

**SUBMISSION OF 2DEGREES TO THE COMMERCE COMMISSION REGARDING THE CLEARANCE APPLICATION
BY ONE NZ RELATING TO THE PROPOSED ACQUISITION OF SPECTRUM FROM DENSE AIR**

Dated 8 December 2023

1. INTRODUCTION

1.1 We refer to the clearance application filed by One New Zealand Group Limited (**One NZ**) with the Commerce Commission (**NZCC**) on 2 November 2023 regarding the proposed acquisition by One NZ of 100% of the shares in Dense Air New Zealand Limited (**Dense Air**) (**Proposed Acquisition**). As noted in para. 1.2 of the clearance application, Dense Air's only assets are management rights to 2 x 35MHz in the 2600MHz radio spectrum band.

1.2 In section 2 below, we provide an overview of the key points of 2degrees' position in response to One NZ's clearance application, and also the NZCC's Statement of Preliminary Issues dated 15 November 2023, namely that:

- (a) Spectrum is essential.
- (b) 2degrees' lack of spectrum is limiting our ability to compete with Spark and One NZ.
- (c) The likely counterfactual involves 2degrees acquiring Dense Air's spectrum.
- (d) If 2degrees acquired Dense Air's spectrum it would have significantly increased ability to compete with One NZ and Spark.
- (e) It is not viable for 2degrees to build more towers to resolve its spectrum issues.
- (f) 2degrees does not have available to it other comparable spectrum acquisition options.
- (g) There are not competitively effective mitigation options that would be available to 2degrees.
- (h) The effects of this Proposed Acquisition will be long term.

1.3 As will be evident from that overview, 2degrees is strongly opposed to the proposed acquisition of the spectrum by One NZ from Dense Air.

1.4 In the remaining sections, we go on to provide comments on the following topics of interest to the Commission:

- (a) Substitutability of different bands of spectrum.
- (b) How different spectrum bands/holdings impact on mobile and fixed wireless broadband offerings.
- (c) Likelihood of spectrum holdings currently used for 2G/3G being re-farmed for 5G/6G in the future.

- (d) [Redacted]
- (e) Capacity to provide fixed wireless broadband.
- (f) Plans that 2degrees has in terms of fixed wireless broadband and 5G, and how these might differ in the factual versus counterfactual.
- (g) Towers/sites that 2degrees would need to have to deploy Dense Air spectrum with and without Dense Air spectrum.
- (h) Substitutability of fixed wireless broadband for fibre (or also copper or satellite).
- (i) General thoughts on the Proposed Acquisition.

1.5 As requested by the Commission, 2degrees has provided separate public and confidential versions of this submission. The information shaded in blue and contained in square brackets in the confidential version has been redacted on confidentiality grounds from the public version.

2. OVERVIEW OF 2DEGREES' KEY POINTS

Spectrum is essential:

- 2.1** The Proposed Acquisition would result in One NZ holding 3 blocks of management rights in the 2600 MHz spectrum band; adding an additional 2 x 35 MHz holding, to their existing 1 x 20 MHz and 1 x 15 MHz holdings. This compares to Spark's 2 x 20 MHz management rights in the 2600 MHz band (and 1 x 70 MHz spectrum management rights in the 2300 MHz band), and 2degrees having no holdings at all in either band.
- 2.2** The 2600 MHz spectrum band is an important spectrum band for the provision of mobile telecommunication services, and in particular the provision of wireless broadband services. 2degrees is the only MNO that does not have any spectrum management rights in the 2600 MHz band (or in the nearby 2300 MHz band), which it requires to effectively compete with One NZ and Spark on price, products and service quality.
- 2.3** Spectrum is essential to how 2degrees competes in the broadband and mobile markets. Spectrum has been acknowledged by the NZCC in its 2019 mobile market study as being a critical input in the deployment of a mobile network. The type and amount of spectrum held by the MNOs will affect the way in which they deploy their networks, and the capacity and services they can offer to retail and wholesale customers. The NZCC has noted that *"Significant asymmetries in spectrum holdings (including in terms of the amount and type of spectrum held) can affect competition in the mobile market"*. The NZCC went on to say that *"The design of future allocation processes for spectrum should have regard to such asymmetries. In setting limits on the amount of spectrum that may be acquired, it may also be appropriate to have regard to existing holdings in other bands which represent a substitute for the spectrum being auctioned or allocated"*.¹ This should equally apply to acquisitions of existing rights and is relevant to the Proposed Acquisition.

