



Expiring Spectrum Licences: Stage 2 Consultation

Telstra's reply to submissions

Public submission

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1 Introduction

We welcome the opportunity to reply to submissions received by the Australian Communications and Media Authority (ACMA) in their Stage 2 Expiring Spectrum Licences (ESL) consultation.

The ACMA received 26 submissions in response to its Stage 2 consultation from a wide variety of interested parties, including incumbent licensees, aspiring licensees, government agencies and regulators, industry associations, and more. The high level of interest underscores the significance of this topic, and the importance of this spectrum to the nation, for the provision of fixed and mobile services, services to support broadcast television and rail safety.

We note that the submissions are generally consistent with existing and well established positions. This consistency should simplify the task of analysing submissions, enabling the ACMA to draw conclusions from this information gathering stage, and release its outcomes paper in a timely manner.

This reply submission contains twelve observations; the first four (in section 2) are general ones relating to all submissions, and the remaining eight (in section 3) relate to specific matters in individual submissions.

2 General observations across all submissions

2.1 Only one submission requested access to “in-use” spectrum

We observe that, across the 26 submissions received by the ACMA only one submission (from the NSW Telco Authority)¹ proposed that spectrum which is actively in use should not be returned to the incumbent licensee, but instead, should be reallocated to a different purpose; in this case, public safety. While other submissions made claims for gaining access to ESL spectrum,² they were either not specific,³ or they requested access to what they consider to be spectrum that is not actively in use (i.e., outside the geographic areas where it is perceived to be “in use”).

Our earlier submission to Stage 2 already outlines our views on dedicating spectrum to specific, bespoke use cases such as Public Safety Mobile Broadband (PSMB), in that it amounts to an inefficient use of spectrum. As outlined in section 6.1 of our earlier submission, we consider that bespoke use cases can be delivered more efficiently over public mobile networks utilising existing mechanisms to appropriately prioritise and protect the traffic for those use cases.

We consider that the absence of specific demand for direct access to “in use” spectrum (other than the NSW Telco Authority proposal) clearly indicates that where ESL licences are actively being used by licensees, this is the highest value use, and the licensees must be offered the opportunity to renew all such licences.

2.2 LEO satellite operators did not request direct access to spectrum for DTH

We observe there are no submissions from Low-Earth Orbit (LEO) satellite operators for direct ownership of licences for the purpose of supplying Direct to Handset (DTH) services.⁴ This absence of submissions from LEO

¹ NSW Telco Authority Submission, p.2. “... the NSW Government contends that Band 5 spectrum in the 850 MHz range is well placed to support public safety and emergency management activities, as has previously been iterated to the ACMA. If this band were allocated for public safety use, rather than being re-licensed to the market, ...”

² Including: AAUS, Connected Farms, Consunet, “Individual submission”, NSW-TA, Omnitouch, OneWiFi and Pivotel.

³ For example, AAUS simply says “AAUS supports provision of dedicated spectrum in the 300 – 3000 MHz band to enable emerging aviation operations” (last bullet point, p.2) without specifying which band would be useful for enabling emerging aviation operations, or how they would use it.

⁴ Gilmore Space lodged a submission seeking access to 2110-2200 MHz, which is the base-station transmit frequency for the 2 GHz IMT band, however, they want it for Telemetry, Tracking and Control (TT&C), not for DTH to IMT handsets.

satellite operators suggests they have no interest in *direct* ownership of spectrum in ESL bands. In contrast, Telstra and other MNOs have indicated they are actively exploring partnership opportunities with LEO Satellite operators to extend the coverage of existing public mobile networks using spectrum licenses held by the MNOs.

Therefore, the focus should be on allowing MNOs to retain access to the relevant spectrum and form partnerships with LEO Satellite Operators to deliver DTH services. This aligns with our submission to the ACMA's consultation on Satellite DTH services: regulatory issues,⁵ where we proposed that an inter-operator agreement should be required for LEO Satellite operators to supply DTH services in IMT bands.

2.3 UIOLI as an alternative licence condition will help ensure spectrum is optimally used

Some submissions argue that the cost of introducing use it or lose it (UIOLI) is likely to outweigh the benefits.⁶ With the exception of Optus, who argues that UIOLI harms the sustainability of competition in the national mobile market,⁷ the main concern expressed in the submissions is the ability to demonstrate current and/or planned use in a way that is measurable, yet not burdensome on incumbent licensees. The ACCC does not foresee an issue with measuring current use, but contends that future planned use is likely to be difficult to verify, and that incumbent licensees have inherent incentives to hold on to unused spectrum.⁸

We consider UIOLI is a sound regulatory device as it promotes efficient spectrum utilisation, aligns with public interest criteria, and addresses the MPS objectives. We consider that spectrum must not be allowed to remain fallow where there is a demonstrable alternative use and user for that spectrum. It is not in the public interest for spectrum to remain unused.

