would, at least partially, solve the problems highlighted, but the best outcome can be achieved if all three rules are adopted.

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.

67. 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% would then still be applied as the Consultation describes. This ensures that a bidder will not

⁶⁶ Consultation, page 81.

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.

68. If this rule were applied, in the Department's example, Bidder Z would retain its full eligibility (and its ability to bid for product C, or to bid for products A and B simultaneously). Although its processed demand is only 400 eligibility points (EP), its requested demand is 600 EP, such that its activity would be calculated as $\max \{400 \text{ EP}, 600 \text{ EP}\} = 600 \text{ EP}$. Its eligibility for the next round would then remain at 600 EP. This change is simple to implement, easy for bidders to understand, and requires no other changes to auction rules. It is also consistent with the Department's proposed rules that a bidder's eligibility may not correspond precisely to its processed demand; under the Department's proposed rules this can already occur if the activity requirement is less than 100%.

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

69. 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.

70. For example, if a bidder in the previous round had a processed demand of six blocks of a product then placed an all-or-nothing bid for four blocks (a demand reduction of two blocks) of that product, its requested change could not be partially accommodated by processing a demand of five blocks (a demand reduction of one block). If the change to four blocks cannot be fully accommodated, the bidder continues bidding for six blocks of that product at the new clock price.

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

71. 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.

72. The three proposed rules above support the auction design principle that "once a product has aggregate demand greater than or equal to supply, there will never be any unsold blocks for the product."⁶⁷ The proposed rules ensure, however, that no bidder will be unexpectedly forced to bid for an inefficient combination of licences.

73. The proposed rules also produce a clock auction design that more closely approximates a continuous clock auction. In a continuous clock auction, bidders would have information at each clock price about the demand that opponents have expressed. A bid to move from one product to another could therefore take into account the aggregate demand at the precise clock price at which the bidder might like to move its demand to different products. In the clock auction that the Department has proposed, this is not possible. "All-or-nothing" bids allow bidders to condition their bids on the actual circumstances, more accurately matching their bids to their precise preferences for switches among different blocks at specific prices.

74. We have no comment on the proposed methodology for calculating posted prices after each clock round.

4.4 Price increments in the clock rounds

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

75. We have no comments on the proposed range of percentage increments.

⁶⁷ Consultation, paragraph 80.

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.

76. We support the Department's proposal to conduct a separate assignment round for each of the most populated service areas sequentially, in descending order of population. We also support the Department's proposal that wherever possible it will create assignment areas that consist of a combination of two or more contiguous service areas.

77. We do not support, however, the Department's proposal to create assignment sessions for six areas at one time after the completion of the first eight assignment rounds. 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.

78. It is critical that bidders do not end up with fragmented spectrum holdings with respect to existing licences and licences obtained in the auction. 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.

79. We support the Department's proposal to use a second-price rule which applies bidder optimal core prices and uses the "nearest Vickrey" approach.

5.0 BIDDER PARTICIPATION: AFFILIATED AND ASSOCIATED ENTITIES

5.1 Associated entities

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

80. We support the proposed Affiliated and Associated Entities rules. 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. 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 and fostering competition to the greatest extent possible.⁶⁸ 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 to meet their own subscribers' needs.

5.2 Prohibition of collusion and other communication rules

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.

81. We support the proposed rules prohibiting collusion and other communication rules. The current collusion and Affiliated and Associated Entities policies and rules work 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.

⁶⁸ The "Enabling Guidelines" in ISED's Spectrum Policy Framework for Canada notes that "Market forces should be relied upon to the maximum extent feasible" (see: <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08776.html#s44>). In addition, the Government's Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives, SOR/2006-355, states that "the Commission should (i) rely on market forces to the maximum extent feasible as the means of achieving the telecommunications policy objectives, and (ii) when relying on regulation, use measures that are efficient and proportionate to their purpose and that interfere with the operation of competitive market forces to the minimum extent necessary to meet the policy objectives".

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.

82. We support the Department's proposal to issue flexible use spectrum licences with 20-year licence terms. Long-term, or indeed indefinite, licence terms are appropriate 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. As noted in the Consultation, longer licence terms "create greater incentive for financial institutions to invest in the telecommunications industry and for the industry itself to further invest in the development of network infrastructure, technologies and innovation."⁶⁹

83. We do not support 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.⁷⁰ 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. For example, due to the transition period, there are areas where spectrum will not be able to be deployed for two to three years after the auction concludes. This effectively reduces the usable licence term to 18, 17 or even fewer years and reduces the value of the spectrum. That is, for the same amount of money, licensees will get less than the full 20 years of use from the spectrum before the licences are renewed.