2degrees' lack of spectrum is limiting our ability to compete with Spark and One NZ:

- 2.4** 2degrees currently has significantly fewer spectrum holdings in MHz than One NZ and Spark (2degrees having 190 MHz, One NZ having 260 MHz usable spectrum and Spark 330 MHz). This discrepancy will only be enhanced post acquisition as One NZ's holdings will go to 330 MHz.
- 2.5** The more spectrum an operator has directly impacts the capacity and speeds an MNO can provide to its mobile and FWA customers. Limited capacity means an MNO will either be forced to constrain customer numbers, prioritise certain customers or products over others, degrade the performance of its network for its customers, and / or build more towers, which is more expensive and often uneconomic.
- 2.6** 2degrees' lack of spectrum has prevented (and is continuing to prevent) 2degrees from competing effectively in 4G FWA in particular. Spark and One NZ have ~30% of their broadband base on FWA (of which almost all will be in 4G) giving them a fundamentally different margin profile for their broadband business, as well as first mover advantage versus 2degrees in FWA. In contrast 2degrees has [Redacted] of its broadband base on FWA. [Redacted] :

¹ Refer to page 11 of the Mobile Market Study findings report: https://comcom.govt.nz/data/assets/pdf_file/0022/177331/Mobile-Market-Study-Findings-report-26-September-2019.PDF - see also para. 3.102: *"The allocation of spectrum will continue to have a very important influence on competitive conditions in downstream markets, including the mobile market, and on how competition evolves in the future"*.

[Redacted

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2.7 That lack of relevant spectrum has also impacted on [Redacted
].

(a) [Redacted

]

(b) [Redacted

]

The likely counterfactual involves 2degrees acquiring Dense Air's spectrum:

2.8 In the absence of the Proposed Acquisition proceeding, 2degrees considers a likely counterfactual would be that 2degrees would acquire Dense Air's 2600 MHz spectrum management rights. This reflects the fact that:

(a) [Redacted

(b) Redacted

(c) **Redacted**

.]

2.9 [Redacted

]

If 2degrees acquired Dense Air's spectrum it would have significantly increased ability to compete with One NZ and Spark:

2.10 If 2degrees acquired Dense Air's spectrum under the counterfactual, then that would provide 2degrees with enhanced mobile capacity to enable us to compete better in both the wireless broadband market and in the mobile market by delivering improved mobile quality compared with the factual. In particular, there would be for 2degrees:

(a) **[Redacted**

]

(b) **[Redacted**

]

(c) More capacity to allocate, particularly over the medium and long term.

(d) Closer to equivalence in terms of spectrum holdings and/or cost base to One NZ and a sustainable cost base.

2.11 This compares with 2degrees' assessment of the factual position if the Proposed Acquisition goes ahead:

(a) One NZ would have more than double the amount of 3G/4G spectrum (2x125 MHz vs. 2x55 MHz²) that 2degrees has – 127% more in fact.

(b) Based on past experience, renewal of the Dense Air spectrum is likely to go to One NZ (as the then-incumbent holder of the relevant management rights) in 2028.³

(c) One NZ and Spark have a sustainable cost advantage over 2degrees in the provision of mobile and fixed wireless broadband services.

(d) **[Redacted**

² In respect of the 700, 900, 1800, 2100, 2300 and 2600 MHz spectrum bands.

³ Subject to any partial reallocation to Māori interests.

- (e) **Redacted**
- (f) **Redacted**
- (g) **Redacted**

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2.12 2degrees considers that **[Redacted**

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It is not viable for 2degrees to build more towers to resolve its spectrum issues:

2.13 It is not practical for 2degrees to build more towers to gain capacity as an alternative to spectrum. This is uneconomic and not viable. In particular:

- (a) If One NZ acquires Dense Air's spectrum, 2degrees would need to build **[Redacted**] more towers to reach near equivalence with One NZ's network capacity (based on a sites x spectrum holdings calculation). **[Redacted**

] This represents only equivalence with One NZ's capacity based on its existing site numbers. Building even a fraction of this volume of towers would take **[Redacted**]. Even if such equivalence could be obtained through building more towers, One NZ's capacity would likely have increased further, so such equivalence would be brief and unsustainable.

- (b) The building of **[Redacted]** more towers would cost 2degrees approximately **[Redacted**]

- (c) Furthermore, the practical realities of embarking on such a build programme, including identifying that number of suitable site locations in areas where demand is required, further demonstrates that this is not a viable or real alternative that will bridge the spectrum disparity.

2degrees does not have available to it other comparable spectrum acquisition options:

2.14 2degrees does not have available to it other comparable spectrum options **[Redacted**]

- (a) **[Redacted**

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- (b) The further anticipated Crown awards of spectrum [Redacted] will not have a material impact on 2degrees' spectrum disparity in the low and mid-bands that are used to provide 4G FWA products.
- (c) There will be spectrum renewals by MBIE in 2028, but spectrum is a long-term asset. Renewal is typically available to those who are using it. 2degrees therefore would expect One NZ to be able to get spectrum renewal for the spectrum being acquired from Dense Air [Redacted].

There are not competitively effective mitigation options that would be available to 2degrees:

2.15 The mitigation strategies available to an MNO like 2degrees that has lower spectrum holdings are (a) build more towers, (b) acquire spectrum from other avenues / sources, or (c) stop offering products.

2.16 As set out above, it is simply not practical for 2degrees to build more towers of the number required. Nor will [Redacted]

]. This only leaves 2degrees the option of stopping offering particular products – [Redacted]

] However it results in a substantial lessening of competition in the relevant markets and a detriment to consumers in terms of the competitive options available to them.

