

Submission on Draft Five Year Outlook 2022-2026

28 February 2022

C H ● R U S

Overview

1. Chorus welcomes the opportunity to provide feedback on the *Draft Five Year Spectrum Outlook 2022-2026: Setting direction for radio spectrum management (the draft outlook)*. As one of New Zealand's largest telecommunications providers, our network spans copper, fibre, and a portion of our legacy rural network is supported by radio spectrum technologies. This gives us both a sector and first-hand interest in the work of Radio Spectrum Management.
2. In urban areas, significant investments have been made by the Crown and private sector into fixed networks via the Ultra-Fast Broadband programmes, providing world-leading speeds and low latency for the 87% of New Zealanders who live within their footprints. Therefore, while we agree with the focus on addressing Maori Spectrum issues (and note the recent progress since the publication of the draft outlook) we question the extent to which MBIE has considered the coherence of spectrum policy and the setting of 5G as a priority in light of the wider telecommunications regulatory framework and the impact of spectrum policy on telecommunications markets.
3. An inconsistent approach to retail and wholesale separation in mobile and fixed networks has seen vertically integrated mobile network operators (MNOs) focus on obtaining and using excess spectrum for fixed wireless access (FWA), with New Zealand now having the third highest level of FWA in the OECD behind the Slovak Republic and the Czech Republic¹, despite widespread availability of a superior fibre network.
4. If the government's view differs from the approach that underpins the UFB agreements regarding the inefficiency of infrastructure competition it should consider changing settings for the local fibre companies (LFCs) to support the development of infrastructure-based competition. Without a coherent view it risks looking at spectrum allocations in isolation and further entrenching the advantages conferred to the MNOs in retail telecommunications markets.
5. While there are no doubt benefits of network competition for some consumers, it points to an excess of spectrum capacity provided to MNOs rather than scarcity requiring priority allocation of 5G spectrum, and is at odds with the regulatory framework that covers the rest of the telecommunications market.
6. Understanding how spectrum assets can best support New Zealanders' wider connectivity needs, particularly in rural New Zealand should be a priority over MNOs' commercial interests in having 5G spectrum allocated to expand their own networks, particularly where these are focused on duplicating broadband networks rather than enabling the widest possible mobile coverage.
7. This network duplication also does not appear to represent an innovative or value-enhancing use of limited spectrum resources for New Zealand overall. As decisions are made with regard to the allocation of this spectrum, consideration should also be given to ensuring we retain the opportunity to use it for innovative and high priority purposes. These may include industry verticals and services provided by Wireless

¹ Annual Telecommunications Monitoring Report: 2020 Key Facts, Commerce Commission, 21 March 2021, p8.

Internet Service Providers (WISPs) – rather than the status quo of national MNO management rights where the benefits appear limited.

8. We note with interest the intention to replan the 1427MHz-1525MHz band for mobile network use. Currently Chorus holds licences in this band to support our CMAR (multi-access radio) network which provides baseband voice services to remote New Zealanders. Should this band be repurposed for mobile network use it is unlikely we would be able to continue to serve these customers via our network and other arrangements for their ongoing connectivity would need to be made. There are around 3,000 customers served this way, predominantly in remote communities, as well as parts of Great Barrier Island and the Chatham Islands.
9. We support plans to identify how to modernise the Radiocommunications Act 1989. Particularly if additional flexibility enables licencing approaches that support more innovative ways of allocating spectrum that don't by design embed historical approaches. As technology to enable more efficient spectrum use develops it is appropriate that the regulatory framework does not act as an impediment to New Zealand being able to take advantage of these opportunities.

Looking forward: Technologies driving change

Satellites and space

10. In *Towards a Digital Strategy for Aotearoa* the importance of internet accessibility for all New Zealanders was highlighted. As outlined in our submission on the issues raised in that document, we strongly support efforts to improve connectivity, with the need particularly high in rural New Zealand. Our understanding is that there are still at least 15,000 households in rural and regional parts of the country who are unable to access fast fixed/terrestrial wireless broadband.
11. While supply for these customers will need to be assessed on a case-by-case basis, and fixed networks, where available and economical are preferable, we believe low earth orbit (LEO) satellite broadband is likely to be an appropriate technical solution for this more remote segment. Currently there is only one LEO constellation covering New Zealand – Starlink. Starlink is already in the beta testing phase and we believe many New Zealanders are amongst their 10,000 beta users.
12. Enough spectrum should be allocated to LEO to serve the most remote proportion of New Zealand's population, taking account of expected usage growth. In the long term, we believe there will be increased competition in the LEO satellite market. We suggest that provision is made in spectrum allocation such that LEO players can enter and compete in the rural broadband market.

