



ACMA's approach to expiring spectrum licences

ACCC submission

August 2023

1. Introduction

The Australian Competition and Consumer Commission (ACCC) welcomes the opportunity to provide a submission to the Australian Communications and Media Authority's (ACMA) consultation on its approach to expiring spectrum licences.

The ACCC is the economy-wide competition regulator responsible for enforcing the *Competition and Consumer Act 2010* (Cth) (CCA). We protect Australian consumers by fostering competitive, efficient, fair and informed Australian markets, including telecommunications markets.

The ACCC is responsible for the economic regulation of certain telecommunications services under Part XIC of the CCA. The ACCC also has a statutory role in providing advice on allocation limits to the ACMA upon request under the *Radiocommunications Act 1992*. To this end, the ACCC works closely with the ACMA to ensure that allocations of spectrum promote competition in relevant downstream markets that rely on spectrum as an essential input.

The ACMA's expiring spectrum licences process will significantly impact the mobile services market

The ACMA is considering the future of spectrum licences set to expire between June 2028 and October 2032.

These spectrum licences, across the 700 MHz, 850 MHz, 1800 MHz, 2 GHz, 2.3 GHz, 2.5 GHz and 3.4 GHz bands have been allocated over an extended period of time and are currently used by incumbent licensees for a range of uses.

State rail authorities and operators, and free to air broadcasters have some holdings in the 1800 MHz band and 2.5 GHz mid-band gap respectively. These licences are used for the provision of rail safety services or electronic news gathering.

However, the great majority of the expiring spectrum licences have been consolidated largely into portfolios held by the three national mobile network operators, Telstra, Singtel Optus (Optus), and TPG Telecom (TPG), and NBN Co, and used for the provision of wide area mobile and fixed broadband services. The infrastructure provider Dense Air also has limited holdings in the 2.5 GHz band after a spectrum swap with TPG in 2021.¹

The expiring spectrum licences held by the mobile network operators represent almost all the spectrum currently used by the operators to provide services on their mobile networks. It is fair to say that the mobile services market is by far the most relevant market that will be impacted by the ACMA's expiring spectrum licences process.

Spectrum is a scarce and critical input into the provision of mobile services and spectrum availability is a key determinant of market structure. By exercising its power to decide whether a spectrum licence should be renewed, the ACMA is making a conscious decision in market design.

¹ See Dense Air media release [Dense Air acquires new spectrum to build neutral host shared wireless networks in Australia](#), 5 August 2021.

As such, the ACMA has an opportunity to facilitate positive changes in the structure of the mobile services market, in assessing what future arrangements will promote the public benefit that end-users derive from the use of the spectrum to provide mobile services.

The ACMA's consultation paper seeks comments on a number of specific issues. We provide our views on these issues below.

2. Proposed public interest criteria

The ACMA notes that the concept of public interest is relevant to evaluating options and informing decision-making with respect to the expiring spectrum licences. The ACMA proposed to consider 5 criteria to guide its consideration of the public interest. These are:

- Criterion 1: Facilitates efficiency
- Criterion 2: Promotes investment and innovation
- Criterion 3: Enhances competition
- Criterion 4: Balances public benefits and impact
- Criterion 5: Supports relevant policy objectives.²

Promotion of competition also facilitates efficiency and promotes investment and innovation

The ACCC considers the proposed criteria reflect and echo the object of the *Radiocommunications Act 1992* (Cth). In particular, we support the inclusion of the criterion of enhancing competition in the consideration of public interest. As recognised by the ACMA, the benefit derived from the use of the spectrum stems from the services that are provided to end-users. Competition in a market that relies on spectrum as an essential input, such as the mobile services market, heavily influences how licensees (in this case the mobile network operators) use the spectrum to provide services to end-users. A competitive market creates incentives on the part of the licensees to use spectrum in a manner that maximises the benefit derived from the use of spectrum, such as by

- providing services at lower prices to end-users which will increase overall use of the services and maximise output;
- providing a variety of services in response to consumer demand and preferences;
- improving the quality of services over time; and
- investing in new technologies and innovations which may lead to product differentiation, as well as reduction in the cost of providing the services over time.

While the ACMA notes that the proposed criteria do not have any hierarchy or weightings and that there may be competing considerations,³ the desirable outcomes of a competitive market as noted above show that the first 3 criteria, at least, are interlinked and mutually reinforcing. That is, the ACCC considers that to a large extent, the promotion of competition in a market will lead to improvement in economic efficiency (Criterion 1) and the promotion of investment and innovation in the use of spectrum in that market (Criterion 2).

² ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, pp. 18–21.

³ ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, p. 18.

There needs to be clarity on applicable policy objectives

The ACMA notes that there are a range of government policy objectives that it will have regard to in considering the extent to which options support applicable policy objectives when forming views on the public interest. The ACMA notes the policy objectives included in the ministerial policy statement in relation to the 3.4-4.0 GHz band and the December 2022 Statement of Expectations to the ACMA as examples.⁴

The ACCC considers that it would be useful for the ACMA to clarify the relevant policy objectives that it considers applicable to the assessment of the public interest. The ACCC understands that some of the policy objectives may overlap with considerations already contained in other proposed criteria. However, to the extent that they do not, the ACCC considers it would be beneficial for the ACMA to identify the relevant policy objectives so as to provide clarity on what the ACMA will take into account when considering the public interest.

The ACMA should explore future arrangements that reduce barriers to new entry

The ACCC considers that a dynamic and competitive mobile services market is most likely to promote the public interest having regard to the proposed criteria. The ACCC does not have a view on the optimal number and types of operators that such a market should have. Rather, the ACCC considers that a dynamic market environment that is conducive to new entry is more likely to exert competitive pressure on existing market players and promote outcomes that serve consumer interests.

The mobile services market is concentrated and characterised by high barriers to entry, with the most critical barrier being access to spectrum. To build out a network of any significant scale, a new entrant operator would need to acquire a sufficient amount of spectrum in the appropriate bands across large geographic areas. Opportunities to acquire spectrum suitable for the provision of wide area mobile broadband services do not arise regularly, and when they do, the cost of doing so would be high due to competing demand from incumbent operators.

The current structure of the mobile services market appears to be a tight oligopoly. The market is dominated by the three national mobile network operators, who collectively account for an overwhelming majority of the market share (91% as of June 2021).⁵ The rest of the market is served by mobile virtual network operators, who typically target the more niche and price-sensitive segment of the market – a segment that the mobile network operators increasingly compete for via their sub-brands. Since the merger of TPG and Vodafone in 2020, there has been limited prospect of new entry. Without spectrum management policies favourable to new entrants, the likelihood of one emerging in the near future is very low. This has competition implications in the market.

Since 2020, there has been a significant softening of price competition amongst the mobile network operators on their flagship brands. All the mobile network operators have raised the prices of mobile plans for their flagship brands several times, reversing the price cutting trend observed in previous years. Arguably, the mobile network operators have adopted a 'more-for-more' retail model where the price increases are typically 'justified' by increases in

⁴ ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, p. 21.

⁵ ACCC, [Communications Market Report 2020–21](#), December 2021, p. 28.

the included data allowances. However, the ACCC considers that it is unclear how much consumers benefit from the additional data inclusion, as growth in included data allowances is significantly outpacing the growth in consumer demand for data.⁶

New entrants, or threat of new entrants, in the mobile services market have the potential to disrupt the current market structure and promote competition. As noted above, access to suitable spectrum is one of the most critical barriers to entry in this market. For the deployment of wide area mobile broadband services, it typically takes a potential entrant many years to accrue the necessary spectrum needed to roll out a competitive network. There may also be other potential operators with alternative business models that focus on specific segments of the market. These operators will likely have different spectrum requirements.

This expiring spectrum licences process provides an invaluable opportunity for prospective new entrants to potentially access 7 bands of spectrum (for mobile use) within a period of just 4 years. In particular, if a new entrant seeking to deploy wide area mobile broadband services misses this opportunity, they will have to build up their spectrum portfolio in a piecemeal manner. Given spectrum licences can now be issued for up to 20 years, the current market structure could be entrenched for a very long time.

While the ACCC is not currently aware of any potential new entry into the mobile services market, we consider the ACMA's process could investigate the possibility of new entrants. The ACMA may consider publishing a notice under section 78 of the *Radiocommunications Act 1992*, inviting persons to express interest in the relevant expiring spectrum licences. Should prospective new entrants express interest, in particular, the ACMA should explore arrangements that are favourable to new entrants to further encourage entry. This could be done in a number of ways. In an auction setting, parts of the spectrum subject to allocation could be reserved specifically for new entrants. Singapore's allocation of spectrum for 4G services across a number of bands in 2016 is an example where a combination of spectrum reservation and price-based mechanism is used to allocate spectrum to a prospective new entrant.⁷ In a renewal process, the New Zealand's partial renewal of licences for the 1800 MHz and 2100 MHz bands in 2019 provides an example of how to free up a package of spectrum for a specific purpose.⁸

Case Study 1: Singapore⁷

In February 2016, the Infocomm Media Development Authority of Singapore (IMDA) decided to facilitate the entry of a new mobile network operator in allocating 235 MHz of spectrum across the 700 MHz, 900 MHz, 2.3 GHz and 2.5 GHz bands.