The effects of this Proposed Acquisition will be long term:

2.17 As noted above, while MBIE will conduct a review of spectrum management rights in 2028, 2degrees expects from past experience that MBIE will renew existing spectrum licenses beyond 2028 where they are being actively used. One NZ expects the same, as they noted at para. 25.2 of their clearance application. In fact, as far as 2degrees is aware, [Redacted]

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2.18 As a result, the proposed acquisition of this Dense Air spectrum by One NZ will lock in this spectrum for One NZ beyond 2028 resulting in an enduring spectrum disparity. It will therefore have long term effects on the markets well beyond the current license term.

3. SUBSTITUTABILITY OF DIFFERENT BANDS OF SPECTRUM

3.1 2degrees does not agree with One NZ's submission that there are many alternative (and available) spectrum bands that can be used to provide 4G and 5G mobile services – as recorded in para. 23.3 of the Statement of Preliminary Issues.

3.2 2degrees considers that:

(a) At a high level, there is substitutability between spectrum bands for capacity purposes, but you still need a total volume that is enough to deliver the required capacity, and you need to be able to manage this across different technologies and products (e.g. mobile v FWA).

(b) However, having small chunks of different bands of spectrum is not as efficient as having large blocks (due to control channels taking up a larger percentage of spectrum meaning less available capacity for user traffic, and carrier aggregation is required to provide equivalent peak throughput which requires specific user equipment to support band combinations).

(c) Different bands have different spectrum configurations, i.e. TDD and FDD spectrum types. Time Division Duplex (**TDD**) uses a common frequency block for both uplink and downlink communications. The entire bandwidth can be used in one direction so peak speeds are high and the amount of time dedicated to each direction can be tuned to match traffic demands. Frequency Division Duplex (**FDD**) has two equal dedicated blocks of spectrum, one for uplink one for downlink. This causes inefficiencies as the downlink direction has more demand, so a portion of the uplink block is under-utilised. e.g. 20 MHz TDD has equivalent FWA capacity as 2 x 15 MHz (30 MHz) of FDD. Note that the Dense Air spectrum in the present case involves FDD spectrum. The 3.5 Ghz spectrum is TDD not FDD.

3.3 In terms of 2degrees' history, we have been faced with a continual spectrum disadvantage which has limited our ability to compete with Spark and One NZ:

(a) We started with 2100 and 900 and delivered mostly voice and SMS services (2G/3G).

(b) As data demands grew and more spectrum became available, we added 1800 and 700 (4G).

(c) While other operators have access to 2300 and/or 2600 MHz spectrum, which they acquired at a time when 2degrees was not in a position to do so, [Redacted] and we continue to have no holdings in the 2300 or 2600 MHz mid-band spectrum bands.

(d) 2degrees has, over time, evolved its deployment strategy. Initially, as a new entrant, 2degrees [Redacted

]. The more spectrum bands (and even the amount of MHz deployed per band) would result in additional costs to 2degrees (either equipment or license costs). [Redacted

]

3.4 2degrees' current spectrum holdings [Redacted] are as follows:

Type	Band	TDD / FDD	Holding	Current Use	[Redacted]
Low-band	700 MHz	FDD	2 x 10MHz	4G low band	
	900 MHz	FDD	2 x 9.8 MHz	4.2MHz – 3G 5MHz – 4G low band	
Mid-band	1800 MHz	FDD	2 x 20 MHz	4G high band	
	2100 MHz	FDD	2 x 15 MHz	5 MHz - 3G 10 MHz - 4G high band	
Mid-band (Suited only to 5G)	3500 MHz	TDD	1 x 80MHz	5G]






3.5 2degrees' current spectrum holdings compare with the current spectrum holdings of Spark and One NZ as follows:

Provided to ComCom June 2023

Spectrum holdings

New Zealand Spectrum Management Rights as at June 2023

Note 1: Based on 2degrees current understanding of relevant spectrum holdings.
 Note 2: Includes 3500 allocations commencing in July 2023