Growth in wireless broadband traffic

13. The Crown has invested significantly in the UFB network which will reach 87% of New Zealanders' homes and businesses. In response to the growth in wireless broadband traffic it is worth noting that more traffic is generated on mobile devices by Wi-Fi than by mobile networks. The Commerce Commission's most recent

monitoring report also found that growth in mobile data use had slowed in the most recent period.²

A coherent view of market structure and desired policy objectives

14. The UFB programme was designed to create a level playing field for retail service providers and avoid the inefficient deployment of capital through unnecessary duplication of infrastructure. Significant regulatory constraints on LFCs ensure that they operate in a way that gives effect to this market structure.
15. We do not see consideration in the draft outlook of the overall market outcomes that spectrum policy drives. For spectrum policy to drive the best outcomes for New Zealand it should be consistent with the Government’s overarching policy objectives.
16. Allocating spectrum to MNOs without appropriate usage conditions and regulatory settings will work against the creation of a level playing field in two ways:
 - a. They use the excess capacity to provide fixed wireless services which duplicate the fibre access networks that have been built in partnership with government. Albeit with a lower speed, higher latency service. This means LFCs face infrastructure competition from vertically integrated firms but are unable to compete fairly given the limitations placed on them under the existing framework.
 - b. It allows MNOs to cross subsidise fixed wireless services with revenues from their mobile customers which means they face lower input costs for providing fixed services than retail service providers (RSPs) who do not own and operate mobile networks. This further entrenches the dominant position of the MNOs who are also the three largest RSPs.
17. Infrastructure-based competition has been a key feature of mobile markets to date, however we are now seeing a trend towards network consolidation. MBIE should consider this evolution as part of its assessment of spectrum allocation, in particular the extent to which infrastructure competition contributes to the outcomes they’re seeking to promote for end-users as well as how it fits with the wider telecommunications market framework.
18. It is for these reasons we think spectrum policy should be driven by a coherent view of market structure and desired policy objectives. If the government’s view differs from the approach that underpins the UFB agreements it should consider changing settings for the LFCs to support the development of infrastructure-based competition.
19. Overall allocation of spectrum for FWA is also in conflict with the Government’s climate objectives. Recent research completed by Sapere Research Group found an entry-level fibre plan, operating at 50 Mbps, is up to 56 per cent more efficient than 4G fixed wireless. For higher speed plans, around 300 Mbps, fibre is up to 77 per cent more efficient than 5G fixed wireless.³

² Annual Telecommunications Monitoring Report: 2020 Key Facts, Commerce Commission, 21 March 2021, p13.

³ Comendant C & Murray K, (2021) *Assessing the emissions footprint of the fibre networks relative to other fixed broadband options in New Zealand*, Sapere Group. <https://srqexpert.com/wp-content/uploads/2021/12/Assessing-the-emissions-footprint-of-the-fibre-networks-relative-to-other-fixed-broadband-options-in-NZ-Corina-Comendant-and-Kieran-Murray-November-2021.pdf>