84. 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

⁶⁹ Consultation, paragraph 148.

⁷⁰ Consultation, paragraph 151.

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.

85. We support the Department's proposal to make the 3500 MHz licences transferable in whole or in part, and to treat them as commercial mobile spectrum for the purposes of evaluating potential transfers. The Department has also proposed that licensees would have the option to indicate that only fixed services will be provided following a requested transfer and that in these cases the Department would not apply section 5.6.4 of CPC 2-1-23 when evaluating the transfer, but would apply a CoL limiting the spectrum to fixed use only. We do not object to this proposal.

86. We do not support the proposal to prevent the transfer of set-aside spectrum to a set-aside-ineligible entity for the first five years of the licence term. As noted in our response to Question 1D, a CoL that prevents a wireless carrier from selling spectrum to a willing buyer would contravene several of the enabling guidelines in the *Spectrum Policy Framework for Canada* and place an unnecessary constraint on the exercise of the Minister's discretion to issue spectrum licences in accordance with the *Radiocommunication Act*. For the same reason, we also do not support the Department's proposal that no transfer of licences or issuance of new licences will be authorized if it would result in a licensee exceeding the spectrum cap during the first five years.

87. At a minimum, the restriction on transferability should only apply to licences obtained through the auction process. Flexible-use licences obtained through the transition process are not obtained through the auction and thus will not benefit from a spectrum set-aside and/or spectrum cap rule. As a result, there is no risk of speculation with respect to these licences.

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.

88. We note that the 20-year Tier 4 targets are consistent with those for 600 MHz auctioned spectrum⁷¹ and the recently renewed AWS-1 spectrum.⁷² This consistency contributes to a stable and predictable regulatory environment. However, as discussed below there are two significant problems with the deployment CoL which must be amended.

89. First, the additional deployment requirement for licensees that currently operate LTE networks is unduly punitive to the service providers who have spent billions of dollars deploying LTE networks to 99% of Canadians. In addition, the timeline associated with this requirement is inappropriately aggressive, and in some cases licensees will simply not have enough time to meet the condition. The proposed condition effectively punishes carriers for serving all Canadians, including those in rural areas.

90. Canada's national LTE networks provide coverage to virtually all Canadians. For example, we have deployed sites in the Northern part of Nunavut and have two sites located north of the Northwest Passage. This outcome is the result of years of network building and billions of dollars in investment, at levels that top our international peers: Canadian carriers are first in the G7 for telecommunications investment as a percentage of revenue.⁷³

91. Regional providers, however, have not achieved coverage levels similar to the national carriers. As a result, if they acquire spectrum outside their existing LTE service area, they will not be subject to the same requirement to promptly deploy a 5G network. This essentially penalizes national networks for having invested heavily in improving network coverage and puts them at a regulatory disadvantage.

92. The proposed LTE deployment rule provides a loophole by which many of the potential licensees of 3500 MHz spectrum will not be required to provide timely 5G coverage in rural areas because they had not previously invested in providing LTE coverage to these areas. In essence, this counter-intuitive requirement rewards service providers for failing to build out their

⁷¹ SLPB-002-18, *Technical, Policy and Licensing Framework for Spectrum in the 600 MHz Band*, Annex A.

⁷² SLPB-001-18, *Spectrum Licence Renewal Process for Advanced Wireless Services (AWS-1) and Other Spectrum in the 2 GHz Range*, Annex C.

⁷³ OECD Digital Economy Outlook, Figure 3.26 "Investment in telecommunications as a percentage of revenue", page 135 (11 October 2017).

networks to rural areas. Therefore, if the Department's goal is the expansion of 5G coverage to rural areas, this should instead be built into the general deployment requirements that apply equally and symmetrically to all potential providers.

93. Requiring such high levels of 5G network coverage within five years of the initial issuance of licences is also unrealistic and does not reflect a flexible approach to a developing network technology. The Department indicates that the deployment timeframes are intended to permit "some flexibility for licensees to put in place network plans that align with their business strategies."⁷⁴ But requiring broad coverage within the earliest years of 5G deployments will severely constrain service providers and prevent them from organically responding to market demand. As the Department itself acknowledged, 5G is still a developing technology, and "it is unclear at this time which business cases will drive ongoing investment in 5G networks, which services and applications will deliver the greatest benefits to Canadians, and when such applications will be ready for market."⁷⁵ Given these unknowns, it is premature and excessively proscriptive to apply such a rigorous deployment requirement in the short-term.