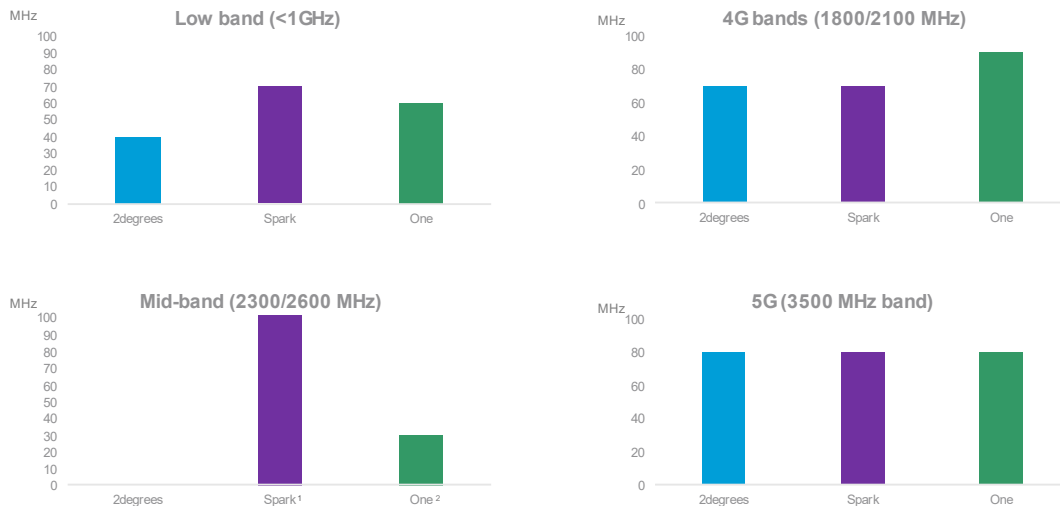
	Sub 1-GHz spectrum			'Core' mobile spectrum (4G)		'Mid-band' spectrum		'5G' spectrum
	700 MHz (FDD)	850 MHz (FDD)	900 MHz (FDD)	1800 MHz (FDD)	2100 MHz (FDD)	2300 MHz (TDD)	2600 MHz (FDD)	3500 MHz (TDD) *expected July 23
	2x10MHz		2x9.8MHz	2x20MHz	2x15MHz			1x80MHz*
	2x20MHz	2x15MHz		2x20MHz	2x15MHz	1x70MHz	2x20MHz	1x80MHz*
	2x15MHz		2x15.2MHz	2x25MHz	2x20MHz		1x20MHz, 1x15MHz	1x80MHz*
							2x35MHz	
					2x10MHz	1x25MHz		1x100MHz*



Updated: One midband lowered to 30 from 35 to reflect 2600 FDD and they only have 2x15 MHz

Spectrum Holdings by MNO

Based on 2degrees current understanding of spectrum holdings



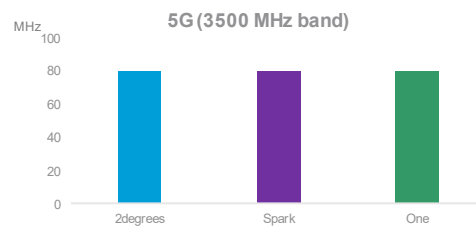
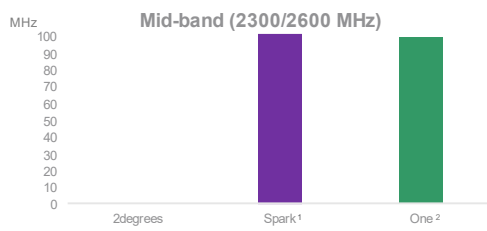
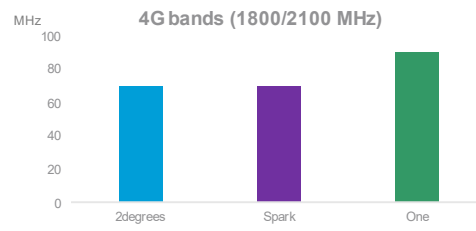
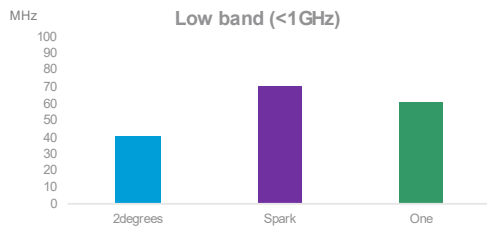
1) Spark hold 1x70MHz of 2300 TDD (initially purchased by Kordia for ~\$1.4m) for plus 2x20MHz of 2600 FDD
 2) Vodafone hold 2 x 2600 lots (1x20MHz TDD and 1x15MHz TDD) initially purchased for ~\$670k



3.6 As noted above, it is important to emphasise that 2degrees currently has no holdings of spectrum in the 2300/2600 MHz mid bands (in addition to having less spectrum than One NZ in 'Low band' and in '4G bands'). This would remain the case if One NZ acquires Dense Air's spectrum and the overall discrepancy is enhanced. This is illustrated in the table below:

Spectrum Holdings by MNO – One spectrum acquisition goes ahead (2x35MHz 2600)

Based on 2degrees current understanding of spectrum holdings



1) Spark hold 1x70MHz of 2300 TDD (initially purchased by Kordia for ~\$1.4m) for plus 2x20MHz of 2600 TDD
2) Vodafone hold 2 x 2600 lots (1x20MHz TDD and 1x15MHz TDD) plus Dense Air spectrum 2x35 MHz