We consider that thresholds to demonstrate active, current use of spectrum should be straightforward to design and implement. Measurable levels of use can be determined from infrastructure rollout, and we agree with NBN Co's view that the ACMA should consult with industry⁹ in designing these measures to ensure they are not burdensome. In response to the ACCC's argument that future planned use may be difficult to verify, we also consider that it is possible to put targets in place (in consultation with the licensee) for future use by a certain point in time (say, five years hence) and verify such plans have been implemented.

As we noted in our submission, any "unused" spectrum that is returned, including through a UIOLI process, must be put to auction,¹⁰ and competition limits should be relaxed in regional or remote locations to help ensure it is put to the highest value use.¹¹ Further, where "unused" spectrum is returned, the original licensee should be compensated for the remainder of the licence term, as we noted in section 7.1.2 of our earlier submission to Stage 2.

2.4 No geographic sub-division of existing licences without MNO participation

Several submissions have requested access to ESL spectrum that is not in use,¹² particularly low-band spectrum. While we support UIOLI (see section 2.3), it is important to be mindful that "carving up" spectrum geographically could easily lead to the creation of unwanted, and harmful interference. This is illustrated by the case studies in

⁵ ACMA Consultation on Satellite direct-to-mobile services: regulatory issues, <https://www.acma.gov.au/consultations/2023-11/satellite-direct-mobile-services-regulatory-issues>

⁶ For example, see Optus' submission, ¶15.34, p.81, NBN's submission section 4.i), p.21, and TPG Telecom's submission, Part c, middle of p.18 under the subheading "Licence conditions".

⁷ Optus submission, ¶15.34, p.81.

⁸ ACCC submission, p.1.

⁹ NBN submission, bottom of p.21.

¹⁰ Telstra submission, s.8.5, p.54.

¹¹ Telstra submission, s.6.4, p.43.

¹² Submissions requesting access to **unused** spectrum include: AAUS, Connected Farms, Consunet, "Individual submission", NSW-TA, Omnitouch, OneWiFi and Pivotel.

section 7 of Optus' submission; most notably, Case Study 2¹³ on the 850/900 MHz band. We also explained how interference from a competitor's base station can reduce the existing coverage of a mobile network in section 4.1.1 of our submission¹⁴ to the ESL Stage 2 consultation.

UIOLI regulations and any geographic subdivision must not be imposed in a way that harms the provision and quality of service of existing public mobile network. This is particularly critical in the sub-1 GHz frequency mobile bands where the risk is inherently greater than higher frequency bands due to better signal propagation. The MNOs must, therefore, be involved in any discussion of proposals for geographic sub-division of licences. Engagement with their extensive in-house expertise on radio frequency planning and knowledge of local conditions is critical for ensuring that service quality is not harmed.

3 Specific responses to observations in individual submissions

3.1 Uniform renewal pricing is necessary to support efficient outcomes

In their submission, TPG-T propose that *"The ESL process is an opportunity to consider alternative fee structures such as scaling licence fees according to a licensee's relevant service revenue or market share."*¹⁵ This approach would effectively penalise operators with higher spectrum prices for investing in their services and infrastructure to deliver better services to their customers and grow their market share. Distorting the market in this manner would be a major disincentive for investment.

Asymmetric pricing of this nature also:

- ignores the fact that the market value (which sets the opportunity cost) of spectrum is agnostic to the revenue/market share of the licensee, as it is determined by the marginal bidder in the market;
- to our knowledge, would be unprecedented across OECD markets in the context of spectrum renewals; and
- goes against the ACMA's longstanding spectrum allocation policy of promoting efficient allocation of spectrum (i.e., not interfering with market prices, so as to avoid inefficient allocation).

The Coleago report contained in Optus' submission¹⁶ also speaks against the dangers of asymmetric pricing: *"However, asymmetric pricing could be challenged on the grounds it is discriminatory for spectrum licence renewal. It could also lead to perverse outcomes where an operator is penalised for success by incurring higher renewal fees."* Coleago are making the point that devising a methodology to determine what the price for each operator should be is not only complex, but the factors that would contribute to making a price determination can be contradictory.¹⁷

In addition to ensuring consistent spectrum pricing across licensees, we also consider renewal pricing must be consistent across technically substitutable spectrum. In this regard, we agree with TPG.¹⁸ We also consider that the renewal prices for spectrum with similar characteristics should be the same.