94. Moreover, 3500 MHz is mid-band spectrum and not suitable for covering large geographic areas like low-band spectrum used for LTE. For example, 3500 MHz has a shorter range than 700 MHz spectrum and thus, it is more challenging to build out coverage in rural areas to meet the LTE deployment requirement.

95. The second problem with the deployment CoL relates to when the clock begins for assessing compliance with the general and LTE-related deployment requirements. In some cases, service providers may have less than two years to roll-out 5G coverage to a service area. For example, incumbents in rural service areas without a population centre of 30,000 people or greater will not be required to transition until three years after the date of the initial issuance of a flexible use licence.⁷⁶ While ISED makes a provision for licences issued after year four of the deployment condition, licence areas that are transitioned after a three-year protection period will still have the five-year requirement applied. In other words, rather than five years to deploy 5G, licensees will only have two years. Such a short-term deployment requirement is unduly burdensome and would be extremely challenging for licensees to meet. As stated above, we recommend instead that the Department build its rural deployment targets into a general deployment requirement that offers a longer timeframe and is applied

⁷⁴ Consultation, paragraph 172.

⁷⁵ Consultation, paragraph 7.

⁷⁶ SLPB-001-19, Figure 2.

symmetrically to all licensees.

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.

96. We have reviewed the remaining proposed CoLs in Annex H of the Consultation and offer the following recommendations which are designed to remove outdated or duplicative regulatory requirements. These recommendations support the Government's priority on regulatory modernization as indicated in the *Fall Economic Statement 2018*:

Many federal regulations have been developed and built up over decades. Over time, some regulations can become obsolete and present a real barrier to innovation. To ensure that federal regulations continue to be reviewed and kept up-to-date, the *Fall Economic Statement* announces that the Government will introduce an Annual Regulatory Modernization Bill, starting in 2019, to remove outdated or duplicative regulatory requirements, and to allow for the updating of regulations.

This annual exercise would allow the Government to modernize its regulations and facilitate innovation by promoting an up-to-date regulatory environment that reflects current public policy and business realities, challenges and opportunities.⁷⁷

6.5 Research and Development

97. Licensees with \$1 billion or more in annual gross operating revenues from the provision of wireless service in Canada must invest, as a minimum, 2% of their wireless revenues in eligible R&D activities related to telecommunications. For the proposed CoL, eligible R&D activities are those that meet the definition of scientific research and experimental development (SR&ED) adopted in the *Income Tax Act*.⁷⁸ Licensees with less than \$1 billion in annual revenues are exempt from the R&D expenditure requirement.

98. The proposed R&D condition suffers from a number of weaknesses which, when considered in aggregate, lead to the conclusion that it should be eliminated.

- i) It imposes a regulatory disadvantage in the form of a constraint on the operating flexibility of wireless licensees with limited, if any, evidence that it benefits

⁷⁷ Department of Finance Canada, *Investing in Middle Class Jobs*, November 2018, page 73.

⁷⁸ Consultation, Annex H, paragraph 26.

Canadians or the Canadian wireless industry. In our view, licensees will undertake an appropriate amount of innovation activities (including SR&ED qualifying R&D expenditures) to compete effectively and, therefore, a CoL that mandates a prescribed revenue percentage to be spent on R&D activities is unnecessary.

- ii) The condition inappropriately targets a subset of licensees for this regulatory disadvantage. As the CoL calculates the R&D spending obligation on a percentage of revenue basis, it would not asymmetrically harm smaller providers. Therefore, if the CoL is maintained, there is no valid reason to limit its application to only the largest licensees.
- iii) The 2% spending minimum is out of date. It was imposed on regional carriers in 1991 (28 years ago)⁷⁹ when the wireless industry was in its infancy and industry revenues were less than 1/20th of current levels.⁸⁰ A comparable minimum spending percentage today would be 0.1% of eligible revenues. A technology-based industry in an early stage of development, as wireless was in 1991, would be expected to spend a significantly higher portion of its revenues on R&D than a large, well-established industry, as wireless is today. Therefore, if 2% was appropriate 28 years ago, it no longer remains so. In fact, given the large size and success of today's wireless industry, it is inappropriate for ISED to mandate any percentage of revenues to be spent on this particular activity.
- iv) The annual reporting requirement related to R&D spending, which provides evidence of compliance with this CoL, is a related but additional regulatory burden. It is an example of one regulation giving rise to another regulation.

⁷⁹ Canada Gazette Notice No. DGRB-001-09, page 9. Note that the R&D expenditure CoL applied to Rogers Cantel began in 1983.