4. HOW DIFFERENT SPECTRUM BANDS/HOLDINGS IMPACT ON MOBILE AND FIXED WIRELESS BROADBAND OFFERINGS

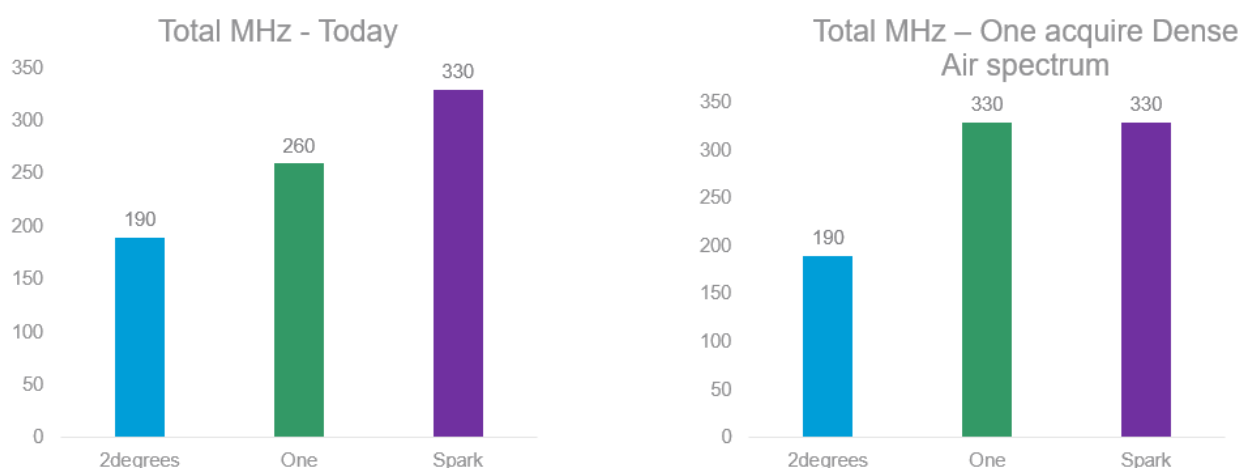
4.1 As noted above, 2degrees does not agree with the submission by One NZ that 2degrees has access to adequate spectrum to provide high quality 5G/4G mobile services and FWA broadband services, and the Proposed Acquisition does not confer a material advantage on One NZ over 2degrees (paras. 23.1 and 23.4 of the Statement of Preliminary Issues).

4.2 The more spectrum an operator has directly impacts the capacity and speeds an MNO can provide to its mobile and FWA customers. Limited capacity means an MNO will either be forced to constrain customer numbers, prioritise certain customers or products over others, degrade the performance of its network for its customers, and / or build more towers which is more expensive and often uneconomic.

4.3 The total spectrum holdings of each of 2degrees, One NZ and Spark are highlighted in the graph and table below (noting the spectrum holdings are rounded to the nearest whole MHz):

Total Spectrum holdings by Operator

Based on 2degrees current understanding of spectrum holdings



Total Spectrum holdings by Operator

Based on 2degrees current understanding of spectrum holdings

Band	Spark		One		2degrees		One with DA Spectrum		
	Holding	Total MHz	Holding	Total MHz	Holding	Total MHz	Holding	Total MHz	
FDD	700	2x20	40	2x15	30	2x10	20	2x15	30
	850	2x15	30						
	900			2x15	30	2x10	20	2x15	30
	1800	2x20	40	2x25	50	2x20	40	2x25	50
	2100	2x15	30	2x20	40	2x15	30	2x20	40
	2600	2x20	40	2x15	30			2x50	100
TDD	2300	70	70						
	3.5GHz	80	80	80	80	80	80	80	80
	TOTAL		330		260		190		330
	TOTAL excl 3.5GHz		250		180		110		250
Total Down link*		210		154		119		189	
Total Down link excl 3.5GHz*		146		90		55		125	

*Downlink assumes 80% TDD Spectrum can be used as downlink

Note: The above aligns with One’s summary of spectrum holdings today in their clearance application, and rounds spectrum holdings to the nearest round number.

4.4 As is evident from these tables, 2degrees has substantially fewer spectrum holdings than One NZ and Spark, and this discrepancy will only be enhanced with One NZ acquiring Dense Air’s spectrum.

4.5 Lack of spectrum has [Redacted]:

(a) [Redacted]

(b) Redacted

(c) Redacted .]
 2degrees estimates that One NZ has circa 30% of their broadband base on FWA, of which 2degrees expects almost all will be a 4G FWA product, giving them a fundamentally different margin profile for their broadband business. Spark have 30% of their Broadband base on FWA and they are targeting 35%. This compares with 2degrees having [Redacted] of our broadband base on FWA. [Redacted]:

]

(d) [Redacted]. In particular:

(i) [Redacted]

(ii) Redacted

]

(iii) There is a first mover advantage with FWA that has impacted the mobile market. With both Spark and One NZ having more spectrum than 2degrees, this has enabled both operators to go early on FWA products and monetise their unused mobile capacity through the delivery of FWA, which in turn has enabled them to expand their 5G mobile network rollout quicker than 2degrees.

4.6 There have also been effects on 2degrees' [Redacted]:

(a) [Redacted]

(b) Redacted

(c) Redacted

(d) Redacted

(e) **Redacted**

]

4.7 What about 5G FWA?

(a) 3.5GHz spectrum is TDD not FDD and is limited to the provision of 5G mobile and 5G FWA services.