¹³ Optus submission, ¶7.29-7.44, p.96-100.

¹⁴ Telstra submission, s.4.1.1, p.28.

¹⁵ TPG-Telecom submission, p.1, bullet point 3.

¹⁶ Optus submission, Coleago Report (p.19 of the Coleago report, or p.163 of the overall Optus submission).

¹⁷ Optus submission, Coleago Report (p.18 of the Coleago report, or p.162 of the overall Optus submission), where it says *"The interaction between these factors is complex and may work in different directions for any one operator."*

¹⁸ TPG-Telecom submission, Part C, p.17, where TPG-Telecom claim "Licence fees for technically substitutable spectrum should be consistent".

3.2 Punitive alternative licence conditions are not justified or helpful

TPG Telecom's submission proposes that any alternative licence condition(s) should be biased to create a *greater impact* on Telstra.¹⁹ TPG Telecom's justification for this position appears largely based on the observation that Telstra has "received" the majority of Mobile Blackspot Program (MBSP) funding. It should be noted that the MBSP and Regional Connectivity Program (RCP) are not simply government handouts; rather, they are co-investment programs that require investment from the MNO to qualify for funding. Telstra has contributed over \$300 million of its own funds to the building of MBSP sites, which resulted in the creation of around 1,000 new sites, amounting to a little over 70% of sites built under the programs (i.e., not "almost all" as TPG Telecom describe). All operators are free to bid for opportunities in programs such as MBSP and RCP, and ultimately, Telstra's coverage is a result of our own willingness to invest in infrastructure and participate in programs such as these.

If, as TPG Telecom propose, the regulatory framework was designed with alternative licence conditions that penalise operators based on their market share, it would likely generate perverse outcomes such as lower future investment in regional Australia. This is because of the risk of attracting licence conditions designed to punish a mobile operator will diminish incentives for further investment in regional mobile network deployment, even within the context of co-funding programs. It would also be worth bearing in mind that applying alternative licence conditions unevenly against one operator amounts to a market distortion, which is neither justified nor efficient.

In short, market distortions created by the asymmetric application of licence conditions (alternative or otherwise) will disincentivise operators like Telstra from making future investment in infrastructure.

3.3 Telstra is not "spectrum rich"

Optus argues Telstra is "spectrum rich",²⁰ without defining what they mean by that term. Earlier in their submission,²¹ Optus equates the *effect* of spectrum "richness" inversely with having to increase deployment densification (i.e., having more spectrum affords the opportunity to deploy less base stations), but this is an outcome of holding a larger quantity of spectrum, not the definition of the term.

In the absence of a definition of "spectrum rich" from Optus, we consider a "spectrum rich" operator to be one whose network can meet traffic demands at a reasonable economic trade-off with base station deployment. Thus, "spectrum richness" is as much a function of user traffic (market share) as it is the need to deploy additional base stations to densify an area, such as a regional town. When considering low-band spectrum, at a national level, spectrum holdings are broadly in line with market share of customers (headcount of customers). However, low-band spectrum licences are allocated at a national level,²² so the operator share of spectrum is consistent everywhere across Australia, regardless of local market share, which varies, primarily on urban versus regional dimensions.

Accordingly, in the 1 million km² area where Telstra is the sole coverage provider, we have 100% of the available market on our network, but only 45% of the low-band spectrum that is mainly used to service this area, such that our ratio of spectrum to population served is poor. Furthermore, in rural areas, access to low band spectrum which can provide propagation over wide areas is particularly crucial. Here, Telstra is similarly at a disadvantage when compared to the MOCN between TPG and Optus. In these areas, Telstra has the same 45% of low-band spectrum (the Optus/TPG MOCN has 55%), but we have a bit under 70% market share (the Optus/TPG MOCN has about 30%). Accordingly, to characterise Telstra being "spectrum rich" in regional areas is disingenuous.

¹⁹ TPG Submission, Part C, second paragraph, p.17. "Stronger obligations should apply to Telstra relative to other licence holders."

²⁰ Optus submission, ¶12.49, p.22, "...promote competition against a spectrum rich Telstra..."

²¹ Optus submission, ¶12.28, p.17.

²² Except 2 x 5 MHz of the 850 MHz band (3GPP Band 5).