⁸⁰ This is a conservative estimate based on available information. Canada's wireless revenue in 2017 (\$25.78B) is reported in the Open Data tables from the CRTC's *Communications Monitoring Report 2018*: see Figure 6.1 for retail wireless revenue and Table W1 for wholesale wireless revenue. Wireless revenue for 1991 was not readily available. However, the OECD's *Communications Outlook 1996* (found at: <https://books.google.ca/books?id=BJDWAqAAQBAJ&pg=PA222&lpg=PA222&dq=oced+communications+outlook&source=bl&ots=npEI0ukrc&sig=ZquNPFOZye43jvahI0IRWd1oaN0&hl=en&sa=X&ved=0ahUKEwjUoOXZ1YPVAhXL6oMKHSyCCj8Q6AEIUDAI#v=onepage&q=oced%20communications%20outlook&f=false>) provides 1993 data for Canada's annual revenue per cellular subscriber (US\$682, page 57) and year end subscribers (1.3 million, page 75). The product of these data result in annual revenues of US\$887M which converts to CDN\$1.1 billion using the US/Canada exchange rate from 1993 (\$1.29, page 249). If data from 1991 and 2018 were available and used to calculate this figure, the prevailing trends in the data indicate that the revenue variance would be considerably larger.

- v) The condition inappropriately mixes spectrum management regulation and industrial development policy.⁸¹ As the Government has shown in recent years with various innovation and broadband deployment programs, it has other incentive-based, rather than penalty-based, policy tools at its disposal to encourage desired behaviours from industry participants. In our view, incentive-based policy tools are more consistent with a modern regulatory framework for a successful industry like wireless than penalty-based tools.
- vi) The financial resources required to satisfy the R&D CoL, i.e., spending that meets the definition of SR&ED adopted in the *Income Tax Act*, could potentially be more productively spent on other activities. For example, it may be more productive for a licensee to spend an equivalent amount of money to: hire or train new personnel, deploy new and/or improved network capabilities, introduce new wireless applications or services, undertake R&D activities that do not align with the definition in the *Income Tax Act*, or fund consumer promotions (such as handset subsidies) that encourage wireless adoption. In a competitive wireless marketplace like Canada's, these investment decisions are best left to the discretion of each competitor rather than the Government.
- vii) In recent years, the Canada Revenue Agency (CRA) has changed the eligibility rules for SR&ED spending for purposes unrelated to the R&D CoL. For example, investments in capital related to R&D activities, such as lab hardware and software, are no longer eligible expenditures under CRA's SR&ED rules. The net effect of these rule changes on licensees' R&D expenditure CoLs is to disallow a significant amount of wireless carriers' spending on R&D simply because the activities do not qualify for SR&ED credits. This is an unintended consequence of using a regulatory scheme designed for one purpose (awarding tax credits) for another purpose entirely (satisfying a spectrum CoL).
- viii) The quality of Canada's wireless services is among the highest in the world – and has been for many years. In fact, the Minister of ISED has observed that "Canada has some of the world's most advanced and efficient telecom networks"

⁸¹ This issue was raised in a 2006 OECD report entitled "Telecommunication Regulatory Institutional Structures and Responsibilities" (see: <http://www.oecd.org/internet/broadband/35954786.pdf>) which ISED highlighted in section 6.1 of Canada Gazette No. DGRB-001-09, *Consultation on revisions to the framework for spectrum auctions in Canada* (see: <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09371.html#DGRB00109.06>).

and "virtually all Canadians are covered by the latest wireless technologies."⁸² In addition, facilities-based telecom providers are also leading investors in R&D at a time when Canada's overall economy lags other countries in this regard. According to the *Expert Panel on the State of Science and Technology and Industrial Research and Development in Canada*, "[a]mong the largest industries, only six increased their spending on R&D, led by chemical manufacturing and telecommunications services."⁸³ Indeed, BCE Inc. is the fourth largest R&D investor in the country and the largest R&D investor within the telecommunications industry.⁸⁴ In consideration of this, it is unnecessary for the Government to mandate R&D investments. The CoL is attempting to fix a problem that does not exist.

- ix) Given that the telecommunications industry in Canada excels at R&D, it is clear that market forces are working. As a result, keeping the R&D CoL 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."⁸⁵
- x) The R&D expenditure CoL ignores the large role played by network equipment manufacturers, handset equipment manufacturers and application developers in the R&D of wireless services. These stakeholders work closely with carriers to research and develop new and innovative wireless capabilities but this work is completely unrecognized by the CoL.

99. In summary, as a legacy CoL that was initiated more than 28 years ago, the R&D spending requirement is both unnecessary and out-of-step with today's modern wireless industry. The CoL is, therefore, inconsistent with Government policy objectives related to

⁸² Speaking Points of the Honourable Navdeep Bains, PC, MP, Minister of ISED, at the 2017 Canadian Telecom Summit, 5 June 2017, available at https://www.canada.ca/en/innovation-science-economic-development/news/2017/06/2017_canadian_telecomsummit.html?=&wbdisable=true.