(b) **[Redacted**

(c) **Redacted**

(d) **Redacted:**

Redacted		

Redacted

]

4.8 If 2degrees remains at a spectrum disadvantage:

(a) **[Redacted**

(b) **Redacted**

(c) **Redacted**

(d) **Redacted**

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5. LIKELIHOOD OF SPECTRUM HOLDINGS CURRENTLY USED FOR 2G/3G BEING RE-FARMED FOR 5G/6G IN THE FUTURE

5.1 Our 900 MHz and 2100 MHz spectrum currently used for 3G (2x4.2 MHz of 900 MHz and 2x5 MHz of 2100 MHz) will be re-farmed to either 4G or 5G after late 2025 when we shut down 3G.

5.2 This will provide incremental FWA capacity and would also mean that we would be able to support more mobile users. Typically **[Redacted**

].

5.3 However, given it is a relatively small amount of spectrum, it will not make a material difference to our overall spectrum holdings.

6. [Redacted]

6.1 [Redacted].

6.2 [Redacted

6.3 Redacted:

(a) Redacted

(b) Redacted

(c) Redacted

(d) Redacted

(e) Redacted.

(f) Redacted

6.4 [Redacted

(a) **Redacted**

(b) **Redacted**

(c) **Redacted**

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8. PLANS THAT 2DEGREES HAS IN TERMS OF FIXED WIRELESS BROADBAND AND 5G, AND HOW THESE MIGHT DIFFER IN FACTUAL VERSUS COUNTERFACTUAL

8.1 As noted above, 2degrees does not agree with the submission by One NZ that 2degrees has access to adequate spectrum to provide high quality 5G/4G mobile services and FWA broadband services, and the Proposed Acquisition does not confer a material advantage on One NZ over 2degrees (paras. 23.1 and 23.4 of the Statement of Preliminary Issues).

8.2 As set out above, [Redacted]. We provide more detail below on the constraints on 2degrees under the factual with the Proposed Acquisition going ahead, and the counterfactual in the absence of the acquisition.

8.3 Factual: One NZ acquires 2x35 MHz 2600 spectrum:

(a) One NZ will have more than double the amount of 3G/4G spectrum (2x125 vs. 2x55 MHz) than 2degrees (127% more in fact).

(b) From past experience, renewal of the Dense Air spectrum is likely to go to One NZ in 2028.

(c) One NZ and Spark have a sustainable cost advantage over 2degrees.

(d) [Redacted]

(e) Redacted

(f) Redacted

(g) Redacted

.]

8.4 Counterfactual: 2degrees acquires 2x35 MHz 2600 spectrum:

(a) Longer term more capacity to allocate.

(b) Closer to equivalence in terms of spectrum holdings to One NZ and a sustainable cost base.

(c) [Redacted]

(d) **Redacted**

.]

[Redacted

]

9. TOWERS/SITES THAT 2DEGREES WOULD NEED TO HAVE TO DEPLOY DENSE AIR SPECTRUM AND WITHOUT DENSE AIR SPECTRUM.

9.1 2degrees does not agree with One NZ's submission that building or utilising more sites is a practical alternative to acquiring more spectrum (para. 23.6 of the Statement of Preliminary Issues).

9.2 The table below sets out 2degrees' views on the number of towers/sites that we would need to have both with and without acquiring the Dense Air spectrum. **[Redacted**

] These calculations are indicative only and have rounded spectrum holdings to the nearest MHz.

Redacted					

Notes:

- RCG Sites excluded from all operators above.
- 2degrees towers include MORAN Sites
- One NZ's towers are based on 1800 spectrum licences and is our best estimate only.
- The Spectrum holdings row for "Today" excludes 3.5GHz. The "One NZ acquires DA Spectrum" column has **[Redacted**

].

9.3 In particular, it is worth noting from this table that:

(a) **[Redacted**

(b) **Redacted**

(c) **Redacted**

(d) **Redacted**

(e) **Redacted]**

10. SUBSTITUTABILITY OF FIXED WIRELESS BROADBAND FOR FIBRE (OR ALSO COPPER OR SATELLITE).

10.1 2degrees considers that, for the purposes of this acquisition, the NZCC should define a separate market for FWA broadband services to isolate the competitive effects of the proposed acquisition (i.e. as per para. 15.4 of the Statement of Preliminary Issues).

10.2 This reflects the points above that:

(a) **[Redacted]**
]. One NZ and Spark have ~30% of their broadband base on FWA, of which almost all will be in 4G, giving them a fundamentally different margin profile for their broadband business. This compares with 2degrees at **[Redacted]** of our broadband base on FWA.

(b) Currently the **[Redacted]**

]

(c) The service and speed you can deliver on FWA (and implied substitutability) depends on the capacity of the network which depends on spectrum.

(d) **[Redacted]**

]

10.3 In terms of 2degrees' more detailed comments on substitutability:

(a) 2degrees considers that FWA is not a substitute for high data users:

(i) As data usage increases, the segment of the BB market for which FWA is a substitute will shrink, and it will shrink the fastest for the operators with less spectrum, because as soon as you have to build a site just for FWA the business case does not stack up.