The consequence for our customers in these more remote locations, is that much of the spectrum remains idle, when it could be used to provide faster broadband speeds. We consider it is in the Government's, and customers' interests to adopt policies that enable the use of all available spectrum to reach its full potential.

3.4 Telstra does not have an “enduring competitive advantage” in regional Australia

Both the ACCC²³ and TPG Telecom²⁴ submissions refer to claims made by Optus and TPG Telecom during the ACCC's Regional Mobile Infrastructure Inquiry (RMII) that:

- (1) Telstra has an enduring coverage and competitive advantage in regional areas;
- (2) Government policies have entrenched Telstra's position; and
- (3) This has served to undermine the incentives of other MNOs to invest in expanding their own coverage.²⁵

For the reasons set out in Telstra's submission to the RMII,²⁶ we refute each of these claims. Government co-investment programs such as the Mobile Blackspots Program (MBSP) have always involved an open tender process, allowing any operator to invest in regional Australia, if they so choose. Telstra's addressable market²⁷ is only 1.1% greater than Optus' addressable market of 98.5% of the population.²⁸ With access to revenue from only an additional 1.1% of the Australian population, we have chosen to invest in regional Australia to deliver an extra 1 million km² relative to other MNOs.²⁹ Any competitive advantage we have gained from this approach can be attributed solely to the strong and unwavering financial commitment Telstra and our shareholders have made to investing in regional, rural and remote areas. As noted earlier in section 3.2, we reiterate that Telstra has contributed over \$300 million of its own funds to the building of MBSP sites.

Most importantly for the purposes of the ESL Stage 2 inquiry, there is no evidence that any current competitive coverage advantage Telstra may have is “enduring” as the ACCC suggests. As acknowledged in the ACCC's submission, LEO satellites “... have the potential to impact the competitive dynamics in the mobile services market by allowing mobile network operators to extend service coverage beyond their terrestrial network”.³⁰ In essence, what the ACCC is saying is that current terrestrial mobile coverage advantages (as well as any regional investment incentives associated with these) will soon diminish in importance, as LEO satellites offering DTH are likely to allow MNOs to close any coverage gap between their networks by offering basic connectivity (with LEO-based capabilities expected to increase further over time).

3.5 Only 3GPP standard equipment must be allowed in IMT bands

Consunet's submission advocates for the use of Wi-Fi standards in the 700 MHz, 850 MHz, 2 GHz, 2.3 GHz, 2.5 GHz and 3.4 GHz bands.³¹ We are strongly opposed to the introduction of class licensed Wi-Fi devices in bands

²³ ACCC submission, top of p.2.

²⁴ TPG submission, Part C, p.17, “The ACMA must acknowledge the unique geography of Australia, and past and present policy decisions that have resulted in Telstra's dominance in telecommunications markets.”

²⁵ ACCC, **Regional Mobile Infrastructure Inquiry: Final Report**, July 2023, p.78-79. Available at:

<https://www.accc.gov.au/system/files/Regional%20Mobile%20Infrastructure%20Inquiry%20final%20report.pdf?ref=0&download=y>

²⁶ Available at: <https://www.accc.gov.au/inquiries-and-consultations/regional-mobile-infrastructure-inquiry-2022-23/public-consultation>

²⁷ Telstra coverage is 99.6% of the population, see

<https://www.telstra.com.au/exchange/what-s-next-for-australia-s-best-largest-and-most-reliable-mobi>

²⁸ For example, see Optus' pre-budget submission to Treasury for FY2020-21, paragraph 4, p.2. Available at:

https://treasury.gov.au/sites/default/files/2020-09/115786_OPTUS_0.pdf

²⁹ Telstra's coverage “...reaches more than 2.7 million square kilometres, ... that's around one million square kilometres more than our nearest competitor.” <https://www.telstra.com.au/exchange/what-s-next-for-australia-s-best-largest-and-most-reliable-mobi>

³⁰ ACCC submission, p.3.

³¹ Consunet submission, section 1.1, p.1. “This creates a significant potential for wireless broadband (WBB) use of the 700 MHz, 850 MHz, 2 GHz, 2.3 GHz, 2.5 GHz and 3.4 GHz bands to use Wi-Fi protocols and standards just as they do in 2.4 GHz ISM and 5 GHz bands, ...”

identified for Mobile services as Primary status in the Australian Radiofrequency Spectrum Plan (ARSP).³² There are insufficient co-existence studies for IMT and Wi-Fi in these bands, and we submit that it is not appropriate for class licensed devices to be introduced without proper study.

