



February 19, 2019

Innovation, Science and Economic Development Canada  
c/o Senior Director, Spectrum Operations  
235 Queen Street  
Ottawa, ON K1A 0H5  
Submitted via: ic.spectrumoperations-operationsdsuspectre.ic@canada.ca

Re: **Teck comments on the Canada Gazette, Part I, Volume 152, Number 48, Notice No. DGSO-002-18: Consultation on a New Set of Service Areas for Spectrum Licensing (published December 1, 2018)**

As Innovation, Science and Economic Development Canada (ISED) advances the consultation on a new set of smaller service areas for spectrum licensing (Tier 5), Teck is pleased to submit the following comments and recommendations for consideration.

Proudly Canadian, Teck is a diversified natural resource company and global sustainability leader with business units focused on steelmaking coal, copper, zinc and energy. Headquartered in Vancouver, we own, or have interests in, 13 mines in Canada, the United States, Chile and Peru. In Canada, we own six steelmaking coal operations; the country's largest open-pit copper mine; an integrated zinc and lead smelting and refining complex; steelmaking coal and copper development projects; and interests in a port and several oil sands projects. Teck directly employs over 10,000 people around the world, including 8,000 people across Canada.

Teck welcomes the ongoing stakeholder engagement undertaken by ISED through these consultations and we appreciate the opportunity to contribute further. To that end, below are Teck's comments and recommendations for consideration.

#### Comments and recommendations

**Q1A – ISED is seeking comments on the proposed design principles when providing responses, include supporting arguments for or against the proposed principles.**

Under Design Principles Section 5.7. Proposed design principles, we support all of the design principles as proposed. The following are particularly important to Teck:

- Recognize geographic differences: consider the unique characteristics of urban and rural areas in Canada
- Foster demand: areas should have either a population base or some economic value to support commercial viability
- Maintain technological and competitive neutrality: not favouring or discriminating against one technology or group of stakeholders over another.

Under Design Principles Section 5.1. Geographic differences, Teck supports spectrum licensing that accounts for the differences between urban and rural environments because it makes it more practical for natural resource extraction companies, or small service providers targeting such companies, to license underutilized spectrum.

**Recommendation:** We recommend that ISED recognize and account for geographic differences and the unique characteristics of urban and rural areas in Canada in the rules for spectrum licensing.

In relation to Design Principles Section 5.2. Foster demand, innovation and digitalization are driving new use cases in mining, which will be well-served by cellular technologies such as LTE and 5G. New technologies that improve the safety, productivity, and environmental sustainability of surface mining operations require the provision of reliable and ubiquitous high-speed data connections to mobile mining equipment and personnel. Support for these emerging use cases has economic value and will foster greater demand for services in sparsely-populated rural areas.

**Recommendation:** We recommend that ISED support the provision of new technologies in rural and sparsely-populated areas to help foster greater demand for their use where it does not currently exist.

In relation to Design Principles Section 5.3, Teck strongly believes that spectrum licensing should be vendor and technology neutral. Access to low-band spectrum via Tier 5 service areas would be highly desirable for certain surface mining applications, as the propagation characteristics of low-band spectrum would be well-suited to the rugged terrain and highly dynamic nature of the surface mining environment. Advancements in technology, combined with the remote location of many surface mining operations, makes licensing underutilized low-band spectrum practical in many cases.

**Recommendation:** We recommend that ISED implement Tier 5 spectrum licences in a vendor and technology neutral fashion. We also recommend that low-band spectrum be made available under Tier 5 licenses.

#### **Q1B – ISED is seeking any suggestions or additional design principles that should be considered.**

We believe that boundaries of Tier 5 service areas should take boundaries of existing mine lease areas into consideration. While it is not necessary for the boundaries of the Tier 5 service area to be coterminous with the boundaries of the local mine lease area, it should be possible to cover an existing mine lease area with a single Tier 5 service area.

**Recommendation:** We recommend that ISED ensures that it is possible to cover an existing mine lease area with a single Tier 5 service area licence.