The IMDA decided to undertake the spectrum auction process over two stages.

In the first stage, 60 MHz of spectrum across the 900 MHz and 2.3 GHz bands would be set aside to be allocated in a New Entrant Spectrum Auction. Only interested pre-qualified parties who do not currently operate a nationwide mobile network could enter this auction.

⁶ ACCC, [Communications Market Report 2020–21](#), December 2021, pp. 33–34.

⁷ See IMDA, Media releases for [Spectrum Auction Framework to Enhance Market Innovation and Competition](#), [Pre-qualification of two companies for New Entrant Spectrum Auction](#), [700 MHz Spectrum Rights \(2016\)](#), [900 MHz Spectrum Rights \(2016\)](#), [2.3 GHz Spectrum Rights \(2016\)](#) and [2.5 GHz Spectrum Rights \(2016\) Auction](#) ("2016 Spectrum Auction"), accessed on 15 July 2023

⁸ See Radio Spectrum Management, [Renewal of management rights in 1800 and 2100 MHz bands](#), accessed on 6 July 2023.

In the second stage, a General Spectrum Auction would be held for the remaining spectrum and open to the incumbent MNOs and any new MNO that emerged after the New Entrant Spectrum Auction.

Prospective new entrants that expressed interest in entering the New Entrant Spectrum Auction needed to meet pre-qualification criteria. These included whether they had the management skills, competencies and operational experience in deploying and operating a public telecommunications network and in providing retail telecommunications services to consumers and enterprise users. The IMDA also looked at whether the prospective new entrants had the financial, technical and engineering capabilities required to establish a telecommunications system for the purpose of providing 4G and/or IMT-Advanced services.

The successful new entrant MNO was required to achieve nationwide outdoor service coverage by October 2018. They would also be required to comply with IMDA's relevant regulatory framework and requirements, including Quality of Service and service resiliency standards in phases.

In November 2016, the IMDA pre-qualified MyRepublic and TPG to participate in the New Entrant Spectrum Auction.

TPG successfully won the 60 MHz of spectrum in the New Entrant Spectrum Auction, and entered the General Spectrum Auction along with the 3 incumbents, M1, Singtel and StarHub. TPG acquired an additional 10 MHz in the 2.5 GHz band at the General Spectrum Auction.

Case study 2: New Zealand⁸

In 2019, the New Zealand Government decided to partially renew existing licence holdings in the 1800 MHz and 2100 MHz bands. The existing management rights, held by Vodafone, Spark, 2Degrees, Hautaki and Telstra were set to expire in 2021. The national mobile network operators Vodafone, Spark and 2Degrees were using the spectrum to provide 2G, 3G and 4G services.

The Ministry for Business, Innovation and Employment (MBIE) initially consulted on 3 main options during the renewal process, which are:

1. Renewal of all existing holdings to incumbents, at a price set by the government
2. Partial renewal of existing holdings to incumbents, with the remaining frequencies to be allocated in a separate process after renewal is complete
3. No renewal of existing holdings to incumbents, with all decisions on the allocation of the spectrum taken from a first principles basis.

Option 3 was not further considered as it provides no certainty that the existing mobile network operators will be able to continue to provide services to existing customers and accommodate future growth.

Several criteria were then used to assess whether to have full or partial renewal of existing management rights. These are:

- Efficiency: how much does the option promote efficient use of the spectrum?
- Competition: how much does the option ensure that there is adequate competition in the cellular mobile (or other) markets?
- Capacity and coverage: how much does the option affect the capacity and coverage of services, including existing cellular mobile services?
- Certainty for operators: how consistent is the option with giving operators certainty about their future rights to use spectrum?
- Crown revenue: how does the option affect Crown revenue?
- Public policy: is there some public policy reason to favour the option over others?

In the end, the government decided to partially renew the spectrum management rights in both bands for a period of 20 years.

In the 1800 MHz band, 2Degrees, Spark, and Vodafone all held 50 MHz, of which 40 MHz was renewed for each operator. In the 2100 MHz band, Hautaki (used by 2Degrees), Spark, and Vodafone all had their entire holdings renewed. Telstra's unused 10 MHz holding was not renewed. This means that in total, 30 MHz of 1800 MHz spectrum and 10 MHz of 2100 MHz spectrum were freed up in the renewal process.