Importantly, we consider class licensed Wi-Fi devices should not be allowed in apparatus licensed space in these bands either. So, even though ESL is about spectrum licences, we are making this comment in relation to both spectrum licensed, and apparatus licensed space in these bands. Furthermore, it is crucial to note that the ITU-R does not provide for the use of Wi-Fi and similar devices in these IMT bands.

3.6 Instalment pricing could alleviate concerns driving inefficient pricing proposals

Key public interest concepts of competition and spectrum attainability raised by the industry are primarily driven by perceptions of affordability. A range of options exist to address short term affordability concerns, including: pricing to recover administrative costs; shorter license terms; and/or instalment payments. As we briefly explain below, administrative pricing has pros and cons, but if implemented carefully, could allow MNOs to free up more funds for network investments and return to sustainable levels of return. Shortening licence terms without strong certainty of renewal would not be helpful, as this disincentivises investment. However, spreading payments over the term of a longer licence would be helpful for affordability while also supporting investment. We note that pricing is not the central concern of this consultation, so we only make limited comments here as we wish to return to this matter in future submissions.

Conservative competition limits in prior auctions have not been helpful as they have introduced distortions into the spectrum market that not been in the public interest. They have enabled some entities to acquire spectrum at significantly discounted prices for the purpose of seeking windfall gains via subsequent market trades that have resulted in the indirect transfer of (potential) revenue from government to opportunistic spectrum speculators — without the offsetting benefits of wider productivity gains enabled through the use of spectrum and associated infrastructure investment.

Pricing ESLs at administrative recovery cost would benefit industry profitability, but any associated licensing conditions would need to be carefully crafted to retain public benefits.

Longer term spectrum licensing provides the certainty and incentive to commit to more marginal infrastructure investments. With nationally consistent pricing for mobility customers, non-economic remote area investments are co-funded through direct government subsidies, and Average Revenue per User (ARPU) margins sustained via the value that customers attach to reliable and extensive coverage. In the absence of other factors, shorter license terms will have the effect of concentrating investments in areas with higher population density and faster Return on Investment.

In contrast, offering longer term licenses with annual instalment payments may directly address short-term affordability concerns, while also supporting long-term incentives for investment. Avoiding large upfront payments may mitigate industry balance sheet risks and support more productive application of capital in competitive investment. Calculation of the interest for the payment annuity, should be set no higher than the government cost of capital to maximise the competition objectives.

3.7 Contrary to the Coleago report, spectrum prices are falling

Optus included a consultant report from Coleago Consulting in their Stage 2 ESL submission.³³ In the report, Coleago make observations and claims about different valuation methodologies, and argue there are no

³² Australian Radiofrequency Spectrum Plan (ARSP). Available at: <https://www.acma.gov.au/australian-radiofrequency-spectrum-plan>

³³ Optus submission, Appendix C, Attachment 2, commencing at p.141.

discernible trends in international spectrum pricing over time. We strongly disagree, and in our view, their methodology is too simplistic to ascertain how spectrum pricing has developed over time.

In particular, Coleago attempt to fit a linear trend line to the evolution of prices between 2007 and 2023. However, as clearly depicted in figure 1 below, this ignores clear evidence that spectrum prices trended upwards in the “4G era”, (until around 2016), and trended downwards in the 5G era (i.e., after 2016). Coleago also fail to consider the convergence in values across the three broad categories of mobile spectrum between 600 MHz and 4 GHz in the 5G era. In the 4G era, lower frequency bands within this range commanded substantial price premiums over higher ones, but again, there is abundant evidence that this premium has eroded significantly in recent years. For example, Figure 31³⁴ from NERA’s book, Round-by-Round, (replicated in Figure 1 below with permission), shows clear upward and downward trends in the unit pricing of spectrum before and after 2016.

Figure 31. Three-Year Moving Average of Unit Prices (US\$) for Categories of Mobile Spectrum, 2010–2023