**Q2A – ISED is seeking comments on the suitability of Option 1 in addressing the proposed design principles.**

We believe that Option 1 supports most of the design principles, with the possible exception of “Ensure boundaries are in low population areas to minimize potential interference issues”. The use of census subdivisions (CSDs) is a good starting point, but there are situations where it would be desirable to deviate from the use of individual CSD boundaries. As an example, in response to the Q2B question about whether urban CSDs should be combined into a single service area, we believe there are some cases where it would be suitable to combine adjacent urban CSDs as necessary to “Ensure boundaries are in low population areas to minimize potential interference issues.”

**Recommendation:** We recommend that ISED adopt “Option 1” for Tier 5 spectrum licences, as we believe it supports the design principles well, and supports both industrial users and the general public in rural areas.

**Q2C – ISED is seeking comments on whether there should be a minimum or maximum size for the service areas and if very small CSDs should be amalgamated into the larger surrounding of adjacent CSD.**

We believe there should be a minimum and maximum size for Tier 5 service areas. Very small Tier 5 service areas should be avoided to prevent speculators from acquiring a spectrum licence for a strategically located small service area in the hopes of securing or “locking up” an important larger service area. From a mining perspective, it would be desirable to cover an existing mine lease area with a single Tier 5 spectrum licence, so if multiple CSDs exist within a mine lease area, they should be combined into a single Tier 5 service area. It would not be practical to have Tier 5 service areas as large as existing Tier 4 service areas.

**Recommendation:** We recommend that ISED establish a minimum and maximum size for Tier 5 service areas and consider amalgamating multiple CSDs into a single Tier 5 service area as necessary to ensure that an existing mine lease area can be served with a single Tier 5 spectrum licence.

**Q2D – ISED is seeking comments to gauge if this option is suitable for northern and rural areas.**

We support this proposal as we believe it meets the needs of the natural resource extraction industry and will help foster demand for commercially viable use of underutilized spectrum in remote areas.

**Recommendation:** We recommend that ISED enact this option as we believe it is suitable and can be helpful for northern and rural areas.

**Q3A – ISED is seeking comments on the suitability of Option 2 in addressing the proposed design principles**

It is Teck's view that some of the proposals under Option 2 are not well-suited to the needs of the resource extraction industry, and as such, does not meet the design principles as it does not foster demand by the industry, as described below.

**Q3B – ISED is seeking comments on the proposed minimum population for small population centre service areas. A rationale should be provided if a different population is proposed.**

In remote and sparsely-populated areas, a Tier 5 service area that included the proposed minimum population could cover a vast service area, which could include both natural resource extraction activities and rural population areas. Providing services to both has economic value, but supporting both use cases in a single Tier 5 service area could be impractical as the use cases are very different. Further, this option is not well-aligned with the intentions of the design principle of fostering greater demand for acquiring the spectrum licence.

**Recommendation:** We recommend that ISED either remove this proposal or amend it to ensure that, if it were enacted, it could effectively support both use cases for natural resource extraction activities and rural population areas as practically as possible.

**Q3C – ISED is seeking comments on whether the “other” service areas (remainder areas in each Tier 4) should be licensed differently (e.g. on a shared or first-come, first-served basis).**

We believe that using a different licensing scheme for “other” service areas is the only practical way to support both the general public and mining users in large and sparsely-populated service areas. Granting spectrum licences on a first-come, first-served basis could encourage speculators to acquire licences in anticipation of future activities for the sole purpose of increasing their value, rather than to provide services to industry and the public.

**Recommendation:** We recommend that ISED maintain the existing licensing approach for “other” service areas.

**Q3D – ISED is seeking comments on whether this option is suitable for northern or rural areas.**

In our review, we concluded that aspects of Option 2 are not well-suited for northern or rural areas and do not support the intentions of the design principle of fostering greater demand for spectrum licensing in rural areas.

**Recommendation:** We recommend that ISED reject Option 2 in favour of Option 1.

## Conclusion

Once again, we appreciate ISED's ongoing collaborative approach and the opportunity to contribute to the design of the new set of service areas for spectrum licensing. Given the complexities associated with this subject, we are encouraged that ISED continues to actively engage industry stakeholders on the new spectrum licensing design and we look forward to further collaboration as it becomes finalized.

If you have any questions regarding this submission or otherwise, please contact me at +1.250.433.1081.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dylan Bennett", with a long horizontal flourish extending to the right.

Dylan Bennett  
Manager, Operational Technology  
Teck Resources Limited

