

## Key takeaway points from markets memo

This doc captures some of the key points that [REDACTED] identified in the ESL markets memo. These key points are grouped into wider themes below.

### Measuring deployment and the usage of the spectrum

- > When rolling out their 5G networks, the MNOs tend to be deploying multiple spectrum bands at a single site. This is demonstrated in the number of 5G sites deployed by spectrum band, and comparing a summation of these deployments with their reported total number of 5G sites. For example, Telstra at January 2023 had deployed 2,605 850 MHz NR sites, 732 2.5 GHz NR sites, and 4,108 3.4 GHz sites. For the same period, they reported only 4,559 total 5G sites, implying a majority of sites had at least two spectrum bands deployed.
- > It is important to consider exactly which spectrum bands each operator is using for what purpose. Telstra's and TPG's preferred low-band 5G options, 700 MHz and 850 MHz respectively, are set to expire relatively early in the ESL process. Optus' preferred low-band 5G licence (900 MHz) by doesn't expire until the mid 2040s.<sup>1</sup> Any assessment of the long term public interest of renewal of the 700 MHz and 850 MHz bands must consider the dynamics of these existing deployments alongside the relative certainty afforded to Optus in the 900 MHz band.

### Demand for mobile broadband and supply of spectrum

- > AMTA has made frequent reference to growing demand for wireless, particularly mobile, data as driving the spectrum requirements of the mobile operators.<sup>2</sup> While demand for data is still growing, according to industry figures such as Ericsson and Analysys Mason, the *rate* of growth is slowing, and may continue to slow, as more data is shifted to fixed line networks and lower-power uncoordinated networks, like Wi-Fi.<sup>3</sup>
- > Operators continue to note that strong growth in demand for wireless broadband will necessitate further allocation of spectrum to wireless broadband. While allocating more (and different) spectrum has historically increased the operators' technical capabilities, it is technological change, such as the move from 2G to 3G and onwards, and increasing densification, that has enabled the industry to serve more bits of information per allocated MHz of spectrum, year on year, since the beginnings of the mobile industry, rather than a comparative increase in spectrum holdings.
- > As at 2020, Australia allocates a comparatively large amount of spectrum between 600 MHz and 2.5 GHz to wireless broadband uses compared to its international peers – more than France, Italy and the United Kingdom (all of which have four mobile network operators with spectrum allocated to them – not three), the same amount as Germany, and on a per-national-operator basis, more than the United States. Only Canada, with three national operators, allocates more spectrum in this range to wireless broadband out of the markets surveyed by Analysys Mason.<sup>4</sup>
- > Australia also allocates a relatively large amount of spectrum to this purpose between 3.4 and 4.0 GHz, but it is important to note that this band also supports NBN's fixed wireless services in regional and remote areas (as does the 2.3 GHz band included in Analysys Mason's analysis in the point above).

<sup>1</sup> Indeed, Optus' 900 MHz spectrum licence has not even technically *commenced* – being a 20-year licence running from mid-2024. Optus is accessing the band via a mix of its existing 900 MHz apparatus licence, and early access to spectrum vacated by Telstra.

<sup>2</sup> AMTA, [Spectrum for 5G and Beyond](#); AMTA, [Submission in response to Draft FYSO 21-26](#); AMTA, [Submission in response to RTIRC 2021](#)

<sup>3</sup> PolicyTracker, [Mobile data traffic consumption: predicting future growth](#), January 2024.

<sup>4</sup> Canada has also replanned the 600 MHz band to support wireless broadband, which Australia has not.

- > Following the allocation of the 3.4-4.0 GHz band across a number of processes, the 600 MHz band is likely to be the only major ‘greenfield’ allocation of spectrum for wireless broadband in the foreseeable future. The most recent FYSO places the 600 MHz band in the ‘monitoring’ planning stage, the first of four.<sup>5</sup>

### The markets for spectrum

- > Based on recent auction results and submissions to various ACMA processes, to the extent there is strong demand for spectrum in regional and remote areas, the most desirable bands in those areas are sub-1 GHz.
- > The lack of readily available future spectrum suitable for the deployment of wireless broadband, particularly spectrum-licensed bands, places the ESL process at a critical juncture. The market structure for the downstream mobiles markets is mature, and following the 2020 merger of Vodafone and TPG, settled. Prospective licensees are unlikely to have many opportunities to acquire spectrum (at least from the regulator) suitable for the deployment of wireless broadband on a wide-area scale outside of any spectrum not renewed during the ESL process.
- > The history of the secondary market for spectrum in Australia has tended to be one of consolidation of licences in the hands of the incumbent mobile network operators, with auction results going back to the late 90s littered with entries of bidders whose spectrum is now aggregated with the licences of Telstra, Optus, and TPG. This may suggest that while access to spectrum is a large barrier to entry into wireless broadband markets (variously defined), it is not the only barrier. In other words, while spectrum access is a necessary condition for the deployment of services, its purchase is not a sufficient one (and while perhaps indicative of commercial intent, not demonstrative!).

### Future developments in wireless broadband markets

- > Direct-to-handset connectivity provided by LEOsats represents a major structural change to the mobiles markets. LEOsats offer the potential for 100% nationwide geographic coverage to be provided to mobile consumers, using unmodified mobile handsets.<sup>6</sup> While only available outdoors, and at first with limited bandwidth and capability, direct-to-handset LEOsat connectivity may represent a major change in the way in which mobile operators provide wide-area geographic coverage.
- > From a competition standpoint, enabling the delivery of this kind of service may be a crucial intervention, and a way of eroding some of the historical and current competitive advantages of Telstra (and to a lesser degree, Optus) in regional and remote areas. That is, LEOsat services have the potential to reduce barriers to entry and expansion in the mobiles markets – barriers cited by the Australian Competition Tribunal in finding that ‘it is undeniable that Telstra has considerable market strength’,<sup>7</sup> and that any enhancement of this position would ‘materially reduce Optus’ incentives to undertake 5G investment in [regional areas]’.<sup>8</sup>
- > Pre its 2020 merger with Vodafone, given TPG’s market position, its spectrum assets, and its noted history of innovative and disruptive competitive strategy, it likely that no other existing telecommunications firm in Australia finds itself in as good a position as pre-merger TPG did to enter the national mobiles market. Given this, TPG deciding *not* to do so, and instead merging with the existing third network is a notable demonstration of the barriers to entry it faced.

<sup>5</sup> ACMA, [Five-year spectrum outlook 2023–28: 6-month progress report](#), p. 2.

<sup>6</sup> Department, Better delivery of universal services, p. 3.  
<https://www.infrastructure.gov.au/sites/default/files/documents/better-delivery-of-universal-services-discussion-paper.docx>

<sup>7</sup> Australian Competition Tribunal, Applications by Telstra Corporation Limited and TPG Telecom Limited (No 2) [2023] ACompT 2, at [664].

<sup>8</sup> Ibid, at [672].