



Montreal, August 2nd, 2019
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Senior Director
Spectrum Licensing and Auction Operations
Innovation, Science and Economic Development Canada
235 Queen Street
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**RE: Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band
(Canada Gazette, Part I, Gazette Notice SLPB-002-19, posted June 5 2019)**

Dear Sir / Madam,

1. ECOTEL Inc. ("ECOTEL") is pleased to submit these comments to Canada's Minister of Innovation, Science and Economic Development in response to the Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band.
2. ECOTEL is a registered Wireless Service Provider licensed in several areas across Canada to operate wireless LTE networks addressing markets in remote regions where other wireless service providers provide limited services.
3. ECOTEL's primary mission is to design, deploy and operate highly secured private LTE cellular networks targeted to mission critical and specialized industrial applications for the Oil, Mining and Utilities markets.
4. Autonomous Truck control system, PLC and SCADA Services, Sensors/Flow meters, real time monitoring and Trucks Collision avoidance systems are just a few of these mission critical applications which benefit from the superior and advanced robustness, security, reliability and performance provided by the LTE wireless technology.
5. ECOTEL is a pioneer in the 4.0 industry revolution, bringing the companies in the mining and oil industry into this new technological era and helping them to increase their efficiency and improve workers security. ECOTEL is allowing new generation of workers to safely and remotely controlling mining equipment located 3 km

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underground. ECOTEL is now exporting Canadian technologies and knowledge to industries operating in various countries.

6. In addition to our industrial focus, ECOTEL also deploys and operates cost effective LTE cellular networks aimed at providing Data & Voice mobility services to remote & rural communities or enterprises.
7. ECOTEL was granted the first subsidy from Federal and Provincial Governments to offer broadband services along the 155 road and in adjacent municipalities and communities in Haute-Mauricie and Lac-St-Jean.
8. ECOTEL is continuously seeking access to new spectrum and, in addition to existing spectrum licenses owned, ECOTEL constantly tries to negotiate spectrum subordination agreements with other carriers in different locations in Canada though so far with very limited success as commented later in this submission.
9. ECOTEL is very pleased with the Department's to make available the 3500 MHz band for flexible use.
10. Below are specific answers from ECOTEL to ISED's questions as per the Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band.

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

11. ECOTEL is of the view that pro-competitive measures are required for the upcoming spectrum auctions in the 3500 MHz band and those measures must be a combination of set aside and spectrum cap as detailed below.

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.

12. Both set-aside and in-band spectrum cap are required to ensure that spectrum will not be concentrated in the hands of a few players, and allow smaller operators to have a fair chance at winning spectrum licenses.
13. Currently, before any spectrum is returned to ISED as per Decision on Revisions to the 3500 MHz Band to Accommodate Flexible Use (SLPB-001-19), more than 90% of MHz-pop of the current 175 MHz block is in the hand of only 2 players: Inukshuk (Bell and

Rogers), and Xplornet. Assuming that all possible spectrum will be returned based on new rules for flexible use spectrum and transition process, ECOTEL estimates that Inukshuk and Xplornet would still, together, owned nearly 50% of all MHz-pop across Canada.

14. Adding the new 25-MHz block (3450-3475) would reduce this to 40% of all MHz-pop of the new band 3450-3650, still represents an enormous amount of spectrum in the hands of only 2 players.
15. As a result, ECOTEL is of the view that in-band spectrum cap is required to limit the concentration of spectrum in the hands of very few players and this spectrum cap should not exceed 40 MHz.
16. In addition, because several existing licensees will still own spectrum following the transition process as per Decision on Revisions to the 3500 MHz Band to Accommodate Flexible Use (SLPB-001-19), the actual spectrum that will be auctioned will vary from license area to another. As such, defining a fix amount of spectrum as set aside for all license areas could create an unfair distribution between set-aside and non-set-aside spectrum.
17. In order to solve this issue, ECOTEL recommends that, in each license area, two-third (2/3) of all spectrum available for auction be set-aside and one-third opened to incumbents.
18. By doing so, ECOTEL estimates that, considering the spectrum that would be kept by existing licensees through the transition process, roughly 50% of the entire 200-MHz of 3500 band would end up in the hand of set-aside-ineligible players (the three Incumbents) at the end of the auction, while 50% would end up in the hands of set-aside-eligible players.
19. By using a spectrum cap of 40 MHz in addition to this set-aside, ECOTEL is of the view that this would provide the right balance between spectrum available to Incumbents versus spectrum available for set-aside available players, while limiting the concentration of spectrum in the hands of only a few players, considering all the spectrum already in the hands of Bell and Rogers (through Inukshuk) and Xplornet.

Q1C—ISED is seeking comments on its proposal to limit the eligibility criteria to bid on set-aside 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.

