WBA Comments on New Zealand 5 Year Spectrum Outlook Consultation

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1. Introduction

Wireless Broadband Alliance (WBA®) submits these comments in response to Ministry of Business, Innovation & Employment, New Zealand Draft Five Year Spectrum Outlook 2022-2026 – Radio Spectrum Management Policy and Planning.[1]

WBA's mission is to enable collaboration between service providers, technology companies and organizations to achieve broad technology adoption by showcasing User benefits and by supplementing with specifications to enable widespread technology adoption.[2] WBA's membership is comprised of major operators and leading technology companies.[3]

2. Have we identified the range of technological advancements and probable new demands relevant to New Zealand?

Wi-Fi has been synonymous with connectivity and connecting users in homes, small businesses, and large enterprises alike. Connectivity ecosystem is evolving and number of devices per person requiring connectivity is increasing dramatically. McKinsey Global Institute research report has projected 22-fold increase in internet traffic from 2020 to 2030[3], a 29% Compounded Annual Growth Rate (CAGR). Even as our existing equipment use increases, new use cases are on the horizon covering a variety of verticals including education, healthcare, telemetry, and others.

To service all this, significant spectrum allocation is needed for license exempt use. Until now, Wi-Fi RF spectrum has been limited to 225 MHz (2.4 GHz band) & 455 MHz (5 GHz

[1] Five-Year Spectrum Outlook 2022-2026 | Radio Spectrum Management New Zealand (rsm.govt.nz)
[2] https://wballiance.com/openroaming/
[3] Complete list of WBA members: http://www.wballiance.com/join-us/current-members/
[3] McKinsey Global Institute, "Connected World," Feb 2020

band) for many regions in the world, including New Zealand. License exempt spectrum allocation has not increased in nearly 20 years despite the unprecedented growth in device count and data usage.

Several other regulators across the globe have already recognized this need and have now added 6 GHz band for license-exempt use to address this acute shortage. There are hundreds of products already announced to operate in the 6 GHz band. These include Laptop and desktop PCs, Smartphones, Access Points / Routers, 8K TVs, with more products on the way. New Zealand citizens can readily tap into this evolving ecosystem and benefit from increased efficiencies with new ways to connect, work, and entertain.

3. **Have we prioritised the right issues that we will need to actively manage through our work programme (to the extent this is possible to predict now)?**

New Zealand has correctly prioritized international harmonization of spectrum resources and to benefit from bigger market forces to reduce costs for equipment. Operator broadband investment decisions are impacted by available spectrum. Many operators deploy Wi-Fi/broadband connection in a converged gateway. Their broadband investment and roadmap is tied to wireless because this is how their customers consume broadband. New Zealand can future-proof their broadband infrastructure plans by designating the entire 6 GHz band for license exempt use.

Amount of available License-exempt spectrum directly translates into increased productivity. Research analysis has shown that worldwide economic contribution of Wi-Fi 6/6E (in 6 GHz band) is expected to grow from $58B to $527B by 2025.[4] Opening up the 6 GHz

[4] **The Economic Value of Wi-Fi®: A Global View**, P74, Telecom Advisory Services, February, 2021 - https://tinyurl.com/56hf2emp

band expeditiously will ensure that economic benefits are maximized for New Zealand citizens. By combining the baseline and the Wi-Fi 6 and 6 GHz scenarios, the overall economic value of Wi-Fi for New Zealand will yield $9.8 billion in 2025.

In addition to the immediate increase in productivity, license exempt spectrum promotes free and aggressive development of new business models and services that are not even conceived of today.

4. Are there other matters that we should cover?

While defining product classes in the license exempt 6 GHz band, New Zealand should specify Low Power Indoor (LPI), Standard Power (SP), Very Low Power (VLP) Portables, as well as LPI Client-to-Client connectivity to enable a full ecosystem of use cases. Following are recommended power levels for the various classes:

Product Class [or Feature]	Client			Access Point		
	PSD (dBm/MHz)	EIRP (dBm) 160 MHz	EIRP (dBm) 320 MHz	PSD (dBm/MHz)	EIRP (dBm) 160 MHz	EIRP (dBm) 320 MHz
Low Power Indoor (LPI)	10	24	27	10	30	33
Very Low Power for portables (VLP)		14	17	-	-	-
Standard Power for outdoor/ indoor (SP)	17	30	33	23	36	39
LPI Client-to-Client	10	24	27	-	-	-

5. Concluding Statement

WBA Policy Work Group is excited about the prospect of license exempt 6 GHz in New Zealand. We strongly urge the Ministry of Business, Innovation & Employment to consider the

entire 1200 MHz of the 6 GHz spectrum for license exempt use. WBA will be happy to engage further and address any questions related to recommendations in these comments.

For more information, please contact the WBA: contactus@wballiance.com