(ii) FWA has been primarily a strategy that leverages unused capacity within the network - as your mobile customers grow, or their usage grows, available capacity reduces, leaving less capacity for FWA.

(iii) That indicates that over time FWA puts less constraint on fixed broadband as the capacity in the network is needed for mobile users.

(iv) Whether a separate market or not, the ability to substitute for fixed broadband, or to remain competitive in a stand-alone FWA market, is impacted by spectrum.

(b) 2degrees does accept that FWA is a substitute for lower broadband data users:

(i) Typically, this involves those on copper connections or those on low speed fibre plans.

- (ii) Lower users are the focus because FWA is a contended service. More data use (i.e. Higher data users) leads to degradation of service performance, with high costs to increase mobile capacity.

11. GENERAL THOUGHTS ON THE PROPOSED ACQUISITION

11.1 For the reasons above, 2degrees remains firmly of the view that the Proposed Acquisition will have the effect of substantially lessening competition in the mobile and broadband markets (including an FWA broadband services market).

11.2 In this section, 2degrees focuses on the following three remaining issues referred to in the Statement of Preliminary Issues:

(a) **[Redacted**

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(b) Why it is not the case that 2degrees is at an early stage of its 5G roll out and has greater latitude to pursue alternative strategies and is not constrained by legacy equipment (contrary to One NZ's submission at para. 23.7 of the Statement of Preliminary Issues).

(c) Why there are not competitively effective mitigation options that would be available to 2degrees due to lower spectrum holdings (as per para. 24.3 of the Statement of Preliminary Issues).

11.3 In focusing on these three issues, that does not mean that 2degrees accepts One NZ's other points (as summarised by the Commission in paras. 23 and 24 of the Statement of Preliminary Issues). Instead, 2degrees considers that it has already addressed those other points in the submission above – but is happy to address any further questions from the Commission on these other issues.

[Redacted

]

11.4 2degrees has limited spectrum alternatives to the Dense Air spectrum.

11.5 **[Redacted**

One NZ current	2degrees current	One NZ with the Dense Air Spectrum	Redacted
1,715 * 180 MHz 308,700 MHz	1,634 * 110 MHz 179,740 MHz	1,715 * 240 MHz 411,600 MHz	Redacted

11.6 There are the following further Crown awards of additional spectrum to be offered:

- (a) The Crown, through MBIE’s RSM team, sets out the roadmap for future spectrum opportunities in its “Outlook 2023-2027” paper that can be accessed here [New Zealand Spectrum Outlook 2023 to 2027 \(rsm.govt.nz\)](https://www.rsm.govt.nz/). In this outlook, the RSM has listed the following upcoming “*projects to consider:*” and Table 2 Summary of RSM Potential Work Plan:
- (i) Review and Re-plan 600 MHz;
 - (ii) Review and Plan 1980 - 2010 MHz, 2170 - 2200 MHz (this band is not used for mobile data traffic);
 - (iii) Consider the remaining 3.5GHz spectrum 3.34 - 3.4 GHz (intended for regional broadbands and private networks), and 3.4 – 3.46 GHz. (This is the Reserved 3.5Ghz Spectrum not allocated in 2023);
 - (iv) Start initial work on reviewing and replanning the 3.8 - 4.2 GHz frequency bands;
 - (v) Investigate future use of 6.425 - 7.125 GHz;
 - (vi) Future use of the 24 - 30 GHz bands for Satellite and mobile data traffic;
 - (vii) Investigate and plan for 40 GHz mmWave bands for 5G / 6G and associated technologies;
 - (viii) Commence review of management rights due to expire in 2028-2031;
 - (ix) Monitor 1427 - 1518 MHz and 5.925 - 6.425 GHz.
- (b) Allocation of Reserved 3.5Ghz (1 x60MHz)- 3.4-3.46 GHz. This is the reserved spectrum left over following the permanent allocation of the 3.5 GHz management rights allocated in 2023. This spectrum was potentially intended to be allocated to Dense Air, but was not allocated following notification by Dense Air of their exit from the NZ telecommunication market. This spectrum would assist 2degrees but, for the reasons set out above, only in the provision of 5G mobile services or a 5G FWA product. There may also be issues with compatibility with 2degrees’ equipment, and it is unlikely that 2degrees could utilise all 60 MHz of 3.5 GHz spectrum, and there has been no indication that 2degrees would or could acquire more than any other operator. In any event, MBIE have not provided any timeframe for allocation of this reserved spectrum. (In MBIE’s 5-year outlook document, it is stated as an upcoming project during the period 2023-2027 but, given all MNOs have 80MHz of 3.5GHz spectrum, this is unlikely to be top priority.)