Considerations regarding the setting of 5G as a priority focus

20. It is worth noting that it would appear there is an excess of capacity in the 4G networks as illustrated by the significant push by MNOs to provide fixed wireless broadband services. Given the presence of a superior fibre network the growth in the FWA market appears driven by the commercial interests of the MNOs rather than consumer-generated demand.
21. In the absence of a clear need for additional 5G capacity for mobile broadband, it is clear that the only rational use for this additional capacity will be fixed 5G broadband services. Vodafone NZ specifically noted the boost 5G would provide for FWA in February 2021, as part of Vodafone's goal to migrate 1 in 4 of their customers to FWA within two to three years.⁴
22. Investments in 5G are also unlikely to address key consumer issues such as the cost of mobile data and extent of mobile coverage outside of urban areas. While 5G will no doubt bring some benefits, particularly for mobile gaming, historically consumers have been unwilling to pay a premium for faster mobile broadband. As the upgrade from 3G to 4G illustrated, obtaining a premium for generational speed upgrades is challenging,⁵ and without a 'killer app' requiring additional speed the way that video did for 4G,⁶ it is unlikely consumers will be willing to pay an increase for 5G either.
23. In urban areas, where fixed networks with Wi-Fi can support uncongested speed and low latency, and where price and quality are subject to tight regulatory controls, it is difficult to see the benefits in allocating spectrum in a way that results in replicating the fibre footprint with fixed wireless broadband.
24. Therefore while 5G technology is a significant priority for MNOs, we think there are higher priorities for consumers that MBIE could focus on, for example identifying how and where spectrum could best assist in reducing the digital divide and improve digital inclusion, and where there are clear benefits for the economy.
25. This may mean making spectrum available for specific purposes, such as private industrial networks. Earmarking spectrum would allow non-mobile organisations such as system integrators, universities, and manufacturers to build innovative, industry-specific solutions that may not be achievable if mobile operators are automatically considered to be the obvious users of new bands.
26. If a scarce resource is used to duplicate existing fibre infrastructure (with benefits mostly accruing to MNOs) New Zealand risks missing valuable innovative mobile use cases that 5G and the spectrum it can operate over will enable. These use cases will likely generate far more value for New Zealand than duplicating existing infrastructure.

⁴ "Vodafone NZ first to go big with 5G wireless broadband", NZ Herald, 22 February 2021, <https://www.nzherald.co.nz/business/vodafone-nz-first-to-go-big-with-5g-wireless-broadband/XWMFFS6SG6X36MM2BVBISKOS6Q/>

⁵ 2013 Annual Telecommunications Monitoring Report, Commerce Commission, 21 May 2014, p 56. https://comcom.govt.nz/_data/assets/pdf_file/0026/63827/2013-Annual-Telecommunications-Monitoring-Report-21-May-2014-final-1.pdf

⁶ "The search for 5G's 'killer apps', Financial Times, 7 February 2022, <https://www.ft.com/content/d60c2865-a961-4c52-b074-8e2cabec57f5> (republished NZ Herald 11 February 2022 "5G: What's the Point").

Looking forward: Trends in spectrum management

Spectrum sharing and efficient use of spectrum

27. Chorus currently holds licences in the 1.5Ghz band to provide baseband voice services via our multi-access radio systems. While this technology is nearing end of life and the number of customers using it is shrinking, we wanted to raise that the current reservations on this band and eventual replanning may impact on our ability to continue to provide service to these remote end users.
28. We would consider that any decisions regarding the use of this band should consider the wider implications for remote access, and we would welcome a discussion about the best way for these customers to be served in the longer term, and the regulatory framework adjusted to account for this proposed change to focus on mobile network use.

Licensing approaches enabling new technologies

29. Globally, we have seen an increase in the demand for Wi-Fi as lockdown has resulted in more people working, learning and socialising from home and the majority of mobile traffic is offloaded to Wi-Fi.⁷ However Wi-Fi performance is the greatest issue for consumers and can constrain their ability to fully benefit from their fibre connection.
30. Wi-Fi using 6GHz (Wi-Fi 6E) would double the bandwidth available compared to using 2.4GHz and 5GHz bands and have a better chance of achieving peak speed of 2Gbps due to less interference. Globally there have been 338 million Wi-Fi 6E device shipments to date and this will continue to grow – New Zealand consumers need the infrastructure to be able to support these products.
31. As outlined in our submission on this last year, we therefore support making the lower 6 GHz band (5925 – 6245 MHz) available for WLAN use in New Zealand. We also see real opportunity from making the upper 6 GHz band available for indoor WLAN use in future, but more work is needed to manage the potential impacts on incumbent users.

Regulatory frameworks

32. We support the proposal to modernise the Radiocommunications Act 1989 to reflect the changes in technology, enforcement, and spectrum use and allocation policies over the past 30 years. We agree it is important that the regulatory framework can respond to technology trends and innovations in spectrum management.

⁷ Wi-Fi Alliance, [Value of Wi-Fi](#), 2021.