⁸³ Council of Canadian Academies, 2018. *Competing in a Global Innovation Economy: The Current State of R&D in Canada*. Ottawa (ON): Expert Panel on the State of Science and Technology and Industrial Research and Development in Canada, Council of Canadian Academies, pages xxiii-xxiv. Available at https://www.scienceadvice.ca/wp-content/uploads/2018/09/Competing_in_a_Global_Innovation_Economy_ExecSumm_EN.pdf.

⁸⁴ Research Infosource Inc., November 2018, available at <https://researchinfosource.com/top-100-corporate-rd-spenders/2018/list>.

⁸⁵ *Spectrum Policy Framework for Canada*, page 9.

encouraging innovation and investment and reducing the administrative burden on regulated companies. We recommend that the Department eliminate the CoL from all spectrum licence conditions, including those for new 3500 MHz flexible use licences. By doing so, the Department will provide licensees with greater operating flexibility to address consumers' needs and will be regulating in a manner consistent with the Government's policy to rely on market forces to the maximum extent feasible.⁸⁶

100. If the Department does not eliminate the R&D spending condition for 3500 MHz and/or other bands, it should, at a minimum, implement the following three recommendations:

1. As noted above, given the scalable nature of a revenue-based regulatory obligation, the Department should significantly lower the revenue exemption threshold to broaden its applicability and make this regulatory requirement more symmetrical among all licensees.
2. The 2% spending requirement should be significantly lowered (e.g., to 1%) in recognition of the changes that the CRA has made to the SR&ED eligibility rules in recent years and the fact that wireless revenues have increased on a massive scale since the spending level was originally put in place.
3. The Department should discontinue using the SR&ED definition of eligible R&D expenditures, which was created for an entirely different policy purpose than the spectrum licence CoL. As explained above, the CRA's standard for R&D is unnecessarily narrow and ignores the significant amounts invested by carriers on non-SR&ED eligible R&D activities. This approach would be very easy to implement (i.e., ISED could issue a new more expansive definition of eligible R&D expenditures) and allow ISED to maintain a CoL related to R&D, and therefore, continue to demonstrate its commitment to encouraging innovation.

⁸⁶ In addition, the Government's *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives, SOR/2006-355*, states that "the Commission should (i) rely on market forces to the maximum extent feasible as the means of achieving the telecommunications policy objectives, and (ii) when relying on regulation, use measures that are efficient and proportionate to their purpose and that interfere with the operation of competitive market forces to the minimum extent necessary to meet the policy objectives".

6.6 Mandatory Roaming

101. ISED first made the provision of wholesale roaming services to wireless carriers mandatory in 2008.⁸⁷ At that time, the CRTC had forborne from regulating both retail and wholesale mobile wireless services for many years and was showing no signs of reversing that decision. The Department's mandatory roaming CoL required carriers to negotiate roaming agreements on a commercial basis, which was less intrusive than regulating the terms of such agreements but more intrusive than the situation in many other jurisdictions.

102. In TRP 2015-177⁸⁸, the CRTC determined that it would 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. In that same policy, the CRTC concluded that it would be inconsistent with the objectives of the *Telecommunications Act* to mandate the provision, or regulate the rates, of other wholesale roaming services or the GSM-based wholesale roaming services provided to Rogers, Telus and ourselves. In other words, in TRP 2015-177, the CRTC established duplicative and inconsistent roaming regulations to those contained in ISED's CPC-2-0-17. As explained below, this development created an untenable regulatory situation for the industry. Moreover, by fundamentally changing spectrum licence conditions in the middle of a licence term, the Government and CRTC have undermined the rules underpinning the hundreds of millions spent by spectrum licensees and introduced significant regulatory uncertainty, to the detriment of future investments.

6.6.1 The Government should have only one mandatory roaming regulatory regime

103. 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. In our view, the CRTC should not regulate wholesale roaming. Historically, ISED has been the regulatory body responsible for wholesale roaming services (undertaken as part of its overall spectrum oversight role) and has an effective, less intrusive regulatory approach than the CRTC. We recognize, however, that the current consultation is under the auspices of ISED so recommendations

⁸⁷ See CPC-2-0-17, *Conditions of Licence for Mandatory Roaming and Antenna Tower and Site Sharing and to Prohibit Exclusive Site Arrangements*, paragraph 7, <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09081.html>.