The government found that the partial renewal option is expected to have only modest impacts on operator certainty, Crown revenue and the capacity and coverage of existing services. At the same time, the partial renewal option opens up possibilities for new entrants to the cellular mobile market, or some other new use of freed up spectrum (one of which is a new emergency services radio network).

In particular, the government noted that existing rights over other bands cannot be freed up for a long time, and the flexibility to put spectrum to another use in the future is valuable especially because rights to use spectrum are generally allocated for a significant period. If no new entrant or new use emerges after a reasonable period of time, it would be open to the government to offer the freed up spectrum back to the incumbents.

3. Proposed expiring spectrum licences process

The ACMA is proposing a 4-stage process for considering the expiring spectrum licences:

- Stage 1: consultation on process (May 2023)
- Stage 2: finalise process and gather information (Q1–Q4 2024)
- Stage 3: consultation on preliminary views (Q4 2024)
- Stage 4: renewal applications and decision-making (commencing 2025).⁹

⁹ ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, p. 22.

Additional consultation is appropriate

The ACCC broadly supports the 4-stage process proposed by the ACMA. The ACCC notes that after the current consultation, the ACMA is not proposing to conduct public consultation until it forms a preliminary view about the proposed future arrangements for spectrum subject to the expiring spectrum licences in Q4 2024. The ACCC understands that the ACMA's preliminary views intend to cover a range of matters including use-cases and users, licensing arrangements, licence conditions and technical framework, spectrum value and pricing and allocation options. To inform its preliminary views, the ACMA intends to, during Stage 2, request information from incumbent licensees and stakeholders on issues such as

- Incumbent levels of use and alternative use-cases
- Demand for the spectrum
- Identifying any band specific issues or inefficiencies
- Market and competition issues
- The public interest.¹⁰

Given the current consultation is about the broad process issues and assessment framework, stakeholders will not, based on the ACMA's current proposed 4-stage process, have an opportunity to comment on the substantive issues until the ACMA releases its preliminary views. Given the importance of this process, the ACCC considers that Stage 2 process could potentially be enhanced by including an additional consultation prior to the ACMA forming its preliminary views on the proposed future arrangements. For instance, the ACMA could gather information on incumbent use (both historical and planned), alternative use-cases and demand for the spectrum in the first instance. The ACMA could then release a paper which discusses these factual matters, and identify key substantive issues relevant to the consideration of the public interest, such as competition in the relevant markets. This would allow stakeholders to provide views on these issues in light of important factual information, and provides more useful input for the ACMA's consideration.

Public consultation on the substantive issues during Stage 2 would also enable the ACMA to first form views on any policy outcomes that it would like to achieve with this process that would support relevant policy objectives. This could then guide the ACMA in forming its preliminary views on the planning decisions in Stage 3.

The ACCC supports the ACMA's proposed approach to form preliminary views on the future arrangements for all expiring licensed bands in Stage 3 regardless of when the licences will expire. This approach makes sense as many of the bands are used together to provide services in the same market. While there may be some band-specific issues, there are likely to be many common issues, such as competition issues in the relevant market, that impinge on the consideration of the public interest with respect to the renewal of these bands.

4. Approaches to examining use

The ACMA proposes to examine the use of the spectrum under existing arrangements to enable it to assess whether they are facilitating efficiency and to identify if changes to existing arrangements or alternative arrangements could better facilitate efficiency. The ACMA also notes that several of the proposed public interest criteria raise matters where

¹⁰ ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, p. 23.

views could be informed by an examination of the use, such potential public benefit and impact, competition, and investment and innovation in the use of the spectrum.¹¹

The ACCC supports the ACMA's proposal to examine use and considers this an important step to take to establish the factual basis upon which different options could be assessed against the public interest criteria. It is however important that the ACMA clarifies how the outcome of such examination will inform its assessment of the public interest. In some instances, where a licensee has not been using the spectrum and has no intention of using the spectrum, it is reasonable to conclude that renewal is not justified based on public interest and the incumbent licensee may not apply for renewal in any case. On the other hand, the ACMA notes in its consultation paper that in some instances holding unused spectrum can potentially provide the licensees utility by providing greater flexibility to deploy or adjust services on a needs basis in the future. The ACMA considers that in such cases, the length of time that the spectrum has not been used would need to be considered in connection with technology and investment cycles, and anticipated future use of the spectrum.¹² This would suggest that the examination of use and the implications of the conclusions from such examination are unlikely to be straight forward.

If the ACMA is inclined to conduct additional consultation during Stage 2 as suggested earlier, ACMA could potentially seek feedbacks on any initial views on how the examination of the use affects the consideration of the public interest.