- (c) 600 MHz (up to 2 x 40MHz). There is no specific timeframe for allocation of this spectrum and the RSM outlook paper describes their work plan as to “Review and Replan, including technical consultation”. However, the opportunity is for only 40 MHz of the 600 MHz spectrum band (so relatively small), and it is currently being used by others that would need to vacate before it could be utilised by mobile operators for FWA services. This means it cannot be allocated in the short-term, and it is also in the low band not mid-band.
- (d) Mmwave frequencies (25-90GHz). The Government has announced mmWave 26 & 28GHz will be made available mid-2026 for mobile and satellite use. Technical discussions on this have only just started. However, mmWave is not a FWA substitute. mmWave frequencies have very restricted propagation properties, meaning that FWA users can only be served if they are very close to a tower and have line-of-sight and no obstructions from trees, builds or terrain. While large capacities are possible due to the wide bandwidth available, the restricted coverage limits use to very dense urban areas such as high-rise apartments, and users within a few hundred meters of the cell tower.

11.7 [Redacted

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11.8 In terms of renewals of spectrum rights:

- (a) (2600 MHz). The rights expire in 2028. 2degrees does not have any 2600 spectrum management rights currently. Currently MBIE are undertaking preliminary planning work, but formal public consultation is not expected until late 2023/2024, probably 2024. They have said they will release consultation material on the ‘renewal or otherwise’ on the website as they progress work.
- (b) (2300 MHz). The rights expire in 2030. 2degrees does not have any 2300 currently. Consultation is expected in 2024.
- (c) (700, 850/900 MHz). These expire in 2031. Consultation is expected in Q4 2025 – 2degrees owns spectrum management rights in the 700 and 900 bands, but does not have any holdings in the 850.

11.9 While there will be these spectrum renewals by MBIE from 2028, spectrum is a long-term asset. Renewal is typically available to those who are using it:

- (a) While not legislated, it is Crown policy generally to consider the incumbent’s use of the band. The Crown considers renewals on a case by case basis.
- (b) If the incumbent is not using the spectrum, spectrum is not generally renewed to the incumbent. For example, 3.5 GHz was not renewed to all the old incumbents – Kordia and One NZ did not have their 3.5 GHz rights renewed when they expired in 2022 (pre the long-term 5G allocation). Similarly, Aotearoa Towers Group and Kordia/One NZ did not have their mmWave spectrum renewed when it expired

in 2018 and 2022 respectively. But this was because the incumbents were not using the spectrum.

- (c) In contrast, if the incumbent is using/serving consumers with the spectrum, there is a much greater likelihood of renewal (albeit it may not be full renewal, e.g. because it is Government policy to reserve/allocate spectrum for Maori spectrum or another use). All MNOs agreed the renewal of the majority of their 1800 MHz and 2100 MHz spectrum in 2021, until 2041 (Spark and One NZ have new management rights for the period 2021-2041; 2degrees paid in 2 lots for the periods 2021-2023 and 2023-2041). Similarly there is a high likelihood of renewal/majority renewal for other spectrum, e.g. 700, 850/900.

11.10 As far as 2degrees is aware, [Redacted

] This is consistent with para. 25.2 of One NZ's clearance application, which records that One NZ expects MBIE will renew the remaining spectrum (apart from spectrum allocated to the IMSC) in its existing proportions. 2degrees therefore would expect One NZ to be able to get spectrum renewal for the spectrum being acquired from Dense Air.

11.11 As a result, the implications of this application are well beyond the current license term to 2028, and the Commission needs to contemplate renewals of spectrum licences by the incumbents.

Why it is not the case that 2degrees is at an early state of its 5G roll out and has greater latitude to pursue alternative strategies and is not constrained by legacy equipment (contrary to One NZ's submission at para. 23.7 of the Statement of Preliminary Issues)

11.12 2degrees' 5G rollout is not in its infancy:

- (a) 2degrees has [Redacted] Sites with 5G covering [Redacted] of the population as set out in para. 4.7(d) above.
- (b) 2degrees' 5G rollout plan is [Redacted].
- (c) 2degrees' upgrade plans were impacted when it became clear that [Redacted].
- (d) This resulted in [Redacted].

11.13 As a result, it is not the case that 2degrees has greater latitude to pursue alternative strategies and is not constrained by legacy equipment.

Why there are not competitively effective mitigation options that would be available to 2degrees due to lower spectrum holdings (as per para. 24.3 of the Statement of Preliminary Issues)

11.14 The mitigation strategies available to an MNO like 2degrees that has lower spectrum holdings are:

- (a) Build more towers.
- (b) Acquire spectrum from other avenues / sources.
- (c) Stop offering the product, or offer products with limitations (data caps, speed reductions, reduced quality of services).

11.15 As is evident from the table above, the number of 2degrees' towers is not dissimilar to those of One NZ at present, yet it is the spectrum that makes the major difference in terms of capacity.

11.16 It is not practical for 2degrees to build more towers of the number required. As previously noted, if One NZ acquires Dense Air's spectrum, 2degrees would need to build **[Redacted]** more towers to reach near equivalence with One NZ's network capacity – with equivalence not being a satisfactory outcome since One NZ would have moved on from its current capacity by the time those towers were built.

11.17 We have set out above the options for 2degrees to **[Redacted**

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11.18 **[Redacted**

11.19 The above only leaves 2degrees the option of stopping offering particular products – **[Redacted**

] However it results in a substantial lessening of competition in the relevant markets and a detriment to consumers in terms of the competitive options available to them.