⁸⁸ Telecom Regulatory Policy CRTC 2015-177, *Regulatory Framework for wholesale mobile wireless services*, paragraph 128.

related to the CRTC's policies and regulations are not part of the Consultation. Our comments will therefore be confined to that context.

104. In consideration of the CRTC's decision to regulate the GSM-based wholesale roaming services provided by Rogers, Telus and ourselves to non-national carriers, the proposed CoL on mandatory roaming is unnecessary and asymmetrical. Keeping 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,"⁸⁹ and would be counter to the Government's priority of reducing duplicative regulatory requirements.⁹⁰

105. The significant problems associated with duplicative and outdated regulations have long been recognized by Government, as has the Government's policy objective to eliminate such regulations. For example, a report prepared by a Government-appointed external advisory committee on "Smart Regulation" 15 years ago stated:

Regulatees and other interested parties have expressed repeated frustration at having to deal simultaneously with different federal regulators with sometimes competing regulatory demands. This lack of regulatory coordination has a real impact in terms of increased production costs for industry. In addition, it contributes to a perception of Canada and Canadian regulation as being overly complex, which acts as a disincentive to investment in Canada. This multiplicity of federal regulators also creates barriers to citizens' participation in the regulatory process.⁹¹

106. More recently, in 2017 the Government-appointed Advisory Council on Economic Growth highlighted the negative impact that uncoordinated and duplicative regulations have on innovation:

Priority #2: Drive coordination between agencies and jurisdictions

A regulatory system can stall innovation if it is beset by overlapping, even conflicting regulations across regulatory bodies, regions and trading nations. Inconsistent or duplicate regulations add unnecessary compliance costs and administrative burdens to businesses, and impede innovation.⁹²

⁸⁹ *Spectrum Policy Framework for Canada*, page 9.

⁹⁰ Department of Finance Canada, *Investing in Middle Class Jobs*, November 2018, page 73.

⁹¹ *Smart Regulation 2004 – A Regulatory Strategy for Canada, Report to the Government of Canada*, External Advisory Committee on Smart Regulation, September 2004, page 30.

⁹² *Investing in a Resilient Canadian Economy*, Advisory Council on Economic Growth, 1 December 2017, page 11.

107. In September 2018, a report from Canada's Economic Strategy Tables, whose members were appointed by ISED Minister Bains, expanded on the negative consequences of duplicative regulations:

Canada's regulatory system is also complex and inefficient with no defined outcomes and timelines, layered with a multi-jurisdictional structure with no clear authority. Often, multiple regulations exist to address the same issue but in slightly different ways. This creates inconsistencies and administrative burdens, resulting in an inefficient system. Canada's complex regulatory system is one of the top reasons foreign investors are no longer investing in Canadian projects and has been identified as the number-one barrier to competitiveness by almost all Tables.⁹³

...

Inefficiency adds cost, limits innovation, detracts investment and slows down projects—eroding trust between industry and regulators, between provincial and federal regulators, and even among regulators interprovincially. ... The pace of the current regulatory system is not designed to keep up with the rapidly changing global environment. This needs to change.⁹⁴

108. As indicated above, in response to years of evidence of harm caused by duplicative regulations, the Government announced, in its *Fall Economic Statement 2018*, to take concrete action to remove outdated or duplicative regulatory requirements and to allow for the updating of regulations.

109. It is clear from the above that eliminating duplicative wholesale roaming regulations between ISED and the CRTC is completely consistent with, and supportive of, successive Governments' policy objectives and priorities. There is simply no rationale for the Department to maintain the status quo. Therefore, there should not be a mandatory roaming CoL applicable to 3500 MHz spectrum. While this is a logical first step in adhering to Government policy regarding smart regulation, the problem must be addressed more broadly such that the mandatory roaming CoL for all spectrum bands should be eliminated.

6.6.2 ISED's mandatory roaming CoL discourages investment

110. Continuous network investment is the lifeblood of the telecommunications industry. Without continuous investments in network improvements and expansion, the performance of

⁹³ *The Innovation and Competitiveness Imperative – Seizing Opportunities for Growth*, Canada's Economic Strategy Tables, 25 September 2018, page 10.

⁹⁴ *The Innovation and Competitiveness Imperative – Seizing Opportunities for Growth*, Canada's Economic Strategy Tables, 25 September 2018, pages 10 and 11.