Setting standardised assumptions for how propagation modelling is undertaken will improve comparability of coverage

The ACMA proposes to examine service coverage as one dimension of use. In measuring service coverage, the ACMA noted that it may seek to set standardised assumptions for how propagation modelling is undertaken to facilitate comparison.¹³ The ACCC strongly supports the ACMA's proposal.

Accuracy and comparability of coverage maps has been a persistent concern for regional communities.¹⁴ As the mobile network operators likely use different modelling assumptions in generating their public coverage maps, it is difficult to accurately compare the coverage provided by the operators. The 2021 Regional Telecommunications Independent Review Committee recommended that the government ensures measures are undertaken to increase the accuracy and transparency of mobile network quality and coverage information. This includes measures to collect and standardise mobile network coverage information and develop a tool for consumers to compare network performance and service availability.¹⁵ To this end, the ACCC considers that the ACMA could utilise the expiring spectrum licences process to consider the appropriate standardised assumptions that should feed into propagation modelling. This would enable the ACMA to meaningfully compare service coverage by the mobile network operators in examining the use of the spectrum. It could also provide a technical foundation for any future work in developing consumer-facing

¹¹ ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, p. 28.

¹² ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, p. 20.

¹³ ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, p. 29.

¹⁴ See ACCC, [Measures to address regional mobile issues](#), October 2017, pp. 5–9; 2021 Regional Telecommunications Review, [A step change in demand](#), pp. 71–72; ACCC, [Regional Mobile Infrastructure Inquiry: Report on preliminary findings](#), 18 April 2023, p. 11.

¹⁵ 2021 Regional Telecommunications Review, [A step change in demand](#), p. 13.

information that facilitates better comparison of coverage across the mobile network operators.

ACMA should seek detailed information on spectrum utilisation

The ACMA proposes to examine the geographic areas the licensee is using the spectrum, and whether the licensee is making full use of the licensed bandwidth.¹⁶

The ACCC supports the ACMA's proposal and considers that the ACMA should seek detailed information on how the spectrum is used geographically, as well as how intensively the spectrum is used within a geographic area. The ACCC's Audit of Telecommunications Infrastructure Asset Record Keeping Rules require the mobile network operators and NBN Co to provide basic site and coverage information in relation to the operation of mobile and fixed radio equipment.¹⁷ Some of the information provided may be useful to the ACMA, which include the location of each active site, technologies and spectrum bands deployed at each site, and coverage maps by each frequency band deployed. Such information provide a good indication of the geographic areas in which each band is deployed and the predicted geographic coverage of each frequency band. However, as the coverage maps are provided by the operators themselves, the underlying assumptions for the propagation modelling used are likely to vary.

As indicated by the ACMA, more details information on the use of the spectrum is likely required, such as the bandwidth of spectrum deployed at each site. Other information that may indicate spectrum utilisation include measures of maximum capacity on a spectrum band deployed, the actual level of capacity used, and spectral efficiency figures. The ACCC understands that measures of spectrum utilisation may differ depending on the purpose for which a mobile network operator is using particular bands of spectrum. For instance, some mid-bands may be used to provide high speed capability and service rather than for capacity reasons. It may also be useful to consider likely future spectrum utilisation in response to continued growth in demand.

Planned and anticipated investments will be driven by market dynamics

The ACMA proposes to consider historical level of investment and innovation, as well as planned and anticipated investment and innovation to occur in the future, in examining use of the spectrum.¹⁸

While historical investments could be easier to ascertain, planned and anticipated investment and innovation are largely based on forward-looking business plans of the operators. As operators generally make investments in order to improve their network for the purpose of maintaining or improving their market position, the competitive dynamics of the relevant market heavily influence the incentives of the operators to invest in the use of the spectrum. As such, the state of competition in the relevant market would be a key consideration for the ACMA in assessing the veracity of any claimed investments.

¹⁶ ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, p. 29.

¹⁷ See ACCC, [Audit of Telecommunications Infrastructure Record Keeping Rules](#).

¹⁸ ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, p. 30.

The ACCC agrees with the ACMA's view that there needs to be a level of confidence that spectrum will continue to be used efficiently and investments into underlying infrastructure will continue throughout the duration of the licences, which could be up to 20 years.¹⁹ The ACCC considers this is particularly the case for regional areas, where the commercial incentives to invest may be more limited. In such a case, the ACCC supports the ACMA considering opportunities for encouraging investment and connectivity in these areas.

¹⁹ ACMA, [Approach to expiring spectrum licences: Consultation paper](#), May 2023, p. 30.