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20. ECOTEL agrees with an eligibility criteria based on registration with the CRTC as facilities-based providers that are not National Mobile Service Providers, and that are actively providing commercial telecommunication services.
21. However, the commercial telecommunications services must not be limited only to the general public as Service Providers can offer services to industries, vertical markets, private networks, IoT and others. Also the terms “general public” would still create confusion if its definition was to encompass all types of customers. Such a generic term would not bring value to the definition.
22. ECOTEL is of the view that “commercial telecommunication services” must be kept as overarching as possible and as a result, the words “to the general public” should be removed from the eligibility criteria.
23. In addition, ECOTEL believes that restricting eligibility to only markets where commercial services are currently offered within a tier-2 must be removed. **There are several markets today where smaller operators including ECOTEL cannot expand their business because of spectrum not being accessible.** For example, existing customers are asking ECOTEL to offer services but ECOTEL cannot, due to this issue of spectrum not being accessible. An existing facilities-based provider should be in a position to expand its business outside of “relevant Tier 2 service area of interest”. By doing so, ISED will allow more **competition** and more innovation.
24. As a result, the words “in the relevant Tier 2 service area of interest” **must** be removed from the eligibility criteria.
25. In summary, ECOTEL recommends the following:

“limit the eligibility criteria to bid on set-aside 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, effective as of the date of application to participate in the 3500 MHz auction.”

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.

26. ECOTEL agrees with the proposal.

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

27. ECOTEL does not have other comments at this time but reserves the right to comment during the reply period.

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.

28. ECOTEL is of the view that grid-cell and subdivided licences should be included towards the spectrum cap and that the return of these licences should be allowed.

29. ECOTEL understands that including grid-cell and subdivided licences towards the spectrum cap might increase the level of complexity but remains the best way to ensure the spectrum will be allocated efficiently and that no inequities will be created.

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

30. As stated by ISED, “The propagation characteristics of the 3500 MHz band limit the interference coordination challenges with neighboring service providers”.

31. In addition, the 3500 MHz band is already allocated in certain cases on the basis of very small areas such as grid-cell and other subdivisions and some of those license areas division will most certainly be kept.

32. Based on these, ECOTEL is of the view that there are no reasons not to use the smallest license areas as possible for the allocation of the 3500 MHz band.

33. ISED recently issued its Decision on a new set of service areas for spectrum licensing whereas tier-5 license areas are now defined.

34. ECOTEL recommends that the new defined tier-5 license areas be used for the 3500 MHz band as this new set of service areas will not increase the interference coordination challenges with neighboring service providers, and especially not more than existing grid-cell and other subdivisions that are currently in use and that will be kept.

35. If ISED’s goal as per this Consultation is “overarching goal of providing services for flexible use in urban and rural areas” the smallest possible set of license areas shall be used. In this case, the new tier-5 license area regime can and must be used.

36. Should ISED decide that tier-5 license areas cannot be used for the 3500 MHz band, then tier-4 license areas can be used. ECOTEL would never recommend using larger license areas than tier-4 for the 3500 band.

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.

37. Spectrum is a scarce resource that needs be efficiently allocated to the maximum extent possible. ECOTEL agrees with the Department's proposal to include all remaining spectrum including partially encumbered license areas as part of the auction.

38. Any spectrum that would still not be allocated following the auction should be made rapidly available as a first-come-first-serve and allow for smaller tier areas allocation of grid-cell if required.

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.

39. ECOTEL agrees with the Department's proposal.

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.

40. ECOTEL agrees with the Department's proposal.

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

41. ECOTEL agrees with the Department's proposal.

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 licences 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.

42. ECOTEL agrees with the Department's proposal.

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.

43. ECOTEL understands there would be a complexity of managing bundled encumbered blocks when it comes to spectrum cap during the auction. However, not counting the encumbered blocks toward any spectrum cap would create inequalities in some tier areas compared to others and could give some advantages to some carriers in certain license areas, especially if the percentage of available population represents a high proportion of the total license area such as for 4-119, 4-120, 4-158 and 4-171.

44. ECOTEL sees a couple of possibilities to remedy to this situation: 1) only the proportion of MHz relative to the percentage of available population in encumbered blocks would count towards the spectrum cap (ex. A 10-MHz encumbered block with 20% of available population would count as 2 MHz toward the spectrum cap), or 2) only encumbered blocks for which the percentage of available population represents 30% and more of the total population of the entire tier license area would count towards the spectrum cap (assumes that encumbered blocks with a percentage of available population lower than 30% would not significantly create inequalities).

45. At the end of the day, what is important is that any deviation from the basic rules does not create inequalities and allow the spectrum to be concentrated in the hand of only a few players.

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

46. ECOTEL agrees with the Department's proposal to used generic licenses.

Q4B—(If a set-aside is applied) ISED is seeking comments on its proposal to categorize all blocks won by set-aside- eligible bidders as set-aside blocks.

47. ECOTEL agrees with the Department's proposal.

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

48. ECOTEL agrees with the Department's proposal.

Q4D—(If only a spectrum cap is applied) ISED is seeking comments on its proposal to create separate categories for unencumbered and for various encumbered block in a service area.