Canada's telecommunications infrastructure – which supports all sectors of the economy – would quickly deteriorate to the detriment of all Canadians. This is why all branches of Government that play a role in regulating telecommunications in Canada have a longstanding track record of supporting facilities-based competition. Facilities-based competition is a direct route to facilitating telecommunications investment. Consider the following Government statements:

Facilities-based competition is beneficial because such competition is most likely to lead to robust and effective long-term competition... service providers that control their own end-to-end networks have greater incentives for investment, innovation and cost efficiency.⁹⁵

The Commission is of the view that efficient and effective competition will be best achieved through facilities-based competitive service providers... the full benefits of competition can only be realized with facilities-based competition.⁹⁶

The Commission believes that fostering facilities-based competition is the most appropriate way to ensure high-quality, affordable service, as well as innovation and service differentiation.⁹⁷

Facilities-based competition, in which competitors primarily use their own telecommunications facilities and networks to compete instead of leasing from other carriers, is typically regarded as the ideal and most sustainable form of competition.⁹⁸

The Commission does not consider that resale and sharing, absent facilities-based entry, would provide a sufficiently sustainable form of competition.⁹⁹

[T]he Governor-in-Council considers that facilities-based competition is a durable form of competition that delivers the greatest benefits to consumers, imposes competitive market discipline on incumbents and strengthens investment in telecommunications infrastructure.¹⁰⁰

The department also agrees with the Panel's assessment that measures which enable dynamic entry, viable multiple providers and market incentives for innovation are important if Canada is to continue to develop an efficient and vibrant wireless industry... policy measures which seek to foster facilities-based wireless competition are consistent with the government's policy to rely on market forces to the maximum extent feasible.¹⁰¹

⁹⁵ Competition Bureau, Submission in Telecom Notice of Consultation CRTC 2013-551, *Review of wholesale services and associated policies* (27 June 2014), paragraph 104 and footnote 6.

⁹⁶ Telecom Decision CRTC 97-8, *Local Competition*, paragraphs 73 and 237.

⁹⁷ Telecom Decision CRTC 2002-34, *Regulatory framework for second price cap period*, paragraph 155.

⁹⁸ Telecom Regulatory Policy CRTC 2015-326, *Review of wholesale wireline services and associated policies* (TRP 2015-326), paragraph 5.

⁹⁹ Telecom Decision CRTC 92-12, *Competition in the Provision of Public Long Distance Voice Telephone Services and Related Resale and Sharing Issues*.

¹⁰⁰ Order in Council P.C. 2007-71.

¹⁰¹ ISED, *Policy Framework for the Auction for Spectrum Licences for Advanced Wireless Services and other Spectrum in the 2 GHz Range* (November 2007).

111. A mandatory roaming CoL is at odds with promoting facilities-based competition and network infrastructure investments. Specifically, the mandatory roaming CoL creates an incentive for one carrier to make the strategic decision not to invest in or upgrade its own network in favour of roaming on one or more of its competitors' networks. This is a particularly attractive strategy in non-urban markets where smaller populations and low population densities mean that the business incentive to invest in new or improved network capabilities is diminished or simply non-existent. This risk to network investments is another reason not to include a mandatory roaming CoL for the licences in question.

6.6.3 Mandatory roaming is unnecessary for national service providers

112. The *Spectrum Policy Framework for Canada* states that "[r]egulatory measures, where required, should be minimally intrusive, efficient and effective" and "[s]pectrum management practices, including licensing methods, should minimize administrative burden and be responsive to changing technology and market place demands."¹⁰² If the Department elects not to remove the mandatory roaming CoL in totality, both of the guidelines referenced above support the elimination of mandatory roaming among the three national mobile service providers. 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.

113. Rogers, Telus and ourselves are sophisticated businesses with multifaceted wholesale relationships spanning wireline and wireless telecommunications and broadcasting lines of business. In consideration of these facts, there is no need for ISED to regulate the provision of wholesale roaming services among these companies. Market forces can be relied upon to address any competitive or market issues that may arise related to wholesale roaming.

114. Importantly, after examining the wholesale roaming issue in the consultation leading to TRP 2015-177, the CRTC concluded that it is unnecessary and inappropriate to mandate roaming among the national carriers. Specifically, the CRTC concluded that it is appropriate to continue to forbear from regulating GSM-based wholesale roaming among Rogers, Telus and ourselves.¹⁰³ The Department should follow the CRTC's lead on this point and, at a minimum, abstain from imposing a requirement on Rogers, Telus and ourselves to provide wholesale

¹⁰² *Spectrum Policy Framework for Canada*, section 4.4, Enabling Guideline (d) and (f), page 9.

¹⁰³ TRP 2015-177, paragraph 128.

roaming services to each other in the 3500 MHz spectrum band. At its earliest opportunity, ISED should extend this approach to all other spectrum bands. This will remove the key inconsistency between the two regulatory schemes that the federal Government applies to wholesale roaming and partially resolve the problem.