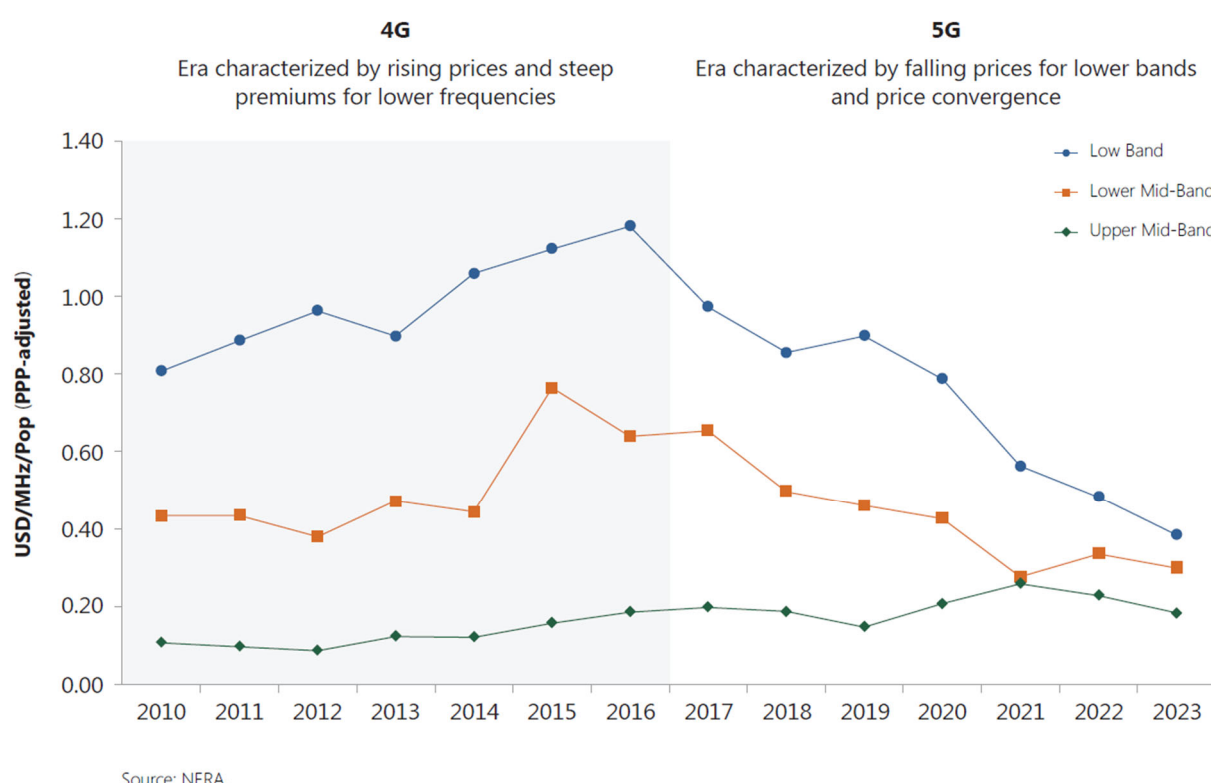


Figure 1: Copy of Figure 31 from Round-by-Round, illustrating the three-year moving average of unit prices.

The decline and convergence of sub-4 GHz spectrum values across the 5G era can readily be explained by the interaction of technological change and basic economics. Put simply, there has been an increase in the supply of spectrum suitable for providing capacity to meet increasing traffic demand, and when supply goes up, prices inevitably come down.

Overall, however, the total “spectrum burden” on operators, in absolute dollars, has continued to increase because prices have not fallen enough to compensate for the increase in spectrum that MNOs have acquired to extend 4G and build 5G networks. This is, as Coleago points out (correctly in this case), is challenging for all

³⁴ Round-by-Round: Learnings from the first 35 years of spectrum pricing. Published by National Economic Research Associates (NERA), 2024. See Figure 31, Chapter 10, p.110. Available at <https://www.nera.com/insights/publications/2024/round-by-round-.html>

operators, because industry revenues have not increased to match high total spend on network build, including spectrum.

Coleago go on to argue that benchmarking is ineffective for valuing spectrum, owing to the noisiness of country and award specific data. Again, we strongly disagree. We recognise that spectrum price data is noisy but there are established techniques for controlling this noise. These include using broad data samples to discern spectrum price trends over time, and identifying specific benchmarks of particular relevance and controlling for known differences in local conditions, such as local supply constraints and differences in the intensity of competition. Applying these techniques requires expertise and care, but the available data does provide some of the most reliable evidence for the market value of spectrum. It would be poor practice to disregard such obviously relevant data when considering the potential value of spectrum subject to renewal.

More generally, all available techniques for valuing spectrum, including benchmarking, are invariably imprecise. It is also well understood that the harm to industry and society from setting spectrum prices above market value can be significant, whereas there may be little, if any harm (only distributional effects), from setting prices more conservatively. It is therefore appropriate for regulators to take a conservative approach when setting renewal prices, taking into account evidence of market value from benchmarking and other techniques.