49. ECOTEL is not in favor of having only a spectrum cap as pro-competitive measures. Those measures shall include both spectrum cap and set-aside spectrum.

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

50. ECOTEL agrees with the Department's proposal.

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

51. ECOTEL agrees with the Department's proposal.

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.

52. ECOTEL does not have comments at this time but reserves the right to comment during the reply period.

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

53. ECOTEL does not have comments at this time but reserves the right to comment during the reply period.

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.

54. ECOTEL does not have comments at this time but reserves the right to comment during the reply period.

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.

55. ECOTEL does not have comments at this time but reserves the right to comment during the reply period.

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

56. ECOTEL is of the view that Inukshuk, that owns about 75% of all MHz-pop of this band nationally prior to returning 3500 band spectrum to ISED, is associated with Bell and Rogers and as such, the in-band spectrum cap must take this into consideration. Inukshuk’s spectrum assets must be divided equally between Rogers and Bell and counted for each Incumbent towards the spectrum cap.

57. ECOTEL does not have other comments on proposed affiliated and associated entities rules at this time but reserves the right to comment during the reply period.

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.

58. ECOTEL does not have comments at this time but reserves the right to comment during the reply period.

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.

59. ECOTEL agrees with the Department’s proposal.

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

60. ECOTEL is comfortable with the proposed wording.

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

61. ECOTEL is comfortable with the Department’s proposal.

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

62. ECOTEL does not have further comments on the other proposed conditions of license.

63. Having said this, as ECOTEL constantly expressed in previous Consultations, ECOTEL strongly recommends that ISED start contemplating additional license conditions to facilitate or force subordination agreements in locations where licensed spectrum is not put to use and even though the deployment condition within a license area would already be reached.

64. ECOTEL tried in multiple occasions to subordinate spectrum from larger MNOs in rural and remote areas and they all refused at each occasion without reasons. In fact, ECOTEL only succeeded once in subordinating spectrum from another operator and this was only due to political pressure (La Tuque project). Letting MNOs holding on unused valuable spectrum and blocking smaller operators that want to innovate is totally unacceptable.

65. Giving access to spectrum to smaller operators is what Canada needs to stimulate innovation in rural and remote areas and ECOTEL will continue to hammer this same message: subordination should be mandated and specifically addressed with the right rules. Our industrial customers, that are actively requesting for spectrum, are asking what ISED can do to prevent a lock down of the spectrum by larger MNOs. There is plenty of spectrum available in remote areas where our customers are located and there are no mechanisms to leverage the unused spectrum.

66. For ECOTEL, there is only one solution to this: mandate spectrum subordination and have it included in the license conditions. Subordination must also become an obligation for regions that are still not covered after a certain number of years and, again, even though the MNO has reached the license deployment condition, or in other words, the MNO has only covered the most urban areas out of any license area or did the minimum to reach the deployment condition and sit on its spectrum for another 20 years.

67. ECOTEL would like to draw ISED's attention on a recent UK Ofcom's decision that will allow spectrum being reserved for enterprises, vertical markets and private networks applications using the 3.8-4.2 GHz band but also by granting "local access to spectrum

that is already licensed to mobile operators, but is not used or scheduled for use in the particular area”¹. As mentioned by Ofcom:

“We want to support innovation and enable new uses of spectrum, and we recognise there is growing interest in the use of mobile technology, including 5G, to develop solutions to meet local wireless connectivity needs. To ensure that lack of access to the radio spectrum does not prevent innovation, we are introducing a new licensing approach to provide localised access to spectrum bands that can support mobile technology”

“Local access to these bands could support growth and innovation across a range of sectors, such as manufacturing, enterprise, logistics, agriculture, mining and health. It could enable organisations to set up their own local networks with greater control over security, resilience and reliability than they may have currently.”

68. In addition to improving the subordination process, ECOTEL urges the Department to start looking at such innovative ways to allocate spectrum efficiently to companies that will bring innovation to Canada as we enter the new 5G era.

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.

69. ECOTEL is comfortable with the Department’s proposal.

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

70. ECOTEL is comfortable with the Department’s proposal.

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

71. ECOTEL is comfortable with the Department’s proposal.

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.

72. ECOTEL is comfortable with the Department’s proposal.

¹ « UK releases masses of spectrum for private, shared usage; squeezes operators», July 25 2019 (<https://enterpriseiotinsights.com/20190725/channels/news/uk-releases-masses-of-spectrum>)

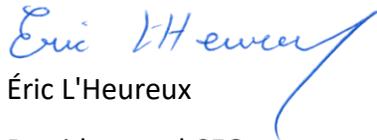
Q19—ISED is seeking comments on the proposed renewal process for spectrum licences in the 3500 MHz band.

73. Any unassigned spectrum after this upcoming spectrum auction should be made available on a first come, first served rule with the proper license fees regime.

74. ECOTEL agrees with the remainder of proposed renewal process.

75. ECOTEL thanks the Department for the opportunity to provide these comments.

Yours truly,



Éric L'Heureux

President and CEO