6.6.4 It is premature and inappropriate to mandate roaming on 5G networks

115. Should the Department elect to impose a redundant regulation (in the form of a mandatory wholesale roaming CoL) for 3500 MHz flexible use licences, it should apply only to existing network technologies and not future 5G networks. This is an important consideration as 3500 MHz spectrum is expected to be a primary 5G band for many carriers. The exact nature of 5G networks is not yet fully known. Carriers are experimenting with 5G technologies, and the 5G equipment ecosystem and international standards are still in their infancy. To mandate roaming now would be premature and discourage innovation. 5G networks will also 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.

116. 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. 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

117. In the decision on the renewal process for AWS-1 licences, the Department acknowledged that all but two respondents to the proceeding recommended removing or modifying the requirements contained in the Annual Reporting CoL to decrease the administrative burden on licensees. As a result, the Department indicated a willingness to launch a consultation process to review this CoL.¹⁰⁴ We are pleased that the Department has

¹⁰⁴ SLPB-001-18 - *Spectrum Licence Renewal Process for Advanced Wireless Services (AWS-1) and Other Spectrum in the 2 GHz Range*, paragraph 69.

taken note of the broad industry concern and alignment on this topic, and recommend that a consultation be initiated in the near future with the aim of removing or reducing the requirements of the Annual Reporting CoL. In the meantime, ISED can avoid expanding this outdated requirement by not making it a CoL for 3500 MHz spectrum licences.

118. The existing annual reporting requirements, which are replicated in the proposed CoLs for 3500 MHz, are overly burdensome on licensees. We appreciate that the Department must monitor spectrum licensees to fulfill its mandate and that licensee-specific information may be an important element of the monitoring exercise. However, the effort required by licensees to prepare the annual reports is significant and it is uncertain that the value that the Department receives from these reports is commensurate with the effort that licensees expend in their preparation. For example, we estimate that our annual ISED report requires approximately 200 hours to prepare. We therefore recommend that the Department reduce the regulatory burden on licensees related to annual reporting.

119. One way in which the annual reporting regulatory burden on licensees and the Department alike can be lowered is by reducing the frequency with which the data is collected. For example, information could be collected every five years for 20-year licences and once every two or three years for shorter licence terms. In addition, the Department should consider streamlining the scope and/or amount of information requested in the reports to only those data that are essential to ISED's monitoring activities.

120. As an alternative to regularly scheduled data collection, the Department could modify the CoL such that licensees are required to provide information on the Department's request, with appropriate notice. For example, the Department could issue a request for information three months in advance of its due date and customize the request to the Department's particular needs for the licences in question. This approach was used recently by the Department when it issued a request for information regarding the deployment of 700 MHz spectrum. Under this model, the expectation is that only a subset of the current data would be collected and it would be collected on an as-needed basis only (i.e., less frequently than the current annual schedule).

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.

121. We have no comments on the proposed amendments to the CoL for all current fixed wireless access licences.

8.0 AUCTION PROCESS

8.1 Opening bids

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

122. The Department's objective is to set opening bid prices to ensure that Canadians receive a fair return for the use of this spectrum.¹⁰⁵ 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.

123. Therefore, if the Department does not impose a spectrum set-aside, then we propose that the Department 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 does impose a spectrum set-aside, then 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.

124. We have no comment on the proposed eligibility points and pre-auction deposits.

¹⁰⁵ Consultation, paragraph 193.

125. 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 spectrum is put into service. For example, suppose the auction concludes in July 2020 and that the flexible use licence cannot be deployed for two years due to the protection period in the transition plan (i.e., the licence is in a service area with a population centre of more than 30,000 people), then the soonest the spectrum can be put into use is July 2022, or two years after the auction. In this situation, the due date for the remaining 80% of the final payment would be due by August 2022.

126. 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 generation of revenue because the spectrum cannot 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.

127. 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.

9.0 LICENCE RENEWAL PROCESS

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

128. We generally support the proposed renewal process. However, the Consultation states that "following the end of the initial licence term, licensees will have a high expectation that a new licence will be issued for a subsequent term through a renewal process[...]."¹⁰⁶ It would be consistent with the Government's policy to modify this to be an expectation that licensees should have a high expectation of renewal at the end of the initial term as well as 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. Indicating to all stakeholders well

¹⁰⁶ Consultation, paragraph 207.

in advance of the auction that there is a high expectation of renewal at the end of all licence terms would provide stability and certainty to both licensees as well as investors while at the same time retaining the Minister's authority and ability to take alternative actions in exceptional circumstances.

*** End of Document ***